Canterbury

District Health Board Te Poari Hauora ō Waitaha

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5 May 2021

9(2)(a)

RE Official information Act request CDHB 10563

I refer to your email dated 16 March 2021 requesting the following information under the Official Information Act from Canterbury DHB. Specifically

1. Copies of documents created since the start of 2019 that relate to the condition, performance and adequacy of Specialist Mental Health facilities managed by the DHB. *I am particularly interested in documents such as reports, briefings and letters that provide an overview of deficiencies in the ability of mental health units to provide adequate treatment for patients with serious mental illness, including factors such as funding, demand, staffing, overcrowding, patient safety and comfort, readmission rates, and the physical state of the facilities.*

Please include:

- 1. Copies of business cases for repairs or upgrades of existing Specialist Mental Health facilities.
- 2. Copies of business cases for the building of new Specialist Mental Health facilities.

Attached as Appendix 1:

- 1 Hillmorton Hospital Condition Survey 11/07/2018 Page 001
- 2 SMHS Relocation from TPMH December 2018 Page 86
- 3 The National Asset Management Programme for DHBs Page 234
- 4 The National Asset Management Programme for DHBs Appendix 4 Page 318
- 5 Board papers 2019 Page 327
- 6 Board papers 2020 Page 392
- 7 Board papers 2021 Page 695
- 8 List of other Business Cases which are available Page 702*

Please note: We have redacted or withheld information pursuant to the following sections of the Official Information Act.

s9(2)(a) i.e. ...to protect the privacy of individuals, including those deceased" s9(2)(b)(ii) i.e. ...commercial prejudice, to protect the commercial position of the person who supplied the information, or who is the subject of the information."

Please also note *8 above, we have provided a list of additional Business Cases rather than the Business Cases themselves. A number relate to operational maintenance and repairs and may not be relevant to your interest. If you would like any of these please advise and we will consider for release.

Please also provide data for the last five years, broken down by month if possible, on the following metrics:

3. Bed occupancy rates in specialist mental health and addiction facilities (broken down by facility if possible and applicable).

Please refer to **Appendix 2 Table one** (attached) which shows 'bed occupancy' in Specialist Mental Health and Addiction facilities broken down by facility by month since April 2016. **Please note** these figures do not include patients who are on leave but are still under care of the unit.

4. Bed numbers in specialist mental health and addiction facilities (broken down by facility if possible and applicable).

	Adult Acute Inpatient	Child and Adolescent	Forensic	Intellectual Disability	Specialty*	Rehab	Alcohol & Other Drug	Total
Available Beds	64	16	37	20	18*	39	6	200**

Table two: Bed numbers in Specialist Mental Health and Addiction facilities

Notes:

*Specialty = includes Eating Disorders and Mothers and Babies

**Includes five baby beds in Mothers & Babies – babies cannot be admitted without Mother

5. Unplanned readmission rates in specialist mental health and addiction facilities (broken down by facility if possible and applicable).

Please refer to Appendix 2 Table three (attached) for the 'unplanned readmission rates' in Specialist Mental Health and Addiction facilities, by month for Adult Acute Inpatient.

Please note: We only routinely capture readmission rates for adult general services. **Table three** shows the readmission rates within 28 days of discharge.

6. Funding for specialist mental health and addiction facilities.

The budget setting process for the Canterbury DHB covers the financial year from 1 July to 30 June, rather than calendar years. Over the last five financial years, the DHB has allocated funding to the provider arm for adult mental health inpatient and community-based services as shown in **Table four** below:

Provider Arm Mental Health Services	2015/16	2016/17	2017/18	2018/19	2019/20
Adult Mental Health Inpatients	31,071,282	31,528,030	31,969,616	31,969,617	32,417,015
CADS - Community Alcohol & Drug Services	4,384,200	4,416,463	4,478,296	4,567,417	4,714,641
Child & Youth including Inpatients	16,642,285	16,878,355	17,415,788	18,375,886	19,034,297
Community (including Māori Cultural Services, Peer Support and Mental Health with Intellectual Disability services)	27,999,049	29,671,704	38,847,500	39,195,373	41,397,319
Forensic Services	13,669,557	15,817,336	16,038,825	17,078,887	18,085,826
Quality & Audit	120,000	120,000	121,680	124,101	120,000
Regional Services including Inpatients	7,093,754	7,198,032	7,932,435	8,090,280	8,217,648
TOTAL \$	100,980,127	105,629,921	116,804,142	119,401,560	123,986,746

Table four: Allocation of funding to Canterbury DHB Mental Health Services for past five financial years.

The data shown in **Table four** (above) does not include funding allocated to NGO providers or paid to other DHBs to deliver mental health services to the Canterbury population.

Funding allocated to the Canterbury DHB's provider arm is spent on staff salaries, patient related care costs including medications and meals etc., costs associated with running inpatient services such as cleaning, orderlies, laundry, building maintenance and utility expenses.

Please note: The **Table four** shows <u>allocation</u> of funding to Canterbury DHB Mental Health Services based on volume of work planned. It does not reflect the actual expenditure by these services.

I trust this satisfies your interest in this matter.

You may, under section 28(3) of the Official Information Act, seek a review of our decision to withhold information by the Ombudsman. Information about how to make a complaint is available at <u>www.ombudsman.parliament.nz</u>; or Freephone 0800 802 602.

Please note that this response, or an edited version of this response, may be published on the Canterbury DHB website after your receipt of this response.

Yours sincerely

Ralph La Salle Acting Executive Director Planning, Funding & Decision Support







Contact Details



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Document History and Status

Revision	Date	Author	Reviewed by	Approved by	Status
1	11/07/2018	N Dawe	A Van Meer	A Van Meer	Draft
2	4/02/2019	N Dawe	T Blanchet	A Van Meer	Final

Revision Details

Revision	Details
2	ADT asset ID numbers added to mechanical and electrical commentary
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Executive Summary

This report presents the results of an asset condition survey carried out at Hillmorton Hospital in 2018. The survey focussed upon the building's exterior fabric, the primary mechanical systems and the main electrical distribution for buildings 1 through 10, 13, 15, 16, 21, 22, 23 and 31. The survey excluded interior finishes, site services grounds and landscaping. This survey report also includes a structural overview of the buildings for potential snow load issues.

The conditions found varied significantly primarily due to the differing age of the buildings. There was significant evidence of a large backlog of deferred maintenance with a number of building elements being at or even beyond the point where intervention would be required to extend their working life.

The primary areas where major deferred maintenance was noted included roofs, windows (steel and timber) and guttering/spouting systems.

The roofs were inspected by aerial drone which uncovered evidence of vandalism and abandoned/redundant materials left on roofs that would not have been seen from any ground based survey.

Due to the age of many of the buildings suspected asbestos containing materials were found in a number of building elements.

The structural review indicates that there are a number of buildings on site where potential high snow loads may pose a health and safety hazard, cause roof collapse and therefore potentially create major business interruptions.

The overall condition of all the assets surveyed is 2.8 out of 5. This includes external elevations, roofs and M&E plant.

11%	60	
ry Good		
9.40%	1,119	
bod		
3.17%	1,226	
oderate		
97%	340	
or		
35%	95	
ry Poor		

Figure 1 Overall site Condition Summary

NSD OPUS

1 Introduction

1.1 Background and Scope

In 2018, the Canterbury District Health Board (CDHB) engaged WSP-Opus to undertake a survey of building exterior surfaces and plant rooms at Hillmorton Hospital to review or update existing asset inventories, and carry out condition assessments for various buildings. The results are presented in a form that will enable the development of asset forward renewal and maintenance programmes that help to underpin financial programmes for Long Term Planning.

The scope focussed on the following key asset components of buildings 1 to 10, 13, 15, 16, 21, 22, 23 and 31;

- Collect data for the materials as per the list provided by WSP-Opus (appendix 1 or our Offer of Service).
- Confirm material, finish and quantity with condition assessed on a scale of 1 to 5 as per IIMM manual.
- Attach photographs of wall surfaces to file record.
- Record any deferred maintenance item with brief description and photos.
- Visit all plant rooms on site and complete and update the data records for all mechanical and electrical equipment to match existing Maximo standard.
- Provide portal to allow CDHB staff to view data on line in the ADT (Asset Data Toolset).
- Utilise a UAV (unmanned aerial vehicle or 'drone') to provide condition information on the roof coverings and roof drainage systems.
- Present all data in an excel format to match the CDHB fields provided, for automatic input into the Maximo database.

1.2 Exclusions

The report excludes any review of:

- Interior finishes,
- Site services,
- Grounds,
- Landscaping
- Building services beyond main plant rooms and electrical distribution

We were unable to assess if damage has been caused or the presence of mould due to any water ingress issues.

1.3 Methodology

A team of experienced building surveyors and engineering professionals assessed the condition grade of all assets, utilising our ADT system to facilitate data capture.



(a) Data Collection Tools

WSP-Opus used the latest data capture technology ensuring that collected data contains the correct level of meta-data to feed into the risk based prioritisation and programme processes.

Electronic hand held devices and Unmanned Aerial Vehicles (UAV) technologies were utilised for the survey work.

Data is held in WSP-Opus' secure cloud based asset data tool, where it can be accessed by the CDHB through web browsers (such as Google Chrome). This data

includes photographs, inventory data, condition data and details of any defects or hazards noted during the survey.

(b) Data Collection & Building Vertical Face Condition Assessment (Exterior Elevations)

Site visits were undertaken by experienced building surveyors to confirm site layout, risks and dimensions.

The data set includes the location, material of construction, dimensions, area quantities and approximate age of each building vertical face.

The surveys included cladding, windows, doors, soffits, facias, stairs, decks, ramps, guttering and spouting

(c) Roof Condition Assessment

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WSP-Opus utilised UAV to provide condition information on the roof coverings and roof drainage systems for each building.

The UAV scope of work included a UAV survey of the various buildings, capturing aerial video data in 4K. Still photos of any areas of interest were then captured from individual frames of the video.

(d) Mechanical and Electrical

WSP-Opus have performed a Mechanical and Electrical Survey of the Energy Centre and each Plantroom, including all plant and main switch boards and distribution boards. The information has been collected using the ADT and has been exported in the format outlined in the CDHB document M07 Asset Data for import to Maximo (.docx) and M07A Info for Asset Table 2016 (.xlsx).

(e) Structural

The buildings have all being previously seismically assessed and no comment is made here. WSP-Opus has however, reviewed the potential snow loading risks for the buildings.



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2 Property

Related Information 2.1

This report can be read alongside the inventory spread sheets for each building and the photos which can be found within the Opus ADT application, some of which are also included in the Appendices. Additionally, the UAV videos of the roof are available and can be used to gain a broader understanding of the condition of the roof surfaces.

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The survey includes 2765 separate assessments and 2833 photos.

The overall average condition of all the assets surveyed is 2.8 out of 5.



Overall site Condition Summary Figure 2

The life expectancy, installation date and condition are all used to estimate a replacement year for individual elements. 251-6-056



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Site Plan Showing locations of Buildings Surveyed.

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3 Structural Commentary

3.1 General

Following the Canterbury earthquakes the Canterbury District Health Board (CDHB) engaged structural engineering firms to undertake rigorous inspections of the buildings at Hillmorton Hospital. The various Detailed Engineering Evaluations (DEE), Detailed Structural Analysis (DSA), and level surveys generated during this process were focussed primarily on seismic activity, and were forwarded to WSP-Opus to aid our understanding of the buildings prior to our inspection.

Given the level of rigour already applied to seismic activity, the primary focus of our inspection was to identify and comment on deterioration and longevity of key building elements, and to comment on vulnerability to non-seismic loads.

A structural focused site visit was completed on the 2nd and 3rd May. The site visit involved a brief walk around the buildings to gain an understanding of the structural systems. Some of the buildings were observed to be highly vulnerable to snow loadings, which is particularly important for asset management. Our commentary therefore focusses on this risk factor.

3.2 Code Issues

Following a NIWA report commissioned by The Department of Building and Housing (now MBIE), the New Zealand Building Code changed the basic snow load in Canterbury from 0.6kPa to 0.9kPa in 2010 (see section 3.4 for further detail). Therefore in buildings designed prior to 2010, large roof spans, flat or near flat roofs, flat roofs adjacent to steep roofs and other areas where snow can collect may not be able to cope with expected snow loads. The structure, being overloaded from snow can result in high deflections and compromise the building envelope. Overtime, the deflection can be excessive and cause ponding. These high snow loads may pose a life hazard due to roof collapse, and potentially cause major business interruptions.

3.3 Site Findings

During our site visit, we found there were multiple roof areas that could be substandard for snow loads, as shown in Figure 4. Of these buildings, we are particularly concerned about the roof in the laundry building (Figure 5) and the canopy structure in the pre-school, due to the large spans and relatively flat roofs. The canopy structure in the pre-school is likely to be unconsented and the large spans were observed to be significantly under designed. The buildings of concern include:



Part of Building 2 Building 3 Building 4 Building 5 Part of Building 6 Building 8 Part of Building 9 Part of Building 10 Front part of Building 15 Building 21 Building 23



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Figure 4 Plan of roof locations that require further assessment for snow loads



Figure 5 Large flat roof area identified in the Laundry Services Building

3.4 Supporting Information

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Analysis of NIWA's historic weather events database shows that a total of 39 snowstorms have damaged property and infrastructure, or killed livestock and/or people.

Four of these occurred prior to 1945, three during the 1970s, one in the 1980s and four in the 1990s. Twenty-seven snowfall incidents have been recorded since 2000.

Recent significant snowfalls include:

- June 2006 Canterbury
- September 2010 Southland
- July 2011 Canterbury
- August 2011 Canterbury and Wellington (snow also fell in Auckland and Hamilton)
- June 2012 Canterbury



A graph of snow depths in cm recorded in Ashburton is shown in Figure 6 below: -

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Figure 6 Maximum observed annual snow depths for station H31971 in Ashburton for the period 1927-2006

http://hydrologynz.co.nz/downloads/20110419-044745-JoHNZ_2007_v46_1_Hendrikx.pdf

Historical snow loads had used snow densities from international data, but snow near sea level in New Zealand can be quite dense, with recorded values ranging between 170 and 600kg/m3, (the Loadings Standard uses a value of 290kg/m3.) In June 2006, a large storm dumped record snows on parts of Canterbury, collapsing several buildings and disrupting electricity networks, communication systems, and transport systems. At the request of the Department of Building and Housing (now MBIE), NIWA also researched the snow loads exerted by that storm, which reached 1.2kPa at a Timaru weighbridge – four times the acceptable one-in-25-year limit in the Building Code of the time.

NIWA's subsequent report highlighted instances where observed ground snow loading had even surpassed the one-in-150-year standard, and said that the snow densities specified in the AS/NZS standard were a "key deficiency."

The New Zealand Building Code changed the basic snow load in Canterbury from 0.6kPa to 0.9kPa in 2010.

The effect of global warming is unknown but there are scenarios that could reduce or increase the load from the current level.

3.5 **Recommendations**

We recommended carrying out an assessment to check the capacity of these roofs as highlighted in Figure 4 due to the increase in snow loads, especially the laundry building and pre-school canopy structure.

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Building 1 Forensic Services 4

General 4.1

The building was constructed in 1990. It is timber framed with brick veneer and has a clay tile roof. Modifications/extensions were made to the building around the year 2000. The building has predominantly steel framed windows.

The overall condition of Building 1 is rated at 2.6.



Building 1 Overall Condition Figure 7



Figure 8 Building 1 Condition of Exterior Elevations

0.00%	0
Very Good	
30.00%	3
Good	
50.00%	5
Moderate	***************************************
20.00%	2
Poor	and the second
0.00%	0
Very Poor	

017

Figure 9 Building 1 Roof Condition

4.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Severe corrosion of steel window frames
- Upper roof gutters appear to be rusting
- Temporary roof repairs evidence of roof leaks
- Significant cracks in water tower brickwork
- Multiple cracks in rendered cladding

4.2 Mechanical Services

4.2.1 Heating, Cooling & DHW Plant

The heating plant for Building 1 is situated in GO26, a ground floor plant room and associated roof plant deck.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

A heating water circulation pump (ADT ID: 431694) supplies the heating water header from which three (3) zone pumps (ADT ID: 431695) supply the building heating zones.

A calorifier circulation pump (ADT ID: 431699) supplies heating water through the calorifier coil (ADT ID: 431692). A domestic hot water pump (ADT ID: 431693) circulates domestic hot water through a loop to supply the building.

The roof deck houses a chiller and a packaged air handling unit.

Heating plant appears to be well-maintained with no apparent issues requiring immediate attention. The mechanical plant generally including the primary heating water pump, calorifier, chiller and air handling unit are into the second half of their service life and will exhibit increasing maintenance costs over the next ten years. Heating water zone pumps and domestic hot water circulation pump appear to have been replaced more recently and should have more than ten years expected service life remaining.

0.00%	0
Very Good	
47.06%	8
Good	
47.06%	8
Moderate	
5.88%	1
Poor	
0.00%	0
Very Poor	

018

Figure 10 Building 1 Condition of Mechanical Systems

4.2.2 Recommendation

The mechanical plant, pumps, chiller, calorifier should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

The heating zone and domestic hot water circulation pumps should have an expected remaining service life of ten years.

4.3 Electrical Systems

4.3.1 Main Switchboard

The main switchboard (ADT ID: 731716) for Building 1 is situated in the Switchboard Room. It is in good condition with modern switchgear and equipment.

4.3.2 Distribution Switchboards

There are six distribution switchboards and two mechanical controls boards servicing the building. With the exception of DB-L1 (ADT ID: 731716), which is integral to the main switchboard and in good condition, the other distribution switchboards are in moderate condition with ageing switchgear and equipment.

The cover of one of the panels on DB-1 (ADT ID: 731712) in the House Keeping Room is no longer secured to the panel. There are exposed live terminals in the aforementioned panel which requires urgent remediation for the safety of the users.

The mechanical controls board in corridor GO07 (ADT ID: 731713) is at the end of its' economic life and a replacement should be considered.

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0.00%	0
Very Good	
37.50%	3
Good	
37.50%	3
Moderate	
12.50%	1
Poor	
12.50%	1
Very Poor	

019

Figure 11 Building 1 Condition of Electrical Systems

4.3.3 Recommendations

- The main switchboard (ADT ID: 731716) be replaced in 15-20 years. •
- The distribution switchboards (ADT ID: 731711, 731712, 731714, 731715, 731717, 731718) be . replaced in 10-15 years.
- . board (The mechanical controls board (ADT ID: 731713) in corridor G007 be replaced within 5

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Building 2 Te Awakura Acute Inpatient Services 5

General 5.1

The building was constructed in 1980. It is timber framed with a variety of cladding systems and has a long run steel and butanol roof. Modifications/extensions were made to the building around the year 1998. The building has predominantly aluminium framed windows.

The building was subject to substantial alterations and extensions in 1998. The overall condition of the building is rated as 2.2.



Figure 12 Building 2 Overall Condition



Figure 13 Building 2 Condition of Exterior Elevations.

0.00%	0
Very Good	
66.67%	2
Good	
33.33%	1
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

021

Figure 14 Building 2 Condition of Roof

5.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Rubber seals to skylight glass falling out
- Materials left on roof. Note that these lengths of timber are weathered, indicating that they have been on the roof for some time. There was a major HVAC project underway when our survey was undertaken, and there were large amounts of material on the roof- suggest checking the roof following completion of the project to ensure that all materials have been removed
- Damage to parapet walls- central triangular roof. Likelihood of serious water damage to wall.
- Large crack in feature wall. Will be allowing water ingress. Assessment was done during large HVAC project- need to ensure that all materials currently on roof are removed.
- Multiple cracks in concrete render
- Exterior doors rotting, frames bent, glass panels broken

5.2 Mechanical Services

5.2.1 Heating Plant

The heating plant for Building 2 is situated in G05, a basement plant room and associated fenced area.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

A calorifier circulation pump (ADT ID: 731728) supplies heating water through the calorifier coil (ADT ID: 731730). A domestic hot water pump (ADT ID: 731724) circulates domestic hot water through a loop to supply the building.

The fenced yard outside the plant room will house a new mini-chiller (ADT ID: 731735) in the process of being installed.

Heating plant appears to be well-maintained with no apparent issues requiring immediate attention. The mechanical plant generally including the primary heating water pump, calorifier (ADT ID: 731729), chiller and air handling unit are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. Heating water zone pumps (ADT ID: 731723) and domestic hot water circulation pump (ADT ID: 731724) appear to have been replaced more recently and should have more than ten years expected service life remaining.

Building 2 Condition of Mechanical Systems

5.2.2 Recommendation

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The mechanical plant: pumps (ADT ID: 731732 HX supply), chiller, calorifier, HX supply pump (ADT ID: 731732), heat exchanger (ADT ID: 731727), are in the first half of their service life and should have an expected remaining service life of over ten years.



Figure 15 Building 2 Condition of Mechanical Systems

5.3 Electrical Systems

Main Switchboard

The main switchboard (ADT ID: 731774) for Building 2 is situated in the Switchboard Room. It is in good condition with modern switchgear and equipment.

5.3.2 Distribution Switchboards

The distribution switchboards and mechanical controls boards (ADT ID: 731775, 731776, 731777) servicing the building are of the same age and make, in good condition with modern switchgear and equipment.

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0.00%	C	0		
Very Good				
100.00%	4	4		
Good				
0.00%	C	0		
Moderate				
0.00%	C	0		1
Poor			-	
0.00%	C	0		1
Very Poor				0

Figure 16 Building 2 Condition of Electrical Systems

5.3.3 Recommendations

4), dist. ,777) be rej the second sec The main switchboard (ADT ID: 731774), distribution switchboards and mechanical controls boards (ADT ID: 731775, 731776, 731777) be replaced in 15-20 years.

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Building 3 Aroha Pai 6

General 6.1

The building was constructed in 1971. It is timber framed with brick veneer and profiled metal cladding systems and has a corrugated iron roof. Modifications/extensions were made to the building around the year 1999. The building has predominantly timber framed windows.

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The building had significant alterations and extensions in 1999. The overall condition of the TIONA building is rated at 3.1.

0.00%	0
Very Good	
53.23%	107
Good	
37.31%	75
Moderate	
7.96%	16
Poor	
1.49%	3
Very Poor	

Figure 17 Building 3 Overall Condition



Figure 18 Building 3 Condition of Exterior Elevations

0.00%	0
Very Good	
0.00%	0
Good	
66.67%	2
Moderate	
33.33%	1
Poor	
0.00%	0
Very Poor	

Figure 19 Building 3 Condition of Roof

6.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Severe corrosion of metal frame of windows
- Evidence of rust to sheet ends under ridge flashing
- Cracks and water ingress where fascia meets plaster
- Barge is cracked. Also looks like flat roof is poorly designed and is allowing water ingress
- Evidence of water ingress and rot.

6.2 Mechanical Services

6.2.1 Heating Plant

The heating plant for Building 3 is situated in Calorifier Room G048.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a shell and tube heat exchanger (ADT ID: 731741) to generate low temperature heating water for the building comfort heating and domestic hot water. Heating water is pumped to radiators through the building. A domestic hot water pump circulates domestic hot water through a loop to supply the building.

Heating plant appears to be well-maintained with no apparent issues requiring immediate attention. The mechanical plant generally including the heat exchanger and calorifier (ADT ID: 737) are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. Pumps: heating water circulation (ADT ID: 731742), LTHW (ADT ID: 731743), calorifier circulation (ADT ID: 731738) and domestic hot water circulation pumps (ADT ID: 731739) appear to have been replaced more recently and should have more than ten years expected service life remaining.



Figure 20 Building 3 Condition of Mechanical Systems

6.2.2 Recommendation

The mechanical plant, calorifier and heat exchanger are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

The pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

6.3 Electrical Systems

6.3.1 Main Switchboard

The main switchboard (ADT ID: 731773) for Building 3 is situated in the Switchboard Room. It is in good condition with modern switchgear and equipment.

6.3.2 Distribution Switchboards

The distribution switchboards and mechanical controls boards (ADT ID: 731719, 731720) servicing the building are in good condition with modern switchgear and equipment.

The exception is the mechanical controls board (ADT ID: 731721) in the Plant Room, which is at the end of its' economic life. A replacement should be considered and will provide the opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.



Figure 21

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Figure 22 Building 3 Condition of Electrical Systems

6.3.3 Recommendations

- The main switchboard (ADT ID: 731773), distribution switchboards and mechanical controls boards (ADT ID: 731719, 731720), with the exception below, be replaced in 15-20 years.
- The mechanical controls board (ADT ID: 731721) in the Plant Room be replaced within 5 years.

7 Building 4 Te Waimokihi

7.1 General

The building was constructed in 1971. It is timber framed with brick and profiled metal cladding systems and has a corrugated iron roof. The building has predominantly timber framed windows.

The overall condition of Building 4 is rated at 3.3.

, C
X

Figure 23 Building 4 Overall Condition

).00%	0	
/ery Good		
20.00%	27	
Bood		
57.04%	77	
Aoderate		
20.00%	27	1
oor		
2.96%	4	

Figure 24 Building 4 Condition of Exterior Elevations

	ig summary
25.00%	1
Very Good	
0.00%	0
Good	
75.00%	3
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

Figure 25 Building 4 Condition of Roof

7.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Cracked cladding panels possibly asbestos
- Blocked internal gutters
- Some evidence of rot in timber window frames

7.2 Mechanical Services

7.2.1 Heating Plant

The heating plant for Building 4 is situated in Calorifier Room G029.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a shell and tube heat exchanger (ADT ID: 731668) to generate low temperature heating water for the building comfort heating and domestic hot water. Heating water is pumped to radiators through the building. A domestic hot water pump (ADT ID: 731672) circulates domestic hot water through a loop to supply the building.

The mechanical plant generally including the heat exchanger and calorifier (ADT ID: 731670) are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. The mechanical control panel is original building equipment and should be replaced along with other electrical boards. The calorifier circulation pump (ADT ID: 731671) and one mixing valve show signs of leakage and require maintenance attention.

Pumps: heating water circulation, LTHW (ADT ID: 731669), and domestic hot water circulation pumps appear to have been replaced more recently and should have more than ten years expected service life remaining.

0.00%	0
18.18%	2
Good	
81.82%	9
Moderate	
0.00%	0
Poor	
0.00%	0

030

Figure 26 Building 4 Condition of Mechanical Systems

7.2.2 Recommendation

The mechanical plant, calorifier and heat exchanger are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five-year time frame. The mechanical control panel should be replaced along with other electrical boards.

The pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

7.3 Electrical Systems

7.3.1 Main Switchboard

The main switchboard (ADT ID: 731781) for Building 4 is situated in the Switchboard Room. Although in good condition, the main switchboard is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.

Distribution Switchboards

The distribution switchboards and mechanical controls board (ADT ID: 731778, 731779, 731780, 731786) servicing the building are of the same age as the main switchboard and similarly, replacements should be considered.

0.00%	D
Very Good	
0.00%	0
Good	
0.00%	Ō
Moderate	
0.00%	0
Роог	
100.00%	5
Very Poor	

031

Figure 27 Building 4 Condition of Electrical Systems

7.3.3 Recommendations

The main switchboard (ADT ID: 731781), distribution switchboards and mechanical controls board (ADT ID: 731778, 731779, 731780, 731786) should be replaced within 5 years.

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8 Building 5 Te Whare Mauri Ora

8.1 General

The building was constructed in 1971. It is timber framed with brick veneer and profiled metal cladding systems and has a corrugated iron roof. The building has predominantly timber framed windows.

The overall condition of Building 5 is rated at 3.3.

1.64%	2
Very Good	
41.80%	51
Good	
42.62%	52
Moderate	
12.30%	15
Poor	
1.64%	2
Very Poor	

Figure 28 Building 5 Overall Condition

.00%	0	
ery Good	43	
5.19%	47	
2.50%	13	
oor).96%	1	

Figure 29 Building 5 Condition of Exterior Elevations



8.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Suspect sheet ends at ridge are rusting. Ridge flashing has been replaced and there are a few patches of primer on the roof
- Cracks in suspected asbestos sheeting

8.2 Mechanical Services

8.2.1 Heating Plant

The heating plant for Building 5 is situated in Calorifier Room G057.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a shell and tube heat exchanger to generate low temperature heating water for the building comfort heating and domestic hot water. Heating water is pumped to radiators through the building. A domestic hot water pump (ADT ID: 731769) circulates domestic hot water through a loop to supply the building.

The mechanical plant generally including the heat exchanger (ADT ID: 731765) and calorifier (ADT ID: 731771) are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. The mechanical control panel is original building equipment and should be replaced along with other electrical boards.

Pumps: heating water circulation (ADT ID: 731767), calorifier circulation pump (ADT ID: 731768), and domestic hot water circulation pumps appear to have been replaced more recently and should have more than ten years expected service life remaining.
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0.00%	0
/ery Good	
55.56%	5
Good	
44.44%	4
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

Figure 31 Building 5 Condition of Mechanical Services

8.2.2 Recommendation

The mechanical plant, calorifier and heat exchanger are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame. The mechanical control panel should be replaced along with other electrical boards.

The pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

8.3 Electrical Systems

8.3.1 Main Switchboard

The main switchboard (ADT ID: 731784) for Building 5 is situated in the Switchboard Room. It is in good condition with modern switchgear and equipment.

8.3.2 Distribution Switchboards

The distribution switchboards (ADT ID: 731782, 731783) servicing the building are in good condition with modern switchgear and equipment.

The mechanical controls board (ADT ID: 731785) in the Plant Room is at the end of its' economic life. A replacement should be considered and will provide the opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.

0.00%	0
Very Good	
75.00%	3
Good	
0.00%	0
Moderate	
0.00%	0
Poor	
25.00%	1
Very Poor	

Figure 32 Building 5 Condition of Electrical Services

8.3.3 Recommendations

- The main switchboard (ADT ID: 731784) and distribution switchboards (ADT ID: 731782, 731783) be replaced in 15-20 years.
- The mechanical controls board (ADTID. 731785) in the Plant Room be replaced within 5 years.

9 Building 6 Avon Administration

9.1 General

The building was constructed in 1930. It is timber framed with a weatherboard cladding system and has a corrugated iron roof. Modifications/extensions were made to the building around the years 1978, 1999 and further unknown dates. The building has predominantly timber framed windows. The overall condition of the building is rated at 3.1.

0.49%	1
Very Good	
15.69%	32
Good	
58.82%	120
Moderate	******
21.57%	44
Poor	
3.43%	7
Very Poor	

Figure 33 Building 6 Overall Condition

0.54%	r 1
Very Good	
13.51%	25
Good	
62.70%	116
Moderate	
21.08%	39
Poor	
2.16%	4
Very Poor	

Figure 34 Building 6 Condition of Exterior Elevations

0.00%	0
Very Good	
22.22%	2
Good	
22.22%	2
Moderate	
55.56%	5
Poor	
0.00%	0
Very Poor	

037

Figure 35 Building 6 Condition of Roof

9.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Subfloor vents below hardstand. Will allow water to enter subfloor space
- Multiple hairline cracks found in foundation ring beam
- Areas of advanced rot in weatherboards
- Paint flaking off weatherboards

9.2 Mechanical Services

9.2.1 Heating Plant

The heating plant for Building 6 is situated in Calorifier Room G052.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a shell and tube heat exchanger to generate low temperature heating water for the building comfort heating and domestic hot water. Heating water is pumped to radiators through the building. A domestic hot water pump (ADT ID: 731236) circulates domestic hot water through a loop to supply the building.

The mechanical plant generally including the heat exchanger (ADT ID: 731232), calorifier (ADT ID: 731233) and the LTHW pump (ADT ID: 731231) are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. The mechanical control panel is original building equipment and should be replaced along with other electrical boards.

The calorifier circulation pump (ADT ID: 731235) and domestic hot water circulation pumps appear to have been replaced recently and should have more than ten years expected service life remaining.

0.00%	0
Very Good	
83.33%	5
Good	
16.67%	1
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

038

Figure 36 Building 6 Condition of Mechanical Services

9.2.2 Recommendation

The mechanical plant, calorifier, heat exchanger and LTHW pump are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

The mechanical control panel should be replaced along with other electrical boards.

The domestic hot water and calorifier pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

9.3 Electrical Systems

9.3.1 Main Switchboard

The main switchboard (ADT ID: 731240) for Building 6 is situated in the Switchboard Room. It is in good condition with modern switchgear and equipment.

9.3.2 Distribution Switchboards

The distribution switchboards (ADT ID: 731241, 731242) servicing the building consist of old panels with modern switchgear and equipment, which are in moderate conditions.



The mechanical controls board (ADT ID: 731243) in the Plant Room is at the end of its' economic life. A replacement should be considered and will provide the opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.

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0.00%	D
Very Good	
0.00%	0
Good	
50.00%	3
Moderate	
33.33%	2
Poor	
16.67%	1
Very Poor	

039

Figure 37 Building 6 Condition of Electrical Services

Recommendations 9.3.3

- The main switchboard (ADT ID: 731240) should be replaced in 15-20 years. •
- The distribution switchboards (ADT ID: 731241, 731242) be replaced in 5-10 years. •
- , set is board (The mechanical controls board (ADT ID: 731243) be replaced within 5 years.

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10 Building 7 Energy Centre

10.1 General

The building was constructed in 1998. It is a reinforced concrete and concrete block structure and has a Diamond V-Rib roof. The building has predominantly aluminium framed windows. The overall condition of the building is rated at 2.3.





Figure 39 Building 7 Condition of Exterior Elevations

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0.00%	0
Very Good	
33.33%	2
Good	
66.67%	4
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

041

Figure 40 Building 7 Condition of Roof

10.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Blocked gutters
- Issues with roof flashings

10.2 Mechanical Services

10.2.1 Heating Plant

Building 7 houses the central heating plant for the Hillmorton Hospital campus and supplies the site-reticulated heating hot water for calorifier and comfort heating for most of the buildings on the site.

Heating is provided by two boilers. The Binder wood chip boiler (ADT ID: 730734) is equipped with particulate emission controls to meet the resource consent particulate discharge requirements. The other Hoval boiler (ADT ID: 730732) is LPG-fired. The energy centre also houses associated plant: pumps (ADT ID: 730731, 730732), expansion tanks (ADT ID: 730728), buffer tank (ADT ID: 730728).

The energy centre was refurbished with the installation of the wood chip boiler and has been in service approximately six years of an expected twenty year service life.

0.00%	0	
/ery Good	15	
0.2470	CI	
11.76%	2	
Moderate		
0.00%	0	
Poor		
0.00%	0	

Figure 41 Building 7 Condition of Mechanical Services

10.2.2 Recommendation

The Energy Centre mechanical plant appears to be well maintained to achieve its expected service life.

10.3 Electrical Systems

10.3.1 Main Switchboard

The main switchboard (ADT ID: 731561) for Building 7 is situated in the Boiler Plant Room. It is in good condition with modern switchgear and equipment.

10.3.2 Generator

2FHFASH

The generator (ADT ID: 731563) and the associated controls panel (ADT ID: 731562) are in good condition.

OPUS wsp

0.00%	1	0		
Very Good				
100.00%		3		
Good				
0.00%	1	0		
Moderate				
0.00%		0		1
Poor			-	-
0.00%		0		
Very Poor		and an and a second sec		6

Figure 42 Building 7 Condition of Electrical Services

10.3.3 Recommendations

.) should i The main switchboard (ADT ID: 731561) should be replaced in 15-20 years.

11 Building 8 Tupuna Village

11.1 General

The building was constructed in 1971. It is timber framed with brick veneer and profiled metal cladding systems and has a corrugated iron roof. The building has predominantly timber framed windows.

0.00%	0
Very Good	
34.03%	49
Good	
51.39%	74
Moderate	
10.42%	15
Poor	
4.17%	6
Very Poor	

Figure 43 Building 6 Overall Condition

0.00%	0 0	
/ery Good		
32.54%	41	
Good		
55.56%	70	
Moderate		
11.11%	14	
oor		
0.79%	1	

Figure 44 Building 8 Condition of Exterior Elevations

0.00%	0	
).00%	0	
Good		
66.67%	2	
Moderate		
33.33%	1	
Poor		
0.00%	0	
Very Poor		

Figure 45 Building 8 Condition of Roof

11.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Evidence of leaks around ridge having been repaired. Noted that the ridge flashing to the east side has been replaced. Given the issues found on buildings 3, 4 and 5 it is safe to assume that the sheet ends under the ridge are starting to rust.
- Various patch repairs evident on roof
- External door rotten

11.2 Mechanical Services

11.2.1 Heating Plant

The heating plant for Building 8 is situated in Calorifier Room G023.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a shell and tube heat exchanger (ADT ID: 731547) to generate low temperature heating water for the building comfort heating and domestic hot water. Heating water is pumped to radiators through the building. A domestic hot water pump (ADT ID: 731551) circulates domestic hot water through a loop to supply the building.

The mechanical plant generally including the heat exchanger, and the calorifier (ADT ID: 731222) are in the second half of their service life and will exhibit increasing maintenance costs over the next ten years. The mechanical control panel is original building equipment and should be replaced along with other electrical boards. One valve actuator has been removed and appears to require maintenance.

The pumps: calorifier circulation (ADT ID: 731550), heating water (ADT ID: 731548), appear to have been replaced recently and should have more than ten years expected service life remaining.





11.2.2 Recommendation

The mechanical plant, calorifier, heat exchanger and LTHW pump are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five

year time frame.

The mechanical control panel should be replaced along with other electrical boards.

The pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

11.3 Electrical Systems

11.3.1 Main Switchboard

The main switchboard (ADT ID: 731573) for Building 8 is situated in the Switchboard Room. Although in good condition, the main switchboard is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, aging switchgear and equipment are inefficient and potentially dangerous.

11.3.2 Distribution Switchboards

The distribution switchboards (ADT ID: 731570, 731571, 731572) and mechanical controls board (ADT ID: 731569) servicing the building are of the same age as the main switchboard and similarly, replacements should be considered.

OPUS **\\S**D

0.00%	0
Very Good	
0.00%	0
Good	
0.00%	0
Moderate	
0.00%	0
Poor	
100.00%	5
Very Poor	

047

Figure 47 Building 8 Condition of Electrical Systems

11.3.3 Recommendations

J73), dist board (AD) The main switchboard (ADT ID: 731573), distribution switchboards (ADT ID: 731570, 731571, 731572) and mechanical controls board (ADT 1D: 731569) be replaced within 5 years.

12 Building 9 Recreation Centre

12.1 General

The building was constructed in 1974. It is timber framed with a brick veneer cladding system and has a corrugated iron roof. The building has predominantly timber framed windows.

The overall condition of the building is rated at 2.9.

1.77%	4
/ery Good	
38.50%	87
Good	
48.23%	109
Moderate	
9.73%	22
Poor	
1.77%	4
Very Poor	

Figure 48 Building 9 Overall Condition

1.90%	4	
/ery Good)	
37.62%	79	
Bood C		
50.00%	105	
Aoderate		
0.00%	21	
200r		
0.48%	1	
).48% /ery Poor	(1)	

Figure 49 Building 9 Condition of Exterior Elevations

049

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0.00%	0
Very Good	
0.00%	0
Good	
66.67%	2
Moderate	
33.33%	1
Poor	
0.00%	0
Very Poor	

Figure 50 Building 9 Condition of Roof

12.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Areas of roof paint in very poor condition
- Downpipes in poor condition
- Internal gutters draining to flat roofing appears to be the cause of roof leaks

12.2 Mechanical Services

12.2.1 Heating Plant

The heating plant for Building 9 is situated in Calorifier Room G061. The plant room is within the building but the concrete floor is below grade.

The building is supplied with site-reticulated heating hot water for comfort heating.

Site reticulated heating water is circulated through a plate heat exchanger (ADT ID: 731590) to generate low temperature heating water for the building comfort heating. Heating water is pumped to radiators through the building.

The mechanical plant generally including the pumps (ADT ID: 731588,731587) and the heat exchanger are in the first half of their service life and should have more than ten years expected service life remaining.

The mechanical control panel is of an age that it should be replaced when other electrical work is scheduled for the building.

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NSD OPUS

0.00%	0
87.50%	7
Good 12.50%	1
0.00%	0
Poor 0.00%	0

Figure 51 Building 9 Condition of Mechanical Systems

12.2.2 Recommendation

The mechanical plant, heat exchanger and the pumps and control valves are in the first half of their service life and should have an expected remaining service life of over ten years.

The mechanical control panel replacement should be scheduled for within a five year time frame.

12.3 Electrical Systems

12.3.1 Main Switchboard

The main switchboard (ADT ID: 731706) for Building 9 is situated in the Switchboard Room. The main switchboard consists of old panels with modern switchgear and equipment, which are in moderate condition.

12.3.2 Distribution Switchboards

The distribution switchboard (ADT ID: 731707) in corridor G026 and the mechanical controls board (ADT ID: 731709) in the Plant Room are in good condition.

The distribution switchboards (ADT ID: 731708) in the Main Room G027 has an assortment of switchgear and equipment which vary in age, make and condition. Overall, the distribution switchboard is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, aging switchgear and equipment are inefficient and potentially dangerous.

The distribution switchboard (ADT ID: 731583) in the Kitchen consists of old panels in moderate to poor condition.

0.00%	0
Very Good	
33.33%	2
Good	
16.67%	1
Moderate	
33.33%	2
Poor	
16.67%	1

Figure 52 Building 9 Condition of Electrical Systems

12.3.3 Recommendations

- The main switchboard (ADT ID: 731706) and the distribution switchboard (ADT ID: 731583) in the Kitchen be replaced in 5-10 years.
- The distribution switchboard (ADT ID: 731708) in the Main Room G027 be replaced within 5 years.
- The distribution switchboard (ADT ID: 731707) in Corridor G026 and the mechanical controls board (ADT ID: 731709) in the Plant Room be replaced in 15-20 years.

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13 Building 10 Kiwi Kids Nursery

13.1 General

The building was constructed around the year 1970. It is timber framed with brick veneer and light-weight cladding systems and has a corrugated iron roof. The building has predominantly timber framed windows.

The overall condition of the building is rated at 2.7.

3.41%	3
Very Good	
29.55%	26
Good	
44.32%	39
Moderate	
18.18%	16
Poor	and and an and a state of the disease of the
4.55%	4
Very Poor	

Figure 53 Building 10 Overall Condition



Figure 54 Building 10 Condition of Exterior Elevations

10.00%	1	
Very Good		
40.00%	4	
Good		
40.00%	4	
Moderate		
0.00%	0	
Poor		
10.00%	1	
Very Poor		

Figure 55 Building 10 Condition of Roof

13.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Patio/Gardens blocking underfloor vents
- Some rot in timber windows
- Shade roof structure appears to be inadequately built
- Step cracks and failed pointing in brickwork, some displaced bricks
- Paint flaking off possible asbestos panels
- Deck boards failed

13.2 Mechanical Services

13.2.1 Heating Plant

The heating plant for Building 10 is provided by spilt system heat pumps with natural ventilation via opening windows.

There is no mechanical plant room for this facility.

3.2.2 Recommendation

The split system heat pumps are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

13.3 Electrical Systems

13.3.1 Main Switchboard

The main switchboard (ADT ID: 731787) for Building 10 is situated in the Laundry. It consists of modern switchgear and equipment but is in moderate to poor condition. One half on the switchboard bi-fold doors is absent.

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13.3.2 Distribution Switchboard

OPUS

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The distribution switchboard (ADT ID: 731788) servicing the building consists of modern switchgear and equipment, which is in moderate condition.



Figure 56 Building 10 Condition of Electrical Systems

13.3.3 Recommendations

The main switchboard (ADT ID: 731787) and distribution switchboard (ADT ID: 731788) be replaced in 10-15 years.

REFERSED

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14 Building 13 Meeting Rooms

14.1 General

The building was constructed around 2011/12. It is timber framed with weatherboard cladding and has a corrugated iron roof. The building has predominantly aluminium framed windows.

The overall condition of the building is rate at 1.6.



Figure 57 Building 13 Overall Condition



Figure 58 Building 13 Condition of Exterior Elevations

100.00%	1
Very Good	
0.00%	0
Good	
0.00%	0
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	



14.1.1 Remedial Works

No specific deferred maintenance items were noted during the survey.

14.2 Mechanical Services

14.2.1 Heating Plant

The heating plant for Building 13, Meeting Rooms 3 and 4 is provided by split system heat pumps (ADT ID: 728820, 728836) with natural ventilation via opening windows.

Condition Rating	Summary	
0.00%	0	
Very Good	1	
0.00% Moderate	0	
0.00% Poor	0	
0.00% Very Poor	0	

Figure 60 Building 13 Condition of Mechanical Systems

14.2.2 Recommendation

The split system heat pumps are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

14.3 Electrical Systems

14.3.1 Distribution Switchboards

The distribution switchboards (ADT ID: 731581, 731582) servicing Meeting Rooms 3 and 4 in building 13 are in good condition with modern switchgear and equipment.



Figure 61 Building 13 Condition of Electrical Systems

14.3.2 Recommendations

The distribution switchboards (ADT ID: 731581, 731582) be replaced in 15-20 years.

15 Building 15 Fergusson Building

15.1 General

The building was constructed in 1960. It is a combination of reinforced concrete and block and timber frame with pre-cast concrete panel and plastered blockwork cladding systems and has a corrugated aluminium sheet roof. Modifications/extensions were made to the building around the years 2013 and 2014. The building has predominantly timber and aluminium framed windows.

The overall condition of the building is rated at 2.9.

.18%	12		
ery Good			
0.91%	225		~ 0
ood			K
0.55%	223		
oderate			
3.64%	75	C	
oor			
.73%	15		

Figure 62 Building 10 Overall Condition



Figure 63 Building 10 Condition of Exterior Elevations

22.22%	4
Very Good	
22.22%	4
Good	
44.44%	8
Moderate	
11.11%	2
Poor	
0.00%	0
Very Poor	

Figure 64 Building 10 Condition of Roof

15.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Suspect roof sheeting rusting beneath ridge flashing
- Loose electrical cabling on roof
- Skylights deteriorated and leaking
- Gutters require cleaning
- Butanol patch repairs to roof evidence of roof leaks.
- Evidence of tree roots lifting pavers and subsidence
- Suspected asbestos cladding
- Dry rot noted in window sills
- Roof sheeting lifting
- Windows require repainting

15.2 Mechanical Services

15.2.1 Heating Plant

The heating plant for Building 15 is situated in BOO1 basement plant room.

The building is supplied with site-reticulated heating hot water for calorifier and comfort heating.

Site reticulated heating water is circulated through a plate heat exchanger (ADT ID: 730259) to generate low temperature heating water for the building comfort heating and domestic hot water - heat exchanger circulation pump (ADT ID: 730261), - calorifier circulation pump (ADT ID: 730267). Heating water is pumped (ADT ID: 730260) to four heating zones throughout the building.

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The mechanical heating plant is generally in good condition, much of it appearing to have been retrofitted recently and while the calorifiers (ADT ID: 730257) are in the second half of their service life the remaining service life of the facility would be a minimum of ten years.





15.2.2 Chiller and Ventilation Plant

Plant room G010 for Building 15 contains a chiller (ADT ID: 731555) and associated pumps (ADT ID: 731556, 731557) to supply cooling coils for air handling units located at level 1 above G010.

Both the chiller and the air handling plant are past the end of their useful service life.

15.2.3 Recommendation

OPUS

The chiller, chilled water pumps and the air handling plant are at the end of their service life and should be monitored closely for deteriorating performance and replacement should be planned.

15.3 Electrical Systems

15.3.1 Main Switchboard

The main switchboard (ADT ID: 730726) for Building 15 is situated in the Basement Plant Room. The board is in very good condition with modern switchgear and equipment.

15.3.2 Distribution Switchboards

The distribution switchboards and mechanical controls boards (ADT ID: 731567, 731568, 731574, 731575, 731576, 731577, 731578, 731579, 731580) servicing Building 15 vary from very good to good condition with modern switchgear and equipment. The solitary exception is the mechanical controls board (ADT ID: 731710), in Plant Room G010. The board is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.

23.08%	3
Very Good	
61.54% Good	8
7.69%	1
Moderate	
Poor	U
7.69%	1
Very Poor	

061

Figure 66 Building 9 Condition of Electrical Systems

15.3.3 Recommendations

- The main switchboard (ADT ID: 730726) and the distribution switchboards (ADT ID: 731567, 731568, 731574, 731575, 731576, 731577, 731578, 731579, 731580) be replaced in 15-25 years.
- The mechanical controls board (ADT ID: 731710) in Plant Room G010 be replaced within 5 years.

16 Building 16 Community Dental Service

16.1 General

The building was constructed in 2010. It is timber framed with a combination of Linea board, Hardiflex and Shadowclad cladding systems and has a long-run iron roof. The building has predominantly aluminium framed windows.

The overall condition of the building is rated at 1.5.

64.10%	25
Very Good	
25.64%	10
Good	
7.69%	3
Moderate	
2.56%	1
Poor	**********
0.00%	0

Figure 67 Building 16 Overall Building Condition

<u>/</u>2

85.71%	24	
Very Good 10.71%	3	
Good 0.00%	0	
Moderate 3.57%	1	
Poor 0.00%	0	

Figure 68 Building 16 Condition of Exterior Elevations

50.00%	1
Very Good	
0.00%	0
Good	
50.00%	1
Moderate	
0.00%	0
Poor	
0.00%	0
Very Poor	

Figure 69 Building 16 Condition of Roof

16.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

4

- Failure of sealants on cladding
- Damage to barge boards

16.2 Mechanical Services

16.2.1 Heating Plant

The heating plant for Building 16 is provided by split system heat pumps with natural ventilation via opening windows with some spaces extracted.



Figure 70 Building 16 Condition of Mechanical Systems

OPUS

Recommendation 16.2.2

The split system heat pumps are in the second half of service life and should be monitored closely for deteriorating performance and replacement should be planned for within a five year time frame.

16.3 Electrical Systems

16.3.1 Main Switchboard

The main switchboard for Building 16 (ADT ID: 731238) is situated in the Plant Room. It is in good condition with modern switchgear and equipment.



Figure 71 Building 16 Condition of Electrical Systems

Recommendations 16.3.2

The main switchboard (ADT ID: 731238) be replaced in 15-20 years.

2ELEASED

17 Building 21 Training Unit, Library

17.1 General

The building was constructed in 1964. It is reinforced concrete and timber framed with a reinforced concrete cladding system and has a galvanised iron roof. The building has predominantly timber and aluminium windows.

The overall condition of the building is rated at 3.2.

0.00%	0
Very Good	
6.32%	6
Good	********
63.16%	60
Moderate	
23.16%	22
Poor	
7.37%	7
Very Poor	

Figure 72 Building 21 Overall Building Condition



Figure 73 Building 21 Condition of Exterior Elevations

0.00%	0
Very Good	
0.00%	0
Good	
0.00%	0
Moderate	
100.00%	2
Poor	
0.00%	0
Very Poor	

Figure 74 Building 21 Condition of Roof

17.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Heavy build-up of tree debris next to building
- Cladding paint peeling
- Downpipes in poor condition
- Cracks noted in soffits
- Rot in timber flashings around windows

17.2 Mechanical Services

17.2.1 Heating Plant

The heating plant for Building 21 is situated in GOO3 Calorifier Room. The system includes a modern condensing gas boiler (ADT ID: 731542) supplying heating hot water, replacing site-reticulated heating water as the energy source. The boiler, expansion tank (ADT ID: 731543) and circulation pump (ADT ID: 731544) for comfort heating have been retrofitted in recent years and are in the first half of their service lives. The switchboard/control panel which includes pump control is at the end of its service life.

Domestic hot water is generated in an electric storage cylinder located in the cleaners' room G020. This is nearing the end of its service life and should be scheduled for replacement.



Figure 75 Building 21 Condition of Mechanical Systems

17.2.2 Recommendation

The mechanical controls should be replaced when the switchboard is replaced in five years. The hot water cylinder should be replaced within a similar time frame.

The boiler, expansion tank and circulation pump should have an expected remaining service life of ten years.

17.3 Electrical Systems

17.3.1 Main Switchboard

The main switchboard (ADT ID: 731564) for Building 21 is situated in the Cleaners Cupboard. The board is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, ageing switchgear and equipment are inefficient and potentially dangerous.

17.3.2 Distribution Switchboards

The mechanical controls board (ADT ID: 731565) in the Plant Room consists of old panels with an assortment of ageing and modern switchgear and equipment, in moderate to poor condition.

OPUS wsp

0.00%	0
/ery Good	
0.00%	0
Good	
25.00%	1
Moderate	
25.00%	1
Poor	
50.00%	2
Very Poor	

Figure 76 Building 21 Condition of Electrical Systems

17.3.3 Recommendations

- The main switchboard (ADT ID: 731564) be within 5 years. •
- d (ADT IE The mechanical controls board (ADT ID: 731565) in the Plant Room be replaced in 5-10

18 Building 22- Youth Specialty Service

18.1 General

The building was constructed in 1985. The building is timber framed with a concrete block veneer, with stained horizontal timber weather boards above the aluminium joinery. The roof is clad with concrete tile, draining to steel spouting and downpipes. A Portacom style extension was added between 2000 and 2004 with a further extension added between 2005 and 2009. Generally, the original building is in better condition than the Portacom additions. The overall building condition is rated at 2.8.

0.00%	0
Very Good	
25.83%	39
Good	
62.91%	95
Moderate	
6.62%	10
Poor	
4.64%	7
Very Poor	

Figure 77 Building 22- overall condition



Figure 78 Building 22- condition of Exterior Elevations
OPUS



18.1.1 Remedial works:

- Ceramic tiles are coming away from the substrate. Investigate cause and repair.
- Door is cracked at hinges. Replace door.
- Repair required to mortar to concrete block •
- An overflow pipe that exits near the base of the wall is discharging a steady • stream of water. Find cause and remediate.
- Doors to external storage area are heavily cracked and should be replaced.
- Main Building: There are a number of visible defects;
 - Numerous cracked tiles
 - Evidence of roof leaks being temporarily repaired with sealant.
 - The gutters are rusted trough in places, there are also several joints that are leaking.

Down pipes are rusted through in places, particularly in the internal courtyard. The down pipe on Elevation 19 is leaking at a high level, suggesting that it is completely blocked.

- Gutters and downpipes should be replaced, with the storm water laterals checked for blockages. The gutters should then be maintained with regular cleaning. Consideration should be given to replacing the entire roof- if this is not possible, then a competent roofer should permanently repair the old leaks, and replace any cracked tiles.
- Roof extension: Large areas of the roof have been painted with a mastic sealant, presumably to fix leaks. It may be prudent to coat the entire roof with a suitable painted membrane or lay Butanol or similar.

FIFAS



18.2 Mechanical Systems

18.2.1 Heating Plant

The heating plant for Building 22 is situated in the Calorifier Room. The system includes a modern condensing gas boiler supplying heating hot water, replacing site-reticulated heating water as the energy source. The boiler (ADT ID: 731801), expansion tank (ADT ID: 731802) and circulation pumps (ADT ID: 731802) for comfort heating, calorifier heating and for domestic hot water circulation have been replaced in recent years and are in the first half of their service lives: heating water circulation pump (ADT ID: 731803), domestic hot water circulation pump (ADT ID: 731807), calorifier circulation pump (ADT ID: 731804). The domestic hot water calorifier (ADT ID: 731805) and control valves are original plant and are nearing the end of their service lives. The heating control panel which includes pump controls and heating zone controls is of the same vintage.

18.2.2 Recommendation

The controls equipment should be replaced when the main switchboard and distribution switchboards are replaced within five years. The calorifier should be replaced within a similar time frame.

The boiler and circulation pumps should have an expected remaining service life of ten years.



Figure 80 Building 22 condition of mechanical systems

18.3 Electrical Systems

18.3.1 Main Switchboard

The main switchboard (ADT ID: 731800) for Building 22 is situated in the Calorifier Room and also contains the isolation points for the power supplies to the Portacom building. There is an assortment of switchgear and equipment which vary in age, make and condition. Overall, although in reasonable condition, the main switchboard is at the end of its economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, aging switchgear and equipment are inefficient and may be potentially dangerous.

18.3.2 Distribution switchboards

The distribution switchboard (ADT ID: 731799) servicing Building 22 is of the same age as the main switchboard and similarly, a replacement should be considered.



Figure 81 Building 22 condition of Electrical Systems

18.3.1 Recommendation

The main switchboard (ADT ID: 731800) and distribution switchboards (ADT ID: 731799) should be replaced within five years.

19 Building 23 Laundry

19.1 General

The building is believed to have been constructed in the 1970's. It is a concrete structure with open web steel joists supporting a low-pitched roof. The roof has long run raised rib metal roofing. The building has aluminium framed windows.

074

The overall condition of the building is rated at 3.1.

0.00%	0	
Very Good		
21.97%	29	
Good		
55.30%	73	6
Moderate		
9.09%	12	A
Poor		
13.64%	18	
Very Poor	<u> </u>	

Figure 82 Building 23 Overall Building Condition

0.00%	0	
rery Good		
9.69%	19	
bood.		
7.81%	37	
loderate		
0.94%	7	1
oor		
.56%	1	

Figure 83 Building 23 Condition of Exterior Elevations

0.00%	0
Very Good	
0.00%	0
Good	
30.00%	3
Moderate	
40.00%	4
Poor	
30.00%	3
Very Poor	

Figure 84 Building 23 Condition of Roof

19.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Guttering and spouting in poor condition
- Section of roof flashing missing and damage to ridge flashing
- Lichen build up in shaded areas requires spraying
- Concrete blocks and steel used to hold down sections of roofing, permanent repair required
- Windows require repainting
- Roof vents removing paint from sections of roof

19.2 Mechanical Services

19.2.1 Heating Plant

Heating energy for Building 23 is generated by two diesel boilers located in the boiler house. One boiler has dual-fuel capability, burning LPG as an alternative (ADT ID: 731619), diesel only (ADT ID: 731618). Associated plant includes boiler feed (ADT ID: 731622, 731621), and distribution pumps (ADT ID: 731631)., fuel systems (ADT ID: 731624, 731620)., buffer tanks (ADT ID: 731627, 731628, 731629)., metering and associated controls. The plant is generally in the latter half of its service life with at least ten years of service life remaining with regular maintenance.

The heating plant for Building 23 is located in the ground floor plant room. Mechanical plant includes heat exchangers (ADT ID: 731650, 731653), pump sets for high and low temperature water supplies (ADT ID: 731642, 731643, 731648, 731649, 731654, 731656, 731657), calorifiers (ADT ID: 731644, 731655), discharge-water filters (ADT ID: 731651) and heat recovery systems (ADT ID: 731652). A compressor (ADT ID: 731647), receiver (ADT ID: 731646) and controls serve some pneumatically actuated control valves.

SI) OPUS

19.2.2 Recommendation

While some systems have been recently retro-fitted and have long remaining service lives, much of the plant is well into the latter end of its useful service life.

Ventilation plant including air handling (ADT ID: 731614, 731615) and evaporative chillers (ADT ID: 731608, 731616) located on level four of the laundry is similarly nearing the end of its economic service life.

0.00%	0
Very Good	
20.45%	9
Good	
75.00%	33
Moderate	
2.27%	1
Poor	
2.27%	1
Very Poor	

Figure 85 Building 23 Condition of Mechanical Systems

19.2.3 Recommendation

The boiler house plant has an expected remaining service life of at least ten years. Much of the laundry mechanical plant should be scheduled for replacement within the next five years. Its performance will be deteriorating and its rate of repairs increasing, making it increasingly uneconomic to operate.

19.3 Electrical Systems

19.3.1 Main Switchboard

Although in good condition, the main switchboard (ADT ID: 731661) for Building 23 is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, aging switchgear and equipment are inefficient and potentially dangerous.

19.3.2 Distribution Switchboards

The distribution switchboards and mechanical controls boards (ADT ID: 731617, 731634, 731635, 731636, 731637, 731639, 731640, 731641, 731662, 731663, 731664, 731665, 731666) servicing Building 23 are of the same age as the main switchboard and similarly, a replacement should be considered.

The exception is distribution switchboard DB-4 (ADT ID: 731638), which is in good condition with modern switchgear and equipment.

0.00%	0
Very Good	
7.14%	1
Good	
0.00%	Ó
Moderate	
0.00%	0
Poor	
92.86%	13
Very Poor	

077

Figure 86 Building 23 Condition of Electrical Systems

19.3.3 Recommendations

- The main switchboard (ADT ID: 731661), distribution switchboards and mechanical controls boards (ADT ID: 731617, 731634, 731635, 731636, 731637, 731639, 731640, 731641, 731662, 731663, 731664, 731665, 731666), with the exception below, be replaced within 5 years.
- The distribution switchboard DB-4 (ADT ID: 731638) be replaced in 15-20 years.

20 Building 31 Food Services Main Kitchen

20.1 General

The building was constructed in 1980. It is a combination of timber frame, reinforced concrete and concrete block with a block veneer and reinforced concrete cladding system and has a Dimondek profiled metal roof. The building has predominantly timber framed windows.

The overall condition of the building is rated at 2.5

0.00%	0
Very Good	
34.57%	28
Good	
46.91%	38
Moderate	
11.11%	9
Poor	
7.41%	6
Very Poor	

Figure 87 Building 31 Overall Building Condition

.00%	0	
ery Good		
9.69%	19	
bod		
7.81%	37	
oderate		
0.94%	7	
oor		
.56%	1	

Figure 88 Building 31 Condition of Exterior Elevations

0.00%	0
Very Good	
0.00%	0
Good	
30.00%	3
Moderate	******
40.00%	4
Poor	
30.00%	3
Very Poor	

079

Figure 89 Building 31 Condition of Roof

20.1.1 Remedial Works

Deferred maintenance items noted during the survey included:

- Door cladding failed
- Roof fastening fixed in troughs of roofing evidence of silicon used to affect repairs
- Multiple patches indicate roof leaks are an issue
- Lichen growing on roof
- Parapet capping in poor condition

20.2 Mechanical Services

20.2.1 Heating Plant

The heating plant for Building 31 is in the services basement spaces BOO3, BO12. Steam from the central heating plant is reticulated to the building and distributed to the kitchen via steam header (ADT ID: 731679). The plant is at or nearing the end of its useful service life, for example, steam condensate tank (ADT ID: 731680), sump pump (ADT ID: 731687). The steam condensate pump has recently been replaced, (ADT ID: 731681).

Kitchen exhaust fans located outside of plant rooms were not inspected as part of this survey.

0.00%	0
Very Good	
20.45%	9
Good	
75.00%	33
Moderate	
2.27%	1
Poor	
2.27%	1
Very Poor	

Figure 90 Building 31 Condition of Mechanical Systems

20.2.2 Recommendation

The kitchen mechanical plant should be scheduled for replacement. Its performance will be deteriorating and its rate of repairs increasing, making it increasingly uneconomic to operate.

20.3 Electrical Systems

20.3.1 Main Switchboard

Although in good condition, the main switchboard (ADT ID: 731793) for Building 31 is at the end of its' economic life and a replacement should be considered. A replacement also provides an opportunity to standardise the switchgear and equipment, which will be beneficial to the maintenance team when a replacement part or item is required. In addition, aging switchgear and equipment are inefficient and potentially dangerous.

20.3.2 Distribution Switchboards

The distribution switchboards and mechanical controls boards (ADT ID: 731789, 731790, 731791, 731795) servicing Building 31 are of also at the end of their economic lives and similarly, replacements should be considered.

The exceptions are distribution switchboards DB-1E (ADT ID: 731794) in the Plant Room and DB.5 (ADT ID: 731792) in G023, which are in good condition with modern switchgear and equipment.

0.00%	C	D		
Very Good				
28.57%	2	2		
Good				
0.00%	0	D		
Moderate				
0.00%	C			
Poor			1	
71.43%	5	5		
Very Poor				24

081

Figure 91 Building 31 Condition of Electrical Systems

20.3.3 Recommendations

- The main switchboard (ADT ID: 731793), distribution switchboards and mechanical controls boards (ADT ID: 731789, 731790, 731791, 731795), with the exceptions below, be replaced within 5 years.
- The distribution switchboards DB-TE (ADT ID: 731794) and DB-5 (ADT ID: 731792) be replaced in 15-20 years.



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Appendix 1: Inventory Spreadsheets

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Canterbury District Health Board

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Appendix 2: Photos

www.wsp-opus.co.nz



Hon Dr David Clark

086

MP for Dunedin North Minister of Health

Associate Minister of Finance



1 9 DEC 2018

Dr John Wood Chair Canterbury District Health Board blue-duck@xtra.co.nz

Dear Dr Wood

Canterbury DHB Specialist Mental Health Services – Detailed Business Case

The Minister of Finance and I have considered the Detailed Business Case for the above project (final version dated 16 November 2018) and approve the Detailed Business Case's preferred option for the relocation of Specialist Mental Health services from The Princess Margaret Hospital (TPMH) to the Hillmorton site, at an estimated capital cost of \$79 million funded by \$79 million of Crown capital funding.

The scope of this project is:

Integrated Family Services Centre

- · Child, Adolescent and Family, 16 bed inpatient service
- Eating Disorders and Mothers & Babies, 13 bed and space for 5-7 cot inpatient and outpatient services and associated workspace
- Southern Regional Health School
- High and Complex Unit
- providing a specialist 24 bed inpatient mental health rehabilitation service

The Child, Adolescent and Family outpatient service and community building is not within the approved scope of this project.

The conditions of approval that apply to this project are attached as Appendix One

I have been advised that this is a straightforward construction project with full design to be completed prior to tendering for construction. As such, management of the project is to return to Canterbury DHB, with quarterly reporting to the Ministry of Health and monthly reporting and oversight through the Hospital Redevelopment Partnership Group.

Congratulations on your work to date and look forwards to hearing of future progress with this important project.

Yours sincerely

Hon Dr David Clark Minister of Health

cc: David Meates, Chief Executive, Canterbury District Health Board

Appendix One: Approval Conditions

Implementation Business Case

- 1) The DHB will complete an Implementation Business Case which will include the proposed new management structure, an updated section on construction risk in the market and an update on how the next design phase has mitigated some of the issues raised in the Detailed Business Case review. This business case will be submitted to the Hospital Redevelopment Partnership Group for approval.
- 2) At the time of the Preliminary Design a clinical and architectural review of the Preliminary Design is to be undertaken. This review is to ensure that the DHB has addressed the concerns raised by the review of the Detailed Business Case and the review will be submitted to the Hospital Redevelopment Partnership Group for approval.

Pre-Build

3) The DHB will supply to the Ministry of Health the quantity surveyor reports and the review report and the information will be to the satisfaction of the Ministry of Health.

Monthly Reporting

4) The DHB will submit monthly project reports to the Hospital Redevelopment Partnership Group.

Quarterly Project Assurance

- 5) The Senior Responsible Officer will submit quarterly project assurance reports for this project to the Ministry of Health (DHB Capital Investment Management Team, DHB Performance, Support and Infrastructure). A template is available from the DHB Capital Investment Management Team. The quarterly assurance report will include the following:
 - a) progress against project milestones
 - b) confirmation of project costs against the approved budget, including a project cash flow
 - c) notification of significant and/or material risks
 - d) change management progress (including health services and models of care)
 - e) details of any project scope changes (note, material scope changes may require the approval of the Minister of Health)
 - f) assurance that the Board has considered the quantity surveyor and project director's reports
 - g) any other information as requested by the Ministry of Health.
- 6

6) Access to Crown capital funding is dependent upon timely submission of the quarterly assurance report to the Ministry of Health.

- 7) A finalised Benefits Realisation Plan must be provided to the Ministry of Health.
- 8) At the completion of the project the DHB is to submit a completed Post Implementation Review and after 12 months a Post Occupancy Evaluation.

Funding

- 9) The project budget for Specialist Mental Health Services project is not to exceed \$79.0 million (excluding GST).
- 10) The Crown will provide \$79.0 million from the Health Capital Envelope.
- 11) A cash profile for the draw down of equity is to be submitted and agreed with officials. The DHB will be expected to manage expenditure within the agreed profile or provides timely notification of any re-phasing.
- 12) The final draw down of equity will be made no later than twelve months after work is n s the Crown officerthe officert completed, or the remaining funds will be forfeited.

REFERSEDUNDERTHEOFTICALINGORMATIONACT **Detailed business**



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Q.V.		

Executive summary



1. Executive Summary

1.1 Introduction

1.1.1 Background and purpose

The Ministry of Health (MOH) commissioned this Detailed Business Case (DBC) on behalf of the Hospital Redevelopment Partnership Group (HRPG) to provide recommendations on the preferred investment option for relocation of regional and local Specialist Mental Health Services (SMHS) from the Princess Margaret Hospital (TPMH) to the Hillmorton Hospital site. This DBC seeks approval to develop the investment option further through the implementation, design and delivery stages of this project.

The DBC builds on the Indicative Business Case (IBC) prepared and commissioned by Canterbury District Health Board (CDHB) in 2016 (and finalised in August 2017), along with previous decisions made by CDHB and the MOH to consolidate CDHB services onto three sites: Christchurch, Burwood and Hillmorton Hospitals, and exit TPMH site.

1.1.2 Scope of health services considered

While the scope of the IBC was limited to TPMH based SMHS, patients, staff and facilities, the continued and unexpected growth in demand for Child, Adolescent, and Family (CAF) services has led to the consideration of CAF outpatient services presently located at Hillmorton Hospital through the DBC for SMHS.

1.1.2.1 Overview of CDHB Specialist Mental Health Services

The CDHB mental health services form part of the South Island Alliance. The South Island Alliance brings together the region's five DHBs, along with primary care, aged residential care, NGOs and consumers, to work collaboratively toward a sustainable South Island health and disability system that is *best for people, best for system*. All CDHB regional SMH services come under the umbrella of this Alliance and related SI Alliance Health Services Plans.

CDHB SMHS is the major provider of mental health services in the Canterbury region and provides a tertiary service for the South Island region. Regional services are provided using a 'hub and spoke' model – with the hub being the location of the regional inpatient services and the spoke being the local DHB liaison staff and SMHS outpatient services.

The CDHB regional service staff are highly specialised in their respective fields and able to provide a level of expertise and intensity of service not able to be provided within a local DHB, they provide patient services, education, support and consult liaison with the South Island region's DHBs. In doing so, the CDHB regional services teams work collaboratively with the districts to ensure that they are upskilled and as much of the service as possible is provided at home and/or within the district.

CDHB SMHS are currently provided from three hospital campuses: Hillmorton Hospital, Burwood Hospital and TPMH, with some services located at other community sites across greater Christchurch. TPMH is currently home to a number of South Island regional specialist mental health inpatient (IP) services and a range of specialist mental health regional and district outpatient (OP) services including:

- ► Mothers and Babies Service (IP/OP)
- ► Eating Disorders Service (IP/OP)
- ► CAF IP unit
- ► CAF Day Programme and Southern Health School
- CAF management team

- ► CAF Emergency Team (CAFEm), CAFLink Team (Single Point of Entry) and CAF Community Consultation & Liaison: jointly known as CAF Access Team (OP)
- CAF South Community and Outreach Team (OP)
- Youth Forensic services (OP)
- ► High and Complex services (formerly Seager clinic) (IP).

1.1.2.2 Specialist nature of services

In principle, the best service for patients is as close to their home as possible but for those with the most severe illnesses and complex needs there needs to be intensive specialist hospital care available. The inpatient aspect of these services being considered in the IBC are of a highly specialist nature, specifically for those people who are high-need patients that cannot be safely cared for in their own homes and communities, by their own general practice team and/or the NGO sector, or need intensity of response to achieve therapeutic outcomes. Such patients require highly specialist accommodation with on-site multi-disciplinary health care.

Eating Disorder Services (EDS)

EDS provides a multidisciplinary approach to assessment and treatment of people with eating disorders. Patients come from a variety of gender, age, ethnicity, body shape, weight, sexual orientation, and socioeconomic status. The service can accept medically compromised patients, and provides an integrative model of care with medical and psychiatric support – that way patients are not having to move between facilities for medical and mental health treatments and their needs are met in a more efficient and patient-centred manner. Approximately 15% of EDS inpatients are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital.

A significant number of inpatients are classed as 'minors'. As a result, staff in EDS are responsible for those patients at all times whilst they are admitted into the inpatient unit. The inclusion of children and adolescents means they must adhere to the United Nations Convention on the Rights of the Child (UNCROC) regarding care, including the requirement to provide separation from adults. Family / whanau also become a vital part of caring for young patients within the EDS inpatient unit.

Mothers and Babies Services (M&B)

Perinatal mental health conditions often develop suddenly, and in the most severe cases, such as post-partum psychosis, present as a psychiatric emergency and require in-patient care. Where there are no Mothers and Babies units, this may result in separation of mother and infant, causing great maternal distress, disruption of breastfeeding, and potentially lasting disruption to early bonding and attachment. Caring for mothers and their babies together has strong and beneficial outcomes for both mothers and their children.

The goal of M&B is to provide specialised multidisciplinary treatment for complex moderate to severe maternal mental illness, incorporating inpatient and outpatient care, education, training and consult liaison, for the treatment of mothers who are pregnant or have babies up to 12 months old. Both the mother and baby are admitted as part of this service.

Like EDS, family / whanau, including partners and other children, are a key part of the model of care within the M&B inpatient service. There are instances where partners and other children will stay in the inpatient unit. As a result, their spatial and functional needs must be considered – this includes the ability to provide inpatient care for mothers with toddlers, which is consistent with the first 1000 days of life emphasis that is supported by CDHB.

Child, Adolescent and Family (CAF)

The CAF Day Unit provides an intensive programme for children and adolescents from the Canterbury region who require a more intensive intervention than is available in the outpatient services but do not require hospital level care.

The CAF inpatient unit provides developmentally appropriate psychiatric care to children and adolescents living in the South Island, who present with acute, complex and/or severe mental

health difficulties that cannot be managed in the community. The service is for the most seriously unwell children and adolescents, not a facility for managing behavioural disorders. The principle of least restrictive care applies to all admissions where possible.

Given the inpatient unit caters for both young children and adolescents who present differently and often have significantly different needs there is a strong requirement for flexibility both in management and in spaces. Due to the vulnerable nature of some patients and the distressing behaviour of others it is important that the ward environment has the capacity to have separate areas to manage these patient groups. In addition, contagion behaviour is a well-known phenomenon and the ward environment needs to be designed to minimise this where possible.

As with EDS and M&B, family / whanau are a vital part of caring for the patients within the CAF inpatient unit. There are instances where it is helpful for parents / guardians to stay in the inpatient unit. As a result, the spatial needs for parents / guardians who are able to stay with their child needs to be considered in the design i.e. bed space / ablutions.

High and Complex (H&C)

H&C is a specialist adult inpatient rehabilitation service that provides a range of treatment programme options, for short, long term, and intensive rehabilitation of patients who have not been successful in other treatment environments. The emphasis is on individualised treatment and re-integration into the community.

Most inpatients have complex presentations and require extended treatment and extensive additional supports beyond the capability of community based providers. The complexity is usually due to a combination of serious enduring mental illness, usually a psychotic illness; co-morbidity; alcohol or other drug dependence; physical illness and cognitive impairment, often with antisocial personality problems as well.

1.1.2.3 Colocation of services

CDHB manage the challenge of relatively small numbers of specialist inpatient services through the co-location of several inpatient services and their outpatient teams, combined with specific staff training to support flexible service delivery and a flexible bed model. Locating in one place and one facility with a shared staffing model (shared between EDS and M&B and across inpatient and outpatient services) enables a level of efficiency and clinical viability that would otherwise be difficult to achieve by multiple DHBs and/or other service providers.

Co-location of CAF inpatient services with EDS and M&B also supports the sharing of access to the Southern Regional Health School, which operates from TPMH and is run in conjunction with the Ministry of Education. Further to this, many patients with Eating Disorders are children and the co-location of CAF inpatient services with EDS means that children can be treated by appropriately trained clinicians allowing UNCROC obligations to be met.

1.1.2.4 Models of Care

Models of care have been reviewed and developed alongside the development of the wider health system (including the South Island DHB network) into a complete model of care that wherever safe and possible people are supported in their own homes and communities and by their own general practice team and/or the NGO sector. CDHB recognises there are alternatives for long term and complex care in the community and has been working to reduce reliance on a hospital setting. The DBC assumes the CDHB will continue in this direction.

Following approval of the IBC by the Ministry of Health in September 2017, a collaborative review of the regional models of care was undertaken by all five South Island District Health Boards (DHBs), which included the consideration of ongoing future needs for the three regional services (Mothers and Babies (M&B), CAF, and EDS). The review culminated a meeting, organised and hosted by MOH officials, John Crawshaw and Trish Smith, and facilitated by an independent facilitator. The review was completed and joint agreement and MOH support obtained in late January 2018.

1.1.3 Approach and assumptions

This business case has been prepared in accordance with the Treasury's guidelines for Better Business Cases for Capital Proposals: Detailed Business Case and is organised around the five case model. Previous decisions set the context for undertaking this business case, and foreclosed some options that might have been considered under other circumstances.

The economic and financial analysis within this business case reflects SMHS services and future projections at a point in time. We have relied on architectural outputs from Klein Ltd dated September 2018, QS costings from Rider Levett Bucknall (RLB) dated October 2018, TPMH site valuations from TelferYoung (Canterbury) Limited dated July 2017 and TPMH demolition cost estimates from CERES New Zealand Ltd dated May 2017 for the purposes of the economic and financial cases. These were commissioned separately by the MOH and CDHB.

1.2 Strategic Case

1.2.1 Strategic context

The investment in new SMHS facilities seeks to address four key problems:

- Current configuration and capacity of facilities compromises care, which negatively impacts on patient access, experience, safety and outcomes
- CDHB is mitigating patient safety and clinical risk through higher staffing and resourcing costs which is an inefficient use of funds
- Relocation of complementary clinical and support services has created operational inefficiencies in both clinical and non-clinical support for mental health care
- Isolation of mental health services has negatively impacted staff safety and morale, and threatens long term service sustainability.

These problems are set within the context of strategic drivers for change, notably a need to meet the objectives of the policy environment by delivering good clinical outcomes in a fit-for purpose built environment constrained by a limited funding envelope. These Strategic Drivers are summarised in the table below.

	Table 1: Summary of the stra	ategic drivers and considerations
	Strategic driver	Strategic consideration/Issue
	Clinical context	• Demand for health care services across the Canterbury region is growing, along with the population, with particularly strong growth in Child, Adolescent, and Family demand. This is partly attributable to the trauma of the Canterbury earthquakes
	LA	 SMHS based at TPMH provides inpatient services to small numbers of high risk patients with highly complex psychiatric and physical care requirements
	Policy environment	The Case for Change is framed by:
Ś		 National health care and mental health policy directives, such as the NZ Health Strategy, Mental Health (Compulsory Assessment and Treatment) Act 1992 and The Mental Health and Addiction Service Development Plan 2012–2017
		• CDHB policy and planning directives, such as the CDHB South Island Health Service Plan
		 Other binding agreements and obligations, such as UN Convention on the Rights of the Child (UNCROC)
	Built environment	 SMHS facilities at TPMH are not purpose built and do not support optimal access nor clinical outcomes, and drive inefficient use of staffing and resources
		 Previous investment decisions are predicated on the future sale of TPMH site (2012 Facilities Development DBC)
		 SMHS have been left isolated on TPMH site driving further inefficiencies and risks to patient and staff safety

Table 1: Summary of the str	ategic drivers and considerations
Strategic driver	Strategic consideration/Issue
	 Approximately two thirds of TPMH has been vacated and some of those facilities are earthquake prone. Reinstatement is not considered economically viable
	► The ability to meet this increasing demand is being compromised by facilities that do provide for efficient service delivery, and contribute to increased lengths of stay relative to a new facility
Funding arrangements	 Previous investment decisions are predicated on the future sale of TPMH site (2012 Facilities Development DBC)
	 Approximately two thirds of TPMH has been vacated and some of those facilities are earthquake prone. Reinstatement is not considered economically viable
	CDHB capital funding constraints.

1.2.2 Investment objectives, benefits and risks

Based on this context and the problems outlined, the following investment objectives were developed for the proposed new facility:

- ► Facilities are configured to deliver care of an optimum standard for specialist mental health patients, including those with high and complex needs, now and in the future.
- Specialist Mental Health Services (SMHS) are delivered using staffing and resourcing appropriate to the level of care.
- SMHS are delivered from safe facilities, for both patients and staff.
- Efficient delivery of specialist clinical services and associated non-clinical support services is improved through co-location with complementary services.
- Staff are provided with an environment that supports multidisciplinary functioning and provides appropriate support.

These objectives were assessed in the business case in the context of the current inefficiencies and safety concerns in clinical delivery and the increasing and unmet demand for SMHS.

Strategic risks were identified and their potential impact on the project's delivery and cost assessed. Risks of delays – driving higher costs and prolonged suboptimal SMHS operation, the continued provision of SMHS from TMH site and the risk that patients with high and complex needs cannot be cared for by the NGO sector, have high residual impact, while the remaining risks assessed typically only have a low or medium residual impact.

The benefits for the CDHB, the health system, and the wider community of addressing the problems identified include: a reduction in adverse events (incidents) and clinical risk, improved access to SMHS, more timely care for patients with complex needs, decreased use of social services, improved efficiency of service provision, and improved workforce effectiveness.

1.3 Economic Case

1.3.1 Purpose

The economic case revisits the short-listed options recommended for further consideration in this DBC and provides an analysis of the costs, benefits and risks of the short-listed options and recommended way forward. The development and assessment of options drew heavily on clinical engagement and analysis of the drivers for investment, such as population catchment, trends in the SMHS services, the needs of patients, clinical providers and the CDHB, who are the main beneficiaries and users of these services. Further engagement with the South Island DHBs reinforced the underlying models of care.

1.3.2 Revisiting the IBC options

The IBC for SMHS recommended two options (Options 3a and 3b) be progressed to DBC for more detailed and rigorous assessment. Both options, with an estimated capital cost of between \$47m and \$57m, were mixture of new build and refurbished facilities on the Hillmorton Hospital site and sought to provide the best balance between achieving desired strategic, clinical and operational outcomes for SMHS with the costs of completing the project.

With the IBC recommendation to relocate SMHS from TPMH site to the Hillmorton Hospital site and the current strategic context in mind, a rigorous process facilitated by Architects and Health Planning specialists, Klein, commenced in February 2018. This process set out to complete an indicative masterplan for the Hillmorton site, detailed enough to enable sensible and logical locating of new SMHS facilities, identify and agree the functional scope and scale of the facilities, including car parking requirements, and prepare schedules of accommodation.

The process was intended to test and refine key assumptions underlying the preferred options identified in the IBC and ensure new SMHS facilities do not obstruct future plans for the Hillmorton site. Key conclusions of the masterplanning process are outlined below and further illustrated in Appendix B:

- The masterplan seeks to locate the family services aspects of the project brief together and in their own discrete location on the Hillmorton site. This has been identified as the area towards the south west corner adjacent to the existing childcare centre and utilising the adjacent vacant land previously used as sports fields further toward the centre of the site (see Appendix B: SK-004 for details). This is consistent with the agreed principle that family services, which include children, mothers and babies and patients with eating disorders, are located further away from the adult acute facilities on the site.
- A number of options for the location of H&C services were considered (see Appendix B: SK-003 for details). It was agreed that H&C should be located on the carpark towards the centre of the site (Option F). This is consistent with the masterplan's future zoning which identifies this area as the flex, rehab transitional zone which is in line with the patient cohort and units' philosophy of transition back to the community. It is also close to the adult acute unit Te Awakura from which back up support can be provided and there is future expansion space adjacent for when the 'sister' unit Tupuna is replaced. There is good proximity to the central plant and replacement parking is easily achieved. There are also minimal in ground services in this area requiring relocation and there is a good sized building platform available to meet the footprint requirements.
- ► During the course of the detailed investigation, the assumptions underlying the preferred options presented in the IBC were revisited. As noted previously, the SoA for all SMHS currently stranded on TPMH has now been built up by the project team and this has resulted in a large increase in estimated areas from those used in the formation of the IBC. The IBC was predicated on a GFA totalling 6,500m2 and the current estimates area in excess of 10,000 m2.

► A result of recent Hillmorton site investigations and the increased scale of development, it is now considered uneconomic to repurpose the originally proposed buildings (Buildings 4 and 9, see Appendix B: MP-012 for details). Forecast capital costs to provide new facilities on the Hillmorton site for all SMHS currently stranded on TPMH site are now in a range between \$98m and \$103m - depending on the option being considered (see Appendix E for further details of QS estimates). Forecast facility operating costs will increase accordingly.

1.3.3 Description of short list options

The DBC considers three short list options and a fourth as a counterfactual. All options contain a new Integrated Family Services Centre (IFSC) and ancillary requirements (site infrastructure expansion/upgrades, car parking, roadway / footpaths / landscaping).

Options then vary by adding other facilities - single storey H&C inpatient unit (with associated workspace), TPMH based CAF outpatients clinical and workspace (including CAF South and CAF Access teams) and finally CAF North workspace (CAF North is already on the Hillmorton site but in older cramped facilities and portacoms). Drawings provided in Appendix D depict the options in graphical format.

The IFSC provides CAF, EDS and M&B inpatient services, along with EDS and M&B outpatient services on the ground floor, and associated workspace on the upper level. The inpatient portion of this building has a total of 29 inpatient beds (plus space for 5-7 cots in M&B) and the unit is physically split into two: the CAF unit which is separated from M&B / EDS which are adjacent. Each unit is then further split into different cohorts of patients to meet clinical and flexing needs and also to meet UNCROC requirements of separating adults from adolescents and children.

There is separate provision for the specialist programme for CAF day patients and the Southern Regional Health School (presently collocated with CAF inpatient services on TPMH site) to provide education services for both inpatients and outpatients across the CAF and EDS services. All areas allow for integration of family support as part of their therapy.

All options contain the new IFSC on the Hillmorton site. Therefore the key differentiating features of the short list options are outlined below:

- ▶ Option 1 (GFA 10,474m² estimated capital cost \$97.7m): includes a new H&C inpatient unit and new CAF outpatients and community building on the Hillmorton site. The CAF outpatients building provides for CAF outpatients clinical area and CAF South, Access and Management workspace. CAF North workspace is not provided for and remains in its current location on the Hillmorton site.
- Option 2 (GFA 11,322m²- estimated capital cost \$103.3m): includes a new H&C inpatient unit and new CAF outpatients and community building on the Hillmorton site. The CAF outpatients building provides for CAF outpatients clinical area and CAF South, North and Access and Management workspace.
- Option 3 (GFA 7,880m²- estimated capital cost \$79.0m): includes a new H&C inpatient unit on the Hillmorton site. However, the new CAF outpatients and community building is not provided and those services and teams would remain on TPMH site until appropriate leased space is sourced. CAF North is not provided for and remains in its current location on the Hillmorton site.

Not included in the above capital cost is an estimated \$8.9m of fitout and FF&E costs that would necessarily be incurred in order to provide CAF outpatient services and associated workspace (currently located at TPMH) from a clinically appropriate and adequately sized leased space (estimated to be a further 2,346m² of purpose built leased space in close proximity to the new IFSC, including associated workspace). The advancement of lease arrangements for CAF outpatients would be subject to a separate planning and business case process, which would be advanced by CDHB independent of this business case.

➤ Option 4 counterfactual (GFA 6,034m²- estimated capital cost \$81.1m): has been explored to demonstrate what could be delivered as close to the IBC forecast capital cost (\$57m) as possible. While the provision of the IFSC only brings the capital cost closer to the original budget, Option 4 would leave H&C, CAF outpatients and associated workspace remaining isolated on TPMH site. Contemporary investigations reveal that significant works would need to be undertaken to continue to provide H&C and CAF outpatient services from the TPMH site, thus driving to the capital cost up well beyond the IBC budget.

It is important to note that none of the options considered assume an increase total bed numbers, nor do they increase staffing requirements. In fact, H&C beds are expected to decrease and in some cases, the total staffing requirements are expected to decrease. The benefits that some options have over others are driven by the efficiency and efficacy of the investment solution.

1.3.4 Options assessment

The short list options and counterfactual were assessed against the Investment Objectives and the Critical Success Factors in a workshop with key personnel from the CDHB. The purpose of this assessment was to determine the extent to which options achieve the investment objectives in a way that delivers project success, and to ensure that internal and external stakeholders are clear about the rationale for advancing the recommended option.

The comparative advantages and disadvantages of	of the short list options are summarised in the
table below.	

Table 2: Concise	options appraisal	
Options	Advantages	Dişadvantages
Option 1: New build at Hillmorton, excluding CAF North workspace	 All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines New inpatient and outpatient facilities will provide improved patient experience, appropriate care for U13 inpatients with eating disorders, space for families of CAF, M&B and EDS patients, flexibility to manage different patient cohorts, complexities and gender, and will be adaptive to changes in MoC and demand for mental health services Increased safety, better configuration and improved flexibility means a greater number of complex patients could be cared for. For example, increased CAF demand could be 	 Existing infrastructure on the Hillmorton site is insufficient Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility The physical separation of CAF North clinical space from workspace across the Hillmorton site is inconsistent with recent masterplanning, will drive a level operating inefficiency and discontent with affected staff. However, it is expected that the majority of these risks can be carefully managed through different working approaches and therefore the residual efficiency impact is not considered material
Option 2: New build at Hillmorton, including CAF North workspace	 catered for through reconfiguration as it would enable greater accommodation of high-needs patients, and would not require seclusion Core staff costs remain the same, but additional nursing, security and support staff costs associated with being stranded on TPMH could decrease Infrastructure upgrades are already required for the Hillmorton site, providing an opportunity for low marginal cost upper cost and cost cost cost cost cost cost cost cost	 Existing infrastructure on the Hillmorton site is insufficient Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility
	 Design could allow for better patient experience leading to better clinical outcomes Efficiencies gained from having a single site offering all services A more flexible facility for current H&C service could be used in the future to cater for other mental health services based on emerging needs/requirements Relocation of all SMHS from the TMPH site 	

Options	Advantages	Disadvantages
Option 3: New inpatient build at Hillmorton, excludes CAF outpatients clinical and workgoes	 Per above, however, without the benefits of single site colocation. 	 Existing infrastructure on the Hillmorton site is insufficient Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility
workspace		 Lost efficiencies that would have been gained from having a single site offering all CAF outpatient services
		 Additional costs associated with lease fitout and lease payments will necessarily be incurred in addition to capital build costs
		While the option would benefit from the colocation of inpatient services alongside other mental health services at Hillmorton, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces
Option 4: Counterfactual New inpatient build for CAF, M&B and EDS	 Makes use of existing CDHB facilities Lower CAPEX costs compared with Options 1 and 2 (however higher whole of life costs than the other short list options) 	 The current configuration of SMHS facilities on TPMH site are not conducive to supporting best practice - compromising patient experience, clinical outcomes and increasing risks to staff and patients
at Hillmorton, excludes H&C and CAF outpatients clinical and		 This increased risk is currently being mitigated through increased staffing and resources, drawing resources that could otherwise be used to deliver greater care across the system, or retained by the CDHB as financial savings
workspace	THEOR	 Given the relatively small size of these facilities, it is not considered appropriate to continue to 'strand' these services away from medical, clinical, and back-office support in the long term. It is both inefficient, and likely to lead to long-term morale, recruitment, retention and service delivery issues
	UNDER	 Option necessitates costly repairs to infrastructure on TPMH site (notwithstanding the significant costs to refurbish, strengthen and "make safe" the SMHS facilities), and will continue to incur site/facility specific operational inefficiencies totalling approximately \$1.7m per annum
AS		 It would also require the refurbishment and strengthening of existing SMHS facilities and the demolition of immediately proximate buildings to make the site safe from seismic risk
		The retention of services onsite would reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold while an active [mental health] facility remains on-site or those portions of the site would be sold at a discount
		 Does not accomplish the original goal of vacating TPMH site

1.3.5 Recommended way forward

The recommended option aims to achieve a balance between cost (capital and ongoing) and the level of qualitative and quantitative benefits that are achieved i.e. the option most effectively and

efficiently achieves the investment objectives and addresses the underlying issues of the CDHB's SMHS.

Clinically, from the CDHB's perspective, the preferred investment options are Options 1 and 2. Of the short list options, Options 1 and 2 are the strongest performing options taking into account:

- Contribution to investment objectives
- ► The performance of the option against the critical success factors
- ► Whole of life cost considerations
- Qualitative assessment

However recognising that capital is a constraint (both locally and nationally), CDHB support Option 3 being carried forward as the recommended option. As such, the advancement of commercial lease arrangements for CAF outpatients and related workspace will be subject to a separate planning and business case process, which will be advanced by CDHB independently of this project.

1.4 Commercial Case

Ensuring an appropriate method of procurement for the new SMHS facility will be critical to ensuring that it is designed correctly and delivered to the standard required for moderate-high risk patients. The procurement method may also have a bearing on the long term operational costs of the facility.

Upon approving the IBC in September 2017, the MOH appointed specialist health project managers, Proj-X Solutions Ltd to manage delivery of the project. Following their appointment and giving consideration to their deep sector specific knowledge of market appetite and capacity, combined with the very tight timeframes for delivering the project, Proj-X recommended the project progress through a traditional procurement approach for construction based on separately procured and fully documented design.

The advantages and risks of the preferred procurement option to the CDHB are summarised in the table below.

Та	ble 3: Traditional Procurement, Advantag	es and Risks	
De	escription	Advantages	Risks
•	CDHB/MOH? enters into contracts for construction based on separately procured design (either concurrently or consecutively) No ongoing obligations for asset maintenance and operations by Contractor § s separate in-house or externally procured operations, maintenance and lifecycle arrangements would be put in place Funded by public sector	 The capital works for the project will be relatively low scale and uncomplicated Fast time to market Low tendering cost High level of design and implementation control 	 Majority of risks retained by public sector Contractor only models may result in interface risks between designers and contractors A consecutive competitive tender process for design and build may put the targeted 2020 operational commencement at risk, but this can be mitigated by parallel procurement

Once this procurement option is confirmed through the DBC, detailed procurement plans, including contractual arrangements, will be put in place to mitigate the risks of this procurement method.

1.5 Financial Case

The projected CAPEX cost of the recommended Option 3 is \$79.0m on a non-discounted nominal basis. It includes all costs of construction for the specialist mental health facility and omits the estimated \$5.1m of value that may be realised from sale of the vacant TPMH land following the transition of SMHS to a new facility, which will be used to meet costs of the Christchurch hospital build as outlined in the 2012 approved *CDHB Facilities Development DBC*.

Not included in the above capital cost is an estimated \$8.9m of fitout costs that would necessarily be incurred in order to provide CAF outpatient services and associated workspace from a clinically appropriate and adequately sized leased space (estimated to be a further 2,346m2 of purpose built leased space in close proximity to the new IFSC). The advancement of lease arrangements for CAF outpatients will be subject to a separate planning and business case process, which will be advanced by CDHB independent of this business case.

The expected operating costs for CDHB SMHS currently located on TPMH over the first 10 years of operation are \$301.6m. This includes all related employment costs, services, clinical supplies, (nonclinical) supplies, lifecycle costs, lease charges, depreciation, interest and capital charges.

It is assumed the capital costs associated with the proposed new SMHS facilities on the Hillmorton site will be equity funded by the Crown at a cost of 6% p.a. (nominal), which will continue in perpetuity. Meanwhile CDHB will undertake a separate planning and business case process to advance the lease of appropriate clinical and workspace for CAF outpatient services.

Under the recommended option, the total capital and operating costs for the SMHS currently located at TPMH over the 10 year forecast period are estimated to be \$389.4m. These costs are broken down as follows (note: all costs are nominal):

Table 4: Summary	of constr	uction co	sts AND	10 year op	perating f	orecast					
Recommended Op	tion 3										
\$000	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Total Building Costs (incl. infrastructure)	-	2,886	3,083	23,893	28,329	4,974	-	-	-	-	63,165
FF&E Costs	-	-	-	4,500		-	-	-	-	-	4,500
Contingency & Escalation to Construction	-	1,861	2,673	2,720	2,720	1,360	-	-	-	-	11,335
Total New Build Capital Expenditure	-	4,747	5,756	31,114	31,050	6,334	-	-	-	-	79,000
CAF outpatients lease space fitout & FF&E	-	5	-	-	8,850	-	-	-	-	-	8,850
Total Capital Expenditure	·	4,747	5,756	31,114	39,900	6,334	-	-	-	-	87,850
Inpatient Costs	9,383	9,610	9,892	10,181	10,432	10,249	10,503	10,762	11,029	11,302	103,343
Outpatient Cost	9,733	10,304	10,916	11,572	11,936	14,972	15,426	15,890	16,362	16,807	133,917
Life Cycle Costs	1,545	1,576	1,607	1,640	1,672	1,232	1,346	1,395	1,452	1,482	14,946
Decant Costs	-	-	-	-	1,667	-	-	-	-	-	1,667
Lease Costs	-	-	-	-	799	815	831	847	864	882	5,038
TPMH Operational Inefficiencies ¹	831	848	865	882	900	-	-	-	-	-	4,325
Total Operational Expenditure	21,492	22,338	23,280	24,275	27,406	27,267	28,105	28,894	29,707	30,472	263,236
Depreciation	-	-	-	-	-	2,625	2,625	2,625	2,625	2,625	13,125
Capital Charge	-	-	-	-	-	4,740	4,740	4,740	4,740	4,740	23,700
Interest	-	-	-	-	-	298	298	298	298	298	1,490

¹ Excludes TPMH lifecycle related cost which are shown separately

Total Operational Expenditure (incl.	21,492	22,338	23,280	24,275	27,406	34,930	35,768	36,557	37,370	38,135	301,551
non cash)											

In order to further advance this programme, the critical next step is to obtain approval from funding parties to proceed forward with the recommended way forward as outlined in the management case below.

Management Case 1.6

The management case provides an assessment of the capacity and capability of the organisation to implement the recommended option. It describes the arrangements required to ensure successful delivery of the recommended option and to manage project benefits and risks. In doing so, the management case outlines the processes required for delivery of the following project components:

- Project planning: next steps and detailed delivery plan to move forward with the project
- Project management and governance arrangements required to progress the project ►
- Stakeholder management and communications ►
- Change management planning ►
- Benefits management planning
- Risk management planning

The MOH will be responsible for the delivery of the project through procurement and construction, and will then hand over responsibility to the CDHB for facility maintenance, transition and operation. The table below outlines the next steps required to move forward with the project, including:

- The key deliverables required for the next phase and the activities required to deliver them
- The critical path
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Milestone	Date
MOH / CDHB & Stakeholder Approval of DBC	November2018
HRPG & CIC Approval of DBC	November-December2018
Implementation phase	
RFP for design consultants released	January-February 2019
Design consultants appointed	March 2019
Design and consenting phase	
Concept Design	March - May2019
Preliminary Design	June – August 2019
Developed Design	September – December 2019
Detailed Design	December 2019 - April 2020
Detailed Design MOH / CDHB & Stakeholder approval	April – May 2020
Consenting (Resource, Building consents etc.)	August 2019 - August 2020
Contractor procurement	
Contractor Expression of Interest (EOI) released to market	December 2019 - February 202
Contractor Request for Proposal (RFP) released to market	June – July 2020
Main Contractor appointed	August 2020
Works on site	
Construction commences	August 2020
Construction completed	November 2022
Operational commencement	December 2022
2. Purpose

2.1 Structure and purpose

The Ministry of Health (MOH) has commissioned this Detailed Business Case (DBC) on behalf of the Hospital Redevelopment Partnership Group (HRPG) to provide recommendations on the preferred investment option for relocation of regional and local Specialist Mental Health Services (SMHS) from the Princess Margaret Hospital (TPMH) to the Hillmorton Hospital site. This DBC seeks approval to develop the investment option further through the design stages of this project.

This business case has been prepared in accordance with the Treasury's guidelines for *Better* Business Cases for Capital Proposals: Detailed Business Case and is organised around the five case model: NFORMAT

- 1. Strategic case
- 2. Economic case
- Financial case 3.
- Commercial case 4.
- 5. Management case

The DBC builds on the Indicative Business Case (IBC) prepared and commissioned by Canterbury District Health Board (CDHB) in 2016 (and finalised in August 2017). This DBC aligns with the approved DBC for both Christchurch Hospital and Burwood Hospital developments. The DBC is also aligned with previous decisions made by CDHB and the MOH to consolidate critical CDHB specialist services onto three sites: Christchurch, Burwood and Hillmorton Hospitals. In doing so, this DBC:

- Outlines the strategic context for the investment
- Revisits both the case for change and the short-listed options recommended for further consideration in this DBC
- Provides an analysis of the costs, benefits and risks of the short-listed options and a recommended way forward
- Outlines a fit for purpose strategy for the procurement of the required services
- Summarises the cost and revenue implications of the recommended option and funding requirements
- Outlines the arrangements required to ensure successful delivery of the recommended option and to manage project benefits and risks.

2.2 Approach

This DBC has been developed through close engagement and consultation with CDHB key stakeholders, including clinicians, management and governance.

2.3 Scope

2.3.1 Scope of health services considered

While the scope of the IBC was limited to TPMH based SMHS, patients, staff and facilities, the continued and unexpected growth in demand for Child, Adolescent, and Family (CAF) services and the poor state of existing facilities to accommodate growth has led to the consideration of CAF outpatient services presently located at Hillmorton Hospital through this DBC.

The CAF North Community and Outreach team (CAF North) are presently located at Hillmorton Hospital and provide comprehensive psychiatric assessment and therapeutic intervention for children and adolescents 0-18 years (or older if still at school) in their family context. Referrals are received from school counsellors, GPs and other health professionals, Education and school staff and social service providers. The service receives referrals via TPMH based SMHS, CAFLink2, for clients living in the northern part of Canterbury and Christchurch city. Bases or clinics operate in Rangiora, Kaiapoi and Kaikoura. CAF North collaborates to provide specialist care pathways and group programmes with other CAF Services.

Due to continued strong growth in demand for CAF services, CAF North have become severely space constrained, whereby porta-cabins are used by staff as offices and treatment is forced to take place in clinically inappropriate environments, such as very small, poorly ventilated office spaces or in thoroughfare spaces for larger group therapies. Contacts are also frequently deferred until space is available or to a time of day where staff do not feel undue risk to their personal safety. As a consequence, current facilities are compromising patient access, privacy, safety and outcomes, along with staff safety and wellbeing.

2.3.2 Models of Care review

Models of care have been reviewed and developed alongside the development of the wider health system (including the South Island DHB network) into a complete model of care that wherever safe and possible people are supported in their own homes and communities and by their own general practice team and/or the NGO sector. In recent years, models of care have been modified and optimised in response to clinical reviews: notably, the CDHB Eating Disorders Service (EDS) model has been used as the national benchmark and High and Complex (H&C) Ward has been reduced from 51 patients to 24 patients, with further reductions planned in the near future, resulting in the requirement of a ward with only 16 patient beds.

Following approval of the IBC by the MOH in September 2017, a collaborative review of the regional models of care was undertaken by all five South Island District Health Boards (DHBs), which included the consideration of ongoing future needs for the three regional services (Mothers and Babies (M&B), CAF, and EDS). The review culminated a meeting, organised and hosted by MOH officials, John Crawshaw and Trish Smith, and facilitated by an independent party. The review was completed and joint agreement and MOH support obtained in late January 2018.

Further to the formal review of regional models of care, ongoing and iterative clinical service reviews have been completed by the CDHB, in consultation with the South Island DHBs, Police and Oranga Tamariki local leaders, the Canterbury Children's Team Local Governance Group (including Police and Oranga Tamariki)), primary healthcare providers, aged residential care providers, consumers, and a range of Non-Government Organisations (NGOs), prior to the initiation of this DBC. Key members of the Children's Team Local Governance Group adamantly support the maintenance of the CDHB's SMHS provision - in particular CAF Services, which they see as absolutely crucial given the extent of issues they are seeing in the community. In addition to support from Children's Team Local Governance Group, other providers, including a range of primary healthcare providers, aged residential care providers and NGOs (e.g. Champion Centre, Family Health Trust) support the continuation of CDHB's SMHS.

² A single point of entry for CAF specialist mental health services

In principle, the best service for patients is considered to be as close to their home as possible but for those with the most severe illnesses and complex needs there needs to be intensive specialist hospital care available. For example, the provision of EDS from a hospital site ensures that refeeding treatment can be implemented alongside psychological and psychiatric care – that way patients are not having to move between facilities for medical and mental health treatments and their needs are met in a more efficient and patient-centred manner. Meanwhile, the M&B service allows extremely unwell women to be treated and have their baby with them. This reduces the risk of further maternal distress, disruption of breastfeeding, and potentially lasting disruption to early bonding and attachment. In a community based service the levels of severity often seen are not be able to be managed and the most severely ill mothers are separated from their babies and admitted to acute adult facilities.

The CDHB models of care for SMHS incorporates inpatient, outpatient and community care. CDHB recognises there are alternatives for long term and complex care in the community and has been working to reduce reliance on a hospital setting wherever possible. This DBC assumes the CDHB will continue in this direction.

2.4 Assumptions and previous decisions

Previous decisions set the context for undertaking this business case, and initially foreclosed some options that might have been considered under other circumstances. Specifically:

- ► As part of the Facilities Redevelopment Detailed Business Case approved by the MOH in 2012, the decision was taken to consolidate specialist CDHB services across the three sites of Christchurch, Burwood and Hillmorton Hospitals. As part of this approved Facilities Redevelopment Detailed Business Case, TPMH was to be vacated and decommissioned.
- However, over subsequent years the bulk of services (mostly Older Person's Health, Corporate and Support Services) were relocated to either Burwood or Christchurch campus in 2016 leaving a range of specialist mental health services stranded on TPMH site.
- ► To avoid unnecessary costs associated with repairing the extensively earthquake damaged TPMH site, including infrastructure such as power, sewage and water, temporary repairs have had to be undertaken over the past 7 years to keep the services operating and a further \$2.7m per annum of additional operating costs are incurred to keep services on site. The cost to achieve an acceptable clinically and operationally viable level of structural compliance has been quantified, and is not considered economically viable.
- ► To avoid unnecessary costs, the decision was taken not to complete permanent repair work on the plant and assets at TPMH, prior to the anticipated disposal of the site. Temporary repairs have been completed to enable continued service delivery from the site in the short term. The cost to achieve an acceptable level of structural compliance for the facilities occupied by SMHS has been quantified, and is not considered economically viable.

The economic and financial analysis within this business case reflects SMHS services and future projections at a point in time. We have relied on:

- Architectural outputs from Klein Ltd dated September 2018
- ▶ QS costings from Rider Levett Bucknall (RLB) dated October 2018
- ▶ TPMH site valuations from TelferYoung (Canterbury) Limited dated July 2017
- TPMH demolition cost estimates from CERES New Zealand Ltd dated May 2017 for the purposes of the economic and financial cases

These were commissioned separately by the MOH and CDHB.

3. Introduction

3.1 Canterbury DHB regional Specialist Mental Health Services

CDHB SMHS is the major provider of mental health services in the Canterbury region. Local services are provided across a wide geographical catchment area north to Kaikoura, south to the Rangitata River and west to the Southern Alps. Regional services are also provided for the South Island.

SMHS provides five core clusters of services including:

- Adult Services
- ► Forensic Services
- ► Intellectually Disabled Persons Health Services
- Speciality and Addiction Services and
- Child, Adolescent & Family Services

These services are currently provided from three hospital campuses: Hillmorton Hospital, Christchurch Hospital and TPMH, with some services located at other community sites across greater Christchurch (this includes Selwyn and Waimakari TLA areas). TPMH is currently home to a number of South Island regional specialist mental health inpatient (IP) services and a range of specialist mental health regional and district outpatient (OP) services including:

- ▶ Mothers and Babies Service (IP/OP)
- ► Eating Disorders Service (IP/OP)
- ► CAF IP unit
- ► CAF Day Programme and Southern Health School
- ► CAF management team
- CAF Emergency Team (CAFEm), CAFLink Team (Single Point of Entry) and CAF Community Consultation & Liaison: jointly known as CAF Access Team
- ► CAF South Community and Outreach Team (CAF South)
- ► Youth Forensic services (OP)
- ► High and Complex services (formerly Seager clinic) (IP)

The CDHB mental health services form part of the South Island Alliance. The South Island Alliance brings together the region's five DHBs, along with primary care, aged residential care, NGOs and consumers, to work collaboratively toward a sustainable South Island health and disability system that is best for people, best for system. All CDHB regional services, including CAF inpatient services, M&B and EDS, come under the umbrella of this Alliance and related Health Services Plans.

CDHB provides a tertiary service for the South Island region. The regional services on TPMH site are provided using a 'hub and spoke' model – with the hub being the location of the regional in-patient services and the spoke being the local DHB liaison staff and SMHS outpatient services.

The CDHB regional service staff are highly specialised in their respective fields and able to provide a level of expertise and intensity of service not able to be provided within the regional DHB's. They provide patient services, education, support and consult liaison with the South Island region's DHBs. In doing so, the CDHB regional services teams work collaboratively with the districts to ensure that they are upskilled and as much of the service as possible is provided at home and/or within the district.

The inpatient aspect of these services being considered in this DBC are of a highly specialist nature, specifically for those people who are high-need patients that cannot be safely cared for in their own homes and communities, by their own general practice team and/or the NGO sector, or need intensity of response to achieve therapeutic outcomes. Such patients require highly specialist accommodation with on-site multi-disciplinary health care.

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The CDHB manage the challenge of relatively small numbers of specialist inpatient services through the co-location of several inpatient services and their outpatient teams, combined with specific staff training to support flexible service delivery and a flexible bed model. Locating in one place and one facility with a shared staffing model enables a level of efficiency that would otherwise be difficult to achieve by individual DHBs and/or other service providers.

As mentioned previously, there is extensive and on-going work on the models of care from a whole patient journey perspective with the focus being on supporting people in their own homes and communities wherever possible. The South Island Alliance continue to support the inpatient services provided by the CDHB through a PBF share based funding model as it is recognised that demand from smaller populations will be highly variable but costs remain fixed. The CDHB's regional colleagues in the South Island DHBs are regularly informed of developments and ways in which CDHB could best continue to provide the current services.

The use of depreciated, outdated and temporary building solutions, combined with the damage caused by the Canterbury earthquakes has caused significant challenges for the health system and its ability to provide services in a timely, best-practice manner. The CDHB is currently delivering adequate care to regional SMHS patients through a variety of interim solutions, however, new facilities for service delivery are required to: address the inefficiencies inherent in the current arrangement; deliver high-quality clinical care to patients; and provide a safe and supportive environment for staff.

3.2 Clinical services context

3.2.1 Efficient service delivery in the SMHS clinical context

There are significant efficiency gains that are delivered by the co-location of the SMHS services currently located at TPMH. The ability to provide a flexible service delivery environment is especially valuable given the highly specialised nature of the services delivered, and the relatively small number of inpatients served at any given time.

Until recently, the co-location of the Eating Disorders Service (EDS), Mothers and Babies (M&B), Child, Adolescent, and Family (CAF), and High and Complex (H&C) needs patients alongside Older Persons Health (OPH&R) at TPMH had enabled CDHB to achieve efficiencies of scale in the provision of clinical and non-clinical support services such as Clinical Team Co-ordinators (CTC), emergency medical cover (including Duty Nurse Managers), radiology, catering and security.

In 2016, OPH&R was relocated to Burwood hospital along with emergency medical cover orderlies and some security resource, and corporate services were relocated to the Christchurch campus. As a result of this, the services remaining at TPMH have had to procure additional staffing support, increasing operating costs to CDHB and causing inefficiencies totalling approximately \$685,000 per annum (see Appendix A for further details of costs of retaining TPMH).

Further to this, while approximately two thirds of TPMH footprint was vacated in 2016 following the relocation of corporate services and OPH&R, certain building services are not able to be switched off for these portions of the site and legislative building compliance requires maintenance of any functional building to Building Warrant of Fitness (BWOF) requirements. As a consequence, CDHB have not been able to fully realise associated building lifecycle cost savings relating to the vacated space.

Table 6 provides a summary of SMHS currently located on TPMH site, current operational arrangements and issues/opportunities.

Table 6 Summary of Specialist Mental Health Services						
Clinical Area	Summary of Services Current Arrangements Current Issues/Opportunities					
Eating Disorders (EDS)	Regional specialist IP and OP services for the assessment and treatment	 Co-located with M&B in C Ward 	 Facilities are not purpose built and are isolated from key support 			

Table 6 Summary	y of Specialist Mental Health	Services	
Clinical Area	Summary of Services	Current Arrangements	Current Issues/Opportunities
	of people with a primary diagnosis of anorexia nervosa, bulimia nervosa or other eating disorder not otherwise specified	 13 beds split with M&B based on clinical need Outpatient staff work across inpatient services 	 infrastructure, such as imaging and facilities are cramped Small facility requirements allow for a flexi-bed and flexi-staffing approach to delivery of IP and OP services Patients have complex psychological and physical care requirements
Mothers and Babies (M&B)	Regional specialist IP and OP services providing psychiatric treatment for women who experience depression and other psychological and psychiatric difficulties during pregnancy and after the birth of their babies up to 12 months old (at time of admission).	 Co-located with EDS in C Ward 13 beds split with EDS based on clinical need 6 to 7 babies in the unit at any time. Babies are admitted as patients, have cots and other equipment and require dedicated staff Outpatient staff work across inpatient services 	 Facilities not purpose built, isolated from key support infrastructure and are space constrained Small facility requirements allow for a flexi-bed and flexi-staffing approach to delivery of IP and OP services Patients (including babies) have complex psychological and physical care requirements
Child Adolescent and Family (CAF)	Regional IP services for the assessment and treatment of children and adolescents with moderate to severe psychiatric disorders, behavioural disturbances and developmental disorders. Outpatient services provide comprehensive assessment and treatment for children and adolescents in the Canterbury region with moderate to severe mental health, alcohol and drug difficulties.	 Co-location with EDS and M&B in C Block 16 bed inpatient unit Provision for family members to live-in, to enable them to be part of their child's treatment programme Inpatient unit works closely with outpatient services to support continuity of care Southern Health School, run in conjunction with the Ministry of Education 	 Facilities not fit for purpose and unable to meet increasing service demand Need to separate age and gender Specialised staff shared with EDS and M&B Lack of a High Dependency Unit (HDU) means seclusion is used to manage high needs patients Increasing risk to patient and staff safety
High and Complex Needs (H&C)	CDHB services for the provision of intensive rehabilitation programmes for complex and high need patients. Patients have long-term psychiatric illness, and have often failed other treatment. They often suffer other comorbidity physical and mental (e.g. dementia) conditions.	 Co-located with other SMHS on TPMH site Reduced following a clinical review from 51 to 24 beds 24 inpatient beds Provision of back up and support from other SMHS located on-site if required 	 Facilities not built for purpose, increasing risk to patient and staff safety Patient monitoring and care is compromised by the configuration of the wards Intention to reduce to 16 beds

3.2.2 Eating Disorders and Mothers & Babies Services

CDHB manage the challenge of relatively small numbers of EDS and M&B inpatient services through the co-location of inpatient services and their outpatient teams, combined with specific staff training to support flexible service delivery and a flexible bed model. Locating in one place and one facility with a shared staffing model (shared between EDS and M&B and across inpatient and outpatient services) enables a level of efficiency and clinical viability that would otherwise be difficult to achieve by individual DHBs and/or other service providers.

Eating Disorders Service

EDS provides a multidisciplinary approach to assessment and treatment of people with eating disorders (e.g. anorexia nervosa and bulimia nervosa). Patients come from a variety of gender, age, ethnicity, body shape, weight, sexual orientation, and socioeconomic status. The service can accept medically compromised patients, and provides an integrative model of care with medical and psychiatric support. Approximately 15% of EDS inpatients are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital.

EDS is the tertiary level provider of eating disorders treatment for the five DHBs in the South Island thereby providing both a local and regional service. The service considers the needs of consumers and their family, whilst working with different levels of the health care sector, i.e. primary and secondary care. Following the guidelines in "Future Directions for Eating Disorders" (MOH, 2008), the Service provides specialist inpatient beds for the South Island alongside specialist outpatient treatment, training, supervision and consultation. Treatment is informed by international best practice guidelines including those from the Royal College of Australian and New Zealand Psychiatrists (2014).

Research suggests that the majority of eating disorders can be treated in an outpatient basis. As such, EDS has a major focus on a sustainable workforce providing a high standard of care throughout the South Island. Each district has an Eating Disorders Liaison (EDL) person who manages eating disorder cases in their area. This position may include treating cases, but it also provides the vital role of liaison between the services, including co-ordinating telemedicine, training dates, and information about referral pathways. The CDHB regional service includes a regional liaison person whose role it is to co-ordinate the training and supervision across the South Island. Each EDL local district person attends monthly telemedicine conferences and has contact as needed with the EDS regional liaison between these conferences.

A significant component of the inpatients are classed as 'minors'. As a result, staff in EDS are responsible for those patients at all times whilst they are admitted into the inpatient unit. The inclusion of children and adolescents means they must adhere to the United Nations Convention on the Rights of the Child (UNCROC) regarding care, including the requirement to provide separation from adults. It is acknowledged that there is a significant difference in maturity/experience of different patients and the need to flexibility manage various patient mixes. The whole unit requires good observation, both for managing behaviour, patient mix and for observing people entering and exiting the unit.

The EDS team have a close collaborative relationship with the CAF team. EDS patients who are of school age (to Year 13) have access to an onsite school, the Southern Health School, run in conjunction with the Ministry of Education. The school day is scheduled to work in with the clinical activities for each child, with cognisance to the individual child's health and educational needs. Patients attend the school only when well enough.

Family / whānau

Family / whanau are a vital part of caring for the patients within the EDS inpatient unit. There are instances where it is helpful for parents / guardians to stay in the inpatient unit. As a result, the spatial needs for parents / guardians who are able to stay with their child needs to be considered in the design i.e. bed space / ablutions. At times having the parent/ caregiver stay with the young person in the young person's bedroom is most helpful and at other times staying on the ward in a parent bedroom is more helpful.

Parents / guardians who are not staying within the inpatient unit will stay at their own homes if they live in Canterbury or will stay at Ronald McDonald House, with family or friends, Ranui House or in a closely located motel if they are not local. When not staying at the inpatient unit, they will still come to the unit to participate in sessions with the patient and the Multidisciplinary Team, in cooking activities etc., so will be present through the day.

Mothers and Babies Service

Mental health problems in pregnancy and around childbirth (perinatal) are very common, affecting up to 20% of women at some point during the perinatal period. Examples of these illnesses include

depression, postpartum psychosis, Bipolar Disorder, Obsessive Compulsive Disorder (OCD), Anxiety. They range in severity from mild to severe. Mild to moderate cases may be managed in primary care, but complex moderate and severe will require specialised treatment.

Perinatal mental health conditions often develop suddenly, and in the most severe cases, such as post-partum psychosis, present as a psychiatric emergency and require in-patient care. Where there are no Mothers and Babies units, this may result in separation of mother and infant, causing great maternal distress, disruption of breastfeeding, and potentially lasting disruption to early bonding and attachment. Caring for Mothers and Babies together has strong and beneficial outcomes for both mothers and their children. In particular, this service supports mother-infant bonding, and better integration of whole-of-family treatment.³ Research also suggests that these units assist in protecting children from the adverse effects of the Mother's illness, reducing the long-term likelihood of mental health issues for children.⁴

The goal of M&B is to provide specialised multidisciplinary treatment for complex moderate to severe maternal mental illness, incorporating inpatient and outpatient care, education, training and consult liaison, for the treatment of mothers who are pregnant or have babies up to 12 months old. Both the mother and baby are admitted as part of this service. There is no other equivalent service for Mothers and Babies in the South Island, and it is the largest of its kind in New Zealand. The service also provides consultation to mothers with an existing mental illness who are planning to become pregnant, and specialised consultation to other services, e.g. Primary Care, who are providing treatment for less severe cases.

Approximately 20% of M&B inpatients are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital.

The service operates as a hub and spoke model, with the M&B service acting as a centre of expertise, providing treatment, supervision, clinical consultation and input into workforce development in perinatal care throughout the South Island. Workforce development is a primary focus of the M&B service. Multidisciplinary teams are vital for perinatal mental health and must be able to offer appropriate treatment with an understanding of the particular challenges and opportunities that occur at this time in a woman's life, and the impact of this on her mental and physical health. Each DHB has 1-2 local District Liaison Clinicians who are the main contact point with Mothers and Babies, acting as a local point of expertise, facilitating communication with Mothers and Babies, disseminating information/training provided by M&B, etc.

Family / whānau

Like EDS, family / whānau, including partners and other children, are a key part of the process for caring for the patient within the M&B service. They may come to the unit to participate in sessions with the mothers and their babies and the Multidisciplinary Team, so may be present through the day.

There are instances where partners and other children will stay in the inpatient unit. As a result, their spatial and functional needs must be considered. Having the ability to accommodate family / whānau enables family activities and planning for discharge. However, the provision of this space must allow for separation of male partners from the predominantly female M&B and EDS inpatient population.

Partners who are not staying within the inpatient unit will stay at their own homes if they are local to Christchurch or will stay with family or friends, at Ranui House or in a closely located motel if they are not local.

³ Barnett, B. Morgan, M "Postpartum psychiatric disorder: who should be admitted and to which hospital?", *A. Journal Psych.* 1996.

⁴ Brockington IF. Oxford: Oxford University Press; 1996. Motherhood and Mental Health.

Colocation of EDS, M&B and CAF Services

The EDS and M&B inpatient services provide care to a relatively small number of patients at any given time, but who have high clinical complexity. The two services operate as a single unit and the co-location allows for the allocation of these beds to shift between M&B and EDS depending on demand.

To capture clinical and operational efficiencies, this service is currently co-located with M&B and adjacent to CAF on TPMH site in an area known as C Block. The M&B and EDS outpatient teams work with the inpatient services to provide much of the outreach services to the districts, such as clinical review, workforce development, supervision, and consult liaison.

3.2.3 Child Adolescent and Family (CAF)

The Child, Adolescent and Family (CAF) Service provides inpatient and outpatient services for children and adolescents up to the age of 18⁵ who have moderate to severe psychiatric disorders, behavioural disturbances and development disorders.

Outpatient services

CAF outpatient services provide comprehensive assessment and treatment for children and adolescents in the Canterbury region with moderate to severe mental health, alcohol and drug difficulties. Services include school based mental health services.

The Day Unit provides an intensive programme for children and adolescents from the Canterbury region who require a more intensive intervention than is available in the outpatient services but do not require hospital level care.

Inpatient services

The CAF inpatient unit provides developmentally appropriate psychiatric care to children and adolescents living in the South Island, who present with acute, complex and/or severe mental health difficulties that cannot be managed in the community. Patients tend to be referred to the inpatient unit when there are major concerns for safety (which includes suicide risk, homicide risk and inability to care for themselves), severe and acute mental illness, or they require very intensive treatment to make treatment gains or diagnostic assessment, that are unable to be provided by the community teams.

The service is for the most seriously unwell children and adolescents, not a facility for managing behavioural disorders. The principle of least restrictive care applies to all admissions where possible. Long term hospitalisation is actively avoided, with the average length of stay being four weeks. However there are some patients who will stay longer term i.e. up to six months.

Regional admissions are done on a planned basis through consultation with lead clinicians. The inpatient unit also provides crisis admissions for children and adolescents living in Canterbury =, however it does not provide this for people in the other regions. It is expected that such crisis admissions would happen locally in their respective districts.

25-40% of CAF inpatients being cared for at TPMH are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital.

Colocation of services

CAF outpatient services are delivered from three locations: Hillmorton Hospital, TPMH, and a central city location, with the majority of those staff being TPMH based. However, all CAF inpatient beds are located on TPMH site. Co-location with EDS and M&B supports the sharing of resources,

⁵ CAF patients may be older than 18 years if still at school or it is felt developmentally appropriate to keep them in the CAF service for longer.

clinical and support staff and access to the Southern Regional Health School, which also operates from TPMH and is run in conjunction with the Ministry of Education.

CAF inpatient and outpatient teams are integrated, as the some clinicians treat both patient cohorts. TPMH based CAF team must also be mindful of the links with other services supporting this population, such as: Children in Care⁶ and School Based Mental Health teams, which rely on the expert support and infrastructure of the wider CAF team. Many patients with Eating Disorders are children; the co-location of the services with EDS means that children can be treated by appropriately trained clinicians allowing UNCROC obligations to be met.

Facilities

Given the inpatient unit caters for both young children and adolescents, of differing genders, who present differently and often have significantly different needs there is a strong requirement for flexibility both in management and in spaces. Due to the vulnerable nature of some patients and the distressing behaviour of others it is important that the ward environment has the capacity to have separate areas to manage these patient groups. In addition, contagion behaviour is a well-known phenomenon and the ward environment needs to be designed to minimise this where possible.

The CAF facility at TPMH does not have a High Dependency Unit (HDU) and as consequence there is difficulty managing severely ill adolescents who have disturbed behaviour. Either admission is deferred or other patients are prematurely discharged, or where already admitted either seclusion is used or they are sent to adult services, neither of which is appropriate, nor meets the needs of UNCROC.

Family / whānau

As with EDS and M&B, family / whānau are a vital part of caring for the patients within the CAF inpatient unit. There are instances where it is helpful for parents / guardians to stay in the inpatient unit. As a result, the spatial needs for parents / guardians who are able to stay with their child needs to be considered in the design i.e. bed space / ablutions. At times having the parent/ caregiver stay with the young person in the young person's bedroom is most helpful and at other times staying on the ward in a parent bedroom is more helpful.

Parents / guardians who are not staying within the inpatient unit will stay at their own homes if they live in Canterbury or will stay at Ronald McDonald House, with family or friends, Ranui House or in a closely located motel if they are not local. When not staying at the inpatient unit, they will still come to the unit to participate in sessions with the patient and the Multidisciplinary Team, in cooking activities etc., so will be present through the day.

3.2.4 High and Complex Services (formerly known as the Seager Clinic)

High and Complex (H&C) is a specialist adult inpatient rehabilitation service that provides a range of treatment programme options, for short, long term, and intensive rehabilitation of patients who have not been successful in other treatment environments. The emphasis is on individualised treatment and re-integration into the community.

Most inpatients have complex presentations and require extended treatment and extensive additional supports beyond the capability of community based providers. The complexity is usually due to a combination of serious enduring mental illness, usually a psychotic illness; co-morbidity; alcohol or other drug dependence; physical illness and cognitive impairment, often with personality and social chaos problems as well.

The principle of the provision of care within the least restrictive environment has been tested in H&C since January 2012, which was the last time that seclusion was used, and more recently in September 2012 when the remaining seclusion room was decommissioned. CDHB pursued an aggressive programme of reducing the number of beds from 51 to 24 as they reinforce a model of

⁶ A service for children and young people between the ages of 0-12 years, including those who are in the custody of the Chief Executive of Oranga Tamariki – Ministry of Vulnerable Children, and who have a confirmed or suspected moderate to severe mental health issue.

community based and least restrictive care. H&C moved from a three-ward unit with two seclusion rooms to a one ward unit without seclusion. There are plans to reduce this to 16 beds capacity in a new facility.

However, one of the biggest obstacles to supporting consumers into the community is the lack of capability and capacity of the current community NGO sector to care for highly complex patients. These patients often cannot be cared for or are not suitable for typical rental accommodation or long-term care facilities. Alcohol and substance use and forensic history often precludes the use of outside providers. Many patients need to be cared for on-site as they are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital (this accounts for between 60 and 90% of H&C patients at any given time, compared with 20% of M&B, 15% of EDS and 25-40% of CAF inpatients).

There are two NGO providers with capability to support these people. However, these providers have very limited capacity. It is recognised that there is a shortage of provision of service for this vulnerable group in many places in New Zealand.

Colocation of services

Colocation of H&C with other SMHS on TPMH site supports the CDHB to maximise efficiency in the delivery of these small and specialised services. However, it is recognised that there are stronger synergies able to be captured between H&C services and other mental health services currently provided from the Hillmorton Hospital site e.g. Adult Acute Inpatient Service (Te Awakura)and Tupuna Villa.

Tupuna provides 24 hour care and support in a home-like environment with the aim of assisting people who have ongoing severe mental health issues and physical ailments to achieve their full potential and work towards finding a suitable place to live in the community. The patient cohort is very similar to H&C, admitted through the same pathway. H&C staff work alongside Tupuna, who have a similar model of care focus – extended treatment - but with an older and more frail population (noting that this was a little accidental and due to Tupuna not having the step in floor level that H&C has, so was preferred for the older frailer cohort).

Colocation of H&C, Te Awakura and Tupuna allows for an adaptive and seamless approach to acute and extended care on one site without the practical and clinical risks of transferring across town. It also provides better support in terms of staff specifically trained in managing acute behavioural episodes. It also provides better support in terms of risk management in that extra staff support is close at hand. This will avoid the 'just in case' transfers that can happen from geographically remote services.

3.3 Hillmorton Hospital site

The Hillmorton Hospital site has a long history of providing mental health services to the people of Canterbury and currently has 145 beds providing care across forensic, acute, AoD, intellectually disabled, high and complex inpatient groups as well as a number of related outpatient services.

Demand for mental health services continues to increase, with CAF increasing more rapidly than other services. There is well documented, peer reviewed evidence that long-term trauma like war or long-term seismic events creates a high level of stress in younger children that can result in greater incidence of mental health disorders.⁷ Given the unusual nature and duration of the Christchurch earthquake sequence⁸ and subsequent Kaikoura earthquakes, there is at least a reasonable chance that a greater than usual proportion of the children who lived through the event will suffer from mental illness later in life⁹.

⁷ See for example: *Effects of adverse experiences for brain structure and function*. BiolPsychiatry.2000 Oct 15;48(8): 721-31.

⁸ Reyners, M.E.; Eberhart-Phillips, D.; Martin, S. 2014 Prolonged Canterbury earthquake sequence linked to widespread weakening of strong crust. *Nature geoscience*, *7*(*1*): 34-37.

⁹ Salcioğlu E1, Başoğlu M Psychological effects of earthquakes in children: prospects for brief behavioural treatment. World J Pediatr. 2008 Aug;4(3):165-72.

The flexibility of future facilities is important to meet changing demand over time. Co-locating the SMHS currently located at TPMH with other services at Hillmorton Hospital provides a number of opportunities for future proofing. As well as a possible increase in the need for inpatient capacity for children, there is the possibility of more flexible use as the adult population grows and the needs for the intellectually disabled who are placed at Hillmorton under the IDDC&R legislation grow. There is also potential to see patients with unmet needs (e.g. Autistic or further high-needs children) should this be required in the future.

pital ...date the There is an intention to complete a full and detailed Masterplan of the entire Hillmorton Hospital detailed enough only to enable sensible and logical locating of new facilities to accommodate the



The strategic case - making the case for change 4.

Purpose 4.1

The purpose of this section is to outline the case for change, including:

- Outlining the strategic context for the investment
- Revisiting the case for change, including: problem definitions; investment objectives; benefits, risks, constraints, and dependencies.

4.2 Strategic context and case for change

There are four parts to the strategic context that were considered in developing the case for ORME change. These include the:

- **Clinical context**
- Built environment
- Policy environment
- Contract management and funding arrangements

Table 7 summarises the strategic considerations on which the Case for Change was based for the IBC (see Appendix C for further details).

Table 7: Summary of the str	ategic drives and considerations underlying the IBC for SMHS
Strategic driver	Strategic consideration/Issue
Clinical context	 Demand for health care services across the Canterbury region is growing, along with the population, with particularly strong growth in demand for Child, Adolescent, and Family services SMHS based at TPMH provides inpatient services to small numbers of high risk patients with highly complex psychiatric and physical care requirements
Policy environment	► The Case for Change is framed by:
	 National health care and mental health policy directives, such as the NZ Health Strategy, Mental Health (Compulsory Assessment and Treatment) Act 1992 and The Mental Health and Addiction Service Development Plan 2012-2017
	CDHB policy and planning directives, such as the CDHB South Island Health Service Plan
S	• Other binding agreements and obligations, such as UN Convention on the Rights of the Child (UNCROC)
Built environment	 SMHS facilities at TPMH are not purpose built and do not support optimal access nor clinical outcomes, and drive inefficient use of staffing and resources
S	 Previous investment decisions are predicated on the future sale of TPMH site (2012 Facilities Development DBC)
	 SMHS have been left isolated on TPMH site driving further inefficiencies and risks to patient and staff safety
	 Approximately two thirds of TPMH has been vacated and some of those facilities are earthquake prone. Reinstatement is not considered economically viable
Funding arrangements	 Previous investment decisions are predicated on the future sale of TPMH site (2012 Facilities Development DBC)
	• Approximately two thirds of TPMH has been vacated and some of those facilities are earthquake prone. Reinstatement is not considered economically viable
	 CDHB capital funding constraints.

On the following pages we outline key changes in the strategic context for SMHS since the IBC was substantially completed in 2016.

4.2.1 Clinical context

Consideration 1: SMHS provides inpatient services to small numbers of high risk patients with complex psychiatric and physical care requirements

CDHB SMHS provide inpatient and outpatient services to patients from across the Canterbury and the South Island districts. The following table summarises current inpatient occupancy levels, outpatient numbers, and the number of beds per unit.

Table 8: Summary of current (FY17 average) service levels and staffing by unit								
Service	Inpatient beds	Current IP Occupancy	Desired IP Occupancy	Average Age of Inpatient	Average Length of Stay (days)	Inpatient FTEs	Outpatient FTEs	Outpatient ¹⁰ Volumes p.a.
Mothers and Babies	7.8	56%	85%	29.5	22.9	26.6	6.5	350
Eating Disorders	5.2	100%	85%	22.1	39.7	20.0	8.2	350
Child Adolescent and Family ¹¹	16	46%%	80%	14.3	30.1	45.5	83.9	3,900
High and Complex Needs ¹²	24à 16	92%%	95%	42.1	334.9	31,2	7	N/A
TPMH clinical and non- clinical support					J.	7.4		

Current occupancy levels are heavily influenced by mix of patients and the need to have appropriate segregation. This means that while there appears to be physical capacity, it is not able to be used optimally to meet clinical needs due to inappropriate configuration of existing space.

Consideration 2: Increasing demand for SMHS, with CAF demand increasing more rapidly

Following the earthquakes, CDHB population growth has been rapid. In the past 5 years Canterbury's population has increased by 10% (against New Zealand population increase of 8% for the same period) Canterbury's Maori population has increased by 22% (against New Zealand Maori population increasing by 11% for the same period). Population levels are now reaching those previously predicted for 2024¹³. While population growth has been strong and has contributed to growth in demand for mental health services, demand for mental health services has exceeded population growth.

Almost eight years on from the first major earthquake, service demand patterns have changed. Prolonged levels of stress and anxiety are exacerbating chronic illness and negatively impacting on the health and wellbeing of CDHB's population. Increased demand is evident across the system, but particularly in mental health services, with CAF demand increasing more rapidly than adult services. In the past six years CDHB have observed a 108% increase in new presentations to CAF, compared with a 36% increase for adult presentations during the same period.

Consideration 3: Changing demand for SMHS and models of care

CDHB have implemented a number of strategies to reduce and manage growing demand for mental health services, yet increasing demand and waiting list timeframes remain a significant issue.

¹⁰ Excludes School Based Mental Health and Children in Care Teams based at Whakatata House and not in scope for this DBC.

¹¹ More fit for purpose, better configured, safe facilities will support higher occupation and higher volumes of high risk patients. While 85% is the recommended occupancy for an acute unit, CAF will sit slightly below 85% to accommodate overnight leave (which is part of the model of care and is an important element for effective reintegration of the patient back into their home setting).

¹² It is accepted that H&C will run at a higher occupancy rate of 95% given the high demand for these services and the inherent difficulties in reintegrating the remaining cohort back into the community.

¹³ CDHB Annual Plan 2017/2018.

In late 2016, CAF made some changes to outpatient services to improve service delivery. These changes include:

- ► Restructuring certain outpatient services (namely the previous Youth Specialty, Child Specialty and Rural Teams) into two teams, CAF South and CAF North, Community and Outreach teams. These teams provide comprehensive psychiatric assessment and therapeutic intervention for children and adolescents throughout Canterbury aged 5-17 years (or older if still at school) in their family context. As a result of this restructure, from October 2016, outpatient services are primarily centred on two locations in Christchurch, with the CAF South Community and Outreach team located at TPMH.
- ► CDHB established a new service pathway for children under 5 years of age.
- CAF Emergency Team (CAFEm), CAFLink Team (Single Point of Entry) and CAF Community Consultation & Liaison are now jointly known as CAF Access Team and are collocated on TPMH site.
- Eight FTEs associated with Youth Forensic services (outpatient) were moved to TPMH in late 2016. The team has since grown to 10 FTE and is now collocated with the newly restructured CAF Access and CAF South Community and Outreach teams.

Future directions for SMHS

The expected future direction of EDS, M&B and CAF services were recently reviewed by all five South Island DHBs through a collaborative process. The review was completed and joint agreement obtained in late January 2018.

M&B service:

While the current model of care for M&B is consistent with Best Practice recommendations nationally and internationally, the model of care is reviewed on a regular basis through feedback and internal review. CDHB have and are undertaking research and audits into outcomes for the services, e.g. an audit of the vulnerability factors for infants of mothers admitted to the ward, and are constantly looking for ways to improve services for mothers, babies and whānau. In addition to this, feedback is provided via the South Island Mental Health Alliance.

The recent South Island DHB review reinforced the following future directions for the M&B service:

- ► Inpatient care is a crucial part of the continuum of care. However, currently the model of care admits mothers in the postpartum only, with babies up to 1 year old. In future it is considered clinically appropriate to be able to admit mothers before their babies are born e.g. third trimester of pregnancy. This would ensure safer and smoother care for mothers with severe mental illness and avoid fragmentation of care with multiple treatment teams.
- ► Infancy is the most vulnerable stage of human development and is widely recognised to be so for the first 3 years of life. The ability to provide inpatient care for mothers with toddlers would be consistent with the first 1000 days of life emphasis that is supported by CDHB. A number of units in Australia e.g. Helen Mayo House in Adelaide are already addressing this. This will have implications for facility planning, as the ward would require to be "toddler proof" e.g. no sharp corners, beverage bars need to be inaccessible to toddling children etc.
- ► The first 1000 days approach to care will also support continued growth in M&B outpatient services. However, this initiative is not just for SMHS to respond to and will be supported through the broader health system.
- Family involvement is crucial 'family stay' accommodation on the ward would allow older children as well as adult members of the family to visit their mothers and siblings in a more home-like setting.

EDS:

There is consistent growth in this area of SMHS, however, it is predicted that most of the growth will be managed in the outpatient services. The recent South Island DHB review reinforced the following future directions for EDS:

- ► Level of complexity/acuity of inpatients is increasing.
- Most likely place for growth is in the treatment of binge eating disorder, as this illness is significantly undertreated in NZ. Treatment would occur in outpatients only.
- The patient population is accessing services at a younger age. EDS demand from patients aged under 13 requires the developmental needs of children and adolescents to be recognised, and services, wherever possible, separated from services for adults. Due to the constraints of the existing EDS facilities, children aged 12 or under, with an eating disorder as their primary diagnosis, are admitted to CAF to satisfy UNCROC requirements. However, in order to improve patient experience, CDHB require facilities that enable staff to flexibly manage various patient mixes.

CAF services:

The recent South Island DHB review reinforced the following future directions for CAF services:

- ► Growth in Infant Mental Health Services consistent with the 1000 days of care approach.
- New service pathway for children under 5 years of age will contribute to the short term outpatient growth trajectory.
- ► Development of a more coordinated child development service with paediatrics.
- ► Development of a more coordinated service with disability services, OT and education services.
- Population growth in greater Canterbury (who may have less community support services necessitating longer inpatient stays and less able to access the day programme).
- Early intervention initiatives e.g. Psychosis pathway, partnerships (improved integration) with NGO's in child and youth sector.
- Looking forward, the \$28m of additional funding into Schools Based Mental Health for Canterbury and Kaikōura children is likely to provide an initial increase in outpatient volumes through the identification of more children in need. Following that initial increase, it is hoped that the success of the initiative will slow demand growth for CAF outpatient services.

Other key factors influencing SMHS services include:

- Increasing presentation of youth with high risk and complex needs, in particular those who adversely impact on the care of the other patients given the limitations of the current facilities.
- Youth Justice age has increased to 18 years, driving increased demand for Youth Forensic services (and CAF inpatient services when they meet admission criteria).
- Emphasis on community care models in which: People take greater responsibility for their own health, people stay well in their own homes and communities, and people receive timely and appropriate complex care.
- Trends towards ensuring that assessment and treatment occur in the least restrictive manner. De-escalation space is integral to reducing seclusion requirements. The models of care require de-escalation be first priority, seclusion last.

The use of ensuites for inpatient beds has become best practice, with the ability to lock these off to meet specific patient needs e.g. EDS.

The flexibility of future facilities is important to meet the changing demand and models of care over time. Co-locating TPMH based SMHS with other services at Hillmorton Hospital provides a number of opportunities for future proofing.

4.2.2 Built environment

4.2.2.1 Consideration 3: Contemporary assessments of buildings proposed for refurbishment

Recent building assessments commissioned by CDHB highlight that the seismic ratings for the Hillmorton Hospital buildings proposed for refurbishment (i.e. Building 4 and Hereford Centre) are lower than previously thought. As such, any refurbishment would trigger extensive and costly seismic upgrades. Furthermore, there is more asbestos removal work required than previously thought.

4.2.2.2 Consideration 4: Contemporary masterplanning for the Hillmorton site

With the current strategic context in mind, a rigorous process facilitated by Architects and Health Planning specialists, Klein Ltd (Klein), was undertaken to:

- Complete an indicative masterplan, detailed enough to enable sensible and logical locating of new facilities to accommodate the SMHS relocating from TPMH – noting there is an intention to commence a full and detailed Masterplan of the entire Hillmorton Hospital site within the next six months
- Identify and agree the functional scope and scale of the facilities, including car parking requirements
- ► Identify infrastructure provisions from existing and/or new site infrastructure networks
- Prepare schedules of accommodation
- ▶ Identify and agree to any residual service and facility characteristics.

The process was intended to test and refine key assumptions underlying the preferred options identified in the IBC and ensure new SMHS facilities do not obstruct future plans for the Hillmorton site.

The indicative masterplan takes into consideration the following aspects:

- ► Responsive to site context and history
- A 'heart' or hub for the facility
- Easy to navigate
- ► Site zoning
- Good site flows: Pedestrian, goods, vehicles
- Minimising travel between buildings
- Logical efficient planning and clarity of zoning
- ► Co-location of similar services
- ► Long life loose fit design
- Empty chair (future builds/decanting/future expansion)

Location of buildings

The masterplan prepared by Klein seeks to locate the family services aspects of the project brief together and in their own discrete location on the Hillmorton Hospital site. This has been identified

as the area towards the south west corner adjacent to the existing childcare centre and utilising the adjacent vacant land previously used as sports fields further toward the centre of the site.

A number of options for the location of H&C services were considered. It was agreed that H&C should be located on the carpark towards the centre of the site. This is consistent with the masterplan's future zoning which identifies this area as the flex, rehab transitional zone which is in line with the patient cohort and units' philosophy of transition back to the community. It is also close to the adult acute unit Te Awakura from which back up support can be provided and there is future expansion space adjacent for when the 'sister' unit Tupuna is replaced. There is good proximity to the central plant and replacement parking is easily achieved. There are also minimal in ground services in this area requiring relocation and there is a good sized building platform available to meet the footprint requirements.

The proposed use of the Fergusson building for outpatient services (IBC Options 3a & 3b) is not optimally located to integrate with inpatient services and associated workspaces and is inconsistent with the proposed new zoning for the site.

Functional scope and scale of the buildings

The briefing process undertaken by Klein has revealed a large increase in the estimated Gross Floor Area (GFA) required for both inpatient and outpatient services and associated workspace. The IBC was based on a GFA of 6,500m², yet the current GFA for the DBC is in excess of 10,000m². The increased GFA means that:

- ► The Hereford Centre, previously earmarked for outpatient services and associated workspace, is not of sufficient size to accommodate the current brief for both outpatient clinical space, workspace and supporting space requirements, necessitating a new build for at least outpatient services.
- Building 4, previously earmarked for H&C services, is insufficient to accommodate the current brief, necessitating extension of the facility and triggering seismic upgrades.
- Previously proposed repurposing of the aforementioned buildings on the Hillmorton site has significantly reduced marginal benefits due to the necessary extension of those facilities, extensive seismic upgrades required and related asbestos issues.
- The upfront CAPEX saving associated with the reuse of existing structures is now estimated by RLB to be circa \$1-1.5m, coupled with a shorter economic life than a new built facility, and not \$20-30m as previously thought.

The primary drivers for the large GFA variance are:

Outpatient clinical space: continued strong growth in demand, particularly for CAF outpatient services, when it was previously expected that demand would taper combined with the recent restructuring of CAF outpatient services and an error in outpatient activity reporting data, which identified that zero minutes we being attributed to certain patient contacts and therefore not accounted for when determining the outpatient space required during the IBC phase.

Workspace: under-provisioning of elements of clinical support and workspace in the IBC, exacerbated by the subsequent restructuring and colocation of CAF outpatient services.

- ► Family and whānau: recent Government emphasis on the first 1,000 days of life and integration of family support as part of the models of care, which has implications for inpatient provisions across all SMH services and for M&B outpatient demand (i.e. supporting mothers and their babies beyond the first 12 months).
- Travel and Engineering: miscalculation of Travel and Engineering allowances (circulation, corridors and space required for building plant and services) in the original IBC area calculation.

Recent CDHB facility developments have heightened the awareness and understanding of the importance of these provisions.

► Existing Buildings: further investigation of existing building stock condition coupled with the increased departmental areas noted above make reuse of existing facilities technically challenging. In order to meet area requirements there would need to be extensive additions and significant refurbishment to bring facilities up to modern codes, which undermines the financial viability of these options.

4.2.3 Policy environment

4.2.3.1 Consideration 5: Policy directives, strategies, and obligations

The case for change is framed by national and CDHB policy and planning directives for the provision of healthcare services generally and for mental healthcare specifically. There are also clinical standards and international obligations that the CDHB must meet. The main drivers that continue to be relevant to this DBC are:

- A focus on delivering efficient health care services
- CDHB vision for an integrated health system (including primary and secondary care) that keeps people healthy and well in their own homes by providing the right care and support, to the right person, at the right time and in the right place
- Ensuring that those in inpatient care particularly children are cared for in a manner consistent with international obligations
- ► A patient safety vision of 'zero harm'
- A focus on reducing long-term hospitalisation for mental health, moving towards a community based model of care in which:
 - ▶ People take greater responsibility for their own health,
 - ▶ People stay well in their own homes and communities, and
 - ▶ People receive timely and appropriate complex care.

Table 9 below provides a summary of the key strategic policy initiatives that have emerged over the past 18 months since the IBC was substantially completed and a change of government elected.



Table 9: Summary of recent	t strategic policy initiatives	
Policy	Summary	Application to CDHB / SMHS
Government Inquiry into Mental Health and Addiction	 In January 2018, the Government announced the initiation of an inquiry into Mental Health and Addiction aimed at: Identifying unmet needs in mental health and addiction Identifying those groups of people (including those not currently accessing services) for whom there is the greatest opportunity to prevent, or respond more effectively to, mental health and addiction problems Recommending specific changes to create an integrated approach to promoting mental well-being, preventing mental health and addiction problems Specifying which entities should progress the inquiry's recommendations, including relevant ministries and a re-established Mental Health Commission. The panel is required to report back to the Government with their findings and recommendations by 31 October 2018. 	 It is hoped that the inquiry findings and recommendations will ultimately provide resources and enable initiatives across the health and disability sector as well as other sectors, including: Education Social welfare Housing Justice and corrections Disability support Accident compensation Wider workplace relations and safety systems, Māori development Emergency response systems It is hoped these resources and initiatives will improve mental health outcomes across New Zealand and reduce the need for treatment in a hospital setting.
Mental health in schools programme	In February 2018, the Government announced a \$28 million plan to hire 80 in-school mental health staff for Canterbury and Kaikōura children, which will result in one mental health worker for approximately every 500 primary and intermediate age school child in Canterbury and Kaikōura. The plan is expected to be fully implemented by July 2019. This new targeted funding will allow more and earlier support for schools to take a holistic approach to the wellbeing of some of our most vulnerable community members. The team will include nurses, psychologists, psychiatrists, occupational therapists and counsellors, and will support parents as well as children.	 This boost to the number and range of health professionals and support workers focused on the wellbeing of young children will see those in need receive support sooner. CDHB has worked closely with the Ministry of Education to design a system that works for children, their families/whānau, caregivers and teachers. While these specific services are not within scope for this DBC, it is expected that additional funding into School Based Mental Health will provide an initial increase in OP volumes through the identification of more children in need. Following that initial increase, it is hoped that the success of the initiative will slow demand growth for wider CAF OP services.

4.2.4 Contract management and funding arrangements

Consideration 6: Project governance and funding arrangements

Funding of the CDHB, like other health sectors is determined by the Population Based Funding Model. Capital funding requests are approved by the capital investment committee.

The CDHB prepared IBC was approved, in September 2017, by the MOH, to proceed to DBC under the Hospital Redevelopment Partnership Group (HRPG) management structure, with contract management provided by the MOH.

The MOH has commissioned this DBC on behalf of the HRPG to provide recommendations on the preferred investment option for relocation of regional and local SMHS from TPMH to the Hillmorton Hospital site. While appropriations were made for this project on the basis of the IBC costings, additional funding approvals will be required from the Ministers of Finance and Health to support the significant increase in estimated funding required to complete the project.

4.3 Problem definition

A workshop was held on 13 February 2018 to revisit the case for change, including: problem definitions; investment objectives; and benefits contained in the Investment Logic Map for the SMHS project. The workshop was attended by representatives from the CDHB and SMHS, including clinical and non-clinical staff.

Four distinct problems, the potential benefits of addressing each problem, the strategic response and possible solutions were revisited and confirmed. The SMHS Investment Logic Map, is included in Figure 1 below.

In some cases, the problems outlined affect only one service line (e.g. CAF or H&C) in a measurable or acute way. However, as previously acknowledged, separating services is not practical. EDS and M&B are fully integrated and are small services that share nursing staff and beds, and it is impractical and inefficient to separate services further, as they rely on similar back-office and support functions. Splitting services and thereby further reducing the number of staff and patients at TPMH will decrease staff morale, increase costs and increase patient risk.

Figure 1: Transition of SMHS Investment Logic Map



Problem 1: Current configuration and capacity of facilities compromises care, which negatively impacts on patient access, experience, safety and outcomes

This problem expresses itself in several ways, with the most severe effects occurring in the CAF units.

Dated facility

SMHS facilities were retrofitted in the 1970s and are now not fit for purpose. Existing facilities and infrastructure have also been significantly impacted on by the earthquake sequences that commenced in September 2010 resulting in 44 buildings across the DHB being vacated / demolished removing options that might otherwise reasonably exist. The suboptimal configuration of these facilities negatively impacts on SMHS ability to admit patients with high and complex needs, the safety of SMHS patients, and clinical outcomes.

Limits to expanding inpatient care

Currently SMHS is limited in its ability to admit patients with high and complex needs due to the lack of a High Dependency Unit (HDU) for Children and Adolescents on TPMH site. This has led to:

- An increase in children who are being cared for in less appropriate facilities or are being turned away
- Children being secluded in order to manage risks
- ► A reduction in the total number of inpatients that can be cared for, should an individual child require intensive supervision.

Studies by the National Bureau of Economic Research show that youth who receive inappropriate or no mental health care, work 25-30% less over the next decade than peers who have appropriate care, and other studies suggest that the economic multiplier for investment in youth mental health is approximately 1:10.¹⁴

Additionally, lack of a HDU also means severely ill youth may have to be managed using seclusion or are sent to adult services, which violates the CDHB's obligations under the United Nations Convention on the Rights of the Child (UNCROC) and results in poor clinical outcomes.

Use of seclusion

The number of hours and number of seclusion events in any given year is strongly influenced by the clinical mix of patients and the nature of the existing facility. Notably, the existing facility does not allow a safe space to manage high risk patients, often requiring that the patient be separated from the rest of the patient group. In extreme cases, half of the CAF inpatient ward is closed to provide a safe and separate space leading to a temporary 50% reduction in CAF inpatient capacity. Similarly on the child side, CAF often have to put a hold on admissions to manage highly dysregulated children under 12 years of age - usually one at a time.

Seclusion events peaked at 65 in FY17, partly owing to the increasing presentation of youth with high risk and complex needs, in particular those who adversely impact on the care of the other patients given the limitations of the current facilities and the lack of appropriate facilities to care for high and complex needs patients at TPMH.

However, in FY18 CDHB mental health services adopted a new approach to inpatient care. *Safewards* is a model of care that originated out of research undertaken in the UK. The model of care offers a number of different ways to help wards understand conflict, which at times can be the reality of mental healthcare. Safewards works by using a set of ten interventions with the aim of reducing conflict and improving the way staff respond to conflict. These interventions can be as

¹⁴ <u>http://www.justicepolicy.org/images/upload/09_05_rep_costsofconfinement_jj_ps.pdf</u>

simple as setting clear mutual expectations, using soft words, mitigating bad news, mutual help and increasing mutual understanding, using calm down methods and providing reassurance approaches the teams use in their day to day practice.

Reducing seclusion has been a particular priority for CDHB. CAF staff have been working very hard to minimise seclusion and restraint, in a very challenging environment, to ensure that their practice reflects "best practice guidelines" and to ensure no further trauma is caused to young people in their care. As a result of these efforts, CAF have been effective in significantly reducing seclusion events down to a five year low of 20 events for FY18 (down 67% on FY17). However, this has come at the cost of reduced admissions, early discharge and high staffing ratios.





High incident rates

The suboptimal configuration of SMHS facilities on TPMH site is also compromising patient and staff safety. Over the last 3 years, there was an average of 670 serious incidents per annum in C-Block and H&C (444 of which being CAF). According to clinicians and nursing staff, approximately half of the incidents in H&C and 50-80% at CAF are avoidable (including missing persons), and can be attributed to suboptimal facilities. The figure below provides a summary of the number of in C-Block and H&C incidents at TPMH over the past 3 years.

Figure 3: SMHS patient incidents influenced by ward environment



In the H&C unit alone, there have been 116 incidents over the past 3 years in which an H&C patient has gone missing while in inpatient care at TPMH. This is due at least in part to the high number of

exits and entrances, which makes tracking patients difficult, and the distance of H&C from the main hospital, which makes provision of back up services more challenging in the case of an incident.

There is an opportunity to configure SMHS facilities in a way that supports delivery of care to optimum standards, increasing access to SMHS for patients with high and complex needs, while decreasing the number of incidents in which patient and staff safety is compromised, and improving patient experience and outcomes.

Compromised patient access and treatment environment for CAF North outpatient services

As previously mentioned, due to continued strong growth in demand for CAF services, CAF North outpatient services (currently located on the Hillmorton site) have become severely space constrained, whereby treatment is taking place in clinically inappropriate environments, such as very small, poorly ventilated office spaces or in thoroughfare spaces for larger group therapies and meetings.

Contacts are frequently deferred until space is available (particularly larger groups of 5+ people) or to a time of day where staff do not feel undue risk to their personal safety. As a consequence, current facilities for CAF North patients and staff are compromising patient access, privacy, safety and outcomes, along with staff safety and wellbeing.

We note that the Model of Care for this service has a multidisciplinary approach often resulting in a number of clinical staff with one patient at one time. Also, this is a children's service, meaning all patients are under 18 and would normally have at least one parent/support person with them. Both the patient and family may be working through issues together.

Problem 2: CDHB is mitigating patient safety and clinical risk through higher staffing and resourcing costs which is an inefficient use of funds

As the demand for health services increases with our growing, aging and ethnically changing population, the CDHB is under pressure to deliver more for less.

Currently the increased risk to patient safety and clinical outcomes presented by the suboptimal facilities at TPMH is managed through the use of additional clinical and non-clinical staff and resources. For example, CAF inpatient services had an average occupancy of 46% for FY17. This is largely attributable to the existing facility not allowing a safe space to manage difficult patients, often requiring that the patients be separated from the rest of the patient group. In extreme cases, half of the ward is closed to provide a safe and separate space leading to a 50% reduction in capacity. Similarly on the child side, CAF often have to put a hold on admissions to manage highly dysregulated children under 12 years of age - usually one at a time.

The nature of split service provision between Hillmorton and TPMH also incurs a cost, with nursing and clinical staff commuting between facilities. It has been estimated that this equates to between 0.5 - 1.5 FTEs of total lost clinical time, much of which could be redeployed leading to an increase in outpatient capacity of 1.25 - 3.75 patients at any given time.¹⁵

More efficient deployment of services will reduce operating costs and/or contribute to higher levels of service across SMHS.

Problem 3: Relocation of complementary services has created operational inefficiencies in both clinical and non-clinical support for mental health care

Many SMHS patients are physically compromised (particularly in EDS) and require medical care to manage their conditions. Until 2016, co-location alongside other services on TPMH site has enabled efficiencies in the delivery of these small and specialised services by utilising clinical and nonclinical services provided by OPH&R. These efficiencies have since been lost, with the recent decant

¹⁵ Based on a 2.5:1 ratio of clinicians to patients for total clinical capacity (as opposed to visit capacity).

of these services to Burwood. As a consequence, complementary clinical and non-clinical support services are now duplicated across multiple sites.

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It is estimated that the continued provision of these essential support services to the stranded TPMH site, such as Clinical Team Co-ordinators (CTC), emergency medical cover, radiology, catering and security, is driving inefficiencies totalling approximately \$685,000per annum.

Further to this, certain building services are not able to be switched off for vacant portions of the site (approximately two thirds) and legislative building compliance requires maintenance of any functional building to BWOF requirements. As a consequence, CDHB have not been able to fully realise associated building lifecycle costs relating to the vacated space. See Appendix A for further details of the cost of retaining TPMH.

Problem 4: Isolation of mental health services has negatively impacted staff safety and morale, and threatens long term service sustainability

The exit of OPH&R, corporate services and some support services from TPMH site has resulted in a significant reduction in the number of CDHB staff on site. Only a small number of SMHS staff remain at TPMH, increasing the risk to staff safety, security and morale.

Due to their compromised psychological condition SMHS patients can pose a risk to staff safety. Over the past 3 years there have been 446 incidents where staff have been physically assaulted by patients, resulting in 140 days of lost working time.¹⁶ These are only reported incidents, and with employee reporting not obligatory, anecdotal evidence suggests that the number of near-misses or unreported incidents is significantly higher.



Figure 4: SMHS assaults to staff

Uncertainty regarding the future of TPMH, and lack of communication and integration into the wider system, is also having a negative impact on staff morale. The CDHB staff wellbeing surveys indicate lower staff engagement for SMHS compared to the staff engagement level across the CDHB, with poor working conditions and substandard facilities being cited more frequently for SMHS staff. Retention rates are also lower then when compared across the system, and the use of sick days and casual staff is more prevalent. Notably, SMHS consistently rank the highest in terms of sick leave as a percentage of hours worked.

¹⁶ CDHB incident and ACC data.





With generally lower levels of staff present and a number of empty or partially empty buildings on site, the area becomes more susceptible to vandals, missing persons, and unwanted access than a fully functional and well-lit site. Increased security will mitigate some risk to staff safety but not remove it.

This isolation, uncertainty, and perception of security risk has an effect on staff morale. Nursing and clinical staff interviewed for this engagement felt that their workload had increased, and that the overall safety of the facility had decreased since OPH&R had left the site. The perception of this lack of resources and support could lead to higher stress and greater levels of burn-out.¹⁷

The collegial support that clinicians, nurses, Allied Health and support staff receive through the integration of SMHS services should not be underestimated. Studies have concluded that lower levels of integration lead to poorer care outcomes,¹⁸ and organisations with poor staff engagement and lower levels of collegiality experience a greater number of incidents for staff and patients.¹⁹

4.4 Investment objectives

The investment objectives for this project are driven by the strategic intent of the CDHB, and its approach to provision of mental health services. They are informed by the current post-earthquake

¹⁷ McTiernan, K., McDonald, N (2016) "Occupational stressors, burnout and coping strategies between hospital and community psychiatric nurses in a Dublin region."

¹⁸ Druss, B (2007) Improving Medical Care for Persons with Serious Mental Illness J. Clin. Psy. 2007:68.

¹⁹ Van Bogaert, P, et al. (2013). "Impacts of unit-level nurse practice environment, workload and burnout on nurse-reported outcomes in psychiatric hospitals."

environment, decisions taken in previous business cases, and seek to directly address the problem definitions set out above. Measures of success have been identified for each of them.

Problem	Investment	Benefit
Current configuration and capacity of facilities compromises care, which negatively impacts on patient access, safety and outcomes	Facilities are configured to deliver care of optimum standard for specialist mental health patients, including those with high and complex needs, now and in the future	Better patient outcomes and safety KPIs
CDHB is mitigating patient safety and clinical risk through higher	Specialist Mental Health Services are delivered using staffing and resourcing appropriate to the level of care	 Increased ability to accept high and complex referrals of patients, including from MSD and Justice
is an inefficient use of funds	SMHS are delivered from safe facilities, for both patients and staff	Improved efficiency in service provision
Relocation of complementary services has created operational inefficiencies in both clinical and non clinical support for mental health	Efficient delivery of specialist clinical services, and associated non-clinical support services, is improved through co-location with complementary services	Decrease in cost per discharge Increase in service provision for Regional DHBs Decrease in wraparound service costs
Isolation of mental health services has negatively impacted staff safety and morale, and threatens long term service sustainability	Staff are provided with an environment that supports multi-disciplinary functioning and provides appropriate clinical support	Improved staft wellbeing Employee engagement scores Retention rates Decrease in absenteeism Decrease in sick leave

Figure 6: Summarises the agreed problem statements, investment objectives, and benefits

While the outcomes from the SMHS project will influence whether the benefits above are achieved, there are other factors outside of the control of the project that will also affect the successful achievement of the benefits.

Measurement, timing and responsibility for achieving the benefits described will be addressed in the Management Case section of this business case.

4.5 Benefit, risks and linkages

A series of workshops and meetings were held to identify and agree the benefits sought from the project; key project risks and mitigation options; and linkages and dependencies with other projects and activities. These are set out below. The workshops and meetings were attended by representatives from the CDHB and SMHS, including clinical and non-clinical staff.

4.5.1 Benefits

The key potential benefits (monetary and non-monetary), and costs associated with the SMHS project are set out below.

Table 10: Benefits (monetary)							
Main benefits	Who benefits?	Direct or indirect?	Description and possible measures				
Reduction in adverse events and clinical risk	Staff and patients	Direct	 Avoided cost of services to mitigate and manage adverse events and clinical risk Reduced staff turnover 				
Operational efficiency gains	CDHB Society	Direct Indirect	 Reduced duplication of services and operating costs due to better configuration and colocation of SMHS facilities Reduced lifetime service cost per capita (sustainable population health costs) Reduction in cost of maintaining substandard facilities (funding released for further health services) 				
Improved workforce effectiveness	Staff CDHB	Direct	 Productive hours and related reduction in cost of non-productive hours brought about by compromised configuration and isolation of SMHS facilities 				

Detailed Business case for the on-going delivery of specialist mental health services

Table 11: Benefit:	s (non – monetary	/)		
Main benefits	Who benefits?	Direct or indirect?	Quantitative or qualitative?	Description and possible measures
Improved access to SMHS and improved health outcomes	Patients Family Society	Direct Direct Indirect	Both Both Both	 Functional status including: wellbeing and healthy years of life, quality of life indicators Family wellbeing Productivity (patient contribution to national workforce) Community participation
Reduction in adverse events and clinical risk	Patient Family Staff	Direct Indirect Direct	Both Qualitative Both	 Health and wellbeing outcomes (see above) Family wellbeing Job satisfaction and staff morale Staff attraction and retention
Improved client/patient experience	Patients Family	Direct Direct	Qualitative Qualitative	 Engagement and satisfaction with service experience and impact on personal/family wellbeing
Improved workforce effectiveness	Staff Patients	Direct Direct	Both Both	 Increased patient contact time/volumes Patient and clinician satisfaction levels
Decreased inappropriate use of social services	Government Society	Direct Indirect	Both	 Decreased use of Youth Justice Facilities. Decreased use of Oranga Tamariki services.

Table 12: Potential costs			
Main benefits	Description		Potential impacts
Capital costs	 The main elements of the Investmer require capital expenditure are: Site preparation works Development of fit-for-purpose for the structure requirements plant, car-parking, roading FF&E Decant costs Lifecycle 	it that facilities s e.g. power,	 Investment options for SMHS need to consider both short term disruption to the services and integration of long term master planning of site services Capital and lifecycle costs
Clinical and clinical support operating costs	 On-going costs of servicing fore demand for mental healthcare s across the continuum of care (fr community / localities outreach 	cast ervices fom acute to services)	 'Incremental' clinical operating costs brought about by increased capacity of SMHS – particularly OP volumes
Non-clinical support, maintenance, depreciation and capital/ interest charges	 Maintenance and non-clinical se required to maintain fit-for-purp facilities Additional operating costs assoc the depreciation and funding of facilities 	rvices ose ciated with the new	 Other 'incremental' operating costs.

4.5.2 Risks

While there are significant benefits sought from the successful delivery of the project, there are significant strategic, delivery, and operational risks that need to be considered. A project management framework was used to consider the likelihood and impact of different risks. Addressing these risks will be considered through the management case.

	Risk	Impact	Risk of	Level of impact
1	Reduced access to or quality of SMHS services as a result of substandard facilities	Many of the SMHS facilities on TPMH site are acknowledged as substandard. As a result patients with complex needs may receive care within an inappropriate environment or may be denied admission due to facility limitations.		€ €●
2	NGOs and other community organisations are unable to provide adequate support for those with major mental health issues	Patients with high and complex needs cannot be cared for by the NGO sector, leaving them at risk.	ê€ ●	
3	Timetable (drivers include approval / decision making delays - see below)	 Exposure to time delays results in increased operating and capital cost, along with increased safety, wellbeing and clinical risk due to: Cost escalation; and The continued operation of TPMH as an interim facility. 		
4	Funding	 Reprioritization of existing funding streams to lease new SMHS facilities compromises the wider Canterbury health system. 	€ €	€€
5	Scope and scale of the facility is not sufficiently flexible to cater to future growth / clinical mix	 Facility is not able to cater to patient demand and/or delivery optimum standard of care. Treatment outcomes and benefit targets are not met. Exposure to future cost escalation and costly alterations to the facility at a later stage. 		ê ê (
6	Current SMHS facilities are substandard	Many of the SMHS facilities on TPMH site are acknowledged as substandard. As a result consumers with complex needs may receive care within an inappropriate environment, may be denied admission due to facility limitations and/or family/whānau may not be able to stay to support their treatment.	€ ● €	€ €
7	Staff at TPMH site do not have access to key facilities and colleagues due to the site's isolation from the main hospital sites.	The ability of staff at TPMH site to deliver high quality services is compromised	\$ \$	ê € ●
8	The limited and fragile physical infrastructure at TPMH site leads to an increased risk of harm to consumers and staff	The infrastructure may impact safe and effective care delivery and increased potential for disruption to service delivery.	\$\$	€€
9	Anticipated reduction in demand growth for long- term / intensive mental health services does not materialise	More facilities for intensive mental health services are required than is anticipated.	€ - €	\$ • \$

			Dieles	
	Risk	Impact	Risk of occurrence	Level of impact
10	Clinical and safety risk is not adequately managed through transition from existing to new facilities	Failure to appropriately manage transition results in patient and staff stress, poor patient experience and outcomes, adverse events, increased safety incidences, poor staff morale and staff turnover	•	ê ê
11	Inefficient or ineffective governance structures	 Approval/decision-making delays (> 3 months) results in increased operating and capital cost, and increased safety, wellbeing and clinical risk due to: Cost escalation; The continued operation of TPMH as an interim facility. Ineffective governance structures lead to poor decision making and therefore a reduction in realised project benefits, including patient experience, outcomes, cost efficiencies and staff wellbeing. 		
12	Material changes to the Project scope, scale and/or cost as a result of incomplete and/or inaccurate information and assumptions underlying the Business Case and/or the procurement process	Project becomes unaffordable and/or does not represent the best value for money resulting in poor decision making and/or time delay e.g. unanticipated, adverse ground conditions		\$ \$
13	Stakeholders, including customers, staff, MOH and DHBs in the region, are not adequately engaged	 Lack of project buy-in adversely affects staff engagement and patient confidence. Other DHBs do not utilise the new SMHS facilities, resulting in excess capacity and reduction in project benefits. Failure to understand the health and staff wellbeing issues unique to SMHS, results in a facility that does not provide a best-practice environment for staff and patients. Adverse impact on patient experience and outcomes. 		1
14	Changes in model of care occur	The new model of care differs from the model of care in the concept plans, meaning the design needs to change resulting in additional cost and time delays.	•	€ €
15	Projected demand for the facility does not materialise for one or more of the SMHS (could be caused by loss of regional service contracts)	Excess capacity and therefore a reduction in realised project benefits and inefficient use of constrained health system resources.	●	€●€
16	Impact of scope and scale on market capacity (delivery)	Size and scale of the project does not allow for sufficient economies of scale, or presents limited opportunities for contractor competition, leading to increased project costs and/or delayed competition	●	\$ \$

4.6 Key stakeholders

Detailed stakeholder management and communications plans will be developed for the Project as it moves through its next stages. Stakeholder management plans aim to coordinate and create consistency of messaging for stakeholders to drive awareness, understanding, buy-in and contribution to the project. It is therefore essential that the key stakeholders are identified up-front and, where relevant, involved in the planning phases of the project.

The plan will set out a clear framework for developing and managing communications with internal and external stakeholders. A stakeholder map will be used to group stakeholders in terms of the influence they have on the Project, the impact of the Project on them and their current level of support for the Project. Mapping their position helps to determine the level and type of stakeholder activities required to inform, involve and engage with them. It also ensures that the project team invests the appropriate resources in those stakeholders who are 'critical' to the success of the Project. This enables the Governance Groups, Project Sponsor and Project Managers to:

- Ensure that the right people are involved at the right time in the process
- Empower the owners of the relationship with the key stakeholder with the right tools and materials to effectively manage stakeholder group(s)
- Encourage stakeholders to provide feedback and voice concerns.

Table 14: Key Stakeholder Groups	CN	
Stakeholder / Group	Key Concerns / Impact	Engagement strategy
MOH and responsible Ministers	Funding envelope. Integration with regional and national delivery strategies.	Engage frequently and incorporate in workshops and milestone decision gates as appropriate.
The Treasury	Funding envelope. Integration with regional and national strategies.	Engage frequently and incorporate in workshops, business case drafts and other milestone decision gates as appropriate.
Ministry for Children (Oranga Tamariki) and Youth Justice	Access to SMHS, quality of SMHS, patient experience and outcomes for children whose wellbeing is at significant risk of harm now, or in the future – including young people who may have offended, or are likely to offend.	Engage throughout the business case and design process as appropriate.
Ministry of Education	Maintaining access to Education for at risk and /or unwell children and youth, including through the Southern Regional Health School	Engage throughout the business case and design process as appropriate.
CDHB Board and sub committees	Fit for purpose, value for money investment, with principles of being: patient/family centred, an integrated health system, safe and 'long life loose fit' facilities. Alignment of investment and models of care with long-term strategic directions, including emphasis on community care models.	Project Management/Governance engagement with Board. Business case drafts and other milestone decision gates to the Facilities Subcommittee.
South Island DHBs	Other South Island DHBs fund these services via PBF based formula. The quality of these services are of ongoing importance to them.	Engage throughout the business case, design and implementation process as appropriate.
Clinicians / staff	Working conditions and personal safety, as well as models of care, patient outcomes and safety.	Ongoing engagement throughout the business case, design, planning and implementation processes. Workshops incorporating key clinical stakeholders.
Patients and their families	Quality of care provision (outcomes, relapse, etc); Safety; Quality of facilities / accommodation (environment); Access to care	Consultation with patients (as appropriate) and their families as

The key stakeholder groups are detailed in Table 15 below.

Detailed Business case for the on-going delivery of specialist mental health services

Table 14: Key Stakeholder Groups		
Stakeholder / Group	Key Concerns / Impact	Engagement strategy
	(time, location, waiting list); and Access to visitation.	part of refining the recommended option through the design phase.

4.7 Key stakeholders

Detailed stakeholder management and communications plans will be developed for the Project as it moves through its next stages. Stakeholder management plans aim to coordinate and create consistency of messaging for stakeholders to drive awareness, understanding, buy-in and contribution to the project. It is therefore essential that the key stakeholders are identified up-front and, where relevant, involved in planning phases of the project.

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Stakeholder / Group		
	Key Concerns / Impact	Engagement strategy
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Patients and their families	Quality of care provision (outcomes, relapse, etc); Safety; Quality of facilities / accommodation (environment); Access to care (time, location, waiting list); and Access to visitation.	Consultation with patients (as appropriate) and their families as part of refining the preferred option through the design phase.
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5. The economic case

5.1 Purpose

This chapter revisits the short-listed options recommended for further consideration in this DBC and provides an analysis of the costs, benefits and risks of the short-listed options and recommended way forward. In doing so, this chapter:

- ► Reviews and confirms earlier work on the long-list and short list options
- ► Reviews the recommended options contained in the IBC to ensure that they are:
 - Likely to deliver the investment objectives and critical success factors
 - ► Likely to deliver sufficient benefits and deliver value for money
 - ► Still considered to be realistic and achievable
- Provides a more detailed analysis of the costs, benefits and risks of the updated short-list and recommended options.

5.2 Revisiting the IBC options

5.2.1 Contemporary masterplanning for the Hillmorton site

The IBC for SMHS recommended two options (Options 3a and 3b) be progressed to DBC for more detailed and rigorous assessment. Both options, with an estimated capital cost of between \$47m and \$57m, were mixture of new build and refurbished facilities on the Hillmorton Hospital site and sought to provide the best balance between achieving desired strategic, clinical and operational outcomes for SMHS with the costs of completing the project.

With the IBC recommendation to relocate SMHS from TPMH site to the Hillmorton Hospital site and the current strategic context in mind, a rigorous process facilitated by Architects and Health Planning specialists, Klein, commenced in February 2018. This process set out to complete an indicative masterplan for the Hillmorton site, detailed enough to enable sensible and logical locating of new SMHS facilities, identify and agree the functional scope and scale of the facilities, including car parking requirements, and prepare schedules of accommodation.

The process was intended to test and refine key assumptions underlying the preferred options identified in the IBC and ensure new SMHS facilities do not obstruct future plans for the Hillmorton site. Key conclusions of the masterplanning process are outlined below and further illustrated in Appendix B:

- ► The masterplan seeks to locate the family services aspects of the project brief (CAF, Mothers and Babies and Eating Disorders Services) together and in their own discrete location on the Hillmorton site. It was agreed that these services should be located at a distance from the adult acute services on the site. This has been identified as the area towards the south west corner adjacent to the existing childcare centre and utilising the adjacent vacant land previously used as sports fields further toward the centre of the site (see Appendix B: SK-004 for details).
- ► A number of options for the location of H&C services were considered (see Appendix B: SK-003 for details). It was agreed that H&C should be located on the carpark towards the centre of the site (Option F). This is consistent with the masterplan's future zoning which identifies this area as the flex, rehab transitional zone which is in line with the patient cohort and units' philosophy of transition back to the community. It is also close to the adult acute unit Te Awakura from which back up support can be provided and there is future expansion space adjacent for when

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the 'sister' unit Tupuna is replaced. There is good proximity to the central plant and replacement parking is easily achieved. There are also minimal in ground services in this area requiring relocation and there is a good sized building platform available to meet the footprint requirements.

- ► During the course of the detailed investigation, the assumptions underlying the preferred options presented in the IBC were revisited. As noted previously, the SoA for all SMHS currently stranded on TPMH has now been built up by the project team and this has resulted in a large increase in estimated areas from those used in the formation of the IBC. The IBC was predicated on a GFA totalling 6,500m² and the current estimates area in excess of 10,000 m².
- ► A result of recent Hillmorton site investigations and the increased scale of development, it is now considered uneconomic to repurpose the originally proposed buildings (Buildings 4 and 9, see Appendix B: MP-012 for details). Forecast capital costs to provide new facilities on the Hillmorton site for all SMHS currently stranded on TPMH site are now in a range between \$98m and \$103m - depending on the option being considered (see Appendix E for further details of QS estimates). Forecast facility operating costs will increase accordingly.

5.3 Options development

5.3.1 Context for options development

The identification and development of the DBC options was informed by the problems identified in the Strategic Case, current and projected demand for SMHS, international trends in models of care, best practice and learnings from comparable Mental Health Hospitals. Further to this, previous decisions have foreclosed some options that might have been considered under other circumstances.

The options developed during this DBC process focus on replacing the currently utilised capacity at TPMH, in doing so delivering:

- ▶ Better patient experience, improved access to SMHS and improved clinical outcomes
- Improved safety for patients and staff
- ► Staffing and resources appropriate to the level of care
- ► Efficiencies through co-location of complementary services
- Appropriate clinical and non-clinical support and an environment that supports multidisciplinary functioning

It is important to note that none of the options considered assume an increase total bed numbers, nor do they increase staffing requirements. In fact, H&C beds are expected to decrease and in some cases, the total staffing requirements are expected to decrease. The benefits that some options have over others are driven by the efficiency and efficacy of the investment solution.

5.3.2 Description of short list options

As noted in the IBC, the continued delivery of SMHS from TPMH was intended to be temporary, and previous decisions have essentially foreclosed the possibility of its ongoing use. Continued operation of SMHS at TPMH site presents a range of clinical, financial, practical, and personnel issues that make it inappropriate for a base case. It is also not possible to cease the provision of SMHS in Christchurch, for the reasons noted in the Strategic Case. Therefore, the CDHB considered there was no feasible 'do minimum' or 'do nothing' option for baseline comparison.

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The DBC considers three short list options and a fourth as a counterfactual. All options contain a new Integrated Family Services Centre (IFSC) and ancillary requirements (site infrastructure expansion/upgrades, car parking, roadway / footpaths / landscaping).

Options then vary by adding other facilities - single storey H&C inpatient unit (with associated workspace), TPMH based CAF outpatients clinical and workspace (including CAF South and CAF Access teams) and finally CAF North workspace (CAF North is already on the Hillmorton site but in older cramped facilities and portacoms). Drawings provided in Appendix D depict the options in graphical format.

The IFSC provides CAF, EDS and M&B inpatient services, along with EDS and M&B outpatient services on the ground level and associated workspace on the upper level. The inpatient portion of this building has a total of 29 inpatient beds (plus space for 5-7 cots in M&B) and the unit is physically split into two: the CAF unit which is separated from M&B / EDS which are adjacent. Each unit is then further split into different cohorts of patients to meet clinical and flexing needs and also to meet UNCROC requirements of separating adults from adolescents and children.

There is separate provision for the specialist programme for CAF day patients and the Southern Regional Health School (presently collocated with CAF inpatient services on TPMH site) to provide education services for both inpatients and outpatients across the CAF and EDS services. All areas allow for integration of family support as part of their therapy.

All options contain the new IFSC on the Hillmorton site. Therefore the key differentiating features of the short list options are outlined below:

- ▶ Option 1 (GFA 10,474m² estimated capital cost \$97.7m): includes a new H&C inpatient unit and new CAF outpatients and community building on the Hillmorton site. The CAF outpatients building provides for CAF outpatients clinical area and CAF South, Access and Management workspace. CAF North workspace is not provided for and remains in its current location on the Hillmorton site.
- Option 2 (GFA 11,322m²- estimated capital cost \$103.3m): includes a new H&C inpatient unit and new CAF outpatients and community building on the Hillmorton site. The CAF outpatients building provides for CAF outpatients clinical area and CAF South, North and Access and Management workspace.
- Option 3 (GFA 7,880m²- estimated capital cost \$79.0m): includes a new H&C inpatient unit on the Hillmorton site. However, the new CAF outpatients and community building is not provided and those services and teams would remain on TPMH site until appropriate leased space is sourced. CAF North is not provided for and remains in its current location on the Hillmorton site.

Not included in the above capital cost is an estimated \$8.9m of fitout and FF&E costs that would necessarily be incurred in order to provide CAF outpatient services and associated workspace (currently located at TPMH) from a clinically appropriate and adequately sized leased space (estimated to be a further 2,346m² of purpose built leased space in close proximity to the new IFSC, including associated workspace). The advancement of lease arrangements for CAF outpatients would be subject to a separate planning and business case process, which would be advanced by CDHB independent of this business case.

Option 4 counterfactual (GFA 6,034m²- estimated capital cost \$81.1m): has been explored to demonstrate what could be delivered as close to the IBC forecast capital cost (\$57m) as possible. While the provision of the IFSC only brings the capital cost closer to the original budget, Option 4 would leave H&C, CAF outpatients and associated workspace remaining isolated on TPMH site. Contemporary investigations reveal that significant works would need to be undertaken to continue to provide H&C and CAF outpatient services from the TPMH site, thus driving to the capital cost up well beyond the IBC budget.

5.3.3 IFSC benchmarking

The IFSC as a whole integrates a number of different patient cohorts and functions, including outpatient areas for M&B and EDS teams due to the small staffing numbers for this regional service. Due to the specialist nature of the proposed facility and the lack of other similar units in New Zealand it is difficult to accurately compare units for benchmarking. Analysis of nett areas (i.e. excluding outpatient areas, the Southern Regional Health School, building travel and engineering) benchmarks the inpatient area at 116m²/bed against a typical general adult acute units at around 90 m²/bed.

Key differences with this type of specialist mental health facility, as compared to general adult acute units, are:

- Small numbers of beds for the range of different patient cohorts leading to spatial inefficiencies. For example, IFSC is physically split into two sections as described above. Each has a dirty utility, so two dirty utilities for 29 beds (standard dirty utility is around 12m²) whereas Middlemore has one dirty utility per 38 beds.
- Other variances include: needs of children and adolescents (including adequate provision of appropriate outdoor spaces and meeting UNCROC requirements); need for separation of children from youth; needs of babies admitted to the M&B unit; family being integral to care for all three services; need for separate areas for M&B and EDS; and higher average length of stay.

Australasian Health Facility Guidelines (AHFG) guideline sizes for mental health rooms are 14m² and 18m² for those with extra space requirements. Inpatient bedroom sizes proposed for the M&B unit are larger for the following reasons (EDS rooms are 14m²):

- Larger rooms of 22m² are provided for the M&B unit to accommodate additional equipment needs such as: cot, second bed for child or support person, feeding chair, etc.
- Due to the relatively low bed numbers, the ability to flex some rooms between M&B and EDS cohorts is essential to meet varying demand. These flex rooms are 18m², larger than EDS needs but able to cater for M&B where additional support space is not required.
- Being regional services, two larger 1-bed suites have been provided to provide accommodation for the wider family / partner / support person / other dependent children in the IFSC unit.

With respect to interview spaces, where outpatient treatment is undertaken, the Model of Care for M&B and EDS has a multidisciplinary approach often resulting in a number of clinical staff with one patient at one time. This service is also provided to children, meaning all patients under 18 years of age would normally have at least one parent/support with them; all resulting in slightly larger than standard interview rooms. AFHG sizes interview rooms in a CAF setting are 14m².

In addition, consultation length is increased for these specialist services compared with general adult mental health services - meaning additional number of rooms to cater for demand. Patients, including children, adolescents and mothers with babies and young children, are often not attending on their own. For this complex group of patients it is common for both the patient and family to be working through issues together.

To allow for a more representative comparison to recent New Zealand mental health developments Klein have assessed the SoA and extracted areas that are considered over and above what would be required for a less complex, single patient cohort or general acute adult unit, in an attempt to compare areas on a more like for like basis.

Table 16:					
	Functional Area m ²	Total beds	Deduct 'specialist' area m ²	Comparable Functional Area m ²	Comparable area per bed
CAF inpatient	1,867	16	(251)	1,616	101m ² /bed
M&B / EDS inpatient	1,502	13	(278)	1,224	94m ² /bed
Total inpatient for IFSC	3,369	29	(529)	2,840	98m ² /bed
H&C inpatient	1,518	16			95m ² /bed
Middlemore AMHU		76			85m ² /bed
Mason clinic T2 - standardisation		15			100m²/bed

The above assessment shows that when the areas required to provide 'specialist care' required for SMHS are deducted from the functional area and benchmarked against two recent adult inpatient mental health units (Middlemore and Mason Clinic), the area per bed is comparable noting however the issues relating to economies of scale of the Middlemore unit making that area per bed a relatively lower number.

5.4 Options assessment

5.4.1 Overview of the options assessment

The short list options and counterfactual were assessed against the Investment Objectives and the Critical Success Factors in a workshop with key personnel from the CDHB. The purpose of this assessment was to determine the extent to which options achieve the investment objectives in a way that delivers project success, and to ensure that internal and external stakeholders are clear about the rationale for advancing the recommended option.

The results of the assessment of the short list of options against the Investment Objectives and Critical Success Factors are summarised in the table below. The assessment scoring scale is explained below:

- Investment Objective (IO) assessment to ensure each option has the potential to achieve the desired benefits for the Project, each of the options was ranked with a score of Exceeds (dark green), Meets (light green), Partially Meets (amber), or Does Not Meet (red) for each of the respective Investment Objectives.
- Critical Success Factors (CSF) assessment each option was awarded a score between 1 to 5 based on the extent to which the option is expected to achieve or contribute to each of the respective Critical Success Factors. Following the initial scorings, the weighting of each criterion were applied to the raw scores to arrive at a weighted percentage score for each option and an implied ranking.

The comparative advantages and disadvantages of the short list options are summarised in the table below.

Table 17: Concise Option	s Appraisal	\sim
Options	Advantages	Disadvantages
Option 1: New build at Hillmorton, excluding CAF North workspace	 Increased safety, better layout and improved flexibility means a greater number of complex patients could be cared for. For example, increased CAF demand could be catered for through reconfiguration as it would enable greater accommodation of high-needs patients, and would not require seclusion Core staff costs remain the same, but additional nursing, security and support staff costs associated with being stranded on TPMH could decrease Infrastructure upgrades are already required for Hillmorton site, providing an opportunity for low marginal cost upgrades Design could allow for better patient experience leading to better clinical outcomes Efficiencies gained from having a single site offering all services A more flexible facility for current H&C service could be used in the future to cater for other mental health services based on emerging needs/requirements 	 Existing infrastructure is insufficient Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility The physical separation of CAF North clinical space from workspace across the Hillmorton site, will drive a level operating inefficiency and discontent with affected staff. However, it is expected that the majority of these risks can be carefully managed through different working approaches and therefore the residual efficiency impact is not considered material.
Option 2: New build at Hillmorton, including CAF North workspace	 Increased safety, better layout and improved flexibility means a greater number of complex patients could be cared for. For example, increased CAF demand could be catered for through reconfiguration as it would enable greater accommodation of high-needs patients, and would not require seclusion Core staff costs remain the same, but additional nursing, security and support staff costs associated with being stranded on TPMH could decrease Infrastructure upgrades are already required for Hillmorton site, providing an opportunity for low marginal cost upgrades Design could allow for better patient experience leading to better clinical outcomes Efficiencies gained from having a single site offering all services A more flexible facility for current H&C service could be used in the future to cater for other mental health services based on emerging needs/requirements 	 Existing infrastructure is insufficient. Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility.
Option 3: New inpatient build at Hillmorton, excludes CAF	 Increased safety, better layout and improved flexibility means a greater number of complex patients could be cared for. For example, increased CAF demand could be catered for through reconfiguration as it would 	 Existing infrastructure is insufficient.

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Table 17: Concise Option	s Appraisal	\mathcal{O}
Options	Advantages	Disadvantages
outpatients clinical and workspace	 enable greater accommodation of high-needs patients, and would not require seclusion Core staff costs remain the same, but additional nursing, security and support staff costs associated with being stranded on TPMH could decrease Infrastructure upgrades are already required for Hillmorton site, providing an opportunity for low marginal cost upgrades Design could allow for better patient experience leading to better clinical outcomes A more flexible facility for current H&C service could be used in the future to cater for other mental health services based on emerging needs/requirements 	 Risk that certain patients (particularly parents of youth) perceive Hillmorton as a less desirable location given that it is also an adult acute mental health and forensic facility. Lost efficiencies that would have been gained from having a single site offering all CAF outpatient services. Additional costs associated with lease fitout and lease payments will necessarily be incurred. While the option would benefit from the colocation of inpatient services alongside other mental health services at Hillmorton, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces.
Option 4: Counterfactual New inpatient build for CAF, M&B and EDS at Hillmorton, excludes H&C and CAF outpatients clinical and workspace	 Makes use of existing CDHB facilities Lower CAPEX costs compared with Options 1 and 2 (however higher whole of life costs than other short list options) 	 The current configuration of SMHS facilities on TPMH site are not conducive to supporting best practice - compromising patient experience, clinical outcomes and increasing risks to staff and patients. This increased risk is currently being mitigated through increased staffing and resources, drawing resources that could otherwise be used to deliver greater care across the system, or retained by the CDHB as financial savings. Given the relatively small size of these facilities, it is not considered appropriate to continue to 'strand' these services away from medical, clinical, and back-office support in the long term. It is both inefficient, and likely to lead to long-term morale and service delivery issues. Option necessitates costly repairs to infrastructure on TPMH site (notwithstanding the significant costs to refurbish, strengthen and "make safe" the SMHS facilities), and will continue to incur site/facility specific operational inefficiencies totalling approximately \$1.7m per annum. It would also require the refurbishment and strengthening of existing SMHS facilities and the demolition of immediately proximate buildings to make the site safe from seismic risk. The retention of services onsite would reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold while an active [mental health] facility remains on-site or those portions of the site would be sold at a discount. Does not accomplish the original goal of vacating TPMH site.
	REFER	

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Ministry of Health & Canterbury District Health Board Detailed Business case for the on-going delivery of specialist mental health services

5.4.2 Assessment against Investment Objectives

Each option was assessed against the Investment Objectives defined in the Strategic Case. The following table reflects the scoring against each , tabe FORMATIO investment objective.

Indicator	Explanation
	Does not meet the investment objective
	Partially meets the investment objective
	Meets the investment objective
	Exceeds the investment objective

Table 18: Assessment of Short List of Options against Investment Objectives					
Investment Objectives	Option 1	Option 2	Option 3	Option 4	
1. Facilities are configured to deliver care of an optimum standard for specialist mental health patients, including those with high and complex needs, now and in the future	Meets	Meets	Meets	Does not meet	
2. Specialist Mental Health Services (SMHS) are delivered using staffing and resourcing appropriate to the level of care	Meets	Meets	Meets	Does not meet	
3. SMHS are delivered from safe facilities, for both patients and staff	Meets	Meets	Meets	Does not meet	
4. Efficient delivery of specialist clinical services and associated non- clinical support services is improved through co-location with complementary services	Meets	Meets	Partially Meets	Does not meet	
5. Staff are provided with an environment that supports multidisciplinary functioning and provides appropriate support	Partially Meets	Meets	Partially Meets	Does Not Meet	

Table 19: Investment Objectives assessment commentary

Investment Objective Commentary Investment Objective 1: Options 1, 2 and 3 met this objective. Facilities are configured to Current inpatient facilities configuration compromises care, which negatively impacts on patient access, including the ability to accept referrals from deliver care of an optimum Oranga Tamariki and MoJ. All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines. New inpatient and standard for specialist outpatient facilities will provide improved patient experience, appropriate care for U13 inpatients with eating disorders, space for families of CAF, M&B mental health patients, and EDS patients, flexibility to manage different patient cohorts, complexities and gender, and will be adaptive to changes in MoC and demand for mental including those with high health services. Further to this, new facilities allow for the decommissioning and disposal of TPMH site.

Table 19: Investment Object	ives assessment commentary
Investment Objective	Commentary
and complex needs, now and in the future	Patient experience, including patient safety, privacy, environmental autonomy, access to outdoor spaces, cultural sensitivity, transition between services, least restrictive practices and aesthetics, is compromised by the current configuration and aesthetics of inpatient facilities, along with insufficient, inappropriate, unpleasant, difficult to find and unsafe outpatient facilities (CAF North in particular), including waiting areas. It is understood that these environmental factors contribute to the high DNAs, high patient incidents, avoidable patient complaints for SMHS and therefore reduced patient outcomes.
	 Options 1, 2 and 3 will provide significantly improved patient experience for both inpatient and some outpatient services in Option 3 through the provision of adequate and appropriate therapeutic environments, ability to heat and cool as required, access to refreshments, flexibility to manage different patient cohorts/complexities, ages, gender and physical disabilities, appropriate care for U13 patients with eating disorders, space for families of CAF, M&B and EDS patients.
	While the new facilities will provide flexibility to manage different patient cohorts/complexities, ages, gender and physical disabilities, and will be adaptive to changes in MoC and future demand for mental health services, leaving CAF north in its current location provides reduced flexibility and is inconsistent with masterplanning for the Hillmorton site.
	Insufficient, unpleasant, inappropriate and unsafe outpatient facilities, including waiting areas, currently limits access to: individual and group therapy and multidisciplinary meetings (particularly CAF North). Options 1 and 2 will provide improved access to services through the provision of appropriate spaces.
	Option 4 does not meet this objective for the reasons outline in the Strategic Case. The continued use of H&C facilities on TPMH site hinders the ability to provide an optimum standard of care for H&C services. Further to this, it does not accomplish the original goal of vacating TPMH site.
Investment Objective 2: Specialist Mental Health	 Options 1, 2 and 3 all meet this objective. Colocation of SMHS inpatient teams with complementary services at Hillmorton and more efficient configuration of facilities support appropriate staffing and resourcing levels.
Services (SMHS) are delivered using staffing and resourcing appropriate	 Option 1: It is acknowledged that the physical separation across the Hillmorton site of CAF North clinical space from workspace, will drive a level operating inefficiency. However, it is expected that the majority of these inefficiencies can be managed through different working approaches and the residual impact is not material.
to the level of care	 Option 4 does not meet this objective for the reasons outline in the Strategic Case:
	 Further fragmentation of services across multiple sites creates significant inefficiencies.
	Retaining TPMH necessitates costly repairs to infrastructure (notwithstanding the costs to refurbish, strengthen and "make safe" the SMHS facilities), and will continue to incur site, location and facility specific operational inefficiencies totalling circa \$1.7m per annum.
	• The retention of services onsite would significantly reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold while an active mental health facility remains on-site or those portions of the site would be sold at a discount.
	 Further to this, it does not accomplish the original goal of vacating TPMH site.
Investment Objective 3: SMHS are delivered from safe facilities, for both patients and staff	Options 1, 2 and 3 all meet this objective. New inpatient facilities will provide: appropriate spaces to withdraw, de-escalate and for staff to observe; anti- ligature fittings; multiple room and building access points; and flexibility to manage different patient cohorts/complexities, ages, gender and physical disabilities. Configuration of new purpose built facilities provides improved safety for staff and patients. Colocation of SMHS inpatient teams with other mental health services at Hillmorton provides better support in terms of staff specifically trained in managing acute behavioural episodes and medical emergency cover over 24h.
	However, for Option 1 there are concerns for staff safety when commuting between CAF North workspace and clinical space, particularly outside of peak hours that will need to be carefully managed through the provisioning of appropriate pathways and lighting. Option 1 scoring assumes appropriate pathways and lighting will be provided for ease and safety of commuting between CAF North workspace and the new CAF outpatients facility on the Hillmorton site.

Table 19: Investment Object	ives assessment commentary
Investment Objective	Commentary
	Option 4 does not meet this objective for the reasons outline in the Strategic Case. Configuration of existing H&C facility does not adequately support staff and patient safety. Clinicians estimate that approximately half (circa 120 per annum) of H&C incidents involving escape, patient-on-patient or patient-on- staff violence, and self-harm a year are attributable to the nature of the building i.e. not providing adequate natural security/sightlines or meeting modern facility standards, including anti-ligature windows and fireproof / fire-retardant walls.
Investment Objective 4: Efficient delivery of specialist clinical services and associated non-clinical support services is improved through co- location with complementary services	 Options 1 and 2 meet this objective. Both options would be located at Hillmorton alongside other mental health services. This will provide for significant clinical integration and clinical efficiency, reduce travel times for clinicians who currently operate across two sites, and would provide an opportunity for care to be better integrated with other services. Option 3 only partially meets this objective. While the option would benefit from the colocation of inpatient services alongside other mental health services at Hillmorton, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces. Option 4 does not meet this objective for the reasons outline in the Strategic Case: SMHS remain isolated on TPMH site, away from other mental health colleagues and relevant support services.
	 Further fragmentation of services across multiple sites creates significant inefficiencies.
Investment Objective 5: Staff are provided with an environment that supports multidisciplinary functioning and provides appropriate support	Option 2 meets this objective. Colocation of SMHS with complementary services at Hillmorton and colocation of CAF services supports optimal multi- disciplinary functioning, along with professional and personal support in a mental health setting and improved connectedness between SMHS (e.g. between CAF North and CAFEm) and with other mental health services (e.g. between H&C, Tupuna and Acute). Colocation of SMHS with other mental health services at Hillmorton provides better support in terms of staff specifically trained in management of acute behavioural episodes and medical emergency cover over 24h.
	Options 1 and 3 partially meet this objective. For Option 1, fragmentation of CAF outpatient workspace and clinical space across the Hillmorton site diminishes opportunities to facilitate stronger clinical communities through informal multi-disciplinary interactions, thereby avoiding unnecessary patient contact and/or providing better quality care for patients. Further to this, divergent working conditions between different CAF OP teams, inefficiencies of moving between workspace and clinical space and diminished opportunities for building collegial relationships is expected to have an impact on CAF North staff wellbeing, which will need to be carefully managed. For Option 3, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through the greater use of the IFSC assessment spaces.
	 Option 4 does not meet this objective for the reasons outline in the Strategic Case i.e. isolation of H&C on TPMH site.

Jetter space and c which will need to b. e clinical risk, which is likely ison 4 does not meet this objective for Health Board Yer

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5.4.3 Critical Success Factors

Critical Success Factors (CSFs) set out the attributes that are essential for the successful delivery of the Project in terms of meeting the Investment Objectives set out in the Strategic Case. They form the "assessment framework" that all potential scope and scale Project options are assessed against in the Economic Case, to ensure the options deliver essential elements for the Project's success.

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The CSFs were reviewed and validated by the Project Team at a workshop facilitated by EY on 5 October 2018. Workshop participants included the representatives from Canterbury DHB.

Weightings totalling to 100% were applied to the CSFs to reflect the relative importance of each factor in driving successful delivery of the Investment Objectives.

Table 20: Critical Success Factors				
Critical Success Factors	Description	Weighting		
Strategic Fit/Integration with Existing Plans	How well does the option align with DHB strategic plans, master plans for the Hillmorton site, Mental Health guidelines, and other policy requirements and directives?	10%		
Patient Experience & Quality of Care	 How well does the option facilitate the delivery of positive patient experiences (including patient safety, environmental autonomy and aesthetics) and support positive patient outcomes in terms of: Quality of life Symptom severity Relapse 	20%		
Integration / Complementarity	How well does the facility integrate with existing service provision in the region and provide and utilise complementary services from other facilities?	15%		
Adaptability & Sustainability	How quickly and efficiently is the option able to flex to the needs of different patient cohorts and future SMHS demand and trends (including the need to service additional patient demand, e.g. from Justice, MSD, and Regional DHBs)?	15%		
Transitional Feasibility	How much disruption is caused to staff and patients as a result of implementing the option?	5%		
Employee Wellbeing & Engagement	How well does the option support employee safety and engagement (via methods such as providing a collegial environment and an environment that supports strong multi-disciplinary functioning, etc) leading to higher levels of employee retention and performance?	20%		
Value for Money	 How well the option achieves: Economy (minimising use of resources) Effectiveness (delivering the right thing) Efficiency (allocating resources well to deliver best system wide outcomes) 	15%		

The identified CSFs and their respective weightings are set out in Table 20 below.

5.4.4 Long list assessment against Critical Success Factors

The evaluation and supporting commentary is presented below. The following rankings are used for the assessment of how well each option meets the Critical Success Factors.

Score	Interpretation			Score	Interpretation		
1	Very Poor			4	Good		
2	Poor			5	Excellent		
3	Average						Ć.
Table 2	Table 21: Summary assessment of short list options against the Critical Success Factors						
Critical	Success Factors	Weight	Option 7	1	Option 2	Option 3	Option 4
Strateg Existing	gic Fit / Integration with g Plans	10%	4		5	4	1
Patient	tOutcomes	20%	5		5	4	2
Integra	tion / Complementary	15%	5		5	4	1
Adaptability and Sustainability		15%	5		5	4	2
Transitional Feasibility		5%	5		5	5	2
Employ Engage	vee Wellbeing and ement	20%	3	P	4	4	1
Value f	for Money	15%	4	(C) ^N	5	2	1
			2				
Total – Unweighted			30		34	27	10
Rank - Unweighted			2		1	3	4
Total – Weighted			4.2		4.8	3.8	1.4
Ranking		8	2		1	3	4

Critical Success Factor 1 - Strategic fit / integration with existing plans

Description: How well does the option align with DHB strategic plans, master plans for the Hillmorton site, Mental Health guidelines, and other policy requirements and directives?

	Table 22:	CSF-1	
	Option	Score	Commentary
~	1	4	All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines. However, leaving CAF north workspace in its current location is inconsistent with masterplanning for the Hillmorton site.
X	2	5	All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines. Incorporating CAF north workspace is consistent with recent masterplanning for the Hillmorton site.
	3	4	All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines. However, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces.
	4	1	This option does not meet the strategic objectives of the CDHB for the reasons outlined in the Strategic Case. The retention of services on TPMH site would reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold

Table 22: CSF 1				
Option	Score	Commentary		
		while an active [mental health] facility remains on-site or those portions of the site would be sold at a discount. Furthermore it does not accomplish the original goal of vacating TPMH site.		

Critical Success Factor 2 - Patient experience and quality of care

Description: How well does the option facilitate the delivery of positive patient experiences (including patient safety, environmental autonomy and aesthetics) and support positive patient outcomes in terms of: Quality of life? Symptom severity? Relapse?

Table 23:	CSF 2	
Option	Score	Commentary
1	5	All new builds will be configured to deliver high-quality care, and will meet the Australasian
2	5	and patients by ensuring the delivery of best-practice layout.
3	4	All new builds will be configured to deliver high-quality care, and will meet the Australasian Guidelines. However, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces.
4	2	The ability to provide staff cover in the case of staff leave and psychiatric emergency would be compromised relative to options that are integrated on site at Hillmorton.
		The use of refurbished facilities for H&C services reduces: patient experience, flexibility to manage different patient cohorts/complexities and gender and adapt to changes in MoC - hindering the ability to provide an optimum standard of care for H&C services. Patient safety is also compromised for H&C.

Critical Success Factor 3 - Integration / complementarity

Description: How well does the facility integrate with existing service provision in the region and provide and utilise complementary services from other facilities?

Table 24: CSF 3			
	Option	Score	Commentary
	1	4	Facilities that are located together on the Hillmorton Hospital site will provide for the greatest level of complementarity and integration. However, fragmentation of CAF teams across site diminishes opportunities to facilitate stronger clinical communities through informal multi-disciplinary interactions.
	2	5	Facilities that are located together on the Hillmorton Hospital site will provide for the greatest level of complementarity and integration.
			Bringing together CAF on a single site will generate a stronger clinical community.
	6	S	Colocation of SMHS with other mental health services at Hillmorton provides better support in terms of staff specifically trained in managing acute behavioural episodes.
0	3	4	Facilities that are located together on the Hillmorton Hospital site will provide for the greatest level of complementarity and integration. However, the separation of the CAF Emergency outpatient team from inpatient services poses some clinical risk, which is likely to be managed through less efficient delivery of services and greater use of the IFSC assessment spaces.
X	4	1	H&C and CAF outpatient services would remain isolated on TPMH site, away from other mental health colleagues and relevant support services. In addition to clinical and safety risks, further fragmentation of services across multiple sites creates significant inefficiencies.
			Splitting services, even those that are clinically separable, would have an impact on nursing and support services sharing e.g. school facilities and appropriately skilled staff to assist with psychiatric emergencies.

Critical Success Factor 4 - Adaptability and sustainability

Description: How quickly and efficiently is the option able to flex to the needs of different patient cohorts and future SMHS demand and trends (including the need to service additional patient demand, e.g. from Justice, MSD, and Regional DHBs)?

Table 25:	Table 25: CSF 4				
Option	Score	Commentary			
1	5	New facilities will provide flexibility to manage different patient cohorts/complexities and gender, and will be adaptive to changes in MoC and future demand for mental health services.			
2	5	New facilities will provide flexibility to manage different patient cohorts/complexities and gender, and will be adaptive to changes in MoC and future demand for mental health services.			
3	4	New facilities will provide flexibility to manage different patient cohorts/complexities and gender, and will be adaptive to changes in MoC and future demand for mental health services. Leased outpatient facilities may limit flexibility or flexibility may come at a greater cost.			
4	2	The configuration and isolation of SMHS facilities on TPMH site do not enable the CDHB to be adaptable and flexible to future SMHS demand and trends. Refurbished facilities, particularly H&C facilities, will limit the ability of the SMHS offering to respond to changes in service demand, due to the age, inflexibility, or design of refurbished facilities.			

Critical Success Factor 5 - Transitional feasibility

Description: How much disruption is caused to staff and patients as a result of implementing the option?

Table 26:	Table 26: CSF 5				
Option	Score	Commentary			
1	5	Building a new facility limits the transitional challenge as staff and patients can easily move into the new facility as / when ready. However, it is noted there will be some disruption CAF north staff as they adapt to a new way of working between outpatient clinical and workspace.			
2	5	Building a new facility limits the transitional challenge as staff and patients can easily move into the new facility as / when ready.			
3	5	Building a new facility limits the transitional challenge as staff can easily move into the new facility as / when ready.			
4	2	Would require the refurbishment and strengthening of existing SMHS facilities and the demolition of immediately proximate buildings to make the site safe from seismic risk - causing disruption to patients and staff.			

Critical Success Factor 6 - Employee retention

Description: How well does the option support employee safety and engagement (via methods such as providing a collegial environment and an environment that supports strong multi-disciplinary functioning, etc) leading to higher levels of employee retention and performance?

Table 27: CSF 6			
$\hat{\mathbf{A}}$	Option	Score	Commentary
X	1	3	Configuration of new inpatient facilities provides improved safety for staff and patients. Colocation of SMHS with other mental health services at Hillmorton provides better support in terms of staff specifically trained in managing acute behavioural episodes.
			However, fragmentation of CAF teams across the Hillmorton site diminishes opportunities to facilitate stronger clinical communities through informal multi-disciplinary interactions, thereby avoiding unnecessary patient contact and/or providing better quality care for patients. The physical separation of CAF North clinical space from workspace across the Hillmorton site, will drive a level operating inefficiency and discontent with affected staff.
	2	4	

Table 27: CSF 6				
Option	Score	core Commentary		
3	4	Configuration of new inpatient facilities provides improved safety for staff and patients. Colocation of SMHS with other mental health services at Hillmorton provides better support in terms of staff specifically trained in managing acute behavioural episodes.		
4	1	SMHS OPD services are left isolated from medical, clinical, and back-office support on TPMH site, which is both inefficient and likely to lead to long-term morale and service delivery issues.		

Critical Success Factor 7 - Value for money

Description: How well the option achieves economy: (minimizing use of resources), effectiveness (delivering the right thing), efficiency (allocating resources well to deliver best system wide outcomes?

Option Score 1 4 2 5	CommentaryBy collocating services on the Hillmorton site this option will provide benefits in terms of patient care, staff integration, and service efficiency. While it is acknowledged that the physical separation across the Hillmorton site of CAF North clinical space from workspace, will drive a level operating inefficiency. However, it is expected that the majority of these inefficiencies can be managed through different working approaches and the residual impact is not expected to be significant.This option will provide the greatest benefits in terms of patient care, staff integration, and
1 4 2 5	By collocating services on the Hillmorton site this option will provide benefits in terms of patient care, staff integration, and service efficiency. While it is acknowledged that the physical separation across the Hillmorton site of CAF North clinical space from workspace, will drive a level operating inefficiency. However, it is expected that the majority of these inefficiencies can be managed through different working approaches and the residual impact is not expected to be significant. This option will provide the greatest benefits in terms of patient care, staff integration, and
2 5	This option will provide the greatest benefits in terms of patient care, staff integration, and
	service efficiency. This option will provide some of the benefits in terms of patient care and staff integration, but there will be some staff who have to routinely travel from the Hillmorton campus, affecting overall clinical efficiency. It is also likely to be amongst the most costly options.
3 2	The separation of CAF outpatient and workspace across multiple leased sites is expected to drive significant capital (fitout, equipment, etc) and operating inefficiencies and greater whole of life costs compared with a consolidated build on the Hillmorton site.
4 1	 This option is not economic, effective or efficient. Further fragmentation of services across multiple sites creates significant inefficiencies. Retaining H&C and CAF at TPMH necessitates costly repairs to infrastructure (notwithstanding the costs to refurbish, strengthen and "make safe" the SMHS facilities), and will continue to incur site/facility specific operational inefficiencies totalling more than \$1.7m per annum. It would also require the refurbishment and strengthening of existing SMHS facilities and the demolition of immediately proximate buildings to make the site safe from seismic risk. The retention of services on TPMH site would reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold while an active [mental health] facility remains on-site or those portions of the site would be sold at a discount. Furthermore it does not accomplish the original goal of vacating TPMH site.

5.4.5 Quantitative analysis of the short list options

The net present value of key financial costs and benefits are presented in the tables below, sources of information and calculation methodologies, including clinical assumptions, are detailed in Appendices E and F. The figures represent the total present value of benefits and costs generated by each short list option across a 25 year period.

on 1 C ,437 ,048	Option 2 7,437	Option 3 7,076	Option 4
,437 ,048	7,437	7,076	7.052
,048	05 0 40		7,052
	35,048	35,048	35,048
,740	16,841	-	<u> </u>
,206	11,206	11,206	-
,000	5,000	4,500	4,000
,160	12,857	9,848	10,090
,109	14,911	11,322	11,757
,700 1	03,300	79,000	67,947
- 6	× -	-	13,153
		8,850	-
,700 1	03,300	87,850	81,100
,	206 000 160 109 700 1 - 700 1	206 11,206 000 5,000 160 12,857 109 14,911 700 103,300 700 103,300	206 11,206 11,206 000 5,000 4,500 160 12,857 9,848 109 14,911 11,322 700 103,300 79,000 - - - 700 103,300 88,850 700 103,300 87,850

Table 30: Cost comparison						
\$000 (real)	Option 1	Option 2	Option 3	Option 4		
New build GFA	10,474m ²	11,322m ²	7,880m ²	6,034m ²		
			_			
New Build at Hillmorton Capital expenditure	97,700	103,300	79,000	81,100		
CAF outpatients lease fitout & FF&E costs			8,850			
Total Capital Expenditure	97,700	103,300	87,850	81,100		
Lifecycle costs per annum (from 2027 ²⁰)	1,374	1,480	1,273	1,253		
Lifecycle costs - 25 year NPV	17,973	18,947	17,076	16,862		
Decant Costs ²¹	1,540	1,540	1,540	1,837		
Decant costs - 25 year NPV	1,220	1,220	1,220	1,442		
Lease costs per annum ²²	-	-	799	-		
Lease costs - 25 year NPV	-	-	8,074	-		
TPMH operational inefficiencies per annum ²³ (prior to	831	831	831	831		
migration in 2022)						
TPMH operational inefficiencies per annum (beyond migration in 2022)		-	-	1,720		
TPMH operational inefficiencies - 25 year NPV	2,880	2,880	2,880	18,907		
Revenue foregone on the disposal of TPMH ²⁴	-	-	-	2,950		
Total 25 year NPV	119,773	126,346	117,100	121,261		

²⁰ 2027 is the first year of "steady state" lifecycle costs i.e. after warranty period has lapsed.

²¹ Includes system and network migration costs. For simplicity these are classified as OPEX for the DBC purpose only.
²² The assessment of the options assumes approximately 2,346m² of leased space is available, in close proximity to Hillmorton Hospital, to accommodate CAF outpatient services and workspace within similar timeframes to commissioning of the IFSC. However, should a suitable single facility not be available, CDHB may be required to lease two facilities, which would likely result in duplication of some facility provisions leading to increased costs, operating inefficiencies and diminished opportunities to facilitate stronger clinical communities through informal multi-disciplinary interactions, thereby avoiding unnecessary patient contact and/or providing better quality care for patients.

²³ Represents TPMH operational inefficiencies based on the costs of retaining TPMH as outlined in Appendix A, excluding lifecycle related cost which are shown separately.

²⁴ Indicative value differential between disposal of full site (per 2012 approved Hospital Redevelopment DBC) and partial site under Option 4.

5.5 Recommended way forward

The recommended option aims to achieve a balance between cost (capital and ongoing) and the level of qualitative and quantitative benefits that are achieved i.e. the option that most effectively and efficiently achieves the investment objectives and addresses the underlying issues of the CDHB's SMHS.

Clinically, from the CDHB's perspective, the preferred investment options are Options 1 and 2. Of the short list options, Options 1 and 2 are the strongest performing options taking into account:

- Contribution to investment objectives
- ► The performance of the option against the critical success factors
- ► Whole of life cost considerations
- Qualitative assessment

However recognising that capital is a constraint (both locally and nationally). CDHB accept Option 3 being carried forward as the recommended option. As such, the advancement of commercial lease arrangements for CAF outpatients and related workspace will be subject to a separate planning and business case process, which will be advanced by CDHB independently of this project.

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6. The Commercial Case

6.1 Purpose

This chapter examines the procurement approach for delivering the recommended option as described in the Economic Case, both in terms of market appetite and capacity to deliver the project and providing long-term value for money. In doing so, this section:

- Sets out the key project characteristics and risks that influence the choice of procurement model
- Describes potential procurement options that could be applied to deliver the project
- Assesses potential procurement options relative to the project characteristics and risks, applying an agreed qualitative evaluation criteria
- Identifies the preferred procurement approach for the project.

6.2 Process for identifying preferred procurement model

Upon approving the IBC in September 2017, the MOH appointed specialist health project managers, Proj-X Solutions Ltd to manage delivery of the project. Following their appointment and giving consideration to their deep sector specific knowledge of market appetite and capacity, combined with the very tight timeframes for delivering the project, Proj-X recommended the project progress through a traditional procurement approach for construction based on separately procured and fully documented design.

The process used to confirm the preferred procurement model consisted of:

- Understanding the project characteristics, including key project assumptions, project risks and models of care (i.e. whether the services are amenable to third party provision)
- Understanding the market profile, including previous sector specific projects and procurement challenges
- > Determining procurement objectives, evaluation criteria and scoring scale
- Determining and assessing the long list of procurement models, including consideration of risk allocation and market capacity and capability
- Determining and defining the short list of procurement models
- Evaluation and scoring of the short list of procurement models using the project profile information, procurement objectives, evaluation criteria and scoring scale

Confirming the preferred procurement model.

The process steps are set out in more detail below.

6.3 Project characteristics

6.3.1 Impact of scope, scale and service characteristics on procurement

The characteristics of the Project's services and facilities are fundamental determinants of the procurement and delivery options that could be applied. A rigorous process facilitated by Architects and Health Planning specialists, Klein, was undertaken to:

- ▶ Understand how the services are delivered and any likely future changes in service delivery
- Complete an indicative masterplan, detailed enough to enable sensible and logical locating of new facilities to accommodate the SMHS relocating from TPMH – noting there is an intention to commence a full and detailed Masterplan of the entire Hillmorton Hospital site within the next six months
- Identify and agree the functional scope and scale of the facilities, including car parking requirements
- ► Identify infrastructure provisions from existing and/or new site infrastructure networks
- ► Prepare schedules of accommodation
- ▶ Identify and agree any residual service and facility characteristics.

Table 31 below summarises the key characteristics of the recommended option that may impact procurement.

Table 31: Characteristics of the recommended option that impact procurement					
Characteristic	Description	Implication for Procurement			
Site location	The masterplan seeks to locate the family services aspects of the project brief together and in their own discrete location on the Hillmorton Hospital site. This has been identified as the area towards the south west corner adjacent to the existing childcare centre and utilising the adjacent vacant land previously used as sports fields further toward the centre of the site. High and complex will be located on the carpark towards the centre of the site. It is consistent with the masterplan's future zoning which identifies this area as the flex, rehab transitional zone which is in line with the patient cohort and units' philosophy of transition back to the community.	 Models of care and site location were determined in the IBC and reaffirmed through a collaborative review by all South Island DHBs of the regional for M&B, EDS and CAF. The Hillmorton Hospital site has a long history of providing psychiatric services to the people of Canterbury and currently has 145 beds providing care across forensic, acute, intellectually disabled, high and complex inpatient groups as well as a number of related outpatient services. Collocation of the proposed new facilities with existing CDHB facilities on the Hillmorton Hospital site means there is limited opportunity for substantial whole of life risk transfer and consequently more complex procurement approaches are unlikely to be appropriate. 			
Scope	 It is anticipated that the key components in the project will be: Buildings, car park, landscaping, infrastructure provision Furniture, fittings and equipment This project will require the construction of two purpose built inpatient facilities, on the Hillmorton Hospital site, and the construction of an adjacent outpatient facility and associated workspace. There are also infrastructure upgrades required and the provision of new car parking. 	 The scope of projects and their complexity will impact the procurement approach. In addition to the build component, maintenance and lifecycle services for varying durations and standard defect liability periods could be included within contracts for the components detailed. While new build projects can be successfully procured conventionally, alternative procurement (including PPPs) forms should be considered where scale warrants it. The more costly, technically complex, risky the project, the more likely that the application of alternative procurement models will be appropriate. 			

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Characterit		Implication for Drawn with
Characteristic	Description	Implication for Procurement
Scale	 It is anticipated that the project will require approximately \$79M in CAPEX, including design, build, fit-out and an allowance for decant. This cost is largely comprised of: 6,184m² GFA for new Integrated Family Services Centre (M&B, EDS and CAF IP and M&B and EDS OP) with associated workspaces on upper level 1,845 m² for new High and Complex (single storey) with associated workspace. The recommended option requires a further 2,346 m² of purpose built leased space in close proximity to the new IFSC, including associated workspace. Fitout costs associated with this facility are expected to be approximately \$8.85m, with an associated annual lease charge of circa \$799,000pa. In addition, the project is expected to incur \$1.3mp.a. of associated AMFM costs. 	 The scale of projects (capital value and on- going services cost) directly impacts the procurement decision-making criteria for project delivery. Generally PPPs are not attractive for projects that are worth less than \$100M in capital costs, with a significant operational component that can be turned over to a private sector consortia, or \$250M for a capital build and maintain only project. For smaller scale projects, the complexity of a PPP, funding availability, and the lack of sufficient competition to drive better value for money outcomes often means that PPPs are not viable. At \$79M CAPEX and outsourcing of core service provision discounted as a viable option, this project not likely to be of sufficient size to generate value for money from more complex procurement approaches. However, the MOH should leverage appropriate risk transfer
Timing	Early completion of the facility is both desirable and necessary in light of the risks associated with the continued provision of SMHS services from TPMH. The need to provide for a safer and more appropriate clinical environment means that the facility should be in service as quickly as possible. The current assumption is that the new facility will be in service from December 2022 to minimise the risks associated with the ongoing operation of TPMH for SMHS. In order to meet that requirement, it is anticipated that construction will need to commence by Q3 2020.	 mechanisms in order to enhance value for money. Procurement timescales (and cost) will normally increase with the complexity of the procurement option applied. If timescales and programming are significant constraints, traditional procurement methods may be more applicable. Timescales are a constraint for the Project. Traditional procurement methods are therefore more appropriate.
Services	 Hard facilities maintenance provided by public or private sector. Soft facilities maintenance provided by public or private sector. As CDHB will be the owner of the facility, asset management services will be provided by CDHB upon completion of construction. Operations/clinical services will be provided by CDHB²⁵. 	 The scope of service requirements will influence cost and may influence market interest.
Facilities and Equipment	 \$he scope of the Recommended Option within this Business Case includes: \$ fit-for-purpose and flexible SMHS facility comprising 47 beds, 200+ FTEs across inpatient and outpatient services. Expected life in excess of 50 years Related Furniture, Fittings & Equipment Support services (including cleaning, catering, security, grounds & gardens, power and utilities) Lifecycle/maintenance services for new facilities 	 The size of a project directly affects the procurement decision-making criteria for project delivery. The cost of establishing a procurement model needs to be recovered from benefits of the chosen procurement route. The scope and scale of facility requirements influences market interest. Collocation of the proposed new facilities with existing CDHB facilities means there is limited opportunity for substantial whole of life risk transfer and consequently more complex procurement approaches are unlikely to be appropriate. The existence of facilities

²⁵ As previously established in the IBC and reconfirmed in the Economic Case, clinical services are not considered amenable to private sector delivery due to: supply side constraints, increased clinical risk, inability to capture the level efficiency gains sought through co-location with complementary SMHS and other health services provided at the Hillmorton site; and the high risk of losing of regional service contracts and therefore losing the benefit of economies of scale.

Table 31: Characteristics of the recommended option that impact procurement				
Characteristic	Description	Implication for Procurement		
	 ICT service, including high definition video conference facilities 	the collocated CDHB facilities presents opportunities for economies of scale through extension of those contracts to the new facility.		

6.4 Project procurement risks

In addition to the asset and service requirements of the Project, a set of potential risks related to the procurement of the Project were identified for consideration in the evaluation of the procurement options:

Table 32: Summary of key ri	sks for the procurement of the Project				
Risk	Impact				
Timetable (drivers include approval / decision making delays)	 Exposure to time delays (impacting works programme or in-service dates) results in increased operating and capital cost, along with increased safety, wellbeing and clinical risks due to: Cost escalation The continued operation of TPMH as a stranded facility 				
Incomplete and/or inaccurate information and assumptions underlying the Business Case, procurement and/or design processes	 Material changes to the Project scope, scale and/or cost as a result of Incomplete and/or inaccurate information and assumptions underlying the Business Case and/or the procurement process. Project becomes unaffordable and/or does not represent the best value for money resulting in poor decision making and/or time delay. 				
Market capacity (delivery)	 Size and scale of the project does not allow for sufficient economies of scale, or presents limited opportunities for competitive tension and choice, leading to increased project costs. 				
Site conditions	 While there is some existing soil testing data available indicating site conditions are acceptable for a structure of this type without significantly enhanced foundations and QS estimates have been based on this information, further detailed investigation will be undertaken as part of the subsequent design process. Unanticipated, adverse ground conditions on site result in material programme delays 				
Design	 Disagreements between designer and contactor may result in delays or the assumption of additional risk by the MOH and CDHB. 				
Construction	 Design is not buildable or results in material additional cost. Sequencing of construction is not met due to unexpected complexity of the project or events such as delays in scheduling of materials, trades, and design or buildability issues. The site requires more remediation work than initially anticipated resulting in significant cost overruns. 				
Operating Risks	 Higher than expected operating costs. High than anticipated utilisation of the facility results in capacity constraints. Lower than expected utilisation of facility results in an overbuilt and OPEX heavy building. 				
Asset	 The built facility is not fit for purpose. The design does not adequately meet the current needs of clinicians and patient realities. Scope and scale of the facility is not sufficiently flexible to cater to future growth / clinical mix: Facility is not able to cater to changing patient demand. Treatment outcomes and benefit targets are not met. Exposure to future cost escalation and costly alterations to the facility at a later stage. 				

6.5 Potential delivery and procurement options

The project could be procured in multiple ways, including traditional procurement and delivery of services through to various collaborative models.

The analysis that follows applies project-level assumptions to support a largely qualitative assessment. A detailed procurement plan for each of the core components of the project will be developed following the approval of this business case and endorsement of the recommended option as outlined in the Management Case.

6.5.1 Delivery options for typical public sector projects

A range of potential delivery and risk transfer approaches can be applied in procuring facilities, equipment and services. The types of procurement models and options that could be applicable comprise three broad categories: traditional models (often referred to as 'conventional' procurement), collaborative models and bundled models ('PPP service models').

As set out in Table 33 below, various procurement options, each with a range of nuances and different outcomes, can be applied to deliver projects that have different outcomes in respect of risk transfer, contract duration and public sector participation. These options, including their respective advantages and disadvantages, are discussed in more detail over the following pages.

Traditional models: Collaborative models: PPP/bundled models: Public sector owns and delivers services Contestable service delivery Focus on 'partnering' services Private sector designs and construction-based models: Contestable service delivery PepP/bundled approach may apply a whole-of-life outcome-based solution. It includes the following procurement models: Cost plus Fixed price lump sum based on detailed design Management contracting The Public actor involvement Alliance contracting. Alliance contracting. Design build finance maintain (DBM) Build-own-operate (BOO) / build-own-operate (BOO) / build-own-operate-transfer (BOOT) Full commercialisation. In addition, the following framework service delivery models could be applied: Integrator Strategic partner and framework contracting (which can incorporate all the procurement models).	Table 33: Types of procurement models		
 construction-based models: Cost plus Fixed price lump sum based on detailed design Design and build Alliance contracting. Management contracting. Management contracting. Design build maintain (DBM) Design build finance maintain (DBFM) Build-own-operate (BOO) / build-own-operate (BOO) / build-own-operate-transfer (BOOT) Full commercialisation. In addition, the following framework service delivery models could be applied: Integrator Strategic partner and framework contracting (which can incorporate all the procurement models). 	 Traditional models: Public sector owns and delivers services Private sector designs and constructs Unbundled approaches are centred on 	Collaborative models: Contestable service delivery The public and private sector work	 PPP/bundled models: Focus on 'partnering' services Design, build, finance, operate and maintain The PPP/bundled approach may apply a
	 Construction-based models: Cost plus Fixed price lump sum based on detailed design Design and build 	 together for shared construction outcomes and risk sharing: Management contracting Early contractor involvement Alliance contracting. 	 whole-of-life outcome-based solution. It includes the following procurement models: Design build maintain (DBM) Design build finance maintain (DBFM) Build-own-operate (BOO) / build-own-operate-transfer (BOOT) Full commercialisation. In addition, the following framework service delivery models could be applied: Integrator Strategic partner and framework contracting (which can incorporate all the procurement models).



Figure 7: Range of delivery and risk transfer approaches

6.5.2 Public sector procurement options decision tree

The decision about which procurement model is appropriate for each individual component of the project will be based on procurement objectives, project characteristics and any identified critical success factors for the project and supporting quantitative assessment where applicable.

Appendix H gives a high-level overview of the decision-making process.

Procuring entities that are planning any 'significant investment' must evaluate all procurement options, including PPP procurement. In terms of financial or risk thresholds, 'significant' generally means investments that require Cabinet or Ministerial approval, that is, high risk proposals, or proposals with whole of life costs in excess of \$15 million, however funded.

Where investments have a significant service component, a choice is required between conventional procurement and a PPP. This is largely dependent on whether the service is 'durable', i.e., how likely it is that the service requirement will change over time in unpredictable ways, requiring costly contract variations.

Treasury's guidance requires an assessment of the project's suitability for PPP procurement against a set of 'hurdle' criteria (detailed in Appendix H) to confirm appropriateness of the procurement model. We note that while the project does not meet the Treasury's PPP suitability hurdle criteria, in terms of project size, durability of requirements and market appetite/competition, for completeness we have considered delivery under a PPP procurement option.

6.5.3 Potential procurement options for the Project

Certain services are more amenable to possible third party and private provision than others. The table below provides an initial assessment of which project characteristics are amenable to possible third party and private provision.

Table 34: Initial Assessment of Service	Delivery Owner	
Not amenable to third party/private delivery of services	Possibly amendable to third party/private provision of services	Definitely amenable to third party/private provision of services
Clinical services	Clinical support services	Project management of design and build process
		Facilities design, build and maintenance services
		ICT services
		Support services (including cleaning, catering, security, grounds & gardens)

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Following the identification of project characteristics and risks, a range of potential procurement options has been identified. The range of procurement models identified for the project was compiled with reference to models previously used in the NZ Health Sector and in the context of commonly applied and emerging NZ procurement models, including the procurement approaches followed by the MOH. REFERSEDUNDERTHEOFFICIALINGORMATIONACT

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Table 35: Potential	procurement options for the project		² C ¹
Procurement approach	Description	Advantages to the Ministry and/or CDHB	Risks to the Ministry and/or CDHB
Traditional	 MOH enters into contracts for construction based on separately procured design (either concurrently or consecutively) No ongoing obligations for asset maintenance and operations by Contractor is separate in- house or separate externally procured operations, maintenance and lifecycle arrangements would be put in place Funded by public sector 	 Greatest level of cost certainty prior to engagement with the construction market Fast time to market Low tendering cost High level of design and implementation control Potential to reduce the delivery schedule by overlapping the design phase and construction phase of a project 	 Majority of risks retained by public sector Contractor only models may increase interface risks between designers and contractors A consecutive competitive tender process for design and build may put the targeted 2022 operational commencement at risk, but this can be mitigated by overlapping the design and constructions phases Positive outcomes and risk management for the public sector dependent on high internal capability and capacity
Bundled design and construction (D&C)	 MOH engages a contractor to conduct detailed design and construction of the project for an agreed fixed sum No ongoing obligations for asset maintenance and operations by Contractor separate inhouse or externally procured operations, maintenance and lifecycle arrangements would be put in place Funded by public sector Works well where the scope is well defined/simple 	 Design and build type contracts provide simpler process for MOH based on single contracting framework Shifting design risk to the contractor helps minimise design risk for the public sector and reduces potential "buildability" issues Potential to reduce the delivery schedule by overlapping the design phase and construction phase of a project 	 Contractual complexity is higher than more traditional forms of contract Majority of risks retained by public sector, including potentially a share of risk to project cost meaning that the final cost is often higher than provided for in the contract Whole of life issues may not be adequately addressed as the incentive on the consortia is to control short-term delivery risks and costs Complexity of design and reduced control over design, which is of particular concern in relation to the complexities associated with the development of mental health facilities
Early Contractor Involvement (ECI)	 ECI is about engaging the contractor during the early phases of a project to assist in the evolution of the design and to promote a better understanding by the parties of a project and its potential risks Suitable for large or complex projects where an uncertain scope may benefit from the early involvement of a specialist contractor In complex design, allows the "buildability" of the design to be considered and construction efficiencies to be explored 	 The tendering process for ECI is aimed at selecting the best team to deliver a project and does not require the tenderer to prepare detailed cost estimates for the actual construction stage of the works. Other advantages include: Shortened delivery time A team approach Experience harnessed early Increased opportunity for innovation Better integration of construction methods Possibly earlier procurement of materials Fewer variations during construction 	 Reliant on good design processes on the MOH / CDHB side and involvement of senior staff in the early stages for longer periods Additional costs through 'optioneering' by contractor and designer ideas Contractor is appointed on capability rather than price. Requires open-book pricing and sufficient expertise on behalf of the public sector (or involvement of independent cost estimators) to prevent higher prices resulting from the non-competitive building up of the price Recent experience has shown that this option often results in higher cost outcomes

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Table 35: Potential	procurement options for the project		$\sim 0^{\circ}$
Procurement approach	Description	Advantages to the Ministry and/or CDHB	Risks to the Ministry and/or CDHB
		FOR	 The public sector retains most of the risks. There is little incentive for the contractor to consider life cycle cost minimisation in the design phase. Whilst better understood by the market today, contractual complexity is significantly higher than more traditional form contracts and there is limited familiarity and capacity in the New Zealand market to engage in ECIs. This could result in a longer contracting period.
Design, build and maintain (DBM)	 Under a design, build and maintain (DBM) contract, the public sector engages a contractor to conduct a detailed design and construction of a project on its behalf for an agreed fixed sum. A hard facilities maintenance contract term is added (typically 5 to 7 years) Applicable for projects where the project offers scope for private-sector led innovation and efficiencies 	 A fixed price for the capital cost of the facility along with some limited risk transfer of the facilities hard maintenance may be achieved Contract value is known before construction commences, however, in reality costly variations are typically required Typically used in projects that include a significant proportion of proprietary technology such as process plants 	 Relies on a well-defined functional and service specification. While this is often considered an advantage for very complex projects with many and diverse stakeholders, it can be a challenge to achieve Usually only limited transfer of facilities management risk achieved in practice due to the relatively short term of facilities management contract Typically higher cost of variations and compensable events (during construction) due to the financing arrangements and risk pricing Contracts can be significantly more costly and time consuming to put in place
Design, build, finance and maintain (DBFM)	 Under a public-private partnership, the public sector typically engages a consortium of parties to design, build, finance and assume responsibility for facilities maintenance and asset replacement for the project, over a defined period (typically around 25 years) Applicable for projects where service performance can be measured and where the project offers scope for private-sector led innovation and efficiencies 	 Contract value is known before construction commences Provides greater opportunity to develop innovative solutions Transfer of whole-of-life cost risk encourages efficient design and quality construction and finishes 	 Relies on well-defined functional and service specifications. While this is often considered an advantage for very complex projects with many and diverse stakeholders, it can be a challenge to achieve Typically higher cost of variations and compensable events (during construction) due to the financing arrangements and risk pricing Sontracts can be significantly more costly and time consuming to put in place

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6.6 Procurement option evaluation framework

The procurement option evaluation framework that follows was compiled in the context of commonly applied procurement guidelines.

6.6.1 Project procurement considerations

The following considerations were compiled by the project team to inform the procurement option evaluation framework. These considerations directly informed the development of the procurement option evaluation criteria that were weighted and scored as part of the procurement model selection process:

- ► Timing: Is time critical to implement or complete certain components within the project and gain benefit from early investment and operational outcomes? If a project is under delivery time pressure, then price certainty may be less important and a traditional model could help achieve the required speed.
- Price certainty: Are a fixed-price contract and price certainty critical? Note: Value for money assessments will look beyond price to incorporate asset performance (quality), including environmental and social factors, into decision making.
- ► Flexibility to change: Does the MOH and/or CDHB need the ability to change delivery direction at critical points during the procurement, design, construction or operational phases? Some procurement models are designed to allow for more cost-effective changes.
- Risk transfer: As a general rule, value for money is not achieved by transferring risk to a party that can neither manage nor price the risk efficiently, or where the risk cannot be identified and quantified with any great certainty. Some procurement models are more likely to deliver value for money under competitive tension where the risks can be readily identified and quantified and there is sufficient market competition to effectively price risk.
- Contractor's incentive (including innovation): To what extent does a project lend itself to a competitive tender where significant value is likely to be gained from the process because the private sector can bring forward innovative solutions to gain competitive advantage?
- Cost effectiveness and economies of scale: Which procurement methods will enhance cost effectiveness and economies of scale?
- Innovation: Is there an opportunity to innovate in design, build or operations? For example, if build requirements are quite generic, there will be limited ability to provide innovation through design processes. The value of investment and level of competition will also impact the private sector's ability to innovate.
- Market competition: Is competition an important driver in achieving the Government's strategic objective of getting better public services for less? As a general rule, procurement models that receive strong market interest generate value for money through competition.

6.6.2 Determining value for money

In an infrastructure procurement context, value for money for future investments and related procurement options can be described as the optimal combination of whole-of-life costs and quality (fitness for purpose) to meet the user's requirements. Table 36 sets out key value for money indicators at the project level, which should be sought from any procurement model adopted for a component in the project. Appendix I provides examples of how to apply the indicators when qualitatively assessing value for money.

Table 36: Qualitative areas fo	r assessment of value for money
Qualitative assessment area	Description
Viability	Do the project investment objectives and required project outcomes translate into outputs that can be contracted for, measured and agreed?
Desirability	Do the benefits of the procurement and contracting structure outweigh any additional cost of contracting out and the cost of undertaking the procurement?
Achievability	MOH (and Representatives) capability, a structured process, market appetite and competition must be evidenced.
Wider value for money areas	Affordability, trade-off between short-term and long-term service provision and contract breakpoints or re-provision points and any variations in non-financial benefits, externalities and wider benefits or outcomes of different project procurement methods.

Assessing the project against the qualitative areas set out in Table 36 above shifts the focus from pure quantitative outcomes and allows for a holistic judgement of value for money.

6.6.3 Procurement option evaluation criteria

The short list procurement models were subjected to a qualitative assessment by the Project Team. The evaluation criteria were developed and subsequently ranked by the Project Team to reflect their relative importance to the project, with reference to the identified project characteristics and risks, by applying the following scoring methodology:

Table 37: Cr	riteria weightings	
Weighting	Relative importance	Description
5	High	Criterion reflects a high relative importance
4	Medium / High	Criterion reflects a medium to high relative importance
3	Medium	Criterion reflects a medium relative importance
2	Low / Medium	Criterion reflects a low to medium relative importance
1	Low	Criterion reflects a low relative importance

Table 38 below summarises the procurement option evaluation criteria applied.

Table 38: Procurement	option evaluation criteria		
Evaluation criteria	Considerations	Weighting	Rationale
Project Objectives	What is the impact on the delivery of the project objectives & benefits outlined in the Strategic Case?	5 (16%)	Vital to the success of the project from a strategic perspective.
Price Certainty	What is the impact on price certainty (accuracy) over the life of the project?	5 (16%)	Having certainty around level of capital and operational funding required is essential due to funding constraints.
Whole of Life Considerations	What is the impact on whole of life facility costs, in terms of capital build, maintenance and operations?	4 (13%)	Whole of life considerations are essential as the facility has a long estimated useful life and there is a reluctance to reduce upfront CAPEX costs in return for unsustainable lifecycle costs.
Value for Money	What is the impact on optimising value for money through competition, innovation, and other means?	4 (13%)	Optimising value for money is an essential criteria in Government funded projects.
Flexibility to Change	What flexibility is there for future change, variation and facility expansion across all phases of the project?	3 (9%)	Flexibility should be designed and built into the facility to accommodate different models of care and demand for services as they evolve over time.
			There is limited risk that the demands will change materially during the project delivery phase, as the project is expected to be well

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Table 38: Procuremen	t option evaluation criteria		
Evaluation criteria	Considerations	Weighting	Rationale
			scoped and tested prior to the procurement process irrespective of procurement method.
Time to In-Service	What is the impact on achieving project procurement and operational commencement timelines (e.g. time to market, construction start and finish date)?	4 (13%)	The continued operation of TPMH for SMHS presents a number of issues and risks, including: inefficiencies, clinical risk, patient and staff safety risk. However, small (3 months) timing trade-offs are considered palatable if it ensures a more fit-for-purpose solution in the long-term and therefore represents better value for money.
Market Competition	What is the capability of the relevant market / experience of the relevant market with delivery using the procurement model?	3 (9%)	The MOH wishes to maintain competitive tension in this process and ensure that the procurement method does not constrain competitiveness due to the complexity of the model to the New Zealand market.
Risk Allocation	To what extent are the risks able to be allocated in an appropriate way relative to the scope and scale of the project?	3 (9%)	The MOH and CDHB are comfortable retaining certain risks to ensure a more fit-for-purpose solution. However, the allocation of appropriate risks to the private sector is desirable.

6.7 Overall assessment of procurement options

6.7.1 Initial shortlisting

Upon consideration of the available procurement models and project characteristics, an initial shortlisting of procurement options that would be taken forward for further evaluation was conducted. PPP models and DBM were not shortlisted for the reasons outlined below.

PPP models (DBFM/DBFMO/BOOT)

While PPP models have been used internationally as a procurement model for significant sized investments in the health sector, local experience of PPPs is limited to schools, prisons and transport. PPP models were not taken forward for the following reasons:

- Models of care and site location (Hillmorton Hospital) were determined in the IBC and reaffirmed through a collaborative review, by all South Island DHBs, of regional service delivery for M&B, EDS and CAF. These processes established that:
 - Clinical services are not considered amenable to private sector delivery due to: supply side constraints, increased clinical risk, inability to capture the level efficiency gains sought through co-location with complementary SMHS and other health services provided at the Hillmorton site and the high risk of CDHB losing regional service contracts and therefore losing the clinical and operational benefits of economies of scale.



Collocation of the proposed new facilities with existing CDHB facilities on the Hillmorton Hospital site means there is limited opportunity for substantial whole of life risk transfer and consequently more complex procurement approaches are unlikely to be appropriate.

- When setting an affordability threshold, the public sector comparator will consider the existence of facilities maintenance and infrastructure contracts covering the collocated CDHB facilities and how this presents opportunities for economies of scale through extension of those contracts to the new facility.
- While variations can be facilitated and are specifically catered for in the PPP standard contract, compared to other procurement models, PPP are viewed as less flexible and more costly in terms of flexing to change.

► Finally, without bundling of operations, the potential size of a PPP contract is unlikely to attract sufficient PPP consortia competition to warrant the increased cost, time and complexity of this contracting model. The procurement process for a PPP is significantly longer than other procurement methods due to increased contract complexity.

DBM (Design, Build, and Maintain) was also not taken forward for the following reasons:

- ► The potential size of the contract is unlikely to attract sufficient private sector consortia competition to warrant the increased cost, time and complexity of this contracting model.
- As with PPP models, when setting an affordability threshold, the public sector comparator will consider the existence of facilities maintenance and infrastructure contracts covering the collocated CDHB facilities and how this presents opportunities for economies of scale through extension of those contracts to the new facility.

6.7.2 Procurement option evaluation

The shortlisted procurement options were assessed against the evaluation criteria using the following scoring method.

Table 39: Sco	ring method
Score	Description
5	If the procurement option offers a distinct advantage compared to other options
4	If the procurement option offers some advantages compared to other options
3	If the procurement option does not offer advantages or disadvantages compared to other options
2	If the procurement option offers some disadvantages compared to other options
1	If the procurement option is at a distinct disadvantage compared to other options

The scoring was multiplied by the relative weighting attributed to each evaluation criteria. The table below details the raw and weighted scores and ranking:

Table 40: Qualitative evaluation	Table 40: Qualitative evaluation of short list procurement options			
Evaluation criteria	Weight	Traditional	Design & construct	ECI
Project Objectives	17%	3	3	3
Price Certainty	14%	4	4	3
Whole of Life Considerations	14%	4	2	4
Value for Money	10%	4	3	2
Flexibility to Change	10%	5	3	4
Time to In-Service	14%	4	4	4
Market Competition	10%	5	3	2
Risk Allocation	10%	3	3	3
Un-weighted score		32	25	25
Un-weighted ranking		1	2=	2=
Weighted score		79%	64%	63%
Weighted ranking		1	2	3
Conclusion		Preferred Option		

6.7.3	Procurement	option	scoring	rationale
			J	

Score	Description
Project Objectives	No individual procurement option was seen to offer any advantage or disadvantage in terms of achieving the desired Project Objectives & Benefits.
Price Certainty	 With Traditional, D&C and ECI procurement the CDHB retain price uncertainty associated with facility maintenance and operations, and while a fixed price is available at various stages irrespective of procurement method, there is typically a premium required in return for design and/or construction price certainty. ECI is seen as performing slightly worse, in terms of price certainty, than traditional procurement insofar as it is challenging and costly to change consortiums after the design is completed, reducing the competitive incentives in construction.
	While in theory D&C offers greater price certainty than Traditional and ECI procurement due to providing earlier price certainty over construction cost where design is straightforward. In complex builds (e.g. mental health services), however, there is heighted risk that additional costs will be introduced in the design phase, even though there may be greater construction price certainty once the design is confirmed. In addition, this price certainty this can come at a risk to whole of life cost outcomes as compromises on quality may be made by the D&C provider to achieve the target price.
Whole of Life Considerations	Traditional and ECI procurement are considered to offer an advantage over D&C options. Although each private party (e.g. construction, design, maintenance etc.) may lack of whole of life incentives, having the MOH and CDHB overseeing the whole process means that the whole of life considerations are better able to be represented and considered than in a D&C. D&C was seen to be at a disadvantage to other options as the incentive on the D&C contractor is to control/minimise costs through the construction process even if that results in higher lifecycle costs.
Value for Money	In theory, ECI is expected to deliver a slight advantage relative to Traditional and D&C procurement, given the competitive tension that can be maintained through the design if multiple parties are taken through design. If there is only one consortia, then the lack of competitive tension could result in higher costs, although some collaborative advantages would remain. In practice, however, recent examples of ECI in the New Zealand market have resulted in higher cost delivery, partially due to the lack of competitive tension. Furthermore, whilst ECI is better understood by the market today, contractual complexity is higher than more traditional form contracts.
	could create design and delivery risks around quality given the potential that contractors may make compromises during construction to maintain price expectations – without the benefit of client input.
	The traditional procurement option, in comparison to bundled options, would enable CDHB to retain greater flexibility over the design, build, operational and maintenance phases; consequently it is considered to offer a distinct advantage over alternative options.
Flexibility to Change	ECI would enable the MOH and CDHB to retain greater flexibility over the design, build, operational and maintenance phases and consequently are considered to offer an advantage over D&C, but the contractual complexity of ECI is higher than more traditional form contracts.
	D&C was seen as having a disadvantage to the ability to change delivery / design relative to the other two procurement options. D&C integrates the design and build in a single contract and consortia. In this case, changes to design post-hoc can be expensive.
Time to In- Service	D&C contracts are typically considered to offer a distinct advantage compared to Traditional or ECI procurement with their linear design and build process, where there are fewer individual procurement steps to undertake (e.g. one consortia relative to procurement for design and build as separate contracts) and therefore the ability to commence construction activities earlier. However, in this instance Traditional procurement models were viewed as offering an advantage, due to the simplicity of contract arrangements and ability to bring portions of the project to market early in the programme. Similarly, ECI was also seen to offer an advantage due to quick and informed decision making, earlier procurement of materials, the ability to commence construction activities earlier and expectations of fewer variations during construction.
Market	Traditional and D&C procurement are more familiar to the Christchurch market. ECI is seen as being at a disadvantage in the local market, given that significantly less 'vertical infrastructure ' projects have been conducted in the Christchurch market (or nationally) using ECI to date.
Competition	The scale of the project also limits the number of potential tenderers. It is likely to be too small to interest large Australian firms, but too large to be able to be handled by more than a few New Zealand based firms. Given this reality more complex procurement methods may further impede competitive

Table 41: Procurement option scoring rationale			
Score	Description		
Risk Allocation	ECI may provide better risk allocation, with risks being identified early in the process and with the ability to allocate those risks better during the contracting phase, but this can drive increased interface risk and cost. While at face value Traditional and ECI are seen to be at some disadvantage to D&C procurement as they decreased the amount of interface risk able to be transferred through the construction process, the MOH considers that it is well placed to manage design and construction risk in a Traditional procurement model.		

6.7.4 Summary of qualitative procurement evaluation analysis

A traditional competitive procurement approach under a fixed price contract for construction based on separately procured and fully documented design is the preferred procurement approach for the replacement SMHS facility.

Under the traditional fixed price contract, the public sector will separately engage a design team to develop the design documentation that forms part of the documentation used to tender the construction contract. The successful contractor has to deliver the works for the fixed price tendered, provided there are no variations to the design. There will be no ongoing obligations for asset maintenance and operations by the contractor as separate in-house or externally procured operations, maintenance and lifecycle arrangements will be put in place. The majority of risks will be retained by public sector.

- Price certainty: MOH will retain the risk and price uncertainty associated with design and CDHB will retain the risk and price uncertainty associated with facility maintenance. There is limited visibility on AM/FM costs post completion and some risk exists that decisions made during construction may increase whole of life costs, although these could be substantively under the MOH. The construction contract value is known before construction commences, provided there are no variations to the design. CDHB's substantive involvement throughout the design phase seeks to mitigate these risks.
- Whole of life considerations: although each private party (e.g. construction, design, maintenance etc.) may lack of whole of life motivations, with an appropriately managed design process (led by the MOH and CDHB), and separation of design and construction, whole-of-life cost can be given appropriate consideration during the design phase.
- Value for money: there is a well-established market for this approach as it provides certainty of scope, proposes pricing options that are well understood by the market and low tendering cost to tenderers. A carefully managed and communicated RfP process will ensure strong competition at the selection stage. Competitive tension will drive innovation; so too will the separation of design and construction, but with a traditional procurement approach only one design is developed which may reduce opportunities for innovation during design that maximise operational benefits.
- ► Flexibility: a sequential design and construction process will allow time to better understand and scope the facility requirements prior to tendering the construction contract. CDHB is in control of the facility following construction and has unfettered ability to adapt the facility over time to meet the needs of changing models of care and patient demand.
- ► Timeliness of operational commencement: the procurement process is less costly and time consuming than PPP and other bundling approaches due to the simple contract arrangements. However, construction cannot commence before design is complete, which may put the targeted 2022 operational commencement at risk. This can be mitigated by bringing portions of the project to market individually.
- Market competition: traditional procurement is familiar to the Christchurch market. The scale of the project also limits the number of potential tenderers. It is likely to be too small to interest large Australian firms, but too large to be able to be handled by more than a handful New

Zealand based firms. Given this reality a less complex procurement is likely to further improve competitive tension and increase the number of tenderers interested in bidding for this project.

► Risk allocation: the public sector retain most of the risks under this model. Key risks include: complex design issues; unanticipated adverse ground conditions; long term asset performance.

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7. **Financial case**

7.1 Purpose

The Financial Case assesses the affordability of the recommended option (Option 3) defined in the Economic Case and delivered through the procurement method as detailed in the Commercial Case. The purpose of this financial case is to:

- Set out the indicative costs of the proposed investment, including impact on capital expenditure 10HA and whole of life operational costs
- Outline the level of cost confidence, potential risks and contingencies
- Outline the potential funding sources for the recommended option

7.2 Summary

The projected CAPEX cost of the recommended Option 3 is \$79.0m on a non-discounted nominal basis. It includes all costs of construction for the specialist mental health facility and omits the estimated \$5.1m of value that may be realised from sale of the vacant TPMH land following the transition of SMHS to a new facility, which will be used to meet costs of the Christchurch hospital build.

Not included in the above capital cost is an estimated \$8.9m of fitout costs that would necessarily be incurred in order to provide CAF outpatient services and associated workspace from a clinically appropriate and adequately sized leased space (estimated to be a further 2,346m2 of purpose built leased space in close proximity to the new IFSC). The advancement of lease arrangements for CAF outpatients will be subject to a separate planning and business case process, which will be advanced by CDHB independent of this business case.

The expected operating costs for CDHB SMHS currently located on TPMH over the first 10 years of operation are \$301.6m. This includes all related employment costs, services, clinical supplies, nonclinical supplies, lifecycle costs, lease charges, depreciation, interest and capital charges (assuming a capital charge of 6%pa on equity funding).

It is assumed the capital costs associated with the proposed new SMHS facilities on the Hillmorton site will be equity funded by the Crown at a cost of 6% p.a. (nominal), which will continue in perpetuity.

7.3 Key assumptions

The financial model was constructed based on cost, revenue and funding assumptions and estimates obtained from CDHB and RLB, supplemented with guidance from CDHB. The assumptions for the financial case are largely drawn from the Economic Case. Key differences in approaches between the two cases are shown in the following table.

Table 42: Economic Case and Financial Case assumptions					
Assumption	Economic Case	Financial Case	Source		
Discount rate	6.00%	n/a	Treasury		
Inflation	n/a	2.00%	Treasury		
Appraisal period	25 years	10 years	Project Team		
GST and Tax	Excluded	Excluded	Treasury BBC guidance		
Depreciation	Excluded	Building structure 1.5%	Canterbury DHB		

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Table 42: Economic Case and Financial Case assumptions						
Assumption	Economic Case	Financial Case	Source			
		Fitout 3%				
		FF&E 8%				
Capital charge	Excluded	6.00%	Canterbury DHB/Treasury			
Funding	Excluded	New build 100% Crown Equity Funded	Canterbury DHB/Treasury			

As noted above, the assumptions for the Financial Case are largely drawn from the Economic Case. The following table summarises the key additional assumptions that have been incorporated in the Financial Case.

Table 43: Financial Case Assumptions						
Title	Assumption	Description	Source			
Uses of funds						
Depreciation	Building structure: 1.5% of structure cost Fitout: 3% of facility fitout cost FF&E: 8% of FF&E cost	Depreciation is applied on a straight line basis and is charged from the first year the facilities are available for use i.e. assumed 2023	Canterbury DHB			
Funding requirements	New build 100% Equity Funded Capital Charge repaid in perpetuity (no equity is repaid)	All new build CAPEX is fully funded by new Crown equity Leased buildings fitout cost is CDHB funded	Canterbury DHB			
Capital Charge	6% of all Equity funding	Capital Charge is applied to the equity balance of the CDHB	Canterbury DHB/Treasury			

The information and assumptions forming the basis of the Financial Case will be further developed and refined as more information becomes available and the recommended option continues to be developed.

7.4 Summary of recommended option – costs

Under the recommended option, the total capital and operating cost for the SMHS currently located at TPMH over the 10 year forecast period (from 2018) are estimated to be \$389.4m. These costs are broken down as follows (note: all costs are nominal):

Table 44: Summary of Recommended Option 3 Costs (10 Years)		
\$000, 10 years nominal	Option 3	
Construction costs	60,602	
Site Wide Infrastructure	7,076	
Escalation, Decanting & Relocation, Contingency and Rounding	11,322	
Capital Expenditure - new build at Hillmorton	79,000	
CAF outpatients lease fitout and FF&E	8,850	
Total Project CAPEX Costs	87,850	
Inpatient Costs	103,343	
Outpatient Costs	133,917	
Life Cycle Costs	14,946	
Decant Costs ²⁶	1,667	
Lease Costs	5,038	

²⁶ Includes system and network migration costs. For simplicity these are classified as OPEX for the DBC purpose only.
Table 44: Summary of Recommended Option 3 Costs (10 Years)						
TPMH Operational Inefficiencies	4,325					
Total Project OPEX excl. depreciation and capital charge	263,236					
Depreciation (non-cash)	13,125					
Capital Charge	23,700					
Interest (financing cost of CAF outpatients lease fitout funded by CDHB)	1,490					
Total Project OPEX	301,551					
Total Project Costs	389,401					

Table 45: Summary of Construction Cost AND 10 year operating forecast

Recommended Op	tion 3									\mathbf{O}	
\$000	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Total Building Costs (incl. infrastructure)	-	2,886	3,083	23,893	28,329	4,974	-	Č.	NP.	-	63,165
FF&E Costs	-	-	-	4,500	-	-	-	Θ	-	-	4,500
Contingency & Escalation to Construction	-	1,861	2,673	2,720	2,720	1,360	1	-	-	-	11,335
Total New Build at Hillmorton Capital Expenditure	-	4,747	5,756	31,114	31,050	6,334	-	-	-	-	79,000
Lease Space fitout & FF&E	-	-	-	-	8,850	-	-	-	-	-	8,850
Total Capital Expenditure	-	4,747	5,756	31,114	39,900	6,334	-	-	-	-	87,850
Inpatient Costs	9,383	9,610	9,892	10,181	10,432	10,249	10,503	10,762	11,029	11,302	103,343
Outpatient Cost	9,733	10,304	10,916	11,572	11,936	14,972	15,426	15,890	16,362	16,807	133,917
Life Cycle Costs	1,545	1,576	1,607	1,640	1,672	1,232	1,346	1,395	1,452	1,482	14,946
Decant Costs	-	$\mathbf{\nabla}$	-	-	1,667	-	-	-	-	-	1,667
Lease Costs		- 7	-	-	799	815	831	847	864	882	5,038
TPMH Operational Inefficiencies	831	848	865	882	900	-	-	-	-	-	4,325
Total Operational Expenditure	21,492	22,338	23,280	24,275	27,406	27,267	28,105	28,894	29,707	30,472	263,236
Depreciation	-	-	-	-	-	2,625	2,625	2,625	2,625	2,625	13,125
Capital Charge	-	-	-	-	-	4,740	4,740	4,740	4,740	4,740	23,700
Interest	-	-	-	-	-	298	298	298	298	298	1,490
Total Operational Expenditure (incl. non cash)	21,492	22,338	23,280	24,275	27,406	34,930	35,768	36,557	37,370	38,135	301,551

7.5 Capital costs

The capital costs for the new build elements of the Recommended Option 3 are estimated at \$79.0m.

Table 46: Capital Costs - New b	uild at Hillmorton	
Preferred Option 3		
\$000	Total	Source and Notes
Design and Construction		
Construction	46,254	RLB SMHS DBC Cashflows Options 1-4 October 2018
Infrastructure	7,076	RLB SMHS DBC Cashflows Options 1-4 October 2018
Decanting & Relocation	100	RLB SMHS DBC Cashflows Options 1-4 October 2018
Fixtures, Furniture and Equipment	4,500	RLB SMHS DBC Cashflows Options 1-4 October 2018
Design & Consents (incl. Insurance)	9,848	RLB SMHS DBC Cashflows Options 1-4 October 2018
Project Contingency and Rounding	7,079	RLB SMHS DBC Cashflows Options 1-4 October 2018
Escalation	4,143	RLB SMHS DBC Cashflows Options 1-4 October 2018
Total Design and Construction cost	79,000	

7.6 Operating costs

The 10 year cumulative operational costs of Option 3 has been estimated at \$301.6m (note: all costs are nominal). These costs are detailed in the below table and are distributed across the patient segments as follows.

Table 47: Operating Costs						
Preferred Option 3						
Operation	Total (\$000)	Source and Notes				
M&B and EDS inpatient unit	25,807	CDHB historical costs were obtained as a basis for the forecast. Number of beds were used as the cost driver across all operating costs (i.e. staff, clinical and non-clinical supplies).				
CAF inpatient unit	42,708	CDHB historical costs were obtained as a basis for the forecast. Number or beds were used as the cost driver across all operating costs (i.e. staff, clinical and non-clinical supplies).				
H&C inpatient unit	28,271	CDHB historical costs were obtained as a basis for the forecast. While bed numbers are projected to decrease by 33% upon migrating to a new facility, it is assumed the remaining patient cohort will inherently be the most difficult to treat and manage. As a result of these factors the new facility is expected to be more staff intensive per bed than present and only minimal FTE savings are projected.				
Other TPMH people cost	6,557	CDHB historical costs were obtained as a basis for the forecast. These costs are expected to continue following migration to new facilities in FY2023.				
TPMH operational inefficiencies	4,325	CDHB historical costs were obtained as a basis for the forecast. This includes all clinical costs but excludes TPMH lifecycle related cost (shown separately). This cost applies until the new facility is available for operation in FY2023.				
All Outpatient unit	133,917	CDHB historical costs were obtained as a basis for the forecast. Forecast outpatient volumes were used as the cost driver. All historical clinical staff to patient ratios were maintained throughout the forecast period.				

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Table 47: Operating Costs		
Preferred Option 3		
Operation	Total (\$000)	Source and Notes
Lifecycle costs	14,946	CDHB historical costs were obtained as a basis for the pre-migration forecast. CDHB provided post-migration estimates based on Option 3 facility specifications.
Decant costs	1,667	CDHB estimate: based on Option 3 facility specifications.
Lease costs	5,038	RLB estimate 2,346 sqm at an indicative average cost of \$300 per sqm p.a. sourced from Chase Commercial.
Total Operating Costs	263,236	
Depreciation	13,125	1.5% on building structure, 3% on fitout capital and 8% of FFE, all calculated annually on straight line basis
Capital Charge	23,700	Treasury's latest capital charge rate is 6% p.a. calculated on the total amount of equity funding for capex. This capital charge is assumed to be paid in in perpetuity.
Interest Charge	1,490	3.5% p.a. financing cost of CAF outpatients lease fitout and FF&E capex funded by CDHB
Total Operating cost (including non-cash)	301,551	

The operational cost for inpatients are proportional to the number of beds provided in the facility therefore when bed numbers change the overall inpatient cost will change. The outpatient operating costs are proportional to the number of outpatients treated.

Total operating costs for inpatient and outpatient services for 10 years are presented below.

Table 48: Outpatient Operati	Table 48: Outpatient Operating Costs										
Preferred Option 3											
\$000	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Doctors	405	440	478	520	539	681	705	731	757	782	6,040
Nurses	2,556	2,722	2,901	3,093	3,194	4,010	4,136	4,265	4,396	4,520	35,795
Allied Health	4,130	4,397	4,683	4,991	5,153	6,470	6,673	6,881	7,092	7,292	57,762
Support Staff	671	710	752	796	818	1,022	1,049	1,076	1,104	1,129	9,126
Management/Administration	1,487	1,517	1,547	1,578	1,621	2,026	2,079	2,134	2,188	2,239	18,417
Personnel Salaries & Related costs	9,249	9,786	10,361	10,978	11,325	14,209	14,643	15,086	15,537	15,963	127,139
Outsourced Services	236	253	271	290	298	373	382	392	402	412	3,310
Clinical Supplies	26	28	29	32	32	41	42	43	44	45	360
Infrastructure and Non- Clinical Supplies	222	237	254	272	280	350	359	368	378	387	3,107
Lease Costs – CAF outpatients	-	-	-	-	799	815	831	847	864	882	5,038
Total Outpatient Operational Expenditure	9,733	10,304	10,916	11,572	12,734	15,786	16,257	16,737	17,226	17,688	138,955

Table 49: Inpatient Operatin	Table 49: Inpatient Operating Costs										
Preferred Option 3											
\$000	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Doctors	246	254	263	272	281	289	298	307	316	325	2,851
Nurses	7,026	7,237	7,454	7,678	7,870	7,822	8,018	8,218	8,423	8,634	78,379
Allied Health	1,233	1,270	1,309	1,348	1,382	1,300	1,332	1,366	1,400	1,435	13,375
Support Staff	356	316	322	329	335	342	349	356	363	370	3,436
Management/ Administration	-	-	-	-	-	-	-	-	-	-	G
Personnel Salaries & Related costs	8,861	9,077	9,348	9,626	9,867	9,753	9,996	10,246	10,502	10,764	98,040
Outsourced Services	107	110	112	114	116	100	102	104	106	108	1,080
Clinical Supplies	214	218	222	227	231	207	211	215	220	224	2,189
Infrastructure and Non- Clinical Supplies	201	205	210	214	218	190	193	197	201	205	2,035
TPMH Operational Inefficiencies	831	848	865	882	900	-		514	-	-	4,325
Total Inpatient Operational Expenditure	10,214	10,458	10,756	11,063	11,332	10,249	10,503	10,762	11,029	11,302	107,668

7.7 TPMH Lifecycle Costs

Currently it is expected that the land on which TPMH occupies will be disposed. Lifecycle costs for TPMH during the planning, procurement and construction phases of the project are based on CDHB estimates for the continued operation of TPMH.

7.8 Funding

It is assumed the capital costs of the new built facility at Hillmorton Hospital will be equity funded by the Crown at a cost of 6% p.a. (nominal), which will continue in perpetuity. Lease fitout costs are expected to be funded by the CDHB and will be subject to a separate planning and business case process. The following tables illustrate the impact of the proposed capital funding arrangements and resulting annual financing and leasing costs.

Table 50: Funding sources (Nomina	I)										
Year	1	2	3	4	5	6	7	8	9	10	
\$000's	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	Total
Funding											
New equity	-	4,747	5,756	31,114	31,050	6,334	-	-	-	-	79,000
Total Central Government funding	-	4,747	5,756	31,114	31,050	6,334	-	-	-	-	79,000
Canterbury DHB funding											
Capital Charge incurred	-	-	-	-	-	4,746	4,746	4,746	4,746	4,746	23,730
CAF outpatients lease fitout costs incurred	-	-	-	-	8,850	-	-	-	-	-	8,850
Interest charge incurred – CAF OP fitout	-	-	-	-	-	298	298	298	298	298	1,490
CAF outpatients lease payments incurred	-	-	-	-	799	815	831	847	864	882	5,038

7.9 Summary and comparison to "Do Minimum" Option

The projected CAPEX cost of the new build components of the recommended Option 3 is \$79.0m on a non-discounted nominal basis. This includes all costs of construction for the specialist mental health facility but does not include the \$5.1m of value that may be realised from sale of the full TPMH site following the transition of SMHS to a new facility and will be used to fund the Christchurch hospital build.

The recommended option is projected to drive operational cost savings and significantly improved clinical outcomes. By contrast retaining TPMH necessitates costly repairs to infrastructure (notwithstanding the costs to refurbish, strengthen and "make safe" the SMHS facilities), and will continue to incur site, location and facility specific operational inefficiencies totalling more than \$800,000 per annum.

It would also require the refurbishment and strengthening of existing SMHS facilities and the demolition of immediately proximate buildings to make the site safe from seismic risk - requiring temporary decant of SMHS from existing facilities while demolition and remediation work is carried out. Notwithstanding the absence of available and appropriate space to accommodate these services, the requirement for clinically appropriate temporary space for the continued provision of SMHS (i.e. anti-ligature, plumbing, fitout, size, and configuration) presents a significant, as yet unquantified, cost not inherent in any of the other long list options.

The retention of services onsite would significantly reduce the amount of capital funds able to be released from TPMH site, as it is unlikely that significant portions of the site could be sold while an active [mental health] facility remains on-site or those portions of the site would be sold at a discount.

7.10 Risk

A key areas of risk which requires highlighting is Cost Certainty. The design and construction costs are based on estimates provided by Quantity Surveyors and Engineers engaged by MOH. An escalation amount has been factored into these costs and they have been independently reviewed by MOH appointed parties.

7.11 Sensitivity analysis

The following table summarises the effect of applying cost sensitivities to the forecast total expenditure (capital and operating) of Option 3 over the 10 year period analysed. Based on this analysis, within a $\pm 10\%$ sensitivity range, the total expenditure for Option 3 ranges from \$350m (best case scenario) to \$428m (worst case scenario).

Table 51: Recommended Option 3 expenditure – Sensitivities - Net cash flow in \$000's							
Total Expenditure Option 3							
Percent change of Costs	-10%	-5%	O%	5%	10%		
Capital Expenditure	79,065	83,458	87,850	92,243	96,635		
Operating Expenditure	271,396	286,473	301,551	316,628	331,706		
Total Expenditure	350,461	369,931	389,401	408,871	428,341		

7.12 Next steps

In order to further advance this programme, the critical next step is to obtain approval from funding parties to proceed forward with the recommended option as outlined in the management case.



8. Management Case

8.1 Purpose

This chapter provides an assessment of the capacity and capability of the organisation to implement the recommended option. It describes the arrangements required to ensure successful delivery of the recommended option and to manage project benefits and risks. In doing so, this section outlines the following key aspects:

- Project management and governance arrangements required to progress the project Stakeholder management and communications Change management Project assurance Benefits management Risk management

The MOH will be responsible for the delivery of the project through procurement and construction, and will then hand over responsibility to the CDHB for facility maintenance, transition and operation.

Clinically, from the CDHB's perspective, the preferred investment options are Options 1 and 2. However recognising that capital is a constraint (both locally and nationally), CDHB support Option 3 being carried forward as the recommended option. As such, the advancement of commercial lease arrangements for CAF outpatients will be subject to a separate planning and business case process, which will be advanced by CDHB independently of this project.

8.2 Project planning (next steps)

This section outlines the next steps required to move forward with the project. Table 52 below describes these steps, including:

- The key deliverables required for the next phase and the activities required to deliver them
- The critical path
- Key milestones and decision gates

Table 52: Project plan	
Milestone	Date
MOH / CDHB & Stakeholder Approval of DBC	November2018
HRPG & CIC Approval of DBC	November-December2018
Implementation phase	
RFP for design consultants released	January-February 2019
Design consultants appointed	March 2019
Design and consenting phase	C
Concept Design	March - May2019
Preliminary Design	June - August 2019
Developed Design	September - December 2019
Detailed Design	December 2019 - April 2020
Detailed Design MOH / CDHB & Stakeholder approval	April – May 2020
Consenting (Resource, Building consents etc.)	August 2019 - August 2020
Contractor procurement	K
Contractor Expression of Interest (EOI) released to market	December 2019 - February 2020
Contractor Request for Proposal (RFP) released to market	June - July 2020
Main Contractor appointed	August 2020
Works on site	
Construction commences	August 2020
Construction completed	November 2022
Operational commencement	December 2022

8.2.1 Detailed project establishment delivery plan (Project Delivery Plan)

The detailed Project Delivery Plan outlined below is focused on the managed establishment of the project for the next 8-9 month implementation phase through to CDHB approval of the fully developed concept design and consultant commencement of the preliminary design phase on 18 June 2019 as per the current Woods Harris Master Programme outlined in Appendix J.

The scope of works for the Project Management consultant (once engaged) requires development and submission of a full (all phases) Project Execution Plan within three months of appointment.

The detailed Project Delivery Plan is based on the following assumptions:

 Option 3 as outlined in this DBC, at a project cost of circa \$79m is selected and obtains the necessary MOH and CDHB endorsement and governance approvals via CIC and HRPG in the Nov / Dec 2018 meeting cycle.

The Woods Harris Master Programme dated 19 October 2018 for Option 3 is the established baseline.

► This DBC is approved to completion in line with the Master Programme.

Consultant engagements

This phase is scheduled to begin on 14 Jan 2019 and reach completion on 18 March 2019²⁷.

Klein have been appointed as the lead / architect / health planner consultant based on the earlier IBC construction budget of circa \$47-57m. Via the masterplanning and concept phases already undertaken by Klein the schedule of accommodation (SoA) has established the building GFA's (and therefore budget & programme) are greater than proposed by the IBC. Klein's SoA's and concept have been peer reviewed twice by Brave Architects with some minor floor area savings still expected to emerge in the next preliminary design phase. This process has resulted in the DBC Option 3 scenario being the recommended option, with the support of CDHB acknowledging the capital constrained environment.

Klein have completed the user group process to the end of their (staged) concept phase engagement. The CDHB are maintaining user involvement by way of model of care and low-fi room mock ups processes. In the present circumstances enhanced user engagement could be achieved by early establishment between users and Klein for the room data sheet process, which typically occurs in the next preliminary design phase. Commencing the room data sheet process early maintains user engagement, accelerates services design for other engineering consultants (once appointed) and tunes the GFA's.

The project consultant appointments that need to made are:

- Project Management
- Structural (includes Structure, Civil, Geotechnical, Topographical Surveying, Contaminated Land and Non-Structural Elements Engineering)
- Mechanical (includes: Mechanical, Sanitary Plumbing and Hydraulics, Energy sources, Medical Gases, Building Management systems, Electrical for Mechanical and H1 thermal envelope modelling Engineering)
- Electrical (includes: Electrical services, Earthing, Lightning protection, Structured data networks, MATV, Security, Nurse Call and Paging Engineering)
- ► Fire (includes: Fire Protection, Evacuation and project specific Fire Design Engineering)
- ► Acoustic Engineering
- Traffic Engineering
- Resource Planner
- Quantity Surveying and Cost Management
- Programmer

The tendering, evaluation and appointment of consultants as per the Master Programme are based around the success of the CIC / HRPG approvals in the November and December 2018 meetings, as the meetings are closely followed by the Christmas holiday season shut down. The Master Programme recognises governance approvals obtained 17 Dec 2018 (in accordance with the current meeting schedule), with full consultant engagement not completed until 28 March 2019.

Consultant engagement will be delayed in part by the lag caused by the holiday shut down, making evaluation (including negotiation with responders) problematic over that period. Whilst consultant

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²⁷ Potential early completion via "parallel approval process": 20 Feb 2019

RFP's can be tendered and evaluated prior to governance approval of the DBC, the DBC must be approved before consultants are appointed.

A programme gain of 4 weeks is possible by running the consultant RFP tender and evaluation parallel with the CIC / HRPG approval for Option 3 by the following scenario:

- ▶ DBC completed 9 November 2018
- ▶ RFP assembled, reviewed by legal and onto GETS 19 November 2018
- ► RFP's close 17 December 2018
- ► Evaluate RFP's and make recommendations 17 December 2018 to 1 February 2019
- HRPG governance approval of consultant appointments at scheduled 13 February 2019 meeting.

As outlined previously, there is a risk of user dis-engagement due to the long lag between completing concept phase (user CD wrap-up meetings were held 6 September 2018) and the next preliminary design phase not starting until 18 June 2019 as per WH programme. This lag for the users (potentially up to 10 months) is due to the consultant engagement process and need for the other consultants to coordinate the Klein concept with their disciplines.

Advanced approval for Klein to begin preliminary design at or immediately following the CIC / HRPG November / December meetings should be considered if Option 3 is confirmed. This would enable Klein to commence room data sheets and room space planning with the users in early 2019 and thus maintain a more beneficial user interaction timeline. Advancing room data sheets is also beneficial to the engineering consultants and documentation development as a whole.

Project establishment and DBC implementation phase

This phase is scheduled to begin on 19 March 2019 and reach completion on 17 June 2019.

In the Master Programme, this phase also includes the consultant RFP engagement process. We have broken the consultant engagement items out and provide narrative in the preceding phase, as there is a potential programme time advantage if these processes can be advanced or paralleled.

It is difficult in advance to reasonably predict any further programme advantage that can be obtained during this stage other than that the sooner design consultants are on board, the sooner they will be able to complete their concept phases and become integrated with the Architects (completed) concept design.

Note that FF&E is presently being progressed as an early activity GAP analysis.

Refer to Appendix K for an itemised schedule of tasks needing to be actioned, implemented or determined. Appendix K is not necessarily an exhaustive list but is nonetheless detailed. Appendix K also notes investigations required to discover and /or mitigate in-ground and existing conditions risk such as ground conditions, contamination and existing infrastructure condition.

One area of uniqueness with this project is that the health planning / architecture is now at the end of its concept design and requires more detailed inputs from the other design consultants. On receipt of other consultant inputs, the architectural concept is progressed incorporating engineering requirements and achieving a more comprehensive coordinated design able to be progressed (in a typical design BAU sense) into the next preliminary design phase. Whilst specialist high level engineering design advice (at a masterplanning level) has been obtained and included by Klein in development of their concept those assumptions need to be explained then extended, tested and verified by the engineering members of the consultant design team once appointed.

The acceleration of the concept design reports from the engineering design consultants, once engaged, is the best possibility for achieving a programme advantage in this stage.

Contractor procurement

This phase is scheduled to begin on 4 December 2019 and reach completion on 12 August 2020. It includes the following processes:

- ► The EOI market period
- ► EOI review
- EOI shortlist
- ► RFP market period
- ► RFP review and negotiate
- ► Appointment of main contractor

As noted above, we believe there may be a modest programme advantage to be gained from a more detailed analysis of the consenting and procurement programme staging once the design has been further developed to enable this.

Works on site: construction

This stage is scheduled to start on 13 August 2020 and reach completion on 4 October 2022. This timeframe includes a 10-week construction delay contingency. The construction phase includes the following processes:

- ▶ Site infrastructure upgrade
- Construction of Integrated Family Services building
- Construction of a new carparking
- Construction of the High & Complex building

Works on site: completion

This stage is scheduled to start on 5 October 2022 and reach completion on 2 November 2022. The completion phase includes the following processes:

- ► FF&E fitout
- Code Compliance Certification
- Practical Completion

Works on site: start-up

This stage is scheduled to start on 2 November 2022 and reach completion on 14 December 2022. It includes the following processes:

- ► Functional commissioning and migration
- ► SMHS Go Live

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8.3 Project management and governance

The Project governance structure is outlined in Figure 8 below, while the CDHB facilities development governance structure is outlined in more depth in Figure 9 on the following page.





Figure 10 below illustrates the key elements of the CDHB facilities development process.

Figure 10: Key elements of facilities development



The remainder of this section describes the composition and roles of key project governance groups.

8.3.1 Hospital Redevelopment Partnership Group (HRPG)

The MOH is responsible for delivering the redevelopment of Burwood and Christchurch Hospitals, along with new facilities for SMHS currently housed at TPMH. The MOH is working closely with CDHB to ensure the new facilities are fit-for-purpose and meet the current and future health needs of the Canterbury region.

The redevelopment is overseen by a Hospital Redevelopment Partnership Group (HRPG), who were appointed by the Minister of Health in 2012. The Group provides governance for planning, service reviews, business case development, and construction of the project. The group also monitors the Canterbury DHB's earthquake repairs programme.

The four members of the Partnership Group are:

- Evan Davies (Chair)
- Dr Tony Lanigan
- ► Dr Margaret Wilsher
- Dr John Wood

In addition, the Group also includes ex officio members representing the MOH, Treasury, and the Canterbury District Health Board.

8.3.2 Project Control Group (PCG)

The PCG is a representative group of key leaders relevant to the Project for continued delivery of SMHS. As a group the PCG is responsible for:

- Achieving the objectives and deliverables of each phase of the project through to operational commencement
- ► Providing recommendations to the MOH Representatives to support decision making
- Ensuring work is achieved within agreed timeframes

- Monitoring the projects risks
- ► Facilitating engagement of key stakeholders
- ▶ Providing collective technical expertise to support the direction of the Project.

Individual members will:

- Provide input and feedback relevant to their specialist area of expertise
- > Promote and provide relevant linkages for the project within their areas of expertise
- Assist with identifying relevant expertise, skills and resources and advise on appropriate communication/consultation mechanisms
- ► Work closely with other internal expertise/resources
- Promote and champion the project within their own organisation and amongst their colleagues and area of expertise.

8.3.3 CDHB Redevelopment Facilities Committee (RFC)

The RFC is a subcommittee of the CDHB Board that meets monthly. The RFC receive proposals before they are sent to the Board, and decide whether or not to endorse each proposal. The RFC is comprised of:

- ► Independent Chair
- ► Chair of the CDHB Board
- ► Chair of CDHB QFARC
- Chair of the CDHB Facilities Sub Committee
- Two members appointed by the Minister
- ► External Clinical Advisor

In addition, the Group also includes ex officio members representing the MOH, Treasury, and the Canterbury District Health Board

8.3.4 CDHB Facility Development Project Governance Group (FDPGG)

The Facility Development Project Governance Group (FDPGG) is the executive group for the wider facilities management team. The FDPGG meets fortnightly. It is their responsibility to facilitate communication between the CEO and external project managers. The FDPGG receives updates and reports from external project managers and the FDP Clinical Leaders Group, and send reports and updates to the CEO.

The FDP is composed of the following CDHB members:

Chief Executive

- Executive Director of Nursing
- ► GM Finance
- Executive Director of Allied Health
- General Manager, Christchurch Campus
- Clinical Leads, Facilities Development
- ► Programme Manager, Facilities Development
- Director of Property & Construction

8.3.5 CDHB Facility Development Project Clinical Leaders Group

The role of the FDP Clinical Leaders Group is to oversee and endorse work and designs from the user groups. They consider the inputs from each user group, synthesize the information and report to the FDP Governance Group, taking a whole-of-project approach. The group meets fortnightly. The FDP Clinical Leaders group is comprised of all chiefs, chairs, nursing directors and allied health leaders of services. Executives and GMs are invited as non-voting members. The full composition of ation Million Allow All the group is:

- Chief of Medicine
- Chief of Surgery ►
- Chief of Child Health ►
- Chief of Psychiatry ►
- Clinical Director of Older Persons Health
- Clinical Director of Women's Health
- GM Medical & Surgical and Women's & Children's Health
- General Manager Older Persons Health, Orthopaedics and Rehabilitation
- General Manager Mental Health
- DON, Medical & Surgical
- DON, Older Person's Health
- DON. Mental Health
- DON OPH & Population Health
- Nursing Director, Women's & Children's Health
- Change Champion, Allied Health
- Allied Health Technical Lead, Medical & Surgery
- Clinical Leads, Facilities Development
- Programme Manager, Facilities Development
- Project Managers, FDP

8.3.6 User Groups

User groups are made up of individuals who will be end-users of the facility, such as patients, families and mental health professionals. Each user group reports separately to the FDP Clinical Leaders Group. The groups will consist of up to eight users per group. Possible groups include:

- M&B/EDS inpatient and outpatient teams, patients and families ►
- CAF inpatient and outpatient teams, patients and families ►
- H&C inpatient teams, patients and families ►
- CAF Day Programme teams, patients and families
- Southern Regional Health School teams, patients and families, including Ministry of Education representatives
- Workspace teams

8.4

- Oranga Tamariki and Youth Justice
- South Island district DHBs

Stakeholder Management

8.4.1 CDHB Stakeholder Management Principles

Detailed stakeholder management plans will be developed for the Project as it moves through its next stages. Stakeholder management plans aim to coordinate and create consistency of messaging for stakeholders to drive awareness, understanding, buy-in and contribution to the project. It is therefore essential that the key stakeholders are identified up-front and, where relevant, involved in planning phases of the project.

- Purpose: Begin every engagement with a clear understanding of what you want to achieve
- Inclusion: Identify relevant stakeholders and make it easy for them to engage
- Timely involvement: Involve stakeholders from the start and agree on when and how to engage
- Transparency: Openly communicate with stakeholders about their respective concerns and contributions and set clear expectations
- Respect: Acknowledge and actively monitor the concerns of all stakeholders and take their interests appropriately into account in decision-making and operations
- Consideration: Listen to the stakeholders about the risks that they assume because of their involvement on the project.

The stakeholder management process is summarised in Figure 11 below.

Figure 11: Stakeholder management process



8.4.2 Stakeholder Analysis

An analysis of key stakeholders by level of influence and support (as illustrated in Figure 12 below) will be undertaken to guide the type and frequency of activity to effectively engage with stakeholders over the course of the project. This enables the FDP Governance Groups, Project Sponsor and Project Managers to:

Ensure that the right people are involved at the right time in the process

- Empower the owners of the relationship with the key stakeholder with the right tools and materials to effectively manage stakeholder group(s)
- Encourage stakeholders to provide feedback and voice concerns.

Stakeholders are classified and mapped by their level of interest in the project and their potential levels of influence and impact. The frequency and type of communications and engagement activities will be targeted appropriately, according to the stakeholders' classification. Figure 12 illustrates the classification of stakeholders and lays out the appropriate engagement activities for each category of stakeholder.

Figure 12: Segmentation analysis of key stakeholders



8.5 Change Management

A Change Management Process will be developed for the Project as it moves to its next stages. The purpose will be to define the change management strategy, framework and plans required for the successful delivery of the recommended option. It is acknowledged the Change Management Process needs to reflect the Project governance arrangements and be constructed in such a way that it focuses on key issues with a material impact.

The change control procedures should be used when considering an actual or potential change to any element of the project and should comprise:

- An assessment of the change impact on the organisation, its customers and other stakeholders.
- Development of the change management approach and initial planning together with the next steps.
- A change request will require formal approval from the relevant governing authority and appropriate communication to those affected. All change requests will be recorded in a change control register.

The process will ensure that the cost and benefits impact of changes to scope are appropriately managed and communicated effectively.

Project Assurance

8.6

Project Assurance is used to mitigate against project failure and optimise the investment. It provides independent and objective oversight of the likely future performance of a project and its outcomes and benefits. Project Assurance is used to check projects are tracking to the desired outcomes at various 'gateways' or 'checkpoints' throughout the project lifecycle.

The form the assurance process takes will be decided by the Project Sponsor and HRPG, with input from the Treasury, as the project moves into the next phase of delivery. Irrespective of approach, this remainder of this section outlines the principles and processes Project governance will follow to ensure successful delivery of the project.

8.6.1 Planning & Documentation

A fit for purpose project assurance plan will be developed and implemented following approval of the DBC. The purpose of the assurance plan is to show the type, quantity and frequency of assurance activities required for successful project delivery. The plan may include a combination of the following:

- Gateway Review: CDHB may initiate external assurance through the Investment Management and Asset Performance (IMAP) team Gateway process, should CDHB deem the project to have a medium or high risk profile.
- ▶ Peer Review: Peer review sign off of technical aspects as required through expert third parties.
- ► Cost and Budget Management: a formal process and policy will be developed.
- Programme Monitoring: Regular reviews will be undertaken during the construction phase and as the Project transitions into operations.
- ► Independent Assurance of the Project could occur in two parts:
 - Assurance of the governance and management of the Project, high level scope includes (governance and project control, quality management, schedule and project management, financial management risk management and assurance)
 - Assurance of the Project delivery (including post-Project evaluation) this piece of Assurance carried out across various phases of the Project from design, construction and in the operation phase.
- ► Probity Assessments: A probity plan may be put in place to ensure that that probity is managed in an appropriate manner. The overarching objective of the Probity Plan is to ensure, through the identification of key risks and the adoption of a set of guiding principles and specific controls, that probity issues are taken into account and appropriately managed throughout the procurement process.

A Project Probity Advisor and/or Probity Auditor may be appointed. A Probity Advisor's role is to work proactively throughout the procurement lifecycle providing advice on probity considerations so that the procurement process can be designed to mitigate risk of challenge. A Probity Auditor's role is to independently observe, review and assess the procurement process.

Post-project evaluation: a formal documented process undertaken involving all parties to determine positive and non-positive aspects of the project.

8.6.2 Reviews & Reporting

The project will follow a defined phased lifecycle. After the Project has been profiled, the level of detail and rigour to be applied will be determined to aid the timing of decision-making within the lifecycle. Assurance Reviews aim to increase confidence that the investment is well managed, aligns with strategic objectives and that benefits will be realised. They can also be used to check readiness for market and transition to operational activity.

Assurance Reviews are phase-driven, internal control points to provide formal approval for investment and decisions on whether to proceed or not. The reviews analyse the following parameters:

▶ Quality of execution: Have the previous project activities been executed in a quality manner?

- ▶ Investment rationale: Is the project still viable within the following criteria: time, cost, scope, benefits, change and investment perspective?
- Business rationale: Is there still a business requirement for this project?

Assurance reporting provides a concise, evidence-based snapshot of a project at the time of each Assurance Review. The report should identify any significant emerging risks or issues that may impact the project's success, with action-orientated recommendations to address these. It is usually FORMATIONAC prepared for the Project Sponsor, becomes part of the project's control documents, and corrective actions should be agreed and added to the project's schedule.

The possible result at the end of the Assurance Review will be one of:

- Proceed as planned ►
- Proceed, but with approved changes
- Pause/hold for further analysis
- Reconsider and re-plan
- Stop

8.7 **Benefits Management**

8.7.1 CDHB benefits management principles

Benefits management is the practice of identification, analysis, planning, realisation and reporting of benefits. CDHB acknowledges the need to have clearly defined deliverables and measurable benefits as part of any decision to invest in projects. With benefits management being an integral part of project delivery and successful change management, the approach to project and change management needs to be benefits driven to ensure maximum value from the investment in change.

The guiding principles of CDHB's benefits management include:

- Benefits are the quantifiable improvement that the investment will achieve. The benefit must be directly attributable to the investment.
- Benefits can be dynamic and may change during and following a project. Changes to benefits need to be documented and follow the scope change control process. Realisation of benefits relies on changes being embedded into different business areas, so effective change management is key.

The process of managing benefits will include four phases:

- Identification: Identify benefits, dis-benefits, measures and owners. This phase identifies what ► the project aims to achieve.
- Analysis: Quantify and analyse benefits and measures. The analysis phase determines the measures that benefit realisation needs to be tracked against.
- Planning: Schedule benefits realisation, clearly defining when benefits will be realised and the steps required to realise them. The planning phase also needs to identify how the MOH and CDHB will know when the planned benefits have been realised.
- Realisation and Reporting: monitor and report on benefits realisation. This stage involves asking if the project is proceeding as it needs to in order for it to achieve the planned benefits. After the project is complete, it involves checking to see whether these benefits were realised or not.

8.7.2 CDHB benefits management framework

The overall context for this framework is based on the New Zealand Treasury's Better Business Case (BBC) Guidance and the UK government Managing Successful Programmes frameworks.

The expected benefits associated with the recommended option have already been identified in the Strategic and Economic Cases and initially assessed in the Economic Case. A process will be put in place to ensure that the Project benefits are managed over the short, medium and longer term. The level of monitoring effort, frequency and audience for regular reporting will be appropriate for the scale, complexity and risks of this project.

The key roles and responsibilities relevant to benefits management will align with the project management governance arrangements and are outlined in Figure 13 and discussed in more detail below.



Figure 13: CDHB benefits management framework: governance

CDHB Executive Management Team (EMT)

The EMT is responsible for maintaining strategic oversight of the full range of benefits being projected across the CDHB. The EMT ensures effective and appropriate systems are in place for delivery and realisation of benefits, and authorises the Business Case and Benefits Realisation Plan and any subsequent changes.

CDHB Strategic Investment Committee (SIC)

The SIC is a subcommittee reporting to the CEO, and takes an enterprise-wide perspective of investment initiatives proposed or agreed to, so as to deliver against the strategic objectives, and as such will review the benefits justification in the concept brief.

CDHB Baseline Capital Prioritisation Committee

The Baseline Capital Prioritisation Committee is a subcommittee to the EMT that prioritises and recommends the baseline capital investment requirements within affordability. They will review the benefits justification of requests.

Strategic Investment Committee Support Team

The support team supports the SIC and Baseline Capital Prioritisation Committee by maintaining a master/portfolio Benefits Register (documentation library) for projects, including version control. They may also be responsible for support and advice on Benefits Management and for reporting on progress towards benefits realisation.

Business Owner

The Business Owner is responsible for specifying the expected benefits in the concept and business case phases and is held accountable for the benefits realisation as defined in the Business Case. They are the end-user/owner of the outputs that the project will deliver and will realise the tangible business value it achieves.

The Business Owner(s) provide confidence to governance groups by ensuring benefit reviews take place to monitor the extent that investments will achieve the expected outcomes and realise anticipated business benefits. Business Owner(s) ensure there is on-going assurance to governance groups that:

- An investment is worthwhile and aligns with strategic goals and principle focus areas
- Benefits are meaningful, achievable, realistic, measurable and ultimately realised
- Lessons learned will be identified and embedded in order to continually improve.

The role of the Business Owner(s) is to:

- ► Authorise the Benefit Profile(s)
- ► Consult on the Benefits Realisation Plan
- Monitor business changes
- ► Approve data to evidence benefits realisation
- ▶ The Business Owner is accountable for the delivery of the benefits

This role is also responsible for the following, but may delegate these aspects to other members of their team:

- Ongoing delivery of the Benefits Realisation Plan
- Embedding the capability into the business operations
- ► Ensuring business ownership, understanding, commitment and adoption

Project Sponsor

For the duration of the project, the Project Sponsor's primary role is to ensure the project delivers the agreed scope and is accountable for ensuring the planned business benefits are on track to being realised for the Business Owner.

Project Manager

The Project Manager is responsible for ensuring the day-to-day management of the project and reports on a regular basis whether the project is on-track to delivering the new capability and expected benefits. They are not responsible for realising the project benefits.

8.7.3 CDHB benefits management documentation

Documentation for the management of benefits will include:

Benefits Realisation Plan: Showing a view of benefits and when they are expected to be realised

- ► Benefit Profile(s): Showing details of each benefit
- ► Benefits Register: Showing consolidated benefit information.

8.8 Risk Management

8.8.1 Risk management framework

Guiding principles

Project risk management is a process by which stakeholders in a project identify, categorise and manage the risks of that project. CDHB recognises project risk as 'an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives. The objective of risk management is to keep a project's risk exposure at an acceptable level, by mitigating the impacts and effects on the project.

A fit for purpose risk management strategy will be developed for the Project upon commencement of the design phase to ensure the effective management of risks. It is expected that the strategy will align with the overall CDHB Risk Management Policy, the CDHB Risk Management Framework and related procedures, and is in accordance with the AS/NZS ISO 31000:2009 Risk Management Standard.

Project risk ownership

Successful risk management requires senior management commitment, ownership and understanding of the process, and an active risk management regime which is reviewed regularly.

Each project risk will be assigned to a person (or entity), who is known as the Risk Owner. The Risk Owner is not always, or necessarily, the Project Manager, but ultimately owns the risk, and has accountability and authority for that risk, but may delegate it to another person to manage it. They are also usually the person who is responsible for the area of work that the risk is most likely to affect, or are the person who will be most adversely affected by the risk, if it occurs.

Project risk management lifecycle

Risks will continually identified throughout the life of the Project, so the systematic process of planning and executing risk management activities similarly continues throughout. Risks can be raised at any time by project team members or by external stakeholders via the Project Manager.

The draft project risk management process for the Project is illustrated in Figure 14 below:

Figure 14: Risk management process



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The purpose of this process is to assess and effectively respond to risks. Specifically, risk management ensures:

- ▶ Project risks/issues are identified, categorised and reported in a risk register
- Affected stakeholders are made aware of the status of risks/issues
- Escalation and treatment of risks/issues takes place according to a defined process

After the risk management assessment is completed, the risks will be documented in a risk register. The register records each risk, their potential impacts, the likelihood each risk has of occurring, the level of the impact and mitigating strategies for each risk.

Project risk reporting and governance

Risks will be recorded in the Project Risk Register, and recorded risks will be managed through regular and accurate reporting to the FDP governance groups and other governance bodies as necessary.

The Project Manager will prepare the Project Status Report for distribution to the Project Sponsor, FDP Governance Group members and the relevant Project Control Group. The report will list all new and closed risks during the period, and any risks that have a notable change in their Risk Rating. Focus is usually given to risks with a rating of High or above.

8.8.2 Risk register

Key risks and indicative mitigation strategies have been identified in the development of the Project to date and, as indicated previously, will continue to be developed as the Project moves through its next stages.

An overview of the key risks for the Project are set out in the table below.

Table 5	53: Summary of key risks fo	or the Project	An.					
	Risk	Impact	Risk of occurrence	Level of impact	Mitigation strategy			
1	Reduced access to or quality of SMHS services as a result of substandard facilities	Many of the SMHS facilities on TPMH site are acknowledged as substandard. As a result patients with complex needs may receive care within an inappropriate environment or may be denied admission due to facility limitations.		¢ ŧŧ				
2	NGOs and other community organisations are unable to provide adequate support for those with major mental health issues	Patients with high and complex needs cannot be cared for by the NGO sector, leaving them at risk.		€ ● €	 Consider intensive mental health services when designing new facilities so that NGOs can be supported if necessary. Engage with NGOs so they are aware of plans to reduce intensive mental health facilities (in favour of earlier interventions) 			
3	Timetable (drivers include approval / decision making delays - see below)	 Exposure to time delays results in increased operating and capital cost, along with increased safety, wellbeing and clinical risk due to: Cost escalation; and The continued operation of TPMH as an interim facility. 	€ €	€ €	 Follow appropriate project management and governance models. 			
4	Funding	 Reprioritization of existing funding streams to lease new SMHS facilities compromises the wider Canterbury health system. 	\$ • \$	\$ \$	 Follow appropriate project and risk management models. Develop stakeholder engagement and communication plans to ensure all interested parties are engaged at the appropriate stages, buy into the Project and are kept informed of deliverables and progress. 			

T .1.1.					
Table	Risk		Risk of occurrence	Level of impact	Mitigation strategy
5	Scope and scale of the facility is not sufficiently flexible to cater to future growth / clinical mix	 Facility is not able to cater to patient demand and/or delivery optimum standard of care. Treatment outcomes and benefit targets are not met. Exposure to future cost escalation and costly alterations to the facility at a later stage. 	\$	PANA RMA	 Undertake appropriate stakeholder engagement, timely communication and obtain to appropriate advice to ensure: The facility scope and scale is sufficiently informed by relevant stakeholders and is viable; and Key stakeholders buy into the Project and are kept informed of deliverables and progress.
6	Current SMHS facilities are substandard	Many of the SMHS facilities on TPMH site are acknowledged as substandard. As a result consumers with complex needs may receive care within an inappropriate environment or may be denied admission due to facility limitations.		F	 Regularly monitor, review and report on impact of facility limitations to EMT: Add all facility issues to works register Regularly review and update works register Identify impact on individual consumers (incidents due to environment, decision not to admit) Review and report on impacts to DLT and then EMT Upgrade facilities to contemporary standard DLT to work with EMT in progressing business case for site redevelopment
7	Staff at TPMH site do not have access to key facilities and colleagues due to the site's isolation from the main hospital sites.	The ability of staff at TPMH site to deliver high quality services is compromised	€ • €	÷ ÷	 Ensure EMT and CDHB Board are aware of contemporary issues related to stranded services at TPMH: Include regular update on all relevant reports Conduct regular reviews of issues raised by stranded services: Regular updates from Clinical areas, raised to DLT by SLT Regular monitoring of complaints related to stranded services Regular review of incidents related to stranded services
			·	·	

					~
Table 53: Summary of key risks for the Project					
	Risk	Impact	Risk of occurrence	Level of impact	Mitigation strategy
8	The limited and fragile physical infrastructure at TPMH site leads to an increased risk of harm to consumers and staff	The infrastructure may impact safe and effective care delivery and increased potential for disruption to service delivery.		€€ CRMA	 Ensure a service delivery plan is in place and features: An Increase in clinical resources A Contingency / emergency plan Monitoring of maintenance needs Support all activities that progress a business case for site redevelopment: DLT to remain informed and updated on progress DLT to provide information as requested Develop action plans to address safety and security concerns on TPMH site
9	Anticipated reduction in demand growth for long- term / intensive mental health services does not materialise	More facilities for intensive mental health services are required than is anticipated.			 Develop a contingency plan: NGOs and community organisations are informed of possible issues. Monitoring of patients with the most acute needs Consider intensive mental health services when designing new facilities.
10	Clinical and safety risk is not adequately managed through transition from existing to new facilities	Failure to appropriately manage transition results in patient and staff stress, poor patient experience and outcomes, adverse events, increased safety incidences, poor staff morale and staff turnover	● ‡ ‡	ê ê (Follow appropriate project and risk management models
Ministry of Health & Canterbury District Health Board Detailed Business case for the on-going delivery of specialist mental health services					

Table	53 [,] Summary of key risks fr	or the Project			$\overline{\mathbf{C}}$
	Risk	Impact	Risk of occurrence	Level of impact	Mitigation strategy
11	Inefficient or ineffective governance structures	 Approval/decision-making delays (> 3 months) results in increased operating and capital cost, and increased safety, wellbeing and clinical risk due to: Cost escalation; The continued operation of TPMH as an interim facility. Ineffective governance structures lead to poor decision making and therefore a reduction in realised project benefits, including patient experience, outcomes, cost efficiencies and staff wellbeing. 		FORMA	 Development of formal project team and governance structure including: PCG and project team structure - independent, external advisors; meeting schedule, agenda, structure etc Review delegation authorities to ensure they are appropriate for efficient and effective delivery Approved project budgets format and approval structure Development of accountabilities for key deliverables. Develop engagement and communication plans to ensure all governance group members are engaged at the appropriate stages, buy into the Project and are kept informed of deliverables and progress.
12	Material changes to the Project scope, scale and/or cost as a result of incomplete and/or inaccurate information and assumptions underlying the Business Case and/or the procurement process	Project becomes unaffordable and/or does not represent the best value for money resulting in poor decision making and/or time delay e.g. unanticipated, adverse ground conditions		\$ \$	 Apply business case good practice. Follow appropriate project management and governance models. Undertake appropriate stakeholder engagement and obtain to appropriate advice to ensure the facility scope and scale is sufficiently informed by relevant stakeholders and is viable Establish and implement a risk management strategy, capturing key risks associated with assumptions underlying the business case.
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Table 53: Summary of key risks for the Project					
	Risk	Impact	Risk of occurrence	Level of impact	Mitigation strategy
13	Stakeholders, including customers, staff, MOH and DHBs in the region, are not adequately engaged	 Lack of project buy-in adversely affects staff engagement and patient confidence. Other DHBs do not utilise the new SMHS facilities, resulting in excess capacity and reduction in project benefits. Failure to understand the health and staff wellbeing issues unique to SMHS, results in a facility that does not provide a best-practice environment for staff and patients. Adverse impact on patient experience and outcomes. 		FORMA	 Develop stakeholder engagement plan. Develop processes to manage relationships in a planned and substantial manner. Develop clear two-way communication channels.
14	Changes in model of care occur	The new model of care differs from the model of care in the concept plans, meaning the design needs to change resulting in additional cost and time delays.		€ ● €	 Create a flexible design that accommodates changing models of care Allow for outfitting changes by having the maximum floor-to-floor heights that do not impact on the overall structure.
15	Projected demand for the facility does not materialise for one or more of the SMHS (could be caused by loss of regional service contracts)	Excess capacity and therefore a reduction in realised project benefits and inefficient use of constrained health system resources.			 Apply business case good practice, develop appropriate stakeholder engagement and communication plans and obtain appropriate advice to ensure: The facility scope and scale is sufficiently informed by relevant stakeholders and is viable; and Key stakeholders buy into the Project and are kept informed of deliverables and progress. Impact will mitigated by requiring a flexible/adaptable facility.
16	Impact of scope and scale on market capacity (delivery)	Size and scale of the project does not allow for sufficient economies of scale, or presents limited opportunities for contractor competition, leading to increased project costs and/or delayed competition.	●≑≑	€ ● €	Establish a robust procurement process
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Appendix A Schedule of costs of retaining TPMH site

Table A1: Schedule of costs					
Item	Total annual cost	Classification			
CTC cover	\$700,000	Opex			
House surgeons	\$150,000	Opex			
Building and grounds management	\$1,200,000	Opex			
Security guards	\$290,000	Opex			
Cleaning	\$270,000	Opex			
Catering and Vending	\$20,000	Opex			
Waste disposal	\$30,000	Opex			
Media and Communications	\$25,000	Opex			
Orderlies	\$100,000	Opex			
TOTAL:	\$2,785,000				

These costs include:

- ► The additional cost to the CDHB for the provision of House Surgeons, Clinical Team Coordinators (CTC), and additional security and orderly staff previous provided by on-site by OPH.
- Emergency Medical Coverage: Emergency medical support is required on TPMH site 24 hours a day, 7 days a week. Until recent years SMHS had no senior nurse presence on TPMH site outside of office hours and CTC support was provided by OPH. Decanting of OPH has meant an increase in SMHS staff to provide the required cover.
- While approximately two thirds of TPMH footprint was vacated in 2016 following the relocation of corporate services and OPH&R, certain building services are not able to be switched off for these portions of the site and legislative building compliance requires maintenance of any functional building to Building Warrant of Fitness (BWOF) requirements. As a consequence, CDHB have not been able to fully realise associated building lifecycle cost savings relating to the vacated space.

Appendix B Hillmorton Hospital SMHS Masterplan

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Appendix C Strategic context for the IBC

Built environment

Consideration 1: TPMH was not purpose built and its continued operation is driving suboptimal clinical outcomes and inefficient use of staffing and resources

TPMH was opened in 1959 as a general hospital. In the 1970s some of TPMH facilities were refurbished as a temporary site for the delivery of SMHS. That was over 40 years ago.

Limited investment in the facilities in recent years, and subsequent earthquake damage, means they are now run down and do not meet modern Australasian Health Facility Guidelines (AFHG) for design and size.

Notably, the need for redevelopment of the CDHB's facilities was supported by a 2011 National Health Board clinical review of CDHB facilities, which made two key observations:

- The clinical risk presented by the use of existing facilities was assessed as high, requiring investment to provide fit-for-purpose facilities.
- Investment was required to manage ongoing clinical risk, forecast demographic changes and resulting service pressures facing the CDHB.

"Optimal physical environments are associated with shorter lengths of stay, lower levels of aggression and critical incidents, better client outcomes and better staff conditions and satisfaction. Recurrent costs will be substantially reduced and client services and outcomes improved in such settings."²⁸

The current facilities are not conducive to supporting best practice. Clinical activity has been designed to 'make do' with the suboptimal configuration of facilities, compromising patient outcomes and increasing risks to staff and patients. This increased risk is currently being mitigated through increased staffing and resources, drawing resources that could otherwise be used to deliver greater care across the system, or retained by the CDHB as financial savings.

Notwithstanding other inefficiencies in the system, the age and nature of this facility alone means that there are no further efficiency or clinical improvements that can be gained while services continued to be delivered from the existing TPMH facilities.

Notably, there are:

- > 2 3 more security staff than would be required for a fully integrated facility
- 3 extra nursing staff and 0.5 FTE support staff that are required due to the layout of the building that could be redeployed elsewhere in the system
 - Clinicians have inadequate space for outpatient practice, requiring that some appointments be declined or rescheduled to accommodate office layout requirements.

In addition, clinicians estimate that approximately half (circa 335) of incidents involving escape, patient-on-patient or patient-on-staff violence, and self-harm a year are attributable to the nature of the building.

²⁸ Australian Health Facilities Guidelines.

Consideration 2: Facilities at TPMH are earthquake prone. Reinstatement is not considered economically viable

The 2010 and 2011 earthquakes caused considerable damage to Christchurch buildings and infrastructure. Facilities on all CDHB hospital sites experienced damage and disruption of services, due to the effects of building shaking and ground settlement.

With the 2016 decant of Older Person's Health & Rehab, corporate and support services from TPMH, SMHS have been left isolated on TPMH site²⁹. SMHS continues to operate in buildings that are at risk of significant damage in another seismic event due to the instability of surrounding structures.

The facilities on TPMH site have suffered widespread damage. Most of the buildings on TPMH site are categorised under the New Zealand Building Code as Importance Level 3 (IL3) due to patient occupation. C block, which houses inpatient services for Eating Disorders, Mothers and Babies and Child Adolescent and Family, is categorised as IL2. The building currently meets between 70 – 100% of code, ('Meeting the code standard' is defined as 100% compliance with current Building Code, however the Board may decide in existing buildings to accept 67%), but the building remains at risk given the compromise of surrounding buildings. This poses a risk to SMHS facilities, patients and staff in the event of another earthquake.

As the site is scheduled for decommissioning and potential disposal, the plant and assets at TPMH have not had permanent repair work undertaken in order to avoid unnecessary costs.

Even if revisiting the decision to potentially dispose was an option, surrounding buildings would need to be demolished to make the site safe, and significant upgrades would need to be taken on the existing structures to meet clinical and structural compliance standards. A review undertaken by Rider Levett Bucknall (RLB) for the CDHB in 2013, suggests that make-safe work alone would cost several million dollars.

Overall the costs of making surrounding buildings safe, upgrading required infrastructure, demolishing unused buildings, forfeiting revenue from the sale of TPMH site, decant and bringing the current C-Block up to code is considered economically and financially prohibitive, according to recent estimates prepared by RLB and Telfer Young³⁰.

Consideration 3: Providing services in the current physical environment at TPMH is not sustainable in the medium term

SMHS facilities have been in 'make do' mode for over 8 years, which is not clinically or operationally sustainable. If investment is not undertaken, one of two things will need to happen:

1. All services will need to be permanently moved from TPMH in the medium-term. This is driven by increasing risk to patients and staff as the site degrades, which is likely to be unacceptable to the Board, and the desire to generate revenue from the sale of TPMH site. Should SMHS need to decamp without a new facility in place:



Overall clinical capacity would reduce significantly

i. Many children and young adults would need to be cared for in adult facilities, leading to potential violations of UNCROC obligations and reduced ability to meet adult demand

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²⁹ Approximately 70% of the 42,595m² total floor area on TPMH site is no longer operational following the decant of Older Person's Health, corporate and support services from TPMH in 2016.

³⁰ See Section 7.9 for further details of the estimated cost to stay on TPMH site long-term.

- iii. Regional centres would be required to care for patients in general hospital wards or in local mental health facilities that are not designed for this type of specialist mental health care. Some patients would need to be cared for in Youth Justice facilities.
- iv. Some services might need to be outsourced, but it is unlikely that the most acute patients could be cared for by existing private providers, particularly in the Eating Disorders Service.

Given the level of stress that this scenario would place on acute mental health services, acute hospitals, MSD youth facilities and on patients, it is not considered a viable option to terminate or significantly reduce services.

2. The other option is a major, but temporary, investment to repair or refurbish some suboptimal and damaged buildings on TPMH site in order to continue to deliver services until a more permanent solution could be found. Given the relatively small size of these facilities, it is not considered appropriate to continue to 'strand' these services away from medical, clinical, and other support in the long term. Already it is costing \$2.7m per annum above normal operational expenditure to just keep services operating on TPMH site. It is both inefficient, and likely to lead to long-term morale and service delivery issues. In addition, there are costly decant considerations and significant infrastructure upgrades that would be required on TPMH site if it were to continue to operate in the long term, thus rendering it an uneconomic solution.

For this reason a 'do nothing' or 'do minimum' investment scenario is not considered physically or clinically sustainable for SMHS.

Policy environment

Consideration 4: Policy directives, strategies, and obligations

The case for change is framed by national and CDHB policy and planning directives for the provision of healthcare services and mental health specific. There are also clinical standards and international obligations that the CDHB must meet. The main drivers relevant to this case are:

- ► A focus on delivering efficient health care services
- ► Integration of primary and secondary care services and integration of clinical care overall
- Ensuring that those in inpatient care particularly children are cared for in a manner consistent with international obligations
- A focus on reducing long-term hospitalisation for mental health, moving towards a community based model of care over time.

Table 9 below provides a summary of the strategic policy settings under which the CDHB delivers its mental health services, and its application to the transition of services from TPMH.

$\hat{\mathbf{O}}$	Table 54: Summary of the strategic policy settings			
X	Policy Summary		Application to CDHB / SMHS	
	Ministry of Health NZ Health Strategy	Provides guidance and direction with respect to health care service and investment planning. Based on the principals that:	 Investment will focus on treating patients to so that they can reengage fully with the community. 	
		 People are supported to take responsibility for their own health Specialist services are intended to provide episodic, intensive services that are 	 CDHB recognises the important role that facilities in Christchurch play as the regional centre for specialist mental health services. 	
		responsive to patients and their families,	 Focus on supporting delivery of some services on site through schools, the 	

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Table 54: Summary of the s	strategic policy settings	
Policy	Summary	Application to CDHB / SMHS
	and support general practice and community providers.	Justice system, and in community- based settings.
	 Community based care with specialist services back up 	
	 Realignment of secondary services to provide a regional specialist support role 	
	 Increased responsibility for community and primary care services. 	Ċ
Mental Health (Compulsory Assessment and Treatment) Act 1992	The Mental Health (Compulsory Assessment and Treatment) Act 1992 provides guidance as to the circumstances in which compulsory assessment and treatment may occur, and:	 Investment should ensure that vulnerable individuals are able to gain access to adequate mental health assessment and treatment services.
	 Ensures that both vulnerable individuals and the public are protected from harm 	 Facilities should protect patients by promoting limited use of restraint and
	 Ensures that the rights of patients and proposed patients are protected 	seclusion.Facilities should provide an
	 Ensures that assessment and treatment occur in the least restrictive manner consistent with safety 	environment that is consistent with clinical good practice, as stipulated in the Act.
	 Provides a legal framework consistent with good clinical practice 	• The CDHB is accountable for ensuring its actions are consistent with the Act.
	 Promotes accountability for actions taken under the Act. 	
Rising to the Challenge: The Mental Health and Addiction Service Development Plan 2012– 2017	The Plan outlines four key priority actions aimed at improving outcomes:	 Efficient use of existing resources allows for greater quantity and quality
	 Making better use of resources Improving integration between primary and 	 Facilities should reduce seclusion hours
2017	secondary services Cementing and building on gains for people 	and increase the quality of life for children in care.
	 with high needs Delivering increased access for all age groups, with a focus on infants, children and youth, older people, and adults with common disorders such as anxiety and 	 Capital and service investment should consider how high-needs individuals car be transitioned from hospital to community care.
LIN Convention on the	depression.	Eacilities should eliminate seelusion and
Rights of the Child (UNCROC)	rights, and requires that states act in the best interests of the child. This includes civil,	restraint requirements for children in mental health.
	political, economic, social, health and cultural rights of children under the age of 18. New Zealand is a signatory and is bound by international law to comply with the convention. The convention stipulates:	 Children are not to be housed with adults in inpatient mental health settings.
EAS	 Children have the right to the highest attainable standard of health and to facilities for the treatment of illness and rehabilitation of health 	
	 No child is deprived of his or her right of access to such health care services. 	
Disability Action Plan	The Plan sets out priorities for action that promote disabled people's participation and contribution in society. The plan is focused on achieving person directed outcomes such as	 Facilities and models of care should promote enhanced patient safety ultimately leading to greater patien outcomes.
	 safety and autonomy, wellbeing, self- determination, community and representation. The plan seeks to so this through actions that: Ensure personal safety 	Investment should be focused on treatment and models of care tha enable patients to remain a contributing to their community.
	 Increase employment and economic opportunities 	

Table 54: Summary of the s	trategic policy settings	
Policy	Summary	Application to CDHB / SMHS
CDHB South Island Health Service Plan 2015 - 2018	 The Plan sets the direction and key principles that inform regional service development, service configuration and infrastructure requirements including: More health care will be provided at home and in community and primary care settings Secondary and tertiary services will be provided across District Health Board boundaries Flexible models of care and new technologies will support service delivery in non-traditional environments Health professionals will work differently to coordinate a smooth transition for patients between services and providers Clinical networks and multidisciplinary alliances will support the delivery of quality health services across the health continuum. 	 Investment promotes the provision of SMHS at home and in community and primary care settings. SMHS are, and will remain, regional services that provide specialist services across the South Island. SMHS outpatient staff work into SMHS inpatient services to support the smooth transition of patients between services, and the sharing of specialist skills across small and highly specialised services. Co-location of SMHS promotes flexible models of care. Investment will support the use of new technologies to support optimised models of care and enhanced patient outcomes.
Clinical context		

Consideration 5: SMHS provides services to small numbers of patients with highly complex care requirements

Canterbury DHB SMHS provide inpatient and outpatient services to patients from across Canterbury and the South Island. The following table summarises current inpatient occupancy levels, outpatient contacts, and the number of beds per unit.

Table 55: Summary of service levels and staffing by unit (FY16)				
Service	Inpatient beds	Outpatient Contacts		
Mothers and Babies	7.8	250		
Eating Disorders	5.2	400		
Child Adolescent and Family	16	2250		
High and Complex Needs (Seager) (IP)	24à 16	N/A		

Although the demand for inpatient SMHS is relatively small compared to other healthcare services, SMHS patients present as high risk, and require complex psychiatric and physical care. For example:

- Patients in the Eating Disorders inpatient service are physically vulnerable with complex physical health needs. This group has a much higher need for medical input than other mental health patients
- Patients in the Mothers & Babies service are usually accompanied by their babies throughout their admission and often partners also stay in, albeit for shorter periods. The physical environment needs to safely accommodate all while maintaining a therapeutic environment for the whole ward. The babies tend to be in a high risk group and need close physical monitoring. Babies are admitted to the unit as patients along with their mothers.

The highly specialised nature of this service, combined with the small size of the units, means that physical site separation of clinicians and patients drives the cost of care up, and a lack of integration makes the site less flexible in responding to changing clinical demand.

Additionally, the disability suffered by these patients is often quite extreme. The treatment of more patients decreases the cost to society, and the cost to the individual through reduction in overall disability and increased employability.
Consideration 6: Demand for SMHS is changing and increasing for young people

The demand for most of the inpatient services currently delivered at TPMH (with exception of CAF) is expected to remain relatively stable over the medium-term, although the patient mix may change. The demand for SMHS in general is increasing, however.

In the last two years mental health demand overall has increased, with CAF increasing much more quickly:

- ▶ 20% increase in new presentations to specialist adult mental health services
- ▶ 35% increase in new presentations to Crisis Resolution services, and
- ▶ 40% increase in new presentations to CAF³¹.

There is also well documented, peer reviewed evidence that long-term trauma like war or long-term seismic events creates a high level of stress in younger children that can result in greater incidence of mental health disorders.³² Given the unusual nature and duration of the Christchurch earthquake sequence,³³ there is at least a reasonable chance that a greater than usual proportion of the children who lived through the event will suffer from mental illness later in life. ³⁴ The magnitude of this impact is not yet clear, and has not been incorporated into the economic modelling at the IBC stage. Further investigation into the likely long-term impact of the earthquakes will be included as a scenario in the modelling for the detailed business case.

The ability to redeploy space as demand for some services – for example adult high-needs inpatient services – decreases, also provides an unquantified potential to see patients with unmet needs (e.g. Autistic or further high-needs children).

The flexibility of future facilities is important to meeting this changing demand. In particular, the demand for services at H&C ward (an intensive and long-term care facility) are likely to decrease as earlier intervention lessens the incidence of long-term mental health issues, and as clinical treatment modalities now favour reintegration into the community wherever possible. Unfortunately, the H&C patients are such that other care options (e.g. community care) are unlikely to be suitable, and many need to be cared for on-site as they are being treated under the Mental Health Act, which requires patients to be seen at a Gazetted hospital (this accounts for between 60 and 90% of H&C patients at any given time).

In the medium term, however, earlier intervention could mean that there is less need for an H&Ctype facility, and careful planning of its replacement means that it could be redeployed to increase capacity for CAF patients where demand is increasing for a wider range of services (e.g. severely Autistic children and adolescents). The scale of this impact has not been quantified to date, but the detailed business case will provide scenario modelling of different potential patient mixes.

Funding arrangements

Consideration 7: Previous investment decisions are predicated on the sale of TPMH site

Investment in the development of new healthcare facilities on the Christchurch and Burwood campuses was predicated on releasing funds from the sale of TPMH site. The decision to relocate

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³¹ CDHB Annual Plan 2014/2015.

³² See for example: *Effects of adverse experiences for brain structure and function*. BiolPsychiatry.2000 Oct 15;48(8): 721-31.

³³ Reyners, M.E.; Eberhart-Phillips, D.; Martin, S. 2014 Prolonged Canterbury earthquake sequence linked to widespread weakening of strong crust. *Nature geoscience*, *7(1)*: 34-37.

³⁴ Salcioğlu E1, Başoğlu M Psychological effects of earthquakes in children: prospects for brief behavioural treatment. World J Pediatr. 2008 Aug;4(3):165-72.

from TPMH was taken – in part – due to estimates showing that reinstatement of The Princess Margaret Hospital would cost in well in excess of \$90M.

In 2010 the CDHB presented an IBC that considered a number of options for meeting forecast services demand and upgrading of CDHB's hospital facilities. The IBC found the investment objectives could be met by a combination of:

- Extending Burwood Hospital through a substantial new build
- Refurbishing existing facilities and constructing new facilities at the Christchurch Hospital, and
- ► Vacating, decommissioning, and selling the Princess Margaret Hospital site.

Cabinet approved the IBC in August 2012 and the MOH commissioned a detailed business case to further develop the option.

The intention outlined in the DBC for the facilities redevelopment was that upon completion, services located on TPMH would migrate to the Burwood and Christchurch hospital sites, or into the community, making TPMH potentially available for sale.

With the completion of the redeveloped Burwood campus in 2016, and the decanting of Older Person's Health, corporate services and support services from TPMH, SMHS has been left isolated on TPMH site, resulting in increased clinical and non-clinical risk, and reduced efficiency of service delivery.

Consideration 8: CDHB capital funding arrangements

Funding of the CDHB, like other health sectors is determined by the Population Based Funding Model. Capital funding requests are approved by the capital investment committee.

There is no budget *per se* for this facility, and decisions about both the level, timing and source of funding will need to be made as part of the overall CDHB capital investment programme of works. These decisions will be guided by this IBC as well as by the DBC.

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Appendix D Summary of short list masterplanning options

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Appendix E QS estimates

REFERSEDUMPERTITE

Appendix F Assumptions and sources of information

Information and assumptions used to estimate of the costs and benefits of the short list options were obtained through a combination of information provided by CDHB, RLB and Klein. Specifically, we have relied on:

- ► Architectural outputs from Klein Ltd dated September 2018
- ▶ QS costings from Rider Levett Bucknall (RLB) dated October 2018
- ► TPMH site valuations from TelferYoung (Canterbury) Limited dated July 2017
- TPMH demolition cost estimates from CERES New Zealand Ltd dated May 2017 for the purposes of the economic and financial cases
- ▶ Other clinical and operating cost details provided by CDHB.
 - Decant, lifecycle, capital charge and depreciation costs for the capital works proposed for each option
 - ► Clinical staff requirements and costs
 - ► Admin and support staff requirements and costs
 - ► Historical and forecast population for Canterbury region
 - ► Proportion of population requiring Mental Health services
 - ► Proportion of population who are new Mental Health patients annually
 - Forecast patient cases/events for SMHS (M&B, EDS, CAF, H&C and Outpatient). Forecasts for Outpatients are based upon the estimated demographic of the catchment population in the Canterbury region (from Statistics NZ) that align with the existing cohort of M&B, CAF and EDS patients gender and age. Forecast for inpatient patients are based on the general Canterbury population and the current Proportion of the population requiring Mental Health Facilities.
 - Current bed numbers for each service
 - ► Historical costs and FTE counts for FY17 and FY18 for each of the SMHS
 - ► Readmission rates for each SMHS
 - Readmission period (time between discharge and relapse) for each SMHS
 - Length of stay for each SMHS
 - Average age of patient for each SMHS
 - ► Occupancy of each inpatient SMHS
 - Annual assaults for each SMHS

Assumptions specific to each costs and benefit are presented throughout the remainder of this appendix.

General assumptions

The following table outlines the general assumptions underpinning the short list options and related financial analysis:

Table H1 : General assumptions					
Assumption	Current State	Option 1	Option 2	Option 3	Option 4
Discount rate	6%	6%	6%	6%	6%
Inflation	2%	2%	2%	2%	2%
M&B beds	6	6	6	6	6
EDS beds	7	7	7	7	7
CAF beds	16	16	16	16	16
H&C beds	24	16	16	16	24
M&B growth rate	No. of beds				
EDS growth rate	No. of beds				
CAF growth rate	No. of beds				
H&C growth rate	No. of beds				
Outpatient growth rate	No. of patients				

ents No. of patients

No.

Patient forecast assumptions

The following table summarises the key assumptions associated with CDHB population forecasts and predicted proportion of the population to require Mental Services.

Table H2: Patient forecast assumpt	ions				
Assumption	Current State	Option 1	Option 2	Option 3	Option 4
CDHB proportion of population requiring Mental Health Services	2.56%	2.56%	2.56%	2.56%	2.56%
CDHB Total Mental Health Cases (proportion of population)	4.45%	4.45%	4.45%	4.45%	4.45%
M&B inpatient forecast (proportion of MH population)	0.37%	0.37%	0.37%	0.37%	0.37%
EDS inpatient forecast (proportion of MH population)	0.42%	0.42%	0.42%	0.42%	0.42%
CAF inpatient forecast (proportion of MH population)	1.06%	1.06%	1.06%	1.06%	1.06%
H&C inpatient forecast (proportion of MH population)	0.43%	0.43%	0.43%	0.43%	0.43%
Outpatient forecast (proportion of MH population)	27.14%	27.14%	27.14%	27.14%	27.14%

27.14%

Clinical assumptions

Table H3: Clinical assumpt	tions				
Assumption	Current State	Option 1	Option 2	Option 3	Option 4
Readmission rate (% of patients who relapse after discharge)	M&B: 21% EDS: 38% CAF: 21% H&C: 67% Outpatients: 39%				
Time in care inpatients (days)	M&B: 23 EDS: 40 CAF: 31 H&C: 335	M&B: 23 EDS: 40 CAF: 20 H&C: 335			
Average occupancy rate	M&B: 56% EDS: 100% CAF: 46% H&C: 92%	M&B: 85% EDS: 85% CAF: 80% H&C: 95%			
Average age of patient	M&B: 20 EDS: 22 CAF: 14 H&C: 42 Outpatients: 15	M&B: 20 EDS: 20 CAF: 14 H&C: 42 Outpatients: 15			
Assaults (patient and staff) per annum	M&B: 22 EDS: 22 CAF: 431 H&C: 238 Outpatients: 27	M&B: 22 EDS: 22 CAF: 216 H&C: 119 Outpatients: 27			

Notes:

- Average age: U13 patients with eating disorder diagnosis are admitted to CAF as a default position. Approximately five U13 patients per annum that may be admitted into EDS (instead of CAF) given a more flexible, purpose built facility. This represents circa 9% of total EDS admissions. Estimated two year reduction in average age.
- Average occupancy: Low current stats reflects overnight leave and lack of HDU resulting in shutting down areas for safety and therefore reduced capacity.
- ▶ Patient incidents: Decrease 50% with more fit for purpose, better configured, safe facilities.
- Time in care: Decrease 33% for CAF with more fit for purpose, better configured, safe facilities that support higher occupation, higher volumes of acute patients and higher throughput.

Construction assumptions

The following table outlines the construction assumptions are assumed for the short list options:

Table H4: Construction assumptions			, C`		
Assumption	Current State	Option 1	Option 2	Option 3	Option 4
Construction commencement date	N/A	Aug 2020	Aug 2020	Aug 2020	Aug 2020
Construction duration	N/A	2 years	2 years	2 years	2 years
Operation commencement date	N/A	Dec 2022	Dec 2022	Dec 2022	Dec 2022

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Appendix H Procurement options decision tree



Figure 16: Procurement options decision tree

Ministry of Health & Canterbury District Health Board Detailed Business case for the on-going delivery of specialist mental health services

Appendix I Qualitative areas for assessment of value for money

Table E1: Qualitative areas for assessn	nent of value for money
Qualitative assessment area	Examples
Viability – do the project investment	Ensure the basis for contracting operates effectively over individual contracts and that contractual requirements are assessed in clear output-based terms against defined measurement criteria.
outcomes translate into outputs that can	 Structure the contract to allow enough flexibility to cater for changes in service requirements but at an affordable future cost.
be contracted for, measured and	 Put in place incentives for contractual counterparties to invest in the delivery of services and related assets.
agreed?	 Test and confirm that contracting and outsourcing parties have the requisite skill, capacity and expertise to deliver the services.
Desirability - do the benefits of the	Demonstrate that the procurement and contractual mechanisms enable parties to effectively price and manage the generic risks associated with the contract (e.g., staff shortages, changing practices, exposure to cost over-run, poor quality).
procurement and contracting structure outweigh any additional cost of	In the contract terms for the project, include incentives to meet required levels of performance standards, key performance indicators and critical success factors.
contracting out and the cost of	Enable the contractual counterparties to innovate in relation to service delivery outputs, improve service levels, or reduce on-going cost.
undertaking the procurement?	 Establish clear and measurable contract terms, risk allocation, payment structures and deduction regimes.
	 Create long-term partnering benefits that lead to efficiencies outside the contract areas.
	 Make sure the contract duration enables recovery of upfront costs and minimises these costs.
Achievability - CDHB capability, a	 Ensure sufficient project team resourcing and experience of resource in procuring projects.
structured process, market appetite and competition must be evidenced	Establish project procurement processes that allow sufficient time to resolve all contract issues and ensure affordability aspects are considered and understood.
	 Ensure appropriate and real competition and that tenderers have the necessary experience to deliver the projects.
	Ensure that individual projects/contracts are affordable over the contract period in direct comparison against existing budgets and that all likely future financial exposure is known.
	 Consider trade-off between short-term and long-term service provision and contract breakpoints or re-provision points.
Wider value for money areas	Identify any variations in non-financial benefits, externalities and wider benefits or outcomes of different project procurement methods.
	Identify the extent that it is sought to outsource facilities management opportunities, particularly hard facilities management (lifecycle) and potentially soft facilities management services, to the private sector on a long-term contract basis.
	Identify the likely nature and form of contracting parties and the CDHB counterparty for delivering future projects in the project.
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Appendix J SMHS Master Programme

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Appendix K Key programme activities: implementation of business case phase

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Programmed completion: 17 June 2019.

- 1. Contracts:
 - a. Obtain executed Consultant engagement contracts and distribute.
- 2. Insurance:
 - a. Obtain Consultant insurance certificates of currency.
- 3. Electronic platforms:
 - a. Negotiate electronic administration platform service agreements. (Aconex / dRofus)
- 4. Contacts:
 - a. Establish MOH / CDHB project contacts: Reporting, Communications, Legal, Procurement, Accounts, etc.
- 5. FF&E:
 - a. Establish FF&E Manager & procurement team processes.
 - b. Undertake FF&E gap analysis.
- 6. Health and Safety:
 - a. Establish Health and Safety at Work Act compliance objectives for design and construction.
 - b. Obtain MOH & CDHB H&S policy.
 - c. Obtain MOH and CDHB drug and alcohol policy.
 - d. Engage H&S specialist consultant client side.
- 7. Meetings:
 - a. Establish PCG attendance and schedule.
 - Establish DCG (Design Control Group) frequency, attendance and schedule.
 - Establish HRPG reporting and attendance.
- 8. Value Management:
 - a. Develop VM strategies for project.
- 9. Risk:
 - a. Establish and maintain risk registers and reporting.

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- 10. User Caveats:
 - Establish user sign off caveats schedule and update / verify for each design phase. a.
- 11. Approvals
 - Establish schedule of MOH / CDHB approvals throughout project lifespan. a.
- 12. External Stakeholders:
 - Identify and engage with external stakeholder entities. Develop communication procedures a. and plans. (eg: CCC, Ecan, HPT, NZP, etc.)
- 13. Peripheral Projects:
 - Identify and monitor peripheral projects which may impact. (eq: Annex Road cycleway, a. CDHB site Masterplanning, Aroha Pa High Care Unit, Laundry Services relocation)
- 14. Procurement:
- ICIAL INFOR Confirm compliance with GROS, Probity, etc. a.
 - b. Establish sign off management processes.
 - Obtain legal advice. C.
 - d. Draft specific contract clauses.
- 15. BIM:
 - Develop and verify agreed BIM execution plan for design phases (Klein draft BEP issued a. with consultant RFP's. Klein are project BIM Manager)
 - Confirm any Facilities Management BIM deliverables from contractor with CDHB. b.
- 16. Payments:
 - Establish consultant payment process. a.
 - Review and certify consultant payment claims. b.
- 17. Client Brief / Client Change:
 - Establish client brief change approval and recording processes. a.
- 18. KPI's:
 - Develop schedule of Key Performance Indicators and milestones for Project. a
- 19. Cost control / OS:
 - Establish budget test verification milestones as outlined in Master Programme, a.
 - Establish financial reporting and cost control policies with QS, Client and Consultant team b.
 - C. Budget Cost reports.
 - d. Detailed Cost plan

- e. Project cashflow.
- f. Financial reports.
- g. Contingency management plan
- h. Inputs into PEP and Procurement strategies.
- 20. Seismic Design:
 - a. Confirm IL and SLS parameters of structure.
 - b. Confirm design responsibilities across all disciplines.
 - c. Confirm contractor seismic design extent and requirements.

21. QA:

- a. Establish project QA procedures and controls.
- 22. Alternative Design Solutions:
 - a. Establish protocols for alternative design when being considered to maintain compliance with brief, budgets, conformity and QA control polices.
- 23. Peer Reviews:
 - a. Establish if more health planning peer reviews are required @ end of PD. Brave have reviewed CD.
 - b. Establish entity for Fire Engineering peer review for consent application.
- 24. Specialist Consultants:
 - a. Establish scope for any specialist consultants for design or consent. (EG: Façade, Radiation shielding if required)
- 25. Contractor Design:
 - a. Establish and maintain schedule of proposed contractor and/or proprietary design elements.
- 26. Enabling / Temp Works:
 - a. Establish schedule of temporary diversions or enabling works to maintain hospital operation throughout project construction.

27. Structure:

- a. Fire rating solutions for steel structural frame if selected.
- b. Foundation design options coordinating with Geotech.
- 28. Non-Structural Design elements:
 - a. Establish demarcation for consultant and contractor design for NS elements and seismic bracing including compliance with NZS 4219.

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- b. Establish protocols for secondary structure design and documentation by consultants and contractor if proposed.
- c. Establish PS1 design producer statement deliverable responsibilities between contractor and consultants.
- d. Establish proprietary systems or elements design compliance verification procedures (eg: for FF&E or similar).
- 29. Geotechnical Engineering:
 - a. Desk top study of existing records and testing.
 - b. Establish inputs in Structural (foundations) and Civil (basecourse) disciplines and the like with other consultants.
 - c. Ground water levels.
 - d. Drafting of Geotech testing specification coordinated with Contaminated Land and able to be priced by separate specialist drilling contractors.
 - e. Facilitate tender, award and reporting for drill testing for Geotech and Contaminated Land.
 - f. Receive Geotech factual report.
 - g. Receive Geotech ground model and hazard report.
- 30. Civil Engineering:
 - a. Verify ARI (average rainfall intensity) for rainfall and flood risk management parameters.
 - b. Coordination with Geotech in civil basecourse build up design options.
- 31. Topographical Surveying:
 - a. Desk top review of existing records and GIS databases.
 - b. Field survey and provision of existing conditions survey map.
 - c. Site encumbrances report (if any)
- 32. Contaminated Land:
 - a. Desk top study of existing records and site usage history.
 - b. Develop initial site conceptual model.
 - Develop preliminary site investigation scope.
 - d. Develop testing specification to be coordinated with Geotech test drilling.
 - e. Geology, hydrology and hydrogeology studies as they pertain to ground / underground site water and aquifers.
 - f. Establish process and timelines for provision of contaminated land AEE (Assessment of Environmental Effects) required for RC application.

- 33. Resource Planner:
 - a. Establish reports or inputs required from other consultants for inclusion with RC application (EG: Architect / Traffic / Contaminated Land / Geotech, etc.)
 - b. RC risk assessment.
 - c. RC application strategy report.
- 34. Programmer:
 - a. Verify master programme update frequency and milestones.
 - b. Develop detailed design programme.
 - c. Critical path analysis.
 - d. Fortnightly reporting updates.
- 35. Mechanical Engineering:
 - a. Heating energy source options report (boiler, buffer tank, ground source heat pumps, etc...)
 - b. Potable water storage.
 - c. Schedule of required consents and permits (discharge to air for boilers, diesel storage etc...)
 - d. Concept phase design report.
 - e. Temporary works / enabling report.
 - f. Integration of existing / retained CDHB infrastructure or control systems.
- 36. Electrical / Communications Engineering:
 - a. HV feeds / capacity and expansion report and options.
 - b. Integration of existing / retained CDHB infrastructure or control systems.
 - c. Schedule of required consents and permits (discharge to air for generators, diesel storage etc...)
- 37. Fire Engineering:
 - a. Fire-fighting / water storage compliance pathway / risk report and options.
 - b. Establish passive fire design, documentation and verification processes.
 - c. Initial draft FEB (Fire Engineering Brief)
- 38. Acoustic Engineering:
 - a. Establish design levels for ambient noise.
 - b. Establish design noise insulation levels to be achieved.

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- 39. Traffic Engineering:
 - Preliminary Traffic Synopsis. a.
 - b. Traffic project risk assessment.
 - Traffic data survey and mitigation strategy for RC application. C.

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EY refers to the global organisation and may refer to one or more of the member

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June 2020



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National asset management programme documents

	Author	Title	Date
	Beca Group	NAMP lessons learnt workshop	2019
	Rider Levett Bucknall	All-in ROC ¹ estimates	2019
	Beca Group	NAMP methodology for rating seismic resilience	2019
	Kestral Group	Background information on seismic risk and seismic assessment	2019
	Beca Group	NAMP DHB ² asset condition self-assessment: Data standard and methodology	2019
	Beca Group	31 DHB campus assessment reports	2019
	Ministry of Health	20 DHB clinical facility fitness for purpose reports	2019
	Ministry of Health	Workshops: Introduction to asset management: Writing, living, updating asset management plans	2019
	Ministry of Health	Clinical facility fitness for purpose: Assessment tool and methodology	2019
	Beca Group	NAMP asset condition survey: Data standard and methodology	2019
	Ministry of Health	NAMP updates for district health boards	2018-19
	Morrison Low	National asset register: Feasibility report	2018
	DHB Working Group	Asset conditions workshop presentation	2018
	Ministry of Health	Guidelines for critical and priority buildings and infrastructure in the district health boards and the health sector	2018
4	Ministry of Health	Asset management plan: Project management plan	2018

¹ ROC = rough order of cost

² DHB = district health board

Asset management source documents

Author	Title	Date
New Zealand Health and Disability review	Interim report: Section 10: System enablers	2019
OAG ³	District health boards' response to asset management requirements since 2009	2016
OAG	Reflections from our audits: Investment and asset management	2017
Audit New Zealand	Asset management and long-term planning: Learning from audit findings 2015 to 2017	2017
Cabinet Office	CO (19) 6: Investment management and asset performance in the state services	2019
OAG	Managing public assets: Discussion paper	2013
King's Fund	Clicks and mortar: Technology and the NHS estate	2019
NSW ⁴ Audit Office	New South Wales Auditor-General's Report: Performance audit: Medical equipment in NSW public hospitals	2017
The Center for Health Design	A guide to clinic design post-occupancy evaluation toolkit	2015
Fronczek-Munter, A	Evaluation methods for hospital facilities	2013
Victorian Government	Medical equipment asset management framework	2012
OECD ⁵	Sizing up the challenge ahead: Future demographic trends and long-term care costs	2011
WHO ⁶ Rechel et al	Investing in Hospitals of the Future	2009
NHS ⁷ estates	Assets in action: An asset management guide for non-technical managers	2003

 3 OAG = Office of the Auditor-General

- ⁴ NSW = New South Wales
- ⁵ OECD = Organisation for Economic Co-operation and Development
- ⁶ WHO = World Health Organisation
- ⁷ NHS = National Health Service

Executive summary

Context

District health boards (DHBs) manage buildings with a replacement value of around \$24 billion, and there is also considerable investment in clinical equipment and information technology (IT). Therefore, capital investment and other aspects of asset management make a significant call on financial resources. Further, the decision-making environment for capital investment and management is complicated by a mix of local, regional and national considerations.

As noted in the Health and Disability System Review interim report (2019, p 263), 'The current state of DHB assets is not good and there is little in the way of long-term planning which can give any confidence that the problem is under control.' Resources have tended to be directed to managing short-term operational pressures, rather than to plan for and invest in longer-term sustainable solutions, including infrastructure.

And it is not just a matter of remediating the accumulated investment deficit; we need to build the capability to support system transformation, especially as models of care evolve, including the advances in clinical equipment and technology that enable shorter hospital stays and more community-based care. In addition, a growing and ageing population will continue to see increased demand for both hospital and community services.

Based on 2018 DHB capital estimates, \$14 billion of investment is required for buildings and infrastructure over the next 10 years. In 2019, the Ministry of Health estimated a requirement for \$2.3 billion for DHB IT⁸ over the same period. The development of a Health National Asset Management Programme (NAMP) is a key initiative to improve the planning and management of health assets. The NAMP process began in 2018–19 to establish a national long-term investment plan founded on a consistent nationwide approach to asset management. This current-state assessment report is the first deliverable, which will be followed by a full National Asset Management Plan with investment scenarios in 2022.

The NAMP is part of a government-wide focus to improve the quality of capital funding decisions, asset management and long-term investment outcomes, in which the primary objective is to deliver the best value from new and existing investments for generations of New Zealanders. The Government has set clear objectives to have asset management plans in place to guide strategic, tactical and operational choices under Cabinet Office circular CO (6) 2019. This circular specifies all aspects of the investment lifecycle for assets and applies to DHBs along with other government agencies. The NAMP is intended to guide strategic investment choices at a sector level, and it is

⁸ This estimate for IT was calculated from DHB operating expenditure during 2018/19, allowing for 2.2 percent additional funding per annum required to lift investment to the benchmark levels identified in the Deloitte (2015) independent review of New Zealand's electronic health records strategy.

expected that, over time, it will provide a consolidated picture of the DHBs' asset management plans.

What does this plan do?

Work to date focuses on bringing together the current state into a national asset register. It provides a consistent picture of the condition, fitness for purpose and deployment of critical assets, including buildings, infrastructure, clinical facilities and IT.

In doing so, this initiative introduces consistent standards for the assessment of asset condition, functionality and consolidation of asset types. It provides a basis for moving towards national prioritisation of investment decisions that meet the Government's wider budget and wellbeing priorities. The current-state assessment provides the framework to evolve into a national asset plan once asset levels of service are identified to inform investment scenarios.

The NAMP has introduced the following enablers to strengthen health sector asset management capability:

- the Health Asset Register Tool (HART), which is a repository for information on DHB-owned buildings, infrastructure, clinical facilities and the capacity of inpatient beds
- a criticality matrix to determine the relative importance of hospital buildings for health services and compliance with the Building Act 2004
- guidelines for consistent condition assessments of hospital buildings and infrastructure that inform both professional assessments and DHB self-assessments
- a methodology to determine the fitness for purpose of clinical facilities that strengthens understanding of the requirements for size, layout and accommodation of new health technologies
- guidelines on seismic risk and a method for assessment of structural resilience that is currently under pilot
- indicative standard costs for refurbishment and replacement of facilities to allow consistent cost estimates in future investment plans
- initial asset management awareness training that was well received and should be continued, alongside revitalisation of the Health Assessment Management Improvement group of health sector asset managers.

This is a significant body of work that is a step-change for health sector asset management capability and long-term investment planning. It will be evolved through future assessments and the development of asset management and investment plans. DHBs have welcomed and embraced the guidelines to date and collaborated on all the assessments.

Not all of the 2019/20 work completed is represented in this report. Other work on the assessment methods and guidelines contributes to the health sector asset management framework and provides a foundation for the asset management plan. The document list at the front of this report includes other reports and material that have been produced by the programme.

This current-state assessment provides evidence to determine the relative investment priorities, which include:

- sitewide infrastructure (eg, pipes and electrical power)
- building operability (eg, passive fire separation)
- mental health and intensive care units, including the fitness for purpose, condition and maintenance of facilities
- core IT applications, including financial management, patient administration and pharmacy management systems.

Public-facing facilities are generally in better condition than the infrastructure, facilities and systems where the condition is less immediately evident.

What does this current-state assessment not (yet) do?

The initial work in this current-state assessment lays the foundation for improving the quality of capital funding decisions, asset management and long-term capital investment to contribute to better outcomes across the health sector. Ongoing work is required to develop a framework for prioritising capital funding and understanding long-term investment requirements. A work programme is being developed and a key checkpoint will be the future delivery of a formal National Asset Management Plan.

We now have a consistent view of the major health facilities, which alongside the other investment management functions currently in development, will support a more robust national investment plan. The other drivers of investment planning to support the NAMP will be national service design and facility standards, settings, frameworks and guidance. As the programme and plan evolve, it will enable the health and construction sectors to develop their capacity and readiness with more certainty.

A key principle of asset management is to develop targets that define the asset levels of service, which is necessary to ensure each asset meets the design and condition requirements to support the needs of health service delivery. An investment plan and/or scenarios will be developed to cost the 'gap' between the current and target asset levels of service. The work to date provides a good assessment of the current state of assets, but targets for asset levels of service have not yet been identified.

Scope of the review

Table 1 sets out the scope of the assets included in the 2018–19 assessments.

Asset type	In-scope	Not included in this current- state assessment
166 buildings	Expert assessments: Condition of 166 buildings at main hospital campuses built pre-2000.	Health-owned buildings not at main hospital and facility campus sites.
933 buildings	Self-assessments: all 933 other buildings.	Leased property (that DHBs occupy but do not own).
80 clinical facilities • 56 acute pathway	52 units = 50% of acute pathway units (emergency departments, operating theatre suites, intensive care units) and 19 inpatient units in pre-2000 buildings, along with 4 control units in	Acute pathway units in post- 2000 buildings, most inpatient units and all other types of clinical facilities.
units24 mental health units	newer buildings. 23 units = 50% of mostly acute mental health inpatient units in buildings pre-2009, 1 control unit in a newer building.	Other 50% of mental health inpatient units, 100% of forensic mental health units.
Infrastructure – 31 main campuses	All sitewide reticulated infrastructure (ie, plumbing, electrical, mechanical) except at Dunedin and Whakatāne hospitals.	Siteworks, roading, carparks, open spaces. Reticulated infrastructure at other locations.
Information technology	5 core applications at each DHB. Northern region IT infrastructure, data centres, networks and security (healthAlliance and Northland, Waitematā, Auckland and Counties Manukau DHBs).	Other core applications at DHBs. IT infrastructure, networks and security at the other DHBs.
Clinical equipment		Clinical equipment (will be included in future NAMP reports).
Other minor assets	R	All minor assets (according to criticality and materiality will be included in future reports).

Table 1: Scope of 2019 asset assessments

What did the work find?

The results of the current-state assessment (the review) carried out as part of the NAMP are outlined below in respect of buildings and infrastructure, older clinical facilities and IT. Several factors contributed to the results, including:

- health sector weakness in asset management
- the prioritisation of expenditure on operational rather than capital requirements, which has led to a significant backlog of deferred maintenance
- the demands of rapidly changing health technologies
- the inability of DHBs to adapt quickly enough to changing demands.

Buildings and infrastructure

Buildings are mostly in average to good condition, with those in average condition having various poor components. The review identified key operability issues, including risks levels for structural integrity, seismic restraints, passive fire separation and presence of asbestos. The average age of buildings at DHBs ranges from 28 years at Waitematā DHB to 53 years at Southern DHB. Generally, the older the building, the poorer its condition. This in turn affects the housing of clinical facilities and data centres.

Sitewide infrastructure was in relatively poorer condition than the main campus buildings. Many campuses have significant issues with reticulated infrastructure, including electrical systems and pipes at or near end-of-life and not designed to support continually increasing operational loads.

Many mental health facility buildings are in better condition than main clinical blocks due to their location in low-rise and simpler building types. However, the interiors of mental health facilities were in poorer condition, as identified in the CFFFP assessments.

Older clinical facilities

The review assessed the CFFFP of 75 older and five newer units across five clinical services nationwide. The units were mostly located in older hospital buildings, with many having well-known shortfalls compared to current guidelines. The divergence from current Australasian guidelines was used to identify the relative appropriateness of the clinical facilities to support their models of care. As design standards are established for the New Zealand health sector, new builds will be expected to meet these. The 2019 assessments produced the following results.

- **Mental health units:** Over two-thirds of the older units have facility designs inadequate for the management of patient cohorts, demand pressures, poor maintenance and safety issues.
- **Inpatient units:** Older units generally have poor facility designs and floor areas and they are generally not reconfigurable. There are common issues of lack of storage, clutter causing safety concerns, infection control issues and a lack of spaces and ceiling-mounted hoists for bariatric care.

Intensive care units: Most older units do not meet current guidelines for physical space, configuration and storage. Some also have issues with infection control, patient observation, negative-pressure rooms and with medical gas and suction services.

- **Operating theatres:** Some older theatre suites are too small or have a mix of acceptable and undersized theatre rooms. This partly reflects the need to accommodate continuing advances in clinical and information technologies as the facilities age.
- **Emergency departments:** Most older departments do not meet current guidelines. Issues include undersized bed bays, poor layout and corridors cluttered with equipment. While most do seem to be managing the increased demand, having

appropriate spaces to manage people who require a mental health assessment is an issue.

Information technology

The review synthesized existing material to assess several core applications, along with the state of the digital health environment, data standards and IT infrastructure. There are significant issues with legacy systems and outdated infrastructure, which means that the benefits of health IT to enable health equity and lift health service productivity have not been realised. These assessments found the following.

- Digital health environment: Audits found that IT strategy, governance and asset management operate at a basic level. The presence of legacy systems, incompatible devices and outdated infrastructure has created ongoing challenges for users to access and use patient and clinical information across both internal hospital locations and wider health service settings.
- **Core applications:** The sample included selected systems at all 20 DHBs. Assessments found 10 DHBs with poor financial management systems, four with poor or very poor patient administration systems, four with very poor pharmacy management systems and one with a very poor clinical portal system.
- **National data standards:** The slow progress with adoption of four key standards has limited the interoperability necessary to share, reuse and analyse information that would enhance both clinical and management operations.
- **IT infrastructure, networks and security:** These are outdated and not adequate to support the introduction of new systems and to manage the increased cyber security issues. While digital health has become critical to the delivery of services, there are significant risks to services from a lack of system capacity, resilience and business continuity arrangements.

COVID-19 pandemic

While the NAMP 2019 assessments predated the COVID-19 pandemic, the assessment findings contribute to ongoing work on emergency preparedness. This report highlights several issues important for management of large numbers of people with infectious and life threatening illness. The COVID-19 response experience underlines the importance of the next phase of NAMP assessments.

The capacity of sitewide electrical and medical gas capacity can limit the numbers of ventilators and monitoring equipment that can be operated at the same time. The clinical facility fitness for purpose (CFFFP) assessments identify issues with patient separation, clean and dirty workflows and suboptimal surfaces that creates difficulties around infection control. There are older negative pressure rooms, used to isolate infectious patients, that are poorly designed compared to the Australasian Health Facilities Guidelines (AHFG). The design issues include inadequate size, lack of anterooms and problems with doors seals and ventilation.

Health sector slowness to adopt standards that enable interoperability between health applications and support tracking of equipment and people is outlined in this report.

The COVID-19 response has also highlighted issues with the procurement and availability of clinical equipment, particularly for intensive care. Better integrated IT and telehealth applications would expedite the provision of services to many people, without the need for a hospital visit. A robust assessment method is being developed for clinical equipment and IT as part of the next phase of the NAMP.

Next steps

The Ministry of Health's Health Infrastructure Unit is working on a prioritised work programme to improve asset management in the health sector. This will be based on the improvement actions that have been identified in this report and are aligned to the available resources. The high priority next steps are as follows.

- Deliver a National Asset Management Plan incorporating investment scenarios to Ministers in 2022.
- Continue to work with DHBs to improve asset management practice and increase capability, including leveraging good practice identified in available asset management plans.
- Develop national service design and facility standards, settings, frameworks and guidance for capital planning.
- Develop asset levels of service aligned to national service design to quantify long-term investment scenarios.
- Develop more extensive and detailed assessments for digital health maturity.
- Develop scope, standards, priorities and complete assessments for clinical equipment.
- Develop a sector-wide capital investment framework and plan.
- Develop renewal and maintenance strategies.
- Incorporate more emphasis on health equity and sustainability in asset management practice, including to reduce greenhouse gas emissions and achieve carbon zero targets.

2ELEASED

Section 1 Introduction

This current-state assessment creates a consistent nationwide picture of the condition and fitness for purpose of district health board (DHB) buildings, infrastructure, clinical facilities and information technology (IT) assets. Alongside other prioritisation criteria, it will help inform capital investment decisions and provide a foundation for evidence-based asset management plans to enable effective health service delivery.

In May 2018 the Minister of Health announced the Government's intention to address the poor state of health infrastructure (Minister of Health 2018). At the time, there was uncertainty around the DHBs' estimated need for a \$14 billion investment over 10 years and the dependence on Crown funding (Treasury 2017). As a first step, the Minister commissioned a national asset management plan to establish a consistent nationwide picture of the state of DHB assets and forecast the population demand for services over the medium to long-term. This first report of the National Asset Management Programme (NAMP) outlines the current state of the assets.

DHBs operate with an accumulated under-investment in assets and many believe their assets to be in poor condition and no longer fit for purpose. Work through 2018–19 indicates investments of \$14 billion for buildings and infrastructure and \$2.23 billion for IT are needed over the next 10 years. However, there are financial constraints, capacity issues for the construction sector and a requirement for a national evidence-based prioritisation framework. Further, there are competing demands on DHBs' funds, with increased clinical complexity relating to an ageing population and ongoing developments in health and digital technologies. The direction in the New Zealand Health Strategy is to leverage new technologies and models of care to deliver more services in outpatient and community settings, rather than in hospitals. At the same time, the strategy anticipates that population ageing will increase the demand for health services, including hospital care (Minister of Health 2016).

This report sets out the current state for selected assets in DHBs. Section 1 provides background on the government-wide agenda to improve asset management. Next, it outlines the state of asset management and the context for capital investment decisions in the health sector. It concludes with the role of the NAMP in the sector and a readers' guide for this report.

Government-wide context

The NAMP is part of a government-wide agenda to improve the quality of asset management and long-term investment plans. Other large agencies have been building their capability in asset management and investment, such as the New Zealand Defence Force, the NZ Transport Agency, the Ministry of Education, the Department of Corrections and Kāinga Ora. The Ministry of Health differs from most central government agencies because it funds but does not own the assets. DHBs own buildings and infrastructure with a replacement value of around \$24 billion and a similar investment in fittings, clinical equipment and IT. This asset base is large, with a complex operating environment.

Several agencies have oversight of health sector capital investment. DHBs must seek joint approval from the Minister of Health and the Minister of Finance for investments over \$10 million and where Crown funding is required (National Health Board 2011). The Capital Investment Committee (CIC)⁹ provides independent advice to these Ministers. The Ministry of Health and The Treasury provide advice to their respective Ministers and support the deliberations of the CIC.

There have also been initiatives to encourage improvement in asset management and long-term investment plans. The Office of the Auditor-General (OAG) provides government with independent assurance about the DHBs' asset management and financial performance. The Treasury has used the investor confidence rating (ICR) to assess the quality of financial and asset management for capital-intensive agencies every three years (Cabinet Office 2015). The Health Asset Management Improvement group is a forum designed to encourage improvement and share knowledge in the health sector.

Sustained attention to asset management and long-term investment plans is essential to build health sector capability. As outlined below, the journey to this first report began with the introduction of asset management plans for DHBs in 2009. The NAMP has evolved from the accumulated effort since then, with the second report and plan due in 2022.

2009	Introduction of asset management plans for DHBs
2011	CIC established and regional plans introduced
2014-15	The Treasury and Ministry of Health review asset management maturity
2015	Health Asset Management Improvement (HAMI) group established
2015	Investor confidence ratings introduced
2016	OAG reports that DHB asset management is immature
2017	Long-term investment plans introduced for DHBs

⁹ The CIC is a committee established under legislation to advise the Ministers of Health and Finance.

2018	18 DHB long-term plans submitted to the Ministry of Health
2018	First long-term investment plan for the Northern Region produced
2017–19	Two rounds of ICR assessment for seven DHBs and Ministry of Health
2018–19	First NAMP assessments undertaken
2020	NAMP Report 1: Draft current-state assessment
2020-21	NAMP Phase 2 programme of work
2022	NAMP second report: National Asset Management Plan

Health sector asset management

Audits of DHBs found that poor asset management has compromised the quality of long-term plans (Office of the Auditor-General 2016). Internationally, poor asset information has been linked to suboptimal allocation of health sector capital (Marriot et al 2011). In 2020 the COVID-19 pandemic response also highlighted weaknesses in health sector asset management, notably around the capacity of facilities, sitewide infrastructure, clinical equipment and IT.

ACT

In 2018, the NAMP and Morrison Low visited 11 health agencies to assess the quality of asset information. Included were healthAlliance and the Auckland, Waitematā, Counties Manukau, Tairāwhiti, Taranaki, Capital & Coast, Hutt Valley, Wairarapa, Nelson Marlborough and Canterbury DHBs. All agencies were willing to engage and share information for the benefit of the health sector.

To provide detailed feedback for DHBs, Morrison Low constructed a 1–3 rating to indicate progress on 22 areas of asset management practice for buildings, infrastructure, IT and clinical equipment. Of the 11 agencies, eight were assessed for IT asset maturity, because healthAlliance manages IT assets on behalf of the Northern Region. Only the 10 DHBs were assessed for management of clinical equipment assets. Figure 1: shows:

- least mature in red: asset levels of service; alignment of multiple asset and finance registers; consistency of data; and completion of asset management plans
- improving in orange: asset registers and condition and performance assessments for infrastructure, buildings and IT
- most mature in green: condition and performance assessments for clinical equipment.

This is a less detailed assessment than completed for the ICR. Conducted by The Treasury, the ICR takes a more in-depth look at the performance of individual agencies in the management of their investments and assets. It provides an indication of the level of confidence that investors (such as Cabinet and Ministers) have in an agency's ability to realise a promised investment result if funding were committed. Seven DHBs and the Ministry of Health have been assessed through two rounds of the ICR, which includes scoring of their asset management maturity and asset performance.

The results of the ICR are on The Treasury's website treasury.govt.nz/informationand-services/state-sector-leadership/investment-management/reviewinvestment-reviews/investor-confidence-rating-icr/results-investor-confidencerating-icr
The ICR process has encouraged Waitematā, Auckland, Counties Manukau, Waikato, Capital & Coast and Canterbury DHBs to develop asset management plans, although there was no national framework to enable a consistent nationwide picture. The NAMP has been established to achieve this.



Figure 1: Asset management maturity assessed by Morrison Low in 2018

The capital investment process

Under the current process of capital investment allocation, DHBs develop business cases to bid for a share of the annual capital available. The information used for decisions comes from stakeholders operating at different levels of the health sector. At the highest level, capital budgets are set as part of a whole-of-government budget process. For DHBs, business cases are variously constructed from a range of information about population need, asset condition and service enablers like models of care, workforce, information and clinical technologies. These business cases are often developed in isolation from DHB neighbours and regional partners. An exception is the long-term investment plan developed in 2016 by the four northern DHBs, which are developing a 10-year roadmap for capital investment. Overall, there is limited consistency and transparency of information at either the local, regional or national levels.

The immaturity of health sector investment and asset management means that asset management plans have not informed the business case process. This has increased the effort and time for DHBs to develop each business case. It has also lengthened the process of business case review as further information and clarification has been necessary to establish a level playing field in the decision-making processes of capital allocation.

In addition to the issues around information quality, capital investment decisions in the health sector are complex. While buildings can have a life of 30–50 years, the designs for effective health facilities change more rapidly. Government and DHBs face a mix of competing considerations for capital investment decisions, including:

- changes to demographics, affecting the types and quantity of services required
- delivery of equitable health outcomes across regions and populations
- current government priorities such as outcomes for mental health and Maori
- the condition of buildings and infrastructure and the optimal time for renewal
- shifts of health services from hospital to community settings
- optimal leverage of health and information technologies, workforce and models of care
- improved availability and access to services for consumers
- synergy with regional and local initiatives and stakeholders
- value-for-money and service sustainability
- advances in technology and innovation that support environmental sustainability.

In this environment it is essential to consider changes in facilities design, health sciences, models of care, IT and clinical equipment, rather than replace assets like-for-like. An optimal investment could be to build an ambulatory care centre located to facilitate access for vulnerable populations or co-located with primary care teams rather than within a hospital. A mature asset management approach focuses on the services required and ensures that non-asset solutions are included in decision-making.

Why have a NAMP?

The NAMP is an important part of the Ministry of Health's stewardship of the health system. It will inform the capital investment plans to enable effective service delivery and improve health outcomes. For the wider economy, the 2020 current-state assessment and the plan due in 2022 will encourage the construction sector to understand the long-term capital pipeline and develop and retain a skilled workforce (Minister for Building and Construction 2018).

For the health sector, the NAMP will:

• provide leadership and expertise to improve the maturity of DHB asset management

- inform national and regional investment plans by supplying a consistent currentstate picture of the condition, lifecycle and capacity of the health estate, along with the forecast demand for services
- provide a transparent source of information to underpin robust discussion around capital allocation among DHBs, the Ministry of Health, The Treasury, the CIC and other stakeholders
- form an important part of the Ministry's work to improve long-term plans, including the development of guidelines on asset assessment, service plans, facilities standards, models of care and sustainability.

The NAMP will influence a shift to strategic and lifecycle considerations in the management of capital investments. Research shows that moving too quickly through the conceptual and planning phases for new health facilities risks poorer long-term outcomes. The costs prior to occupancy are likely to account for only 6 percent of the lifetime costs of the building. Best practice is to maintain focus on health service strategy, the facility's fitness for purpose and its operational cost, prior to occupancy (Bjorberg and Verweij 2009).

What is the NAMP?

Begun in 2018, the NAMP is a high-level strategic programme. Over time it will create investment pipelines to inform capital allocation, allowing for different scenarios for government investment. This includes funding from DHB budgets and additional capital allocations.

The NAMP will provide guidelines to consistently identify and assess assets across DHBs. This includes the assets' condition, expected life and cost of renewal. Information on the population demand, along with the assets' level of service and expected life, will be used to plan the timing of large investments. This will form the basis for consideration of what types of assets and technologies should be deployed to replace those that are approaching end-of-life.

In 2018–19, to establish the inaugural assessments, the programme delivered:

- a framework to determine building criticality in health services
- professional onsite inspection of 166 selected older and critical hospital buildings
- self-assessments by DHBs of 993 other buildings
- professional onsite assessments of infrastructure on 31 campuses
- professional onsite clinical facilities fitness for purpose (CFFFP) assessments of 75 clinical units and five control units
- Ministry of Health DHB digital systems landscape survey of core applications in DHBs
- self-assessments by DHBs of the condition of their top 20 critical IT assets
- assessment of asset management maturity in DHBs
- a national electronic asset register
- next steps for development of the programme.

The current-state assessment in this report uses data at an aggregated level to understand the condition and performance of assets in the health sector. These assets include buildings and infrastructure, clinical facilities and IT. (Clinical equipment will also be included in the 2022 report).

Figure 2: shows how data is consistently assessed from components to assets, asset types and groups to support plans for maintenance, renewal and refurbishment and strategic asset management.





In 2019 the Ministry of Health commissioned the development of an asset management repository, the Health Asset Register Tool (HART). So far, this repository has been populated with the 2019 assessments of building and infrastructure, bed capacity and CFFFP. Development of this asset register is ongoing, with plans to support wider stakeholder access in 2020.

Figure 3 shows how the NAMP will work interactively with DHBs, both bottom up and top down, to improve the information flows that inform investment plans, priorities and decisions.

The blue boxes show the role of the Ministry of Health's Health Infrastructure Unit to provide guidance on services plans, facilities standards, demand and capacity modelling, models of care and sustainability.

In yellow is the lifecycle of asset management through acquisition, operation, maintenance and disposal, and the plans and business cases produced by DHBs.

The green box shows how the NAMP and DHB asset management link to strategic plans, business cases and the national framework for investment prioritisation supported by the Ministry of Health and The Treasury, for the CIC and the Ministers of Health and Finance.



Figure 3: NAMP, asset management and investment decisions

Reading this report

Section 1 looked at the health sector asset management and capital investment context, addressed the questions of what the NAMP is and why it is important and outlined how it will operate in the future to inform health sector asset management.

Section 2 sets out the approach and findings for assessments of 1159 buildings and the sitewide infrastructure on 31 campuses. The building estate is in a mostly average to good condition, as DHBs have endeavoured to maintain assets despite a short-term planning focus. There are elements of older buildings, building operability and sitewide infrastructure in poor condition.

Section 3 sets out the approach and findings for the CFFFP of 75 units in older buildings, along with five comparison units in newer buildings. This was around half of the emergency departments, operating theatre suites, intensive care units and mental health inpatient units nationwide, along with a sample of 20 older inpatient units. As expected, the older units scored from very poor to average, with a poorer range of scores for mental health and intensive care units. These assessments will inform conversations around improvement with DHBs.

Section 4 sets out the approach and findings for the assessments of IT assets. This included DHBs' core applications, the complex and fragmented digital IT environment, the slow progress with adoption of national data standards and poor condition of infrastructure. While DHBs have maintained their IT assets, IT governance and asset management is basic. Significant investment is required to address issues with legacy systems and ageing infrastructure, and to invest in technologies that enable health services to transform to new models of care and increase community-based delivery.

Section 5 sets out next steps for the NAMP through 2020/21 and the second report targeted for 2022.

Section 2 Buildings and infrastructure

Robust investment plans are required to address poor components and shift the overall condition scores from poor or average to good. While DHB buildings are mostly in an average to good condition, the average scores indicate poor components. Also, in many cases the building operability and sitewide infrastructure are in poor condition.

Most buildings assessed were in average to good condition. DHBs have made best efforts to maintain their assets in the current environment of short-term planning. The buildings have an average age of 28–50 years, which indicates they are approaching end-of-life and are likely to have poor components within their average condition scores. For the 31 campuses assessed, scores for mechanical infrastructure were nine poor, 21 average, and one good. For electrical infrastructure¹⁰ scores were one poor, 13 average, 14 good and two very good. Further work is needed to understand the asset levels of service for the buildings and infrastructure in order to compare these to the current-state assessments. This comparison will show whether these assets appropriately support the respective health services.

Under the 2017 changes to the building regulations, there are now 52 buildings at importance levels 3 and 4 considered earthquake prone. A significant number of these buildings are currently being redeveloped at the Dunedin, Taranaki Base and Grey Base hospitals. The 2017 regulations require that remediation work be completed by 2027 for regions with high seismic risk and 2034 for regions with medium risk, although territorial authorities may grant time extensions. There are also opportunities identified by DHBs and the Ministry of Health for investments to improve the components of building operability that protect occupants through disasters. These include the quality of seismic restraints, passive fire separation and continued work on the management of asbestos.

¹⁰ There are electrical infrastructure scores for 30 of the 31 sites. At the time of the inspection, there was no access to assess the electrical infrastructure at Point Chevalier.

This section begins with the assessment approach used by the NAMP and DHBs for this current-state analysis. Next, it reports on the mean age and condition of buildings and their seismic integrity, followed by the buildings' operability including seismic restraints, passive fire separation and the presence of asbestos. The section then reports the condition of sitewide infrastructure on 31 campuses and concludes with schedules of cost estimates for new builds and refurbishments of different types of DHB buildings. Further information is set out in Appendix 4.

Assessment approach

A criticality matrix was developed with DHBs to select 166 buildings and 31 campuses for professional assessments by the NAMP team and Beca Group. DHBs self-assessed the remaining 993 buildings using the assessment guideline and an electronic survey tool.

Consistent methods were used to create a nationwide picture of the health estate. This included identification of key asset components and measures for grading condition. There is consistency between the professional and DHB self-assessments, except that the professional data is more detailed. This ensured the task was achievable for the DHBs. Scores were reviewed with each DHB and only adjusted where evidence supported this.

When making decisions on the future of critical buildings, knowledge of each building's ability to be operational after an earthquake is required. The NAMP, Beca Group and Kestral developed guidelines for DHBs to procure seismic assessments, along with a method to produce a standardised seismic rating to support comparison of the buildings. This method was applied to assess the seismic resilience of 34 properties.

Table 2 shows the components assessed for building condition, seismic integrity and building operability.

Table 2: Assessment components for buildings

Buildings

For buildings, information was collected on the condition, condition variability and estimated time to replacement for:

- building fabric (external and internal)
- mechanical, heating, ventilation, air-conditioning and plumbing
- electrical, power, lighting, extra-low voltage, lifts, fire systems.

Seismic integrity

For seismic integrity assessments are based on:

- structural integrity: earthquake safety as a percentage of the new building standard (%NBS) from existing initial and detailed seismic assessments
- seismic resilience: a pilot study to identify seismic resilience where possible was calculated from detailed seismic assessments

Building operability

Building operability components affect the safety of the building for its occupants day-to-day and through disasters. Risk was assessed as low, medium and high for:

• asbestos, passive fire separation and seismic restraints.

Scores for building operability, including passive fire separation, likelihood of asbestos and quality of seismic restraints, are:



Table 3 shows the components assessed for the sitewide infrastructure that connects services to buildings. These assessments excluded the components assessed for buildings.

Table 3: Assessment components for sitewide infrastructure

Sitewide electrical infrastructure

- Substations
- Main switchboards
- Site distribution mains
- Site generators (backup power supply)

Sitewide mechanical infrastructure

- Steam pipes
- Storm water drains
- Heating pipes
- Cold water supply pipes
- Heating plant
- Cooling pipes
- Hot and cold water site pipesHot and cold water storage
- Cooling plant
- Medical gases
- Sewer drains

Analysis

This current-state analysis is a nationwide picture of the condition of buildings and infrastructure, structural integrity and building operability. In this report, the graphs show mean (average) condition scores across critical and non-critical buildings, regardless of their age. The following factors in this assessment contribute to better mean condition ratings.

• Compared to the professional assessors, the DHBs tend to assign lower scores that indicate better condition to the 993 buildings they assessed.

• The building portfolio includes newer as well as older buildings. Averaging obscures the poor-scoring outliers that are mostly older buildings.

• An average score for a building contains many components. A building with an average score of 3.0 can comprise good and poor components, while any building that scores higher than 3.0 has components with significant issues.

• When all the critical and non-critical buildings are included, a more even distribution score is produced. There is more variation in scores for analysis at the building component level.

Table 4 sets out definitions for the condition scores used for fabric, electrical and mechanical components of buildings and the components of sitewide infrastructure.

Rating	Condition	Definition
1	Very good	Assets displaying no deterioration or only normal routine maintenance required. New or near-new condition or repaired as good as new.
2	Good	Assets displaying limited deterioration that does not affect their use or where limited restoration has been performed. Minor maintenance may be required.
3	Average	Assets that have deteriorated to a degree where maintenance is obviously due, but not to the extent that the function is significantly impaired.
4	Poor	Assets that need repair or renewal in the short term because their condition is severely impacting performance. Barely serviceable, and failure likely in the short term.
5	Very poor	Immediate repair or renewal required. Assets have failed or failure is imminent. May pose health and safety issues and requires urgent attention.

Table 4: Condition score definitions for building and infrastructure

Mean age and condition of buildings

Figure 4: shows the mean age of the buildings at main campuses ranges from 28 years at Waitematā DHB to 53 years at Southern DHB. Generally, the older the building, the poorer its condition, and suboptimal maintenance reduces the useful life of the building. For clinical buildings, refurbishments can be expected after 25 years and major refurbishment or renewal after 50 years. The vertical lines show the age range for buildings in each DHB.



Figure 4: Mean age of major campus buildings for all 20 DHBs

Figure 5: shows the mean condition scores for all DHB buildings, calculated on a gross floor area. There are 10 with good and 10 with average scores.¹¹ No DHBs had poor or very poor scores. However, the average scores indicate the presence of some components in poor condition.



Figure 5: Mean building condition scores weighted for gross floor area

Figure 6: shows a wide distribution of mean condition scores for buildings accommodating mental health inpatient units. There are two very good, seven good, nine average and one poor. Many buildings had been refurbished and repurposed to accommodate mental health units. However, as the poorer scores for CFFFP indicate, many repurposed buildings did not have floor plans appropriate for mental health services, which can compromise service delivery. The buildings are mostly low-rise with fewer mechanical components and therefore easier to maintain. However, in many cases the interiors were found to be in poorer condition compared to the mean condition score for all the buildings. The two with very good building condition scores are newer facilities.

¹¹ West Coast DHB was not included due the current hospital rebuild.



Figure 6: Mean condition scores for buildings that house mental health units

Operability of buildings

Buildings were assessed for operability, which relates to their capacity to be safe for patients, staff and visitors. Assessments included structural integrity, seismic restraints, the presence and condition of asbestos and passive fire separation.

Structural integrity and resilience

In 2019, the Ministry of Health requested that DHBs provide the NAMP with all their %NBS scores for buildings where a seismic assessment has been completed. Previously, DHBs supplied their %NBS scores only for earthquake-prone buildings. This work is currently in progress, with 60 percent of buildings having the %NBS recorded. Scores are not required for non-essential buildings such as garages and sheds.

The building regulations related to earthquakes were changed substantially in 2017, which has had a significant impact in the health sector with its large proportion of importance level 4 and 3 (IL4 and IL3) buildings. The regulations identify buildings with emergency departments and operating theatre suites as IL4, and these buildings are likely to house other critical hospital services. The %NBS requirements are higher for buildings with a higher importance level; for instance, IL4 compared to IL3. Improvements are required for buildings that are identified as less than 33% NBS which are classified as earthquake prone buildings. This includes buildings scored as a D or E in the scoring below for any importance level. The timeframe for improvements depends on the seismic risk, being 2027 for areas with high risk and 2034 for areas with medium risk.

Figure 7: shows the completed structural integrity information for 1229 buildings. It shows the numbers of buildings; the importance level of 1 to 4; and for each importance level the proportion of buildings with a score A+ to E that equates to a %NBS range.

The %NBS scores indicate that there are 52 buildings (30 IL4 and 22 IL3) with scores of D and E, which are earthquake prone according to the new building regulations. All affected DHBs have plans to address these requirements. Among these 52 buildings

are those at the Dunedin, Taranaki Base and Grey Base hospitals currently being redeveloped. The Ministry of Health will be working with DHBs to determine the most appropriate action in relation to the small number of other buildings.

The IL3–4 buildings where there is presently no %NBS data are mostly located in areas of low seismic risk. While the Ministry is encouraging DHBs to assess all IL4 buildings, the building regulations allow up to 35 years for this in areas of low seismic risk.



Figure 7: Importance level of buildings and degree of earthquake risk (%NBS)

The structural integrity measured as %NBS relates to the building's ability to protect the life of its occupants through a disaster. The Ministry of Health will work with DHBs to determine asset levels of service that are likely to include seismic resilience. Seismic resilience is a different concept from %NBS. It rates a building for its capacity to provide service continuity following a disaster. A method that uses DHBs' seismic assessments to assess their buildings seismic resilience has been developed and is being piloted.

Seismic restraints

Most seismic restraints complied with the standards required at the time the building was constructed. In some cases, there have been upgrades to retrofit modern seismic restraints to older buildings. Overall the quality of the restraints varies, from robust frames to secure heavy equipment such as water storage units, to similar units poorly secured with limited restraint. These issues were identified through the joint DHB and NAMP assessments and the Ministry of Health will seek plans to improve seismic restraints.

Figure 8: shows the risk levels of seismic restraints as a proportion of buildings, with 39 percent low risk, 20 percent medium risk, 10 percent high risk and 31 percent not yet assessed.





Presence of asbestos

Many DHBs are managing significant levels of asbestos present in buildings, including maintenance of an asbestos exposure register and reports to WorkSafe New Zealand. There are special procedures in place to protect building occupants and the most significant issues relate to the friable asbestos lagging of pipes.

In cases where there were significant issues, the previous and planned work to remove asbestos was discussed with the DHB. Asbestos is generally managed through isolation and encapsulation, with removal where necessary. Removal can be difficult where pipes are in constrained areas or pass through walls. Moderate asbestos is usually encapsulated.

Figure 9 shows the risk levels for presence of asbestos as a proportion of the buildings, with 39 percent low risk, 20 percent medium risk, 10 percent high risk and 31 percent not yet assessed.



Figure 9: Risk levels for presence of asbestos as a proportion of buildings

Passive fire separation

ELEA

Active fire protection systems include alarms and sprinkler systems that are subject to regular building warrant-of-fitness procedures with local government, so were not included as a specific assessment in this report.

ATIONAC

Passive fire separation is usually evaluated against the standards in place at the time of the building's construction. This assessment focuses on the current issues, rather than performance against previous standards. In many cases, passive fire separation has been compromised by poor practices around the installation of new technologies, such as cabling.

DHBs have advised the Ministry of Health that controls are now in place to ensure that fire cells are not compromised by new IT installations. There have been problems with holes drilled through walls to feed cables that were left unsealed or sealed with non-fire-resistant sealants. Unsealed holes enable smoke and flames to spread through buildings, compromising passive fire separation. In many cases, DHBs have remediation programmes that are expensive and time consuming already in progress.

Figure 10: shows the risk levels for passive fire separation as a proportion of the buildings, with 52 percent low risk, 16 percent medium risk, 11 percent high risk and 21 percent not yet assessed.





NATIONAC **Combined condition and operability**

Older buildings generally have accumulated issues at the component level, poor %NBS scores, and may have operability issues. Tables 5 and 6 show extracts from the HART tool. From the left, is the building name, gross floor area, year built, mean condition score, building component score, seismic integrity and building operability. The building components include fabric, electrical and mechanical. The seismic integrity includes the graded NBS score and importance level. The building operability includes risks for passive fire separation, presence of asbestos and seismic restraints. Table 5 also shows the number of facilities in the building that were assessed for clinical facility fitness for purpose (CFFFP) and the mean score achieved on the nine CFFFP design principles.

Table 5 shows all buildings housing clinical services that have poor condition scores. For this group of 24 buildings:

- construction dates range from 1946 to 2011, with many built in the 1970s and three that have previously been refurbished
- 62 percent of the building components were poor
- graded NBS scores range from a good A+ score to a very poor E score
- 11 had CFFFP assessments on some facilities with scores from average to very poor.

The buildings house a range of services, including for the acute care pathway, clinical support departments, outpatients, child services, mental health and aged care. Some of the larger buildings such as at Grey Base Hospital are currently being redeveloped.

Table 5: The 24 buildings ho	using clinica	l facilities wi	th poor conditio	on scores			Ċ	AACT	•	
Building name	Year built	Gross floor area (m ²)	Mean condition score		Building component so	ores	Seismic	integrity	Clinical fac	ilities fitness-for- ourpose
				Fabric	Electrical	Mechanical	Graded NBS scores	Importance level	Mean CFFFP score	Number of facilities assessed for CFFFP
NMDHB Nelson George Manson	1960	6,863	3.7	3.6	3.5	4	С	IL4	3.6	1
WtDHB Waitakere Special Care Baby Unit	1964	3,899	3.6	4	3.8	2.8	С	IL2		
CDHB Ashburton Laboratory and Pharmacy	1990	752	3.4	3.5	3.7	3	A	IL3		
CMDHB Ōtara Tāmaki Oranga	1970	509	3.4	3.2	3.5	3.5	В	IL3	3.3	1
CMDHB Ōtara Spinal Unit	1974	5,632	3.3	3.4	3.5	3	С	IL3	4.6	1
HBDHB Hastings Laboratory	1983	891	3.3	3.6	2.1	3.5	С	IL4		
SDHB Wakari Helensburgh	1955/2012	5,623	3.3	3.4	2.6	3.5	A	IL3	4.1	1
WtDHB Mason Rata	2000	1,465	3.3	3.3	3	3.4	В	IL3		
WtDHB North Shore Geriatric	1972/1999 Wards 6A and 11)	8,437	3.3	3.4	1.9	3.9	A+	IL3	3.2	1
WCDHB Buller Medical		0	3.3	3.7	2.9	2.9	С	IL4		
ADHB Point Chevalier Buchanan	1973	2,294	3.2	3.1	3	3.4	В	IL2	2.3	1
CDHB Christchurch Riverside	1980	17,722	3.2	3.2	2.5	3.7	D	IL3		

Building name Gross floor Building Seismic integrity Clinical facilities fitness-for-Year built Mean area (m²) condition score component scores purpose Graded NBS Number of Fabric Electrical Mechanical Importance Mean facilities assessed scores level CFFFP score for CFFFP NDHB Whāngārei Child Health 3.2 2.5 IL2 1986 173 3.6 2.9 NA 10,151 3.2 2.6 **SCDHB** Timaru Clinical Services 1976 3 IL4 4 1 NA 3.8 East 2.5 2 SCDHB Timaru Clinical Services 1976 3.2 2.9 С IL4 3.7 4 Main SDHB Dunedin Child Pavilion 3.2 1945 3.1 4,482 3.2 3.4 В IL3 TarDHB Clinical Services 1968 7,510 3.2 2.9 3.8 3.2 Е IL4 3.8 1 3.2 3.2 WCDHB Grey Main 15,000 2.5 3.5 2.3 1 CDHB Ashburton Radiology and 693 А 1990 3.1 3.2 3 3 IL3 Patient Records 2,888 2.7 CDHB Hillmorton Forensic 1999 3 IL4 3.1 3.4 NA Mental Health 1980 17,630 3.1 3.2 3.3 CCDHB Wellington Grace Neill 2.9 А IL3 NDHB Whāngārei Surgical 2 1956 3.1 3.1 2.8 3.3 NA IL3 4 NDHB Whāngārei Te Roopu 1977 0 3.1 3.5 3.2 2.5 NA IL2 Kimiora 2011 3,555 NMDHB Wairau Main 3.1 3 3.2 3.2 NA IL4 251150

Table 6 shows the eight buildings with the worst mean condition scores. This includes six buildings that house support functions such as plant rooms, workshops and kitchens and two buildings that house clinical services located at Nelson Marlborough DHB and Waitematā DHB. The results show:

- almost all components were poor
- two are classified as earthquake prone with a score of D, four were average with a score of C and for two the scores were not applicable
- operability scores varied
- date of construction ranges from 1891¹² to 1972.

DHB Building name	Year built	Gross floor area (m ²)	Mean overall condition score		Buildin component	g scores	Seismic	integrity	Βι	uilding operabilit	y
				Fabric	Electrical	Mechanical	Graded NBS scores	Importance level	Fire separation issues	Likelihood of asbestos	Seismic restraint issues
ADHB GLane B5	1906	1,462	4	4	4	4	D	IL2	high	high	high
ADHB GLane B6 Costley	1891	1,404	4	4	4	4	D	IL2	high	high	high
NM Tapawera House	1962	57	3.9	4	3.5		NA	IL2	low	low	low
WtDHB Waitakere Woodford Hse	1972	2,023	3.9	4	3.5	3.9	С	IL2	NA	NA	NA
NMDHB Wairau workshop	1950	165	3.8	3.6	4	4	NA	IL2	low	high	medium
NMDHB Nelson George Manson	1960	6,863	3.7	3.6	3.5	4	С	IL4	high	high	high
HVDHB Kitchen	1942	3,233	3.6	4	2.8	3.4	С	IL2	medium	medium	medium
WtDHB Waitakere SNBU	1964	3,899	3.6	4	3.8	2.8	С	IL2	Medium	high	high

¹² Costley Home, a New Zealand heritage-listed building.

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Sitewide infrastructure

Sitewide infrastructure is critical for the continuity of hospital services. Plans for this infrastructure must include support for future campus development. Significant issues were found in the professional assessments of sitewide infrastructure on 31 main hospital campuses. This includes electrical systems and pipes at or near end-of-life. The assessors noted that these issues can be overlooked in plans for the replacement and refurbishment of hospital buildings and are not visible to the public.

In general, DHBs have maintained their sitewide infrastructure to supply medical gases, water, sewer pipes and electricity. However, electrical infrastructure upgrades are difficult to manage because hospitals are continuously operational. Assessors noted some suboptimal partial upgrades due to problems taking the electricity supply off-line. Other difficulties relate to the lack of skilled people and replacement parts for repair of old infrastructure to a good standard, such as Pyrotenax cabling. There are also cases where DHBs have constructed new buildings on infrastructure that was nearing its end-of-life.

Many of the boilers were old, of suboptimal design, or converted from oil to gas with low efficiency. Coal-fired boilers should be phased out to reduce CO₂ emissions. There are more effective options to replace reticulated steam that operate at point-of-use. Many chilling systems are old, use refrigerants no longer in production and are harmful to the ozone layer. These systems should be replaced and the old refrigerants safely disposed of.

Some pipework is at the end of its economic life, with many valves that need to be replaced. A programme of certification could be used to minimise health service disruption from these faults. Several sites reported issues with pinholes in copper water pipes that relate to low-grade copper and changes to water treatment practices.

Figures 11 and 12 show the mean scores for the professional assessments of DHB sitewide infrastructure, including 30 campuses for electrical and 31 for campuses for mechanical. The graphs cover sitewide components like pipes and cabling that connect services to buildings. The mechanical and electrical components within buildings formed part of the building condition assessments. Campuses vary in their complexity, for example mental health facilities do not require medical gases to be piped sitewide.

Figure 11: shows the mean condition scores for sitewide electrical infrastructure at 30 campuses, with one poor, 13 average, 14 good and two very good.



Figure 11: Mean condition for sitewide electrical infrastructure at 30 campuses

Figure 12: shows the mean condition scores for mechanical sitewide infrastructure at 31 campuses, with nine poor, 21 average and one good.



Figure 12: Mean condition for sitewide mechanical infrastructure at 31 campuses

The poorest mean scores for both electrical and mechanical sitewide infrastructure are at Palmerston North Hospital, Wellington Regional Hospital and Hillmorton Hospital. More details of specific issues are identified by campus in Appendix 4.

Cost estimates

Quantity surveyors Rider Levett Bucknall developed cost estimates per square metre (m²) for replacement and refurbishment of different building types, to support analysis of future investment. This provides an indication of like-for-like replacement or refurbishment and will support consistent cost estimates for investment scenarios.

More detailed estimates will be required at the business case and project stages. Tables 7 and 8 set out these cost estimates.

Included in these estimates were:

- construction costs
- an allowance for siteworks and landscaping (new build) • CHALING PRIMATION ACT
- an allowance for infrastructure (new build) •
- design and construction contingency
- professional fees ٠
- furniture, fittings and equipment
- future escalation in costs during design
- project contingency. •

Excluded in these estimates were:

- demolition of existing structures
- remediation of contaminated ground •
- ground improvement •
- land costs •
- development contributions
- specific flood remediation requirements
- sitewide infrastructure
- IT requirements beyond those included in construction costs
- future cost escalation for commencement beyond 2019
- DHB internal project and direct management costs ٠
- car park structure and GST.

Refurbishment costs are for building interiors only and exclude resolution of existing compliance issues.

The costings in Tables 7 and 8 assume a hypothetical completion date that ranges from 2021 to 2028. FILEA

Table 7: Health facility new build cost estimates

Building type	Cost estimates per m ²
Tertiary hospital	\$13,250
Secondary hospital	\$10,000
Community hospital	\$7,500
Administration B grade	\$5,500
Industrial	\$2,000
Mental health	\$10,000
Forensic mental health	\$12,000

Table 8: Health facility refurbishment cost estimates

Secondary hospital \$10,000 Community hospital \$7,500 Administration B grade \$5,500 Industrial \$2,000 Mental health \$10,000 Forensic mental health \$12,000 able 8: Health facility refurbishment cost est
Community hospital \$7,500 Administration B grade \$5,500 Industrial \$2,000 Mental health \$10,000 Forensic mental health \$12,000 Fable 8: Health facility refurbishment cost est
Administration B grade\$5,500Industrial\$2,000Mental health\$10,000Forensic mental health\$12,000Fable 8: Health facility refurbishment cost es
Industrial \$2,000 Mental health \$10,000 Forensic mental health \$12,000
Mental health \$10,000 Forensic mental health \$12,000 Fable 8: Health facility refurbishment cost est
Forensic mental health \$12,000
Fable 8: Health facility refurbishment cost es
Building type & extent Cost estimates of refurbishment per m ²
High technical extensive \$8,500
Medium technical extensive \$6,000
Low technical extensive \$4,000
High technical moderate \$6,000
Medium technical moderate \$4,000
Low technical moderate \$2,500
High technical minimal \$750
Medium technical minimal \$500
Low technical minimal \$500

Section 3 **Clinical facilities'** fitness for purpose

TIONACT Seventy-five clinical units in older buildings were assessed for CFFFP across five services. Many units were undersized and achieved poor scores against the nine design principles, particularly among the mental health and intensive care units.

The assessments looked at how well clinical facilities in older buildings perform compared to the design guidelines for new facilities. Over the last 25 years, guidelines for the sizes of rooms, layout and available therapeutic spaces have changed. Older units were not expected to meet the current guidelines. However, the findings about their 'relative' performance can inform conversations with DHBs about improvement strategies and the national priorities for investment plans.

The Australasian Health Facility Guidelines (AHFG) are used to inform the design of health facilities in New Zealand. The Ministry of Health's new Health Infrastructure Unit will develop additional guidance for the design of new buildings and renewal of older facilities in the New Zealand environment.

The assessments included five clinical services in older facilities: around half of the acute mental health units, emergency departments, operating theatre suites and intensive care units nationwide and a small sample of the oldest inpatient units at 13 DHBs. Each assessment included the unit's layout, size, physical aspects and use of space and also considered how well it supports the model of care. For each of the five services, a unit located in a newer building was also assessed. The five newer units were expected to achieve better CFFFP scores.

Further work with DHBs is required to consider options to improve seven mental health units, three emergency departments, five operating theatres suites, five intensive care units and eight inpatient wards. Options could include a combination of changes to models of care, strengthening other services in the workflow, unit refurbishment and renewals.

This section begins with the approach for assessment. It then outlines the findings for mental health units, emergency departments, operating theatres, intensive care units and inpatient units.

Assessment approach

The CFFFP survey was developed in 2019 to assess New Zealand hospital units for how well they support their model of care and align with the Australasian Health Facility Guidelines. Assessments considered unit performance against nine clinical design principles:

- 1. proximity of the unit to external clinical and clinical support services
- 2. appropriate co-location of key functions and activities in the unit
- 3. ease of access within the unit
- 4. adequate size and layout of key patient spaces
- 5. layout of space to facilitate staff communication and patient observation
- 6. support of audio and visual privacy
- 7. management of infection control
- 8. reduction in medication errors
- 9. physical security.

A further aspect of the units' fitness for purpose is their size. The AHFG was used to develop a benchmark size for each type of clinical unit. Guidelines have changed over time. Therefore, older units were expected to have poorer scores when compared with these benchmarks.

Table 9 shows that the assessment included around 50 percent of the acute mental health units, intensive care units, operating theatre suites and emergency departments nationwide. A typical inpatient unit was selected from an older ward block at 13 DHBs. Forensic mental health units were excluded from these 2019 assessments due to complexities with access. For each service, a control unit in a newer building was selected for comparison.

Type of unit	Number	Sample size	Number of DHBs
Acute mental health	24	Around 50% nationwide	17
Inpatient units	20	Small	13
Intensive care units	10	Around 50% nationwide	10
General operating theatre suites	15	Around 50% nationwide	13
Emergency departments	11	Around 50% nationwide	11

Table 9: The 80 units assessed for CFFFP

Assessments were piloted at the Nelson Marlborough and Hawke's Bay DHBs, then implemented at the remaining 17 DHBs.¹³ In each case, assessments were completed in collaboration with charge nurses and key clinical staff.

¹³ Wairarapa DHB did not meet the criteria for inclusion because all its clinical facilities are in newer buildings.

For each unit, the analysis includes a total score on the nine clinical design principles, performance on gross floor area and a summary of the themes identified in the survey observations. Table 10 sets out the definitions for the mean scores on the nine design principles. An average score indicates poor performance on some design principles. Poor and very poor scores merit investigation and remediation.

Rating	Fitness for purpose	Definition
	Very Good	Number, size, layout of key clinical and clinical support spaces and overall configuration of department or unit is appropriate for model of care. Clinical department or unit displaying no deterioration or only normal routine maintenance required. New or near-new condition or repaired as good as new.
2	Good	Generally, the right number, size and layout of key clinical and clinical support spaces and generally, the overall configuration of the department or unit is appropriate for the model of care. Clinical department or unit displays limited deterioration that does not affect its use. Minor maintenance may be required.
	Average	Likely to be too few key clinical and clinical support spaces. Some may be the right size while others are too small. Layout of key clinical spaces may be compromised. Some elements of the overall configuration of the department or unit may compromise the model of care. Clinical department or unit has deteriorated to a degree where maintenance is obviously due.
4	Poor	Generally, too few key clinical and clinical support spaces. They are generally inadequately sized and may have a poor layout. The overall configuration of the department or unit does not support the model of care. Repair or renewal is required as facility condition is severely impacting clinical safety and performance. May pose health and safety issues.
5	Very Poor	Too few key clinical and clinical support spaces. They are inadequately sized and likely to have a poor layout. The overall configuration of the department or unit does not support the model of care. Immediate repair or renewal is required as the facility's condition is severely impacting clinical safety and performance. May pose health and safety issues and requires urgent attention.

Table 10: Rating definitions for CFFFP assessments

Mental health units

The 24 mental health units assessed were selected from buildings built before 2010. This included 21 acute units, one extended care, one rehabilitation, one psychogeriatric and one intellectual disability unit. The bed numbers for the wards in these units ranged from 7 to 40, with the largest unit at Auckland DHB accommodating 62 overall.

Around 70 percent of the units have designs that do not provide adequate privacy, safety and therapeutic space to support different diagnoses, stage of illness, culture, gender and age. Managing patients with different needs in a poorly designed unit is

difficult for staff and challenging for patients. The problem is exacerbated in the units with fewer beds and fewer options to separate patients.

Many units lack consideration of the cultural needs of their clients. Cultural spaces, whānau rooms and areas suited to pōwhiri are important for New Zealand mental health facilities. While the Australasian Health Facility Guidelines do not specify these spaces, they do recommend that entry, reception and waiting areas are welcoming and respectful. Tiaho Mai at Middlemore Hospital has a whare entrance and at Tauranga Hospital, there is a large whānau room with outdoor access used to welcome people.

Strategies to cope with excess demand were evident in 70 percent of the units. These included using day, seclusion, interview and meeting rooms as bedrooms. Periodic leave is an important part of the person's transition, but some bedrooms were used for new patients while their occupants were on leave in the community.

Interior maintenance at 70 percent of the units was poor, including poor paintwork, holes in the walls, leaks in ceilings, rippling and worn carpets and poor bathroom facilities. Maintenance was good at the Southland Hospital unit, the older persons unit at Kenepuru Hospital, Kensington in Timaru and Waiatarau in Waitematā.

Mean scores for nine design principles

For mental health inpatient units, the key principles involved in poorer scores include:

- lack of privacy for recovery
- inadequate support for staff and patient communication related to poor line-ofsight for observation
- poor lighting in treatment areas and lack of access for staff to computers
- insufficient door sizes and corridor widths for people to circulate and to access therapy areas inside and outside the unit
- for stand-alone units, the distance for access to other clinical services should electro-convulsive therapy (ECT), intensive care and radiology services be required.

Investigation is required to identify the opportunities to address these issues. Initiatives could include a mix of changes to models of care, strengthening community-based alternative services, targeted refurbishments and unit renewal.

Figure 13: lists the older mental health units and wards (W) assessed, along with the control unit. It shows the mean overall scores on the nine design principles ranged from good to very poor, with three good, six average, 11 poor and four very poor. The unit at Hillmorton provides psychiatric and intellectual disability services (PSAID). The control unit Tiaho Mai was among three with a good score.



Figure 13: Mean scores on nine design principles for mental health units¹⁴

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Gross floor area

Most (75 percent) of the units are smaller than the AHFG benchmark of 80m² per bed and many have undersized bedrooms. While a significantly undersized unit can compromise service delivery, larger units can also be poorly designed. Six units, including the control unit at Middlemore, are larger than the benchmark size but within an acceptable size range. The gross floor area findings for all units assessed are set out in Appendix 3, Table 22.

Unit configuration

Over 50 percent of the units had various features common to designs first developed for prisons, which do not support modern requirements for safe, quality care for staff and clients. These features include:

- having bedrooms on both sides of the corridors with doors opening outward into the corridor, which reduces privacy and compromises the space for circulation
- having shared bedrooms, shared bathrooms and shared toilets with partial partitioning, which is not compatible with privacy, cohort management, safety and recovery
 - a central glass-enclosed staff base that gives people-in-care a sense of being watched and provides no privacy for staff to complete their work
- dead-end corridors that are inflexible for cohort management and create a risk that staff become trapped with an agitated person
- angular geometry with high sloping or raked ceilings that are not associated with a restful supportive environment for recovery
- outdoor spaces entirely external to the unit and fenced, that do not support flexible indoor to outdoor space for different cohorts

¹⁴ DHB names are abbreviated. See Appendix 2 for definitions.

inadequate separation of spaces between the individuals being treated, the public and the staff.

In contrast, the Tiaho Mai control unit at Counties Manukau DHB is the first example of the new courtyard model, which features:

- wide circulation areas around enclosed courtyards
- separation of spaces for people acutely unwell and those in step-down care
- smaller shared living spaces
- ATIONACT separate and therapeutic areas for interaction among the person in care, whānau and the staff
- off-the-floor staff work areas
- separate access pathways for staff, acute admissions and the public
- more subtle sophisticated security arrangements.

Most (80 percent) of these older units lack spaces for different aspects of therapy compared to the guidance in the AHFG. This includes interview rooms, patient and whānau areas, sensory rooms or gardens, dining rooms, kitchens, activity rooms, lounges and outdoor spaces. Therapeutic spaces are required by a range of staff, including mental health nurses and assistants, social workers, psychologists, psychiatrists, occupational therapists and cultural advisors.

Only half of the units have adequate outdoor space. Helensburgh at Wakari campus Southern DHB is located on the third floor and has no outdoor recreation area. Te Whetū Tāwera at Auckland DHB and Ward 11 at Hauora Tairāwhiti Gisborne Hospital have very limited outdoor space.

The Henry Bennet unit at Waikato DHB has constructed two bedrooms from a single room, which compromises privacy and access to external windows. The North Shore older persons unit has several multiple-bed bedrooms, which offer no privacy or ability to separate patients according to gender, age, acuity, diagnosis or cultural needs.

Only three units – Gisborne, Tiaho Mai and Invercargill – provide en-suite bathrooms for each bedroom. The rest have either a mix of en-suite and shared bathrooms or only shared bathrooms.

Safety

Safety issues included:

- keyed access to doors, rather than electronic swipe card keys
- dead-end corridors where the patients and staff can be trapped
- bedrooms on both sides of corridors with doors that open outward into the corridor, obstructing access and observation
- lack of required anti-ligature fittings.

Most units had just a single clinic room for dispensing medication. Single-point and poorly located dispensaries compromise patient management, as the patients congregate around the clinic.

Emergency departments

Nine emergency departments were assessed, nearly half of all departments nationwide. Included were the Northland, Counties Manukau, Hawke's Bay, Tairāwhiti, Lakes, Taranaki and South Canterbury DHBs. The control unit at Waikato DHB was selected due to its location in a newer facility. Capital & Coast DHB's Kenepuru unit was assessed; however, it operates as an after-hours general practice rather than an emergency department.

All emergency departments have similar models of care, with triage to direct people for minor and more complex problems and resuscitation areas. Most departments have experienced significant increases in demand over the last five years. Some departments report difficulties managing people who require a mental health assessment, due to a lack of suitable space.

Mean scores for nine design principles

For emergency departments, the key principles involved in poorer scores include:

- infection control issues related to suboptimal separation of patients, separation of clean and dirty workflows and the quality of surface finishes
- lack of privacy for people being treated

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• poorly sized and shaped spaces for key clinical work.

Figure 14: lists the older emergency departments assessed, along with the control department. It shows the mean overall scores on the nine design principles ranged from good to poor, with two good, three average and six poor. Kenepuru was the only accident and emergency department included. The control department at Hamilton Hospital scored average.



Figure 14: Mean scores on nine design principles for emergency departments

Gross floor area

Over half (64 percent) of the emergency departments are undersized against the AHFG benchmark of 50m² per bed and all have undersized bays for patient treatment. For 50 percent of emergency departments, most bed bays are undersized compared to the AHFG bay sizes for acute treatment at 12 m², patient resuscitation at 25m² and trauma at 30m².

The smallest emergency department compared to the AHFG benchmark is Whangarei at 38 percent. Departments at Timaru and Palmerston North are also unacceptably small. Three departments, the Kenepuru accident and emergency, Middlemore and Wairau are above the AHFG benchmark. The control unit at Waikato is also above at 104 percent. The gross floor area findings for all units assessed are set out in Appendix 3, Table 18.

Unit configuration

Just under half (40 percent) of the departments have layouts that do not support their models of care. To accommodate demand, Whāngārei, Palmerston North, Gisborne, Timaru and Hastings have incrementally incorporated space from adjacent areas. The resulting layouts are piecemeal, with:

- cramped conditions
- suboptimal configuration for a functional flow of care
- lack of safe separation of patients
- lack of natural light.

A further 50 percent of the departments have some of these problems. Only Wairau has both a layout and the space necessary for a modern model of care for an emergency department.

Almost all (90 percent) of the departments lack adequate clinical spaces to support patients who need:

- a single room
- isolation for infection control
- privacy for mental health assessments
- paediatric care
- obese or bariatric facilities.

A further problem is the use of enclosed single door spaces for mental health assessments that do not meet the AHFG benchmark of two exits, necessary for staff safety.

Safety

The difficulties with undersized bed bays, suboptimal layout and corridors cluttered with equipment compromise the safety of staff and patients. Issues include:

- infection control because cleaning is compromised
- obstructed access in thoroughfares, which can contribute to injuries for staff, patients and visitors
- trip hazards from equipment and cables, which can contribute to injuries for staff, patients and visitors
- risk of work injuries from lifting items stored on floors or at height.

In over half (70 percent) of the units, staff could observe less than half of their patients from a clinical workstation. This compromises patient safety and places additional demands on staff. Whangarei, where just 26 percent of patients were within direct line-of-sight from a staff base, had the poorest score. The best was the control unit at Waikato, with 59 percent of patients visible from a staff base.

Storage

None of the emergency departments assessed have adequate storage. Corridors are cluttered with extra beds and transport trolleys, trolleys for diagnostic tests and treatments, patient mobilisation equipment, electronic clinical devices, portable X-ray machines, computers-on-wheels etc. There is inefficient storage for supplies and inadequate space for disposal of rubbish, waste and soiled linen.

Other issues

Most units (80 percent) reported they have inadequate facilities for bariatric patients, including designated treatment spaces and ceiling-mounted lifting devices.

Not all units had a permanent security presence. Many (40 percent) reported increasing security concerns, particularly the management of people with presentation related to drugs and alcohol.

Operating theatre suites

Nearly half (15) of operating theatre suites nationwide were assessed at 11 of the 20 DHBs. These included units in Northland, Auckland, Counties Manukau, Tairāwhiti, Waikato, Lakes, Hawke's Bay, MidCentral, Capital & Coast, Nelson Marlborough and Canterbury DHBs. Canterbury DHB's Burwood was selected as the control unit due to being in a newer building.

These units perform planned and acute surgeries, except for the elective surgery centre at the Manukau SuperClinic. Over half (60 percent) of theatres reported that demand exceeds capacity. All theatres operate 8 am to 5 pm, five or six days per week, and after-hours for urgent cases. There is limited ability to increase volumes of cases within existing facilities.

Mean scores for nine design principles

For operating theatre suites, the key principles involved in poorer scores include:

- infection control issues related to suboptimal separation of patients, separation of clean and dirty workflows and the quality of surface finishes
- lack of privacy for people receiving surgery
- poorly sized and shaped spaces, especially operating rooms.

Figure 15: lists the older operating suites assessed and the control operating suite. It shows the mean overall scores on the nine design principles ranged from good to very poor, with four good, six average, four poor and one very poor. The control suite at Burwood was among those with a good score.



Figure 15: Mean scores on nine design principles for operating theatre suites

Gross floor area

Nearly half (40 percent) of the theatre suites were under the AHFG benchmark of 280m² per operating theatre. The smallest was Starship at 76 percent and the largest was Burwood at 125 percent.

Over half (53 percent) report their operating room sizes are too small, and 33 percent have a mix of acceptable and undersized operating rooms compared to the AHFG room size. Since many of these units were constructed, operating room sizes have increased to accommodate advances in clinical and information technologies. The AHFG sizes for general surgery rooms were updated in 2018 and for day surgery and procedure rooms in 2016. Only Wairau and Burwood have adequate numbers of operating rooms at the AHFG sizes.

These findings considered the size of different types of operating rooms, including:

- 75m² for rooms in a high-technology imaging and robotics suite
- 60m² for rooms a general surgical suite
- 42-55m² for rooms in a day patient surgery suite
- 17m² for day procedure, endo and colonoscopy rooms
- 24m² for dual layout day procedure rooms.

Starship's newest operating room and Wairau's new private operating room met the general surgical suite benchmark at 60m². All operating rooms at Burwood were 64m². The gross floor area findings for all units assessed are set out in Appendix 3, Table 20.

Unit configuration

Over half (67 percent) of theatre suites have a layout that only partly supports their model of care, from patient preoperative preparation, to theatre rooms and post-anaesthetic care. The layouts at Timaru, Gisborne and Starship do not support their model of care.

Nearly half (40 percent) of the theatre suites have issues with the separation of their clean and dirty workflows. This includes Starship, Gisborne, Christchurch Parkside, Whāngārei, Greenlane and Hamilton. Burwood, Timaru and Palmerston North have partial separation. The remaining six have a clear separation between these two flows.

Half (53 percent) of theatre suites reported that all their operating rooms are too small, and around 30 percent have only some rooms that are appropriately sized for their purpose. Two DHBs also had operating rooms with ceiling heights below 3.0 m, which created difficulties for manoeuvring around the ceiling-mounted equipment.

Safety

Over half (70 percent) of units have direct line-of-sight from the staff workstation for all their patients in the post-anaesthesia care area, which is crucial for patient safety. However, four units (27 percent) had less than 100 percent visibility. Greenlane has none due to poor layout and the location of the structural columns.

Unit issues contribute to difficulties with infection control through cramped patient areas; older floor, wall and ceiling surfaces that are hard to clean; and poor separation of clean and dirty workflows.

Storage

Most (80 percent) of the theatre suites lack storage space for the increased volumes of prepacked supplies, consignment and loan instruments, implants and specialist clinical equipment. Only Nelson and Kenepuru had fewer storage issues, while Wairau had none.

Intensive care units

Nearly half of the intensive care units nationwide were assessed. Of these 10 units, there are nine that care for both intensive care and high-dependency patients, including Whāngārei, Starship, Waitematā, Counties Manukau, Waikato, Tairāwhiti, Hawke's Bay, MidCentral and South Canterbury DHBs. Starship is a paediatric unit. The control unit at Waikato DHB, selected due to its location in a newer building, is a specialist intensive care unit.

Mean scores for nine design principles

For intensive care units, the key principles involved in poorer scores include:

- infection control issues related to suboptimal separation of patients, separation of clean and dirty workflows and the quality of surface finishes
- lack of privacy for people in care
- poorly sized and shaped spaces for key clinical work.

Figure 16: lists the older intensive care units assessed and the control unit. It shows the mean overall scores on the nine design principles ranged from average to poor, with three average and seven poor. None of these intensive care units that are over 20 years old achieved a good score on the nine design principles. The control unit at Hamilton Hospital had the best score.



Figure 16: Mean scores on nine design principles for intensive care units

Gross floor area

The AHFG benchmark for intensive care is $85m^2$ per bed for units with fewer than 15 beds, and $70m^2$ per bed for those with more than 15 beds. Most (80 percent) of units are beneath the benchmark. The control unit at Waikato is 118 percent of the AHFG.

Over half (70 percent) of the units have bed spaces under the AHFG bed space size of 24-25m², while the remainder have some bed spaces compliant with the AHFG. The gross floor area findings for all units assessed are set out in Appendix 3, Table 19.

Unit configuration

Most (80 percent) of the intensive care units have insufficient enclosed patient bays to support their mix of patients. The AHFG recommends a range of enclosed and open patient bays for the effective management of patients and infection control.

At Taranaki, the unit has been built in a U-shape around a large plant room. This obstructs patient observation across the unit and allows little space for clinical support spaces, staff and storage. At MidCentral and Gisborne, all patient bays are too small, and key clinical and clinical support spaces are missing.

Palmerston North, Hawke's Bay and Timaru have only one point of entry to their units, used for patients, staff, visitors, delivery of goods and removal of dirty linen and waste. Additionally, Timaru has to use an access ramp to their single point of entry.

Safety

Patient observation is compromised at:

• Taranaki, due to the design around a large plant room

- Starship, due to the multiple-bed bedrooms
- Middlemore, due to the layout and column location.

Palmerston North, Gisborne, Hawke's Bay and Timaru have significant infection control issues due to cramped units, inadequate negative-pressure rooms and storage issues, along with suboptimal surface finishes and maintenance.

Storage

Almost all units have inadequate storage. The Starship paediatric unit has significant problems storing age-related beds and equipment for 0–19 years. Most storage at Taranaki and Middlemore is outside the unit.

Other issues

Apart from Timaru, all units have negative-pressure bedrooms. However, only four meet AHFG size recommendations, which are bedrooms of 25 m^2 with dedicated anterooms of 6 m^2 and typically en-suite bathrooms of 6 m^2 . Provision of negative-pressure bedrooms is essential for managing patients who are infectious. Issues include inadequately sealed rooms, use of a corridor as an ante-room and shared ante-rooms.

Three units have significant issues with the location of medical gas and suction services, including:

- Gisborne, where floor-mounted bollards under the head of the bed mean staff crouch under the bed to operate them and they obstruct clinician access to the patient's airway
- Timaru, where floor-mounted bollards beside the bed create difficulties for staff to operate them and to access the patient
- Hawke's Bay, where ceiling-mounted bollards have poorly maintained articulated arms, which are hard to position and maintain in position.

Almost all units (90 percent) have inadequate facilities for bariatric patients, including designated treatment spaces and ceiling-mounted lifting devices.

Inpatient units

DHB staff nominated an inpatient unit from the 19 ward-blocks over 20 years old at 13 DHBs. These units ranged from 20 to 43 beds and included medical, surgical, orthopaedic, rehabilitation and older persons care. Included were units at the Northland, Auckland, Counties Manukau, Waikato, Bay of Plenty, Tairāwhiti, Hawke's Bay, Whanganui, MidCentral, Capital & Coast, Hutt Valley, Nelson Marlborough and Canterbury DHBs.

Challenges were observed for the care of patients in units with multiple models of care. For instance, the Whāngārei paediatric unit has medical and surgical care, inpatient and
outpatient care, along with child protection and mental health cases. This complicates the workflow, the separation of patient cohorts and the use of clinical spaces.

All units reported excess demand, which has implications for increased staff stress and risks to the quality of care.

Mean scores for nine design principles

For inpatient units, the key principles involved in poorer scores include:

- infection control issues related to suboptimal separation of patients, separation of clean and dirty workflows and the quality of surface finishes
- lack of privacy for people being treated
- inadequate support for staff and patient communication related to poor line-ofsight for observation, poor lighting in treatment areas and lack of access for staff to computers
- poorly sized and shaped spaces for key clinical work.

Figure 17 lists the older units and wards (W) assessed, along with the control unit. It shows the mean overall scores on the nine design principles ranged from good to very poor, with two good, three average, 13 poor and 2 very poor. The newer control unit Ward A3 at Waikato DHB was among those with a good score.





Gross floor areas

The AHFG benchmark for inpatient units is $36m^2$ per bed. Over half (70 percent) of the units are at or beneath the benchmark. All units have problems with the size of bed spaces in both single and multiple bed rooms. Over half (70 percent) of units were undersized to the AHFG, while the remainder had some bed spaces compliant with the AHFG. The gross floor findings for all units assessed are set out in Appendix 3, Table 21.

Unit configuration

Compared to older units, modern unit designs aim to optimise the natural light for patients, have more single bedrooms and en-suite bathrooms, enable staff access to and observation of patients and have easy access to areas for utilities and storage. Newer units generally accommodate these requirements through increased width and a larger floor space.

The 2019 assessments included nine single-corridor and 11 racetrack style units. The single-corridor configuration usually has multiple-bed bedrooms on one side and single bedrooms, patient amenities, the nursing station and utilities on the other side. Racetrack wards are wider than single-corridor wards, with multiple-bed bedrooms and single bedrooms around the outside, and the nurses' station, patient amenities, utilities rooms and storage in the centre. People circulate around the centre, hence the name 'racetrack'. Each style has difficulties that newer designs attempt to address.

Safety

The clutter in bedrooms and corridors has safety implications, including:

- infection control, because cleaning is compromised
- retrieval of stored items with implications for staff injury
- obstructed thoroughfares, which impact staff, patients and visitors
- trip hazards from equipment and cables, which impact staff, patients and visitors.

Patient observation is a critical element of clinical care. Generally, the single-corridor wards have one nurse-base located centrally, which severely limits patient observation, such as at the Nelson orthopaedic ward. Some newer racetrack configurations have distributed nurse-bases. This is evident at Greenlane's surgical day-stay and in the control unit at Waikato, where nurse-bases are distributed closer to patients' bedrooms.

Modern unit designs have decentralised staff-bases to enable observation of higher dependency patients. The assessors observed improvisations in the older units, including a nurse-base installed in the trauma room of the Christchurch orthopaedic unit and a nurse-base in the Whāngārei rehabilitation unit located in a dead-end corridor to enable observation of the higher acuity patients in an adjacent multiple-bed bedroom.

There are a wide range of design issues that affect infection control. These include whether the floor, ceiling and wall-finishes are easy to clean; whether there is separation between service, patient and visitor flows; and whether there is adequate storage and waste disposal. Seventy-five percent of the units scored poorly across all of these issues.

Storage

Most units (80 percent) had a lack of storage due to the increased demand for supplies and electronic and rehabilitative equipment. This is evident across all specialities,

including medical, surgical, orthopaedic, spinal and rehabilitation care. These difficulties with size and storage space were expected as these units are in buildings over 20 years old.

The changes to short hospital stays with intensive treatment on wards have increased the demand for storage. In older facilities, the space around each bed was designed to include a patient's dresser, wardrobe and tray tables and a visitor's chair. Wards also had medication, linen and supply storage and some equipment such as commodes, bed cradles and dressing trolleys.

Today, there is an array of additional equipment on inpatient wards, including electronic monitoring devices and infusion pump units, large portable hoists, bedside diagnostic devices like electro-cardiographs and portable ultrasound, computers-onwheels and charging and storage bays for portable electronic equipment. Early mobilisation of patients involves equipment like walking frames, patient bedside chairs, wheelchairs and crutches, along with accommodating more intensive therapy work on the unit. Medication storage has also changed to accommodate more pre-packaged formulations and regulatory guidelines. Some wards retrofit secure specialised medication dispensaries within the unit.

Further analysis could identify opportunities to improve storage hospital-wide and locally in units. For instance, clever storage systems are evident at the Waikato intensive care unit. When equipment is cleverly installed and easy to access, it can facilitate safe and efficient workflow within the unit. There may also be opportunities to redistribute storage in the hospital.

Other issues

Over half (65 percent) of the inpatient units do not have or require negative-pressure bedrooms for their model of care. Of the seven units with negative-pressure bedrooms, only two are compliant with the AHFG. Issues identified include shared ante-rooms, shared bathrooms, poor door seals and inadequate patient observation panels. These older units were built prior to the introduction of the AHFG and lack components in their construction needed to support negative-pressure rooms. There appears to be a poor understanding of the AHFG for negative-pressure rooms, a problem also observed in the intensive care units.

Most (85 percent) of units do not have enough facilities for obese or bariatric patients, such as bariatric beds, hoists and equipment. The exception is the medical ward at Waikato, however at the time, most of the ceiling-mounted lifting hoists were non-functional due to a technical issue with the supplier. The two paediatric wards did not answer this question.

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Section 4 Information technology

DHB IT is largely focused on core hospital systems, with asset management practice constrained by a short-term planning focus. Investment of around \$2.3 billion is required over the next 10 years to address issues with legacy systems and to invest in technologies that enable services to transform to new models of care.

New Zealand has lacked the investment levels necessary to embrace rapid changes in health IT technologies. It is estimated that DHBs spend 2.3 percent of their operating budgets on IT, with 90 percent going to support aged and outdated systems and infrastructure. According to Deloitte (2015), this needs to shift to 4.6 percent, with 75 percent spent on maintenance and 25 percent on new investments. Over the last 10 years health professionals have changed from acceptance of departmental legacy systems to expectations that systems support the clinical workflow. This includes support to view and update an integrated patient record, on-the-move, across all care settings and on various devices. A significant lift in investment of around \$2.3 billion is necessary to deliver this digital health environment.¹⁵

DHBs have maintained their IT assets in an environment of accumulated underinvestment. Audits have shown that IT strategy, governance and asset management have operated at a basic level (Morrison Low 2018). There are multiple versions and customisations of core applications, ageing infrastructure, limited network capacity and devices not fit for purpose. This reduces productivity, increases costs for maintenance and support and increases cyber security risk. Further, the slow adoption of systems compliant with national data standards limits information sharing across clinical settings and with consumers. Consequently, system users resort to various 'workarounds' to overcome lack of access, multiple logins, poor response times and the lack of alignment with clinical workflows. This means the productivity and quality benefits of clinical IT systems are not being realised.

Health IT is likely to move to a 40:60 percent split between capital investment and operating expenditure through 'as a service' solutions. This will enable DHBs to move

¹⁵ Calculation based on DHB 2018/–19 operating expenditure and 2.2 percent per annum to lift investment levels to the 4.5 percent benchmark.

away from reactive management of complex technology environments, to the development of IT solutions as enablers for the clinical workflow, improved data analytics and new models of care. Modernising technology solutions will also reduce the costs associated with maintaining the diverse skill-base required in the current mix of legacy and newer technologies. Development of a consistent nationwide picture of the fitness for purpose of IT assets will contribute to the prioritisation of long-term capital investment.

This section begins with the assessment approach, then provides an overview of the digital health environment. Next it reports the condition scores for selected core applications in DHBs. The section then looks at the slow progress with the adoption of four national data standards important for health information sharing, system integration and workforce collaboration. The section concludes with an outline of the condition of a sample of infrastructure, networks and security.

Assessment approach

This is an initial assessment. The sources for these assessments include:

- two national surveys for assessment of core applications, although neither were specifically designed as asset management surveys
- two case studies, one from the Northern Region's Information Systems Strategic Plan (ISSP) and the other a review by Hutt Valley Health, along with information held by the Ministry of Health informed assessments of the digital health environment, the adoption of national data standards and the condition of the infrastructure.

To support future assessments, in 2020/21 a more detailed and robust assessment will be developed in collaboration with DHBs. The approach will be similar to that used for the 2019 assessments of buildings, infrastructure and clinical facilities. It will be designed for IT and clinical equipment and consider asset lifecycle, condition and fitness for purpose. There will also be work on asset levels of service.

Table 11 sets out the asset types, sources of data, assessment content and sample size for this current-state assessment.

Asset type	Data sources	Assessment	Sample size
Digital health environment	Northern Region ISSP, Hutt Valley Health case studies and information held by the Ministry of Health	Narrative and some statistics on demand growth, fragmented systems and complex IT environment	25% of DHBs
Core applications	Grade scores from DHB digital systems landscape survey 2019 Condition scores from national Government Chief Digital Officer survey of top 20 critical systems 2018	Combined grade and condition score	20% of core applications for all DHBs
Data standards	Northern Region ISSP and information held by the Ministry of Health	Narrative on slow progress and the implications	Applies across all DHBs
Infrastructure	Northern Region ISSP	Narrative and some statistics on grade, condition and functionality	20% of DHBs

Table 11: Data sources for health digital technology assessments

The Northern Region's Information Systems Strategic Plan (ISSP) is a significant case study as the four DHBs operate similar IT systems to other DHBs. The region covers 20 percent of all DHBs and 39 percent of the New Zealand population from urban Auckland to rural Northland. Work will be completed in 2020 on a methodology for assessments of IT and clinical equipment assets.

Digital health environment

The mobility of the IT landscape has changed dramatically since the widespread adoption of smart phones and similar devices in the late 2000s. Clinical staff expect patient and clinical information to be accessible to view, for collegial discussion conversations with patients and to update on-the-move between patient care areas, offices and community settings. Yet realisation of these expectations is constrained by limitations in funding, infrastructure, legacy applications and the slow adoption of national data standards for interoperability.

DHBs collaborate to varying degrees, as individual organisations and as regional groups. The focus of the collaboration varies, such as the shared management of infrastructure through the joint ownership of the healthAlliance by the four northern DHBs and the sharing of clinical data through a read-only portal across South Island DHBs and community providers. Despite such progress, the core systems that manage hospital departments are seldom shared instances. Additional local systems are also used to integrate information and support clinical work, but functions are limited and implementation slow.

In 2018, an IT business impact review was completed by Hutt Valley DHB that revealed an 800 percent growth in applications, mostly in clinical areas, in little over a decade. The growth included high dependency on Wi-Fi and mobile phones with applications seen as critical to service delivery and patient safety. The implications for IT management include: significant cyber security risks; requirements to support both legacy and new technologies; and the need for staff to have a diverse range of technology skills. This complexity focuses effort on maintenance rather than on IT as an enabler of workflows and new models of care.

Another review in 2018, in the Northern Region, found over 1,200 applications across its four DHBs. Yet only 10 percent of these applications appeared to be up to date, with the rest obsolete or becoming obsolete. Application lifecycles were poorly managed, deployment was not responsive to the business and there was a lack of automated application testing.

The explosion in demand exacerbates the problems with bespoke and departmentally specific systems that are widespread due to:

- the role of senior medical staff as primary influencers in purchases of IT and clinical equipment related to their own area of specialty. The result can be a complex siloed environment with limited data sharing which is expensive to maintain over the lifecycle of the assets
- lack of investment in the IT infrastructure necessary to keep pace with this clinical demand for applications, devices and network capacity to access information onthe-move across the organisation
- lack of attention to and funding for IT implementation, including clinical process standardisation, comprehensive design of application configurations and the change management important for an integrated organisational approach to IT investment
- little attention to the advantages and slow adoption of the national standards to support data-sharing between applications.

There is a multi-layered environment of clinical data generation, access and reuse within health services. A range of data views are required to support both clinical and management tasks such as:

- accessing a macro view of a patient's clinical history through different care settings
- electronic whiteboard displays of the status and location of all patients in a treatment area such as an emergency department or ward

analysis of different patients and episodes of care as part of planning and performance review.

When health professionals find systems difficult to access or use, they resort to workarounds with paper forms, email and smart phones. This undermines the integrity of data repositories and compromises the value of information for the clinical workflow and management analysis.

Table 12 lists elements of IT systems important for health professionals to access systems. Issues include:

- multiple sign-ons
- ageing devices, phone and paging systems
- applications incompatible with some devices

• use of insecure and non-integrated systems.

Access	Issues
Sign-ons	Multiple sign-ons to network and clinical applications increase complexity for users.
Devices – mostly desktop PCs	DHBs may have up to 6,000 devices. It is common for these to be used beyond their expected life (eg, in the Northern Region the Win 7 operating system is out-of-support in January 2020).
Device application compatibility	Many applications are not configured or approved for tablets and phones.
Remote access	Mostly Citrix. Few applications support smart phone access.
Phones	Various ages of Private Automated Branch Exchange (PABX) systems with poor capacity for smart phone use. There are 70 PABX systems in the Northern Region.
Paging systems	Obsolete.
Corporate collaboration	Lack of digital clinical collaboration space, which means personal smart phones and email are widely used for clinical communications.

CIA

Table 12: Access barriers to clinical information and collegial communication

Core applications

There are multiple instances and versions of core applications, and customisation is common. Data from the 2019 DHB digital systems landscape survey shows approximately 21 core applications in DHBs, including:

- corporate applications like financial management, inventory management, payroll and human resources
- core patient administration systems found in all DHBs, along with specialised systems like mental health and maternity found in some DHBs
- clinical department applications for laboratories, radiology and pharmacy, along with a clinical portal found in all DHBs; medicine charting, radiology and laboratory orders; and general practice referrals in some DHBs.

There are many other applications and various interfaces among these. Even so, many elements of patient records have remained paper-based, particularly at the bedside and treatment bay. Systems need to be expertly designed and configured to support the workflow. Implementation requires significant change management and deployment of large numbers of devices to capture all record-keeping on-the-move for health professionals.

Assessment

Selected for this assessment were five of approximately 21 core applications used across management and clinical operations. These included financial management,

patient administration, clinical portals and pharmacy management used by all DHBs and one newer application for medication charts used by eight DHBs.

The assessment scores are derived from a combination of the condition and deployment scores. Table 13 depicts the matrix used to analyse information from the Ministry of Health's 2019 DHB digital systems landscape survey and the 2018 Government Chief Digital Officer survey.

Table 13: IT asset condition and deployment assessment scores

		Deployment	
Condition	Multiple local	Single local	Shared
Modern	n/a	2	
Current	4	3	2
Legacy	5	4	N' 3

The condition scores relate to:

- modern a well-managed IT environment with a system generally within its 7year lifecycle, which could include some elements of 'as a service' delivery for infrastructure and applications
- current a system that may be older than its 7-year lifecycle but has an upgrade path and support available, which may have elements of 'as a service' delivery
- **legacy** an older vendor product or bespoke system, with no upgrade path, very limited compliance with national standards and generally more expensive to maintain.

The deployment scores relate to the number of instances of the asset.

- **multiple local** There are multiple versions of the asset within the organisation, which can relate to a history of separate decision-making at different sites and fragmented management of asset renewal.
- **single local** There are single versions of the asset with a strategic approach to upgrades and renewals.
- shared The asset is managed through shared purchasing, maintenance and replacement or upgrade arrangements among DHBs or at a national level, which is designed to optimise both the solution and its lifecycle cost.

The scores were:



Corporate systems: financial management systems

Figure 18: shows the finance systems were assessed as average to very poor in 14 of the 20 DHBs, with 10 poor and four average. There were two assessed as good and

four as very good. The systems rated average to very poor should each have upgrade plans in place, although this information was not sought for this assessment.





Patient administration systems

Core patient administration systems have a central patient index and support services for the management of medical records, inpatient admissions, outpatient appointments, emergency department and theatres, along with some other functions. Some DHBs use separate systems for emergency department and theatre. Other specialised patient administration systems include maternity, mental health and general practice referrals.

There are 26 core patient administration systems due to legacy systems retained at specific hospital campuses. Figure 19: shows 12 DHBs with patient administration systems assessed as average to very poor (eight average, two poor and two very poor). There are six good and two very good.



Figure 19: Assessment scores for patient administration systems

The main clinical support departments of radiology, laboratory and pharmacy have specialist information systems. These clinical support systems each have subsystems, including in pharmacy for inventory management and medication dispensing, in laboratory a subsystem for each specialist laboratory department and in radiology for department management and for image capture, storage and retrieval. These systems also include interfaces to a range of clinical equipment to capture inventory and clinical data. Pharmacy was selected for this assessment; laboratory and radiology systems will be considered for the next assessments.

Figure 20: shows that 13 DHBs have pharmacy systems assessed as very good. There are seven assessed as average to very poor (three average and four very poor).





Clinical portals

Clinical portals enable health professionals to view patients' information across different organisations such as general practices and other DHBs. Generally, to update a patient's records, health professionals must sign on to different systems. There is no integrated workspace for health professionals to appraise clinical information and generate actions to progress the activities of care.

Figure 21: shows for the 20 DHBs, nine clinical portal systems were assessed as good to very good (four good and five very good). There were 10 average and one very poor.



Figure 21: Assessment scores for clinical portals

Order entry and medication charts

Order entry systems and electronic medication charts operate at the interface between patient care areas in places like emergency departments, wards, clinics and theatres and the clinical support departments of laboratory, radiology and pharmacy. DHBs typically have a range of order entry systems for laboratories and radiology, both electronic and paper based. Modern order entry systems should provide an integrated workspace for ordering and reviewing of assessments. To be effective, these systems depend on an IT environment that supports on-the-move access to systems for health professionals and adequate change management to standardise the clinical processes.

Like the order entry systems, electronic medication charts operate between the clinical care delivery at the bedside and treatment bay and the pharmacy systems. Electronic medication charts are relatively new in New Zealand and implementation can range from a few patient care areas to organisation-wide. Figure 22: shows electronic medication charts implemented in 8 of 20 DHBs, with two assessed as very good and six as average.





Shared health record repositories hold patient and clinical information from collaborating DHBs and different health information systems. The repositories supply

information to support more integrated views of data, useful for systems such as clinical portals, order entry and electronic medication charts, along with district and regional analytics. Further work is required to develop an asset assessment approach for these repositories.

Data standards, interoperability and analytics

The Ministry of Health's Health Information Standards Organisation (HISO) oversees the selection, development and adoption of all standards for interoperability in health care. However, adoption by the health sector has been slow and inconsistent. Clinical data comes from each core departmental system and there is limited interoperability for sharing among applications, to support work with patients and use the data for analytics. Work to improve core information systems and compliance with data standards, through the clinical workflow, is required to realise benefits from operating a more digitally enabled health system (Health and Disability System Review 2019, p 212). This slowness to adopt digital standards and coded forms of data has related to:

- health professionals' preference for text and reluctance to use coded forms of data in their clinical work
- incomplete and poorly configured implementations of patient administration systems and a lack of standardised approaches to data across multiple data repositories
- lack of attention to strategies for enterprise reporting and analytics, other than the disease and procedures codes that are grouped for funding purposes at discharge from hospital
- poor understanding of national and global standards as key enablers for quality, efficiency, information sharing and analytics.

The Northern Region identified 100 core systems across the four DHBs with data important to the construction of a patient's electronic record. However, the region lacked the necessary data standards and capability for integrated use. Capability issues included:

- low scores on the Data Maturity Model at 1.6 out of 7¹⁶
- separate business intelligence tools and analysts specialised for large applications, such as patient information, pharmacy, laboratory and radiology
- lack of technical support for data security, due to out-of-date integration technologies and legacy security standards
- risks to the integrity of patient data with limited monitoring, alerts and error management capability.

In DHBs, the slow adoption of data standards is also evident in around 30 to 35 bidirectional connections for information sharing between patient administration and other systems, along with numerous interfaces between clinical systems and clinical

¹⁶ Assessed by healthAlliance.

equipment. The Health Level 7 (HL7) framework guides development of application programming interfaces, but this produces bespoke rather than reusable solutions, which are expensive to develop and maintain. The Northern Region identified 240 application programming interfaces on outdated integration platforms, with 50 percent being interfaces with core systems.

HISO has endorsed four key national standards for the New Zealand health sector. These standards enhance productivity through entry and update of data once at its source, with a community of users able to access data with no re-keying. Progress with adoption is slow, despite the productivity opportunities. The four key national standards include:

 Systematised Nomenclature of Medicine Clinical Terms – SNOMED CT SNOMED CT is a global language of health care. New Zealand was a founding member of SNOMED International, which is a not-for-profit organisation formed in 2007 for ongoing development of SNOMED CT. Standardised clinical terms with common codes enable clear exchange and analysis of clinical data to improve patient outcomes. SNOMED CT codes apply to the entire clinical workflow, from a presenting yet undiagnosed condition to diagnostic tests, treatments and outcomes. At present there is discrete use of SNOMED CT in New Zealand by some clinical departments and general practitioners.

• Global Standards 1 – GS1

GS1 provides unique identifying codes for organisations, parts of organisations, products and devices. It enables global e-commerce, facilitating transmission of unique product information, through the supply chains, including tracking, product advisories and recalls. In many developed countries, the health sector is the largest government user of GS1. Health care uses include procurement and tracking materials, devices and medicines through health facilities and to patients' bedsides. The New Zealand Business Number and parts of an organisation are GS1 location codes. One use is to enable visitor tracking, such as in the Ministry of Health's NZ COVID Tracer app. New Zealand lags other countries with adoption, particularly in health.

New Zealand List of Medicines and formulary – NZULM

NZULM is a unique identifier for funded and approved medicines in New Zealand. It is an application of SNOMED CT, which can support sharing of medicines information across hospital and community settings. There is also an alternative system with different codes in New Zealand and slow adoption of both systems among general practitioners.

Health Level 7 Fast Healthcare Interoperability Resources – HL7 FHIR

FHIR is the most recent of the HL7 standards that have existed for several decades. HL7 provides a framework to guide interface developments between applications in health. However, this produces bespoke interfaces that tend to be expensive to build and replace. Older applications do not support the FHIR version. Overall adoption of the SNOMED CT, NZULM and GS1 would also reduce the degree of variability in HL7 interfaces.

Infrastructure, networks and security

These assessments were drawn from a review of the Northern Region's four district health boards, completed by the healthAlliance. IT infrastructure assets include:

- systems-as-a-service
- data centres and computer rooms
- shared record repositories •
- server operating systems
- networks
- security.

Data centres

ORMATIONACT DHBs are moving towards having regional data centres managed by specialist providers. They are also moving to 'as a service' and cloud-based services for some of their clinical repositories at an organisational or regional level. Typically, DHBs have large data centres along with campus-based local computer rooms with servers running applications.

Data centres can be vulnerable due to the condition of the buildings and site infrastructure and the data centre design and condition. This design includes flooring, climate control, uninterruptable power supplies, cabling and server racks. Poor condition risks system outages from failures and compromises safety for the technical staff directly involved. It entails significant risk for DHBs because service delivery depends on the continuity of information systems that support patients' diagnostic and treatment processes. Illustrations of recent failures experienced by DHBs include burst water pipes flooding the computer room and fire caused by overheated uninterruptable power supplies.

Assessments of the five data centres in the Northern Region showed these as mostly in average to poor condition. Issues include:

lack of capacity to support strategic initiatives, including moves to a regional patient administration system, collaborative community care and improved management of user identity access

- requirements to upgrade 50 percent of operating systems in 2020 to avoid being out-of-support and to invest in capacity to increase space, power supply and cooling in 2020
- operating 60 percent of core systems without disaster recovery arrangement.

Networks

Networks in DHBs lack capacity and reliability to support on-the-move access to clinical systems for health professionals. Significant issues include:

- slow response times due to lack of capacity
- · loss of data integrity in a multiple-user environment
- extended outages due to lack of network redundancy
- variable Wi-Fi access across clinical settings
- lack of capacity for Internet access for patients and visitors.

In the Northern Region, 50 percent of the network infrastructure will be out-of-support by 2020. Multiple outages associated with network failures have lasted for up to 8 hours for Internet access and 72 hours for communication via the national secure network.

Security

Problems with DHB management of security related both to the complexity of legacy systems and to financial constraints. Issues include:

- lack of security policies and staff training
- multiple applications with inconsistent functionality around user profiles and tracking of data views and updates
- large numbers of users who work across different health organisations require access to several applications – these users can repeatedly join and leave each organisation as they move through cycles of training, without being removed from systems
- lack of IT system configuration and tools to detect security attacks
- lack of skilled IT staff to focus on security.

Conclusion and next steps

TIONACT The current-state assessment identifies the relative investment priorities using the consistent frameworks developed by the NAMP. The next steps are to develop a comprehensive work programme to deliver National Asset Management Plan and continue to build the asset management capability and evidence-base across the health sector. OFF

Conclusion

The development of consistent frameworks and asset management enablers such as the HART provide a good foundation for development of a National Asset Management Plan. The information and data provided has already been used by the Ministry. It will continue to inform investment prioritisation and the development of investment programmes.

The current-state assessment provides evidence to determine the relative investment priorities, which include:

- sitewide infrastructure (eg, pipes and electrical power)
- building operability (eq, passive fire separation)
- mental health and intensive care units, including CFFFP, condition and maintenance
- core IT applications, including financial management, patient administration and pharmacy management systems.

There are multiple trade-offs involved to prioritise asset improvement for health facilities. For example, there can be trades-offs between the resilience of buildings, clinical fitness for purpose and sustainability features. It will be useful to clearly set out the priorities and provide an integrated view of the necessary investment. Over time, target asset levels of service and design standards will contribute to assurance that health facilities are fit for purpose over a range of asset performance objectives.

The NAMP is part of a government-wide agenda to ensure generations of New Zealanders receive best value from new and existing investments. Best value outcomes depend on improving the quality of capital funding decisions, asset management and long-term investment outcomes. The Government has set clear objectives to have asset management plans in place to guide strategic, tactical and operational choices under Cabinet Office circular CO (6) 2019. The NAMP is intended to guide strategic choices at a sector level and over time it is expected that it will represent a consolidation of the DHBs' asset management plans.

The team involved in the development of the frameworks and current state would like to acknowledge and thank the DHB staff who were involved in development of the current-state assessment.

Next steps

The Ministry is developing an asset management framework for the health sector and working on a more comprehensive, realistic and detailed work programme to progress asset management across the health sector. This will be aligned to resource levels and asset management standards such as the International Standards Organisation (ISO) asset management standards and the International Infrastructure Management Manual 2015.

Table 14 sets out the asset scope being considered in the design of the programme of assessments for 2020/21. The findings will be presented as part of the NAMP second report in 2022.

Asse	et type	In-scope	Target data completeness	Target data confidence
Build	dings	All IL3 and IL4 hospital buildings	Building condition 100%	Reliable
	\sum	Buildings at hospital campuses larger than 1,000 m ²	50–100%	Reliable
	ASV	Clinical facilities - Inpatient mental health facilities, including acute and forensic units	80–100%	Reliable
Infra	astructure	All sitewide reticulated systems (ie, plumbing, electrical, mechanical and critical utilities supporting campus services)	100%	Reliable
Info	rmation	All core applications at each DHB	50–100%	
Tech	nnology	Compliance with national standards	50-80%	Reliable (will be dependent on data
		IT infrastructure, datacentres, networks and security	50–80%	from DHBs)

Table 14: Asset scope for the second NAMP report due in 2022

Clinical equipment	Large clinical equipment (eg, radiology including X-ray, ultrasound, gamma cameras, linear accelerators)	100%	Reliable
	Smaller critical clinical equipment, shared across departments	Sample 10–50%	Reliable
Other minor assets	Criticality framework for minor assets established		
	Critical minor assets	Sample 10–50%	Reliable

The priorities to improve asset management through the NAMP include:

- further prioritise the work programme required to progress development of a national asset management plan for the health sector, in consultation with the Health Asset Management Improvement forum and to be approved by Capital Investment Committee
- consult with DHBs and then publish an asset management strategy and policy for the health sector
- complete an asset management framework for the health sector including development of an asset management plan template and guidance
- continue to refine the data and presentation in the HART tool, including analytic and narrative 'A3s' for each DHB including campus data and to make the tool available to appropriate DHB staff
- develop an asset risk and assurance framework for DHBs
- develop an asset sustainability work programme
- develop and pilot a robust assessment for clinical equipment and IT in collaboration with DHBs
- develop asset levels of service aligned to the national service design to quantify long-term investment scenarios
- complete a second phase of clinical facility fitness for purpose in mental health including forensic mental health units
- follow up with DHBs to document plans to remediate any significant issues identified as part of the condition and clinical facility fitness for purpose assessments
 - deliver a second report in the series 'a national asset management plan for the health sector' in 2022 with scope dependant on resources.

This will be progressed in the context of work across the Health Infrastructure Unit to:

- develop national service design and facility standards, settings, frameworks and guidance for capital planning
- · develop a sector-wide capital investment framework and plan
- incorporate more emphasis on health equity and sustainability in asset management practice, including establishing a sustainability work programme and reducing greenhouse gas emissions.

This list and priorities will be updated once the overall work programme has been completed and aligned with available resourcing.

REFERSEDUMPERTIE

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Appendix 1 DHB abbreviations s official when the optimized in the optized in the optimized in the optimized in the optimized in the optim

BOPDHB	Bay of Plenty DHB

ADHB

CCDHB Capital & Coast DHB

Auckland DHB

CDHB **Canterbury DHB**

CMDHB Counties Manukau DHB

HBDHB Hawke's Bay DHB

HVDHB Hutt Valley DHB

Lakes DHB LDHB

MCDHB MidCentral DHB

NDHB Northland DHB

NMDHB Nelson Marlborough DHB

SCDHB South Canterbury DHB

SDHB Southern DHB

Tairāwhiti DHB TaiDHB

Taranaki DHB TarDHB

WkDHB Waikato DHB

WrDHB Wairarapa DHB

Waitematā DHB **WtDHB**

WCDHB West Coast DHB

Whanganui DHB WDHB 2FLFAS

Appendix 2 Scope, data confidence ONACT and reliability

Buildings and infrastructure

Table 15 shows the data confidence framework, from the International Infrastructure Management Manual, used to determine the confidence in the asset data used in the assessments for buildings and infrastructure.

Confidence Grade	Meaning
Highly Reliable	Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment.
Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings; for example, the data is old, some documentation is missing and reliance is placed on unconfirmed reports or some extrapolation.
Uncertain	Data based on sound records, procedures, investigations and analysis that is incomplete or unsupported, or extrapolated from a limited sample for which grade highly reliable or reliable data is available.
Very Uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.
	*

Table 15: Confidence grades for 2019 sources of assessment data

Table 16 applies the confidence grades from Table 15 to the assets assessed to show the reliability of assessment data for each asset type.

Fable	16. Polishilit	, of data fo	r huilding	and infractructure	accoccmonte
able	To. Renability	, or data io	n bununig	and minastructure	assessments



Asset Type	Highly Reliable	Reliable	Uncertain	Very Uncertain
Critical older buildings, expert assessors				
Other buildings, DHB self-assessed				
Sitewide infrastructure – 31 main hospital sites				
Seismic restraint, passive fire, asbestos				
Structural integrity %NBS (earthquake)				
Structural resilience (earthquake)				

Table 17 shows the percentage of completeness of the datasets used to assess each asset type in the 2018–19 assessments.

Asset Type	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	
Critical older buildings, expert assessors												
Other buildings, DHB self-assessed												26
Sitewide infrastructure – 31 main hospital sites										X	0	
Seismic restraint, passive fire, asbestos									8			
Structural integrity %NBS (earthquake)							1	K				
Structural resilience (earthquake)						6						

Table 17: Data completeness for building and infrastructure assessments

Table 18 shows for building and infrastructure assets: whether there was a professional or DHB self-assessment, the focus of sampling for assets and components and aspects that were out of scope.

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	Asset type & action	Assessment type	Sample focus	Component focus	Out of scope
	Building condition	166 professional assessments	Critical buildings at main hospital campuses pre-2000 build	Condition at main component level for: - building fabric mechanical and electrical equipment Building operability: - seismic restraint passive fire separation, presence of asbestos	Detailed rating of individual buildings or plant items
	Building condition	993 DHB self- assessments	Non-critical buildings at main hospitals pre-2000 build	Condition at main component level for: - building fabric mechanical and electrical equipment Building operability: - seismic restraint passive fire separation presence of asbestos	Detailed rating of individual building or plant items (Some DHBs have this detail and used it to inform their ratings)
	Infrastructure condition	Professional assessments	Sitewide reticulated infrastructure at 31 main campuses	Mechanical, plumbing, heating, air conditioning	Dunedin (due to rebuild plan) and Whakatāne (due to recent work and a minor campus)
	SED	JAY		Electrical power, lighting, fire systems	Dunedin (due to rebuild plan) and Whakatāne (due to recent work and a minor campus)
251	Building structural integrity	From DHB's initial and detailed seismic assessments	All buildings	Structural rating %NBS	No additional seismic assessments were commissioned
	Building seismic resilience	Professional assessments of 34 properties	Buildings with suitable seismic assessments completed	Standardised re- interpretation of initial and detailed seismic assessments	No additional seismic assessments were commissioned

Table 18: Scope of 2019 building and infrastructure assessments

Clinical facility fitness for purpose

Table 19: Completeness of datasets for 2019 CFFFP assessments

Asset Type	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Acute mental health units											
Forensic mental health											
Inpatient units, sample of 20											1.
Intensive care, coronary care and neonatal units										X	0°
Operating theatres – general & specialist suites								. (1. S.		
Emergency departments							2	K			
Radiology departments						2,					
Outpatient departments						\mathcal{G}					
Therapies departments					2.						
Pharmacy				$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$							
Laboratories		2									
	^{کل} ار	×.									

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The Australasian Health Facility Guidelines (AHFG) are intended to support designs for new clinical facilities in Australasia. The AHFG was used to inform assessments of the size of each clinical facility. First, a schedule of accommodation was created for each type of facility and to support comparison, a gross floor area (GFA) per bed (or operating room) was calculated. Next, a ratio was calculated between each facility's actual gross floor area per bed (or operating room) and the AHFG benchmark area per bed (or operating room). Older units can be expected to perform poorly when assessed in relation to these AHFG benchmarks.

Tables 18-22 below shows for each facility assessed in Section 4: the DHB, location, actual gross floor area, number of beds (or operating rooms), GFA per bed (or operating room) and the ratio of the actual GFA to the AHFG benchmark.

DHB	Location	Actual GFA m ²	No. of beds	GFA / bed m ²	%AHFG benchmark@ 50 m ² /bed
NDHB	Whangarei	638	34	19	38%
SCDHB	Timaru	418	13	32	64%
MCDHB	Palmerston North	1162	36	32	65%
TarDHB	Taranaki Base	1019	24	42	85%
HBDHB	Hawkes Bay	1296	30	43	86%
TaiDHB	Gisborne	481	11	44	87%
LDHB	Rotorua	1560	34	46	92%
WkDHB	Hamilton	2659	51	52	104%
NMDHB	Wairau	646	12	54	108%
CMDHB	Middlemore	4470	79	57	113%
CCDHB	Kenepuru A&M ¹⁷	545	6	91	182%

Table 20: Gross floor area analysis for emergency departments

¹⁷ Kenepuru is an accident and emergency service, rather than an emergency department.

DHB	Location	Actual GFA m ²	No. of beds	GFA / bed m ²	%AHFG benchmark @85 m²/bed for units < 15b @70 m²/bed for units >15b
SCDHB	Timaru	365	8	46	54%
TaiDHB	Gisborne	378	8	47	56%
MCDHB	Palmerston North	467	8	58	69%
NDHB	Whangarei	605	10	61	71%
HBDHB	Hawkes Bay	717	11	65	77%
WtDHB	North Shore	966	14	69	81%
TarDHB	Taranaki	934	16	58	83%
ADHB	Auckland Starship Children's	1458	22	66	95%
WkDHB	Waikato	1319	16	82	118%
CMDHB	Middlemore	2537	25	101	145%

Table 21: Gross floor area analysis for intensive care units

Table 22: Gross floor area analysis for operating theatres

	DHB	Location	Actual GFA m ²	No. of operating rooms	GFA / bed m ²	%AHFG benchmark@ 280 m ² / OR
	ADHB	Auckland Starship Children's	1499	7	214	76%
	ADHB	Greenlane	1926	8	241	86%
	NMDHB	Nelson	1507	6	251	90%
	TaiDHB	Gisborne	1040	4	260	93%
	CMDHB	Manukau SuperClinic	3184	12	265	95%
	HBDHB	Hawkes Bay	2208	8	276	99%
	LDHB	Rotorua	1672	6	279	100%
	CDHB	Christchurch	3134	11	285	102%
	MCDHB	Palmerston North	2234	5	319	114%
	SCDHB	Timaru	1633	7	327	117%
	NDHB	Whangarei	1965	6	328	117%
	CCDHB	Kenepuru	1333	4	333	119%
	NMDHB	Wairau	1716	5	343	123%
2~	WkDHB	Waikato	8368	24	349	125%
	CDHB	Burwood	1400	4	350	125%

HBDHB HBDHB Hastings WA3 466 18 26 WkDHB Hamilton WM2 615 23 27 BOPDHB Tauranga W2A 548 25 22 MCDHB Palmerston North W24B 864 27 32 NDHB Whängärei Children's W2 815 27 30 CDHB Christchurch W19 688 28 25 HBDHB Hastings WB2 755 28 27 CMDHB Middlemore W23 785 28 28 WDHB Whanganui W2A 1007 29 35 ADHB Starship Children's W24 676 29 23 TaiDHB Gisborne W5 710 30 24 NMDHB Nelson W9 822 30 27 HVDHB Hutt GSG ¹⁸ 916 34 27 NDHB Whangarei W2 Stroke 815 34 24 ADHB Auckland City B9 1110 41 27 ADHB Greenlane Day Stay 1222 42 29	50% 50% 63% 69% 75% 75% 76% 78% 78% 80%
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ADHBGreenlane Day Stay12224229CMDHBOtara Spinal Unit8904520	114%
CMDHB Otara Spinal Unit 890 45 20	117%
	124%
WkDHB Hamilton W3 1213 49 25	135%
CCDHB Kenepuru W7 1015 51 20	141%
HVDHB Hutt OPRS ¹⁹ 2679 62 43	173%
UNDER	

Table 23: Gross floor area analysis for inpatient units

¹⁸ GSG = general surgery and gynaecology¹⁹ OPRS = older persons and rehabilitation service

DHB	Location	Actual GFA	No. of beds	GFA / bed	%AHFG benchmark
CDHB	Hillmorton Te Awakura South	617	16	m 39	@ 80 m /bed 48%
SDHB	Wakari Helensburgh W11	793	16	50	62%
WtDHB	North Shore Geriatric	954	19	50	63%
WkDHB	Waikato Henry Bennett W35, W36	1746	33	53	66%
SCDHB	Timaru Kensington	647	12	54	67%
LDHB	Rotorua Acute Psychiatric	786	14	56	70%
WtDHB	Waitakere Waiatarua	2385	40	60	75%
CDHB	Hillmorton Aroha Pai PSAID ²⁰	914	15	61	76%
MCDHB	Palmerston North W21	1631	24	68	85%
SDHB	Wakari W9B	1025	15	68	85%
CCDHB	Kenepuru Psychogeriatric	1133	16	71	89%
HVDHB	Hutt Te Whare Ahurua	1712	24	71	89%
ADHB	Auckland Te Whetu Tawera	4462	62	72	90%
SDHB	Southland Hospital	1544	21	74	92%
NMDHB	Nelson Waahi Oranga	2069	28	74	92%
CMDHB	Otara Tamaki Oranga	1516	20	76	95%
TarDHB	Taranaki Te Puna Waio	1764	23	77	96%
BOPDHB	Tauranga Te Whare Maiangiangi	1900	24	79	99%
CDHB	Hillmorton Tu Puna	1230	15	82	103%
CMDHB	Middlemore Tiaho Mai	3316	38	87	109%
TairDHB	Gisborne Psychiatric W11	958	8	120	150%
WCDHB	Greymouth	863	7	123	154%
ADHB	Auckland Pt Chevalier Buchanan	1817	14	130	162%
WDHB	Whanganui Te Awhina	1770	12	148	184%
ADHB WDHB	Auckland Pt Chevalier Buchanan Whanganui Te Awhina	1817 1770	14 12	130 148	162 184

Table 24: Gross floor area analysis for mental health units

²⁰ PSAID = Psychiatric service for adults with intellectual disability

Appendix 4 REFERSEDUNDERTHEOFFICIALINGORMATIONACT **Expert assessments for**



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REFEASED UNDER THE OFFICIAL INFORMATION ACT



the official who and the **The National Asset** Management **Programme for** district health boards

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Appendix 4

Report 1: The current-state assessment

June 2020



Acknowledgements

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Ta	Table 2: Condition score definition	s for building	and infrastructure	6


This appendix sets out key findings from the expert assessments of 30 DHB campuses and 166 buildings. It focuses on the infrastructure that provides services sitewide and within buildings. Once assets have an average condition score, they will have variable component scores that are likely to require plans for remediation and replacement.

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This summary highlights the assets and components assessed as average to very poor, in the 2019 expert assessments. Assessors included Beca Group, Ministry of Health officials and the facilities managers at each DHB. Scores were reviewed with each DHB, and only adjusted where the evidence supported a change.

Consistent methods were established, including the identification of key asset components and measures for grading their condition. Table 1 shows these components.

Table 1: Components for buildings and sitewide infrastructure

Buildings

For buildings, information was collected on the condition, condition variability and estimated time to replacement for:

- building fabric (external and internal)
- mechanical, heating, ventilation, air-conditioning and plumbing
- electrical, power, lighting, extra-low voltage, lifts, fire systems.

Sitewide electrical infrastructure

- Substations
- Main switchboards
- Site distribution mains Site g
- Site generators, backup power supply

Sitewide mechanical infrastructure

- Steam pipes
- Heating pipes
- Heating plant
- Cooling pipes
- Cooling plant
- Medical gases

- re
- Storm water drains
- Cold water supply pipes
- Hot/cold water site pipes
- Hot water storage
- Sewer drains

Table 2: shows the definitions for the condition scores used for assessments of buildings and sitewide infrastructure.

Rating	Condition	Definition
1	Very good	Assets displaying no deterioration or only normal routine maintenance required. New or near-new condition or repaired as good as new.
2	Good	Assets displaying limited deterioration that does not affect their use or where limited restoration has been performed. Minor maintenance may be required.
3	Average	Assets that have deteriorated to a degree where maintenance is obviously due, but not to the extent that the function is significantly impaired.
4	Poor	Assets that need repair or renewal in the short term because their condition is severely impacting performance. Barely serviceable, and failure likely in the short term.
5	Very poor	Immediate repair or renewal required. Assets have failed or failure is imminent. May pose health and safety issues and requires urgent attention.

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Table 2: Condition score definitions for building and infrastructure

Out of Scope



Canterbury DHB

Christchurch Hospital

Out of Scope	

Buildings

1974 Tupuna Villas – This building has cladding panels containing asbestos. The switchboards scored average to poor. They appear to be beyond end-of-life, with nuisance tripping of power circuits. The hot and cold water plumbing reticulation scored poor. The central HVAC and heating distribution scored poor.

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Te Awakura Stewart, adult acute unit – The hot and cold water reticulation scored average to poor. The local HVAC scored average to poor and the heating distribution scored poor.

Aroha Pai, Randolph – psychiatric service for adults with an intellectual disability – The hot and cold water reticulation scored poor. The local HVAC, building management system and local electrical distribution boards scored average to poor. The heating distribution scored poor.

Sitewide electrical infrastructure

Generally, the electrical infrastructure is beyond end-of-life. On three occasions, the generator has suffered failure of the dampener and scored poor. The high-voltage substation scored average to poor.

Sitewide mechanical infrastructure

Generally, the mechanical services are in average to poor condition. The site heating pipes and reticulation scored very poor. The site storm water and sewer drain reticulation scored average to poor. There appears to be no provision for sitewide cooling or cold water storage.

THE NATIONAL ASSET MANAGEMENT PROGRAMME FOR DISTRICT HEALTH BOARDS 27



RELEASED UNDER THE OFFICIAL INFORMATION ACT

						Dis Te F	trict H 'oari Ha	ealth Board uora o Viaitana
TO: Chair and Members Canterbury District Health Board						05		
SOURCE:	Site Re	edevelopme	nt					
DATE:	17 Dec	ember 2019						
Report Status	– For:	Decision		Noting		Information		

Canterb

HILLMORTON MASTERPLAN PROPOSAL

1. ORIGIN OF THE REPORT

In December 2018, the Minister of Finance and Minister of Health approved the Detailed Business Case (*DBC*) for the relocation of the remaining Specialist Mental Health Services (*SMHS*) from The Princess Margaret Hospital (*TPMH*) to the Hillmorton Hospital site. Included in the DBC is an indicative Masterplan for the Hillmorton Hospital site, detailed enough to enable sensible and logical locating of the new facilities to accommodate the SMHS from TPMH, without unnecessary constraints or obstructions to the potential future plans for this site. The intention was to complete a full and detailed Masterplan of the entire Hillmorton Hospital site.

A full Masterplan for the entire Hillmorton Hospital site has now been completed and the purpose of this paper is to present the plan.

2. <u>RECOMMENDATION</u>

That the Board, as recommended by the Quality, Finance, Audit and Risk Committee:

i. approves the proposed Hillmorton Hospital Campus Masterplan.

3. SUMMARY

Klein architects were engaged by the Ministry of Health to complete the indicative Masterplan for the Hillmorton Hospital campus to inform the 2018 DBC. In 2019, CDHB engaged the Klein architects to complete the Masterplan for the entire Hillmorton Hospital campus. The process has involved:

- Executive workshops.
- Individual consultation sessions with clinical services.
- Input from demand planning and a range of services consultants (such as traffic, electrical, stormwater, etc).

The proposed Hillmorton Hospital Masterplan covers the entire Hillmorton Hospital campus and provides a staged approach to the site developments over the next 30 years.

The purpose of this Masterplan is to inform the next programme of works for the Hillmorton Hospital Campus. Request for investments in line with the Masterplan stages of work will be submitted for approval in line with the CDHB business case approval process and delegation of authorities.

4. <u>APPENDICES</u>

Appendix 1: Proposed Masterplan

Report prepared by:	Sue McGregor, Project Manager, Site Redevelopment Brad Cabell, Programme Director, Construction and Property
Report approved for release by:	Mary Gordon, Executive Director of Nursing / EMT Lead Facilities

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Hillmorton Hospital Masterplanning Presentation to CDHB

Job Number 3.1256 Date 17th Dec 2019 Client Canterbury District Health Board









Agenda

- Overview 1.
- **Existing Site Information** 2.
- Masterplan Principles 3.
 - Masterplan Principles
- MATIONACT Masterplan Co-Adjacency & Capacity
- Programme 4.
- Hillmorton Masterplan 5.
 - Relationship & Capacity Co-Adjacency Diagram
 - Masterplan Massing North Campus
 - Masterplan Massing South Campus
- 6. Programme and Staging
 - Programme
 - Masterplan Massing North Campus Staging Diagrams
- 7. Next Steps

Overview

- **Previous Projects**
 - Masterplanning Lite
 - Specialist Mental Health Services: High and Complex, and Integrate RMA Family Services Centre
- **Project Timeline**
 - Engagement Group Workshops Aug
 - Service Leader Meetings Aug-Sept
 - Meeting with CCC Traffic and Planning Oct
 - Present Assumptions and Masterplan to Engagement Group Nov
 - Presentation to Executive Group Nov
 - Presentation to QFARC Dec

We are here

Presentation to CDHB - Dec

Existing Site Information





Existing Site



Existing Site

Existing South Campus Analysis



Existing Site



Masterplan Principles

- Staged replacement of most existing buildings
- Create a heart of the site with a multi-functional building which sits in surrounding green space
- Smaller outpatient services such as Forensic and IDPH PSAID can be included in inpatient services, or could be catered for offsite in the community
- Operational continuity of site is retained during development
- Maintain as much green space as possible and give it purpose
- Site needs to be more accessible externally and internally
- Retain smaller built form, strengthen service co-adjacency and support network

Relationship and Capacity Co-Adjacency Diagram



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Masterplan Co-Adjacency & Capacity

Indicative growth. Based on CDHB assumptions. November 2019

Drug & Alcohol OPD

> CAF OPD

IFSC 29 Beds Future Growth Regional / Community



Existing Service Capacity

Future Additional Capacity (Projection Data TBC)

Long Term Expansion

Ideal Backup Support Flow

Hillmorton Masterplan

AFORMATION ACT

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Masterplan Massing North Campus



Masterplan Massing South Campus



Legend



Green Space

Zoning South Campus



Masterplan Programme

	Klein	3.1256 CDHB Hillmorton Masterplanning Masterplan Programme
		2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2031 2032 2033 2034 2035
STAGE 1	SMHS	Design Construction (24-months)
STAGE 2A	FERGUSSON OPD	Business CaseDesign (6- months)Construction (12- months)
STAGE 2B	REFURB TE WHARE WAIMOKIHI	Business Case Design (15-months) Construction (12- months)
STAGE 2C	CAMPUS HEART	Business Case Design (15-months) Construction (24-months)
STAGE 2D	AIS & DETOX - 80 Bed	Business Case Design (24-months) Construction (24-months)
STAGE 2E	AIS & DETOX - 16 Bed	Business Case Design (24-months) Construction (24-months)
STAGE 3A	FORENSIC REHAB	Business Case Design (24-months) Construction (24-months) Timing not crucial, can be built at a later date but de-risks forensic demand if built earlier
STAGE 3B	FORENSIC & AT&R - Stage 1	Business Case Design (18-mor hs) Construction (24-months)
STAGE 3C	FORENSIC & AT&R - Stage 2	Business Case Design (18-mor ns) Decant Construction (24-months) Decant
STAGE4	IDPH - PSAID	Business Case Design (18-mor hs) Construction (24-months)
STAGE 6	HCN	Business Case Design (15-months Construction (24-months) Timing not crucial, can be built at a later date
STAGE 7	CAF OPD	Business Case Design (18-months) Construction (24-months)
		Stage 1 Construction of new 16 Bed HCN and 29 Bed IFSC Completion Stage 2 Expansion of Fergusson building to accommodate admin from Auon and outpatient services from Te Whare Waimokhil 2022 Stage 2.b Refurbish Te Whare Waimokhile. Partial decant Te Whare Waimokhil 2022 Stage 2.b Refurbish Te Whare Waimokhile. Partial decant Te Whare Waimokhil 2022 Stage 2.b New construction of Campus Heart to Nouse pharmacy, cafel training, te whare atawhail 2024 Stage 2.b Demolish Von and Te Whare Mauri Ora. New 204ed AS and Detox. 2024 Stage 2.e Demolish Von and Te Whare Mauri Ora. New 204ed AS and Detox. 2024 Stage 3 New 13 Bed Forensic Rehab 2024 Stage 3.b New 13 Bed Forensic Services. New 26 bed Forensic. 2027 Stage 3.b Detonish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 3.b Detonish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 3.b Detonish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 4 Stage 10 Detonish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 5.b Demolish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 5.b Demolish remainder of Te Awakura. New 10 Bed Forensic. 2024 Stage 5.b Demolish remainder of Te Awakura. New 10 Bed Forensic.

Programme



Stage 1:



Stage 1A:



Stage 2:



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Stage 3:

- a.) Stage 1 Forensic Services new build
 b.) Decant Forensic Services from Te Awakura (15 beds) and new AIS (9 beds) to Forensic new build
- c.) Demolish remainder of Te Awakura (16 beds)

SALVENSTREET

Outpatient & Administration 6974sqm GFA 5247sqm FP

OPD Extension 700sqm GFA

P - 35



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Stage 4:

1



Masterplan Staging

Stage 5: a.) Stage 2 AIS/Detox



Stage 6:

a.) Staged replacement of Aroha Pai Major disruptioin for very sensitive group. Consider locating IDPH PSAID in Western Campus.

- b.) Forensic Rehab new build on Western Campus
- c.) Decant Forensic Rehab from Te Waimokihi new build (Western)
- d.) Decant Detox from Te Waimokihi to new bu Detox + Flex
- e.) Demolish Te Waimokihi

SALVENSTREET

Outpatient & Administration 6974sqm GFA 5247sqm FP

OPD Extension 700sqm GFA

P - 35

1



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Stage 7:

- a.) High and Complex new build with optional secure boundary fence and connecting links to High and Complex and IDPH



Stage 8:



Issues for Future Phases

Masterplan Development

- Outpatient growth numbers impact on build area of outpatients facilities
- Infrastructure/services masterplan
- Cultural narrative engagement in masterplan design

Business Case and Facility Feasibility

- Interrogate staging / decanting / enabling
- Briefing and MOC development



SMHS End of Preliminary Design Phase

356



TRO INS

70

-1841 x 844



3.1213 SK-166

Kieln Ltd


A1 841 x 594



MANATŪ HAUORA

PO Box 47 538 Auckland Fax: 09 377 7006 Email: kieln@kieln.co.nz

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SMHS End of Preliminary Design Phase

High & Complex Needs

ALL HA

359

Key design elements incorporated during Preliminary Design

- Preferred locations of corridor doors, enabling 'pods' when needed
- MDT has 1 of 2 exits into the staff zone
- Corridor removed then redesigned back in near laundry for better staff/ward circulation



How has the Preliminary Design phase of this project gone so far?

Is there anything that has gone particularly well?

- User Group Meeting appointments
- 'Homework' meetings have enabled scenarios to be developed and explored pre scheduled meetings
- User group feedback provided has been discussed and incorporated into redesign as appropriate and in a timely manner
- Questions as prompts have assisted shaping discussions and acted as guidelines
- Provision of information and detailed diagrams in a timely manner has assisted with discussions and ensured comprehensive feedback is able to be provided

Has anything been particularly challenging or of concern?

• No issues at this time

How have you engaged with the consumer perspective to date?

• Family and consumers active within the user group





HIGH & COMPLEX NEEDS



 Job No.
 3.1213
 Scale
 NTS

 Date
 12.09.2019
 Cadfile No.
 N/A

Drawing No. SK-136



HIGH & COMPLEX NEEDS



 Job No.
 3.1213
 Scale
 NTS
 Drawing No.

 Date
 12.09.2019
 Cadfile No.
 NA.
 SK-137



 Job No.
 8.1213
 Scale
 NTS
 Drawing No.

 Date
 12.09/2019
 Cardilie No.
 N/A
 SK-138

HIGH & COMPLEX NEEDS





Drawing No. SK-139 Job No. 3.1213 Scale NTS Date 12.09.2019 Cadfile No. N/A

HIGH & COMPLEX NEEDS



SMHS end of Preliminary Design Phase IFSC – Inpatients -Child, Adolescent and Family -Mothers and Babies, Eating Disorders

366





PO Box 47 538 Auckland Fax: 09 377 7006 Email: kieln@kieln.co.nz

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CAF: Examples of key design elements

incorporated during Preliminary Design

- 'Pod' structure of bedrooms for flexibility and safety
- Decentralised 'lounge' areas to enable patient choice and separation of various groups as required
- Externally located bedrooms/inclusion of internal courtyards to maximise access to natural light
- Co-location of staff areas and patient social areas with good lines of sight to allow discrete observation
- Courtyards and external spaces to allow access to the outdoors (health promotion)
- Use of wide corridors, inwardly opening doors and corridors ending in glass to create a sense of space and minimise causes of escalation (safety)
- Closer integration of the activity spaces to allow patients to self-select the space as desired (choice), develop increased self care skills (growth and development) and be close to staff support and de-escalation spaces (safety).





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CAF - How has the Preliminary Design phase of this project gone

so far?

Is there anything that has gone particularly well?

- Consultative process
- Consistent meetings
- Opportunity to feedback
- Team very approachable, and follow through, and creative in their solutions

Has anything been particularly challenging or of concern?

- Demands of future proofing
- Overlay of standardisation
- Time over and above existing roles

How have you engaged with the consumer perspective to date?

- Youth forum with Youth Consumer Advisor
- Walk through of mock up

Has this process highlighted any model of care opportunities that could/should/must be addressed?

• Tried to ensure flexibility to provide care and treatment in differing models of care





Klein

HILLMORTON HOSPITAL SPECIALIST MENTAL HEALTH SERVICES

Job No. 8.1213 Scale NTS Drawing No. Date 12.09.2019 Caditie No. N/A SK-132 CAF ADOLESCENT LIVING / DINING / KITCHEN



 Job No.
 3.1213
 Scale
 NTS
 Drawing No.

 Date
 12.09.2019
 Cadfile No.
 N/A
 SK-133

CAF ADOLESCENT LIVING / DINING / KITCHEN



<u>M&B EDS: Examples of key design</u> <u>elements incorporated during</u> <u>Preliminary Design</u>

- Change in position of Youth Pod due to increased admissions of under 18 years
- Bedrooms and corridors flex requirements met
- Balancing privacy and safety requirements for clinical spaces
- Creating a space that supports indoor/outdoor flow and quiet spaces
- Family whanau areas
- Incorporating future proofing in to design





<u>M&B EDS: How has the Preliminary Design phase of this</u>

project gone so far?

Is there anything that has gone particularly well?

- Managing UNCROC requirements in design
- User group team teamwork
- Responsiveness of Design Team and Klein

Has anything been particularly challenging or of concern?

• Two unique patient groups requiring enclosed areas for different reasons

How have you engaged with the consumer perspective to date?

• Consumer and Family Advisor participate in all meetings and decision making

Has this process highlighted any model of care opportunities that could/should/must be addressed?

• No





Job No. 8.1213 Scale NTS Drawing No. Date 12.09.2019 Caditie No. N/A SK-130 M&B / SIEDS SHARED LIVING / DINING / LOUNGE





Date 12.09.2019

Cadfile No. N/A

SMHS End of Preliminary Design

Integrated Family Service Centre (IFSC) -Mothers and Babies, Eating Disorders Outpatients -Workspace, Front of House, Back of House

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<u>M&B EDS Outpatients: Key</u> <u>design elements incorporated</u> <u>during Preliminary Design</u>

- Safety of Interview rooms: 2 doors
- Maximise use of light through room location and wall construction
- Maximising privacy through room location and wall construction
- Flexibility of room use: consult rooms, small wait areas
- Minimising impact of x-ray room on outpatient space operations, while maximising access
- Efficiency of operation with storage options
- Efficiency of operation with range of room sizes



M&B EDS Outpatients: How has the Preliminary Design phase of this project gone so far?

Is there anything that has gone particularly well?

- Architects listening and incorporating requests/suggestions
- Feedback from teams and UG vital, and has been happening
- Teams being forward thinking, constructive

Has anything been particularly challenging or of concern?

- Challenging timeframes for consultation and additional workload for UG members
- Absences of user group members due to illness, leaves, bereavements
- Trust in architects and project team required for resolution of issues in the future
- Will the space be supported by adequate technology to support model of care?
- Financial constraint impact on function, fit out

How have you engaged with the consumer perspective to date?

- Informal survey with consumers on ward
- Consumer/whanau involvement in UG and meetings





<u>Front of House: Key design</u> <u>elements incorporated during</u> <u>Preliminary Design</u>

- Spacious area with options for consumers and whanau to be seated while waiting
- Strong opinion of teams and UG that lockers are not located here
- Natural and logical flow of people through this space

EASt

- Good lines of sight for reception staff
- Accessible toilets, parenting room and change table options for infants
- Good separation for privacy considerations between waiting area and clinical rooms

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L1 Workspace: Key design elements incorporated during Preliminary Design –



- Access to natural light
- Separation of teams by location of plant rooms, quiet space, meeting rooms
- Maximise privacy noise reduction within open plan area by location of plant rooms, quiet rooms
- Maximise functionality of rooms with variety of layouts and sizes

PLANT I

- Environmental management through HVAC
- Family friendly with incorporation of parenting room
- Improved functionality for all with 2 areas for toilets

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383

Workspace, FoH, BoH: How has the Preliminary Design phase of this project gone so far?

Is there anything that has gone particularly well?

- Architects listening and incorporating requests/suggestions
- Feedback from teams and UG vital, and has been happening
- Teams being forward thinking, constructive

How have you engaged with the consumer perspective to date?

Consumer/whanau involvement in UG and meetings

Has anything been particularly challenging or of concern?

- Will BoH space be adequate in total for all the needs of the different teams?
- Will FoH operation be adversely effected of lockers placed there, operational issues?
- Out of hours function of FoH toilets and parenting room: principles vs reality
- Challenging timeframes for consultation and additional workload for UG members
- Absences of user group members due to illness, leaves, bereavements
- Trust in architects and project team required for resolution of issues in the future
- Will the space be supported by adequate technology to support practices required by this layout?
- Financial constraint impact on function, fit out







MAIN ENTRY FRONT OF HOUSE / WAITING





MAIN ENTRY FRONT OF HOUSE / WAITING







 Jack No.
 3.1213
 Scale
 NTS
 Drawing No.

 Date
 12.09.2019
 Cadfile No.
 N/A
 SK-125

SHARED FAMILY ZONE WHANAU / FAMILY COURTYARD





SHARED FAMILY ZONE WHANAU / FAMILY COURTYARD

 SPECIALIST MENTAL HEALTH SERVICES

 Job No. 3.1213
 Scale NT3
 Dawing No.

 Date 12.092019
 Castlie No. N/A
 Diswing No.



TO: Chair and Members Canterbury District Health Board

SOURCE: Facilities Development

DATE: 21 November 2019

Report Status – For:	Decision		Noting		Information	
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1. ORIGIN OF THE REPORT

The purpose of this report is to provide the Board with an update on the Child, Adolescent and Family (CAF) outpatient service and community facility project.

2. <u>RECOMMENDATION</u>

That the Board:

- i. notes that the Child, Adolescent and Family (*CAF*) outpatient service and community facility is not within the scope of the Specialist Mental Health Services Detailed Business Case (*DBC*) approved by the Minister of Health and Minister of Finance in December 2018;
- ii. notes that to date, facility options considered include:
 - Option A: Leasing and fitting out a facility which is the option outlined in the Specialist Mental Health Services Detailed Business Case;
 - Option B: Building on the former Spreydon School site which would co-locate with the Ministry of Education Health School;
 - Option C: Building on Hillmorton Hospital campus within the zone that the CAF Inpatient facility is being built;
- iii. notes that while Option A is in the original DBC, this Lease option is unlikely to be recommended due to the higher total cost of ownership / whole of life costing;
- iv. confirms the commitment to a facility for the CAF outpatient service and associated workspaces, and approves in principle a budget of up to \$10 million for this project;
- v. notes that a request has been made to the Maia Health Foundation for fund raising efforts for a target of \$5 million, based on match model of "a dollar donation for a dollar CDHB funding";
- vi. notes that the Board's confirmation of the commitment and the approval-in-principle of the funding should provide Maia Foundation with the confidence to begin their fundraising planning; and
- vii. notes that a further paper will be provided, when more detailed analysis on each option is completed to inform the recommended option and this will be submitted in line with the CDHB business case process and delegation of authority.

3. DISCUSSION

Option A: Leasing And Fitting Out A Facility

This is the option outlined in the 2018 Specialist Mental Health Services DBC with a high level capital cost estimate of \$8.9m for fit-out and FF&E. As outlined in the approved Specialist Mental Health Services DBC, this is based on a 2,346m2 (which excluded the CAF North workspace and support) of purpose built leased space in close proximity to the new Integrated Family Service Centre, including associated workspaces.

This purpose built lease space option is unlikely to be recommended due to the comparatively higher cost of ownership or whole of life costing.

Option B: Building On The Former Spreydon School Site

This option involves building a facility on the former Spreydon School site to co-locate with the Ministry of Education Health School. The Southern Health School on 2 Halswell Road (next to the Hillmorton Hospital campus) is due for rebuild, which presents an opportunity for potential sharing of space and is within acceptable proximity to Hillmorton Hospital campus. Engagement with the Ministry of Education has commenced to better understand the possibilities and expectations.

The benefits of establishing an outpatient base on the Education site are twofold:

- a. It enables child and youth health care to be delivered on a child and youth friendly site, completely separate from the busy Hillmorton campus on which a large number of adult services including acute, forensic and crisis are provided. (It is important to note that we have received a significant number of complaints from families using the child and youth mental health services on The Princess Margaret Hospital site, about witnessing distressing and concerning behaviour of adults on this campus.)
- b. It offers the potential to develop a child and youth mental health and wellbeing hub that could include the co-location of other agencies, such as social services, that are often providing to the same families as the CAF mental health services.

Option C: Building On Hillmorton Hospital Campus

This option involves a new build on the Hillmorton Hospital campus, within the zone of the new Integrated Family Service Centre. As part of development of the 2018 Specialist Mental Health Services DBC, options of Family Services Outpatient & Community Building had been considered, however, all the options considered are new builds to accommodate the Outpatient service, the management teams and the support teams. Further analysis is required to better understand the facility options within the affordable capital budget of up to \$10m.

Report prepared by:

Corporate Support

Report approved for release by: Mary Gordon, Executive Director of Nursing/EMT Lead Facilities

FIFASEDUN

SPECIALIST MENTAL HEALTH SERVICES – DETAILED BUSINESS CASE



TO: Chair and Members Canterbury District Health Board

SOURCE: Corporate Services

DATE: 21 February 2019

Report Status – For: Dec	cision 🛛	Noting	; 🗹	Information	
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1. ORIGIN OF THE REPORT

The purpose of this report is to provide an update on the approval status of the Detailed Business Case (*DBC*) for Specialist Mental Health Services (*SMHS*) relocation from The Princess Margaret Hospital (*TPMH*).

At its meeting on 15 November 2018, the Board received a draft DBC (dated 9 November 2018) for consideration. The Board resolved:

"That the Board:

- *i.* endorses the DBC for on-going delivery of specialist mental health services currently stranded on the The Princess Margaret Hospital site;
- *ii.* approves Option 3 in the context of a nationally constrained capital environment; and
- iii. notes that Option 3 does not accommodate the Child, Adolescent and Family (CAF) Outpatients and Department Teams, which will have both a capital and operational impact on the DHB as they will need to be accommodated in a commercial leased building."

A copy of the final DBC (dated 16 November 2018), was submitted to the 22 November 2018 Hospital Redevelopment Partnership Group (*HRPG*) meeting for endorsement to submit to the Ministry of Health (*MoH*) for approval. A copy was provided to CDHB's Facilities Committee meeting on 21 November 2018, as part of the HRPG agenda papers.

2. <u>RECOMMENDATIONS</u>

That the Board:

ii.

- i. notes that as at 19 December 2018, Canterbury DHB received notification from the Minister of Health that both the Minister of Health and the Minister of Finance had considered the DBC for the "Canterbury DHB Specialist Mental Health Services", and approved the preferred option for the relocation of SMHS from TPMH to the Hillmorton site, at an estimated capital cost of \$79M, funded by \$79M of Crown capital funding;
 - notes the Child, Adolescent and Family outpatient service and community building is not within the approved scope of this project;
- iii. notes the management of this project is to return to CDHB, with quarterly reporting to the MoH and monthly reporting and oversight through the HRPG;
- iv. notes the approval letter from the Minister of Health to the Chair CDHB, including the conditions of approval, attached Double Up and
- v. notes the Detailed Business Case (final version dated 16 November 2018), approved by the Ministers of Health and Finance, attached

APPENDICES 3.



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Report prepared by:

Beng-Cheng Chan, Manager, Corporate Support Services

.vi .orporares Manufacture Attended to the second s Justine White, Executive Director Finance & Corporate Services

Board PX-21feb19-SMHS detailed business case

NEW HIGH CARE AREA FOR SMHS AT&R SCOPE CHANGE

 TO:
 Chair and Members, Canterbury District Health Board

 PREPARED BY:
 Brad Cabell, Programme Director, Construction & Property

 APPROVED BY:
 Mary Gordon, Executive Director of Nursing / EMT Lead Facilities

 DATE:
 16 April 2020

 Report Status – For:
 Decision
 Noting
 Information

392

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1. ORIGIN OF THE REPORT

This paper provides an update on the request for change to the budget requirement for the High Care Area for SMHS AT&R project, which was approved by the Board at the April 2018 meeting.

2. <u>RECOMMENDATION</u>

That the Board, as recommended by the Quality, Finance, Audit and Risk Committee:

- i. notes the Scope Change Request for an additional \$160,000, approved by management, as outlined in Appendix 1; and
- ii. notes that this work has no impact on the planned project completion timeline.

3. APPENDICES

Appendix 1: Scope Change Request for New High Care Area for SMHS AT&R.

251-FASEDUNDER

393 Scope Change Request

Project Overview

Project Name	New High Care Area – AT&R	Oracle Project Number	CT-18-C-00209 Task 1
Project Manager	Simon Hemmings	Date of Request	10/03/2020
Project Sponsor	Brad Cabell	Requester Name	Simon Hemmings

Scope Change Request

	Original Scope	Current State	Requested change
Completion Date	30/11/2021	On programme	30/11/2021
Budget	\$5,875,000	Within budget excluding Scope Change	\$160,000
Deliverables	New High Care Area – AT&R – Hillmorton	IN IN	Additional works to Hot water system due to current condition

Reason for the change

It was identified that during the excavation of the medium temperature hot water system (MTHWS) piping the condition of the existing valve pits and shut off valves were far below the expected condition for their age. Maintenance and Engineering (M&E) advised that a number of isolation butterfly valves appear to be non-working and a leak within the system was known. On further investigation by the project team and M&E it was established that the original scope of works (install approximately 30 meters of flow and return piping behind the proposed build area and connection to the existing system via welded elbow joints) would not be possible due to the condition of the existing isolation valves, access to existing valve pits and lack of overall control of the MTHWS. In order to maintain continuity of the programme of works, the project team and M&E established a change to scope which would allow for improved control of the existing system, replacement of defective / upgrades to deferred maintenance items and improve physical access to control and isolation valves by constructing larger chambers (this removed the confined space risk).

Due to the nature of the work additional scope changes could be identified once works commenced. Once works on the system did commence it was identified that the existing pipe route (gradients) differed to the original as-built information available at the planning stage. This resulted in M&E requesting additional drain points be added at the lowest identified point of the pipe system rather than at the believed location, this also required the construction of a new chamber and sump at the lowest point for future works. Due to the requirement to drain the system entirely of water in order to

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Scope Change Request

replace the damaged values it became apparent that new larger filling points were also required which were able to be installed on the day.

The overall changes to the MTHWS have resulted in greater control of the system, improved isolation of the system for future projects that would have required similar complex shutdowns, improved access to valve chamber and thus removing the need to work in confined spaces with exposure to water at approximately 95C.

Time line of works

- Temporary capping protection of existing lines under proposed building Sept 19
- Installation of new lines between new and existing building Nov / Dec 19
- Excavation of two new valve pits within project boundary Jan 20
- Site wide shut down of MTHWS, drain of system (approximately 20 tonnes of water), install new isolation valves, drain and fill points, weld new connections for the diversion, excavation of 3rd chamber for drain low point and sump, replacement of existing valves at site boiler house, refilling and air bleeding of the entire system and boiler start up 26th Feb 2020 (approximately 19 hours on site works)
- Construction of the third chamber and installation of new access lids to all chamber/ pits March 2020

Breakdown of Estimated Costs:

- Temporary capping protection of existing lines: \$25,000
- Installation of new lines: \$120,000
- Excavation of two new valve pits: \$20,000
- Excavation and construction of new drain pit and sump: \$10,000
- Replacement of existing chamber lid and supply three new lids to new chambers: \$10,000
- Replacement of butterfly valves and supply / install of drain and fill points: \$5,000
- Temporary works to site fencing and access paths: \$10,000
- Hydro excavation as required: \$15,000
- Sheet piling protection: \$15,000
- Consultants design costs: \$5,000
- Testing and commissioning: \$2,000
- Contingency: \$13,000

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Canterbury District Health Board To Pour Hausen o Waltana

Scope Change Request

Total cost for works is \$250,000, \$90,000 was included in the original budget, balance of \$160,000 is required in this scope change.

Justification for Scope Change.

The project is currently at approximately 30% of the build programme with the most complex stages still to complete. Due to the nature of the project and the complex requirements for anti-ligature, staff and patient safety and mechanical control systems required though out the building, the existing project contingency budget levels need to be maintained.

Specific examples of budget risk include:

- 1. There are several manufactured led design/constructability items currently in the final stages of development that may cause alteration to the base line build and budget which will need to be accommodated. For example, the door and window manufacturer / hardware supplier has identified during final product testing that the additional hardware added to the base system is compromising the strength and integrity of the product. This compromise was unknown at the design stage and was only investigated once a confirmed order had been placed. This alteration to the designed system may result in a cost variation to the project which would need to be covered by the project contingency, anticipated costs are approximately \$108,000.
- 2. The clinical team have now confirmed that one pod is to accommodate a specific patient who previously had planned to remain in an existing unit. Some specific changes to the accommodation will be required with the contingency budget used to fund this the anticipated cost is approximately \$30,000.

Options Evaluated

- Complete works with additional scope changes Complete the works required to the MTHWS including replacement of all items listed above to maintain the programme of works and delivery of the project. In addition, provide improved control for future projects – Option chosen.
 - Delay works until M&E have capex, only complete original scope
 - Due to the condition of the existing system this was not possible unless delivery of the new high care unit was delayed until works are completed, costs are unknown, there is a risk to patient and staff safety.

3. Do Nothing

This would not allow the project to be delivered as contracted.

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Canterbury

District Health Board

Scope Change Request

Impact Assessment

Risk	Project will be stalled / delayed
Resources	This change will be resourced by HRS / CDHB supplying some materials
Financial Impact	Additional budget is required for this change request of \$160,000 (Estimated, based on Contractor quotations and provisional sums)
Schedule	The work has been completed
Deliverables / Quality	Supply and install additional valve pits, inlet points, wash out / drain points, replacement of existing butterfly valves, replacement of valve pit lids.
Benefits	Improved access to valve pits by M&E staff, replacement of worn out valves, installation of control points for filling and draining 50 metres of replacement medium temperature hot water piping. These works will assist with future developments on the site as the system is now able to be isolated on each leg rather than requiring a site wide shut down of the heating system, full drain and re pressurisation after works (process took approximately 12 hours for M&E staff including adding approximately 20 tonnes of water back into the system).
Transition	N/A

Endorsement and Approval

Endorsed by	Brad Cabell	Approved by	Mary Gordon, EMT Lead Facilities
Date of Endorsement	10.03.2020	Date of Approval	11/3/2020
Signature	See next page	Signature	Moch

CDHB Financial Delegation Approval

(Additional Budget >\$150k) Approved by Justine White, Executive Director Finance & Corporate Services Approved by David Meates, CEO Date of Approval 16/8/2020 Date of Approval 18/3/2020 Signature Max Signature

Additional \$160,000 to be funded from 1920 CEO Contingency, increasing total project budget from \$5,875,000 to \$6,035,000.

As original Project Budget is approved by the Board, the approval of this Scope Change is to be notified to 31st March 2020 QFARC and 16th April 2020 BOARD.

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Canterbury Diskici Health Board Te Pool Hauora ö Wailaba

Scope Change Request

Impact Assessment

Risk 	Project will be stalled / delayed
Resources	This change will be resourced by HRS / CDHB supplying some materials
Financial Impact	Additional budget is required for this change request of \$160,000 (Estimated, based on Contractor quotations and provisional sums)
Schedule	The work has been completed
Deliverables / Quality	Supply and install additional valve plts, inlet points, wash out / drain points, replacement of existing butterfly valves, replacement of valve pit lids,
Benefits	improved access to valve plts by M&E staff, replacement of worn out valves, installation of control points for filling and draining 50 metres of replacement medium temperature hot water piping. These works will assist with future developments on the site as the system is now able to be isolated on each leg rather than requiring a site wide shut down of the heating system, full drain and re pressurisation after works (process took approximately 12 hours for M&E staff including adding approximately 20 tonnes of water back into the system).
Transition	N/A

Endorsement and Approval

Endorsed by	BARE CARELL	Approved by	
Date of Endorsement	10/2 2010	Date of Approval	
Signature	Ray Un Cit	Signature	
RELEASED			

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CHILD, ADOLESCENT & FAMILY OUTPATIENTS - OPTIONS UPDATE

District Health Board

Canterbury

Te Poari Hauora ō Waitaha

Report Status – For:	Decision		Noting		Information	2
DATE:	18 June 2020					
APPROVED BY:	Mary Gordon	, Execı	utive Director	r, Nurs	ing & Facilities	
PREPARED BY:	Brad Cabell, Programme Director, Construction & Property					
TO:	Chair and Me	mbers	, Canterbury	Distric	t Health Board	

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1. ORIGIN OF THE REPORT

The Child Adolescent and Family Outpatients (*CAF OP*) service is not within the scope of the Specialist Mental Health Services (*SMHS*) Detailed Business Case approved by the Minister of Health and Minister of Finance in December 2018.

This paper is generated as an update on the progress of the options investigation to relocate these services from The Princess Margaret Hospital (*TPMH*) campus.

2. <u>RECOMMENDATION</u>

That the Board, as recommended by the Quality, Finance, Audit & Risk Committee:

- i. notes that the remaining SMHS CAF outpatient services (CAF South, CAF Access and CAF management) on TPMH campus, will require relocation from TPMH, about the same time as when the SMHS inpatient services are relocating from TPMH to Hillmorton;
- ii. notes that the SMHS CAF outpatient service (CAF North) currently located on the Hillmorton Hospital campus, are in sub-optimal facilities;
- iii. notes that there is a preference for all the SMHS CAF outpatient services to be co-located to align with the model of care and efficiency;
- iv. notes that at the 21 November 2019 meeting, the Board confirmed the commitment to a facility for the CAF outpatient service and associated workspaces and approved in principle a budget of up to \$10 million for this project;
- v. notes that Maia Health Foundation has been informed of the CDHB commitment and has commenced their fundraising planning accordingly, towards a target of \$5m (being 50% of the expected costs of \$10m);
- vi. Cnotes that three options, as outlined below, are being investigated:
 - a) Leased building;
 - b) New build on Hillmorton as noted in the Hillmorton Site masterplan;
 - c) Refurbishment of existing building on Hillmorton;
 - notes the progress of the options investigation as outlined in this paper and that a recommendations paper will be submitted when a preferred option has been identified; and
- viii. notes that although the preference is to accommodate all SMHS CAF outpatient services, the current budgetary constraints may result in a recommendation for a small floor area premise or a staged approach to development.

vii.

Board PX-18jun20-CAF outpatients-options update

3. DISCUSSION

3.1 Options

Three options are being considered to relocate CAF OP services, as follows:

- a) Leased building
- b) New build on Hillmorton, as noted in the Hillmorton Site Masterplan
- c) Refurbishment of existing building on Hillmorton

These options are being considered based on the indicative floor area of 3,442m² outlined in the SMHS Detailed Business Case.

Option A - Leasing Building

This has been investigated by approaching commercial real estate agents to obtain indicative costs from potential landlords. Leasing a new purpose-built building or leasing an existing building have been considered.

Option B - New Build at Hillmorton

This is an option where the DHB designs, builds and owns a new building at the Hillmorton Campus. The Masterplan for the site includes a space for the CAF outpatients service. A quantity surveyor has priced a building based on 3,442 m2.

Option C - Refurbishing the Hillmorton Laundry

The Hillmorton Laundry facility (which is planned to be vacated) is circa 4,400 m2 of floor space and is being investigated to see if the space can be reconfigured to suit CAF Outpatient service requirements. Consultants are currently investigating the relocation of the Design Lab into the laundry. In May, a scope change was submitted to allow the consultants to also consider the inclusion of CAF Outpatient service into the laundry facility. The investigation includes architectural design and structural and fire engineering assessments. Costs are expected to be available in mid/late June 2020.

3.2 Costs at The Princess Margaret Hospital (TPMH)

The CDHB incurs annual costs of running TPMH of approximately \$504,000 for annual maintenance and cleaning and \$22,465 for annual rates. Although SMHS CAF outpatient service and related support service occupy a portion of TPMH only, the essential services infrastructure such as sewage, boiler, high voltage and low voltage switchgear, etc will have to continue working, therefore maintained accordingly. We do anticipate some reduction in terms of electricity usage and cleaning areas.

CDHB has a global insurance policy with a single premium covering all assets, so specific premium related to only the vacated portion of TPMH is not applicable.

NEXT STEPS

When the Hillmorton Laundry option costs have been provided, a cost comparision will be made between the various options to identify a solution that works for CAF and is economically preferable. Site Redevelopment will then prepare a recommendations paper seeking confirmation of the preferred option.

Once a preferred option has been endorsed, a Business Case will be prepared to progress the design work.



Hillmorton programme business case

Presentation for discussion at Canterbury DHB's QFARC

14 August 2020



The purpose of today

Provide background and context for the proposed Hillmorton programme of works

t out the case for change



Discuss site options and decisions on the programme



Set out how the programme will be implemented

Overview of Mental Health and Addictions Services

Provide a number of inpatient, community-based and mobile services throughout Canterbury. Grouped into five service clusters:

- 1. Adult Mental Health Services
- 2. Forensic Services
- 3. Intellectually Disabled Persons Health Services
- 4. Specialty and Addiction Services
- 5. Child, Adolescent and Family Services

Currently provided across 3 sites (Hillmorton, Christchurch and Princess Margaret)

Overview of Mental Health and Addictions Services



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Overview inpatient services

Inpatient service	Current	Current bed	Admission	Average
	location, building	numbers	A	length of stay (days)
Te Awakura (Adult Acute)	Hillmorton, Building 2	64	1411	18.1
Tupuna (Adult Extended Care)	Hillmorton, Building 8	15	16	256
Seager (Adult High and Complex Needs)	ТРМН	16	32	253
Te Whare Manaaki (Forensic Acute)	Hillmorton, Building 1	15	38	94
Te Whare Hohou Roko (Forensic Extended Care)	Hillmorton, Building 1	9	7	1188
Te Whare Mauriora (Forensic Rehabilitation)	Hillmorton, Building 5	13	24	139
Aroha Pai (Psychiatric Services for Adults with an Intellectual Disability)	Hillmorton, Building 3	14	55	52
Assessment, Treatment & Rehabilitation (Intellectual Disability)	Hillmorton, Building 3	6	20	26
Kennedy (Medical Detoxification)	Hillmorton, Building 5	6	354	5
Eating Disorders	трмн	7	53	48
Mothers and Babies	ТРНМ	6	63	43
Child, Adolescent and Family	ТРМН	16	265	1411

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Decisions taken so far

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- Separation from medical services and consolidation on the Hillmorton site
- Establishment of mental health specialist services on the site
- Construction of the mental health specialist services building

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Proposed decisions

This programme business case seeks formal approval from the Capital Investment Committee to start the preferred programme of work as follows:

- 1. Approve enabling site infrastructure works (\$98m) including construction of a 'campus heart' building (1,700 sqm; \$22m).
- 2. Tender for and appoint design consultants for Stages 1A and 1B of the programme of work being the design stages for 3 and 4 below.
- Proceed directly to developing detailed business case for the Forensic Rehabilitation and Outpatients building (2,200 sqm; \$38m).
- 4. Proceed directly to developing a detailed business case for the Adult Acute Inpatient Services building (10,000 sqm; \$151m).

The Programme Business Case and the case for change (the Strategic Case)

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DRMATION AC



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Plan		Investment Choices	MATION	
BBC Phase and Decis	ion Point:	Stage One	Stage Two	
Strategic Assessment	Programme Business Case	Project - Indicative Business Case	Project - Detailed Business Case	Implementation Business Case
Decision:		Single Stage Bu	ísiness Case	
Confirms the need to invest and to proceed to business case development	Confirms the case for change, the preferred direction of travel and to proceed to project business case development	Confirms the case for change, the proposed way forward and to proceed to detailed business case	Confirms the way forward, to formally approach market and prepare implementation business case	Decision to commence implementation and commit investment funding i.e. the decision to invest
For state sector organ	nisations	2		
Decision normally man Sponsoring Agency	de by: Cabinet	Cabinet	Cabinet	Usually delegated to Joint Ministers
Decision to proceed to business case development	The contingency establis annual budget process detailed or single stage back	shed as part of the to be confirmed by business case report	The contingency is finalised. Appropriation and funding decision delegated to Joint Ministers	Funding appropriated and allocated
\$-4		www.thinkSapere.com		10

Canterbury population is growing and changing

- In 2019/20 was 570,610 (11.5% of the national population)
- Second largest DHB by population in New Zealand
- Sixth fastest growing over the last five years (7.0% increase)
 - Māori population (over 55,000)
 - sixth largest in New Zealand
 - fastest growing (11.5%) in New Zealand over the last five years.
 - Pacific population (nearly 16,000)
 - fifth largest
 - fastest growing (15.4%) over the last five years.
- Prison muster increased by 45 percent from 1,307 to 1,900

Increasing contacts with mental health services has flow on effect to inpatients



Insufficient capacity⁴¹³ Adult Acute Inpatients (64 beds)

Average number of Te Awakura (Adult Acute Inpatient Service) consumers under care and sleeping at midnight by month



Insufficient capacity⁴¹⁴ Forensic Service (37 beds)

Percent of beds occupied at midnight by Forensic Service unit



Bed projections – Adult Acute Inpatients (80–96 beds)

Comparison of bed requirements for Adult Acute Inpatient Service by population assumption



Bed projections – Fotensic Service (46–54 beds)

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Comparison of Forensic mental health beds and prison muster

Region	Forensic mental health beds	Prison muster	Beds per 1,000 prison muster
Central	47	2,631	17.9
Midland	35	1,988	17.6
Northern	112	3,488	32.1
South Island	50	1,946	25.7
New Zealand	244	10,053	24.3
Canterbury (current)	37	1,307	28.3
Canterbury (NZ average rate applied)	46	1,900	24.1
Canterbury (Canterbury rate applied)	54	1,900	28.3

Over occupancy and fncreasing demand impact length of stay and readmission

Mental Health and Addictions Key Performance Indicators for Adult Acute Inpatient, Canterbury compared to national,

Indicator	Region	2015/16	2016/1	2017/1	2018/1	Chang
			7	8	9	е
		AP				17/18
						to
						18/19
Discharges ¹	Canterbury	1366	1419	1469	1492	1.6%
	National 📈	11486	11580	11544	10404	-9.9.%
Average Length of	Canterbury	18.6	18.2	19.9	16.7	-16.1%
Stay ² (days)	National	17.6	17.1	17.6	18.2	3.4%
28-day readmission	Canterbury	17.9%	18.2%	20.9%	21.8%	0.9%
rate⁵ (target ≤10%)	National	16.4%	15.3%	16.1%	16.2%	0.1%
C V	V					

Hillmorton sitewide infrastructure poorest in country

Health National Asset Management Programme (NAMP)

Mean condition for sitewide mechanical infrastructure at 31 campuses_



Hillmorton building Gondition and design MA poor

Health National Asset Management Programme (NAMP)

Mean condition scores for buildings that house mental health units



Hillmorton building condition and design poor



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Facilities end-of-life and not fit for RMATIONACT clinical purpose

Seclusion hours per person secluded¹ for Adult Acute Inpatient, Canterbury compared to national



A compelling problem definition

- 1. Insufficient capacity and increasing demand.
- 2. Facilities are end-of-life, amongst the worst in the country and lack the ability to be expanded or reconfigured to meet future demand.
- **3**. Facilities are not fit for clinical purpose; they inhibit contemporary service delivery and create safety risk for consumers and staff.
- 4. Current site configuration does not enable the consolidation or expansion of mental health inpatient services on the Hillmorton site.

Investment objectives

Objective 1 –

One functional site connected by a 'campus heart' with functional facilities that have flexible spaces with the ability to be expanded or reconfigured to accommodate future growth.

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Objective 2 –

Fit-for-purpose modern, therapeutic environments that support safe, high-quality practice and contemporary service delivery.

Objective 3 –

Positive, culturally and therapeutically safe environments that place the consumer and their family/whānau at the centre to support recovery, holistic health and wellness.

Options for the moment FLEASEDUNDER

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Design principles

. ON ACT Developed during masterplanning include:

- generic CDHB principles
- Te Whare Tapa Wha
- a cultural narrative has been developed for the site led by Manawhenua ki Waitaha

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Te Huarahi Hou "A New Journey" – Hillmorton to be a place for wellness .

Critical success factors for decisionmaking

- 1. **Co-adjacencies of services** to ensure good clinical pathways and support.
 - Consumer flow through the wellness journey makes sense.
 - Ability so surge staff.
 - Future proofing, disaster resilience and long-term capacity resilience.
 - Creation of service zones with a flow from acute (more secure) services together on the north of the site through to less secure and an increasingly independent feel to the south.
- 2. Stage-ability of the whole site development. Consideration of the operational functionality and the staging component (i.e. need to demolish buildings but retain operational services while the new build is in progress).

3. Fit for site and expandability.

- Consideration of the size and resource conditions (e.g. setbacks, proximity to residential housing) of the Western site.
- A desire to have single level facilities where possible.
- 4. Ensuring the site is **therapeutic and park-like** with ample green space.
- 5. Improving the **whole site flow (clinical, walking and vehicular), access and parking**.

Key drivers shaped master plan options

- Need to replace the majority of buildings for flexibility and resilience
- Need to strengthen zoning and flow with roads.

The following decisions shape the development of masterplan options.

- Retention of the Fergusson building.
- Demolition of the Avon building. This was an early key decision that meant services could keep operating during new builds.
- Creation of a family and child zone and where it would be located.
- Zoning for the whole site according to acuity.

Masterplan options development

Initially five options were developed

'Option 5 Western Campus not utilised' discarded prior to the options being worked up because there was not going to be enough space on the Northern Campus for accommodate all the services.

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Four masterplan test-of-fit options were explored once the sizes of the buildings were developed and confirmed.

- Option 1 Detox & Forensic Rehab on Western Campus
- Option 2 IDPHS (IDPH PSAID & IDPH Forensic) on Western Campus
- Option 3 Forensics + IDPH Forensic (AT&R) on Western Campus
- Option 4 Main Campus North and West sites

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Masterplan options assessment

Critical success factor	Option 1	Option 2	Option 3	Option 4					
Co-adjacencies met	Does not meet	Does not meet	Meets	Meets					
Allows staging	Meets	Meets	Does not meet	Meets					
Fit for site and expandability	Does not meet	Meets	Does not meet	Meets					
Optimises therapeutic green space	Does not meet	G Meets	Does not meet	Meets					
Site access, flow and parking	Meets	Meets	Meets	Meets					
RELEASED UNDER THE									
www.thinkSapere.com									
Masterplan Option 4³⁰preferred and endorsed

Option 4 – Main Campus – North and West Sites.

- Provides clarity of clinical zoning for the whole campus, including utilisation of the West Campus and allows for enough inpatient and outpatient capacity for projected growth.
- Strengthens the three key entry points. Provides clear vehicular connections and provides good pedestrian routes through the site and links green spaces.
- Creates a 'central heart' and maximises green space. This option was well-endorsed by the Canterbury DHB executive, Board and engagement groups.



Option 4 programme⁴³² **staging revisited**

Two primary reasons for discarding Option 4 programme staging were the preference to:

- Bring clinical capacity on stream earlier. The first new clinical building was not proposed until Stage 2.
- Avoiding refurbishment cost. Stage 1A required the refurbishment/upgrade of Te Waimokihi from an old non-clinical building to a clinical facility that would temporarily house Te Whare Mauirora Forensic Rehabilitation. The proposed West Campus for the new Forensic Rehabilitation and Outpatients building is vacant and can be built on straight away.

Three subsequent programme staging options

- All three options include the construction of the Forensic Rehabilitation and Outpatient building on the West Campus in Stage 1A.
- Option 1 differs from Options 2 and 3 in that only half (40-beds) of the Adult Acute Inpatient Service building is constructed in Stage 1B.
- Option 3 differs from Option 2 in that the construction of the Campus Heart building is deferred until Stage 2 of the programme.

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Option 1 Construction of half (40 beds) Adult Acute Inpatient Service building

Description	Stage 1A includes construction of the Campus Heart and Forensic Rehabilitation and Outpatients buildings and Stage 1B includes construction of half (40 beds) of the Adult Acute Inpatient Service proposed beds.									
Advantages	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus. Eliminates the need to refurbish/upgrade Te Waimokihi to temporarily house Te Whare Mauriora in order to demolish Te Whare Mauriora. 									
	 Brings forward the construction of Phase 1 (40 beds) of the Adult Acute Inpatient Service (Te Awakura) building compared to the masterplan Option 4. 									
Disadvantages	 Construction of the Adult Acute Inpatient Service building in two stages will lengthen the construction programme. Forensic inpatients cannot be temporarily decanted into Te Awakura until all of Adult Acute Inpatient Service has been relocated into new build. 									
	• New forensic unit cannot be constructed until Te Awakura has been partially demolished, and Forensic temporary housed in Te Awakura.									
	• Reducing the first phase of the Adult Acute Inpatient Service building to only half the size means the focus of the first stages shifts more towards non-clinical spaces (carparks, campus heart, demolition of buildings) than clinical (Adult Acute Inpatient Service, Forensic Rehab). Given the strain on existing services this is not optimal.									
	• This will be clinically and operationally challenging for the Adult Acute Inpatient Service team as they will be stretched across two buildings for some time, increasing the risk to staff health.									
Ó	The GFA split of building only 40 beds will be closer to 70/30 than 50/50 because the majority of the front of house and shared functions will have to be constructed in Phase 1.									

Option 2 Construction of full (80 bed) Adult Acute Inpatient Service building

Description	Stage 1A includes construction of the Campus Heart and Forensic Rehabilitation and Outpatients buildings and Stage 1B includes construction of the Adult Acute Inpatient Service
	(80 beds).
Advantages	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus. Eliminates the need to decant Te Waimokihi to new build, then refurbish/upgrade Te Waimokihi and decant Te Whare Mauriora to upgraded Te Waimokihi. Clinical buildings are being built early in the programme. Construction of the Adult Acute Inpatient Service building has been brought forward and will be constructed in a single stage. There is sufficient site area available for this construction to prove
	No impact on future stages and decanting space
Disadvantages	EASED UNDER
	KASK.

Option 3 Deferred construction of the Campus Heart

Description	Stage 1A includes construction the Forensic Rehabilitation and Outpatients building and
	Stage 1B includes construction of the Adult Acute Inpatient Service (80 beds).
Advantages	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus.
	• Eliminates the need to decant Te Waimokihi to new build, then refurbish/upgrade Te Waimokihi and decant Te Whare Mauriora to upgraded Te Waimokihi.
	Clinical buildings are being built early in the programme.
	 Construction of the Adult Acute Inpatient Service building has been brought forward and will be constructed in a single stage. There is sufficient site area available for this construction to occur.
	No impact on future stages and decanting space.
Disadvantages	Construction of the Campus Heart is deferred until Stage 2.

Building specific costs for each option

	GFA	Construction	Option 1	Option 2	Option 3
		rate	-		-
North Campus				N	
Adult Acute Inpatient Service	10,442	\$6,475	\$154,316,229	\$151,426,022	\$152,248,344
Adult Acute Inpatient Service (Future Growth)	1,680	\$6,474	\$24,826,247	\$24,361,275	\$24,493,569
Forensic and IDPH Forensic (AT&R)	6,650	\$7,924	\$118,747,886	\$116,495,371	\$117,136,257
Forensic Rehab and OP	2,220	\$7,625	\$38,236,262	\$37,512,581	\$37,718,482
High & Complex – Tupuna	1,964	\$7,626	\$33,830,694	\$33,190,391	\$33,372,570
IDPH PSAID and OP	2,482	\$6,060	\$34,491,192	\$33,848,246	\$34,031,177
CAF Outpatients	3,685	\$5,668	\$48,144,939	\$47,252,008	\$47,506,065
Fergusson Building	4,187	\$5,934	\$57,069,729	\$56,007,550	\$56,309,761
Campus Heart	1,737	\$5,668	\$22,694,432	\$22,273,524	\$22,393,281
Empty Chair	1,700	\$6,500	\$25,214,785	\$24,742,407	\$24,876,808
Energy Centre (Expansion & New)			\$19,266,883	\$18,879,234	\$18,989,528
North Campus Total	36,747		\$576,839,277	\$565,988,609	\$569,075,843
South Campus	0	-	-		-
Grounds Maintenance & BOH	276		\$2,685,997	\$2,704,184	\$2,648,247
Food Services	253		\$3,475,332	\$3,221,931	\$3,426,144
Oral Health	270		\$2,989,933	\$3,044,733	\$2,947,789
Future Learning and development	276				
Future outpatients	253				
Future Vocational	270				
South Campus Total	799		\$9,151,262	\$8,970,848	\$9,022,180
North & South Campus Total	37,549		\$585,990,539	\$574,959,457	\$578,098,022

Option 2 preferred

Option 2 is preferred over Option 1 as it brings on additional clinical capacity earlier and does not create the operation risk and additional operating cost associated with Option 1.

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Option 2 provides a lower whole-of-life cost than Option 3.

Details of the staging



- FRSEDUND

ORMATIONACT

-	Stage	lequired actions						
	<u>ркауе</u> 1А	 a) Fergusson Refurbishment and Extegsign (TBC) b) Decant Avon into Fergusson c) Demolish Avon Building d) Construct Campus Heart e) Construct Forensic Rehab/OPD (with carparking and swale) f) Decant Forensic OPD from Te Waimokibi to West Campus new build g) Decant Cultural and Whānau/Consumer from Te Waimokibi to Campus Heart h) Decant Training/Library into Campus Heart, then demolish existing building i) Decant Forensic Rehab from Te Whare Mauriora to West Campus new build j) Partially refurb Te Waimokibi (IDLT/PSAID teams to remain) - decant Detox from Te Whare Mauriora to Te Whare Mauriora to Te Waimokibi k) Demolish Te Whare Mauriora l) Relocate Building 13 m) Relocate Community Dental Building to South Campus n) New Sylvan Street site entrance o) New infrastructure and carparcing as required 	ACT					
	1B	 a) Construct new Je Awakura AIS 80 beds b) North Energy Centre c) Additional 100 <u>ongrade</u> parking spaces to North of Fergusson once Community Dental relocated 						
	2	 a) Partial demolition of <u>Te Awakura</u> b) Decant of Forensic Services to remaining <u>Te Awakura</u> c) Construct CAF Outpatient Building d) Construct 1500m² stormwater detention basin. 						
	3	a) Forensic Services new build b) Decant Forensic Services from <u>Te Awakura</u> c) Demolish remainder of <u>Te Awakura</u>						
	4	 a) IDPH Forensic (AT+R) new build b) Decant IDPH Forensic (AT+R) to new build 						
	5	a) Construct Detox/Flex b) Decant detox from <u>Te Waimokihi</u> to new build c) Demolish <u>Te Waimokihi</u>						
	6	 a) Construct IDPH PSAID and PSAID OPD b) Decant Aroha Pai into new PSAID building c) Demolish Aroha Pai d) Expansion of central energy centre and bore field. 						
OFILA	7	 a) High and Complex new build with optional secure boundary fence and connecting links to High and Complex and IDPH PSAID b) Decant Tupuna to High and Complex new build c) Demolish Hereford d) Demolish Tupuna Villa 						
www.thinkSapere.com	8	 a) New entrance road from Sylvan Street towards Campus Heart b) Construct future empty chair c) Dedicated peak load boiler for Fergusson building 						





The Financial, Commercial and Management Case



Capital spend by 5 year periods in \$⁴⁴⁴**millions**



445 Environmental setting for the MATICA **Commercial Case**

Falling construction activity



- Competing projects particularly the New Dunedin Hospital (a \$1.47 billion build)
- The Construction Industry Accord
- Strong supply side, in terms of Tier 2 contractors

Revised Procurement Rules

Require public bodies to consider broader outcomes (social, environmental, cultural or economic) that arise as a result of procurement and delivery of a project.

- Increase access for New Zealand businesses to procurement opportunities and encourage agencies to *involve Māori, Pasifika and regional businesses as well as social enterprises*.
- Suppliers expected to contribute to *growth of construction skills and training*, to support the expended capability and capacity of the construction workforce.
- Improving conditions for New Zealand workers, such as *protecting workers* from unfair and unsafe behaviour and labour practices.
- Transitioning to *a net-zero emissions economy* and designing waste out of the system to support *a circular economy*.

Construct only is the preferred option

- **Construct only:** Design is fully developed before the construction contract is awarded. The client engages consultants to prepare a design against a brief and budget, and to prepare the tender documents. Contractors are then invited to submit bids to carry out the construction work, based on the tender documents. Consultants review the contractors' bids, select and recommend the most favourable option for the client.
- Early contractor involvement (ECI): The client and contractor are bought together at an early stage of the design process. It is envisaged that the contractor will bring <u>design buildability</u> and <u>cost</u> efficiencies to the pre-<u>construction phase</u>. ECI is particularly well-suited to large or <u>complex projects</u>.
- **Project alliancing:** A relationship-style arrangement that brings together the client and one or more parties to work together to deliver the project, sharing project risks and rewards. Collaborative procurement methods are typically used for highly complex or large infrastructure projects that would be difficult to effectively scope, price and deliver under a more traditional delivery.

Architects will be appointed for each stage – the following principles will be followed

- Continued evolution of user experience and incorporating lessons learnt.
- Design consistency throughout the different programme stages.
- Focus on whole of life costs for each stage and site in totality.
- Strong relationship with CDHB design user groups.
- Ongoing understanding impact of design on material procurement and maintenance.



Risk	Consequence	Likelihood	Risk level	450 Mitigation
Unexpected costs or cost escalation may result in the need to request additional funding to complete the project.	Severe	Likely		Costs to be validated by an external quantity surveyor. Ensure design work happens promptly. Appoint experienced Construction Project Manager. Regular reporting on budget.
Delay in construction works impacts overall timeline:	Likely	Moderate	(Programme the site construction so that one construction workforce can move from one building to the next. Monitor schedule closely and escalate early if any concerns. Regular monitoring at site meeting and oversight at Project Control Group.
Changes in scope of project, or changes to design of facility after construction commences increases project costs	Major	Moderate	×	Early and frequent engagement with user group to deliver an agreed design in the Detailed Business Case stage. Close management of user expectations. Clear project governance and accountabilities to limit post final design changes.
Poor integration of contractors may lead to design issues that result in financial and administration issues.	Major	Moderate		An appropriate procurement model for selection of experienced contractors and consultants. External advice with regular meetings. One design consultant will be used across the site to reduce co-ordination issues.

Discrepancies, design errors in consultants' documentation could lead to quality and financial administration issues.	Major	Moderate	QA checking of all documentation. 451 Ensure skilled and experienced consultants are engaged. Regular communication, design meetings, with consultants/contractors to work as a close team Allow sufficient time for full design drawings to be issued.
The completed building not fit-for-purpose or does not meet users' needs.	Severe	Unlikely	User Group process has close engagement with the design team through preliminary and developed design, for each building. Close engagement of Facilities Management with the Facility Project Team.
A lack of momentum due to calls on time on other construction sites	Major	Likely	Ensure there is a linked up Hillmorton specific project governance mechanism incorporating the service (the operator) as well as facilities management.
Model of care not being implemented in a timely way means the acute inpatient facility in particular	Major	Moderate	Coordination between project governance and DHB governance to ensure model of care changes progress with project programme. Engage those delivering model of care.
Sustainable staffing model unable to be delivered due to mismatch of workforce skills	Severe	Unlikely	Inform wider DHB governance of the expected benefits that rely on a suitable workforce. Recruitment focus on future facility workforce requirements rather than on current needs.

Adult acute inpatient specific risks

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Risk	Consequence	Likelihood	Risk level	Mitigation AFORMAT
Forensic facility fails before a new one is built	Severe	Likely	Č	None. If it fails then consumers will be housed in the acute inpatient unit with great difficulty also greatly reducing available acute inpatient beds.
Design is not fit for purpose for a forensic facility	Severe	Likely		Design services will be sought from a range of architectural firms and a requirement will be experience in design of forensic services facilities. An independent design review will be sought.
lwi aren't aligned to the purpose of the building	Likely	Moderate		There will be close consultation with lwi in development of the concept and preliminary designs.

Forensic specific risks

				453
orensic s	spo	ec	ifi	c risks
Risk	Consequence	Likelihood	Risk level	Mitigation
Forensic facility fails before a new one is built	Severe	Likely		None. If it fails then patients will be housed in the acute inpatient ward with great difficulty also greatly reducing available acute inpatient beds.
Design is not fit for purpose for a forensic facility	Severe	Likely		Design services will be sought from a range of architectural firms and a requirement will be experience in design of forensic services facilities. An independent design review will be sought.
lwi aren't aligned to the purpose of the building	Likely	Moderate		There will be close consultation with lwi in development of the concept and preliminary designs.

Attending to site infrastructure is the first cab off the rank - \$100 million

- 1. The need for an additional HV/LV electrical Sub-station at the north of site and expansion of the southern SMHS substation
- 2. Additional diesel backup generation capacity at the north of the site
- 3. Expansion of the SMHS artesian heating and cooling system to serve the whole site. A new northern plantroom and expansion of the southern SMHS plantroom will eventually allow the removal of the site wood chip plant. These plantrooms will be interconnected to improve resilience and redundancy in the event of plant failure and shutdowns
- 4. A new GSHP bore field to the north of site and expansion of the SMHS southern bore field for the heat pump plant
- 5. A new fire ring main around the site is proposed to allow the new buildings to be connected back to the SMHS central water tanks
- 6. The site water main is being upgraded as part of the SMHS project, it is anticipated that local extension of the site mains water network will be undertaken as the buildings are upgraded
- 7. Hot water will be provided on a building by building basis, powered via the central heat pump network
- 8. New surface and sewer water drainage connections and swales

Benefits of investment

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Benefit	ts of investment	ARC
LSF domain	Benefit	Who benefits
Health	Improved mental health status and outcomes for consumers Improved ability to meet demand within resources	Consumer, Whānau, Staff, DHB, Society
Subjective wellbeing	Improved consumer and whānau experience and wellbeing Improved staff wellbeing	Consumer, Whānau, Staff, DHB
Safety and security	Reduced harm to consumer, whānau and staff Increased ability to care for consumers with high and complex needs Improved systems and building resilience to prevent failure/disaster	Consumer, Whānau, Staff, DHB
Cultural identity	Kaupapa Māori approaches and connection to culture and identity to support recovery	Consumer, Whānau, Society
Time	Improved workforce effectiveness and efficiency in service provision	Consumer, Whānau, Staff, DHB



Appendix DSchedule of Accommodation

REFERSEDUMPERTIE



Canterbury District Health Board Hillmorton Site Masterplan Summary Schedule for PBC - Rev C

Sonico / Building	Exis	sting	Future			
	Beds	DFA	Beds	DFA	IFA	GFA
NORTH CAMPUS						
Acute Adult Inpatient Services	64	2,966	80			
Adult Inpatient Detox + Flex	6	450	16			
Adult Inpatient Services Combined	70	3,416	96	7,809	9,683	9,974
Pharmacy	-	82	-	150	186	192
Clinical Services Unit	-	-	-	216	268	276
Te Awakura AIS	70	3,498	96	8,175	10,137	10,441
	1				5	
Adult Inpatient Services Future Growth	-	-	16	1315	1631	1,680
	0.1	1.074	00	1 101	5100	5.070
	24	1,874	36	4,131	5,122	5,276
IDPH Forensic (AT&R)	-	498	6	1,076	1,334	1,374
Forensic and IDPH Forensic (AT&R)	24	2,372	42	5,207	0,400	0,000
Earanaia Dahah	10	200	10	1.050	1 550	1 507
	13	390	13	1,230	1,550	1,597
Forensic Community Onli	- 10	282	- 10	488	0.155	023
	13	0/2	13	1,730	2,100	2,219
High & Complex - Tupuna	15	1 266	15	1 538	1 007	1.064
High & Complex - Tupula	24	1,200	16	1,500	1,907	1,904
High & Complex (2x buildings)	30	1 266	91	3 084	3,824	3 038
	03	1,200		0,004	0,024	0,900
IDPH PSAID	20	886	14	1 626	2 017	2 077
IDPH PSAID Outpatients	-	362		317	393	405
IDPH PSAID and OP	20	1 248	14	1 944	2 410	2 482
				1,011		
IFSC	-	. (-)	29	4792	5942	6.120
CAF Outpatients	-	715	-	2,885	3,578	3,685
		$\overline{\mathbf{X}}$				
Ferguson Existing	-	5,460	-	5,460	6,771	6,974
Ferguson Refurbished			-	2,730	3,385	3,487
Ferguson Expansion			-	548	680	700
Ferguson Building	<u> </u>	5,460	-	6,008	7,450	7,674
Campus Heart	-	1.608	-	1.360	1.686	1.737
				.,		
Energy Centre Existing	-	280	-	280	348	358
Energy Centre SMHS		200		391	485	500
Energy Centre Expansion & New)	_	-	_	666	825	850
Energy Centre	-	_	_	1 337	1 658	1 708
				1,007	1,000	1,700
Total North Compute	166	16 920	041	97 944	46.007	49 225
	100	10,039	241	37,044	40,927	46,330
Total PBC Works for North Campus	-	-	196	28,105	34,850	35,896
REFERSI						
*						

Convice / Duilding	Exi	sting				
Service / Building	Beds	DFA	Beds	DFA	IFA	GFA
Grounds Maintenance Existing	-	493	-	493	612	630
Grounds Maintenance Expansion	-	-	-	99	122	126
Back of House Expansion	-	-	-	117	146	150
Grounds Maintenance & Back of House	-	493	-	709	880	906
						1
Food Service / Kitchen Existing	-	991	-	991	1,229	1,266
Food Service / Kitchen Expansion	-	-	-	198	246	253
Food Service / Kitchen	-	991	-	1,189	1,475	1,519
Oral Health Clinic (relocation)	-	211	-	211	262	270
Laundry Existing (future L&D or OPD)	-	4,290	-	4,290	5,319	5,479
Refurbishment for Learning & Development (TBC)	-	-	-	-	_	<u> </u>
Future Learning & Development	-	4,290	-	4,290	5,319	5,479
					$\overline{\mathcal{A}}$	
Future Outpatients (TBC)	-	-	-	- /	<u> </u>	-
					<u> </u>	
Future Vocational (TBC)	-	-	-		-	-
	1	1				1
Total South Campus	-	5,985	-	6,400	7,936	8,174
Total PBC Works for South Campus	-	-	- /	626	776	799
			\sim	*		

WHOLE CAMPUS

Indicative Whole Campus	166	22,825	24	44,244	54,863	56,508
Total PBC Works for Whole Campus	-	- 🔪	19	96 28,731	35,626	36,695

Assumptions

- GFA for new buildings is assumed to have a 24% Travel and Engineering factor applied to IFAs , this is not strictly accurate for existing buildings where full accurate data was not always available.

- Existing areas of building are an assumed DFA. The majority of buildings on the campus are single storey. Further Assessment required of existing areas and briefing for proposed future developments.

- Existing facilities on the South Campus have an assumed GFA, note future predictions for this site are for refurbishments and extensions and have had a lesser rate or 12% applied to get a GFA.

- Fergusson building assumes expansion zones to existing facility and decanting of some services including Community Dental.

- Campus heart - includes Te korowai Atawhai, central café, central meeting and therapy spaces, future area derived from new SOA.

- Campus heart not currently provided, services currently split across Te Korowai Atawhai, the Avon building or are non existent, therefore accurate comparisons cannot be made to future proposed.

3.1256 CDHB Hillmorton Mental Health **Campus Heart** Schedule of Accommodation for PBC - Rev B



Klein

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Function / Room / Space	Area	No.	Total	Comments
	(Sqm)		(Sqm)	C
Flexible Training /group /meeting				Note some of these areas could be on an upper floor
Recovery Resource/Peer Space	12	1	12	resources , family resource material etc
Library, resource, study zone	50	1	50	staff - quiet workzone and library
Training /Meeting/AVL/Education/Group	100	1	100	community group room for gatherings, events, training, exercise etc.
Training /Meeting/AVL/Education/Group	60	2	120	community group room for gatherings, events, training, exercise operable wall for options to have as 1 x larger room or 2 x smaller room
Group Room / Multipurpose	30	1	30	Mulitipurpose inc training , recreational activites
Interview /small meeting	15	1	15	training team and accessible to all
Store - Meeting/Education Suite	9	2	18	Chairs, mats, resources
Beverage bay	6	1	6	Beverage bay supports all meeting, training group room ,
Bay - waste streaming	2	1	2	
Workspace - Training Staff	5	12	60	, [7]
Workspace - support training team	6	3	18	break out , admin/copier /support zones
WC	3	7	21	\checkmark
WC Accessible	5	2	10	Y
Waiting Space	10	1	10	supports meeting suite
Net Functional Area			1,025	
Gross Functional Area (DFA) incl circulation (28-30%)			1,312	
		\sim	~	
Non Clinical Support Zone - Staff Only			1.2	
Disposal	12	1	12	Access from kitchen
Cleaners	8	1	8	
Net Functional Area	9	2	18	
Net Functional Area (DEA) that size (JE6)			38	
GIOSS FUNCTIONALATEA (DFA) INCI CITCULATION (25 %)			40	
Total Gross Functional Area (DFA) Campus Heart			1,360	
Travel and Engineering (24%))		326	
Total Internal Floor Area (IFA) Campus Heart			1,686	
External Walls (3%)			51	
Total Gross Floor Area (GFA) Campus Heart			1737	

NB We have identified rooms that are possibly able to go on an upper level, to be discussed during next phase planning

Function / Room / Space	Area (Sqm)	No.	Total (Sqm)	Comments
			TRO	
External Areas /Landscaped or built areas			IBC	
Entrance - lanoscapeo			00	
Secure Dike store Service users			30	
Secure Bike park - Stall			60	
Volleyball court			250	TDO
Pathways				IBC - across campus
Family Courtyards			500	
Courtyard to community facilities - Volleyball, games etc			200	
Gardens - productive			100	
Total Outdoor / Courtyard Area			1,140	
Build Up - Campus Heart			CTA A	
Department Target Area - Ground Floor			626	All under flevible group/meeting/therepu/training evel Spiritual appage
Travel and Engineering Cround Elect (100/ of total DEA)		$- \leftarrow \mathbf{x}$	126	All under liexible group/meeting/merapy/training - excl Spintual spaces
Travel and Engineering - Ground Floor (10% of total DFA)		\sim	100	
Internal Eleer Area - Ground Eleer (DEA + TRE)		\bigcirc	190	
Internal Floor Area - Ground Floor (DEA + T&E)			826	
Gross Floor Area - Ground Floor (3% external wall)			906	
Gross Floor Area - First Floor (3% external wall)	R		851	

3.1256 CDHB Hillmorton Mental Health - Adult Inpatient Services Te Awakura Schedule of Accommodation for PBC - Rev B

3.1256 CDHB Hillmorton Mental Health - Adult Inpatient Services Te A Schedule of Accommodation for PBC - Rev B	Awaku	ra			Klein
Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments Stage
Public Entry Zone					
	10	0			
Air lock	10	G	1	10	ausparta astropos and indiaial
Child play Area	15	G	2	30	supports entrance and judicial
Lockers vistor /service user	4	G	. 1	4	
Reception /administration	18	G	A	18	,Front desk reception back room copier, Stores, hot desks
Workroom, BOH reception, administration	34	G	1	34	stores, admin team, hot desks
Security office	20	G	1	20	
Toilet Public male	12	G	1	12	
Toilet Public male - female	15	G	1	15	
Toilet Public Accessible/baby change	7	G	1	7	
Net Functional Area		· · · · · · · · · · · · · · · · · · ·		156	
Gross Functional Area (DFA) Incl. circulation (30%)	\mathbf{X}			203	<u> </u>
Admissions Judicial ,Consult Unit Shared)				Shared for whole unit (90 Beds)
Whare - Lobby	15	G	1	15	
Whare	50	G	1	50	Specialist room Supports admission process, group
Where Kei	40	0		40	room Kitaban dining
Whare Kai	40	G	I	40	AVL capable supports family meetings, external visitors
Meeting /family room	30	G	1	30	etc
Store	4	G	3	12	AVL specialist equipment and storage
Beverage bay	4	G	1	4	Supports family mtg rooom and suite
Consult /interview	14	G	3	42	2 doors
Judicial room	60	G	1	60	2 doors
WC Not Eurotional Area	5	G	2	10	
Res Functional Area (DEA) Incl. circulation (35%)				203	1
REFERSE					

Function / Room / Space	Target Area	Floor	No.	Total (Som)	Comments	\bigwedge	Stage
	(Sqm)			(OqIII)		N'	

Central Activity/ Therapy Zone Unit Shared

Shared for whole unit (90 beds) Whanau Interaction

30	G	1	30		1
80	G	1	80	Open plan area , pool/ table tennis zones ,	1
20	G	1	20	MDT room	1
6	G	2	12		1
4	G	2	8		1
24	G	1	24	Locate with Recreation zone	1
14	G	2	28	Extra therapy/interview room	2
60	G	1	60	open onto rec zone	2
2	G	2	4		2
15	G	2	30	Smaller as areas divided up for user choice could be family lounge areas	2
36	G	<u> </u>	36		2
50	G	1	50	Storage for equipment	2
			382		
. ()		516		
	30 80 20 6 4 24 14 60 2 15 36 50	30 G 80 G 20 G 6 G 4 G 24 G 14 G 60 G 2 G 15 G 36 G 50 G	30 G 1 80 G 1 20 G 1 6 G 2 4 G 2 24 G 1 14 G 2 60 G 1 2 G 2 15 G 2 36 G 1 50 G 1	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	30 G 1 30 80 G 1 80 Open plan area , pool/ table tennis zones , 20 G 1 20 MDT room 6 G 2 12 4 G 2 8 24 G 1 24 Locate with Recreation zone 14 G 2 28 Extra therapy/interview room 60 G 1 60 open onto rec zone 2 G 2 4 15 G 2 30 Smaller as areas divided up for user choice could be family lounge areas 36 G 1 36 50 G 1 50 Storage for equipment 382

Adult Inpatient Zone - Divided into 4 pods , each pod paired with some shared ammenities and 1x shared High Care zone of 8 beds per 2 pods

Cohort 1 - Pod 1 and 2 - North and East / Cohort 2 - Pod 3 and 4 - South and West

Bedroom Zone - North 16 beds 3 clusters 1 x 8 and 2 X 4 beds to allow different cohorts of consumers					bed clusters can be rearranged with further briefing
Single Bedroom	14.0	G	7	98	
Single bedroom - smaller cluster 1	14.0	G	3	42	
Single bedroom - smaller cluster 2	14.0	G	3	42	
Single Bedroom/ Special (1x in each bedroom cluster)	18	G	3	54	
Shower / WC	5.0	G	13	65	
Shower/WC - Special	6.0	G	3	18	
Store - cupboard linen	2	G	2	4	
Lounge/ Dining North	60.0	G	1	60	
lounge	30.0	G	1	30	
Lounge - pod	15.0	G	2	30	with smaller bedroom cohorts
Interview room	14.0	G	2	28	dedicated interview rooms plus access to shared therapy zone between PODs
Sensory modulation/quiet room	14	G	1	14	
Toilet	5	G	1	5	
Store- Secure	4	G	2	8	
Staff base mini	2	G	2	4	

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Staff base	14.0	G	1	14		
Net Functional Area				516	2	
Gross Functional Area (DFA) Incl. circulation (38%)				712	North, East	1
Gross Functional Area (DFA) Incl. circulation (38%)				712	South,West	2
Living/ Activity/ Therapy Zone shared					North and East, duplicated for South west	
Interview room	14	G	2	28		
Clinic/treatment (service user access)	14	G	2	28		
Meeting/group room	30	G	1	30		
Lounge/multiuse/games	50	G	1	50		
Bay Waste streaming	2	G	2	4		
Kitchen - OT	20	G	1	20		
Bay -Locked consumables /equipment	2	G	2	4		
Activity - OT	36	G	1	36		
Laundry	12	G	1	12		
Gym - small	30	G	1	30		
Phone booth zone	1	G	1	1		
Toilet	3	G	2	6		
Bathroom	10	G	1	10		
Net Functional Area				259		
Gross Functional Area (DFA) Incl. circulation (38%)				363	North East	1
Gross Functional Area (DFA) Incl. circulation (38%)				363	South West	2
Staff Zone-clinical support, admin shared	*				North and East, duplicated for South west	
Medication /Clean utility	14	G	1	14		
Staff workroom	36	G	1	36		
Administration support	9	G	1	9		
Office/private workspace	9	G	2	18	Unit CN and CNS	
Toilet – Staff	5	G	1	5		
Dirty utility/disposal	12	G	1	12		
Store - consumables /equipment	15	G	1	15		
Store patient Property	10	G	1	10		
Pantry - staff only	12	G	1	12		
Cleaner	6	G	1	6		
Bay -Locked consumables /equipment	2	G	2	4		
Net Functional Area				141		
Gross Functional Area (DFA) Incl. circulation (30%)				183	North East	1
Gross Functional Area (DFA) Incl. circulation (30%)				183	South west	2
RELE						

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Secure Admission Zone 1					Shared 2x16 bed units	
Air lock	10	G	1	10		
Arrival Lounge	30	G	1	30		
	7	G	1	7		
Staff support	6	G	1	6	stores, mini base, utility cupboard	
Net Functional Area				43		
Gross Functional Area (DFA) Incl. circulation (38%)				59	North East	1
Gross Functional Area (DFA) Incl. circulation (38%)				59	South west	2
De-escalation/ High Care Area 1)	Shared 2x 16 bed units	
Lounge- seclusion	20	G	2	40	Seclusion level TBD	
Single de-escalation bedroom Seclusion	10	G	2	20		
Toilet and Shower	6	G	2	12		
Staff mini base	2	G	2	4		
Support - consumables , utility	4	G	1	4	Utility , consumables	
Net Functional Area	(~ //		80		
Gross Functional Area (DFA) Incl. circulation (38%)				110	North east	1
Gross Functional Area (DFA) Incl. circulation (38%)				110	South West	2
Total Gross Functional Area (DFA) Cohort 1 Pod 1 and 2				1,428	North East	1
Total Gross Functional Area (DFA) Cohort 2 Pod 3 and 4				1,428	South West	2

High Dependency Unit - 8 beds aligned with 2 x 16 bed wings	
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Cohort 3 High Dependency Unit					
Bedroom Zone 8 Beds high dependency	2				
Single Bedroom	14.0	G	4	56	
Single bedroom - smaller cluster	14.0	G	2	28	
Single bedroom - smaller cluster	14.0	G	1	14	
Single Bedroom/ Special (1x in each bedroom cluster)	18	G	1	18	
Shower / WC	5.0	G	7	35	
Shower/WC - Special	6.0	G	1	6	
Lounge/ Dining	60.0	G	1	60	
lounge	24.0	G	1	24	
Lounge - pod	15.0	G	2	30	with smaller bedroom cohorts
Lounge/multiuse/games	50	G	1	50	
Sensory modulation/quiet room	14	G	1	14	
Activity, multi function , group	40	G	1	40	

 \sim
Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments Stage
Clinic/treatment (service user access)	14	G	1	14	, Y
Interview room standard	14	G	2	28	2
Interview /Meeting - large	20	G	1	20	
Stores - group	6	G	2	12	OT, Fitness equipment, chairs etc
Toilet	5	G	1	5	
Store- Secure	2	G	3	6	linen /equip meal trolley
Staff base mini	4	G	1	4	
Staff base	14.0	G	1	14	
Net Functional Area				478	
Gross Functional Area (DFA) Incl. circulation (38%)			. (669	
HDU Staff Zone-clinical support, admin shared			A.		Potential sharing of some spaces with 2 x Pods
Medication /Clean utility	14	G	1	14	
MDT workroom	24	G	1	24	
Administration support	9	G	1	9	Ward Clerk
Office/private workspace	9	G	1	9	
Toilet – Staff	5	G	1	5	
Dirty utility/disposal	12	G	1	12	
Store - consumables /equipment	15	G	1	15	
Store patient Property	8	G	1	8	
Net Functional Area				96	
Gross Functional Area (DFA) Incl. circulation (35%)				130	
Total Gross Functional Area (DFA) Area 8 Bed High Dependency Unit 1				799	1
Back of house - Non Clinical support whole unit				799	2
Cleaners +Store	10	G	1	10	
Disposal - Dirty linen	20	G	1	20	
Equipment /Trolley Bay - locked	12	G	1	12	To securely hold linen/meal/equipment as needed prior to pick up
Store -Consumables	24	G	1	24	
Store- equipment	30	G	1	30	
Disaster Emergency supply	12	G	1	12	
Patient Property store	15	G	1	15	
Net Functional Area				123	
Gross Functional Area (DFA) Incl. circulation (30%)				160	1
RELL					

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Detox Unit - Flex beds						
Public Entry Zone						
Air lock	6	G	1	6	Admission process to be briefed	
Public entrance/ waiting	10	G	1	10		
Lockers vistor /service user	1	G	1	1		
Reception /administration /security	12	G	1	12		
Toilet Public Accessible	6	G	1	6		
Net Functional Area				35		
Gross Functional Area (DFA) Incl. circulation (30%)				46		3
Admissions/consult						
Admissions space/group therapy	36	G	1	36	Multi use space for large group /mtg/admission	
Meeting room	24	G	1	24		
AVL specialist equipment and storage	3	G	1	3		
Consult /interview	14	G	2	28	2 doors	
WC	5	G	1	5		
Net Functional Area				96		
Gross Functional Area (DFA) Incl. circulation (38%)				132		3
Inpatient Zone 3 - 2 cohorts of 8 beds. 1 x detox and 1x flex						
Oshad t. Datau						
Conort I - Detox						
Single Padroom	14.0	C	6	0.4		
Single bedroom amaller aluster 1	14.0	G	1	04 14		
Single Bedroom / Special	14.0	G		14		
Single Bedroom/ Special	10	G	7	10		
Shower / WC	5.0	G	1	35		
Silowei/Wo - Special	50.0	G		50		
intention room	14	G	1	14		
	5	G	1	5		
Totro Cooliro	0	G	1	3		
Store support lines	2	G	<u>∠</u>	4		
Stofe - cupublish miler	12.0	G		10		
	12.0	G	2	30	with smaller badroom, cohorte	
Not Functional Area	15.0	G	2	274		
Cross Functional Area (DEA) Incl. circulation (38%)				378		3
				510		

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Cohort 2 - Flex beds AIS and Detox					2	
Bedroom Zone - Flex						
Sinale Bedroom	14.0	G	6	84		
Single bedroom - smaller cluster 1	14.0	G	1	14		
Single Bedroom/ Special	18	G	1	18	D'	
Shower / WC	5.0	G	7	35		
Shower/WC - Special	6.0	G	1	6	7.	
Store - cupboard linen	2	G	1	2		
Store- Secure	2	G	2	4		
Lounge/ Dining Flex	50.0	G	1	50		
interview room	14	G	1	14		
Toilet	5	G	1	5		
Staff base	12.0	G	1	12		
Lounge - pod	15.0	G	2	30	with smaller bedroom cohorts	
Net Functional Area				274		
Gross Functional Area (DFA) Incl. circulation (38%)	(378		3
I wing/ Activity/ Therapy Zone shared btwn Detox and flex beds						
	40	G	1	40		
Lounge TV	24	G	1	24		
Sensory modulation/quiet room	14	G	1	14		
Descalation lounge	20	G	1	20		
Bay Waste streaming	2	G	2	4		
Laundry	8	G	1	8		
Kitchen -	20	G	1	20		
Activity - OT	36	G	1	36		
Phone booth zone	1	G	1	1		
interview room	14	G	1	14		
Clinic/treatment (service user access)	14	G	1	14		
Toilet - patient	4	G	1	4		
Bathroom	10	G	1	10		
Net Functional Area				209		
Gross Functional Area (DFA) Incl. circulation (38%)				293		3
REFERSE						

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Staff Zone-clinical support, admin shared					$ \rightarrow^{k} $	
Medication /Clean utility	14	G	1	14		
Office/private workspace	9	G	2	18		
Staff workroom	24.0	G	1	24		
WC Staff	5	G	1	5	D'	
WC - Shower Staff	5	G	1	5		
Pantry	9	G	1	9	1.	
Dirty utility/disposal	12	G	1	12		
Store -Equipment, consumables	12	G	1.	12		
Store patient Property	6	G	1	6		
Cleaner	6	G	1	6		
Bay -Locked consumables /equipment	2	G	T	2		
Net Functional Area		<u>^</u>		113		
Gross Functional Area (DFA) Incl. circulation (30%)				147		
Total Gross Functional Area (DFA) Area Detox - Flex	(~ / /		1,374		3
Staff Zone -Administration First Floor					NB TBC _ requires confirmation of numbers	
Staff tea room	60	1	1	60	For the whole 90 bed unit plus CSU and Pharmacy This area may be divided up depending on design	
Staff lounge	30	1	1	30	decompress zone staff , comfortable chairs etc	
Meeting - large	40	1	1	40		
Meeting small	15	1	2	30		
Admin/ utility zone	6	1	2	12	Area for printers/photocopier etc/paper	
Admin secure file store	14	1	1	14	Discuss managment, legal requirements	
Quiet rooms	6	1	6	36		
Beverage bay	4	1	1	4		
break out- informal mtg	9	1	3	27		
Bay Waste streaming	2	G	4	8		
Office	12	1	2	24	Large single or 2 person shared	
Workspace – open plan	6	1	38	228		
Store - consumables/admin	12	1	1	12		
Bay – staff property lockers	8	1	1	8		
Change / shower / WC	6	1	3	18		
WC /Change	24	1	2	48	WC cubicles	
Net Functional Area				599		
Gross Functional Area (DFA) First Floor incl circulation (25%)				749		1
P						

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	Stage
Total Gross Functional Area (DFA) Ground floor				7,060		
Total Gross Functional Area (DFA) First floor				749	\sim	
Total Gross Functional Area (DFA) Both Levels				7,809		
Travel and Engineering (24%)				1,874	D'	
Total Internal Floor Area (IFA) AIS without Pharmacy and CSU				9,683		
External Walls (3%)				290	7	
Total Gross Floor Area (GFA) AIS without Pharmacy and CSU				9,974		
				О,		

Additional Clinical Support - Pharmacy and CSU						
Clinical Services unit						Includes Electroconvulsive therapy procedures
Waiting		10	G	1	10	
Consult /treatment room		14	G	2	28	
Recovery zone		28	G	1	28	4 recovery bays at 7m2 each plus small support
Procedure suite		30	G	1	30	ECT etc
Phlebotomy room		9	G	1	9	
Medication /Clean utility		12	G	1	12	
Staff workroom/Administration		20	G	1	20	
Toilet – Patients		5	G	1	5	
Toilet Staff		3	G	1	3	
Dirty utility/disposal		8	G	1	8	
Store - consumables /equipment		9	G	1	9	
Bay -consumables /equipment		2	G	2	4	Resus, linen
Net Functional Area					166	
Gross Functional Area (DFA) CSU incl. circulation (30%)	0				216	
Internal Floor Area (IFA) CSU incl Travel and Engineering (24%)					268	
Gross Floor Area (GFA) CSU incl external walls (3%)					276	1

Pharmacy	JC -					Included in AIS as Key support area . Supports whole Hillmorton site Highly secure area
Waiting		8	G	1	8	
Reception		4	G	1	4	
Clinic/treatment (service user access)		10	G	1	10	
Pharmacy Workroom and Stores	S	60	G	1	60	Fridge, workspace, specialist storage units
Store - Bulk Consumables		9	G	1	9	
Staff workroom	2ELET	20	G	1	20	

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	, CT	Stage
Toilet Staff	3	G	1	3			
Dirty utility/disposal	6	G	1	6	-	7	
Net Functional Area				120	\sim		
Gross Functional Area (DFA) Pharmacy incl circulation (25%)				150			
Internal Floor Area (IFA) Pharmacy incl Travel and Engineering (24%)				186			
Gross Floor Area (GFA) Pharmacy incl external walls (3%)				192	D'		1
Total Gross Functional Area (DFA) - Additional Clinical Support (CSU & Pharmacy)				366	7.		
Total Internal Floor Area (IFA) - Additional Clinical Support (CSU & Pharmacy)				454			
Total Gross Floor Area (GFA) - Additional Clinical Support (CSU & Pharmacy)				467			
Total Gross Floor Area (GFA) AIS with Pharmacy and CSU			7	10,441			
External Target Areas		4.					
Secure Entry	95	G	3	285			
Landscaped courtyard - central large	300	G	7	2,100			
Landscaped courtyard - small	100	G	6	600			
Landscaped courtyard - Deescalation	40	G	4	160			
Landscaped garden - security fenced - off therapy areas	150	G	1	150			
Total Outdoor / Courtyard Area)			3,295			
Build Up - Te Awakura (Acute & Detox)							
Department Target Area - Ground Floor				7,426	Assumed CSU	& Pharmacy included	
Department Target Area - First Floor				749			
Travel and Engineering - Ground Floor (10% of total DFA)				817			
Travel and Engineering - First Floor (14% of total DFA)				1,144			
Internal Floor Area - Ground Floor (DFA + T&E)				8,243			
Internal Floor Area - First Floor (DFA + T&E)				1,893			
Gross Floor Area - Ground Floor (3% external wall)				8,491			
Gross Floor Area - First Floor (3% external wall)				1,950			

Staging Split	Ground	First	Total		
Stage 1 DFA	3545	749	4294		
Stage 1 T&E	429	601	1030		

Function / Room / Space	Target Area (Sqm)	Floor	No.	Total (Sqm)	Comments	S.	Stage
Stage 1 IFA		3974	1350	5324		(Y	
Stage 1 GFA		4094	1390	5484	2	7	
Stage 2 DFA		2507	0	2507			
Stage 2 I &E		2758	351	3109	$\langle \rangle$		
Stage 2 GFA		2841	362	3202	0		
Stage 3 DFA		1374	0	1374	Y		
Stage 3 T&E		137	192	330	7.		
Stage 3 IFA		1511	192	1703			
Stage 3 GFA		1556	198	1755			
			LHK				
		CIAL					
C	KE)						
ADE.							
SEV							
R. C.							

3.1256 CDHB Hillmorton Mental Health - Forensic Rehab Schedule of Accommodation for PBC - Rev B

3.1256 CDHB Hillmorton Mental Health - Forensic Rehab Schedule of Accommodation for PBC - Rev B				Klein
Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Pecentian			AN.	Unit requires further specific briefing
Airlock	6	1	6	For security and weather
	0			
waiting zone	2		2	Small seated area near the front entrance
Whanau Lounge	22	1	22	Family lounge near entrance to the unit include kitchenette design with orientation to living zones for the unit interface with garden /courtyard
Toilet Accessible (with baby change)	5	1	5	
Net Functional Area	- / /		35	
Circulation		30%	11	
Inpatient Bedrooms / Pods				robust fit out, mental health standards , discuss anti ligature requirements .Swipe card access
Bedroom (14m2) - Mental Health	14	9	126	. The total number of 13 beds assumes one transitional flat, one high care area and small pods to allow cohorting of different
Ensuite - Mental Health	5	9	45	Appropriate for MH support, some will require assistance for mobility and ADLS
Bedroom (18m2) - Mental Health	18	2	36	4x larger rooms for people with higher space needs - Hoists fitted to full room 1x rooms and bathroom (need to discuss pros and cops of this and use/ligature risk)
Ensuite - Mental Health Large	6	2	12	To large rooms
REFER				

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Pod Lounge	15	2	30	Small lounge space to support separation of groups, gender and sex, transitional living 2 pods in addition to high care and transitional area
Bathroom - Domestic	10	1	10	Set up like a domestic bathroom
Net Functional Area			259	<u> </u>
Circulation		35%	91	
Gross Functional Area (DFA) Inpatient Bedrooms / Pods			350	
		1)	
Transitional / Step Down Area	1	7		To prepare patients for discharge. Capacity 2 patients N.B. Incorporated into the unit - potentially in pod type arrangement to allow flexibility of use.
Bedroom (14m2) - Mental Health	14	2	28	
Ensuite	5	2	10	
Lounge / Dining/Kitchen	18	1	18	
Laundry	2	1	2	
Store - General	2	1	2	
Net Functional Area Transitional / Step Down			60	
Circulation		35%	21	
Gross Functional Area (DFA) Transitional / Step Down			81	
RELEASED				

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
High Care Zone				To support patients requiring higher support for brief periods, in the least restrictive environment reduces need for unit transfers
Descalation lounge	20	1	20	
Bedroom (14m2) - Mental Health	10	1	10	
Ensuite	5	1	5	
Staff support	4	1	4	
Net Functional Area High Care		2	39	
Circulation		35%	14	
Gross Functional Area (DFA) Transitional / Step Down			53	
Inpatient Therapy and Recreational Areas		-		
Open plan Dining Room / Lounge	70	1	70	Dining / Lounge area with beverage bay , interface with courtyard
ADL Kitchen	20	1	20	Shared kitchen for consumers to undergo meal prep - kitchen opening into dining space but able to be closed if ADL assessment underway
Kitchen - Stores /meal trolley	8	1	8	Secure area meal trolley and staff supplies - allows for differing meal bay combine with ADL kitchen area
Shared Lounge	24	1	24	separate lounge or quiet zone
Computer Nook / Study / Library	12	1	12	
Phone Booth	1	1	1	
Interview / Therapy Room	12	1	12	Therapy /small mtg dual egress
Interview / Therapy Room	16	1	16	Therapy /small mtg, AVL dual egress
Consult / Treatment Room	14	1	14	Consult room - multidisciplinary use eg PT
Group Therapy / Meeting Room	40	1	40	Group therapy, family meetings, MDT, AVL
Store - Meeting / AVL/equipment	2	3	6	Chairs, specialist equipment
Activities Room	40	1	40	For all therapy teams needs to be able to house groups of 10 includes wet area, storage cupboards, tables pinboards drying racks, etc
Toilet - Accessible	6	1	6	
Laundry	8	1	8	1x small also included in transition area
Net Functional Area			277	
Circulation		35%	97	
Gross Functional Area (DFA) Therapy and Recreational			374	
P-F-				

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Clinical Support				R'
Reception	6	1	6	Possibly combine with staff station for a staff write up zone
Store - Photocopy / Stationery Clinical CNM	6 12	1 1	6 12	Embedded in admin
Office Shared Clinical Workroom MDT	12 24	1	12 24	
Dirty Utility /disposal	10) 10	Needs to be in locked cupboard - all bays need to be
Bay - Waste Streaming Clean Utility/Meds	3 14		3 14	secured (as in BWD AG/BG) Combine with meds/dispensing. Discuss medication management
Bay - Linen	2	2	4	Needs to be in locked cupboard - all bays need to be secured (as in BWD AG/BG)
Store - Patient property	10	1	10	patient property stores
Store - Equipment	15	1	15	General equipment stores
Store - General	12	1	12	
Bay - inwards goods	6	1	6	Secure with doors or in staff only zone
Cleaner's Room	5	1	5	
Net Functional Area			139	
Circulation		25%	35	
Gross Functional Area (DFA) Clinical Support			174	

Total Gross Functional Area (DFA) Forensic Rehab - excluding staff workspaces

1,077

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Staff Workspaces & Support				
Bay Administration support / store	6	1	6	Embedded inside workspace
Workspace - open plan	5	10	50	includes hot desks for students /visitors
Meeting Room Office Shared Clinical Store Files	15 12 9		15 12 9	Also Use meeting room in ward
Quiet Rooms Staff Room	7 24	1	7 24	Could combine with outpatient for one unit tearoom - TBC
Bay - Waste Streaming Staff Property Bay Toilet - Staff	3 2 3	1 1 2	3 2 6	
Accessible Shower - WC - Staff	5	1	5	
Circulation		25%	35	
Gross Functional Area (DFA) Staff Workspaces & Support		2070	174	
Total Cross Functional Area (DEA) Foransia Bababu isaluding staff workensoon			1.050	
Travel and Engineering		24%	300	
Total Internal Floor Area (IFA)		2470	1 550	
External Walls		3%	47	
Total Gross Floor Area (GFA) Inpatient			1,597	
REFERSEDUR				

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Outpatient Consulting suite				
Waiting	12	1	12	
Beverage bay	4	1	4	
Clinic/treatment (service user access)	14	1	-14	
Interview Room	14	8	112	
Interview Room	18	2	36	
Medication/Utility	10	1	10	
Group room	30	1	30	
Workroom MDT	24	1	24	
Administration	6	1	6	
Office shared	12	2	24	
Staff Tea Room	20	1	20	small tea room - could be combined with inopatient tea room
Workspace - shared	5	16	80	
Toilet – Consumers	4	2	8	
Toilet – Staff	4	1	4	
Bay -Locked consumables /equipment	3	2	6	
Net Functional Area Outpatient			390	
Gross Functional Area (DFA) Outpatient Incl. circulation (25%)			488	
Travel and Engineering 24%			117	
Internal Floor Area (IFA)			605	
External Walls 3%			18	
Gross Floor Area (GFA) Outpatient			623	
Total Gross Floor Area - Inpatient and Outpatient			2,219	
REFERSED				

Function / Room / Space	Target Area (Sqm)	No.	Total (Sqm)	Comments
Outdoor / Courtyard Spaces				
Covered Drop off / pick up / Ambulance Bay	50	1	50	Covered area for ambulance pick ups/drop off and service delivery inwards / outwards good to the unit. Careful design required
Outdoor Space Courtyard - covered / deck , landscaping	250	1	250	Further briefing required space for bbq area and tables
Outdoor - landscaped /garden	100	20	100	Landscaped area, paths, garden beds, vege garden seating , activities
Total Outdoor / Courtyard Area		1	400	
Build Up - Forensic Rehab				
Gross Functional Area - Ground Floor			1,564	incl outpatient
Gross Functional Area - First Floor			174	
Travel and Engineering - Ground Floor (10% of total DFA)			174	
Travel and Engineering - First Floor (14% of total DFA)			243	
Internal Floor Area - Ground Floor (DFA + T&E)			1,738	
Internal Floor Area - First Floor (DFA + T&E)			417	
Gross Floor Area - Ground Floor (3% external wall)			1,790	
Gross Floor Area - First Floor (3% external wall)			430	

3.1256 CDHB Hillmorton Mental Health Campus Heart Schedule of Accommodation for PBC - Rev B



MACT

Requires access for services and deliveries from a separate entrance, close to

Open to staff, visitors and Service Users - requires different zones of seating to

disposal Cafe zone for fresh prep and reheating, servery and all stores.

Potential vocational opportunity for service users

cohort different groups, staff, visitors, service users

Function / Room / Space

Airlock Security Entrance

Gathering /waiting zones

Reception /admin support Security- admin support Lockers - Staff/Visitors

Whare Kai (kitchen zone)

Whanau Room (include with adjacent courtyard)

ELEASE

WC Accessible parenting/carers room

Lobby

WCs WCs

Whare

Whare Hui

Front of House / Whanau / Spiritual /Café

Area No. (Sqm)

70

40

1

З

70

120

Total Comments (Sqm)

				Ar
	6	1	6	Arrival and admission MOC TBC as a priority staff, visitors, service users
	10	1	10	
	10	2	20	Divided wait zones for separation of users and family members
	5	1	5	
	8	1	8	
	15	1	15	male toilets
	15	1	15	female toilets
	15	1	15	
	20	1	20	
	3	1	3	
	(
		J .		Whare - mulitpurpose in use Access and orientation important , spiritual
	120	1	120	space, special events, training, group Design TBC in consultation with
	XV			cultural support and advisors
				Area could be combined with café zone for improved flexibility TBC in
	36	1	36	consultation with cultural support and advisors Lockable kitchen plus smaller
				dining zone with option to open out onto cafe eating area for larger groups
N'				workroom stores for Whare (chairs mate AVI) and whare kai-food
\sim	15	2	30	stores - could be divided up differently
	5	4	20	Cultural lead x 2 Chaptins x 2 workspace
			20	Family meetings, catch ups - allows children - include beverage bay flow to
\sim	40	1	40	courtvard

Café kitchen and stores

Whare Support Workspace

Café

Café seating and gathering

Function / Room / Space	Area (Sqm)	No.	Total (Sqm)	Comments
Elevible Training (group (meeting				Note some of these areas could be on an upper fleer
Recovery Resource/Peer Space	12	1	12	resources family resource material etc
Library resource, study zone	50	1	50	staff - quiet workzone and library
Training /Meeting/AV/L/Education/Group	100	1	100	community around room for gatherings, events, training, evercise atc
Haining / Meeting/Avt/ Education/ Group	100	1	100	community group room for gatherings, events, training, everoise etc.
Training /Meeting/AVL/Education/Group	60	2	120	wall for ontions to have as 1 x larger room or 2 x smaller room
Group Room / Multipurpose	30	1	30	Multipurpose inc training recreational activites
Interview /small meeting	15	1	15	training team and accessible to all
Store - Meeting/Education Suite	9	2	18	Chairs, mats, resources
Beverage bay	6	1	6	Beverage bay supports all meeting, training group room.
Bay - waste streaming	2	1	2	
Workspace - Training Staff	5	12	60	
Workspace - support training team	6	3	18	break out . admin/copier /support zones
WC	3	7	21	
WC Accessible	5	2	10	
Waiting Space	10	1	10	supports meeting suite
Net Functional Area		-	1,025	
Gross Functional Area (DFA) incl circulation (28-30%)			1,312	
		$\langle \rangle$	>	
Non Clinical Support Zone - Staff Only	(
Disposal	12	\mathcal{I}_1	12	Access from kitchen
Cleaners	8	1	8	
General Consumables/equipment Store	9	2	18	
Net Functional Area			38	
Gross Functional Area (DFA) Incl circulation (25%)			48	
Total Gross Functional Area (DFA) Campus Heart			1,360	
Travel and Engineering (24%)			326	
Total Internal Floor Area (IFA) Campus Heart			1,686	
External Walls (3%)			51	
Total Gross Floor Area (GFA) Campus Heart			1737	

NB We have identified rooms that are possibly able to go on an upper level,

to be discussed during next phase planning

Function / Room / Space	Area (Sqm)	No.	Total (Sqm)	Comments
Esternal Areas // andesaned ar built areas			TDO	ZK
External Areas /Landscaped or built areas			IBC	
Soure bike store. Service users			30	
Secure Bike park - Staff			60	
Volleyball court			250	
Pathways			200	TBC - across campus
Family Courtvards			500	
Courtvard to community facilities - Volleyball, games etc			200	
Gardens - productive			100	
Total Outdoor / Courtyard Area			1,140	
Build Up - Campus Heart Department Target Area - Ground Floor			744	
Department Target Area - First Floor			636	All under flexible group/meeting/therapy/training - excl Spiritual spaces
Travel and Engineering - Ground Floor (10% of total DFA)		\rightarrow	136	
Travel and Engineering - First Floor (14% of total DFA)			190	
Internal Floor Area - Ground Floor (DFA + 1&E)			880	
Internal Floor Area - First Floor (DFA + T&E)			826	
Gross Floor Area - First Floor (3% external wall)	2		851	



CDHB HILLMORTON MASTERPLANNING

MASTERPLAN 3D MASSING NORTH & WEST CAMPUS - VIEW FROM SOUTH

 Job No.
 3.1256
 Scale
 N/A
 Drawing No.

 Date
 16.07.2020
 Cadfile No.
 SK043-44
 SK043-44













NATIONACT

Te Huarahi Hou – A new journey

Hillmorton Campus Mental Health Services programme business case

Prepared by Sapere on behalf of Canterbury District



REFERSEDUNDERTHEOFTICIALINFORMATIONACT





Tuia i te herenga tāngata

Tui tui tuia.

Tū tonu e ngā maunga whakahī o Te Waipounamu, Ngā Tiririri o te Moana.

Papaki kau ana Te Tai o Mahaanui, ā, Te Tai o Marokura hoki, arā, nei rā Ngā Pākihi Whakatekateka o Waitaha.

CIA

E ngā mate kua hinga atu nei i runga i ō tātou marae maha.

Haere atu, okioki mai rā.

E ngā whakaaro, ngā kōrero aroha, ngā tautoko i awhi nei i te kaupapa.

Anei te mihi ki a koutou.

Whakapiki te kaha.

Whakapiki te ora.

Whakapiki te māramatanga.

Kia eke tātou katoa ki Te Pae Ora, ki Te Huarahi Hou.

Tēnā koutou katoa.

Let us weave together the threads of humanity.

May the proud mountains of Te Waipounamu, the Southern Alps, stand tall.

From the mountains to the coast of Canterbury and the Kaikoura, stretch out the great plains of Waitaha.

Let us farewell the many amongst us who have departed.

Farewell and be at rest.

Lift up our thoughts, words and support to embrace the kaupapa.

Greetings to you all

Lift up our strength

Lift up our wellbeing

Lift up our knowledge

We all strive to achieve Pae Ora (total wellbeing) in this new pathway, Te Huarahi Hou.

Therefore, greetings to all.



Document control

Document n	ame	Programme Business Case for Hillmorton Campus mental health services
Document o	wner	Greg Hamilton, General Manager, Mental Health Services
Issue date		19/08/20
Document his	story	

490

Document history

Version	Issue date	Key changes
Version 1	19/08/20	Report progressively developed over the last month

Document review

Document revie	w AFC)`
Group/Role	Name	Review status
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Document approvals

Group/Role	Name	Sign-off function	Complete
	CDHB Board	Approval	
	Capital Investment Committee	Recommendation	
	Ministry of Health	Approval	



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Executive summary

The purpose of this programme business case is to seek the endorsement of the Capital Investment Committee and the approval of the Ministry of Health for the design and construction programme for mental health buildings on the Hillmorton site. The overall programme of work reaches out over 20 years and the estimated programme cost, including \$203m of escalation, is \$860m.

This programme business case seeks formal approval from the Capital Investment Committee to start the preferred programme of work as follows:

- 1. Tender for and appoint design consultants for Stages 1a and 1b of the programme of work.
- 2. Approve enabling site infrastructure works (\$100m) for the programme business case including for stages 1a and 1b.
- 3. Approve construction of a 'campus heart' building (1,737 sqm; \$23m) in Stage 1a.
- 4. Proceed directly to developing a detailed business case for the Forensic Rehabilitation and Outpatients building (2,220 sqm; \$38m) in Stage 1a.
- 5. Proceed directly to developing a detailed business case for the Adult Acute Inpatient Services building (10,442 sqm; \$154m) in Stage 1b.

This programme business case has been approved by the Board of Canterbury District Health Board, is supported by Mana Whenua ki Waitaha and has the approval of the clinicians involved in the services.

This programme business case also seeks approval from the Ministry of Health for an injection of equity to cover these costs, which will subsequently be capitalised as part of the construction accounting.

A compelling case for change (the Strategic Case)

In addition to the masterplanning process, we used an Investment Logic Mapping process to reconfirm and develop the existing business problems, likely benefits from this investment, and the programme investment objectives.

The key problems are:

1. Insufficient capacity and increasing demand.

Facilities are end-of-life, amongst the worst in the country and lack the ability to be expanded or reconfigured to meet future demand.

- 3. Facilities are not fit for clinical purpose; they inhibit contemporary service delivery and create safety risk for consumers and staff.
- 4. Current site configuration does not enable the consolidation or expansion of mental health inpatient services on the Hillmorton site.



Demand is increasing, occupancy is already high and bed projections indicate a need for increased capacity

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Canterbury's population has increased significantly post-quakes and the demographic profile is changing rapidly. Canterbury's population for 2019/20 was 570,610 (11.5 per cent of the national population) making it the second largest DHB by population in New Zealand and the sixth fastest growing over the last five years (7 per cent increase).

In addition to the increasing general population, there is a partially implemented and planned increase in the prison muster in Canterbury that will see capacity increase by 45 per cent from 1,307 to 1,900.

Our Child, Adolescent and Family and Adult Community Services have seen a steady increase in contacts over the last 10 years. A proportion of those that have contact with these services will likely go on to require inpatient care in the future. We can surmise that this increase in contacts will have a follow-on impact on demand for inpatient services.

The current Adult Acute Inpatient Service building is significantly under-capacity (64 beds):

- Daily occupancy is, averaged by year, above capacity (consistently at 120 per cent). While some of this over-occupancy is dampened by appropriate leave or sleepovers in other units, there is still a lack of beds.
- Previous analysis by the service has shown that about 25 per cent of consumers were not acutely unwell but they could not be discharged due to a lack of appropriate supported accommodation in the community. This shortage is unlikely to be resolved even in the medium term.

These two dynamics can impact on other consumers as they may be discharged faster than is desirable (i.e. after suboptimal care time) to allow beds to be available for new admissions. There are two consequences:

- The consequence of over-occupancy is reduced length of stay. The average length of stay for Canterbury (16.7 days in 2018/19) has decreased over the last four years and is lower than the national average length of stay (18.2 days).
- The consequence of early discharge is higher readmission rates. The 28-day readmission rate for Canterbury (21.8 per cent in 2018/19) has increased over the last four years.
 Canterbury's rate is higher than the national rate (16.2 per cent) and over double the target rate (≤10 per cent).

Bed projections for the Adult Acute Inpatient Service suggest a future bed capacity requirement of between 80 and 96 beds.

There are currently 37 Forensic Service inpatient beds in Canterbury with bed occupancy consistently at 100 per cent. Demand is expected to grow in line with the increasing prison population in the South Island. Due to high volumes of consumers, the average length of stay is shorter than clinically recommended.





Bed projections for the Forensic Service relate directly to the prison muster and suggest a future bed capacity requirement of between 46 and 54 beds. Approval of this increase in capacity will be dependent on decisions made by the Ministry of Health regarding forensic capacity nationally.

The current site has many challenges; sitewide infrastructure and buildings are in poor condition and are not fit for clinical purpose

During the masterplan process, several challenges with the current Hillmorton Hospital site were documented. These challenges can be attributed to a historic lack of vision for the site, facilities not fit for purpose, and lack of maintenance and development in recent years. Continued under-investment in maintaining and improving these buildings will not deliver value or long-term sustainability for mental health services in Canterbury.

Sitewide infrastructure is inadequate. According to the Health National Asset Management Programme report¹ Hillmorton Hospital had the poorest mean score for mechanical sitewide infrastructure and was among the poorest for electrical sitewide infrastructure. The Beca Sitewide Services report² notes these challenges and proposes a services infrastructure blueprint for the Hillmorton site for the next 20 years. Key proposals include expansion of existing and additional electrical sub-station, expansion of artesian heating and cooling system, expansion of existing and new bore field, new fire ring main and new surface and sewer water drainage connections and swales.

The buildings across the Hillmorton Campus are a variety of ages and are in varying degrees of building condition. The Health National Asset Management Programme report³ notes Canterbury DHB's mean score for condition of its mental health unit buildings was among the five poorest in New Zealand. Three units at Hillmorton scored very poor or poor: Hillmorton Aroha Pai PSAID unit, which provides psychiatric and intellectual disability services (PSAID); Hillmorton Te Awakura South, which provides Adult Acute Inpatient Services; and Hillmorton Tupuna, which provides extended inpatient care.

Many of the facilities have received considerable negative comment by the Chief Ombudsman⁴ and the Clinical Fit for Purpose Assessments⁵. The facilities create significant challenges, including safety risks for consumers and staff. Most of Canterbury DHB's existing mental health facilities are not fit for purpose for contemporary, best-practice service delivery. Consumer and staff incident rates and levels of seclusion are high. Canterbury has seen a steady increase in seclusion duration over the last four years, while nationally there has been a decrease. Canterbury's seclusion hours per person secluded were 47.8 hours in 2018/19 (an increase from 16.8 hours in 2015/16), while nationally it was 48.1 hours in 2018/19 (a decrease from 56.4 hours in 2015/16).

¹ Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The current-state assessment. Wellington: Ministry of Health.

² Beca Limited. 2020. Hillmorton Master Plan – Sitewide Services.

³ Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The current-state assessment. Wellington: Ministry of Health.

⁴ Boshier, P. 2018. Report on an unannounced visit to Te Awakura Inpatient Unit (Canterbury District Health Board) Under the Crimes of Torture Act 1989. Office of the Ombudsman.

⁵ Macfarlane, R. 2019. Clinical Facility Fitness for Purpose Canterbury District Health Board. Ministry of Health.



Three programme investment objectives that respond to the key problems and business needs

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In response to the key problems identified, the following investment objectives were developed and agreed.

- Objective 1 One functional site connected by a 'campus heart' with functional facilities that have flexible spaces with the ability to be expanded or reconfigured to accommodate future growth.
- Objective 2 Fit-for-purpose modern, therapeutic environments that support safe, highquality practice and contemporary service delivery.
- Objective 3 Positive, culturally and therapeutically safe environments that place the consumer and their family/whānau at the centre to support recovery, holistic health and wellness.

A full set of options have been considered (Economic Case)

Design principles and aspirations were established for the whole site redevelopment. A cultural narrative has been developed for the site in collaboration with Manawhenua Ki Waitaha.

During the masterplanning design phase, Klein developed a 'long life, loose fit' strategy. At the high level of design, that meant allowing for consideration of flexible long-term use for the buildings zoned with optimal clinical adjacencies, flows between consumers, staff, visitors and whānau. The masterplan options were all zoned with optimal clinical adjacencies in mind and consideration of the separation of flows between public, consumers and logistics both within buildings and at a site access level.

The site masterplan is complete

The previous work, Indicative and Detailed Business Cases for the Specialist Mental Health Services, and the subsequent Hillmorton Site Masterplan exercise considered the general location of mental health services. A number of site options were considered, and it was then determined the Hillmorton site was the appropriate site to centralise all mental health services.

The critical success factors identified during the site masterplanning were:

1. Co-adjacencies of services to ensure good clinical pathways and support.

 Stage-ability of the whole site development. Consideration of the operational functionality and the staging component (i.e. need to demolish buildings but retain operational services while the new build is in progress).

- 3. Fit for site and expandability.
- 4. Ensuring the site is therapeutic and park-like with ample green space.
- 5. Improving the whole site flow (clinical, walking and vehicular), access and parking.

The site masterplanning exercise has revealed a way of organising the site such that:



- the co-adjacencies of services are strengthened
- services are clustered together on acuity (e.g. adult acute inpatient and forensic inpatient services buildings)

- green spaces are consolidated
- the site can remain operational while construction is underway.

Key drivers and critical success factors shaped the masterplan options

The key drivers of the masterplan options identification process were the need to replace the majority of buildings for flexibility and resilience and to strengthen zoning and flow with roads. The following key drivers and decisions shape the development of masterplan options.

- Retention of the Fergusson building.
- Demolition of the Avon building. This was an early key decision that meant services could keep operating during new builds.
- Creation of a family and child zone and where it would be located.
- Zoning for the whole site according to acuity.

After site masterplanning was complete, the preferred way forward was Option 4 – Main Campus – North and West Sites. This option:

- provides clarity of clinical zoning for the whole campus, including utilisation of the West Campus, and allows for enough inpatient and outpatient capacity for projected growth
- strengthens the three key entry points, providing clear vehicular connections and good pedestrian routes through the site, and links green spaces
- creates a 'central heart' and maximises green space.

This option was well-endorsed by the Canterbury DHB Executive, Board and engagement groups.

The programme staging for the masterplan Option 4 was revisited and three alternative staging options were developed

The programme staging for the masterplan Option 4 was revisited at a stakeholder workshop. This led to a decision to discard the masterplan Option 4 programme staging. Two primary reasons for changing this programme staging were the preference to:

1. Bring clinical capacity onstream earlier. The first new clinical building was not proposed until Stage 2.

Avoiding refurbishment cost. Stage 1A required the refurbishment/upgrade of Te Waimokihi from an old non-clinical building to a clinical facility that would temporarily house Te Whare Mauriora – Forensic Rehabilitation. The proposed West Campus for the new Forensic Rehabilitation and Outpatients building is vacant and can be built on, avoiding full refurbishment cost.

Three options for staging were subsequently developed. All three options include the construction of the Forensic Rehabilitation and Outpatient building on the West Campus in Stage 1A. Option 1 differs from Options 2 and 3 in that only half (40 beds) of the Adult Acute Inpatient Service building is



constructed in Stage 1B. Option 3 differs from Option 2 in that the construction of the Campus Heart building is deferred until Stage 2 of the programme.

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Option 2 is preferred over Option 1 as it brings on additional clinical capacity earlier and does not create the operational risk and additional operating cost associated with Option 1.

Design and construct preferred (Commercial Case)

Canterbury DHB will procure and manage design and construction services using industry standard contracts and while working in the context of the Construction Industry Accord. Canterbury DHB considered other contracting approaches such as Early Contractor Involvement and Early Contractor Engagement, or alliancing. Recent experience of Canterbury DHB-specific projects as well as the wider construction experience in Canterbury has concluded the most appropriate contractual form for a construction of this scale is a separation of design and construction.

The intention is to competitively tender for each tranche of the programme, separate design and construction services. Separation of design from construction will allow lower risk for construction firms when tendering, creating an environment with more certain cost and timeframes.

A civil contractor will be appointed to attend to the site issues of drainage, potable water and other horizontal infrastructure.

Whole-of-life costs are similar across options (Financial Case)

This proposal requires capital spending of between \$844m and \$860m between 2020/21 and 2036/37 (nominal dollars). We show the operating cost and balance sheet effects of the proposal to assist with consideration of whether there is sufficient financial headroom for the proposal to proceed.

Of the total capital expenditure, between 45 per cent and 50 per cent of the total will attract capital charge relief because it relates to new buildings.

Asset-related costs (being depreciation, holding costs and capital charge net of capital charge relief) of between \$430m and \$466m will be incurred for the 17-year period from 2020/21 to 2036/37. The average additional annual charge to the statement of comprehensive revenue and expense will be \$26m in asset-related costs.

We estimate that by 2036/37 an additional \$24m will be required for additional staff and associated overhead relating to the Adult Acute Inpatient Service and Forensic Service facilities.

The whole-of-life costs (\$ million) discounted cash flows are shown below. The whole of life costs for the options are within \$12m of each other.

	Option 1	Option 2	Option 3
Whole of life capital costs	420	432	430



Whole of life operating costs	79	79	79
Total	499	511	510
Annualised	36	37	37

Canterbury DHB is running cash deficits. The DHB has limited reserves with negative working capital of \$19.6 million at 30 June 2019. There are no investment assets. Over the past four years Canterbury DHB has recorded negative free cash flow (i.e. the change in cash position excluding any transfers from the Crown). When an entity has negative free cash flow it must use reserves or seek additional financing.

Canterbury DHB will be seeking Crown equity funding for the cost of construction.

Canterbury DHB will manage construction on Hillmorton through site-specific governance (Management Case)

The site will be operational while construction continues. This poses a set of risks and issues. Canterbury DHB has a Facilities Redevelopment Governance Group that will oversee this project. The DHB will implement a further site-specific governance mechanism, being a Project Control Group. This Project Control Group will be made up of the General Manager of Mental Health Services, the clinical leads for adult acute inpatient and forensic services, facilities management as well as an external construction expert.

A programme manager will be appointed to oversee the project who in turn will appoint external project managers. Rider Levett Bucknall remain as the quantity surveyors and will progressively reestimate costs as the projects move through design to preliminary drawings.

The consequences of doing nothing are unpalatable

Without investment and development, there would be a failure to improve the mental health status and outcomes for consumers:

- The adult inpatient unit can't meet demand.
- Sub-optimal lengths of stay would continue for a large cohort of acute inpatients.
- Readmission rates would remain high.
- Seclusion rates would remain high.
- Incident rates would remain high.

There is a risk of building failure in the medium security forensic inpatient unit that would result in patients being re-housed in other less secure buildings and likely the acute inpatient building. The site's fire safety and water standards are not being met.

CDHB would fail to improve staff wellbeing, workforce effectiveness and efficiency. Staff and consumer injuries would remain unacceptably high.
REFERSED UNDER THE OFFICIAL INFORMATION ACT



1. Introduction

The purpose of this programme business case is to seek the endorsement of the Capital Investment Committee and the approval of the Ministry of Health of the design and construction programme for mental health buildings on the Hillmorton site.

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The purpose of this programme business case is to:

- confirm the strategic context and fit of the proposed investment
- confirm the case for change and the need for investment
- recommend a preferred programme and a preferred way forward for further development of the investment proposal
- identify the projects that will support the delivery of the programme, including proposed stages, and
- seek the early approval of [decision-makers]
 - agreement in principle to the preferred way forward
 - approval to develop subsequent stage and/or project-based business cases (Detailed Business Case or Single-Stage Business Case, as appropriate).

In addition, we have embedded a detailed business case for site infrastructure works for stages 1A and 1B and additional information for stages 1A and 1B of the programme.

This programme business case follows the Treasury Better Business Cases guidance and is organised around the five-case model, which:

- is supported by a compelling case for change—the Strategic Case
- optimises value for money—the Economic Case
- is commercially viable—the Commercial Case
- is financially affordable—the Financial Case
- is achievable—the Management Case.

This programme business case and detailed business case for site infrastructure works was developed in consultation with key CDHB stakeholders and builds on previous work completed and documented in the following reports:

- Hillmorton Site Masterplan⁶ (Klein 2020)
- Hillmorton Master Plan Sitewide Services⁷ (Beca 2020)
- Cultural Narrative: Specialist Mental Health Services, Hillmorton⁸ (Parata-Goodall 2020)

⁶ Klein. 2020. Hillmorton Site Masterplan: Masterplan Report.

⁷ Beca Limited. 2020. Hillmorton Master Plan – Sitewide Services

⁸ Parata-Goodall, P. 2020. Cultural Narrative: Specialist Mental Health Services, Hillmorton.



Part One: Programme Business Case

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REFERSEDUNDERTHEOFICIAL MEDRAMATION ACT



2. Strategic case: making the case for change

The strategic case confirms the strategic context for the investment proposal, defines the problem and investment objectives, and describes the current arrangements and business needs along with expected benefits of the investment.

2.1 Strategic context

The strategic context provides an overview of the organisation and the outcomes that it is seeking to achieve, or contribute to, through its operations.

2.1.1 Organisational overview

Canterbury District Health Board (CDHB) is responsible for planning, funding and providing health services for its population of 578,340 people (2019/20).⁹ Its mission is to improve, promote and protect the health of the people in the community and foster the well-being and independence of people who experience disabilities and reduce disparities.¹⁰ CDHB is New Zealand's second largest district health board (DHB) both by population size (11.6 per cent of the total New Zealand population) and geographically (26,881 square kilometres), covering the east coast of the South Island from Kaikoura district in the north to Ashburton in the south, as well as the Chatham Islands.

CDHB employs more than 10,700 staff, making it the largest employer in the South Island.¹¹

The DHB's annual plan¹² describes six areas of focus:

- population levels and meeting demand
- primary and community care
- equity across mental health services
- young people
- workforce sustainability
- building facilities and how climate change is being considered.

A whole-of-Canterbury health system in line with the New Zealand Health Strategy

In line with the New Zealand Health Strategy,¹³ CDHB is committed to planning services as a 'wholeof-Canterbury health system', working in partnership with other health service providers and with their

⁹ Canterbury District Health Board Statement of Intent 2019–2023

¹⁰ Canterbury District Health Board Annual Plan 2018/2019

¹¹ Canterbury District Health Board Statement of Intent 2019–2023

¹² Canterbury District Health Board Annual Plan 2018/2019

¹³ <u>https://www.health.govt.nz/publication/new-zealand-health-strategy-2016</u>



communities to design and deliver service solutions to meet the changing needs of the Canterbury population.¹⁴

Through an alliance framework, CDHB shares a joint vision for the health system with its clinically led alliance partners and works with them to improve health outcomes for the shared population. This includes the Canterbury Clinical Network (CCN) District Alliance and the South Island Regional Alliance with four partner South Island DHBs (Nelson Marlborough, West Coast, South Canterbury and Southern).

2.1.2 Alignment to existing strategies

This investment proposal aligns to the following Government, regional and organisational policies, strategies and goals. Specific policies and strategies are briefly described along with how the investment aligns with or supports delivery.

He Ara Ōranga sets the direction nationally

Widespread concern about mental health services and calls for a wide-ranging inquiry from service users, their families and whānau, people affected by suicide, people working in health, media, iwi and advocacy groups led to the announcement of the Government Inquiry into Mental Health and Addiction. The National Inquiry Report, He Ara Ōranga 2018, describes the need for change and for a new direction, which:

- puts people at the centre
- emphasises wellbeing and community
- provides more prevention and early intervention
- offers expanded access to services and wider treatment options
- brings treatment closer to home
- delivers more Māori-centric approaches, whānau and community-based responses and services
- calls for cross-government action.

The report also highlights inequitable outcomes that exist across the system, especially for Māori.

During the Inquiry, frequent complaints were made about inadequate environments, reflecting the 'poor cousin' status of mental health and addiction within DHBs. People described depressing inpatient facilities that were not fit for purpose and were poorly maintained, which hindered rather than helped recovery.¹⁵

¹⁴ https://www.cdhb.health.nz/about-us/canterbury-health-system/

¹⁵ He Ara Öranga Report of the Government Inquiry into Mental Health and Addiction November 2018



Kia Kaha, Kia Māia, Kia Ora Aotearoa: COVID-19 Psychosocial and Mental Wellbeing Recovery Plan

The goal of the recovery framework¹⁶ is to protect and enhance people's mental wellbeing so that they can adapt and thrive after their lives have been disrupted by the COVID-19 pandemic. It has been designed to guide a coordinated effort across national, regional and local levels to support wellbeing.

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The plan is intended to guide actions for the next 12–18 months but recognises that recovery and adapting to a new reality is likely to take several years.

The plan has been developed based on six guiding principles: people and whānau centred, community-led, uphold Te Tiriti o Waitangi, achieve equity, protect human rights and work together. These principles guide five focus areas for action, which are to:

- collectively build the social and economic foundations for psychosocial and economic wellbeing
- empower community-led solutions
- equip people to look after their own mental wellbeing
- strengthen mental health and addiction supports in communities
- support specialist mental health and addiction services.

Whakamaua: Māori Health Action Plan 2020–2025

Whakamaua: Māori Health Action Plan 2020–2025¹⁷ sets the Government's direction for Māori health advancement over the next five years. It outlines a suite of objectives and priority areas with tangible actions that can be implemented to achieve high-level outcomes that will contribute to pae ora (healthy futures) for Māori.

The plan guides the Ministry of Health and the whole health and disability system to give practical effect to He Korowai Oranga. Achieving the actions listed in this plan will contribute to the Government's wellbeing agenda and priorities for the health and disability system, including improving child, mental and general wellbeing, by developing a strong and equitable public health and disability system. The four main outcomes are:

1. Iwi, hapū, whānau and Māori communities can exercise their authority to improve their health and wellbeing.

The health and disability system is fair and sustainable and delivers more equitable outcomes for Māori.

3. The health and disability system addresses racism and discrimination in all its forms.

¹⁶ Ministry of Health. 2020. Kia Kaha, Kia Māia, Kia Ora Aotearoa: COVID-19 Psychosocial and Mental Wellbeing Recovery Plan. Wellington: Ministry of Health.

¹⁷ Ministry of Health. 2020. Whakamaua: Māori Health Action Plan 2020–2025. Wellington: Ministry of Health.



4. The inclusion and protection of mātauranga Māori throughout the health and disability system.

The Mental Health and Addiction Service Level Alliance sets the regional direction

By working collaboratively, South Island DHBs can strengthen regional integration of services and improve the quality, access and sustainability of mental health services. The Mental Health & Addictions Service Level Alliance (MH&A SLA)¹⁸ provides advice, guidance and direction to the mental health sector to strengthen integration while improving value for money and delivering improved outcomes for people using services. Where people in Te Waipounamu/South Island need assessment, treatment and support to improve their mental health and wellbeing, they will be able to access the interventions they need from a range of effective and well-integrated services.

The MH&A SLA has been formed to provide advice, guidance and direction to the South Island mental health sector through:

- best integration of funding and population requirements for the South Island
- providing an integrated service across the continuum of primary, community, secondary and tertiary services.

Seven key focus areas set the direction of this work plan:

- Alcohol and Other Drug Services
- Youth Forensic
- Workforce Development
- Mental Health and Addiction Service capacity for people with high and complex needs
- People with Low Prevalence Disorders
- Adult Forensic Services
- Suicide Prevention and Actions.

Other areas of focus include earlier intervention, investment and preventative care, increased home and community-based care, and new technology and information systems.

Specialist Mental Health Services purpose, strategy and cultural narrative

The core purpose of Specialist Mental Health Services is to provide safe, compassionate and effective services that enable people with serious or acute mental disorders in their recovery. The five strategic pillars¹⁹ are outlined in Figure 1.

¹⁸ <u>https://www.sialliance.health.nz/our-priorities/mental-health--addiction-services/</u>

¹⁹ Canterbury District Health Board Specialist Mental Health Services 2019. Nā ēnei tikanga ka ora hinengaro ai, Purpose and Strategy.





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Figure 1 The five strategic pillars for Specialist Mental Health Services

A cultural narrative for Specialist Mental Health Services was developed in 2020. The purpose is to:²⁰

- provide an insight into the local history and cultural mindset
- encourage the opportunity to consider how SMHS Hillmorton might think about its connection and engagement with the whenua, the people, their stories and the history of this place.

In this case, this narrative takes a look at some of the aspects which underpin Ngāi Tūāhuriri understanding and engagement with hauora. It brings forth a view into their values, traditions and history, recognising the rights and guarantees provided under the Treaty of Waitangi. Ngāi Tūāhuriri are mana whenua, the local people of this place. They have a firmly established whakapapa connection via their ancestor Tūāhuriri, back through time to the gods, to Papatūānuku and Ranginui and Pokohāruatepō.

Health and wellbeing are critical to the ongoing survival of the hapū and iwi. In the following statement issued by Te Maire Tau [Te Papa Hauora Health Precinct Advisory Council, 2018], the Upoko Rūnanga (senior spokesperson) for Ngāi Tūāhuriri, Te Maire, aptly sums up the Ngāi Tūāhuriri position on the status of health. It is fair to say that there have been many trials and tribulations and the journey is not yet over. However, it is clear that human health is directly linked to the health of the environment. To achieve a state of wellness and wellbeing, then a holistic approach is required.

²⁰ Parata-Goddall, P. 2020. Cultural Narrative: Specialist Mental Health Services, Hillmorton.





The narrative provides cultural context and background from the perspective of mana whenua, Ngāi Tūāhuriri, with the story told from the perspective of the ancestors.

The underlying narrative talks about the connection of land and water to people. It also begins to unpack the story of Ngāi Tahu's struggle to remain an equal in their own land.

Mana whenua seek the opportunity to work collaboratively to bring their stories back to the surface. Together we can make a difference and build a strong bicultural whāriki on which to welcome and embrace diversity. Mana whenua envisions a world where there is a balance of visual cultural indicators and sense of cultural wellbeing.

2.2 Hillmorton is home to CDHB and regional Mental Health and Addiction Services

The activity that is carried on with the support of the site and facilities of Hillmorton is both extensive and varied.

Mental Health and Addictions Services are grouped into five service clusters that provide a number of inpatient, community-based and mobile services throughout Canterbury. The five service clusters are (Figure 2):

- 1. Adult Mental Health Services
- 2. Forensic Services
- 3. Intellectually Disabled Persons Health Services
- 4. Specialty and Addiction Services
- 5. Child, Adolescent and Family Services.

Te Korowai Atawhai – Māori Mental Health Service, supports development and practice of hauora Māori through Pūkenga Atawhai (Specialist Māori Mental Health Workers) embedded within these services.

Specialist Mental Health Services are currently provided across three hospital campuses (Hillmorton, Christchurch and Princess Margaret). In 2017 and 2018, the indicative²¹ and detailed business cases²² for the on-going delivery of SMHS outlined options and recommended the consolidation all SMHS together on to one site at Hillmorton Hospital Campus.

Hillmorton Hospital currently provides 142 beds for the CDHB Mental Health and Addictions Services. Some of these beds are regional beds that support specialty services for the whole of the South Island. The Forensic, Eating Disorders, Alcohol and Drug, and Child, Adolescent, and Family (CAF) Services provide regional inpatient beds and consultation liaison. Adult and CAF community services are also provided North to Kaikoura and South to Ashburton.

²¹ EY. 2017. Indicative business case for the on-going delivery of specialist mental health services.

²² EY. 2018. Detailed business case for the on-going delivery of specialist mental health services.



Figure 2 provides summary information for each inpatient service including current location and number of beds. See Table 1 at the end of this section for details on admission and average length of stay (ALOS) for the last five years.



Figure 2 Mental Health and Addictions Service provision at Hillmorton Hospital, existing and planned

Source: Klein. 2020. Hillmorton Site Masterplan: Masterplan report.

2.2.1.1 Adult Mental Health Services

Inpatient:

- Te Awakura Adult Acute Inpatient Services is an open inpatient facility for adults with acute mental illness that requires 24-hour hospital care. Te Awakura is made up of four inpatient units (North, South, East and West) that service areas of Christchurch and correlate with outpatient teams. Te Awakura services the Canterbury region from Ashburton to Kaikoura.
 - Tupuna Villa Extended Care is an inpatient extended care unit providing 24-hour care and support for people with mental health issues who require a longer stay in hospital than what the acute inpatient unit can provide. The team assists the consumer to maintain their current skills and learn new ones in order to move out to live in the community.
- Seager Clinic High and Complex Needs is an inpatient rehabilitation unit which offers a recovery-based programme aimed at enabling people with mental health issues to live fulfilling lives in the community.

Outpatient:



Adult Community Mental Health Services (East, North, South, West, Rural, Ashburton) – is
responsible for different geographical areas of Christchurch and outlying regions. It
provides community-based assessment, treatment and support services, including
urgent/emergency intervention, which are undertaken by the Crisis Resolution function of
the team, treatment and follow-up care, support and education for clients, families and
carers, and links to community resources and services. Psychiatric Consultation and Liaison
services are based at Christchurch Hospital for inpatients.

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- Hereford Centre Assertive Outreach Team offers a range of assertive outreach to individuals with mental illnesses whose needs require more oversight than those provided by general adult services.
- Totara House Early Intervention in Psychosis Service is a specialist multidisciplinary service for young people (18–30 years) who are experiencing their first episode of a mental illness. A range of services are provided including community treatment and support, group programmes, and education about psychosis.

2.2.1.2 Forensic Services

Forensic mental health services provide specialist care for people who, as a result of mental illness, have or may have seriously offended or are assessed as high risk for serious offending.

The Canterbury Regional Forensic Psychiatric Service (CRFPS) is a regional service covering Canterbury, West Coast, South Canterbury and Nelson Marlborough. The Forensic Service consists of:

Inpatient:

- Te Whare Manaaki medium secure, locked, inpatient unit with a focus on acute admission. Admission is most commonly acute, directly from the courts or prisons, although some admissions may be known consumers, who have destabilised in community NGO facilities.
- Te Whare Hohou Roko medium secure, locked, extended care, rehabilitation unit. Admissions are usually from the adjacent Te Whare Manaaki. Two beds are regional beds for admissions from Southern DHB.
- Te Whare Mauriora minimum secure, open, inpatient rehabilitation unit for consumers who require ongoing support in preparation for transitioning into the community. The unit has a clear focus on rehabilitation and the principles of recovery in the context of mental health and in the context of their offending. Least restrictive practice underpins the approach in the unit.

Outpatient:

 Forensic Community Team (Te Whare Rangihau) – provides care for people with a mental illness that have police, court and/or prison involvement and require assertive outpatient care.



2.2.1.3 Intellectually Disabled Persons' Health Services

Inpatient:

 Psychiatric Services for Adults with an Intellectual Disability (PSAID) – is a specialist inpatient unit that provides treatment of mental health disorders for adults with intellectual disabilities. Complex physical comorbidities are frequently present. The service is provided for the Canterbury region.

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 Assessment, Treatment and Rehabilitation (AT&R) for Intellectual Disability Unit – provides secure inpatient assessment, or treatment and rehabilitation for people with intellectual disabilities and/or significant risk or challenging behaviour.

Outpatient:

- PSAID Community Team provides comprehensive mental health assessment and treatment, including case management when needed. This location close to the inpatient unit allows for support to the inpatient team and consultation for PSAID consumers living in the community.
- Intellectual Disability Liaison Team (IDLT) is for people with an intellectual disability who have been charged with an offence and are care recipients of the Intellectual Disability (Compulsory Care and Rehabilitation) Act.

2.2.1.4 Specialty and Addiction Services

CDHB SMHS Specialty & Addictions Service provides tertiary-level specialist mental health services as part of the South Island Mental Health Alliance.

The service provides a range of sub-specialties for adults covering mental health assessment, risk assessment and treatment of severe conditions with a comprehensive multi-disciplinary approach.

Alcohol and Drug Services

- Kennedy Unit Alcohol and Drug provides medical detoxification for clients with identified complications associated with alcohol and drug withdrawal as part of a planned course of treatment.
- **Community Alcohol and Drug Service** provides assessments and individual and group outpatient treatment for people that need assistance with moderate to severe alcohol and/or other drug dependence and a significant mental health problem.
 - **Christchurch Opioid Recovery Service** provides case management and opiate substitution treatment in the community.

The Alcohol and Drug Service works in close collaboration with NGO partners. There are a number of pathways into and through the Alcohol and Drug Services in Canterbury.

Anxiety Disorders Service

This is a community-based team that provides a specialist service focused on assessment and treatment for consumers with a primary anxiety disorder meeting severe criterion.



Eating Disorders Service

 Inpatient – the South Island Eating Disorders Service (SIEDS) provides inpatient treatment, education and liaison services for people with a diagnosed eating disorder under the case of a South Island Mental Health Service.

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Community Team – provides outpatient treatment for people who live in the CDHB area.
 The team provides education, liaison, training and case consultation to community services throughout the South Island.

Mothers and Babies Mental Health Service

The Mothers and Babies Mental Health Service is a specialist service providing perinatal mental health care incorporating inpatient and outpatient care, education, training and consult liaison, for the treatment of mothers who are pregnant or have babies up to one year old.

It provides consultation to mothers with an existing mental illness who are planning to become pregnant, and specialist consultation to other services (e.g. Primary Care) who are providing treatment for less severely unwell mothers. The level of care is tailored to the mother, baby and whānau, and takes into account the local context.

The service operates as a hub-and-spoke model, with the Mothers and Babies Service acting as a centre of expertise, providing treatment, supervision, clinical consultation and input into workforce development in perinatal care in the South Island. The ultimate goal is that every mother with severe mental health problems in the South Island has access to appropriate specialist care.

- Inpatient provides inpatient treatment for mothers or primary caregivers with or without their baby.
- Community Team provides outpatient treatment for people who live in the CDHB area. The team provides education, liaison, training and case consultation to community services throughout the South Island.

2.2.1.5 Child, Adolescent and Family Services

 Inpatient – is a specialist regional (South Island) treatment and assessment service for children and adolescents who have severe psychiatric, emotional, behavioural, or developmental disorders.

Community and Outreach – operates primarily from two community-based teams, North and South Community and Outreach. The focus is supporting the child and their whānau through assessment and treatment.

 In addition to the North and South teams, the service operates several specialist teams: Youth Forensic Team, for children and youth who are referred from the courts, and the Children in Care Team, for children who are under the care of Oranga Tamariki.

2.2.1.6 Te Korowai Atawhai – Māori Mental Health Service

Te Korowai Atawhai (Māori Mental Health Service) is an integral part of the service provision for SMHS for consumers, whānau, visitors and staff.



Te Korowai Atawhai works to enhance the delivery and quality of mental health services provided to tangata whaiora mainly through the mahi of Pūkenga Atawhai (Specialist Māori Mental Health rane of the second seco Workers) embedded in multidisciplinary clinical teams across the service clusters. Pūkenga Atawhai provide cultural assessment, support and advice for tangata whaiora, whānau and staff.

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Table 1 Admissions, total and average length of stay for each inpatient service, 2014–15 to 2018–19

Inpatient service	Current location, building	Current bed numbers	Measure	2014–15	2015–16	2016–17	2017–18	2018–19
			Admission	1238	1318	1318	1399	1411
Te Awakura (Adult Acute)	Hillmorton, Building 2	64	Total LOS (days)	25258	25596	26393	27307	25501
	2 anonig 2		ALOS (days)	20.4	19.4	20.0	19.5	18.1
			Admission	9	10	18	13	16
Tupuna (Adult Extended Care)	Hillmorton, Building 8	15	Total LOS (days)	6579	13970	13410	8462	4103
(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			ALOS (days)	731	1397	745	651	256
Seager			Admission	34	33	29	27	32
(Adult High and Complex	трмн	24	Total LOS (days)	15415	8739	8317	8019	8097
Needs)			ALOS (days)	453	265	287	297	253
			Admission	26	28	31	38	38
Te Whare Manaaki (Forensic Acute)	Hillmorton, Building 1	15	Total LOS (days)	4154	4329	6887	5112	3577
			ALOS (days)	160	155	222	135	94
	Hillmorton, Building 1	9	Admission	1	0	5	3	7
Te Whare Hohou Roko (Forensic Extended Care)			Total LOS (days)	332	0	5804	5001	8314
			ALOS (days)	332	0	1161	1667	1188
		13	Admission	15	8	16	20	24
Te Whare Mauriora (Forensic Rehabilitation)	Hillmorton, Building 5		Total LOS (days)	1682	2489	7664	7871	3342
(,	building 5		ALOS (days)	112	311	479	394	139
Areha Dai DCAID	Hillmorton, Building 3	14	Admission	69	58	68	69	55
Arona Pai - PSAID			Total LOS (days)	4374	10953	3110	3470	2837
P-1-1								

Confidential



(Psychiatric Services for Adults with an Intellectual Disability)			ALOS (days)	63	189	46	50	52
Assessment Treatment &			Admission	23	25	27	28	20
Rehabilitation (Intellectual	Hillmorton, Building 3	6	Total LOS (days)	3392	898	2410	1667	524
Disability)	building b		ALOS (days)	147	36	89	60	26
			Admission	280	398	423	352	354
Kennedy (Medical Detoxification)	Hillmorton, Building 5	6	Total LOS (days)	1859	1876	1800	1689	1701
	2 an an ig 2		ALOS (days)	6.6	4.7	4.3	4.8	4.8
			Admission	82	56	65	64	53
Eating Disorders	ТРМН	7	Total LOS (days)	2329	2820	2544	2487	2542
			ALOS (days)	28.4	50.4	39.1	38.9	48.0
			Admission	51	57	65	64	63
Mothers and Babies	ТРНМ	6	Total LOS (days)	3105	2924	2664	2498	2715
			ALOS (days)	61	51	41	39	43
		X	Admission	249	187	217	245	265
Child, Adolescent and Family	ТРМН	16	Total LOS (days)	4431	4157	3807	4307	4499
			ALOS (days)	1238	1318	1318	1399	1411
Source: CDHB data								
www.thinkSapere.com			Confidentia	al				

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2.3 There are compelling reasons to update Hillmorton's facilities

During the masterplanning process, workshops with key stakeholders were held to consider drivers for change and key problems. These drivers were reconfirmed and further developed at facilitated workshops with the services. An Investment Logic Mapping (ILM) process was used to identify the existing business problems, likely benefits expected from the investment, and the programme investment objectives.

The key stakeholders agreed the following key problems and investment objectives at a programme level.

Below the drivers for change, key problems, investment objectives and business needs at a programme level are discussed.

2.3.1 Increasing demand on services as a result of Canterbury's unique context

In addition to the increasing demand for mental health services across New Zealand, Canterbury has experienced several significant stressors over the past 10 years including earthquakes (2010, 2011 and 2016), the mosque terrorist attack (2019), floods and fire. It is well documented that significant disasters impact the vulnerability, psychosocial wellbeing and mental health of sections of the population. It was recognised that there will be an ongoing increase in demand for mental health services across the Canterbury region due to the delayed effects for many people.

Canterbury's population is growing and the demographic profile is changing

Canterbury's population has increased significantly post-quakes and the demographic profile is changing rapidly. These factors have brought challenges in coping with increased volumes, complexity and changing needs. Canterbury's population for 2019/20 was 570,610 (11.5 per cent of the national population) making it the second largest DHB by population in New Zealand and the sixth fastest growing over the last five years (7 per cent increase).

- Canterbury's Māori population (over 55,000) is the sixth largest in New Zealand and fastest
 Growing (11.5 per cent) in New Zealand over the last five years.
 - Canterbury's Pacific population (nearly 16,000) is the fifth largest and fastest growing (15.4 per cent) in New Zealand over the last five years.
- Canterbury's Asian population (nearly 72,000) is the fourth largest and second fastest growing (36.9 per cent) in New Zealand over the last five years.

In addition to the increasing general population, there is a partially implemented and planned increase in the prison muster in Canterbury that will see capacity increase by 45 per cent from 1,307 to 1,900. Prison capacity has a direct relationship with the demand on Te Whare Manaaki – the Forensic Acute Admission Unit.



Figure 3 shows the number of people that had contact with a mental health service each year. Both Child, Adolescent and Family (CAF) and Adult Community Services (ACS) have seen a steady increase in contacts between 2009/10 and 2019/20, 48 per cent and 32 per cent, respectively. A proportion of those that have contact with CAF or ACS may go on require inpatient care in the future. We can surmise that this increase in contacts with CAF and ACS may have a follow-on impact on demand for inpatient services.



Figure 3 Number of people with mental health service contact¹

Source: CDHB data

1 A contact may be with a consumer, their family member or an external organisation (e.g. school, G.P.).

- * CAF Child, Adolescent and Family, data includes CAF Link, Youth Specialty Service, Child & Family Service, CAF Rural, Youth Forensic, Schools Based Team, Children in Care, CAF South, CAF North, CAF under 5.
- ^ Adult Community Services, data includes Single Point of Entry, Psychiatric Emergency Service, North, South, East, West, Ashburton and Rural teams.

Occupancy is high, and bed projections indicate a need for increased capacity across Adult Acute and Forensic Inpatient Services

Adult Acute Inpatient Services

Demand drivers for Adult Acute Inpatient Services include:

- increasing population and changing demographic profile in the Canterbury area
- drug use (not the largest driver but accounts for about one guarter of consumers and increases the risk profile for the service. An admission to an inpatient facility is not always the right place but there may be no other suitable option.
- increasing complexity and acuity of consumers due to comorbidities.

There are currently 64 Adult Acute Inpatient Service beds for Canterbury this has remained static since 2000 and is significantly under-capacity. Daily occupancy for the Adult Acute Inpatient Service is, averaged by year, above capacity (Figure 4). While some of this over-occupancy is dampened by appropriate leave or sleepovers in other units (or outliers), there is still a lack of beds. Previous analysis



by the service has shown that about 25 per cent of consumers in the units were not acutely unwell but they could not be discharged due to a lack of appropriate supported accommodation in the community. This can impact on other consumers on the ward as they may be discharged faster than is desirable to allow beds to be available for new admissions. The consequence of early discharge is high readmission rates. Despite alternative community options, demand for inpatient beds has not decreased.

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Figure 4 Average number of Te Awakura (Adult Acute Inpatient Service) consumers under care and sleeping at midnight by month, January 2015–June 2020



Source: CDHB data

It is difficult to determine, but CDHB staff agree that the current 64 Adult Acute Inpatient Service beds are insufficient and more will be required. The bed projections detailed below for the Adult Acute Inpatient Service suggest a future bed capacity requirement of between 80 and 96 beds.

Using historic service utilisation data, four methodologies for generating the baseline were explored.

Method 1.	Average admission rate for the financial years ending 2010 to 2019, using the
	financial year ending 2019 average length of stay.
Method 2.	Average admission rate for the financial years ending 2010 to 2019 using the
S	financial years ending 2017 to 2019 average length of stay.
Method 3.	Trend projection of bed days per capita using the financial years ending 2010 to
	2019 as the historic period.
Method 4.	Average bed days per capita for the financial years ending 2010 to 2019.

The results of applying these methodologies to CDHB total population growth is shown in Figure 5. CDHB staff agreed that the Methods 1 and 3 were the most realistic.





Figure 5 Baseline bed estimates for the Adult Acute Inpatient Service, methodology comparison

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Source: CDHB analysis

Depending on which population the projections are based on, future bed requirements differ slightly (Figure 6). For comparison we used Method 1 to explore the differences between three different population groups (based on the 2019 Update to the Population Projections):

- total CDHB population growth
- CDHB population growth for 20–64-year-olds
- CDHB population growth for 20–64-year-olds, adjusted for different rates of admission for different ethnicities.

Restricting the population growth to only 20–64-year-olds decreases future demand projections as much of the overall population growth for CDHB is for those aged 65 and over. Adjusting this population for ethnic disparities increases the projected bed requirements slightly. This is due to:

- Māori and Pasifika have higher admission rates (approximately 2 times and 1.5 times higher than European/Other respectively).
- Māori and Pasifika population growth rates are projected to be higher than European/Other (Māori 2.1 per cent, Pasifika 2.0 per cent, Other 0.4 per cent p.a. CAGR between the financial years ending 2020 to 2031).



Historic Population growth 20-64 population growth Ethnicity adjusted 20-64 growth - AIS Beds Flex Beds --- Flex for Detox Beds 96 92 88 84 Beds 80 76 72 68 64 60 2009/10 2011/12 2013/14 2015/16 2017/18 2019/20 2021/22 2023/24 2025/26 2027/28 2029/30 Year

Figure 6 Comparison of bed requirements for Adult Acute Inpatient Service by population assumption

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Source: Sapere analysis

Forensic Service inpatient beds

Demand drivers for Forensic Service inpatients include:

- Increasing prison population in the South Island. This has a direct relation with forensic mental health growth across the service
- Acuity and risk have increased.
- Acute admission for assessment from Corrections is the primary area of growth.

There are currently 37 Forensic Service inpatient beds in Canterbury with bed occupancy consistently at 100 per cent (Figure 7). There are on average 47 admissions a per year (FYRs 2010 to 2019). Financial years 2018 and 2019 have seen slightly higher admissions (61 and 69 respectively). There is a bottleneck with individuals made Special Patients and the ability to transition to suitable accommodation and support in the community. The flow through is slow. The acute admission area (Te Whare Manaaki) of the service is blocked by transfers in of acutely unwell individuals from the Corrections. This subsequently blocks the ability for admissions directly from the Courts to complete the initial Court-ordered assessments. These people are now remanded into custody.





Figure 7 Percentage of beds occupied at midnight by Forensic Service unit, January 2019–June 2020

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Comparing Canterbury's current number of Forensic Service inpatient beds (37) to the prison muster for Canterbury (1,307) equates to 28.3 beds per 1,000 prison muster. This is higher than the New Zealand average of 24.3 beds per 1,000 prison muster. With the planned increases in prison capacity (taking total capacity to 1,900) and applying the New Zealand average rate (24.3 per 1,000), this equates to a Forensic Service inpatient bed requirement of 46 beds. Applying the Canterbury prison muster rate (28.3 per 1,000) equates to 54 forensic beds (Table 2).

Bed projections for the Forensic Service relate directly to the prison muster and suggest a future bed capacity requirement of between 46 and 54 beds. Approval of this increase in capacity will be dependent on decisions made by the Ministry of Health regarding forensic capacity nationally.

Region	Forensic mental health beds	Prison muster	Beds per 1,000 prison muster
Central	47	2,631	17.9
Midland	35	1,988	17.6
Northern	112	3,488	32.1
South Island	50	1,946	25.7
New Zealand	244	10,053	24.3
Canterbury (current)	37	1,307	28.3
Canterbury (NZ average rate applied)	46	1,900	24.1
Canterbury (Canterbury rate applied)	54	1,900	28.3

Table 2	Comparison	of Forensic	mental hea	Ith beds and	prison muster
					•



Over-occupancy and increasing demand is impacting length of stay and readmission rates

The New Zealand Mental Health and Addictions Key Performance Indicator Programme²³ provide comparative service performance information. Below we present the Adult Acute Inpatient KPIs (to the end of June 2019) for Canterbury compared to national. Table 3 shows that Canterbury has:

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- had a small increase in the number of discharges, while nationally there was a decrease
- a decrease in both average and median LOS, while nationally it has remained stable or increased slightly
- pre-admission and post-discharge community care KPIs closer to the targets than the national
- a 28-day readmission rate that is higher than national rate.

Table 3 Mental Health and Addictions Key Performance Indicators for Adult Acute Inpatient, Canterbury compared to national, 2015/16–2018/19

Indicator	Region	2015/16	2016/17	2017/18	2018/19	Change 17/18 to 18/19
Discharges ¹	Canterbury	1366	1419	1469	1492	1.6%
	National	11486	11580	11544	10404	-9.9%
Average Length of Stay ² (days)	Canterbury	18.6	18.2	19.9	16.7	-16.1%
	National	17.6	17.1	17.6	18.2	3.4%
Median Length of Stay ² (days)	Canterbury	10.5	10.0	10.0	8.0	-20.0%
,0	National	10.0	9.0	9.0	10.0	11.1%
Pre-admission community care ³	Canterbury	67.7%	67.4%	64.5%	68.8%	4.3%
(target ≥75%)	National	57.8%	56.9%	56.3%	56.3%	0.0%
Post discharge community care ⁴	Canterbury	78.8%	78.5%	80.5%	79.6%	-0.9%
(target ≥90%)	National	66.8%	68.1%	68.4%	66.5%	-1.9%
28-day readmission rate ⁵	Canterbury	17.9%	18.2%	20.9%	21.8%	0.9%
(target ≤10%)	National	16.4%	15.3%	16.1%	16.2%	0.1%

Source: https://www.mhakpi.health.nz/Data/Data/ADULT-ENDING-2019-06-30

1. Number of in-scope discharges from the organisation's acute mental health and addiction services inpatient unit(s) closed during the reporting period.

2. Acute inpatient occupied bed nights for in-scope discharges closed during the reporting period.

²³ https://www.mhakpi.health.nz/



- 3. Percentage of overnight discharges from the mental health and addiction service organisation's inpatient unit(s) closed in the reporting period for which a community service contact was recorded in the seven days immediately preceding the day of admission.
- 4. Percentage of overnight discharges from the mental health and addiction service organisation's inpatient unit(s) closed in the reporting period for which a community service contact was recorded in the seven days immediately following that discharge.
- 5. Percentage of overnight discharges from the mental health and addiction service organisation's acute inpatient unit(s) that result in readmission within 28 days of discharge to the same organisation.

2.3.2 Operational changes to manage demand are not enough to achieve our vision

In a submission to the Government inquiry into mental health in 2018²⁴, CDHB noted a number of issues which we set out in this section. There is agreement across the health system and our intersectoral partners that the status quo for mental health service provision is not meeting the needs of our population. The system has been too focused on mental illness and requires reorientation towards a wellbeing system that aims to support people to stay well and healthy and in their own homes.

This reorientation requires physical, social, cultural, policy and spiritual environments that support wellbeing. It relies on members of society providing support and kindness to each other; this was seen following the earthquakes, which coincided with a fall in demand for acute mental health services. This system will provide early support and services to restore people to wellness and highly reactive specialist services for people who become unwell.

Achieving this outcome requires rethinking and refocusing of our efforts. It cannot be done alone, and we believe future mental health and additions approaches will require broader engagement and partnership approaches.

We have a vision for future approaches to mental health and addictions that have an increased focus on keeping people well and early intervention. This vision requires a whole-of-society approach, intersectoral partnership and integration within health; we need to work together.

We believe the future of mental health and addiction approaches needs to be based on the following principles:

- 1. whole-of-society engagement
- 2. intersectoral contributions from across Government entities and the non-Government sector
- 3. integrated responses that are multi-level and co-ordinated through providers of multiple services
- 4. consumer driven
- 5. aligned across the country
- 6. prevention and early intervention
- 7. responsive approaches
- 8. multi-modal interventions
- 9. workforce skilled, engaged, multi-agency

²⁴ He Ara Oranga : Report of the Government Inquiry into Mental Health and Addiction, November 2018.



10. reduce bureaucracy.

We have begun to develop highly effective ways of working with our intersectoral partners to address the mental health and addiction needs of our population in response to these trying circumstances. The Canterbury health and social sectors have engaged in a range of responses that have almost certainly reduced the scale of the post-disaster impacts on our population. Innovation, collaboration and hard work have underpinned the successes. However, these initiatives alone are insufficient to address our ambitions for a population that has high mental wellbeing and is resilient to challenges.

Part of this vision, the continuum of care, always needs to include care and treatment for acute mental disorders and/or distress, provided in a safe, therapeutic inpatient environment.

2.3.3 Sitewide infrastructure and buildings are in poor condition and not fit for clinical purpose

In this section we provide an overview of the condition of Hillmorton's sitewide infrastructure and buildings. More detail on specific infrastructure and buildings is provided in appendices.

Most of CDHB's existing facilities are not fit for purpose for contemporary, best-practice service delivery. They create significant challenges, including safety risks for consumers and staff.

The Health National Asset Management Programme (NAMP) is a key initiative to improve the planning and management of health assets. The process began in 2018–19 to establish a national long-term investment plan founded on a consistent nationwide approach to asset management. Below we highlight key findings for Hillmorton Hospital from the NAMP current-state assessment.²⁵

Hillmorton Hospital had the worst mean score for mechanical sitewide infrastructure and was among the poorest for electrical sitewide infrastructure. Figure 8 and Figure 9 show the mean condition for sitewide mechanical and electrical infrastructure across New Zealand hospital campuses.

²⁵ Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The current-state assessment. Wellington: Ministry of Health.





Figure 8 Mean condition for sitewide mechanical infrastructure at 31 campuses

Source: Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The currentstate assessment. Wellington: Ministry of Health.

Figure 9 Mean condition for sitewide electrical infrastructure at 30 campuses



Source: Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The currentstate assessment. Wellington: Ministry of Health.

Specific comments for the Hillmorton Hospital site were:

Generally, the mechanical services are in average to poor condition. The site heating pipes, and reticulation scored very poor. The site storm water and sewer drain



reticulation scored average to poor. There appears to be no provision for sitewide cooling or cold-water storage.

Generally, the electrical infrastructure is beyond end-of-life. On three occasions, the generator has suffered failure of the dampener and scored poor. The high-voltage substation scored average to poor.

Overall CDHB's mental health unit buildings received an average mean condition score (Figure 10).



Figure 10 Mean condition scores for buildings that house mental health units

Source: Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The currentstate assessment. Wellington: Ministry of Health.

In addition to building condition, Clinical Facilities Fit For Purpose was assessed against nine key design principles. The NAMP report found that over two-thirds of the older mental health units in New Zealand have facility designs that are inadequate for management of patient cohorts, demand pressures, poor maintenance and safety issues.

Figure 11 shows the older mental health units and wards (W) assessed, along with the control unit. It shows the mean overall scores on the nine design principles ranged from good to very poor, with three good, six average, 11 poor and four very poor.

Three units at Hillmorton scored very poor or poor: Hillmorton Aroha Pai PSAID unit, which provides psychiatric and intellectual disability services (PSAID); Hillmorton Te Awakura South, which provides Adult Acute Inpatient Services; and Hillmorton Tupuna, which provides extended inpatient care.

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Figure 11 Mean scores on nine design principles for mental health units

Source: Ministry of Health. 2020. The National Asset Management Programme for district health boards. Report 1: The currentstate assessment. Wellington: Ministry of Health.

Specific comments for the Hillmorton Hospital buildings were:

Aroha Pai – psychiatric service for adults with an intellectual disability – The hot and cold water reticulation scored poor. The local HVAC, building management system and local electrical distribution boards scored average to poor. The heating distribution scored poor.

Te Awakura – adult acute unit – The hot and cold water reticulation scored average to poor. The local HVAC scored average to poor and the heating distribution scored poor.

1974 Tupuna Villa – This building has cladding panels containing asbestos. The switchboards scored average to poor. They appear to be beyond end-of-life, with nuisance tripping of power circuits. The hot and cold water plumbing reticulation scored poor. The central HVAC and heating distribution scored poor.

The buildings across the Hillmorton site are a variety of ages and are in varying degrees of building condition. An asset condition survey by WSP OPUS in 2018²⁶ provided a comprehensive review of the exterior envelope, mechanical, and electrical systems. Figure 12 and Figure 13 provide an overview of the current buildings on the Hillmorton site and their condition.

²⁶ WPS OPUS. 2018. Hillmorton Hospital: Condition assessment of hospital buildings.





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Figure 12 Condition on buildings on Hillmorton's North site

Source: Klein. 2020. Hillmorton Site Masterplan: Masterplan Report.



2.3.4 Canterbury's mental health and addiction sector key performance indicators show an increase in seclusion events and duration

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Below we present the Adult Acute Inpatient KPIs²⁷ (to the end of June 2019) for Canterbury compared to national. These show that Canterbury has seen a steady increase in seclusion events and duration, while nationally there has been a decrease.

The service has a focus on least restrictive practice. However, despite this, the increasing complexity in presentation as a result of drug use and at-risk behaviour, coupled with high occupancy and poor facility design, means at times there are few alternative options. The lack of general circulation space on the units, lack of de-escalation space and lack of flexible ability to cohort consumers are significant drivers of seclusion hours.





Source: https://www.mhakpi.health.nz/Data/Data/ADULT-ENDING-2019-06-30

1. Total hours of seclusion that occurred during the reporting period, irrespective of when the event started or ended.

²⁷ https://www.mhakpi.health.nz/



Figure 15 Duration of seclusion event¹ (average hours) for Adult Acute Inpatient, Canterbury compared to national, 2015/16–2018/19



Source: https://www.mhakpi.health.nz/Data/Data/ADULT-ENDING-2019-06-30

1. Uses the length of stay methodology to represent distribution of duration of seclusion events such as median, average and interquartile ranges. Boxplots are used to show the distribution.

2.3.5 The current site has many challenges

During the masterplan process a number of challenges with the current Hillmorton Hospital site were documented. These challenges can be attributed to lack of vision for the site, facilities not fit for purpose, and lack of maintenance and development in recent years. Continued under-investment in maintaining and improving these buildings will not deliver value or long-term sustainability for mental health services in Canterbury. The sitewide challenges are described below.

- Most buildings were constructed in the latter half of the 20th century, aside from the Avon Administration building which was built in 1930.
- Core services at Hillmorton Hospital are housed in buildings in need of replacement, with asbestos present in most buildings, with the exception of Forensic Services and Oral Health Clinic. These aging buildings do not and cannot comply with current clinical standards.
 - Many of the buildings need replacement due to run-down conditions as well as not being fit for purpose (e.g. Aroha Pai for Intellectually Disabled Psychiatric Health Services require a larger space within the facility and pods for service users who need their own space).
- Many of the existing services have outgrown the facilities and are not future proof.
- Current facilities are constrained to meet demand (e.g. acute services are having to discharging consumers after sub-optimal treatment time).
- The site is missing a 'heart' to bring people together, welcome visitors and service users and provide training/education for staff.
- Inadequate spaces for staff (e.g. Adult Acute Inpatient Service staff spaces are mixed with consumer spaces/no breakout spaces).



- The existing internal road network is difficult to navigate due to ad-hoc development.
- There is no pedestrian circulation across the site; visitors, staff and service users are expected to walk across grass or roading.
- Safe parking is not currently provided for staff members who work night shifts and walk to and from buildings.
- Green spaces are important for rehabilitation and useable; at present secure green spaces/courtyards are limited for service users.
- Energy Centre requires expansion to support any additional services or expansion on the site.

The key problems summarised

- 1. Insufficient capacity and increasing demand.
- 2. Facilities are end-of-life, amongst the worst in the country and lack the ability to be expanded or reconfigured to meet future demand.
- 3. Facilities are not fit for clinical purpose; they inhibit contemporary service delivery and create safety risk for consumers and staff.
- 4. Current site configuration does not enable the consolidation or expansion of mental health inpatient services on the Hillmorton site.

2.4 The consequences of doing nothing are unpalatable.

Without investment and development, there would be a failure to improve the mental health status and outcomes for consumers.

- The adult inpatient unit cannot meet demand.
- Sub-optimal lengths of stay would continue for a large cohort of acute inpatients.
- Readmission rates would remain high.
- Seclusion rates would remain high.
- Incident rates would remain high.

There is a risk of building failure in the medium-security forensic inpatient unit that would result in patients being rehoused in other less secure buildings and likely the acute inpatient building. The site's fire safety and water standards are not being met.

CDHB would fail to improve staff wellbeing, workforce effectiveness and efficiency.



2.5 Our programme investment objectives respond to the key problems and business needs

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Based on information from the masterplan process we undertook a desk-based Investment Logic Mapping (ILM) process to identify the existing business problems, likely benefits expected from the investment, and the programme investment objectives. These desk-based outputs were then tested with the services at facilitated workshops.

The existing arrangements and key problems are described in Sections 2.2.1–2.2.4, with more detail appendicised.

The agreed problem statements have been used to identify the set of investment objectives for the programme. These were developed and agreed with key stakeholders.

The Investment Objectives for the programme are:

- 1. One functional site connected by a 'campus heart' with functional facilities that have flexible spaces with the ability to be expanded or reconfigured to accommodate future growth.
- 2. Fit-for-purpose, modern, therapeutic environments that support safe, high-quality practice and contemporary service delivery.
- 3. Positive, culturally and therapeutically safe environments that place the consumer and their family/whānau at the centre to support recovery, holistic health and wellness.

Specific business needs associated with each of the investment objectives are provided in Table 4.

Table 4 Investment objectives and associated business needs

Objective 1 One functional site connected by a 'campus heart' with functional facilities that have flexible spaces with the ability to be expanded or reconfigured to accommodate future growth.

Business	• Create a 'campus heart' to connect the whole campus and provide space that:
needs	welcomes service users, whānau and visitors
C.	 includes a whare hui – a key space to reflect Tikanga Māori and spiritual approaches including whanaungatanga
	\circ has flexible spaces to host large groups for training, support and gatherings
	 includes a café accessible to all.
	• Flexible and modular inpatient spaces that allow the service to appropriately care for a range of consumer cohorts, needs and allow for adequate separation.
	 Range of services provided on one site to allow efficient delivery of services and to keep staff and consumer connected.
	 Ability to scale inpatient beds to safely accommodate variances in access.



	• Spaces that appropriately support the level of care that is required and can flex to consumer needs including transition spaces and transition routes to other spaces.
	 Ability to alter flow of the unit to support consumer needs/de-escalation or transfer to high care areas.
	 Provision of areas for low-stimulus quiet zones and sensory modulation rooms as alternatives to more restrictive seclusion spaces.
	High-care space.
	Provision of a low security unit to flexibly accommodate different cohorts of
	consumers and for those consumers that do not require forensic services but do need a secure unit.
Objective quality pr	2 Fit-for-purpose modern, therapeutic environments that support safe, high- ractice and contemporary service delivery.
Business	• A building design and fabric, and models of care that are culturally and spiritually safe.
needs	• Fit-for-purpose facilities with contemporary spaces that support a range of clinical, therapy, and constructive social and physical activity-based interventions with the paceessant spaces and tools to manage risk, safety, security and de-escalation
	• Ability to cluster or separate people and provide graduated levels of care
	 Ability for consumers to freely access safe and secure outdoor spaces the majority of the time.
	 Design that supports physical safety, physical health and wellbeing with appropriate indoor physical activity space and secure internal courtyards and green spaces.
	• Design that incorporates a variety of spaces for clinical assessment and consultation (e.g. consult, meeting, interview, medication, low-stimulus, sensory spaces, education and teaching).
	 Facilities with good functional connections to support service delivery and care of whānau. Areas for visitor/family/whānau that are easy to access and child friendly.
	• Well-designed safe and functional spaces for staff that have good visibility, multiple
	exit points and duress response.
	 Accessible for people with physical or other disability needs.
ć	 Accessible for people with physical or other disability needs. All rooms with full ensuites.
C	 exit points and duress response. Accessible for people with physical or other disability needs. All rooms with full ensuites. Appropriate balance between privacy and care/observation.
FA	 exit points and duress response. Accessible for people with physical or other disability needs. All rooms with full ensuites. Appropriate balance between privacy and care/observation. Provision of spaces that embrace cultural and spiritual needs.

Objective 3 Positive, culturally and therapeutically safe environments that place the consumer and their family/whānau at the centre to support recovery, holistic health and wellness.



Business needs	• A separate consumer entry point and admission space that is secure, welcoming, safe and culturally inclusive.
	• A culturally safe and therapeutic environment, natural lighting, and a range of quiet and social spaces. Connectivity with outdoor spaces.
	An environment that supports multi-disciplinary functioning, provides appropriate clinical support and integrates inpatient, rehab and community teams.
	 Ability to support consumers and their whānau within a central zone ('campus heart') in addition to support within the specific service areas.
	• A 'campus heart' that provides a cultural and spiritual space and meeting place to for staff, consumers and their whānau.
	• Service delivered from safe facilities for both consumer and staff (e.g. good visibility and areas with multiple exit points).
	Appropriate whānau spaces on units and in communal areas.
	• Accessible and secure internal courtyards and green that can be freely access most of the time. Shaded seating that can also be used for clinical discussions between clinician and consumers.
	 Supports consumer and whānau-centred practices by providing a range of appropriate spaces that enable consumer/family/whānau inclusiveness from the outset.

2.6 Potential business scope and key service requirements

This investment is to deliver a staged programme of works for the reconfiguration of the Hillmorton Campus and delivery of a number of new SMHS facilities for the people of Canterbury.

2.6.1 Background and scope of this investment

As part of the masterplanning process, a thorough analysis of the existing site and services was undertaken. This process was managed over a series of meetings with key stakeholders and members of the CDHB mental health services engagement group.

Alongside these generic meetings, representatives of every service were met with and a further consultation process was undertaken to gain a more in-depth understanding of current constraints, pressures, areas for improvement and future vision for their respective services. The following represents the key points gleaned from this process, including generic site aspirations.

2.6.2 Service requirements for the Hillmorton Campus

The key requirement for the Hillmorton Campus is to incorporate all SMHS on one functional site to support safe, holistic and effective mental health care for the people of Canterbury. The key service requirements and site design strategies for the Hillmorton Campus were developed with input from all clinical services, who shared many common wishes. These are described in Table 5.



Service requirements and site design strategies	Description
Suitable zoning and improved access and flow for the whole site	Clear zoning of services on the site that reflects the care continuum. Improved wayfinding and access around the site. Keep most vehicular traffic near the perimeter of the site, to enhance pedestrian experience within the site. Walking paths to encourage activity and connection.
Creation of a 'campus heart'	Based around a 'campus heart' that connects the whole campus and provides a flexible space that reflects Tikanga Māori and spiritual approaches. A flexible central space to host large groups, training, support, gatherings that includes a whare hui, whare kai and café for everyone to enjoy.
Facilities that are therapeutic, safe and suitable for each service	Improved facilities to provide a place of refuge and safety; private spaces and spaces to share with whānau. Flexible units and areas that allow for expansion. Ensuite bathrooms for all rooms. A range of therapeutic spaces.
Meet the needs of specific population groups	Ability to cater for varying needs of different cohorts (e.g. younger people, older people, gender). Accessible for consumers and whānau with disabilities.
Facilities for whānau and family	Appropriate and adequate whānau facilities. Access to whānau spaces and recreation zones for therapy, socialisation and support.
Appropriate recreational spaces	A variety of recreational spaces are provided—from quiet spaces to sensory space to spaces for physical activity. Options for group dining and activities, etc. Plenty of green spaces for relaxing, walking and sensory experiences. Native trees and plants to encourage bird life.
Suitable facilities for staff	Staff need a range of clinical and non-clinical spaces, including offices and administration spaces and interview spaces.

Table 5 Key service requirements and site design strategies for the Hillmorton Campus

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2.7 Main benefits

The Treasury's Living Standards Framework (LSF) describes the Four Capitals—natural, human, social, and financial and physical assets—that generate wellbeing.²⁸ The LSF includes 12 domains of current

²⁸ https://treasury.govt.nz/information-and-services/nz-economy/living-standards/our-living-standards-framework


wellbeing, reflecting its current understanding of the things that contribute to how New Zealanders experience wellbeing.

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This proposal is for investment in hospital facilities (physical capital) from which we expect to see benefits in the following domains of wellbeing in the LSF: health, subjective wellbeing, safety and security, cultural identity and time use. IONACT

Stakeholders identified the following benefits at facilitated workshops on 22 July 2020.

Table 6 outlines the expected benefits and their alignment with the LSF.

LSF domain	Benefit	Who benefits?	Direct or indirect?	Possible measures
Health	Improved mental health status and outcomes for consumers Improved ability to meet demand within resources	Consumer Whānau Staff DHB Society	Direct Indirect Direct Indirect	Number of total seclusion hours Change in Health of the Nation Outcome Scale (HoNOS) score (admission compared to discharge) Number of consecutive days at an occupancy rate ≥100%
wellbeing	improved consumer and whānau experience and wellbeing Improved staff wellbeing	Whānau Staff DHB	Indirect Direct Direct	Number of building related complaints/compliments for consumer and whānau Number of days staff are on work related ACC Staff turnover: proportion of staff that transfer or leave a unit relative to other DHB services
Safety & security	Reduced harm to consumer, whānau and staff Increased ability to care for consumers with high and complex needs Improved systems and building resilience to prevent failure/disaster	Consumer Whānau Staff DHB	Direct Indirect Direct	Number of total incidents Number of assaults Number of restraint episodes Number (and severity) of building failure or outage events
Cultural identity	Kaupapa Māori approaches and connection to	Consumer Whānau	Direct Direct	Number of culture-related complaints/compliments

Table 6 Primary expected benefits and measures



9 9 0	culture and identity to support recovery	Society	Indirect	Number of seclusion hours by ethnicity Number of restraints episodes by ethnicity	
Time use	Improved workforce effectiveness and efficiency in service provision	Consumer Whānau Staff DHB	Direct Indirect Direct Direct	Number of sleepovers and incidents as a proxy for reduced clinical/therapeutic time with the consumer Length of therapeutic time during stay (potential measure using TrendCare information when implemented)	ATIONACT
2.8 M	ain risks		•	R	

Main risks 2.8

Risk is an uncertain event or circumstance that, if it occurs, has a negative effect on at least one programme objective. The most significant risks that might prevent, degrade or delay the achievement of the investment objectives are identified and analysed below. All risks will be monitored, managed and updated as the programme progresses. Key risks are set out in Table 7.

Table 7 Initial risk analysis

Risk	Consequence	Likelihood	Risk level
User group – lack of agreement leads to delays in schedule or a design not supported by all users.	Major	Unlikely	\bigcirc
Unexpected costs or cost escalation may result in the need to request additional funding to complete the project.	Serious	Likely	
Construction market may mean it is difficult to engage an appropriate contractor.	Major	Likely	\bigcirc
Delay in construction works impacts overall timeline.	Major	Likely	\bigcirc
Poor integration of contractors may lead to design issues that result in financial and administration issues.	Moderate	Likely	\bigcirc
Discrepancies, design errors in consultants' documentation could lead to quality and financial administration issues.	Major	Unlikely	\bigcirc
The completed building is not fit-for-purpose or does not meets clinical or users' needs.	Major	Unlikely	\bigcirc
Changes to models of care not introduced in a timely manner.	Moderate	Likely	\bigcirc
Unexpected events lead to delays in construction (e.g. weather, natural disaster).	Major	Unlikely	\bigcirc

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Risk	Consequence	Likelihood	Risk level
Ongoing maintenance costs are expensive as buildings not built robustly.	Major	Unlikely	\bigcirc

2.9 Key constraints, dependencies and assumptions

The proposal is subject to the following constraints, dependencies, and assumptions (Table 8).

Management strategies and registers will need to be developed to record management of these and they will need to be carefully monitored and managed during the programme.

Table 8 Key constraints, dependencies and assumptions

Constraints	Notes
Funding availability for capital investment	Capital injection is required – funding approved subject to acceptance of business case
Workforce is available for the construction	There are competing demands including the building of the New Dunedin Hospital
There is considerable investment needed in site infrastructure	The cost of the next building is very high as the enabling infrastructure improvements need to be instructed and commissioned
The Ministry of Health is the client for forensic mental health patients	MoH plans a forecasting exercise of forensic mental health patients out into the future

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3. Economic case: exploring the preferred way forward

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The purpose of the economic case is to identify the preferred programme that optimises value for Government and New Zealand. Having established the strategic context for the investment proposal and established a robust case for change, this part of the Programme Business Case identifies:

- key drivers and critical success factors
- and assesses the programme options (or trade-offs) for delivering the service needs
- a preferred way forward based on the preferred programme.

3.1 The masterplanning process shaped key drivers and critical success factors for the options analysis

Design principles and aspirations were established for the whole site redevelopment. A cultural narrative has been developed for the site and was led by Manawhenua ki Waitaha.

Te Huarahi Hou – A New Journey – Hillmorton to be a place for wellness

This was identified as a guiding principle during the masterplanning work and supports reinvention of the site as a place of wellness.

Te Whare Tapa Wha

- Recognising the importance of the Māori philosophy Te Whare Tapa Wha for a person's wellbeing—how his/her health should be viewed holistically, as a combination of the physical (Tinana), the mental/emotional (Hinengaro), the spiritual (Wairua) and the relational/familial (Whānau). All these aspects should be nurtured interconnectedly, and the new masterplan should facilitate that. This includes:
 - the need for a welcoming entry space for tangata whaiora and whānau
 marae as a store house of spirituality and culture
 - cultural and ecological narrative.

3.1.1 Design principles for the whole site redevelopment

In the early stages of developing the site masterplan, Klein worked with good practice design principles to guide the initial masterplan development.

During the masterplanning design phase, Klein developed a 'long life, loose fit' strategy. At the high level of design, that meant allowing for consideration of flexible long-term use.

The masterplan options were all zoned with optimal clinical adjacencies in mind and consideration of the separation of flows between public, consumers and logistics both within buildings and at a site access level.



The masterplan attempts to echo the following sets of principles.

3.1.2 CDHB's facilities development principles/project aspirations

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CDHB developed a set of generic principles to work towards for all of their facilities redevelopment INFORMATIONACT projects. They are:

- consumer, whānau, family-centred
- safe
- health-promoting
- clinically effective
- lean and efficient
- self-care supported by an integrated system
- environmentally sound
- supporting teaching and learning
- flexible and proactive
- design process
- evidence based
- participatory
- aligned with the transformation of Canterbury's health system.

Key drivers and decisions shaped the masterplan 3.2 options

The key drivers of the masterplan options identification process were the need to replace buildings for flexibility and resilience and to strengthen zoning and flow with roads.

Most of the current buildings on the site are in poor condition. Therefore, extension and/or refurbishment was not an option. In addition, there was an assessment of buildings (on the Annex Road side) that are currently used for other purposes. The following key drivers and decisions shape the development of options:

- Retention of the Fergusson building.
- Demolition of the Avon building. This was an early key decision that freed the site for design and meant services could keep operating during new builds.
- Creation of a family and child zone and where it would be located.
- Zoning for the whole site by acuity.

3.2.1 Critical success factors influencing options choice

The critical success factors identified were:

- 1. **Co-adjacencies of services** to ensure good clinical pathways and support.
 - a) Consumer flow through the wellness journey makes sense.



- b) Ability to surge staff across clinical areas based on unit acuity.
- c) Futureproofing, disaster resilience and long-term capacity resilience.
- d) Creation of service zones with a flow from acute (more secure) services together on the north of the site through to less secure and an increasingly independent feel to the south.

- Stage-ability of the whole site development. Consideration of the operational functionality and the staging component (i.e. need to demolish buildings but retain operational services while the new build is in progress).
- 3. Fit for site and expandability.
 - a) Consideration of the size and resource conditions (e.g. setbacks, proximity to residential housing) of the Western site.
 - b) A desire to have single-level facilities where possible.
- 4. Ensuring the site is therapeutic and park-like with ample green space.
- 5. Improving the whole site flow (clinical, walking and vehicular), access and parking.

Constraints included:

- management of storm water
- parking requirements—there is currently no public transport to the site
- resource conditions (e.g. setbacks from residential housing).

3.3 Programme options identification and assessment

The options development process was primarily undertaken during the development of the SMHS business cases and the masterplanning process. Therefore, the options presented below were shaped by:

- decisions made during the SMHS business cases
- masterplanning options (below).

3.3.1 SMHS IBC and DBC option decisions shaped the masterplan options

A long list of 10 options and three short list variants were considered through the economic case. This long list considered a range of feasible locations (existing PMH site, Hillmorton, Burwood) and also considered an outsourced service delivery model. There was no base or do-minimum case considered as the wholesale reuse of the existing site was not considered economically or clinically viable and has been foreclosed by previous decisions, and doing nothing would result in an unacceptably low level of service. It was considered that all potentially feasible options required new facilities to be provided, somewhere in Christchurch, to treat patients with severe mental illness.²⁹

²⁹ EY (2017). Indicative business case for the on-going delivery of specialist mental health services.



The IBC for SMHS recommended two options (Options 3a and 3b) be progressed to DBC for more detailed and rigorous assessment. Both options were a mixture of new build and refurbished facilities on the Hillmorton Hospital site.³⁰

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3.3.2 Masterplan options

A range of programme options were generated by stakeholders at an options workshop facilitated by Klein held as part of the masterplanning process.

Initially five options were developed. However, 'Option 5 Western Campus not utilised' was discarded prior to the options being worked up because there was not going to be enough space on the Northern Campus for accommodate all the services.

Four masterplan test-of-fit options were explored once the sizes of the buildings were developed and confirmed (Table 9). These took into consideration understanding of critical adjacencies, zoning, ideal vehicular and pedestrian flows, maximisation of green spaces and other design principles, as well as initial input from consultants regarding parking, stormwater management, and site services.

 Advantages
 The western campus (site area 15880m²), being across Annex Road from the main (north) campus, can accommodate a couple of standalone units which do not require a strong clinical link to the larger services on the main campus. We felt that with both Detox and Forensic Rehab, being open and stepped down units, would work well on this site.

 Disadvantages
 Detox is ideally co-located with Adult Acute, sharing a number of flex beds across the two services. An integrated building containing both Adult Acute and Detox will not fit on the Western Campus unless a multi-storey inpatient building is considered.

 However, Forensic Rehab can be located on the west site by itself—see current masterplan.

Option 2 IDPHS (IDPH PSAID & IDPH Forensic) on Western Campus

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³⁰ EY. (2018). Detailed business case for the on-going delivery of specialist mental health services.



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Drawing SK027	

Advantages	IDPHS patient group is very sensitive to external stimulus. Placing this group on the smaller, more secluded site may be beneficial and a good fit.
Disadvantages	IDPH Forensic (AT&R) wishes to be co-located with core Forensics (see discarded Option 3); also, the IDPH PSAID group would like to maintain proximity to other services, especially High & Complex.

Option 3 Forensics + IDPH Forensic (AT&R) on Western Campus



Advantages	Placing core Forensics and IDPH Forensic (AT&R) on the western campus will unlock the north-west portion of the site (Acute/Forensic zone), allowing Adult Acute, a high clinical priority, to be expanded and redeveloped.			
Disadvantages	The large building footprint (taking internal courtyards into consideration) occupies most of the site, leaving insufficient area for green space, engineering and future expansion space. The building also infringes many town planning controls, hence likely to result in a notified Resource Consent, which would be particularly challenging for Forensic Services.			
Option 4 Main Campus – North and West sites				

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	Advantages	Provides clarity of clinical zoning for the whole campus, including utilisation of the Western Campus and allows for sufficient inpatient and outpatient capacity for projected growth.
		Strengthens the three key entry points. Provides clear vehicular connections and provides good pedestrian routes through the site and links green spaces.
		Creates a central heart and maximises green space.
	Disadvantages	



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Stakeholders considered each of the following dimensions when considering programme options.

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Dimension	Description		
Scale, scope and location	In relation to the proposal, what levels of coverage are possible?		
Service solution	How can services be provided?		
Service delivery	Who can deliver the services?		
Implementation	When can services be delivered?		
Funding	How can it be funded?		

Table 10: Possible programme options classified by the five dimensions of choice:

3.3.3 **Options assessment**

The potential programme options in each of the five dimensions were assessed against the investment objectives and critical success factors. The summary assessment of each of the long-list options is included below.

The masterplan options were assessed against the critical success factors (Table). Some of the options were discarded as viable options due to the various clinical or architectural challenges they posed. These discarded options all shared a common trait—seeking to utilise the western campus, currently a CDHB-owned vacant lot to the west of the main campus across Annex Road, to unlock the main site for further development.

Critical success factor	Option 1	Option 2	Option 3	Option 4
Co-adjacencies met	Does not meet	Does not meet	Meets	Meets
Allows staging	Meets	Meets	Does not meet	Meets
Fit for site and expandability	Does not meet	Meets	Does not meet	Meets
Optimises therapeutic green space	Does not meet	Meets	Does not meet	Meets
Site access, flow and parking	Meets	Meets	Meets	Meets
Comment	Detox is ideally co-located with Adult Acute, sharing a number of flex beds across the two services. An integrated building containing both Adult Acute and Detox will not fit on the	IDPH Forensic (AT&R) wishes to be co- located with core Forensics (see Option 3); also, the IDPH PSAID group would like to maintain proximity to other services, especially High & Complex.	The large building footprint (taking internal courtyards into consideration) occupies most of the site, leaving insufficient area for green space, engineering and future expansion	Provides clarity of clinical zoning for the whole campus, including utilisation of the Western Campus and allows for sufficient inpatient and outpatient capacity for projected growth.

Table 11 Assessment of options



3.4 Masterplan Option 4 the preferred way forward

On the basis of the above initial assessment as part of the masterplan process, the preferred way forward was masterplan Option 4 – Main Campus – North and West Sites.



Figure 16 Masterplan Option 4 – Main Campus – North and West Sites

Key aspects of masterplan Option 4 – Main Campus – North and West Sites:

- Replacement of old, not-fit-for-purpose buildings.
- Provides clarity of clinical zoning for the whole campus, including utilisation of the Western Campus.
- Allows for sufficient inpatient and outpatient capacity for projected growth with room for expansion more so than the other options.



- Strengthens the three key site entry points, provides clear vehicle connections. Has roading that allows secure admission to Forensic Services and creates a strengthened acute admitting arrival point for the Adult Acute Inpatient Service.
- Pulls parking to the edges of the site and close to outpatient areas.
- Provides good pedestrian routes through the site and links green spaces.
- Creates a central heart and maximises green spaces.
- Turns the North (main) Campus into a largely inpatient site long-term.
- Utilises the West Campus (off Annex Road) for Forensic Rehab and Forensic Outpatients, with its own drop off, green space and carparking area.
- Validates the location and orientation of the Hillmorton SMHS proposed buildings, with potentially some very minor adjustments.
- Co-locates secure Forensic and Acute Adult Inpatient Units that will include flex beds.
- Co-locates IDPH Forensic (AT&R) with Core Forensics.
- Provides empty chair unit(s) for future expansion and decanting capacity.

This option has been well endorsed by the CDHB executive and engagement groups.

3.4.1 Assumptions

The assumptions and tools used in each of the line items above are summarised below:

3.5 The programme staging was revisited and updated and three alternative options developed

The proposed stages and projects for the programme were identified during the masterplanning process. Table 10 provides an overview of the original programme staging.³¹

The programme staging was revisited at stakeholder workshop held on 8 July 2020. At this workshop a decision was made to discard this programme (masterplan Option 4). Two primary reasons for discarding this programme staging were the preference to:

- 1. Bring clinical capacity on stream earlier. The first new clinical building was not proposed until Stage 2.
- 2. Avoiding refurbishment cost. Stage 1A required the refurbishment/upgrade of Te Waimokihi from an old non-clinical building to a clinical facility that would temporarily house Te Whare Mauriora – Forensic Rehabilitation. The proposed West Campus for the new Forensic Rehabilitation and Outpatients building is vacant and can be built on avoiding full refurbishment cost.

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³¹ Klein. 2020. Hillmorton Site Masterplan: Masterplan Report.



 Table 10 Original masterplan programme staging: Stage 1 and 1A Construct Campus Heart and Fergusson OPD

 Extension/refurbishment
 Stage
 Required actions

 1
 a) Move community dental to South Campus

	 b) Develop carparking outside Fergusson on Sylvan Street c) Create additional entrance form Sylvan Street for staff and BOH d) Construct 1200m² stormwater detention basin. e) Relocation of existing HV substation
1A	f) Fergusson refurbishment and extension
	 i. refurbish vacant space left behind by relocated Hospital Dental ii. extent of extension to be determined – end of wings or fill in courtyards
	g) Construct Campus Heart
	h) Decant services from Avon Building to Fergusson/Campus Heart
	j) Decant Te Waimokihi to new build, then refurbish/upgrade Te Waimokihi
	k) Decant Te Whare Mauri Ora to upgraded Te Waimokihi
	I) Demolish Te Whare Mauri Ora
2	a) Adult Inpatient Service (AIS)/Detox + Flex new build phase 1
	b) Partial decanting of Te Awakura
	c) Partial demolition of Te Awakura d) Decapt of Forensic Services to remaining Te Awakura
	e) Northern energy centre and bore field new build to service northern portion of campus.
	f) Construct 2000m ² stormwater detention basin
3	a) Forensic Services new build phase 1
	b) Decant Forensic Services from Te Awakura
	c) Demolish remainder of Te Awakura
4	a) Forensic Service new build phase 2
	b) IDPH Forensic (AT&R) new build
5	a) Adult Acute Inpatient Service new build phase 2
6	a) Staged replacement of Aroha Pai, now only accommodating IDPH PSAID (Major disruption for
	very sensitive group. Consider locating IDPH PSAID in Western Campus.)
	c) Standalone air source heat pump for Western Campus building
. 0	d) New carpark (150) on western site
	e) Decant Forensic Rehab from Te Waimokihi to new build (Western)
	f) Decant Detox from Te Waimokihi to new build Detox + Flex
	 g) Demoisin re-waimokini b) Expansion of central energy centre and hore field
	i) Construct 1100m ² stormwater detention basin
7	a) High and Complex new build with optional secure boundary fence and connecting links to High
	and Complex and IDPH PSAID
	b) Decant Tupuna to High and Complex new build
	c) Demolish Tupuna Villa



8	a) Expand carpark outside Fergusson (75)
	b) New entrance road from Sylvan Street towards Campus Heart
	c) Dedicated peak load boiler for Fergusson building

Source: Klein. 2020. Hillmorton Site Masterplan: Masterplan Report.

3.5.1 Three options for the programme staging were developed

Three options for the programme staging were subsequently developed.

All three options include the construction of the Forensic Rehabilitation and Outpatient building on the West Campus in Stage 1A. Option 1 differs from Options 2 and 3 in that only half (40 beds) of the Adult Acute Inpatient Service building is constructed in Stage 1B. Option 3 differs from Option 2 in that the construction of the Campus Heart building is deferred until Stage 2 of the programme. The full programme staging for each option is set out in **Error! Reference source not found.**Tables 11, 12 and 13**Error! Reference source not found.**,**Error! Reference source not found.** and Table 15 sets out the advantages and disadvantages of each proposed option.

Option 1 Construction of half (40 beds) the Adult Acute Inpatient Service building

Table 11 Full programme staging for Option 1 Construction of half (40 beds) the Adult Acute Inpatient Service building

Stage	Required actions
1A	a) Fergusson Refurbishment and Extension (TBC)
	b) Decant Avon into Fergusson
	c) Demolish Avon Building
	d) Construct Campus Heart
	e) Construct Forensic Rehab/OPD (with carparking and swale)
	f) Decant Forensic OPD from Te Waimokihi to West Campus new build
	g) Decant Cultural and Whānau/Consumer from Te Waimokihi to Campus Heart
	h) Decant Training/Library into Campus Heart, then demolish existing building
	i) Decant Forensic Rehab from Te Whare Mauriora to West Campus new build
	j) Partially refurb Te Waimokihi (IDLT/PSAID teams to remain) - decant Detox from Te Whare
	Mauriora to Te Waimokihi
	k) Demolish Te Whare Mauriora
	I) Relocate Building 13
	m) Relocate Community Dental Building to South Campus
	n) New Sylvan Street site entrance
,0	o) New infrastructure and carparking as required
1B	a) Construct new Te Awakura AIS Stage 1 – 40 beds.
	b) North Energy Centre
	c) Additional 100 on-grade parking spaces to North of Fergusson once Community Dental
	relocated
2	a) Adult Inpatient Service (AIS) new build Stage 2 - 40 beds
	b) Partial decanting of Te Awakura
	c) Partial demolition of Te Awakura
	d) Decant of Forensic Services to remaining Te Awakura
	e) Construct CAF Outpatient Building



	f) Construct 1500m ² stormwater detention basin.
3	a) Forensic Services new build
	b) Decant Forensic Services from Te Awakura
	c) Demolish remainder of Te Awakura
4	a) IDPH Forensic (AT+R) new build
	b) Decant IDPH Forensic (AT+R) to new build
5	a) Construct Detox/Flex
	b) Decant detox from Te Waimokihi to new build
	c) Demolish Te Waimokihi
6	a) Construct IDPH PSAID and PSAID OPD
	b) Decant Aroha Pai into new PSAID building
	c) Demolish Aroha Pai
	d) Expansion of central energy centre and bore field.
7	a) High and Complex new build with optional secure boundary fence and connecting links to High
	and Complex and IDPH PSAID
	b) Decant Tupuna to High and Complex new build
	c) Demolish Hereford
	d) Demolish Tupuna Villa
8	a) New entrance road from Sylvan Street towards Campus Heart
	b) Construct future empty chair
	c) Dedicated peak load boiler for Fergusson building

Option 2 Construction of full (80-bed) Adult Acute Inpatient Service building

Table 12 Full programme staging for Option 2 construction of full (80-bed) Adult Acute Inpatient Service building

Stage	Re	quired actions							
1A	a) Fergusson Refurbishment and Extension (TBC)								
	b)	Decant Avon into Fergusson							
	c)	Demolish Avon Building							
	d)	Construct Campus Heart							
	e)	Construct Forensic Rehab/OPD (with carparking and swale)							
	f)	Decant Forensic OPD from Te Waimokihi to West Campus new build							
	g)	Decant Cultural and Whānau/Consumer from Te Waimokihi to Campus Heart							
	h)	Decant Training/Library into Campus Heart, then demolish existing building							
	-i)	Decant Forensic Rehab from Te Whare Mauriora to West Campus new build							
) Partially refurb Te Waimokihi (IDLT/PSAID teams to remain) - decant Detox from Te Wha								
		Mauriora to Te Waimokihi							
	k)	Demolish Te Whare Mauriora							
$\langle \rangle$	I)	Relocate Building 13							
	m)	Relocate Community Dental Building to South Campus							
	n)	New Sylvan Street site entrance							
	o)	New infrastructure and carparking as required							
1B	a)	Construct new Te Awakura AIS 80 beds							
	b)	North Energy Centre							



	 Additional 100 on-grade parking spaces to North of Fergusson once Community Dental relocated
2	a) Partial demolition of Te Awakura
	b) Decant of Forensic Services to remaining Te Awakura
	c) Construct CAF Outpatient Building
	d) Construct 1500m ² stormwater detention basin.
3	a) Forensic Services new build
	b) Decant Forensic Services from Te Awakura
	c) Demolish remainder of Te Awakura
4	a) IDPH Forensic (AT+R) new build
	b) Decant IDPH Forensic (AT+R) to new build
5	a) Construct Detox/Flex
	b) Decant detox from Te Waimokihi to new build
	c) Demolish Te Waimokihi
6	a) Construct IDPH PSAID and PSAID OPD
	b) Decant Aroha Pai into new PSAID building
	c) Demolish Aroha Pai
	d) Expansion of central energy centre and bore field.
7	a) High and Complex new build with optional secure boundary fence and connecting links to High
	and Complex and IDPH PSAID
	b) Decant Tupuna to High and Complex new build
	c) Demolish Hereford
	d) Demolish Tupuna Villa
8	a) New entrance road from Sylvan Street towards Campus Heart
	b) Construct future empty chair
	c) Dedicated peak load boiler for Fergusson building

Option 3 Deferred construction of the Campus Heart

Table 13 Full programme staging for Option 3 programme staging: Stage 1A Construct Forensic Rehabilitation and Outpatients; Stage 1B Construct Adult Acute Inpatient Service building (80 beds)

-	Stage	Required actions
-	1A	a) Fergusson Refurbishment and Extension (TBC)
	1.2	b) Decant Avon into Fergusson
	V.	c) Demolish Avon Building
		d) Construct Forensic Rehab/OPD (with carparking and swale)
$\mathcal{O}^{\mathcal{V}}$		e) Decant Forensic OPD from Te Waimokihi to West Campus new build
V		f) Decant Forensic Rehab from Te Whare Mauriora to West Campus new build
		g) Partially refurb Te Waimokihi (IDLT/PSAID teams to remain) - decant Detox from Te Whare
		Mauriora to Te Waimokihi
		h) Demolish Te Whare Mauriora
		i) Relocate Building 13
		j) Relocate Community Dental Building to South Campus
		k) New Sylvan Street site entrance

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	I) New infrastructure and carparking as required
1B	a) Construct New Te Awakura AIS 80 beds
	b) North Energy Centre
	c) Additional 100 on-grade parking spaces to North of Fergusson once Community Dental
	relocated
2	a) Partial demolition of Te Awakura
	b) Decant of Forensic Services to remaining Te Awakura
	c) Construct Campus Heart
	d) Construct CAF Outpatient Building
	e) Construct 1500m ² stormwater detention basin.
3	a) Forensic Services new build
	b) Decant Forensic Services from Te Awakura
	c) Demolish remainder of Te Awakura
4	a) IDPH Forensic (AT+R) new build
	b) Decant IDPH Forensic (AT+R) to new build
5	a) Construct Detox/Flex
	b) Decant detox from Te Waimokihi to new build
	c) Demolish Te Waimokihi
6	a) Construct IDPH PSAID and PSAID OPD
	b) Decant Aroha Pai into new PSAID building
	c) Demolish Aroha Pai
	d) Expansion of central energy centre and bore field.
7	a) High and Complex new build with optional secure boundary fence and connecting links to High
	and Complex and IDPH PSAID
	b) Decant Tupuna to High and Complex new build
	c) Demolish Hereford
	d) Demolish Tupuna Villa
0	 A) New entropies and frame School towards Commune Heart
ŏ	a) New entrance road from Sylvan Street towards Campus Heart
	c) Dedicated pack load bailer for Forgueson building
	c) Dedicated peak load boller for Fergusson building

Table 14 shows the timing of the stages. The detailed staging plan for the preferred option is attached in the appendices.

Â		Option 1	Option 2 (preferred option)	Option 3			
4	Stage 1A	Start October 2020	Start October 2020	Start August 2020			
		Finish October 2024	Finish October 2024	Finish August 2024			
	Stage 1B	Start November 2020	Start November 2020	Start August 2020			
		Finish May 2026	Finish July 2026	Finish May 2026			

Table 14 Timing of the stages of the three options



	Option 1	Option 2 (preferred option)	Option 3
Stage 2	Start June 2023	Start April 2023	Start August 2023
	Finish March 2028	Finish March 2028	Finish December 2027
Stage 3	Start September 2024	Start April 2023	Start November 2024
	Finish November 2029	Finish December 2028	Finish April 2029
Stage 4	Start September 2024	Start April 2023	Start November 2024
	Finish March 2031	Finish April 2030	Finish August 2030
Stage 5	Start May 2027	Start May 2027	Start May 2027
	Finish August 2032	Finish September 2031	Finish February 2032
Stage 6	Start May 2029	Start May 2028	Start May 2029
	Finish October 2033	Finish November 2034	Finish April 2033
Stage 7	Start October 2030	Start July 2030	Start October 2030
	Finish July 2035	Finish August 2034	Finish December 2034
Stage 8	Start July 2032	Start July 2032	Start July 2032
	Finish August 2036	Finish September 2035	Finish February 2036

Figure 17 shows when the timing of the stages will take place and compares the options. Option 2 is timed to be completed earlier than options 1 and 3.



~ ~ ~ ~	Stage 1a															
Option 3																
Option 1	Stage 1b															
Option 2	Stage ID															
Option 3																-
Option 2	Stage 2															
Option 3																
Option 1																
Option 2	Stage 3														\mathbf{D}	
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Figure 17 Staging in calendar years

Table 15 Advantages and disadvantages of the three proposed options for programme staging

	Option 1 Construction of half (40 beds) Adult Acute Inpatient Service building	Option 2 Construction of full (80 bed) Adult Acute Inpatient Service building	Option 3 Deferred construction of the Campus Heart
Description	Stage 1A includes construction of the Campus Heart and Forensic Rehabilitation and Outpatients buildings and Stage 1B includes construction of half (40 beds) of the Adult Acute Inpatient Service proposed beds and other shared spaces.	Stage 1A includes construction of the Campus Heart and Forensic Rehabilitation and Outpatients buildings and Stage 1B includes construction of the Adult Acute Inpatient Service (80 beds).	Stage 1A includes construction the Forensic Rehabilitation and Outpatients building and Stage 1B includes construction of the Adult Acute Inpatient Service (80 beds).
Advantages	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus. Eliminates the need to refurbish/upgrade Te Waimokihi to temporarily house Te Whare Mauriora. Brings forward the construction of Phase 1 (40-beds) of the Adult Acute Inpatient Service (Te Awakura) building compared to the masterplan Option 4. 	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus. Eliminates the need to decant Te Waimokihi to new build, then refurbish/upgrade Te Waimokihi and decant Te Whare Mauriora to upgraded Te Waimokihi. Clinical buildings are being built early in the programme. Ensures response to the capacity and identified building issues in a shorter time frame. Allows for a whole-of-service relocation which reduces operational and clinical challenges of operating across two spaces. Construction of the Adult Acute Inpatient Service building has been brought forward and will be constructed in a single stage. There is sufficient site area available for this construction to occur. No impact on future stages and decanting space. 	 Allows immediate construction of the Forensic Rehabilitation and Outpatients building on the currently vacant West Campus. Eliminates the need to decant Te Waimokihi to new build, then refurbish/upgrade Te Waimokihi and decant Te Whare Mauriora to upgraded Te Waimokihi. Clinical buildings are being built early in the programme. Construction of the Adult Acute Inpatient Service building has been brought forward and will be constructed in a single stage. There is sufficient site area available for this construction to occur. No impact on future stages and decanting space.
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Building specific costs

		Sap valuation	on	Ć	, ,
Building specific costs				2r	
	GFA	Construction rate	Option 1	Option 2	Option 3
North Campus			4		
Adult Acute Inpatient Service	10,442	\$6,475	\$154,316,229	\$151,426,022	\$152,248,344
Adult Acute Inpatient Service (Future Growth)	1,680	\$6,474	\$24,826,247	\$24,361,275	\$24,493,569
Forensic and IDPH Forensic (AT&R)	6,650	\$7,924	\$118,747,886	\$116,495,371	\$117,136,257
Forensic Rehab and OP	2,220	\$7,625	\$38,236,262	\$37,512,581	\$37,718,482
High & Complex – Tupuna	1,964	\$7,626	\$33,830,694	\$33,190,391	\$33,372,570
IDPH PSAID and OP	2,482	\$6,060	\$34,491,192	\$33,848,246	\$34,031,177
CAF Outpatients	3,685	\$5,668	\$48,144,939	\$47,252,008	\$47,506,065
Fergusson Building	4,187	\$5,934	\$57,069,729	\$56,007,550	\$56,309,761
Campus Heart	1,737	\$5,668	\$22,694,432	\$22,273,524	\$22,393,281
Empty Chair	1,700	\$6,500	\$25,214,785	\$24,742,407	\$24,876,808
Energy Centre (Expansion & New)			\$19,266,883	\$18,879,234	\$18,989,528
North Campus Total	36,747		\$576,839,277	\$565,988,609	\$569,075,843
South Campus					
Grounds Maintenance & BOH	276		\$2,685,997	\$2,704,184	\$2,648,247
Food Services	253		\$3,475,332	\$3,221,931	\$3,426,144
				'	

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Oral Health	270		\$2,989,933	\$3,044,733	\$2,947,789
Future Learning and development	276			<u> </u>	
Future outpatients	253				
Future Vocational	270		24		
South Campus Total	799		\$9,151,262	\$8,970,848	\$9,022,180
North & South Campus Total	37,549		\$585,990,539	\$574,959,457	\$578,098,022
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Table 16 Proposed schedule of construction, demolition and refurbishment for Option 2 North Campus

Stage	Construction (m ²)	Demolition	Refurbishment
1A	Campus Heart (1737)	Avon	Fergusson (3487)
	Forensic Rehab/OPD (2220)	Te Whare Mauriora	Te Waimokihi (partial)
	Fergusson extension (700)		
	Carparking		
	Swale		
	Sylvan Street entrance		
	Infrastructure as required		
1B	Adult Acute Inpatient Service (10442)		MA
	Northern Energy Centre		2
	Carparks (100 parks) north of Fergusson	20	
2	CAF Outpatient (3685)	Te Awakura partial	
	Stormwater detention basin (1500)		
3	Forensic Service (5276)	Te Awakura remainder	
4	IDPH Forensic (AT+R) (1374)		
5	Adult Acute Inpatient Service Future Growth Flex/Detox (1680)	Te Waimokihi	
6	IDPH PSAID and PSAID OPD (2482)	Aroha Pai	
	Central Energy Centre Expansion		
	Bore field		
7	High & Complex (1964)	Hereford	
		Tupuna Villa	
8	Empty Chair (1700)		
~	?		
LΧ	New entrance road from Sylvan Street		
	towards Campus Heart		
V	Dedicated peak load boiler for Fergusson		



Summary schedule of accommodation

	Service / Building	Beds	DFA	Reds	DFA I	e IFA Ì	GF/
100 Carlos							
NORTH CAMPUS	And the second sec						
Acute Adult Inpa	itient Services	64	2,966	80			_
Adult Inpatient D	letox + Flex	6	450	16			
Adult Inpatient S	ervices Combined	70	3,416	96	7,809	9,683	9,9
Pharmacy	4.4 %		82		150	186	
Clinical Services	Unit	-	-	+	216	268	-0
Te Awakura AIS		70	3,498	96	8,175	10,137	10,3
Adult Inpatient S	Services Future Growth	1 - 1		16	1315	1631	1,
Forensic Mental	Health	24	1.874	26	4 121	5 122	5
IDPH Forensic (/	AT&R)		498	6	1 076	1.334	1
Forensic and ID	PH Forensic (AT&R)	24	2.372	42	5,207	6,456	6.6
A STOLEN AND ADDRESS					-14-51-1		-1-
Forensic Rehab		13	390	13	1,250	1,550	13
Forensic Comm	unity Unit		282	-	488	605	f
Forensic Rehab	and OP	13	672	13	1,738	2,155	2,2
High & Complex	- Tupuna	15	1,266	15	1,538	1,907	1,9
High & Complex	- Seager	24		16	1,546	1,917	1,9
High & Complex	(2x buildings)	39	1,266	31	3,084	3,824	3,6
		1					
IDPH PSAID		20	886	14	1,626	2,017	2,0
IDPH PSAID Out	patients	-	362	11	317	393	-
IDPH PSAID and	IOP	20	1,248	14	1,944	2,410	2,4
IFSC		-		29	4792	5942	6,1
CAE Outpatients	•	1	715		2 885	3 578	36
ora outpution	7	1		·	2,000	0,070]	0,0
Ferguson Existin	D		5,460	-	5,460	6,771	6.9
Ferguson Refurt	bished	-		-	2,730	3,385	3,4
Ferguson Expan	sion	1 - 1		+	548	680	7
Ferguson Buildir	ng		5,460		6,008	7,450	7,6
	Q						
Campus Heart			1,608	*	1,360	1,686	1,7
Energy Centre E	witting		290		290	248	
Energy Centre E	Xisung	* -	200		200	405	
Energy Centre E	vnansion & New)			121	666	825	5
Energy Centre		-		-	1.337	1.658	1.7
and gy service		-				11	
Total North Can	npus	166	16,839	241	37,844	46,927	48,3
Total PBC Work				100		24 850	05.0

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Conview / Duilding	Existing		Future			
Service / Building	Beds	DFA	Beds	DFA [IFA	GFA
OUTH CAMPUS						
Grounds Maintenance Existing		493		493	612	630
Grounds Maintenance Expansion			*	99	122	126
Back of House Expansion	1		÷.	117	146	150
Grounds Maintenance & Back of House	-	493	7	709	880	906
Food Service / Kitchen Existing		991	-	991	1,229	1,266
Food Service / Kitchen Expansion		+	-	198	246	253
Food Service / Kitchen	-	991	*	1,189	1,475	1,519
						1.1
Oral Health Clinic (relocation)	-	211	-	211	262	270
					6	
Laundry Existing (future L&D or OPD)		4,290		4,290	5,319	5,479
Refurbishment for Learning & Development (TBC)	× 1		47	1.4.4	~ >	+
Future Learning & Development	-	4,290		4,290	5,319	5,479
Future Outpatients (TBC)					1	-
Future Vocational (TBC)		-			142	÷
Total South Camous		5 985	27	6 400	7 936	8174
Total PBC Works for South Campus		-	- 1	626	776	799
Teres i de l'esta les deser ourripou				020		,

WHOLE CAMPUS

Indicative Whole Campus	166	22,825	241	44,244	54,863	56,508
Total PBC Works for Whole Campus	*	1~	196	28,731	35,626	36,695

Assumptions

- GFA for new buildings is assumed to have a 24% Travel and Engineering factor applied to IFAs , this is not strictly accurate for existing buildings where full accurate data was not always available.

- Existing areas of building are an assumed DFA. The majority of buildings on the campus are single storey. Further Assessment required of existing areas and briefing for proposed future developments.

- Existing facilities on the South Campus have an assumed GFA, note future predictions for this site are for refurbishments and extensions and have had a lesser rate or 12% applied to get a GFA.

- Fergusson building assumes expansion zones to existing facility and decanting of some services including Community Dental.

- Campus heart - includes Te korowai Atawhai, central café, central meeting and therapy spaces, future area derived from new SOA.

- Campus heart not currently provided, services currently split across Te Korowai Atawhai, the Avon building or are non existent, therefore accurate

comparisons cannot be made to future proposed.

3.5.2 Indicative costs and benefits

The proposed whole of life cost of the programme is \$511m over the 30 years of the expected lifetime of the programme.

The CEO has signified their agreement to the indicative cost and benefit estimates of the proposal.

Confidential



4. Commercial case – a preferred procurement approach

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The commercial case outlines the proposed procurement arrangements for the preferred option.

Ensuring an appropriate method of procurement for the Hillmorton site will be critical to ensuring that it is designed correctly and delivered to the standard required for moderate-high risk patients.

A workshop was arranged with CDHB staff to develop a preferred procurement option for the Hillmorton programme. The workshop involved CDHB procurement, facilities and financial representatives. The workshop participants expressed a desire for a facility design and construction project that encourages competitive tendering through the course of the design and construction stages of the programme. Competitive tenders for design and construction at each tranche of the project is the preferred procurement approach.

4.1 Local construction market has been stretched

The Christchurch construction market has been busy in recent years, with significant activity continuing with the post-earthquake rebuild. CDHB has experience with significant construction projects:

- Burwood Hospital, 32,000 m² completed 2016
- Outpatients Building, 10,500 m² completed 2018
- Acute Services Building, 62,000 m² completed 2020.

Stakeholders anticipate construction (excluding residential housing) activity in Canterbury will remain at current levels through to 2022, in both non-residential and infrastructure activities. Beyond 2022, the forecast is for a decline, potentially easing some of the pressures on the local construction market.



Figure 18 Canterbury forecast of construction projects

Source: National Construction Pipeline Report 2019



The impact of COVID-19 on the construction industry has already been felt. For example, Fletcher Building announced at the start of April a significant cut in pay for employees to cover the period of working restrictions³² and a subsequent reduction in staff numbers of 1,000 in May (a 10% reduction).³³ Forecasts of future construction activity are uncertain, with specific reductions in both residential and commercial construction.³⁴ Although infrastructure construction led by the public sector may partially offset the lower activity levels in other areas, overall construction activity is expected to be reduced. Lower construction activity will adversely impact construction firms and associated industries such as architecture and other professional services. Fewer potential construction firms could see a tighter market for the planned construction programme. However, recent market engagement undertaken by CDHB has been positive.

4.1.1 Recent market engagement is promising

CDHB is relocating the regional and local Specialist Mental Health Services (SMHS) from the Princess Margaret Hospital to the Hillmorton Hospital. On 23 June 2020, Registrations of Interest closed for main contractors to register their interest in the relocation task. Contractors will be shortlisted, and those shortlisted will be invited to provide a Request for Proposal.

CDHB received five expressions of interest from Tier 2 contractors. Initial assessment is that all contractors would be appropriate to carry out the work. The results of the Registrations of Interest are a positive indication for the likely interest in the wider Hillmorton programme.

4.1.2 New Dunedin Hospital is a competing project

The Ministry of Health is constructing a new hospital in Dunedin. Scheduled to be built between 2022 and 2028, it is estimated at a project cost of around \$1.4 billion. It is the largest vertical construction project in New Zealand, as noted on the Infrastructure Commission's infrastructure pipeline, and requires construction staff from outside Dunedin. The new Dunedin hospital's relative proximity to Christchurch and the likely significant overlap of contractors and sub-contractors may place pressure on the construction supply chain for Hillmorton.

4.2 Construction programme is multi-faceted

The Hillmorton redevelopment comprises a set of diverse tasks, including design, construction, site works, carparking, demolition of existing buildings as well as refurbishment of existing facilities over a period from 2020 through to 2034.

The collective size of the construction task is substantial. The individual construction tasks are, however, not at a scale that would deter smaller Tier 2 or Tier 3 construction firms from tendering and

³² Retreived from: <u>https://fletcherbuilding.com/news/significant-uptake-of-fletcher-buildings-bridging-pay-programme/</u>

³³ Retreived from: <u>https://fletcherbuilding.com/news/fletcher-building-update-on-trading-and-organisation-</u> reset/

³⁴ Retreived from: <u>https://www.westpac.co.nz/assets/Business/Economic-Updates/2020/Bulletins-</u> 2020/Construction-Sector-Economic-Insight-May-2020-Final-Westpac-NZ.pdf





completing the task. The proposed staging of tasks allows for a coherent packaging of related works in each stage.

4.3 Construction Sector Accord underpins procurement of services

In response to a pressured construction sector, the Government has worked with the construction industry to develop the Construction Sector Accord (the 'Accord')³⁵ and Government Procurement Rules. The Accord and Procurement Rules provide a structure under which the procurement will sit.

The Accord was jointly developed by Government and construction sector leaders to signal a desire to work together to improve the overall health and performance of the construction industry. Key initiatives are being progressed to build the resilience of the construction sector and ensure New Zealand gets the quality infrastructure investment needed to improve long-term economic performance and social wellbeing. Specific shared goals are:

- Increase productivity: A productive, value-driven and efficient construction sector able to produce more for each dollar spent.
- Raise capability: A skilled and capable workforce that meets New Zealand's growing housing and infrastructure needs.
- Improve resilience: Strong, sustainable businesses with the capacity to innovate and adapt to change and disruption.
- Restore confidence, pride and reputation: A high-performing, transparent and trusted sector we can all be proud of.

The principles and goals of the Accord will be considered in overall procurement strategy as well as in each individual procurement decision.

4.3.1 Government Procurement Rules

The most recent Government Procurement Rules³⁶ were published in October 2019. They are designed to support good market engagement, with a focus on the importance of open competition. The updates are designed to achieve wider public outcomes for New Zealand, including improving the construction industry's performance and resilience. Following the procurement rules is mandatory for construction projects greater than \$9 million.

In particular, the Procurement Rules require public bodies to consider broader outcomes (social, environmental, cultural or economic) that arise as a result of procurement and delivery of a project. Specifically:

• Increase access for New Zealand businesses to procurement opportunities and encourage agencies to involve Māori, Pasifika and regional businesses as well as social enterprises.

³⁵ <u>https://www.constructionaccord.nz/the-accord/</u>

³⁶ https://www.procurement.govt.nz/procurement/principles-charter-and-rules/government-procurement-rules/



- Suppliers expected to contribute to growth of construction skills and training, to support the expended capability and capacity of the construction workforce.
- Improving conditions for New Zealand workers, such as protecting workers from unfair and unsafe behaviour and labour practices.
- Transitioning to a net-zero emissions economy and designing waste out of the system to support a circular economy.

The broader outcomes will be reflected in the procurement strategy, tender evaluation development and during construction of the mental health facility. For example, CDHB envisage the following steps:

- Explicitly consider environmental sustainability in its procurement process.
- Include specific KPIs (e.g. reduced or zero emissions, reduced waste as a result of design, reuse and recycling, diversion from landfill, etc.) relating to the contractor's/subcontractor's environmental outcomes in their tender documentation
- Explicitly consider all contractors' health and safety credentials in its procurement process.
- Include specific KPIs (e.g. worker wellbeing, safety-in-design) relating to the contractor's/subcontractor's Health & Safety outcomes.
- Engage with the local construction industry to ensure they have opportunity to: (a) provide feedback and contributions to the procurement process, and (b) allow enough time to invest in ramping up their workforce.
- Require contractors and subcontractors to demonstrate how they will invest in growing their workforce including to create new apprenticeships, on-the-job training, better job retention and skills development.

4.4 A preferred approach is to simplify past arrangements

The CDHB preference is to simplify the procurement and construction activities for the site programme from the partnership model adopted for the previous large and complex medical builds. Mental health facilities will be a simpler construction task than that of, for instance, the complex Christchurch Hospital Hagley (CDHB's acute inpatient facility). A simpler approach will still allow for close management of risk and will also reduce co-ordination costs and risks.

Learning from previous construction activity, a key lesson is that construction contractors are provided with well-developed design documentation, allowing accurate pricing with appropriate construction schedules.

4.1 Preference for a "construct only" model, for the construction contract

CDHB's clear preference is for a standard contracting arrangement with good relationships between parties. Allied with simplicity is a requirement for maintaining competitive tension in the construction market. A construct-only model is preferred, allowing a de-risked approach at each stage for contractors with fully designed and scheduled buildings to be tendered against.



There is a clear preference not to take the risk of alliancing or a PPP model. Combining all stages into a single contract would be required for either a project alliance model or a PPP model. These models represent a likely reduction in likely contractor counterparties due to the length and expertise required to deliver a decade long construction project, and PPP models are not current government policy for health infrastructure projects.

Recent CDHB experience is that the early contractor involvement model has not been working in local health projects, specifically Christchurch Hospital Hagley, and more generally in Christchurch and South Island construction projects. There are several reasons why this has been so but a more direct relationship with the contractor is sought, reflecting the much less complex nature of the proposed construction activity.

Several contracting options were considered.

Construct only: Design is fully developed before the construction contract is awarded. The client engages consultants to prepare a design against a brief and budget, and to prepare the tender documents. Contractors are then invited to submit bids to carry out the construction work, based on the tender documents. Consultants review the contractors' bids, select and recommend the most favourable option for the client.

Early contractor involvement (ECI): The client and contractor are bought together at an early stage of the design process. It is envisaged that the contractor will bring design buildability and cost efficiencies to the pre-construction phase. ECI is particularly well-suited to large or complex projects. Project alliancing: A relationship-style arrangement that brings together the client and one or more parties to work together to deliver the project, sharing project risks and rewards. Collaborative procurement methods are typically used for highly complex or large infrastructure projects that would be difficult to effectively scope, price and deliver under a more traditional delivery.

Public Private Partnerships (PPP): This a service contract between the public and the private sector where the Government pays the private sector to deliver infrastructure and related services over the long term. The private sector parties who build public infrastructure are financially responsible for its condition and performance throughout the asset's lifetime.

4.2 Design consultants (architects) will be selected at each stage of the project

Architects will be appointed for each stage of construction. The following programme features are important in the design procurement decision.

• Continued evolution of user experience and incorporating lessons learnt.



- Design consistency throughout the different programme stages.
- Focus on whole of life costs for each stage and site in totality.
- Strong relationship with CDHB design user groups.
- Ongoing understanding impact of design on material procurement and maintenance.

Other options were considered but discarded.

A single design team could be appointed for the full construction project, or design teams procured for each stage of construction. CDHB has decided against a single design team despite the apparent benefit of having one design team across the site. The disadvantages of a single design team are the performance risk created by a long length of the construction project, and significant uncertainty over commercial prices such that either architectural firms would incorporate a large risk premium or be unwilling to bid.

There are important objectives for design across the Hillmorton site. These design objectives include standardisation of design for maintenance and procurement, reduction of co-ordination issues with user groups, and capturing learnings from previous design activity. These design objectives would be achieved through a collaborative relationship between CDHB and designer incorporated in the tender process, ensuring that key lessons from earlier tranche design are incorporated through the programme.

4.5 Contracting and risk will be standardised

For the design works contract, the CDHB long form consultant contract (CCCS structure with CDHB special conditions) will be used, and the standard form construction contract (NZS3910:2013) will be used as the base contract for the construction works. The base for setting the contract will be:

- a contract structure with a fair risk allocation that ensures a clear description of roles and responsibilities, process for proposing and pricing changes/variations, inclusion of termination clauses, a security regime and disputes resolution process
- a draft version of the desired contracts will be issued during the RfP stages allowing the opportunity to negotiate contractual positions with the counterparties and reduce contract changes during contract execution.

Previously CDHB has placed a lot of risk onto counterparties, especially construction contractors. This stance is beginning to change. In light of the Accord, evidence from recent CDHB construction experience and potential changes in the construction sector, the risk allocation is likely to be more balanced, with a fairer and more transparent allocation of risks, with a focus on allocating risks to those parties who are best to able to mitigate them.



5. Financial case

The purpose of the financial case is to illustrate the cost of the preferred option and provide an assessment of its affordability.

This proposal requires capital spending of between \$844m and \$860m (depending on the option chosen) between 2020/21 and 2036/37 (nominal dollars). We show the operating cost and balance sheet effects of the proposal to assist with consideration of whether there is enough financial headroom for the proposal to proceed.

Of the total capital expenditure, between 45% and 50% of the total will attract capital charge relief because it relates to new buildings.

Asset related costs (being depreciation, holding costs and capital charge net of capital charge relief) of between \$430m and \$495m will be incurred for the 17-year period from 2020/21 to 2033/37. The average additional annual charge to the statement of comprehensive revenue and expense will be between \$25m and \$27m in asset related costs.

We estimate that by 2036/37 an additional \$24m will be required for additional staff and associated overhead relating to the Adult Acute Inpatient Service and Forensic Service facilities.

5.1 Assumptions

This section sets out the assumptions that were used in developing the financial case. The general assumptions are summarised in Table 17**Error! Reference source not found.**

Assumption	Detail	Source
Capital charge	6% per annum assessed on depreciated value of facility	Treasury
Holding costs	No holding costs have been modelled. It has been assumed that work in progress will remain on the Crown accounts. The commissioning value will be at cost.	Modelling assumption
Capital charge relief	Assume that Government will fund capital charge component of new build items as per interim decision	https://www.beehive.govt.nz/rele ase/extra-support-dhbs-help- costs-building-new-facilities
Completion of works and handover of asset to the DHB	See detailed schedule	Modelling assumption

Table 17 Overall assumptions



Assumption	Detail	Source
Depreciation and amortisation	Hard fitout 2% Building fit-out 7% FF&E 13.5% Decanting and demolition 2% Blended rate (e.g. for escalation) – 3.4%	Assumption of 50-year building life; IRD guidance for other categories
Capital spend will be met by the Ministry of Health	During the construction period, the Crown will release funds that match the construction cost, at the time that money is needed.	DHB assumption
Modelling period	17 years	Masterplan
Price escalation QS estimates	3% per annum	RĽB
Price escalation operating costs	3% per annum	Blended rate factoring in wage inflation, inflation, and efficiencies
Funding	AIS, Forensic – Crown Equity All others – Insurance, balance sheet	Capital expenditure plan 2019/20-2029/30

5.1.1 Capital expenditure

QS estimates have been obtained from RLB for three options. The cash flows associated with these options are shown in Figure 19.

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Figure 19 Capital expenditure (\$ millions) nominal dollars

Table 18 shows the spending in five-year time periods.

	5 years	5 years	5 years	2 years	Total		
	2020/21–24/25	2025/26–29/30	2030/31–34/35	2035/36–36/37			
Option 1	239	312	259	50	860		
Option 2	256	312	265	11	844		
Option 3	242	323	251	33	848		

Table 18 Capital spend timing (\$ million)

5.1.2 Staging

The work has been divided into nine stages: 1, 1A, and then 2 through 8. We have calculated a present value of each stage based on timing in Table 19.

Stage	Option 1	Option 2	Option 3
Stage 1a	123	116	87
Stage 1b	100	132	145

Table 19 Present value of stages (\$m 2020)



Stage	Option 1	Option 2	Option 3
Stage 2	64	33	54
Stage 3	36	41	39
Stage 4	32	36	35
Stage 5	25	28	23
Stage 6	18	19	19
Stage 7	14	16	15
Stage 8	11	10	11
Subtotal	423	432	429
Rounding value	-3	0	2
Total Present value	420	432	430
		CICIF.	<u> </u>

Operating expenditure 5.1.3

Operating spending is comprised of asset related expenditure (depreciation and capital charge) and other operating expenditure (staff costs and related overhead).

Figure 20 shows the operating expenditure associated with Option 1 (for illustration). By 2036/37 there will be depreciation of \$28m and net capital charge of \$17m (net of capital charge relief of \$21m). Other operating expenditure amounts to \$24m, which is comprised of staff costs, central overhead, and direct costs associated with servicing additional bed numbers.

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Figure 20 Operating expenditure 2020/21 to 2036/37 (Option 1)

Table 20 shows the operating expenditure for the three options, broken into five-year intervals.

	5 years	5 years	5 years	2 years	Total	Note			
	2020/21–24/25	2025/26–29/30	2030/31–34/35	2035/36–36/37		2036/37			
Asset related costs									
Option 1	16	142	185	87	430	45			
Option 2	15	155	204	92	466	46			
Option 3	11	150	194	88	443	45			
Other operating costs									
Option 1	0	5	64	47	116	24			
Option 2	0	5	64	47	116	24			
Option 3	0	5	64	47	116	24			

Table 20 Operating expenditure (\$ millions) by five-year period

5.2 Whole-of-life costs

Table 22 shows the whole of life costs. The cash flows of the spending (in real 2020 dollars) for the period between 2020/21 and 2050/51 have been discounted. It is assumed that the capital asset will be fully depreciated over the period with no residual value.

This table shows that Option 1 has the lowest whole-of-life cost.


IONAC

	Option 1	Option 2	Option 3
Whole of life capital costs	420	432	430
Whole of life operating costs	79	79	79
Total	499	511	510
Annualised	36	37	37

Table 22 Whole of life costs (\$ millions) – discounted cash flows – 2020/21 to 2036/37

5.3 The DHB is running cash deficits

Canterbury DHB has limited reserves with negative working capital of \$19.6 million at 30 June 2019. There are no investment assets. Over the past four years Canterbury DHB has recorded negative free cash flow (i.e. the change in cash position excluding any transfers from the Crown). When an entity has negative free cash flow it must use reserves or seek additional financing.



Figure 21 Free cash flow (actual and forecast)

Source: Canterbury DHB Annual Reports; Annual Plan

After coming close to breaking even in 2015/16, Canterbury DHB has since recorded deficits between 2016/17 and 2018/19, although last year's result was exacerbated by one-off effects relating to a pay settlement which affected all DHBs. Figure 22 shows the actual and forecast results out to 2022/23. The 2018/2019 Annual Plan for Canterbury DHB forecast deficit support of \$98m for 2019/20³⁷ and \$117m for 2020/21. However, additional funding recently announced will likely reduce this amount and reduce the deficit accordingly.

³⁷ It is likely that the deficit for 2019/20 will be confirmed at around \$170m.





Figure 22 Net result actual and forecast

Source: Canterbury DHB Annual Reports; Annual Plan

5.4 Financing options

Canterbury DHB will be seeking Crown equity funding for the Adult Acute Inpatient and Forensic facilities.

Options for financing are the following:

- financing from the DHB balance sheet not possible because of insufficient funds •
- public-private partnership unrealistic because of small size of project and not possible • because of Government policy
- debt DHBs are not able to take on long term debt under current policy settings .
- equity transfer from Crown the remaining possibility.

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Tables of spending by option

							¢	S va	ap Iuatio	er	e.				~	5		
	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/27	Tota
Capital spending	anani an	LULLILL	EVER/ES	2023/24	2024/25	2023/20	2020/21	EVEN/ EN	2020/25	2023/30	2030/31	1034/31	1032/33	2020124	2024/22	2033/30	2030/27	(otal
Stage 1a	6	17	46	33	69													171
Stage 1b		6	15	17	28	45	51											161
Stage 2				1	1	2	28	44	53									129
Stage 3					1	1	1	1	18	53			~ /					84
Stage 4					1	0	1	0		1	38	45						87
Stage 5								1	1	1	14	21	36	70				74
Stage 0										1	1	1	13	38	26	20		59
Stage 8											*	\mathcal{O}	3	5	6	20	10	44
Total capital expenditure	6	22	61	51	100	49	81	46	72	65	56	70	53	48	32	39	10	861
Operating expenditure											()							
Capital charge					10	10	19	18	25	29	28	32	35	37	36	37	38	353
Depreciation					6	6	11	11	15	18	18	20	23	25	25	26	28	232
Other opex costs		_								5	5	5	15	16	22	23	24	116
Total operating expenditure	0	0	0	0	16	16	30	30	40	52	51	58	73	77	83	86	89	700
Less Capital charge relief Opex net of capital charge relief	0	0	0	0	16	16	30	30	.33	17	40	16	20	23	22 61	21	21	155
	1 manual	Same dani	NAME INC.	acre te d	ada citari	and the		a and the l	Sales Louis	Annatant	amariai	ana taal	1000 (00)	anim to d	2022/02/	anneral	and that	
Option 2	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/2/	2027/28	1028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/30	2036/27	lotai
Capital spending Stage 10		46	75	70	45													155
Stage 1b		5	12	22	52	53	69											214
Stage 2				2	5	з	9	45										64
Stage 3					1	1	4	18	63									87
Stage 4					1	1	1		1	31	57							91
Stage 5								1	1	8	16	53						78
Stage 6									1	1	4	5	47					58
Stage 7						- (1	1	1	30	22			55
Total capital expenditure	6	51	49	45	105	57	83	63	65	39	78	59	51	34	44	11	0	840
On any line of the set						$\langle \cdot \rangle$												
Capital charge					-10		21	24	78	59	22	25	27	36	27	28	36	370
Depreciation					5	5	12	14	17	17	20	22	24	24	26	27	27	242
Other opex costs					~					5	5	5	15	16	22	23	24	116
Total operating expenditure	0	0	0	0	15	14	34	39	45	50	57	63	76	76	86	88	87	727
Less Capital charge relief					15		14	4	9	8	13	17	20	19	19	18	18	146
Opex riet of capital charge relief	U	Ŷ	0		- 13-	14	34	35	37	-41	43	43	30	50	07	70	03	302
Option 3	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35	2035/36	2036/27	Total
Capital spending		201			75													
Stage 1a	5	15	10	10	59	60	61											231
Stage 7		10		2	10	16	22	50										101
Stage 3					1	4	4	9	30	36								85
Stage 4					1	1	1	1		25	59							88
Stage 5								1	0	1	1	41	24					57
Stage 6										1	1	5	21	36	1.1			62
Stage 7											1	0	1	16	36			54
Stage 8 Total capital expenditure	5	45	45	42	105	81	88	61	30	63	61	47	46	52	45	25	8	43 848
0	5									-								
Conital shares						2	20	36	24	70	27	2*	24	20	20	27	27	257
Depreciation					1	4	11	15	15	17	20	20	34	24	36	26	27	232
Other opex costs					-					5	5	5	15	16	22	23	24	116
Total operating expenditure	0	Ó	0	0	11	11	31	40	39	51	57	57	71	76	86	85	88	704
Less Capital charge reliet			1					0	6	11	15	15	18	21	20	20	19	146
Opex net of capital charge relief	0	0	0	0	11	11	31	40	33	40	42	42	53	55	65	66	69	558

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6. Management case

The purpose of the management case is to describe the arrangements that will be put in place for the successful delivery of the programme and its constituent projects, both to ensure successful delivery and to manage programme risks.

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6.1.1 **Programme management strategy and framework**

The project will be managed directly by CDHB through its facility management infrastructure and governance. There will, however, be an additional overlay to ensure the Operator, the General Manager of Mental Health Services, has clear oversight given the number of projects and the need to maintain operational services during construction.

6.1.2 Governance arrangements

The CDHB Chief Executive has overall responsibility and accountability for the series of investments in the Hillmorton site. Greg Hamilton, General Manager Mental Health Services, is the Project Sponsor. He is responsible for ensuring regular reporting mechanisms are established and maintained to keep the Chief Executive and CDHB governing bodies informed of the status of the programme and the projects as they are kick-started.

The Project Control Group (PCG) will meet monthly until construction contracts are let at which point it will meet fortnightly.

The diagram below shows the project governance and management structure.

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The PCG members will include:

- General Manager Mental Health Services, Project Sponsor provide overall monitoring of the project and reporting to the sponsor.
- Clinical Lead Facilities User Group representative to ensure User Group input is sought where appropriate.
- Iwi representative treaty partner tikanga Māori advice.



• Manager, Maintenance and Engineering – maintenance advisory role and ensure a successful handover to business as usual.

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- Quality Manager provide clinical input on quality issues.
- Programme Director site redevelopment.
- DHB Procurement representative manage both the procurement of the design and construction contracts, as well as ongoing contract management, variations or disputes
- Programme Director Construction and Property (in attendance only) manage the overall programme of works and ensure reporting is timely and accurate.
- Design Project Manager (in attendance only) manage the day-to-day design works, programme and interaction with user group. Will be central contact for the design works.
- Construction Project Manager (in attendance only) manage the day-to-day building works and programme. Will be central contact for the construction works.

6.1.3 **Programme structure**

Brad Cabell will be the Programme Director and will oversee the programme structure, activity and cost. Each construction project will be scheduled in the programme with interdependencies closely monitored. An external project manager will be appointed to assist with project management across these two projects.

Project control meetings will happen monthly and will be chaired by the Programme Directors and will include facilities management, the design lead and prime contractors (once appointed). The meeting will be supported by reporting from the external project managers, the Construction Project Manager.

6.1.4 **Programme reporting arrangements**

The project will follow a work programme owned by the Programme Director, working closely with the Construction Project Manager. Any changes to the project's capital requirements or risk mitigations will be considered in accordance with the delegated financial authority policy and risk management policy.

The Construction Programme Director will provide the following monthly to the PCG:

- Project schedule monitoring
- Project status report in the format of the standard Clinical Support Services report template
- Project financials including reporting commitments and use of contingency
- Project risk updates the project will be run to the ISO:31000 standard.

Other items will be provided as directed by the PCG or at appropriate stages of the project.

Programme reporting will be as follows:

- Fortnightly to Facilities Development Governance Group
- Monthly to the Hillmorton Project Control Group
- Fortnightly to the Programme Manager and the project control meeting.



6.1.5 Outline programme plan

The outline programme plan is attached.

6.2 Two User Groups will contribute to facility design

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CDHB has extensive experience in including user group input into the design process. Two User Groups will be established—one for adult acute inpatients, and the other for forensic.

The User Groups will report to the PCG. User Groups will be established to include a wider range of disciplines and ensure strong multi-disciplinary team input. The groups will input into the detailed design of the building to ensure that the end result is a built environment that closely matches the needs of service users and provides appropriate support for family/whānau. Where required the User Groups will reach out for input from the community. This may be in form of consultation or secondments onto the group.

The benefit of ongoing user group input, including to detailed design stage, is that it provides consistency of input and allows the development of ideas that better inform design throughout the project.

User Group members will be able to regularly engage with designers to take early observations and thoughts to fruition in the detailed design stage. Members will build knowledge, skills and shared experience which can add significant value to consideration of options and inevitable choices about design, materials and construction. The project will continue with extensive engagement in a user group process to incorporate co-design principles and to realise this value throughout the project.

Final design decisions will be made by the sponsor in conjunction with the PCG and FDGG. The proposed membership of the User Groups is outlined below (Figure 22 and Figure 23). This will evolve through the design phase to include a wider range of stakeholders, including community, iwi, and consumers.

Figure 23 Proposed User Group membership

Position
Clinical Lead MH facilities
Service lead
Clinicians or staff from the service area – range of disciplines and roles
Consumer advisor
Family advisor
Pūkenga Atawhai



6.3 **Project takes time to develop design**

The design and construction programme will be progressively refined. The current programme is based on assumptions about shape and size of buildings that will only be fully known once preliminary designs are available.

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The next steps following approval of this business case are to:

- confirm the Project Control Group membership
- confirm the user group representatives
- develop a detailed project management plan for approval by the Project Control Group
- procure detailed design consultants.

The broad shape of the programme has been drawn up and costed.

Each project in the Programme has four main stages: inception, detailed design, main contractor procurement, construction. An indicative timetable for high-level key milestones for the Adult Acute Inpatient facility and for the Forensic facility is outlined below but this will be revisited in the detailed project plan.

Table				
Stage	Stage	Duration	Start date	End date
Inception	Confirm project governance structure and membership	1 month	Month 1	Month 1
	Procure design consultants	8 weeks	Month 1	Month 2
Design	Preliminary design	10 weeks	Month 3	Month 5
	Developed design	16 weeks	Month 5	Month 8
	Detailed design (Drawings for consent/tender/construction)	18 weeks	Month 9	Month 13
Contractor pro	ocurement (see commercial case for further detail)	4 Months	Month 14	Month 17
Construction	Consenting and construction period	16 months	Month 18	Month 33
	Complete build and handover	2 months	Month 34	Month 35

6.3.1 **Communications will be specific to the audience's needs**

A detailed communications plan will be developed following approval of the business case.

Engaging with internal and external stakeholders in the development of the new mental health facility is paramount. The communications approach will ensure that the flow of information is two way and allows feedback from stakeholders rather than simply presenting information without engagement. Central to the communications will be a repository hosted on the DHB website that contains all publicly released information including media releases, project plans and available design information. The communications schedule will be driven by specific project events, with content driven by new information.

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The User Group will be the primary method to communicate to close stakeholders. This channel is important to create engagement with our diverse stakeholders and will continue through the project.

We will engage and keep staff informed, beyond the user group process, as they will be critically impacted by the new facility. A feedback mechanism will be developed to gather staff input throughout the project. Regular DHB communications will be used to share project updates with the wider CDHB community.

The mental health and addictions, and prison community, which includes users, whānau and supporters, are the primary external audience. The user group is an important source of information and members will be encouraged to share information at an appropriate level, with their wider networks. We will provide regular updates to the Consumer Council as the project progresses. Information will be disseminated to the general public through mainstream and social media. We will consider whether one or more community forums are needed.

6.4 Benefits management will be core to the project

The CDHB's experience in benefits planning has been informed by the recent Outpatient and Inpatient construction as well as that of Burwood Hospital. The benefits committed to in those projects have been largely realised ahead of the completion of the build.

Benefits management is the identification, analysis, planning, realisation and reporting of benefits. Project investment decisions need clearly defined deliverables and measurable benefits. CDHB will manage the benefits in four stages:

- 1. Identification: Identify benefits, dis-benefits, measures and benefit owners.
- 2. Analysis: Quantify and analyse the benefits and how the benefits will be measured.
- 3. Planning: Defining when benefits are expected to occur, and what is needed to be done to achieve the benefits.
- 4. Realisation and Reporting: Track and report on benefit occurrence. This will take place during and after the project.

The expected benefits have been initially identified in the Strategic and Economic Cases. Project benefits will be managed during and after the project, with appropriate monitoring and reporting. The Programme Sponsor will be responsible for managing the benefits process and will be accountable for the benefit realisation. To manage the benefit realisation, benefit documentation process will include:

- Benefit Profile: benefit details.
- Benefits Realisation Plan: benefits and when they will be achieved.
- Benefits Register: a consolidated view of benefit information.



6.5 Risk management is mature and project risks are developing

A risk schedule for the project will be managed by the Programme Director. The Programme Director will manage the project policies and practices for the identification, assessment, recording, treatment, mitigation, monitoring and reporting of all risks and issues, which have the potential to threaten the project schedule, budget or quality of deliverables or have an adverse impact on the DHB.

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Risks and issues will be a standard agenda item at PCG meetings and will form part of projecting reporting to the sponsor. Key risks (i.e. those that have changed significantly or require urgent attention) will be reviewed by the Project Sponsor.

The detailed project risk schedule will also be informed by the risk registers developed by main contractor. It will be contractually required to identify, monitor and manage risks relating to the project where necessary and reasonably practical.

Ultimate ownership of risks will sit with the Project Sponsor, who will delegate day-to-day management of individual risks to the appropriate person or group. Where applicable, project risks will be escalated as part of the DHB risk management process through the Quality, Finance, Audit and Risk Committee.

6.5.1 Risk scoring matrix/DHB overall risk approach

Risk evaluation will be consistent with the overall CDHB process, which is governed by the Quality, Finance, Audit and Risk Committee. Risks will be assessed based on likelihood and consequence, using the existing DHB framework. We present the framework below:

Risk consequ	ience	Examples
Serious	5	 Death(s) or permanent disability of staff/contractor or visitor related to work incident or suicide Cessation of a key service Extended Ministerial Inquiry Cost overrun or reduction in revenue > \$2m or 2% of total divisional expenditure budget
Major		 Major injury/illness to staff/contractor or visitor Significant ongoing disruption to a key service Major inquiry by external agency Cost overrun or reduction in revenue > \$1m or 1% of total divisional expenditure budget
Moderate		 Disruption to a key service Inquiry by external agency CEO intervention Cost overrun or reduction in revenue > \$100k or 0.1% of total divisional expenditure budget. (whichever is lesser)
Minor		 Medical treatment or injury/illness for 2 or more staff/contractor or visitors Disruption to a service



	 Cost overrun or reduction in revenue > \$50k or 0.05% of total divisional expenditure budget. (whichever is lesser)
Minimal	 Minimal injury to any person(s), first aid required, with no lost time or restricted duties for staff/contractor Service delivery substandard Cost overrun or reduction in revenue > \$10k or 0.01% of total divisional expenditure budget. (whichever is lesser)

Likelihood of risk occurring	Definition
Almost Certain	Is almost certain to occur within the foreseeable future or within three months
Likely	Is likely to occur within the foreseeable future or in the next four to twelve months
Moderate	May occur in the foreseeable future or in the next one to two years
Unlikely	Is not likely to occur within the foreseeable future or in the next two to five years
Rare	Will only occur in exceptional circumstances

Combination of the consequence and likelihood estimates create a risk score from the matrix below. The most critical risks are those that are rated High or Extreme.

Pick Matrix		Consequence											
		Minimal	Minor	Moderate	Major	Severe							
	Almost Certain	Low	Medium	High	Extreme	Extreme							
po	Likely	Low	Medium	High	High	Extreme							
eliho	Moderate	Low	Medium	Medium	High	High							
Like	Unlikely	Low	Low	Medium	Medium	High							
	Rare	Low	Low	Low	Low	Medium							

6.5.2 Preliminary risk register

The table below outlines initial significant risks identified at this stage in the project and associated mitigation strategies. A full risk management plan will be developed by the Programme Director as part of the inception phase and will be endorsed by the Programme Sponsor. The current risk register is yet to be reviewed by the Quality, Finance, Audit and Risk Committee.

A risk register will be developed for the whole of the site with subsets of risk for each of the major construction projects.

In this programme of work, we identify general risks across the programme of activity as well as specific risks for acute inpatient services and forensic services.



Risk	Consequence	Likelihood	Risk level	Mitigation
Unexpected costs or cost escalation may result in the need to request additional funding to complete the project.	Severe	Likely		Costs to be validated by an external quantity surveyor. Ensure design work happens promptly. Appoint experienced Construction Project Manager. Regular reporting on budget.
Delay in construction works impacts overall timeline:	Likely	Moderate		Programme the site construction so that one construction workforce can move from one building to the next. Monitor schedule closely and escalate early if any concerns. Regular monitoring at site meeting and oversight at Project Control Group.
Changes in scope of project, or changes to design of facility after construction commences increases project costs	Major	Moderate		Early and frequent engagement with user group to deliver an agreed design in the Detailed Business Case stage. Close management of user expectations. Clear project governance and accountabilities to limit post final design changes.
Poor integration of contractors may lead to design issues that result in financial and administration issues.	Major	Moderate		An appropriate procurement model for selection of experienced contractors and consultants. External advice with regular meetings. One design consultant will be used across the site to reduce co-ordination issues.
Discrepancies, design errors in consultants' documentation could lead to quality and financial administration issues.	Major	Moderate		QA checking of all documentation. Ensure skilled and experienced consultants are engaged. Regular communication, design meetings, with consultants/contractors to work as a close team Allow sufficient time for full design drawings to be issued.
The completed building not fit-for-purpose or does not meet users' needs.	Severe	Unlikely		User Group process has close engagement with the design team through preliminary and developed design, for each building. Close engagement of Facilities Management with the Facility Project Team.
A lack of momentum due to calls on time on other construction sites	Major	Likely		Ensure there is a linked up Hillmorton specific project governance mechanism incorporating the service (the operator) as well as facilities management.

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Risk	Consequence	Likelihood	Risk level	Mitigation
Model of care not being implemented in a timely way means the acute inpatient facility in particular	Major	Moderate		Coordination between project governance and DHB governance to ensure model of care changes progress with project programme. Engage those delivering model of care.
Sustainable staffing model unable to be delivered due to mismatch of workforce skills	Severe	Unlikely		Inform wider DHB governance of the expected benefits that rely on a suitable workforce. Recruitment focus on future facility workforce requirements rather than on current needs.

Risks specific to forensic services' facility

Forensic services buildings are very specific in their construction with medium level security arrangements as well as, necessarily, a robust and non-ligature interior.

	Risk	Consequence	Likelihood	Risk level	Mitigation
	Forensic facility fails before a new one is built	Severe	Likely		None. If it fails, patients will be housed in the acute inpatient ward with great difficulty also greatly reducing available acute inpatient beds.
	Design is not fit for purpose for a forensic facility	Severe	Likely		Design services will be sought from a range of architectural firms and a requirement will be experience in design of forensic services facilities. An independent design review will be sought.
	Iwi aren't aligned to the purpose of the building	Likely	Moderate		There will be close consultation with Iwi in development of the concept and preliminary designs.
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Risks specific to adult acute inpatient facility

Risk	Consequence	Likelihood	Risk level	Mitigation
Acute facility fails before a new one is built	Severe	Likely		None. If it fails, consumers will be housed in the acute inpatient unit with great difficulty also greatly reducing available acute inpatient beds.
Design is not fit for purpose for an acute facility	Severe	Likely		Design services will be sought from a range of architectural firms and a requirement will be experience in design of forensic services facilities. An independent design review will be sought.
lwi aren't aligned to the purpose of the building	Likely	Moderate		There will be close consultation with iwi in development of the concept and preliminary designs.

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6.6 Project reviews will be independent and undertaken regularly, for each project

CDHB will commission independent auditors to undertake a set of reviews before, during and after each project. They will report to the Quality, Finance, Audit and Risk Committee. The planned reviews are:

- Pre-project—set planned audit process, review and implement information capture required for assessments at mid and post-project stages.
- Mid-project—track ongoing project performance against timeline and budget. Consider effectiveness of governance process and stakeholder satisfaction.
- Immediate post-project—identify lessons learned and to assist in planning of future, similar projects. Consider project performance by tracking project performance against original timeline and budget.
- Post-project—post-implementation review to assess if expected project benefits were achieved.

These reviews will occur for each construction.



Part Two: Detailed business case for RELEASED UNDER THE OFFICIAL INFORMATION ACT Infrastructure and stages 1A and 1B

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7. Detailed business case for site infrastructure

Site infrastructure is a material issue and cost of construction on the Hillmorton site. Engineers and facility managers identify material risks including stormwater issues, potable water issues, fire safety issues and a lack of resilience in the electrical infrastructure.

7.1 Site infrastructure

The Beca Hillmorton Master Plan – Sitewide Services report³⁸ was commissioned and proposed a services infrastructure blueprint for the Hillmorton site for the next 20 years. This report was based on the masterplanning exercise completed at the end of 2019. The Beca report uses that review as a basis and overlays suggested strategies for electrical, heating, cooling, civil infrastructure and fire protection solutions to support the redevelopment of the site.

The key proposals in that Beca report included in the report are:

- The need for an additional HV/LV electrical Sub-station at the north of site and expansion of the southern SMHS substation.
- Additional diesel backup generation capacity at the north of the site.
- Expansion of the SMHS artesian heating and cooling system to serve the whole site. A new northern plantroom and expansion of the southern SMHS plantroom will eventually allow the removal of the site wood chip plant. These plantrooms will be interconnected to improve resilience and redundancy in the event of plant failure and shutdowns.
- A new GSHP bore field to the north of site and expansion of the SMHS southern bore field for the heat pump plant.
- A new fire ring main around the site is proposed to allow the new buildings to be connected back to the SMHS central water tanks.
- The site water main is being upgraded as part of the SMHS project, it is anticipated that local extension of the site mains water network will be undertaken as the buildings are upgraded.
- Hot water will be provided on a building by building basis, powered via the central heat pump network.
- New surface and sewer water drainage connections and swales.

The architectural staging plans have been overlaid with the services implications at each stage (see appendices).

Table 23 List of infrastructure items

Category	Item description
Demolition	Forensic Service

³⁸ Beca Limited. 2020. Hillmorton Master Plan – Sitewide Services.



	Acute Inpatient Service – Te Awakura
	Aroha Pai
	Te Waimokihi
	Recreation Centre
	Te Whare Mauriora
	Avon Administration
	Tupuna Villa
	Totara House, Library
	EV for Asbestos
Site Preparation	Site clearance remaining site
	Site clearance to new build areas including roads and footpaths
	Extra Value Existing in ground contamination
	Relocation of Existing Services @ \$400/m2 of site clearance
Infrastructure Mechanical	Heating and cooling would be provided by GSHP with new site distribution
	Mains Pipes and connections
	Decommissioning and Demolition of existing woodchip boiler house
	Transfer Buildings from Woodchip boilers to GSHP
	Interconnecting pipework between energy centres for diversification H&C F&R
	Removal of existing underground pipework
IN.	Extra value for stand-alone main heating & cooling plant due to isolated location of Forensic Rehab
Infrastructure Electrical	Mains 3000kvA
C V	Generator2300kVA
	Electrical Infrastructure expansion of both the HV/LV Networks is necessary
	Substations
	Removal of existing cables
	Extra value for stand-alone HV supply due to isolated location of Forensic Rehab
	Extra value for stand-alone generator due to isolated location of Forensic Rehab
Infrastructure	New comms hubs in energy centres
Communication	Allowance to connect fibre and site-wide data



	Removal of Existing
Infrastructure Plumbing	P&D allowance
& Drainage	Fire Ring main upgrade
	Provide separate backup water tanks and fire pumps at each energy centre
	Removal of existing
Infrastructure Civil	Stormwater attenuation to remaining site
	Roading 5m wide
	Footpaths 2m wide
	Sewer water alterations
	Tunnels

7.2 Procurement arrangements for Stage 1

Stage one of the Hillmorton programme requires external expertise to deliver construction and design services. The construction services required are extensive.

The preferred construct only procurement method will require separate contracts for construction and design, with design completed in advance of the construction process.

CDHB wish to procure the construction services in two packages; a construction and demolition package with a separate civil package. The construction/demolition package involves the demolition of existing buildings, preparation of the site, and construction of the proposed stage one buildings. The civils package will incorporate plumbing and drainage (including fire services), roadings and footpaths, electrical, mechanical infrastructure and car parking. The separation of the two construction packages will achieve efficiencies in cost and programming.

CDHB will procure an architecture firm to progress the facility design though to detailed design. The detailed design will define all building elements, materials and systems. Detailed design will feed into both the consenting and procurement of the construction contractor.

Beyond production of the detailed design, the design team will also review construction bids to ensure they meet the design requirements. Following the start of construction, the design team could also be involved in checking the construction process is meeting the specifications and performance criteria set out in the detailed design.

Stakeholder engagement is important to the design of the units. It will be important for the design team to be closely involved with ensuring stakeholders' needs are met in the design and construction of the buildings. Engagement with the User Group will be needed, and potential design providers will need to demonstrate their experience in navigating a broad and diverse set of stakeholders.



7.2.1 Procurement is two-stage for design and construction

Both the design and construction contracts will be procured via the Government Electronic Tender Service (GETS). A two-stage competitive tender will be undertaken for both the design and the construction contracts. The two stages are a preliminary Registration of Interest (ROI), followed by a Request for Proposal (RFP). The ROI stage allows CDHB to reduce the number of bids to evaluate as well as provide prospective bidders certainty to their level of competition, which will engender more competitive price bids due to the improved chances of success compared to an unlimited competition.

An open competitive tender is required given the size of the contracts, as well as a desire to encourage as wide participation in the process by the market. This is a transparent process, provides a true indication of project costs and is aligned to Government rules of procurement. An indicative timeline for both tender processes is set out below.

Action	Design
Approve Procurement plan	Week 0
Upload ROI to GETS	Week 1
ROI closes	Week 5
ROI evaluation	Week 6
RFP uploaded to GETS	Week 7
RFP submission period closes	Week 11
RFP evaluation complete	Week 12
Contract negotiations complete	Week 13
Management recommendation and signoff	Week 14
Design commencement	Week 15

Table 21 Draft design procurement timetable

Source: Government procurement rules, CDHB

Table 22 Draft construction procurement timetable

Action	Construction
Approve Procurement plan	Week 0
Upload ROI to GETS	Week 1
ROI closes	Week 5
ROI evaluation	Week 6
RFP uploaded to GETS	Week 7
RFP submission period closes	Week 12



Action	Construction
RFP evaluation complete	Week 14
Contract negotiations complete	Week 16
Management recommendation and signoff	Week 17
Design commencement	Week 18

Source: Government procurement rules, CDHB

7.3 Evaluation criteria and team

A cross-functional team will be involved in evaluating bids and recommending the preferred supplier. Selecting the right members of the panel will increase the quality of decision making for the preferred supplier. The panel make-up will ensure key stakeholders are part of the recommendation process.

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People with specific knowledge of construction projects and expertise in undertaking evaluations on the scale and nature of projects similar to the facility build will be included on the panel. Care will be taken to ensure there is a diverse mix of members from different backgrounds to enable a broad suite of views are covered.

Evaluation panel membership would consist of the following members:

- DHB project lead
- Clinical representative
- Programme Director Construction and Property
- Maintenance and Engineering Manager Team
- Project quantity surveyor
- Project Manager.

There will also be a set of non-voting advisors representing these specialities:

- Legal
- Financial
- Probity.

7.3.1 **Prerequisites ensure minimum standards are met**

Both design and construction bidders will need to fulfil a set of prerequisites to progress to tender evaluation. They must:

- have a legal structure or proposed legal structure with one organisation with clear responsibility and accountability to deliver the Requirements
- demonstrate the company is financially sound, can meet a solvency test and provide audited accounts
- have prior experience in constructing or designing buildings of a construction value of \$50 million within the last five years, with a preference for health projects



• demonstrate that they comply with all relevant employment standards and health and safety requirements.

7.3.2 Request for information evaluation criteria

The initial ROI stage is to reduce the number of interested parties. CDHB envisage five or six parties will be invited to participate in the request for proposal stage. The ROI would be evaluated using the criteria in Table 26**Error! Reference source not found.**

Category	Detail required	Weighting
Relevant experience	Previous experience in projects of similar scale and complexity	30%
Track record	Completing projects to target performance levels, on schedule and within budget. Require written references.	30%
Technical skills	Ability of proposed personnel in the technical skills required.	5%
Capacity	Availability and current workload of key personnel and proposed staff	20%
Management skills	Practices used to deliver and ensure quality services	15%

Table 26 Request for Information evaluation criteria

7.3.3 Construction tender evaluation criteria

Following the ROI, parties selected for the RFP will undergo a further evaluation of their bids. CDHB place price as the primary factor in assessing construction tenders. If, however, a bid is materially lower than others, further investigation into the underlying drivers for the price will be taken, to ensure there is not a miscalculation. An excessively low bid price may place a risk of default on the contractor, which would be an extremely poor outcome for both contractor and CDHB. **Error! Reference source not found.** Table 27 provides the construction tender criteria and weighting.

Category	Detail required	Weighting
Fixed Price	Breakdown for stage of construction	40%
	Variation methodology and pricing	
Methodology	Proposed approach for delivering contract	25%
	Integrated project timetable	
	Relationship management	
	Risk register and mitigations	
	Site health and safety plans	
	Opportunities for partnering with Māori and Pasifika organisations	
	Social Procurement – Use of local firms and local labour with proportion of local labour and resources used on the build	

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Table 27 Construction tender criteria



	Alignment with Construction Accord (social, green and broader outcomes)	
Experience	Previous experience in constructing similar facilities	15%
	Availability of key personnel	
Capacity	Sufficient resources to complete project Sub-contractor engagement Key capital equipment	20%

7.3.4 Design tender evaluation criteria

As with the construction process, parties successful in the ROI stage will be invited to respond to a Request for Proposal. These bids will be evaluated using the criteria and weighting in Table 23**Error! Reference source not found.**

Table 23 Design contract criter

		1
Category	Detail required	Weighting
Fixed Price	Breakdown for each design stage, and rates for variations	30%
Methodology	How design will be progressed including interaction and engagement with clinicians, user group, iwi and other stakeholders as required Ability to incorporate local participation in design, especially contributions from stakeholders	30%
Experience	Previous experience in designing similar sized facilities, with preference for health care projects	20%
Capacity	Availability of key personnel and ability to deliver design in proposed timeframes	20%

7.4 Risk allocation will be fair and transparent

A fair allocation of project risks is desired.

Risks should be held by the party that is best positioned to manage, understand and price each risk.

- Risks are assigned to the party who can most effectively reduce the likelihood of each risk or reduce the adverse impact of that risk should it occur.
- Key risks are placed with the successful bidder—such as construction performance, cost overruns and programme delay.
- The DHB will retain risks with time and cost implications, as well as design and site risk.
- A detailed risk allocation between the DHB and the contractor will be agreed during contract negotiations.



The proposed risk allocation is set out in Table 24Error! Reference source not found.

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Table 24 Risk allocation

Risk type and allocation	СДНВ	Contractor
Site Risks		
Existing ground conditions (pre-construction and construction)	\checkmark	7
Unforeseen contamination	✓	4
RMA designation	√	<u> </u>
Finds/archaeological artefacts	✓	, 2,
Design		<i>H</i>
Design specification (including clinical requirements and performance standards)	1 CO	
Changes to design specification (including clinical requirements and performance standards)		
Design constructability	√	
Conformance with design specification	\checkmark	
Compliance with legislative design standards	√	
Design fault (including incomplete or ambiguous drawings) or delay	√	
Building, engineering and resource consents	\checkmark	
Construction		
Site safety		\checkmark
Construction programme and performance		\checkmark
Building inspections, and code compliance		\checkmark
Construction cost overruns (e.g. labour supply, materials, fuel, etc.)		\checkmark
Construction errors, defects, non-compliant works, quality control		√
Financial		
Insurance premium increases (construction)		√
Inflation/escalation (pre-construction)	✓	
Inflation/escalation (during construction)		√



 \checkmark

7.5 Contract rules and payment terms

The DHB will use industry standard contracts. For the design works contract a long form conditions of contract for consultancy services will be used. The standard form construction contract (NZS3910:2013) will be used as the base contract for the construction works, with specific CDHB special conditions. The key steps are:

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- A contract structure with a fair risk allocation that ensures a clear description of roles and responsibilities, process for proposing and pricing changes/variations, inclusion of termination clauses, a security regime and disputes resolution process.
- A draft version of the desired contract will be issued alongside the RFP allowing the opportunity to negotiate contractual positions with the contractor and reduce contract changes during the construction phase.

The DHB will pay a fixed price as agreed in the contracts for delivering and designing the mental health facility. The payment terms will be set as standard under the Construction Act 2002.

- Progress payments will be made according to an agreed schedule that is linked to agreed milestones. Milestones will be developed and monitored by the DHB's project team.
- Required outputs will need to be demonstrated to have been delivered within a given time period or to meet a given milestone to be eligible for payment.
- Any contractual changes or variations made to the scope, programme or performance metrics after contract signing will be incorporated into the payment mechanism once that change or variation is agreed by the DHB.

The DHB expects payments to be subject to an agreed security regime. The regime may include liquidated damages, insurances, guarantee(s), performance bonds or retentions.

7.6 Three buildings will be designed and constructed.

The three buildings that will be constructed are the Campus Heart building, the Forensic Rehabilitation and Outpatient building, and the Acute Inpatient Services building.

7.6.1 Creating a 'Campus Heart'

The Hillmorton site is missing a 'heart' to bring people together, welcome visitors and service users and training/education for staff. Currently, welcoming, training and support services are split across Te Korowai Atawhai, the Avon building, training unit and rooms or are non-existent. There is a clear need to provide a cultural heart to the campus; a space where people can get support, training, celebrate and find peace. The masterplan places this at the heart of the site. It will be a key landmark building to welcome visitors; a space with staff, consumer and family, whānau at the centre. Spiritual space on the campus was lost as a result of the Canterbury Earthquakes and subsequent demolition of the Chapel. Replacement of a spiritual space is critical to support wellbeing.

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The key functions of a campus heart space would be:

- Café accessible for all especially important for consumers who may spend long periods in hospital on the site and welcoming spaces for family, whānau.
- Whare hui key space to reflect Tikanga Māori and spiritual approaches. Flexible space to support coming together for support, training or reflection. It is envisioned that this space would support staff, consumers and family in Taha Wairua one of the four cornerstones of health. This would also support Te Korowai Atawhai and Pūkenga Atawhai in coming together for whanaungatanga day each fortnight.
- Flexible group and training rooms with the ability to support large gatherings for welcomes and visits.
- Easy access to outdoor space.
- Flexible multi-use space ensures best use of valuable resources

There is a strong synergy between the workforce development and embedding Tikanga Māori in the building, and this is a key focus of workforce development for SMHS.

Critical to workforce development

Being a part of the 'heart' would refocus workforce development as a core part of SMHS. In the present location the team is disconnected from both training spaces and the people they work with.

The current training spaces are not flexible nor best use of space. Older lecture theatre type seating arrangements do not support contemporary education delivery methods. The two main training rooms are located in temporary prefab buildings on site.

The main foci of the training and workforce development are:

- Working in partnership with clinical, Māori, family and consumers to understand staff development needs, and to co-create plans around these. These plans have a focus on implementation in everyday practice.
- To develop and deliver quality education events in partnership with Maori, consumers, family/whanau and clinicians as part of these plans.
- To support clinical teams to understand best practice through the use of literature from our library services.
- To provide integrated practice programmes, such as NESP.
- A flexible multi-use space ensures best use of valuable resources.

Outdoor space will be easy to access and is located amongst key green space, forming the heart of the Hillmorton campus.





Area	Needs
Whare (will be named later)	To be the site hub that has a marae structural base
	To be used for welcoming and farewell events and as a spiritual area and for training (cultural and clinical)
	Needs to be adjacent to the café and/or with access to a whare kai and access to the wider seating space.
Cafe	Access for delivery of food from the main kitchen to be situated at the end of the building.
	Facilities for heating food and chiller cabinets
	Space for gathering inside and an outside courtyard
	Flexible spaces that allow areas to be separated off (e.g. for staff) Family space near the cafe
Flex and group spaces	To accommodate administration, shared office spaces, generic work rooms, training rooms etc
Staff office space	To accommodate training unit staff, cultural lead, chaplains and site security

7.7 Forensic rehabilitation and outpatients

The Regional Forensic Psychiatric Service provides a specialist comprehensive, integrated community approach to the assessment and treatment of individuals with a known or suspected mental disorder who are involved in the justice system. The aim is to reduce their personal distress and reduce their risk of re-offending, in consultation with their family/whānau.

Community care is at the heart of the service with interventions delivered in the least restrictive environment possible promoting valued, socially adaptive living and continuity of care. The forensic service is provided across medium secure, low secure, community, court and corrections environments.

Below we provide more detail on the current state of Te Whare Mauriora – Forensic Rehabilitation (low security) and the Forensic Community Team – Te Whare Rangihau.

The unit is currently located in an old villa (Building 5) on the Hillmorton campus. The unit is not clinically fit for purpose and has a number of design features that do no support contemporary mental health care.

The unit has several current challenges:



• Lack of ability to respond to gender needs - shared bathroom facilities and lack of additional lounge space

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- Limited outdoor space
- Ligature points exist throughout the building
- Minimal spaces for interview/ therapy spaces and the size of existing spaces are small e.g. medication room
- Lack of large group/ whanau space
- Lack of suitable toilet facilities four in total: two ensuite for single consumer use, two remaining for rest of unit consumers)
- Lack of suitable family/ whanau spaces indoor/ outdoor
- Lack of large meeting spaces
- Limited laundry facilities/ clothes lines essential for core rehabilitation
- Lack of space for suitable activity/ gym area
- Lack of storage for personal belongings and unit items such as bicycles.

The current unit does not allow for a transition space for consumers to 'trial' flatting and selfmanagement in a supported environment. The current small kitchen where this rehabilitation can be 'practised' is in the least observable part of the unit and does not contain a full kitchen that supports skill generalisation.

In the current design, should a consumer require additional support due to a deterioration in mental state they require transfer to the medium secure unit as there is no space for this within Te Whare Mauriora.

Criteria	Te Whare Mauriora			
Gross floor area*	50m ²			
	63% of benchmark size			
Total score^	166/270			
Appropriate external functional relationships	15/20			
Appropriate internal functional relationships	17/30			
Access	13/15			
Adequately sized/shape/layout key clinical spaces	9/55			
Enhanced communication between staff and patients	24/30			
Enhance privacy	5/5			
Reduce patient infections	25/35			
Reduce medication errors	10/20			
Enhance staff & patient safety	48/60			

Table 25 Summary of clinical facility fit for purpose assessment of Te Whare Mauriora

Te Whare Mauriora is a 13-bed, adult open forensic unit. It is accommodated in half of Building 5, which is a square 'donut' with an internal courtyard separated in half. The Kennedy Detox unit is accommodated in the other half. No elements of the building are shared.

The unit accepts both male and female consumers, 17–65 years, and sometimes older. There are always more men than women. Currently the unit has consumers who have been resident for more than 2 years.

Consumer cohort separation, whether by diagnosis or gender, is a key concern, especially for women, who may be more vulnerable in this community.



The unit does not have enough key clinical support spaces for the model of care, such as; lounges, activity spaces, consulting rooms and has no multifunction group room, indoor exercise room, sensory modulation rooms, de-escalation areas, interview rooms or whānau rooms. There is no capacity for managing cultural considerations. The external courtyard has two points of access and is well utilised.

Bedrooms are all small, especially when considering the length of stay, and none have ensuite facilities. There are only 2 x WC's, (one used to be for staff), and 2 x WC/shower rooms and 1 x bathroom without a WC. There are not enough, and all are shared. This is problematic, especially for female consumers.

Staff do not have a dedicated meeting room and have only 1 x WC on the unit.

The unit has a single point of entry for all staff, consumer admissions, visitors, food (self-catering), and deliveries (consumables). The loading bay is not used for any inwards goods dues to access issues, however, is used for rubbish going out. The linen (clean and dirty) has a separate entrance off the back of the unit. Consumers do their own laundry and use this entrance to access the clothesline. Security is compromised by this door.

The unit is situated close to the Southern motorway which is very noisy most of the time. The unit is in poor condition with sub-optimal environmental systems; heating/cooling/ventilation and poor natural light. There is asbestos in the roof space. Keys are still used to access spaces throughout the unit.

Source: Macfarlane, R. 2020. [DRAFT] Clinical Facility Fitness for Purpose Canterbury District Health Board. Ministry of Health. Ministry of Health NAMP Clinical Facility Fit for Purpose workstream assessed physical aspects of critical infrastructure within DHBs. The NAMP team assessed the unit against the Australasian Health Facility Guidelines (AHFG) for area and nine international evidence-based principles that promote safe design for patients and staff.

* Minimum AHFG guideline (80m2 per bed).

^ Each question is allocated a score of 1 to 5 (1 = optimal and 5 = least optimal). Therefore, the lower the score the more optimal the clinical facility.

7.7.1 Consequences of lack of appropriate space

The lack of appropriate therapeutic spaces inhibits consumer recovery and creates safety risks for consumers and staff. Consequences include:

- risk of significant security issues if the building is closed due to building failure (e.g. ventilation system)
- operational inefficiency
- high rates of seclusion and assault (violence, sexual assault) consumer on other consumer and staff
- high levels of staff leave (sick, ACC)
- high staff turnover
- C high levels of consumer/whānau/family experience dissatisfaction (service and cultural).

7.7.2 Forensic Community Team issues (Te Whare Rangihau)

The Forensic Community Team provides care for people with a mental illness that have police, court and/or prison involvement and require assertive outpatient care.

The team is currently located in an old villa on the Hillmorton site. It is not purpose built and lacks the facilities required to ensure the safety of staff working in the building.

Current issues include:



• Lack of suitable entrance space to screen or undertake metal detector sweep and no waiting area

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- Lack of security/duress alarms
- Limited interview and large meeting space
- Medication room no space to do physical examinations, safety is an issue
- Lack of storage
- Poor heating/cooling
- No dedicated male/female toilets for staff or consumers
- Poor working space for staff challenges with noise and distraction few quiet spaces for dictation, privacy for clinical discussions.

7.7.3 Forensic rehab and outpatients functional requirements

Area	Needs	
Rehab	13-bed unit with an additio	nal High Care Area/Suite (flex area):
	• 9 regular sized ro	poms with ensuites
	2 larger sided ro	oms with ensuites
	• 2 transitional flat	suites (can be used as regular flex beds)
	An additional High	gh Care Suite
	High Care Area to be based	around a lounge with a bedroom and ensuite. This will
	ensure an important shift fro	om the current model for consumers requiring a place
	away from peers. This will el	iminate the need for them to go back to Te Whare
	Manaaki and will encourage	practices of least restrictive access with an
	environment to support that	
	Gym space included in the a	ctivity area
	Spaces for pre-vocational w	ork that sits along-side a talking therapy space
	Indoor space for family/whā	nau that connects to an outdoor space
Shi	Areas that enable the small	specialist teams to work together
LA	Individualised space	
	AVL space	
	Multi-use area (heart of the	unit)
Ÿ	Whānau area	
	Multi-use areas for staff and AVL/review bookable space	supervised consumers for parole board etc, includes
	Transition space	

The table below sets out the functional requirements for these activities.



	A transitional flat which allows consumers the opportunity to test out and practice skills for community living such as budgeting, meal prep and home management with intensive support.
	High care space
	A suitable space to respond to consumers who may be experiencing a deterioration in their mental state, or consumers from the community who may require short intervention i.e. administration of medication. This would reduce the need for transfer to a medium secure environment for some consumers and could reduce demand on the acute part of the service.
	Larger group and whanau spaces
	To support group and whanau involvement, cultural input, closed group work and prevocational group work.
	Indoor outdoor flow
	To create a sense of space and support self-regulation strategies and equally well initiatives. Outdoors raised garden beds as some consumers currently grow their own vegetables and to support sensory garden needs
	Flexibility to pod consumers based on risk or gender needs
	Individual rooms, with ensuites, pod lounges and suitable large spaces to support physical, bariatric or end of life care needs
	Large self-catering kitchen
	Requires suitable storage space and space required number for freezers/ fridges. Needs to incorporate two self-catering cooking areas.
Outpatients	Search space near the entrance with lockers
	Co-location with Te Whare Mauriora would enable more appropriate duress response and improved security. This would also place the Forensic team in closer proximity to the wider Forensic service.
EAST	Improved design with appropriate security features - on entry and dual egress from meeting rooms, clear staff consumer areas
	Increase in therapeutic and interview space and suitable meeting space.
K.	Improved audio-visual capabilities within the design
	Improved facilities for staff



7.8 Te Awakura – Adult Acute Inpatient Service

Below we provide more detail on the current state of Te Awakura – Adult Acute Inpatient Service. The next stage of work would be to issue a design contract and to consider the two competing designs of four modules of 20 beds or five of 16 beds, amongst other issues.

7.8.1 Overview

Te Awakura is an open inpatient facility for adults with acute mental illness that require 24-hour hospital care. Te Awakura has a total of 64 beds made up of four separate, 16-bed, open adult primary units (North, East, South, West) that service areas of Christchurch and correlate with outpatient teams. Each 16-bed unit includes three beds within a High Care Area that can be locked. The High Care Area is intended for consumers who require more intensive support, treatment observation and engagement. The High Care Area provides a lower stimulus, safer and more contained environments where increased care levels can be provided when required.

In addition to the 64 beds, there are three low stimulus/seclusion (LSA) spaces that are housed in Te Awakura, but they are shared across all mental health services on the Hillmorton Campus. These spaces are frequently used by other services.

Consumers from Hereford, Totara, Rural and Ashburton outpatient teams are accommodated across the four units.

7.8.2 An integrated model of care

In Te Awakura each inpatient unit is closely aligned with the corresponding community team (North, South, East and West). This integrated model of care supports single, integrated multidisciplinary teams functioning across community and inpatient settings with the community focus maintained regardless of care setting. This allows for consumers to receive co-ordinated and seamless support no matter the setting. Each consumer has an identified community case manager and their care and treatment is based on a shared plan with review and handover rather than repeated reassessment. For those consumers discharged to primary care from the inpatient setting a post discharge review is completed by the corresponding community team.

The care and treatment provided within Te Awakura is underpinned and guided by the following values, principles and philosophies:

- SMHS Strategic Pillars (Figure 1)
- Person centred practice
- Family/whānau inclusive practice
- Trauma Informed Care³⁹

³⁹ Refers to a service delivery approach that is based on knowledge and understanding of how trauma affects people's lives and service needs and usage.



- Meihana Model⁴⁰ Te Whare Tapa Wha
- Principles of recovery⁴¹
- Least Restrictive Practice⁴²

The multidisciplinary team (includes access to social workers, occupational therapists, medics, Pūkenga Atawhai, pharmacists, dieticians and physiotherapists) endeavours to form and maintain a therapeutic relationship with the person and their family/whānau and develop a collaborative, goal-centred treatment plan. Members of the multidisciplinary team work alongside the individual, their family/whānau and community supports to implement and evaluate the treatment plan on a day-to-day basis from the point of admission to the point of discharge.

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The service works closely with families/whānau and NGO providers to facilitate appropriate support on discharge for consumers.

The wider Adult Mental Health Service has worked closely with NGO providers to look at ways to offer an alternative to acute admission. In 2019, Te Ao Marama was opened, as a 7-bed, peer led, alternative to acute admission. Despite the success of this partnership demand has continued unabated on the acute inpatient beds.

The adult community intensive pathway commenced in March 2020 which is a brief and focused option of care for acutely unwell consumers to be supported in their home following discharge from hospital or to prevent an admission to hospital. This initiative is staffed by two registered nurses from existing funding and has been at capacity since its inception, with plans to expand as resources allow.

7.8.3 Occupancy is high and flow through is blocked by a lack of supported community accommodation

Te Awakura has had on average 111 admission and 111 discharges each month.

⁴⁰ This model encompasses the four original cornerstones of Te Whare Tapa Wha and inserts two additional elements. These form a practice model (alongside Māori beliefs, values and experiences) to guide clinical assessment and intervention with Māori clients and whānau accessing mental health services.

- ⁴¹ The principles of recovery-oriented mental health practice ensure that mental health services are delivered in a way that supports the recovery of mental health consumers.
- ⁴² Refers to practice in mental health settings that is mindful of the need to maximise both the autonomy and safety of service users and reduce or prevent practices that restrict personal freedoms and are known to cause harm such as restraint and seclusion.

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Figure 24 Number of Te Awakura (Adult Acute Inpatient) admissions and discharges by month, January 2015–June 2020

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The data shows that the average length of stay for Te Awakura has decreased from an average of 19 days in 2012 to 15 days in 2019. This compares to a national average length of stay of 18 days in 2018/19.⁴³ The continued high occupancy rate observed in Te Awakura is likely to shorten the average length of stay for some consumers.

There are currently a small number of consumers have extended stays of up to two years (some requiring a bed in the High Care Area). These extended lengths of stay more commonly relate to barriers to discharge, such as there being no suitable accommodation to meet their support needs in the community, rather than the need for extended acute inpatient care.

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⁴³ <u>https://www.mhakpi.health.nz/Data/Data/ADULT-ENDING-2019-06-30</u>



Figure 25 Average length of stay (excluding leave) for Te Awakura (Adult Acute Inpatient) consumers by month, January 2012–May 2020



Figure 26 Average length of stay in Te Awakura (Adult Acute Inpatient) for discharged consumers by month, January 2015–June 2020



On average 20 per cent (range of 7–31 per cent) of Te Awakura consumers were readmitted within 28 days of discharge between January 2012 and May 2020. There has been an increasing trend from an annual average of 18 per cent in 2012 to 22 per cent in 2019.





Figure 27 Percentage of Te Awakura (Adult Acute Inpatient) consumers readmitted within 28 days of discharge by month, January 2012–May 2020

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Operational efficiencies have been implemented and exhausted and efforts have been made to increase alternative inpatient admission and home-based support.

CDHB has recently reviewed and made some changes to the crisis admission pathway and the protocol outlining crisis admissions. Crisis admissions may be identified as part of a consumer's treatment plan, for short, focused admissions with a goal of providing a brief period of increased support to help the consumer not act on urges of self-harm or suicide. These changes were brought about following feedback from consumers and staff that the process and expectations of crisis admissions for consumers was unclear. There was inconsistency across inpatient and outpatient wards and there was some confusion about the purpose of crisis admissions (from both staff and consumers).

Currently crisis admissions make up on average 21 per cent of all admissions into Te Awakura, so it was important that a clear pathway and policy was developed to support consumers, their whānau and staff. A working party was formed and a new model was adopted which moves away from the purpose of crisis admissions being about containment and 'keeping the client safe', rather that its purpose is to provide a brief period of increased support to help the client not act on urges to self-harm, suicide or any other self-destructive action during a time of acute risk. This work is in its early stages but relies heavily on community treatment options being considered prior to admission which may include Crisis Respite Services or Te Ao Marama.

Month and Year	Total	Crisis	% of total
April 2020	76	15	20%
May 2020	86	20	23%
June 2020	123	25	20%



7.8.4 The Te Awakura building is not fit for clinical purpose and inhibits the provision of safe therapeutic care

The Ministry of Health NAMP Clinical Facility Fit for Purpose workstream assess physical aspects of critical infrastructure within DHBs. The NAMP team assessed the unit against the Australasian Health Facility Guidelines (AHFG) for area and nine international evidence-based principles that promote safe design for patients and staff.

Te Awakura South Clinical Facility Fit for Purpose Assessment highlights significant issues

Criteria	Te Awakura South	
Gross floor area*	39m ²	
	48% of recommended size	
Total score^	154/275	
Appropriate external functional relationships	17/20	
Appropriate internal functional relationships	17/30	
Access	3/15	
Adequately sized/shape/layout key clinical spaces	22/55	
Enhanced communication between staff and patients	24/30	
Enhance privacy	5/5	
Reduce patient infections	27/35	
Reduce medication errors	3/20	
Enhance staff & patient safety	36/65	

Table 26 Summary of clinical facility fit for purpose assessment of Te Awakura South

Te Awakura South is in a building with three other inpatient units, North, East and West. South is L shaped with a single central corridor.

Te Awakura South is an adult acute inpatient unit with 16-beds including a 3 bed ICU with a dedicated courtyard. Three seclusion rooms are in an adjacent ward and are shared between the four inpatient units in the building.

The unit has with significant issues.

The consumer group have complex needs and diagnoses. Separation of various cohorts of patients (age, diagnosis, acuity) is challenging in the current layout.

All bedrooms are single with doors that open into the main corridor. The corridor is narrow, and when opposing doors are open, visibility down the corridor is obstructed which raises safety concerns for staff and consumers. Four bedrooms have dedicated ensuites, the rest share bathroom facilities. All bedrooms are undersize to the AHFG.

There is a lack of clinical support spaces; lounges, activity spaces, quiet spaces, etc.

There is a lack of access to safe and desirable outdoor spaces.

The unit has key access (no swipe) to all rooms within the unit which is a safety concern for staff.

The environment is poorly maintained and is run-down.


Source: Macfarlane, R. 2019. Clinical Facility Fitness for Purpose Canterbury District Health Board. Ministry of Health.

Ministry of Health NAMP Clinical Facility Fit for Purpose workstream assessed physical aspects of critical infrastructure within DHBs. The NAMP team assessed the unit against the Australasian Health Facility Guidelines (AHFG) for area and nine international evidence-based principles that promote safe design for patients and staff.

* Minimum AHFG guideline (80m2 per bed).

^ Each question is allocated a score of 1 to 5 (1 = optimal and 5 = least optimal). Therefore, the lower the score the more optimal the clinical facility.

7.8.5 Ombudsman reports identify service and building improvement recommendations

Table 27 Summary of recommendations from Chief Ombudsman inspection for Te Awakura Inpatient Unit

Criteria	Te Awakura Inpatient Unit 2017						
Facilities,	Address privacy issues in North ward.						
privacy and safety	Notices detailing the process for entry and exit into the ward should be displayed in prominent areas when the doors are locked.						
	Replace worn and damaged soft furnishing.						
Restraint and	Review access to the seclusion area for clients in East, South and West wards.						
seclusion							
Service and	Develop a plan to reduce the number of sleepovers.						
therapeutic opportunities	Identify a more suitable family/whānau room.						
	Review the activities and programmes on offer in the wards and allow service users access to a gym.						
Consumer	Service users receive a copy of their treatment plan.						
rights	Consent to treatment forms should be completed and filed appropriately.						
	Service users be invited to attend their MDT meeting.						
Staff training and wellbeing	The Nurse Coach should work with nursing staff on the application of the Mental Health Act.						

Source: Boshier, P. 2018. Report on an unannounced visit to Te Awakura Inpatient Unit (Canterbury District Health Board) Under the Crimes of Torture Act 1989. Office of the Ombudsman.

7.8.6 Challenges of the current facilities (summary comment)

The building is end-of-life, not fit-for-purpose and inhibits the provision of therapeutic care. Challenges include:

- Environment run-down and maintenance costs are high
- Lack of building resilience (e.g. ventilation, temperature control)
- Lack of flexible indoor spaces (e.g. quiet spaces, low stimulus spaces, activity spaces, physical activity spaces, lounges, visitor/whānau spaces)
- No flexibility to appropriately cohort different consumers and to support a trauma informed approach (e.g. lack of ensuites, areas to separate males and females, space for time away when distressed)
- Lack of privacy (e.g. have to transfer people through public spaces to get from units to the LSA/Seclusion/CSU)



- High Care Areas have limited space especially for distressed consumers. Courtyards are small. Resource intensive for staff
- LSA area has limited line of sight and visibility, doors can be barricaded with heavy furniture and has no access to a courtyard
- Poor line of sight and visibility in main unit areas
- Lack of Tikanga Māori embedded in the building to support tangata whaiora accessing the service
- Lack clinical support spaces
- Lack of access to safe and desirable outdoor spaces (e.g. courtyards fencing is unattractive and can be climbed)
- Lack of appropriate private space for whanau and visitors when visiting consumers
- Lack of natural light
- Key access (no swipe) to all rooms

7.8.7 Consequences of the poor state of facilities

The lack of appropriate therapeutic space inhibits consumer recovery and creates safety risks for consumers and staff. Consequences include high rates of:

- readmission
- seclusion
- assault (violence, sexual assault) consumer on other consumer and staff
- sleepovers
- consumer/whānau/family experience dissatisfaction (service and cultural)
- staff leave (sick, ACC)
- staff turnover
- operational inefficiency (e.g. staff looking for spaces to meet with consumers).

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Appendix B Costs over time and by stage

Option 2 - Building	Specific	Breakdown
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ion 2 - Building Specific Breakdown		Constru	uction		External	Professional	Green star		Decanting and Relocation	Paysiament			
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It Inpatient Services Future Growth	1,680.00	\$	6,474	5 10,876,750	5 954,592	\$ 2,011,328	\$ 415,280	\$ 1,631,513	\$ 335,588	\$ 217,535	\$ 2,548,601	\$ 5,370,088	\$ 24,361,275
ensic and IDPH Forensic (AT&R)	6,650.00	\$	7,924	\$ 52,691,500	\$ 3,778,594	\$ 9,599,916	\$1,982,100	\$ 7,903,725	\$1,328,371	\$ 1,053,830	\$ 12,142,396	\$ 26,014,939	\$116,495,371
nsic Rehab and OP	2,220.00	\$	7,625	\$ 16,928,560	\$ 1,261,425	\$ 3,092,298	\$ 638,468	\$ 2,539,284	\$ 443,456	\$ 338,571	\$ 3,912,520	\$ 8,357,998	\$ 37,512,581
& Complex - Tupuna	1,964.00	s	7,626	\$ 14,978,160	5 1,115,964	\$ 2,736,001	5 564,904	\$ 2,246,724	\$ 392,319	\$ 299,563	\$ 3,461,713	\$ 7,395,043	\$ 33,190,391
PSAID and OP	2,482.00	\$	6,060	\$ 15,039,960	\$ 1,410,296	\$ 2,796,544	\$ 577,404	\$ 2,255,994	\$ 495,792	\$ 300,799	\$ 3,545,902	\$ 7,425,555	\$ 33,848,246
Outpatients	3,685.00	\$	5,668	\$ 20,887,700	\$ 2,093,853	\$ 3,906,864	\$ 806,652	\$ 3,133,155	\$ 736,097	\$ 417,754	\$ 4,957,222	\$ 10,312,712	\$ 47,252,008
uson Building	4,187.00	\$	5,934	5 24,846,800	\$ 2,379,094	\$ 4,628,402	\$ 955,629	\$ 3,727,020	\$ 836,374	\$ 496,936	\$ 5,869,889	\$ 12,267,405	\$ 56,007,550
opus Heart	1,737.00	\$	5,668	5 9,846,000	\$ 986,980	\$ 1,841,607	\$ 380,238	\$ 1,476,900	\$ 346,974	\$ 196,920	\$ 2,336,721	\$ 4,861,184	\$ 22,273,524
oty Chair	1,700.00	\$	6,500	\$ 11,050,000	\$ 965,956	\$ 2,042,713	\$ 421,760	\$ 1,657,500	\$ 339,583	5 221,000	\$ 2,588,269	\$ 5,455,625	\$ 24,742,407
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isting in ground contamination	s	4,716,900 \$	801,873.00 \$	163,363.19 5	94,338.00 \$	895,694 \$	1,342,703 \$	8,017,072	
ation of Existing Services @ \$400/m2 of site clearnace	\$	16,771,200 \$ \$	2,851,104.00 \$	388,66912 5	335,424.00 5	3,184,692 \$	4,774,057 \$	28,503,145	
structure		\$							
ing and cooling would be provided by GSHP with new site distribution	5	8,000,000 \$	1,360,000.00 \$	280,800.00 \$	160,000.00 \$	1,519,124 5	2,277,264 \$	13,597,188	
s Pipes and connections mmissioning and Demolition of existing woodchip polierhouse	5	13,000,000 \$	2,210,000.00 \$	456,300.00 \$	260,000.00 \$	2,468,577 \$	3,700,554 \$	22,095,431 849,824	
rer Buildings from Woodchip boilers to GSHP	5	250,000 \$	42,500.00 \$	8,775.00 \$	5,000.00 \$	47,473 \$	71,165 5	424,912	
ovel of existing underground pipework	s	1,000,000 \$	170,000.00 \$	35,100.00 \$	20,000.00 \$	189,891 5	284,638 \$	1,699,648	
value for stand alone main heating & cooling plant due to isolated location of Forensic Rehab	\$	500,000 5	85,000.00 \$	17,550.00 5	10,000.00 \$	94,945 \$	142,329 5	849,824	
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erator 1000kVA erator 2300kVA	5	3,750,000 5	637,500.00	131,625.00 5	75,000.00 5	712.089 5	1.067.468 5	6.373.682	
rical Infrastructure expansion of both the HV/LV Networks is necessary	S	10,000,000 \$	1,700,000.00 \$	351,000.00 \$	200,000.00 5	1,898,905 \$	2,846,580 5	16,996,485	
ovel of existing cables	ŝ	1,000,000 \$	170,000.00 \$	35,100.00 \$	20,000,00 \$	189,891 \$	284,658 \$	1,699,649	
I value for stand alone HV supply due to isolated location of Forensic Rehab I value for stand alone generator due to isolated location of Forensic Rehab	5	250,000 \$ 350,000 \$	42,300.00 \$ 39,300.00 \$	8,775.00 \$	5,000.00 \$	47,473 \$ 66,462 \$	71,165 \$	424,912 594,877	
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comms hubs in energy centers	\$	1,500,000 \$	235,000.00 \$	52,650.00 \$	30,000.00 \$	284,836 \$	426,987 \$	2,549,473	
vance to connect fibre and site wide data ovel of Existing	5	5,000,000 \$ 750,000 \$	830,000.00 S 127,300.00 S	26,325.00 S	100,000.00 S	949,433 S 142,418 S	1,423,290 \$	8,498,243	
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Ring main upgrade ide separate backup water tanks and fire pumps at each energy centre	5	5,000,000 \$	850,000.00 \$ 102,000.00 \$	175,500.00 S	100,000.00 5	949,453 S 113,934 S	1,423,290 \$	8,498,243	
oval of existing	\$	1,250,000 \$	212,300.00 \$	43,875.00 \$	25,000.00 \$	237,363 \$	355,823 5	2,124,561	
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ting 3m wide paths 2m wide	s	6,585,000 \$ 1,606,400 \$	1,119,450.00 \$ 273.088.00 \$	231,133.50 5	131,700.00 \$ 32,128.00 \$	1,250,429 \$ 305.040 \$	1,874,473 5	11,192,186 2,730,315	
er water alterations	5	1,500,000 \$	255,000.00 \$	52,650.00 \$	30,000.00 \$	284,836 \$	426,987 \$	2,549,473	
	•	\$	- \$	- 5	- 5	101332 3	5	2,00-,00J	
	\$	128,969,040 \$	21,924,737 \$	4,526,813 \$	2,579,381 \$	24,489,995 \$	\$ 36,712,072 \$	219,202,039	
PerStage		Total	Stage 1a	Stage 1b					
	5	4,734,700 \$	951,178 \$	1,221,962					
rep structure	\$	26,225,940 \$ 97,988,400 \$	5,246,499 5 19,602,580 5	6,740,087 25,183,097					



Appendix C Facilities measures



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Appendix D Schedule of Accommodation (attached as separate document)

RELEASED UNDER THE OFFICIAL INFORMATION ACT

PROGRAMME BUSINESS CASE - ⁰²⁰ HILLMORTON

Te Poari Hauora o Waitaha **RETO:** Chair and Members, Canterbury District Health Board **PREPARED BY: Rebecca Webster, Clinical Lead Mental Health Facilities APPROVED BY: David Meates, Chief Executive** DATE: 20 August 2020 \checkmark Report Status - For: Decision Noting Information

Canterbu

District Health Board

1. ORIGIN OF THE REPORT

This report provides the proposed Programme Business Case for Hillmorton Campus – Te Huarahi Hau - A new journey.

The Programme Business Case and recommended programme of works has been developed to support the Board endorsed Hillmorton Masterplan that was presented in 2019. This business case is also in response to the Ministry of Health's National Asset Management Programme report which identified significant issues with mental health facilities across New Zealand, but particularly in Canterbury, both in terms of being clinically fit for purpose and the site and building condition.

2. <u>RECOMMENDATION</u>

That the Board:

- i. endorses the Programme Business Case for Hillmorton Campus Te Hurahai Hau A new journey;
- ii. endorses the identified programme of work in the programme business case:
 - a. tender for and appoint design consultants for Stages 1a and 1b of the programme of work;
 - b. approve enabling site infrastructure works ^{9(2)(b)(ii)} for the programme business case including stages 1a and 1b;
 - c. approve construction of a 'campus heart' building (1,737 sqm; ^{9(2)(b)(0)} in stage 1a;
 - d. proceed directly to developing a detailed business case for the Forensic Rehabilitation and Outpatients building (2,220 sqm;^{9(2)(b)(f))} in stage 1a;
 - e. proceed directly to developing a detailed business case for the Adult Acute Inpatient Services building (10,442 sqm.⁹⁽²⁾⁽⁰⁾⁽⁰⁾ in stage 1b; and
- iii. approves the submission of the Programme Business to the Capital Investment Committee.

3. SUMMARY

The Hillmorton Site Masterplan exercise, completed in 2019, considered the general location of mental health services. A number of options were considered and it was then determined the Hillmorton site was the appropriate site to centralise all mental health services. The purpose of this Programme Business Case is to seek the approval of the Capital Investment Committee and the Ministry of Health for the design and construction programme for mental health buildings on the Hillmorton site. The Programme Business Case includes required site infrastructure development and the sequencing to enable complex decant / deconstruction / building to minimise service disruption over the next 17 years.

The Ministry of Health recently released the National Asset Management Programme report which indicated mental health facilities across the country were among the poorest facilities and that Canterbury's generally were among the worst of those.

- Enabling site infrastructure and a central heart space building.
- A forensic rehabilitation services building
- An adult acute inpatient services building

The Programme Business Case and recommended programme of work has the strong support of the clinicians involved in the services and has significant engagement with Manawhenua and the development of a cultural narrative to support the development of plans.

4. DISCUSSION

The Programme Business Case represents a significant investment into the future of our mental health services in Canterbury. There is the need to move rapidly to the preferred programme of works; enabling site works, central heart space and new builds of Te Whare Mauriora - Forensic Rehabilitation, Acute Inpatient

The development of the Programme Business Case continues the focus from the masterplan work from 2019, including a site which enables the provision of contemporary mental health services, accessibility (paths and making the site more accessible) and maintenance of green space. The Programme Business Case builds on and embeds the cultural narrative which has been prepared for the site. Manawhenua ki Waitaha have been briefed on progress and focus to date. The Manawhenua ki Waitaha Board have noted they are very excited with the heart space and at the prospect that Hillmorton will be a place to enhance the wellbeing of all and to step away from stigma that a Mental Health Institution has carried for many many years.

Throughout the development of the Programme Business Case and the recommended programme of works there have been workshops and meetings with the Specialist Mental Health Services divisional and service leadership teams; site redevelopment and maintenance and engineering; involvement of consumer and family in the development of detailed service summaries, workshops with key groups relevant to the programme such as with Pou Whirinaki – Maori cultural adviser, Training lead and Food Services manager regarding the heart space. The Canterbury DHB Clinical Leaders Group (*CLG*) have also informed the discussion.

The development of the Programme Business Case involved the identification of options for consideration. Three options were explored. During this process it was identified the first option had a negative impact on staging of further tranches. This option could delay progression to development for the wider Forensic service for at least one year. There were other considerable risks with this option noted in the executive summary.

The preferred option in terms of being able to respond to pressing capacity issues and incorporates the development of the campus heart is Option 2. This option has also been endorsed by CLG.

5. CONCLUSION

The Programme Business Case and recommended programme of works provide both a long-term programme view aligned to the 2019 approved Masterplan for Specialist Mental Health Services on the Hillmorton campus and commencement with initial phases of this facility development.

6. <u>APPENDICES</u>

Appendix 1:

Hillmorton Campus Mental Health Services – Programme Business Case REPURPOSING & STRENGTHENING OF HILLMORTON LAUNDRY BUILDING



TO:	Chair & Members, Canterbury District Health Board								
PREPARED BY:	Brad Cabell, Programme Director, Construction & Property Beng-Cheng Chan, Manager, Corporate Support Services								
APPROVED BY:	David Green, Acting Executive Director, Finance & Corporate Services Dr Rob Ojala, Executive Lead for Facilities								
DATE:	15 October 2020								
Report Status – For:	Decision Noting D Information								

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1. ORIGIN OF THE REPORT

This report has been generated to provide an update and to seek funding for the strengthening of Hillmorton Laundry building as part of repurposing this existing building to accommodate services currently in temporary accommodation and to provide a more economical facility option for those services currently in leased properties.

2. <u>RECOMMENDATION</u>

That the Board:

- i. notes that CDHB Site Redevelopment Unit has been investigating various facility options for services who are currently in temporary facilities, such as the SMHS CAF outpatient services currently located at TPMH and also for more economical facilities for services currently in leased facilities;
- ii. notes that based on the Test-To-Fit exercise, the existing Laundry building on the Hillmorton campus which provides 5,771m2 of available space; can accommodate the SMHS CAF outpatient services currently located at TPMH, with a remainder of 3,604m2 available for other services;
- iii. notes that compared with a new build, repurposing the Hillmorton Laundry building is the most economical option to accommodate the SMHS CAF Outpatient relocation from TPMH and providing a cost saving option for services currently in leased properties;
- iv. notes the business case to strengthen the Hillmorton Laundry building, as outlined in Appendix 1;
 - 7. Capproves (2)(6)(0) to strengthen the existing earthquake damaged Hillmorton Laundry building to up to 100% IL3 as reasonably practical, but aiming to reach agreement with the Christchurch City Council (*CCC*) for 67% IL3 target, as strengthening is a CCC requirement for change of use of this building (post the relocation of Canterbury Laundry service from this building);
- vi. notes that the ^{(2)(b)(0)} of strengthening work is based on QS estimate of the Concept Design and is to be funded from Earthquake Programme of Works. This is funded from the balance of available yet-to-be committed EQ insurance proceeds of circa ^{(2)(b)(0)} (after allowing for the ring-fenced ^{(2)(b)(0)}) for Christchurch Hospital Campus compliance work) as at September 2020;
- vii. notes that the business case for the fit-out of about 2,707m2 of the Laundry building, to accommodate the SMHS CAF outpatient services relocation, is to be submitted to the 19 November 2020 Board meeting for approval; and
- viii. notes that the planning and test-to-fit exercise on the use of the remaining 3,604m2 of the Laundry building for the other services is already underway and the recommendation

and justification for these services will be submitted as separate business cases, in line with the CDHB business case approval process and CDHB delegation of authority framework.

3. **APPENDIX**

RELEASED UNDER THE OFFICIAL INFORMATION ACT

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Board PX-15oct20-hillmorton laundry strengthening

Appendix 1 Hillmorton Laundry Strenghtening business case

Recommendation

The Business Case seeks approval for:

- the design, consenting and construction work to strengthen the Hillmorton Laundry Services Building. The building requires strengthening so that the building can be issued with a Change of Use from the Christchurch City Council. To achieve the Change of Use, the structure will need to be strengthened from 35% IL2 to as near as is reasonably practicable to reach 100% NBS IL3 (the project will aim to reach an agreement with the Council that 67% IL3 is appropriate).
- the building requires some exterior works to rectify deferred maintenance.
- the budget of \$5.59M to complete the strengthening work.

Justifications for the Investment

The Hillmorton Laundry Services Building is to be repurposed as the laundry service is relocating to a new site. To be repurposed, the CDHB needs to apply for a Change of Use from the Christchurch City Council. The structural engineers have confirmed that to gain the Change of Use the Council will need to be satisfied that the building structure is as nearly as is reasonably practicable to the 100% NBS IL3 target. During the project, the structural engineers will be discussing the strengthening options and approach with the Council intending to agree on a strategy that achieves 67% IL3.

The strengthened building will partly be used to co-locate the Child & Family Outpatients (CAF OP) located at Hillmorton and Princess Margaret Hospitals.

Approximately half the building will be available for other services, such as the Design Lab and Occupational Therapy Equipment store.

Options Assessment:

The following options have been considered:

- Strengthen the building so that a Change of Use can be issued and the building repurposed for other CDHB uses. Complete external works.
- Do not strengthen the building and repurpose the building with CDHB activities that do not trigger the change of use requirement.

- Demolish the building.

The 'Do not strengthen' option was not investigated in detail because there were no alternative uses for the building identified that did not trigger the change of use requirement. The CDHB stores were an option but this was ultimately discounted because the building layout could not meet the layout requirements for stores.

The demolish option was costed at ^{(2)(b)(ii)}. This option was discounted as the building is not at end of life, and the cost of strengthening the building compares favourably with the costs of demolition and leasing commercial spaces for alternative uses, such as CAF Outpatients.

Benefit Delivery of Recommended Option						
Business owner (Who will be responsible and accountable for the delivery and monitoring of the Benefit Realisation)	Sue McGregor, Project Manager					
Benefit Measure(s) (Specific Measure/s of the improvement)	Building will achieve a Change of Use and will therefore be suitable for refurbishment for CDHB services.					
Target (Actual no/%/\$ change of the improvement)	Building strengthened to nearly as practically feasible for 100% NBS IL3 and will therefore be granted a Change of Use by the Christchurch City Council					
Benefit Realisation Reporting (Month & Year the benefit will be monitored and able to reported against)	12/2021					

Asset Management

Holmes Consulting have completed a feasibility assessment of the strengthening required. A summary of their report is included in Appendix A.

The feasibility report has been used as the basis of the cost estimate to strengthen the building. A summary of the QS report prepared by BDD is included in Appendix B.

Capital Costs:

Strengthening & External Works

Design & Approvals

Contingency

Total

Project Delivery

Upgrade the Laundry building from 35% IL2 to IL3 to meet Council change of use requirements – See Attached Engineers Report

Carry out deferred maintenance to the building envelope

9(2)(b)(ii)

Project Delivery (On Time, Deliverable, On Budget)					
Project Commencement	December, 2020				
Project Completion	November, 2022				
Deliverable (Description & Qty)	Building Strengthening				
Total Capital Requested	9(2)(b)(îi)				

Appendices

Appendix A: Structural Feasibility Report

Appendix B: Quantity Surveyor Estimate

Appendix C: Estimate to Demolish

Holmes Consulting

Memorandum

То:	Sue McGregor			
Company:	CDHB			<i>_</i>
From:	9(2)(a)			
Date	23 July 2020	Project No:	140496.13	
Subject:	CDHB Hillmorton Laundry	Concept - Strengthening Fe	asibility	

Holmes Consulting has been engaged by CDHB to provide a feasibility scheme for the strengthening of the Hillmorton Laundry Services Building based on the updated refurbishment concept by Noordanus Architects dated 1 July 2020.

The strengthening feasibility scheme attached to this memo relies on the Detailed Seismic Assessment (DSA) dated 8 March 2013 which was prepared by Holmes Consulting, and the site geotechnical report revision 2 by Sinclair Knight Merz (SKM) dated 24 August 2012.

The purpose of this feasibility scheme is for a suitably experienced quantity surveyor to get a rough order of costs. A new structural analysis of the structure has not been completed for the scheme, rather the strengthening items are based on the 2013 DSA recommendations which have been assessed for the new concept design to a capacity of 67% NBS IL3, as per discussions with CDHB. Please note, for change of use of this building, Council will need to be satisfied that the structure is as nearly as is reasonably practicable to the 100% NBS IL3 target.

The feasibility scheme is for primary structural aspects only and does not include secondary elements such as waterproofing, fire protection, electrical and mechanical equipment.

The main strengthening items that are beyond the original items included in the 2013 DSA are as follows:

- Diaphragm strengthening of the Central Block precast panels with chased in reinforcing bars.
- Strengthening of the tension ties of the East Process Floor portal columns to the diaphragm with chased in reinforcing bars.
- Clarifying that two bays of roof crossing bracing in the E-W direction and wall bracing in the N-S
 direction are required.

9(2)(a)			

STRUCTURAL ENGINEER Holmes Consulting LP





CDHB - Hillmorton Laundry Strengthening Feasibility

North Side (Google Street View)





This package includes feasibility strengthening features which are consistent with the 2013 DSA report as well as several new strengthening items to meet 67% NBS IL3.



PROJECT: CDHB Hillmorton Laundry Concept JOB NO: <u>140496.13</u> DATE: <u>23/07/2020</u> Holme SSK: SK-01 _REV: 1

CDHB - Hillmorton Laundry



PlanNorth





Carcass Level 2 - Sheets 678/S4 and 678/S5 Combined from Original Structural Drawings

Legend:

Blue text and shapes are existing features.

Red text and shapes are new features per strengthening.

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1. Strengthening:







9. & 10. Strengthening: Add one bay of roof and wall cross bracing in the East and West Process, and provide new foundation below wall

> 8. Strengthening: Provide two bays of roof bracing in the E-W dir'n and wall bracing in the N-S dir'n. Wall bracing to be stand alone structure from ground to roof and new foundations required.







*See 678/S1 for L1 plan

Central Block - East-West Walls



New RC skin wall next to block wall

New foundations



Central Block: North-South Walls



Grid 0 - Sheet S11A

existing foundations.

gend:	
	New RC shear wall
	New RC skin wall next to block wall
	New foundations



Cafeteria - Administration Foundation Floor Plan and Elevations Sheet 678/S60-62 from Original Structural Drawings Legend:

Blue text and shapes are existing features.

Red text and shapes are new features per strengthening.



7 September 2020

Attn: Sue McGregor

Canterbury District Health Board Private Bag 4710 CHRISTCHURCH 8140

Dear Sue,

RE: CDHB HILLMORTON LAUNDRY FEASIBILITY STUDY | CONCEPT DESIGN ESTIMATE

Further to your request, we have produced an updated Concept Design Estimate for the above project as follows and attached:

Concept Design Estimate | 7 September 2020 | C18105 EE03

Child, Adolescent & Family Outpatients

- 1. Fitout Works
- 2. Proportion of Seismic Strengthening Works
- 3. Proportion of External Building Works
- 4. Consultant Fees (15%)
- 5. Consent Fees (0.8%)
- 6. Project Contingency (10%)

DesignLab & Occupational Therapy

- 1. DesignLab Fitout
- 2. Occupational Therapy Store
- 3. Proportion of Seismic Strengthening Works
- 4. Proportion of External Building Works

5. Consultant Fees (15%)

- . Consent Fees (0.8%)
- 7. Project Contingency (10%)

9(2)(b)(ii)	
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Our cost estimate is prepared on the basis that these works will be carried out in conjunction with each other, competitively procured through locally based resources and the seeking of up to three fixed quotations following completion of the construction documentation. Tender documentation will be completed to a level that ensures tenderers do not include undue risk allowances and that the lowest price is acceptable.







Basis of Estimate

- Noordanus Architects Preliminary Scope Report and Drawings dated July 2020
- Holmes Consulting Structural Feasibility Memorandum dated 23/07/20
- Powell Fenwick Fire Safety & Egress Feasibility Report and Drawings dated 22/07/20
- Powell Fenwick HVAC Review Report dated 24/07/20
- Powell Fenwick Electrical Review Report dated 24/07/20
- Planning Matters Proposal Assessment dated 8/07/20
- Enable New Zealand pricing of Hub Scrub dated 29/07/20

Clarifications

- The total cost of seismic strengthening and external building works have been apportioned based on the percentage of gross floor area of each space only, being 2,707m2 for Child, Adolescent & Family Outpatients and 3,064m2 for DesignLab and Occupational Therapy.
- We have allowed to maintain and upgrade the existing fire sprinkler system in the estimate. Powell Fenwick acknowledge that this is not specifically required but likely that the insurers may not accept a non-sprinklered building.
- A Provisional Sum of (2)(b)(0) has been included for asbestos removal. The intention is that encapsulating as much asbestos as possible will be done.

Exclusions

- Upgrade of council infrastructure services
- FF&E and IT
- Relocation costs
- Non-competitive tendering
- Legal and finance costs
- Future cost escalation and exchange rate fluctuation
- GST

Should you have any queries, please do not hesitate to contact the Writer.



The estimate has been prepared by Barnes Beagley Doherr at the request of its client and is exclusively for its client's use. No responsibility of liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this estimate by any third part. Without limiting any of the above, Barnes Beagley Doherr's liability, whether under the law of contract, tort, statute, equity or otherwise, is limited as set out in the terms of the engagement with the client.

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Project:

C18105 Hillmorton Laundry

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Project:	C18105 Hillmorton	Laundry	
Estimate:	Concept Estimate EE03 Concept Design Estimate EE03		
Estimate Date:	7/09/2020	ESTIMATE SUMMARY	
		SEISMIC STRENGTHENING WORKS	barnes beagley doherr

SEISMIC STRENGTHENING WORKS

No.	Description	Quantity	Unit	Rate	Total
	SEISMIC STRENGTHENING WORKS	9(2)(b)(ii)			
11	Site Prenaration				
12	Substructure				
13	Frame				
14	Structural Walls				
15	Upper Floors				
16	Exterior Walls & Exterior Finish				
17	Sundries				
	Sub-total				
18	Preliminaries				
19	Margin				
20	Design Development Contingency				
	OX OX				
0					
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SEISMIC STRENGTHENING WORKS

No.	Description	Quantity	Unit	Rate	Total
	SEISMIC STRENGTHENING WORKS	9(2)(b)(ii)			
	Site Preparation				
21	Break out or remove walls where required				
	Substructure				
22	Jet grout columns to 5m deep (approx 2,000m2 on plan)				
23	New foundation beams				
24	Chase concrete slab and install 6-XD16 reinforcing bars and grout on completion				
	Frame				
25	FRP wrap to columns below west suspended floor				
26	Connect precast columns to level 2 slab and fibre wrap				
27	Seating angles to precast floor panels				
28	Cross bracing to roof and walls				
29	Additional fixings between central block and east and west roof structures				
30	Strengthen base connections to level 4 braces				
	Structural Walls				
31	Reinforced concrete shear walls				
32	Reinforced concrete skin wall to blockwall				
	Upper Floors				
33	Allowance for installing new seating angles under Double T webs				
	S				
	Exterior Walls & Exterior Finish				
34	Remove and replace cracked and damaged blocks				
35	Rake out and replace silicone sealant to blockwork/column joints				
	Sundries				
36	Make good areas on completion of strengthening works				
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SEISMIC STRENGTHENING WORKS

No.	Description	Quantity	Unit	Rate	Total
	SEISMIC STRENGTHENING WORKS				
	Broliminarios	9(2)(b)(ii)			
37	Temporary propping				
38	Extra value for construction methodology				
	Sub-Total				
39	Preliminaries & General (12%)				
	Margin				
40	Main Contractor Margins (7%)				
	Design Development Contingency				
41	Design Development Contingency (15%)				
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No.	Description	Quantity	Unit	Rate	Total
	OUTPATIENTS FITOUT	9(2)(b)(ii)			
42	Site Preparation				
43	Exterior Walls & Exterior Finish				
44	Windows & Exterior Doors				
45	Interior Walls				
46	Interior Doors				
47	Floor Finishes				
48	Wall Finishes				
49	Ceiling Finishes				
50	Fittings & Fixtures				
51	Sanitary Plumbing				
52	Heating & Ventilation Services				
53	Fire Services				
54	Electrical Services				
55	Special Services				
56	External Works				
57	Sundrice				
57	Suluies				
50	Sub-total	$\mathbf{O}_{\mathbf{X}}$			
58					
59	Margin				
60	Design Development Contingency				
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No.	Description	Quantity	Unit	Rate	Total	1
	CHILD, ADOLESCENT & FAMILY OUTPATIENTS FITOUT Site Preparation	9(2)(b)(ii)				
61	Uplift and dispose of existing vinyl flooring					
62	Demolish existing internal partitions					
63	Demolish existing raised platforms and steps					
64	Remove existing borrowed light to office					
65	Remove existing borrowed light to mezzanine					
66	Remove and dispose of existing vinyl wall coverings					
67	Form opening in existing external wall for installation of new entry doors					
68	Form opening in existing external wall for installation of new egress door					
69	Remove existing bi-folding garage door and make good opening for new windows					
70	Asbestos removal (Provisional Allowance)					
	Exterior Walls & Exterior Finish					
71	Make good cladding around new entry door opening					
72	Make good cladding around new door opening					
	Windows & Exterior Doors					
73	Replace or repair damaged window hardware and replace any broken glazing					
74	Pair of automatic bi-parting frameless glass sliding doors and sidelights					
75	Clear double glazed commercial aluminium windows					
76	Double glazed aluminium exterior door and frame including hardware and finish					
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No.	Description	Quantity	Unit	Rate	Total	Ì
	CHILD, ADOLESCENT & FAMILY OUTPATIENTS FITOUT Interior Walls	9(2)(b)(ii)				
77	2 layers of 13 Noiseline both sides of 90 timber framing including acoustic insulation and skirting (GNS134)					
78	2 layers of 13 Gibboard both sides of 90 timber framing including acoustic insulation and skirting (GSS134)					
79	13 Gibboard both sides of 90 timber framing including acoustic insulation and skirting (GSS132)					
80	Infill existing openings with 13 Gibboard both sides of 90 timber framing including skirting					
81	Extra value for 13 Aqualine					
82	Single glazed acoustic borrowed light					
83	Double glazed observation window with soundstop glazing and timber frame					
	Interior Doors	-				
84	Pair of solid core paint grade doors including frame, hardware and finish					
85	Single solid core paint grade door including high pressure laminate facing, vision panel, frame, hardware, kickplates and acoustic seals					
86	Single solid core paint grade door including vision panel, frame, finish, hardware, kickplates and acoustic seals					
87	Single solid core paint grade door including frame, hardware, finish, kickplates and acoustic seals					
88	Single solid core paint grade cavity slider including frame, hardware and finish					
89	Pair of automatic bi-parting frameless glass sliding doors and sidelights					
90	Paint existing door					
	Floor Finishes					
91	Entry matwell					
92	Vinyl to floor including coved upstand and preparation					
93	Carpet tiles direct stuck to existing vinyl including preparation					
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651 Project: C18105 Hillmorton Laundry Concept Estimate EE03 Concept Design Estimate EE03 Estimate: 7/09/2020 Estimate Date:



No.	Description	Quantity	Unit	Rate	Total
	CHILD. ADOLESCENT & FAMILY				
	OUTPATIENTS FITOUT	9(2)(b)(II)			
94	Paint to plasterboard walls				
95	Prepare and paint existing plasterboard walls				
96	Stainless steel skirting to existing walls				
97	Acoustic treatment to walls				
	Ceiling Finishes				
98	Acoustic ceiling tiles on Rondo suspended ceiling system				
99	Lower level acoustic ceiling tiles on Rondo				
	suspended ceiling system on timber framing with acoustic insulation and trafficable particle board laid overtop				
100	Paint existing ceilings				
	Fittings & Fixtures				
101	Main entry reception counter				
102	Central reception counter				
103	Staff entry reception counter				
104	Staffroom kitchenette				
105	Beverage kitchenette				
106	Photocopy bench unit				
107	Miscellaneous joinery				
108	Accessible grab rails				
109	Accessible shower seat				
110	Baby change table				
111	Loose joinery fittings and appliances (Excluded)				
	Sanitary Plumbing				
112	The following items include water and waste services				
113	Toilet				
114	Wash hand basin				
115	Sink insert				
116	Shower unit				
117	Cleaner's sink				
118	Hot water boiler and chiller				
119	Hot water cylinder				
Ref:	C18105 Printed	07 Sep 2020		·	Page 8



No.	Description	Quantity	Unit	Rate	Total	1
	CHILD ADOLESCENT & FAMILY	9(2)(b)(ii)				
	OUTPATIENTS FITOUT					
120	Open plan HVAC system					
121	VAV svstem					
122	Toilet extract system					
	Fire Services					
123	Alter, maintain and upgrade existing fire sprinkler system to suit new layout and loading					
124	Type 4 smoke detection and manual alarm system					
125	Fire stopping of services penetrations					
126	Fire extinguisher					
127	Passive fire upgrade requirements					
	Electrical Services					
128	New electrical lighting and power including					
	emergency egress and exit signage					
	Special Services	-				
129	Alter existing data system and add new outlets					
120	to suit new layout					
130	Upgrade existing security and access system					
131	AV system					
132	Nurse call and panic alarm system					
133	IT equipment (Excluded)					
		+				
	External Works					
134	Main entry stair and ramp including handrails					
135	Fire egress stair including handralis					
130	requirements					
	\sim					
R	Sundries	+				
137	Blinds					
138	Signage					
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	000
Project:	C18105 Hillmorton Laundry
Estimate:	Concept Estimate EE03 Concept Design Estimate EE03
Estimate Date:	7/09/2020



No.	Description	Quantity	Unit	Rate	Total	
	CHILD, ADOLESCENT & FAMILY OUTPATIENTS FITOUT	9(2)(b)(ii)				
139	Preliminaries & General (12%)					
140	Margin Main Contractor Margins (7%)					
141	Design Development Contingency Design Development Contingency (5%)					
R	ELERSED UNDER THE OF					
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Project: C18105 Hillmorton Laundry Estimate: Concept Estimate EE03 Concept Design Estimate EE03 Estimate Date: 7/09/2020 ESTIMATE SUMMARY



DESIGNLAB FITOUT

654

No.	Description	Quantity	Unit	Rate	Total	
						1
	DESIGNLAB FITOOT	9(2)(b)(ii)				
140						
142	Site Preparation					
143	R001					
144	Exterior Walls & Exterior Finish					
145	Steire & Beluetradee					
140	Stalls & Dalusliades					
147	Interior Doors					
1/0	Floor Finishes					
150	Wall Finishes					
151	Ceiling Finishes					
152	Fittings & Fixtures					
153	Sanitary Plumbing					
154	Heating & Ventilation Services					
155	Fire Services					
156	Electrical Services					
157	Special Services					
158	External Works					
159	Sundries					
	Sub-total					
160	Preliminaries					
161	Margin					
162	Design Development Contingency					
	SV					



No.	Description	Quantity	Unit	Rate	Total	1
	DESIGNLAB FITOUT					1
	Site Preparation	9(2)(b)(ii)				
163	Uplift and dispose of existing vinyl flooring					
164	Uplift and dispose of existing carpet					
165	Cap off and remove existing basin					
166	Remove and dispose existing door and frame					
167	Demolish existing internal partitions					
168	Remove and dispose of existing wall linings					
169	Form opening in existing external wall for installation of new entry doors					
170	Form opening in existing external wall for installation of new egress door					
171	Asbestos removal (Provisional Allowance)					
	Roof					
172	Patch and paint to underside of roof					
	Exterior Walls & Exterior Finish					
173	Infill to match existing cladding where existing entry door removed					
174	Make good cladding around new entry door opening					
175	Make good cladding around new door opening					
	<u></u>					
	Windows & Exterior Doors					
176	Replace or repair damaged window hardware and replace any broken glazing					
177	Pair of automatic bi-parting frameless glass sliding doors and sidelights					
178	Double glazed aluminium exterior door and frame including hardware and finish					
	Otain & Daluatandan					
170	Stairs & Balustrades					
119	both sides of existing ramp					
180	Fire egress stair including handrails					
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No.	Description	Quantity	Unit	Rate	Total	
	DESIGNLAB FITOUT	9(2)(b)(ii)				
	Interior Walls					
181	2 layers of 13 Gibboard both sides of 90 timber framing including acoustic insulation and skirting (GSS134)					
182	Infill existing openings with 13 Gibboard both sides of 90 timber framing including skirting					
183	13 Gibboard to existing timber framing including acoustic insulation					
184	Extra value for 13 Aqualine					
185	Single glazed acoustic borrowed light					
	Interior Doors					
186	Pair of solid core paint grade doors including vision panel, frame, finish, hardware, kickplates and acoustic seals					
187	Single solid core paint grade door including frame, hardware, finish, kickplates and acoustic seals					
188	Single glazed door including frame and hardware					
189	Pair of automatic bi-parting frameless glass sliding doors and sidelights					
190	Install supplied sliding doors reused from existing DesignLab space					
191	Paint existing door					
	Floor Finishes					
192	Entry matwell					
193	Vinyl to floor including coved upstand and preparation					
194	Carpet tiles direct stuck to existing vinyl including preparation					
195	Carpet including preparation					
196	Patch and polish existing vinyl flooring					
X						
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No.	Description	Quantity	Unit	Rate	Total	1
	DESIGNLAB FITOUT	9(2)(b)(ii)				
	Wall Finishes	5(2)(2)(1)				
197	Paint to plasterboard walls					
198	Prepare and paint existing plasterboard walls					
199	Stainless steel skirting to existing walls					
200	Acoustic treatment to walls					
201	Clean and patch existing vinyl wall coverings					
	Ceiling Finishes					
202	Paint on 13 Gibboard ceiling on timber framing with acoustic insulation					
203	Make good existing ceilings where existing services removed					
204	Paint existing ceilings					
0.0-	Fittings & Fixtures					
205	Main entry reception counter					
206	DesignLab reception counter					
207	Kitchen fitout					
208						
209	Miscellaneous joinery					
210	Accessible grab rails					
211	Accessible shower seat					
212	Baby change table					
213	Loose joinery mangs and appliances (Excluded)					
	Sanitary Plumbing					
214	The following items include water and waste services					
215	Toilet 5					
216	Wash hand basin					
217	Sink insert					
218	Shower unit					
219	Cleaner's sink					
220	Hot water boiler and chiller					
221	Hot water cylinder					
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No.	Description	Quantity	Unit	Rate	Total	1
	DESIGNLAB FITOUT					
	Heating & Ventilation Services	9(2)(b)(ii)				
222	HVAC system including mechanical ventilation					
223	HVAC system including natural ventilation					
224	Toilet extract system					
225	Kitchen extract					
226	Service existing split AC system					
	Fire Services					
227	Maintain and upgrade existing fire sprinkler system					
228	Type 4 smoke detection and manual alarm system					
229	Fire stopping of services penetrations					
230	Fire extinguisher					
231	Upgrade existing egress doors					
232	Passive fire upgrade requirements					
	Electrical Services					
233	Office/seminar spaces electrical lighting and power including emergency egress and exit signage					
234	Mockup space lighting					
235	Mockup space overhead power outlets					
236	Floor boxes					
	Special Services					
237	Alter existing data system and add new outlets to suit new layout					
238	Upgrade existing security and access system					
239	AV system					
240	IT equipment (Excluded)					
Q	External Works					
241	Fire egress stair including handrails					
242	Upgrade existing egress stair to meet					
	requirements					
						ſ
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No.	Description	Quantity	Unit	Rate	Total	1
	DESIGNLAB FITOUT					1
	Sundries	9(2)(b)(ii)				
243	Entrance canopy					
244	Signage					
	Preliminaries					
245	Preliminaries & General (12%)					
	Margin					
246	Main Contractor Margins (7%)					
247	Design Development Contingency					
241	Design Development Contingency (370)					
	A A					
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X						
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Proje Estin Estin	ect: nate: nate Date:	C18105 Hillmorton Lau Concept Estimate EE0 7/09/2020	ndry 3 Concept Design Estin ESTIMAT OCCUPATION	nate EE03 E SUMMAR L THERAP1	Y Y STORE	E	barnes beagley doherr
No.		Description		Quantity	Unit	Rate	Total

No.	Description	Quantity	Unit	Rate	Total
	OCCUPATIONAL THERAPY STORE				
		9(2)(b)(ii)			
248	Site Preparation				
249	Interior Doors				
250	Floor Finishes				
251	Wall Finishes				
252	Ceiling Finishes				
253	Sanitary Plumbing				
254	Fire Services				
255	Electrical Services				
256	Sundries				
	Sub-total				
257	Preliminaries				
258	Margin				
259	Design Development Contingency				
	0.				
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	S				
6					
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OCCUPATIONAL THERAPY STORE

No.	Description	Quantity	Unit	Rate	Total	1
	OCCUPATIONAL THERAPY STORE	D(2)(b)(#)				1
	Site Preparation	5(2)(0)(1)				
260	Cap off and remove existing wc					
261	Cap off and remove existing basin					
262	Cap off and remove existing shower					
263	Demolish existing internal partitions					
264	Demolish existing demountable partitions					
265	Form opening in existing wall					
266	Asbestos removal (Provisional Allowance)					
	Interior Doors					
267	Paint existing door					
	Floor Finishes					
268	Patch and polish existing vinyl flooring					
269	Epoxy paint to concrete floor including					
	preparation					
	Wall Finishes					
270	Prepare and paint existing plasterboard walls					
	Ceiling Finishes					
271	Make good existing ceilings where existing					
272	Services removed					
212	Paint existing cenings					
	Sanitary Plumbing					
273	The following items include water and waste services					
274	Connection to hub scrub machine					
275	Cleaning bay					
276	Gas hot water heater system					
X	· · · · · · · · · · · · · · · · · · ·					
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OCCUPATIONAL THERAPY STORE

No.	Description	Quantity	Unit	Rate	Total
	OCCUPATIONAL THERAPY STORE	9(2)(h)(ii)			
	Fire Services	5(2)(6)(1)			
277	Maintain and upgrade existing fire sprinkler system				
278	Type 4 smoke detection and manual alarm system				
279	Fire stopping of services penetrations				
280	Fire extinguisher				
	Electrical Services				
281	Alter existing electrical lighting and power including emergency egress and exit signage				
	Sundries				
282	Hub scrub machine				
283	Create bunding for cleaning bay				
285	Floor markings				
200					
286	Preliminaries Preliminaries & General (12%)				
287	Margin Main Contractor Margins (7%)				
	Design Development Contingency				
288	Design Development Contingency (5%)				
	CL-AST				
8					
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Project:	C18105 Hillmorton	Laundry	
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EXTERNAL BUILDING WORKS

660



No.	Description	Quantity	Unit	Rate	Total
	EXTERNAL BUILDING WORKS				
		9(2)(b)(ii)			
280	Site Prenaration				
200	Roof				
291	Exterior Walls & Exterior Finish				
292	Heating & Ventilation Services				
293	Electrical Services				
294	External Works				
	Sub-total				
295	Preliminaries				
296	Margin				
297	Design Development Contingency				
		e			
	OX OX				
	2				
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EXTERNAL BUILDING WORKS

No.	Description	Quantity	Unit	Rate	Total
	EXTERNAL BUILDING WORKS				
	Site Preparation	9(2)(b)(ii)			
298	Remove existing chainlink fencing around				
	loading bay				
	Roof				
299	Patch roof where existing mechanical plant removed				
300	Additional flashings to improve weather-tightness				
301	Repair existing guttering				
302	Roof maintenance access system				
	Exterior Walls & Exterior Finish				
303	Additional flashings to improve weather-tightness				
304	Clean and paint existing walls				
	Heating & Ventilation Services				
305	Remove/decommission redundant mechanical				
	piant				
206	Electrical Services				
307	New distribution board including submains				
007	cabling				
308	Upgrade existing distribution board				
309	Upgrade existing submains cabling to mechanical services distribution board				
310	External building perimeter lighting				
311	Lighting poles to carpark				
X					
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EXTERNAL BUILDING WORKS

No.	Description	Quantity	Unit	Rate	Total
	EXTERNAL BUILDING WORKS	0(2)(5)(ii)			
	External Works	9(2)(b)(11)			
312	Design ab entry paying				
313	CAF entry paving				
314	CAF courtyard space including perimeter fencing				
315	CAF outdoor play area including play equipment				
316	Secure cycle enclosure for 18 no bikes				
317	Cycle stand				
318	Additional carparking (to provide 190no total)				
319	Modify existing carpark layout and markings				
320	Additional planting and landscaping				
	Preliminaries				
321	Scaffold (supply erect remove)				
322	Scaffold hire (6 weeks)				
	Sub-Total				
323	Preliminaries & General (12%)				
204	Margin				
324	Main Contractor Margins (7%)				
	Design Development Contingency				
325	Design Development Contingency (10%)				
	C ^V				
Q					
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REFERSEDUNDERTHEOFFICIAL INFORMATION ACT

Prepared For: CDHB

Our Reference:

Hillmorton Hospital - Laundry Building

Initial Estimate

Project Details

Description

Basis of Estimate

This is a high level estimate to provide initial cost advice on the demolition of the building and overall site remediation of the Canterbury Linen Service Building at Hillmorton Hospital

It should be noted that this estimate is based on limited information regarding the condition of the buildings and the asbestos contained therein (see Inclusions below).

It should also be noted that RLB have been capturing and monitoring demolition rates across hundreds of demolitions nationally for many years, most recently including the Burwood Hospital Old Birthing Unit demolition completed in January 2019. We have benchmarked the rates used in this estimate against similar projects to ensure the rates used for our estimate reflect current market conditions.

Items Specifically Included

The works have been priced to include asbestos removal as noted in the PDP report, soft strip, services removals & decomissioning and full demolition of the building together with removal of basement, slab and foundations.

It should be noted that given the level of information available at this time that the demolition costs include for asbestos removal based on the PDP report and as a seperate strip out activity prior to demolition of the building.

In addition site wide costs have been included for the remediation of the land after demolition of the buildings is completed. Based on recent experience of sites close to this one, we have assumed that there is no asbestos contamination within the ground.

If after further detailed investigations have been carried out it is found that asbestos is within the ground then the estimate can be revised accordingly

Items Specifically Excluded

Removal of service tunnels beyond the perimeter of the main building

Removal of ancilliary buildings (Boiler house, substation etc)

Removal of hardstandings, carparking and access roads outside of building perimeter

Escalation beyond Q3 2019

GST

Documents

PDP Asbestos Management Survey - Feb 2017 WSP-Opus condition survey extract - July 2018 CDHB Maintenance Dept - Floor Plans - Oct 2007





Hillmorton Hospital - Laundry Building Initial Estimate

Loc	ation	GFA m ²	Cost/m²	Total Cost
Α	Basement	9(2)(b)(ii)		
в	Ground Floor			
С	First Floor			
	ESTIMATED NET COST	-		
MAI	RGINS & ADJUSTMENTS			
∕Iaiı ∕Iaiı Con	n Contractor Preliminaries & General (circa 8%) n Contractor Margin (circa 5%) ıstruction Risk Allowance			
Prof	essional Fees, Consents & Insurances			
	ESTIMATED TOTAL COST			
	ER THE			
	ASEDUND			



Hillmorton Hospital - Laundry Building Demolition

Initial Estimate

Rates Current At August 2019

A			~	Kale	
Α		9(2)(b)(ii)			
	BASEMENT				
	Allowance for removal of fixtures & fittings; mechanical plant; plumbing fittings 4 fixtures; electrical fittings	6			
	2 Allowance for de-commissioning & removal of plumbing, mechanical & electrical services				
	3 Allowance for asbestos removals				
	4 Demolition of basement structures, mixed material				
	5 Disposal of demolition material off site to appropriate landfill				
	6 Disposal of asbestos contaminated demolition material off site to appropriate				
	 Break out and remove floor slab construction and foundations and dispose off site 	f			
	8 Break out and remove service tunnel construction and dispose off site				
	9 Excavation; 300mm deep				
	10 Disposal of excavated material off-site				
	11 Supply & lav Bidim A29 separation laver				
	12 Supply & lay AP65_300mm thick				
	13 Allowance for capping service tunnels beyond building perimeter				
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Hillmorton Hospital - Laundry Building Demolition

Initial Estimate

Rates Current At August 2019

De	scrip	otion	Unit	Qty	Rate	Total
в	GR	OUND FLOOR	9(2)(b)(ii)			
	1	Allowance for removal of fixtures & fittings; mechanical plant; plumbing fittings & fixtures; electrical fittings				
	2	Allowance for de-commissioning & removal of plumbing, mechanical & electrical services				
	3	Allowance for asbestos removals				
	4	Demolition of building shell, mixed material				
	5	Disposal of demolition material off site to appropriate landfill				
	6	Disposal of asbestos contaminated demolition material off site to appropriate landfill				
	7	Break out and remove floor slab construction and foundations and dispose off site				
	8	Excavation; 300mm deep				
	9	Disposal of excavated material off-site				
	10	Supply & lay Bidim A29 separation layer				
	11	Supply & lay AP65, 300mm thick				
		Sub Total	-			

rene a ray AP65, 300mm this



Hillmorton Hospital - Laundry Building Demolition

Initial Estimate

Rates Current At August 2019

De	scri	ption	Unit	Qty	Rate	Total
С	FIF	RST FLOOR	9(2)(b)(ii)			
	1	Allowance for removal of fixtures & fittings; mechanical plant; plumbing fittings & fixtures; electrical fittings (significant plant above ceiling level)				
	2	Allowance for de-commissioning & removal of plumbing, mechanical & electrical services				
	3	Allowance for asbestos removals				
	4	Demolition of building shell, mixed material				
	5	Disposal of demolition material off site to appropriate landfill				
	6	Disposal of asbestos contaminated demolition material off site to appropriate landfill				
		Sub Total				

PIER

RLB Rider Levett Bucknall HILLMORTON PROGRAMME BUSINESS CASE – REFRAMING FOR CAPITAL INVESTMENT COMMITTEE Canterbury District Health Board Te Poari Hauora ö Waitaha

Report Status – For:	Decision		Noting		Information		A
DATE:	15 October 2	020					$ \land $
APPROVED BY:	Dr Rob Ojala	, Execu	tive Lead for	r Facili	ties		
PREPARED BY:	Dr Greg Ham	ilton, G	eneral Mana	ger, S	pecialist Menta	l Hea	alth Services
TO:	Chair & Mem	bers, C	anterbury Di	strict	Health Board		

1. ORIGIN OF THE REPORT

This report has been generated to provide an update on reframing the Hillmorton Campus Mental Health Services Programme Business Case (*PBC*) which was approved by the Board on 20 August 2020. Increasing clarity of guidance from the Capital Investment Committee (*CIC*) has led to the suggested alterations in presentation and sequencing of the PBC which remains substantively the same as signed off by the Board.

2. <u>RECOMMENDATION</u>

That the Board:

- i. notes the drivers for reframing the PBC;
- ii. notes that changes are made in sequencing to accelerate clinical bed elements of the build within the programme, incorporate the site infrastructure costs into each stage of the build, defer the Campus Heart building until a later stage of the programme, and incorporate lower cost options where alternative area available;
- iii. notes that these alterations are likely to reduce total costs and improve the Financial Case of the PBC; and
- iv. approves alterations to the presentation and sequencing of the PBC as outlined below.

3. DISCUSSION

The Programme Business Case has been approved by the Board

The Hillmorton Campus Mental Health Services Programme Business Case (*PBC*) was approved by the Board on 20 August 2020. The purpose of this PBC was to seek the endorsement of the Capital Investment Committee (*CIC*) and the approval of the Ministry of Health for the design and construction programme for mental health buildings on the Hillmorton site. Approval was sought to proceed to detailed business cases for stage 1a (enabling site infrastructure works, campus heart building and Forensic Rehabilitation and Outpatients building) and stage 1b (Adult Acute Inpatient Services building). The overall programme of work laid out over 20 years of development and the estimated programme cost was ^{9(2)(b)(0)} of escalation.

The PBC has been placed on the November CIC agenda allowing time for review (with proposals due by 28 October 2020).

New information from the Capital Investment Committee

Since the PBC was approved further guidance from CIC has recently been received. Key themes include the limited size of the capital envelope, prioritisation of clinical space and that infrastructure needs to be included in the costs of the clinical builds. Reframing the PBC

presentation and sequencing to better address CIC guidance means the approved PBC elements remain the same. This requires PBC contributors to provide revised versions of infrastructure (Beca), costing (RLB) and programming (Woods Harris) which will be incorporated into the PBC by Sapere with a final draft for review on 23 October 2020. This needs to be sent to CIC by 28 October 2020 for the November CIC meeting.

Alterations to presentation of the Programme Business Care

The proposed changes to the PBC include:

- a. Reprioritising to move the clinical builds forward. The Master Plan highlighted the complexity of the site meaning a complicated decant demolish build sequence. Acceleration of Adult Acute Inpatient Services building within the programme can be achieved by creating alternate solutions to people with high and complex needs to create decant space in current Hillmorton facilities.
- b. Infrastructure costs will be incorporated into each stage rather than presented as an upfront cost. Effectively, this apportions infrastructure costs to each stage of the programme.
- c. The Campus Heart building will be deferred to a later stage. Interim arrangements can be achieved by redevelopment of Fergusson building.
- d. These alterations will reduce the total costs associated with the PBC and improve the Financial Case. The quantum of this reduction in costs will be presented in the 23 October 2020 draft.

680 HILLMORTON LAUNDRY BUILDING FITOUT - TO ENABLE CAF OUTPATIENT SERVICE CONSOLIDATION

Canterbury District Health Board Te Poari Hauora ō Waitaha

RMA

то:	Chair & Members, Canterbury District Health Board						
PREPARED BY:	PARED BY: Dr Greg Hamilton, General Manager, Specialist Mental Health Services Brad Cabell, Programme Director, Construction & Property Beng-Cheng Chan, Manager, Corporate Support Services						
APPROVED BY:	Dr Rob Ojala, Executive Lead for Facilities David Green, Acting Executive Director, Finance & Corporate Services						
DATE:	19 November 2020						
Report Status – For:	Decision Noting D Information						

1. ORIGIN OF THE REPORT

This paper has been generated to:

- provide an update on the proposed relocation of Specialist Mental Health Services (SMHS) Child, Adolescent and Family (CAF) outpatient service from The Princess Margaret Hospital (TPMH) campus to consolidate the overall service;
- seek funding for the fit-out part of the Hillmorton Laundry building to enable this; and
- demonstrate progress in the CDHB direction to exit TPMH campus as part of the 2012 DBC. f of

2. RECOMMENDATION

That the Board:

- notes that the 19 December 2018 approval of \$79m crown funding by both the Minister i. of Health and the Minister of Finance for the relocation of SMHS from TPMH to the Hillmorton Hospital site, excluded the CAF outpatient and community building;
- ii. notes that the approved 2018 Detailed Business Case had outlined an estimated \$8.9m of fit-out and FF&E cost, based on fitting out a leased property and that the planning and business case process was to be advanced by CDHB as a separate process;
- iii. notes at the 21 February 2019 Board meeting, the CDHB identified it would need to determine an appropriate solution for the SMHS CAF outpatient service;
- iv. notes that at the 21 November 2019 meeting, the Board:
 - confirmed the commitment to a facility for SMHS CAF outpatient service and associated workspaces and approved in principle a budget of up to 9(2)(6)(1) for this project;
 - noted that Maia Health Foundation has been informed of the CDHB commitment and has commenced their fundraising planning accordingly, towards a target of \$5m (being 50% of the expected costs of ^{9(2)(b)(ii)}
- notes that CDHB Site Redevelopment Unit and SMHS have been investigating various v. facility options for the CAF outpatient service and the associated workspaces currently located at TPMH, for the most clinically appropriate and economical option;
- notes that at the 15 October 2020 meeting, the Board approved ^{9(2)(0)(ff)} to strengthen the vi. existing earthquake damaged Hillmorton Laundry building as this is the most economical option to accommodate services currently requiring a permanent facility solution in addition to providing a cost saving option for services currently in leased properties;

- vii. notes that post strengthening the existing Hillmorton Laundry building, of the 5,771m2 of available space, it is recommended that SMHS CAF outpatient service including the associated workspaces, occupy about 2,707m2 of the Hillmorton Laundry building, leaving a remainder of 3,064m2 available space for other services;
- viii. notes the business case to relocate the SMHS CAF outpatient service from TPMH to Hillmorton Laundry building and co-locating with SMHS CAF North outpatient service currently in Hillmorton campus; as outlined in Appendix 1;
- ix. approves to fit-out about 2,707m2 of the Hillmorton Laundry space to provide a clinically appropriate and economical accommodation solution for the consolidation of CAF outpatient service;
- x. notes that the^{9(2)(b)(0)} for the fit-out is based on QS estimate of Concept Design and is within the November 2019 Board approval-in-principle decision of up to^{9(2)(b)(0)} of budget;
- xi. notes that the ⁹⁽²⁾⁽⁰⁾⁽⁰⁾ is to be funded from the Maia Health Foundation commitment to funding up-to ^{9(2)(0)(ff)} with the balance to be funded from CDHB cashflow, via depreciation;
- xii. notes in the event that Maia Health Foundation funding commitment changes and/or is less than the \$5m target, CDHB will fund that difference accordingly within its depreciation cashflow;
- xiii. notes that recently in November 2020, the Maia Health Foundation has re-confirmed that the Foundation is still progressing with the development of their plans for raising the that they have committed to this project and look forward to finalising their plans and commencing the implementation, most likely in the new year;
- xiv. approves formal communication to Maia Health Foundation of the CDHB's business case approval and details to allow Maia Health Foundation to commence fundraising;
- xv. notes the General Manager of SMHS supports the proposal and confirms it meets clinical requirements going forward. In addition, any delay in the relocation of the SMHS CAF outpatient service from TPMH site would reduce opportunity for integration across the service, therefore preventing the flexing of staff numbers depending upon need;
- xvi. notes that QFARC, at its 29 September 2020 meeting, recommended that the Board at the 19 November 2020 meeting approve the proposal; and
- xvii. notes that progress updates on these projects will be provided as part of the monthly CDHB Site Redevelopment Unit Facilities Update; including any significant change to the costing as we progress with the various project stages (detailed design, procurement, construction).

3. DISCUSSION

SMHS CAF outpatient and community service provision is currently split between two hospital sites (three locations) in facilities that are not fit for purpose.

The 2012 DBC decision to consolidate the CDHB facilities and so exit TPMH as a fourth campus has prompted the need for TPMH CAF outpatient service to be delivered elsewhere. It has also created an opportunity to look at the physically fragmented service and how this might be improved. This proposal allows for the *consolidation* of CAF outpatient services North, South and Access teams in a single location closer to the specialist amenity and creates a number of efficiencies in a more appropriate facility. Other options explored* to date have been more expensive and with fewer operational advantages.

The location on the Hillmorton South campus reduces barriers to access for our young people and their whanau. The bus route on Lincoln Road requires a short walk (unlike the main Hillmorton site which is over one-kilometre walking). There is sufficient parking. It will mean
the SMHS CAF outpatient service and community services are in close proximity to the main Hillmorton site reducing current travel barriers associated with being at TPMH. The SMHS CAF management will occupy office space nearby in the building currently used for the SMHS CAF outpatient service north team - which is not suited to clinical service provision.

Importantly, the space allows our clinical teams to come together in an area specifically designed to meet clinical requirements. The Maia Health Foundation contribution will allow the conversion of clinical space into a modern therapeutic environment with age appropriate surroundings.

4. APPENDIX

entseri Accommodation Option for SMHS CAF Outpatient Service Business Case



APPENDIX 1 CONCEPT FLOOR PLAN



Note: The central section of the building concept design above includes the CDHB Design Lab which is not included in the scope of this Business Case.

RELEASEDUNDER

684

Appendix 1 Accommodation Option for SMHS CAF Outpatient Service Business Case

Recommendation

This Business Case seeks approval for funding ^{9(2)(b)(ii)} for:

- The relocation of Specialist Mental Health Services (SMHS) Child, Adolescent & Family (CAF) outpatients service and teams (CAF South and CAF Access) from The Princess Margaret Hospital (TPMH) to the Hillmorton Laundry building.
- Fit out of approximately half of the Hillmorton Laundry building to convert it into an outpatient facility.
- This will also allow the consolidation of SMHS CAF North service currently located on Sylvan Street (Hillmorton Campus) with SMHS CAF South currently located in Heathcote building (TPMH campus) and SMHS CAF Access currently located in Seager building (TPMH campus).

Justifications for the Investment

In 2012 Canterbury District Health Board (CDHB) and the Ministry of Health agreed the need to move services off the TPMH site as the buildings were damaged, old and uneconomic to repair. Funding was committed to the redevelopment of Burwood Hospital, however, a solution was not identified for the mental health services on the TPMH site, which included inpatient and outpatient facilties for CAF, and inpatient and outpatient facilties for Mothers and Babies and Eating Disorders and Seager clinic (inpatient adult high and complex needs).

Since corporate and older persons health services have moved off TPMH site, operating costs for TPMH based services are approximately \$6M per annum. These costs include increased after-hours clinical leadership, increased security, transport, and maintenance. Despite these increased supports, services remain fragile and risks included significant impacts on staff and care provided due to the isolation of stranded services in inadequate facilities. There are issues related to ongoing travel and time costs associated with operating out of two campuses and the therapeutic environment limits the quality of care.

In 2019 the Minister of Finance and Minister of Health approved \$79M for the development of :

- a new Integrated Family Services Centre on the Hillmorton campus for CAF inpatient service, , Mothers & Babies and Eating Disorders inpatient and outpatient service; and
- a High and Complex Unit for the Adult rehabilitation inpatient service.

(It is important to note that clinically, from CDHB's perspective, the preferred facilities investment option included providing accommodation for the SMHS CAF outpatient services and associated workspaces. Recognising the capital constraint (both locally and nationally), the \$79m option which excluded providing accommodation for the SMHS CAF outpatient service and associated workspace currently located at TPMH, was carried forward as the recommended option in the final Detailed Business Case.)

When SMHS services are transferred to the new Intergrated Family Services centre and the High and Complex unit (due for completion end of 2022), Older Person's Health community services and SMHS CAF outpatient service and teams will remain at TMPH with associated campus costs. The SMHS CAF outpatient service and teams at TPMH (CAF South, CAF Access and CAF leadership) must be relocated because of the planned closure of TPMH.

A number of options have been considered. The option of leaving SMHS CAF outpatient services at TMPH after the SMHS CAF inpatient service, Mothers and Babies inpatient and outpatient service, Eating Disorders inpatient and outpatient service and Seagar inpatient service have been relocated to the Hillmorton campus has been explored. This option would reduce some of the operating costs required currently at TPMH as some security and other out-of-hours services would no long be required. The remaining additional operating costs would include security (working day and limited after-hours required for risks associated with empty buildings), increased transport for clinicians between the campuses (split inpatient and outpatient services), infrastructure, grounds and maintenance. The risk of infrastructure failure related to fire safety alarms (already an issue), water, waste, information technology and electrical is high due

to the limited maintenance programmes in accord with the impending departure from the site. Keeping the 'lights on' 686 for the TMPH site is likely to require significant investment.

The interview rooms at TPMH site are not clinically fit-for-purpose for children, adolescents and their whanau. The fitout (supported by Maia) provides an opportunity to create a child and youth friendly therapeutic environment.

A range of relocation options including new build and lease have been considered, with the preferred option being to repurpose the CDHB owned Hillmorton Laundry building. The laundry building is in the process of being vacated because the laundry service is moving to a new off-site facility. At the 15 October 2020 Board meeting, the CDHB approved strengthening the earthquaked damaged Laundry building, with the plan to repurpose as accommodation for CDHB services that are still in temporary locations. SMHS CAF teams will occupy approximately half the building. This site has sufficient parking capacity for both CDHB cars for community and home visits and visitors to the services.

SMHS CAF outpatient teams (CAF South, CAF North and CAF Access) are currently located across three sites, the largest being based at TPMH. This will allow the consolidation of these teams into one building, for both clinical and administrative functions. Co-location of services will ensure better integration, greater efficiency, better use of resources, greater opportunities for knowledge sharing and professional development, a better patient experience and clinically fit-for-purpose facilities. The current CAF North building located at Sylvan Street on Hillmorton Hospital campus is CDHB owned and is not designed for a child service. It does not support contemporary service delivery (it is an old inpatient unit that has been unsuccessfully converted to an outpatient facility). We would anticipate using this vacated building for administration offices, or as a decant option to support other building works required on the Hillmorton campus.

There is urgency to progress, as any delay in the move of these services off the TPMH site would reduce opportunities for service integration and efficiency. This proposal would allow the flexing of staff numbers depending upon need, for example in urgent situations of increased risk where de-escalation and the ability to separate people to contain a challenging situation is required. The current interview rooms at both TPMH and Sylvan Street are clinically inappropriate for children, adolescents and their whanau and limit the the number of consumers able to be seen at the same time. As an example, last week the SMHS CAF Access Emergency function ran out of interview space as multiple assessments were required. The waiting room space could not fit more than one family group at the same time, which has resulted in people waiting in their cars.

Options Assessment:

The following relocation options for the TPMH CAF team have been considered:

- Do nothing is not an option because the CAF team must be relocated from TPMH.
- The CDHB approached commercial leasing agents in early 2020 to enquire about availability and costs.
 Leasing a building has been estimated to cost between \$0.69M and \$1.07M per year (excluding car parks for CDHB cars and operating expenditure).
- The highest cost option considered was a new build on CDHB property at 9(2)(b)(ii) The Rough Order of Cost estimate was prepared by quantity surveyors RLB in early 2020.
- **Preferred:** Relocating CAF to the laundry has been estimated to cost ^{9(2)(b)(t)} based on concept level designs prepared in 2020.

Benefit Delivery of Recommended Option									
Business owner (Who will be responsible and accountable for the delivery and monitoring of the Benefit Realisation)	Sue McGregor, Project Manager								
Benefit Measure(s) (Specific Measure/s of the improvement)	SMHS CAF Outpatients are co-located on one site SMHS CAF Outpatients are relocated from TPMH The recently vacated Hillmorton Laundry building is repurposed								
Target (Actual no/%/\$ change of the improvement)	SMHS CAF Outpatients continue to be based in a CDHB building								
Benefit Realisation Reporting (Month & Year the benefit will be monitored and able to reported against)	February, 2023								

Asset Management

The TPMH building is to be sold (signalled as part of the approved 2012 Detailed Business Case for Burwood and Christchurch Hospital redevelopment). This cannot occur until all CDHB services are no longer based there. Relocating SMHS CAF outpatient service to Hillmorton is a critical step in vacating the TPMH site, enabling the sale of this site. Maintenance of TPMH has been intentionally kept to a minimal, in line with asset management strategy of properties that no longer have future use.

The Canterbury Linen Services is relocating to another premises leaving the laundry building vacant. The laundry building needs deferred exterior maintenance works and strengthening for a change of use to be permitted. Post strengthening and fit out of the Laundry building for SMHS CAF outpatient service and teams, CDHB Maintenance & Engineering service will be responsible for ongoing maintenance of this building.

Financials & Resourcing

Capital Costs:

CAF Outpatients Fit out Cost Design & Approvals FF&E Contingency **Total** Refer to Appendix 2 for the QS Estimate



Maia Health Foundation Contribution

At the 21 November 2019 meeting, the Board:

- confirmed the commitment to a facility for SMHS CAF outpatient service and associated workspaces and approved in principle a budget of up to^{\$(2)(b)(0)} for this project
- noted that Maia Health Foundation has been informed of the CDHB commitment and has commenced their fundraising planning accordingly, towards a target of $\frac{9(2)(0)}{(0)}$ (being 50% of the expected costs of $\frac{9(2)(0)(0)}{(0)}$

Recently in November 2020, the Maia Health Foundation has reconfirmed that the Foundation is still progressing with the development of their plans for raising up to the $\frac{9(2)(b)}{(b)}$ that they have committed to this project, which included fittings and furniture, to create the therapeutic environment for child and youth friendly settings.

Project Delivery	699	

The scope of work includes completing all designs, obtain consents and any other regulatory approvals, tender the works and complete all fitout works. The project will be managed by the Site Redevelopment Unit with ongoing input from SMHS CAF outpatient and Hillmorton Campus teams.

	Project Delivery (On Time, Deliverable, On Budget)
Project Commencement	December, 2020
Project Completion	November, 2022
Deliverable (Description & Qty)	Refurbished Laundry to Accommodate SMHS CAF OP
Total Capital Requested	9(2)(b)(ii)
Appendices	
Appendix 1: Concept Floor Plan	
Appendix 2: QS Cost Estimate	An a
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APPENDIX 2 QS COST ESTIMATES

	9(2)(b)(ii)
SMHS CAF Outpatient Fit out Cost	bbd QS Estimate
Design & Approvals	bbd QS Estimate %
Consultant Fees (15%)	
Consent Fees (0.8%)	×
Contingency (10%)	bbd QS Estimate %
FF&E	Site Redevelopment Estimate
TOTAL	RMATION
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CANTERBURY DISTRICT HEALTH BOARD

HILLMORTON HOSPITAL REVELOPMENT

MASTER PLAN - Option 2 VERSION 02c

D	Task Name	Dur	Start	Finish	2020 2021 2022 2023 20 20 20 20 20 20 20 20 20 20 20 20 20
2	Develop Master Plan V02 - Ontion 2a - 1st August 2020	0 d	Sat 1/08/20	Sat 1/08/20	A Davideo Master Plan V02 - Ontion 2a 1st August 2020
2	Complete & Lodge PBC & Stage 14 DBC	1 w	Eri 31/07/20	Thu 6/08/20	Develop in aster Frain (voz option) za - ist August 2020 Complete & Loder DRC & Strong TA DRC
3	Comprise Rusiness Case Time Frames	240 d	Eri 7/09/20	Fri 20/07/21	
5	Procure Health Architect	240 u	Eri 7/08/20	Thu 3/00/20	
6	Procure Rusiness Case Development Team	- w	Fri 7/08/20	Thu 17/09/20	Product registration
7	Complete Functional Briefs	12 w	Fri 4/09/20	Mon 30/11/20	
8	Complete Schedules of Accommodation & Stacking Diagrams	8 w	Tue 24/11/20	Fri 29/01/21	Complete Schedules of Accommodation & Stacking Diagrams
9	Complete Staging Documentation & Develop Concept Drawings	8 w	Mon 1/02/21	Mon 29/03/21	Complete Starling A Develop Concent Travings
10	Complete Master Programme & Budget Development	6 w	Tue 23/03/21	Thu 6/05/21	Complete Master Programme & Buildet Development
11	Collate & Test Information for Business Case	30 w	Fri 18/09/20	Thu 6/05/21	Collate & Test Information for Business Case
12	DHB Approvals (DLT, CLG, FDGG, ELT, QFARC & Board)	8 w	Fri 7/05/21	Fri 2/07/21	DHB Approvals (DLT, CLG, FDGG, ELT, QFARC & Board)
13	Ministry Approvals (HRPG, CIC, Minister)	4 w	Mon 5/07/21	Fri 30/07/21	Ministry Approvals (HRPG. CIC, Minister)
14	Approval of Programme Business Case	3 w	Fri 7/08/20	Thu 27/08/20	Approval of Programme Business Case
15	Stage 1A - Business Case Approval (Ferguson OPD, Forensic,	3 w	Fri 7/08/20	Thu 27/08/20	Stage 1A - Business Case Approval (Ferguson OPD, Forensic, Central Heart, Avon Demolition & Sylvan St Entrance)
10	Central Heart, Avon Demolition & Sylvan St Entrance)	50		E-: 47/00/04	
10	Forensic Services Demolition)	52 W	FII 20/00/20	FII 17/09/21	Stage To Detailed Business Case (ATS/Detox, Te Awakura & Potensic Services Demolition)
17	Stage 2 Detailed Busines Case CAF OPD	52 w	Mon 4/04/22	Thu 27/04/23	Stage 2 Detailed Busines Case CAF OPD
18	Stage 3 & 4 Detailed Business Case (New Forensic Services)	52 w	Mon 3/04/23	Fri 26/04/24	Stage 3 & 4 Detailed Business Case (New Forensic Services)
19	Stage 5 Detailed Business Case (AIS/Detox Extension)	52 w	Mon 4/05/26	Mon 24/05/27	Stage 5 Detailed Business Case (AIS/Detox Extension)
20	Stage 6 Detailed Business Case (IDPH PSAID, Forensic Rehab,	52 w	Mon 3/05/27	Mon 22/05/28	Stage 6 Detailed Business Case (IDPH PSAID, Forensic Rehab, Demolition of Te Waimokihi)
21	Demolition of Te Waimokihi) Stage 7 Detailed Business Case (High & Complex Needs &	52 w	Mon 2/07/29	Tue 23/07/30	Starle 7 Detailed Business Case (High & Complex Needs & Tununa Villas)
21	Tupuna Villas)	52 W	1011 2/01/29	140 20/07/00	Stage / Detailed Dusitiess Gase (Fight & Complex Needs & Tupuna Villas)
22	Stage 8 Detailed Business Case ("Empty Chair", Car Park	52 w	Mon 30/06/31	Mon 19/07/32	Stage 8 Detailed Business Case ("Empty Chair" Car Park Extension & Roading Works)
22	Extension & Roading Works)	2222 4	Eri 20/00/00	Thu 20/02/24	
23	Store 14	3322 U	Fri 20/00/20	Thu 30/03/34	DESIGN, CONSENT & CONTRACTOR PROCOREMENT
24 25	Consultant Engagement Documents	705 a	Fri 28/08/20	Thu 1/10/20	
20	Market Engagement (CETS)	5 W	Fil 20/00/20	Mop 16/11/20	Consultain Engagement (Countering
27	REP for Design Consultants	6 w	Fri 2/10/20	Mon 16/11/20	Ref for Design Consultants
28	Review & Approvals for Engagement	6 w	Tue 8/12/20	Fri 29/01/21	Review & Anonyals for Engagement
29	Ferguson (Expansion & Refurb) & Sylvan St Entrance	205 d	Mon 1/02/21	Tue 23/11/21	Ferguson (Expansion & Refurb) & Svivan St Entrance
30	Design Works - Ferguson OPD	27 w	Mon 1/02/21	Fri 13/08/21	Design Works - Ferguson OPD
31	SoQ	4 w	Mon 16/08/21	Fri 10/09/21	soQ
32	Market Engagement for Contractors (GETS)	4 w	Mon 5/07/21	Fri 30/07/21	Market Engagement for Contractors (GETS)
33	RFT for Contractors	4 w	Mon 13/09/21	Fri 8/10/21	RFT for Contractors
34	Review & Approvals for Engagement	4 w	Mon 11/10/21	Mon 8/11/21	Review & Approvals for Engagement
35	Resource Consents	14 w	Mon 21/06/21	Fri 24/09/21	Resource Consents
36	Building Consent	8 w	Mon 27/09/21	Tue 23/11/21	Building Consent
37	Central Heart & Avon Demolition	345 d	Mon 1/02/21	Mon 27/06/22	Central Heart & Avon Demolition
38	Design Works - Central Heart	52 w	Mon 1/02/21	Tue 22/02/22	Design Works - Central Heart
39	SoQ Market Engagement for Contractors (CETS)	5 W	Wed 23/02/22	Tue 29/03/22	Sou
40	PET for Contractors (GETS)	6 W	Wed 30/03/22	Fri 13/05/22	BET for Contractors
41	RFT for Contractors	6 W	Mon 16/05/22	Mon 27/06/22	Review & Approved for Engagement
42	Resource Consents	12 w	Wed 17/11/21	Tue 22/02/22	
44	Building Consent	12 w	Wed 23/02/22	Fri 20/05/22	Building Consent
45	Forensic Rehab & Te Whare Mauriora Demolition	325 d	Mon 1/02/21	Fri 27/05/22	Forensic Rehab & Te Whare Mauriora Demolition
46	Design Works - Forensic Rehab & Demolition of Te Whare	48 w	Mon 1/02/21	Mon 24/01/22	Design Works - Forensic Rehab & Demolition of Te Whare Mauriora
47	Mauriora	-	T 05/04/00	T (100,100	
4/	Sol	5 W	Tue 25/01/22	Tue 1/03/22	SOU
48	Market Engagement for Contractors (GETS)	6 W	Wed 2/03/22	Tue 12/04/22	Market Engagement for Contractors (GE1S)
49 50	Review & Approvals for Engagement	6 W	Wed 13/04/22	Fri 27/05/22	Review & Approvals for Engagement
51	Resource Consents	14 w	Mon 18/10/21	Tue 8/02/22	Resource Consents
52	Building Consent	12 w	Wed 9/02/22	Fri 6/05/22	Building Consent
53	Refurbishment of Te Waimokihi	320 d	Wed 30/03/22	Tue 18/07/23	Refurbishment of Te Waimokihi
54	Design Works - Refurbish Te Waimokihi	50 w	Wed 30/03/22	Wed 5/04/23	Design Works - Refurbish Te Waimokihi
55	SoQ	4 w	Thu 6/04/23	Mon 8/05/23	SoQ
56	Market Engagement for Contractors (GETS)	6 w	Tue 9/05/23	Tue 20/06/23	Market Engagement for Contractors (GETS)
57	RFT for Contractors	4 w	Tue 9/05/23	Tue 6/06/23	RFT for Contractors
58	Review & Approvals for Engagement	4 w	Wed 21/06/23	Tue 18/07/23	Review & Approvals for Engagement
59	Building Consent	8 w	Thu 6/04/23	Tue 6/06/23	Building Consent
60	South Campus - Dental Car Park & Laundry Refurbishment	170 d	Mon 16/08/21	Fri 29/04/22	South Campus - Dental Car Park & Laundry Returbishment
61	Design Works - Dental Car Park & Laundry Refurbishment	20 w	Mon 16/08/21	Mon 17/01/22	Design Works - Dental Car Park & Laundry Refurbishment
62	SoQ	4 w	Tue 18/01/22	Tue 15/02/22	■ SoQ
63	Market Engagement for Contractors (GETS)	4 w	Wed 24/11/21	Tue 21/12/21	Market Engagement for Contractors (GETS)
64	RFT for Contractors	4 w	Wed 16/02/22	Tue 15/03/22	RFT for Contractors
65	Review & Approvals for Engagement	4 w	Wed 16/03/22	Tue 12/04/22	Review & Approvals for Engagement
66	Resource Consents	14 w	Tue 9/11/21	Tue 1/03/22	Resource Consents
67	Building Consent	8 w	Wed 2/03/22	Fri 29/04/22	Building Consent
60	Stage 18 Consultant Engagement Decuments	645 d	Mon 20/09/21	Wed 15/05/24	Stdge 1D
70	Market Engagement (GETS)	6 W	Tue 2/11/21	Tue 14/12/21	Market Engagement (GETS)
71	RFP for Design Consultants	6 w	Tue 2/11/21	Tue 14/12/21	REP for Design Consultants
72	Review & Approvals for Engagement	8 w	Wed 15/12/21	Tue 22/02/22	Review & Approvals for Engagement
73	Te Awakura & North Energy Centre	545 d	Wed 23/02/22	Wed 15/05/24	Te Awakura & North Energy Centre
				-	

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CANTERBURY DISTRICT HEALTH BOARD

HILLMORTON HOSPITAL REVELOPMENT

MASTER PLAN - Option 2 VERSION 02c

		2	<u> </u>	-		
ID T	ask Name	Dur	Start	Finish	2020 2021 2022 2023 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4	2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 4 Q1 Q2 Q3 Q4 Q1 Q2
74	Design Works - AIS/Detox	92 w	Wed 23/02/22	Thu 11/01/24		Design Works - AlS/Detox
75	SoQ	5 w	Fri 12/01/24	Fri 16/02/24		= SoQ
76	Market Engagement for Contractors (GETS)	6 w	Mon 19/02/24	Tue 2/04/24		Market Engagement for Contractors (GETS)
77	RFT for Contractors	6 w	Mon 19/02/24	Tue 2/04/24		RFT for Contractors
78	Review & Approvals for Engagement	6 W	Wed 3/04/24	Wed 15/05/24		Review & Approvals for Engagement
79 80	Resource Consents	14 W	Fri 26/01/24	Thu 25/01/24		Resource Consents
81	Stane 2	1021 d	Fri 28/04/23	Mon 28/06/27	Stage 2	
82	Consultant Engagement Documents	6 w	Fri 28/04/23	Fri 9/06/23		Itant Engagement Documents
83	Market Engagement (GETS)	6 w	Mon 12/06/23	Fri 21/07/23	Mark	el Fonarement (GFTS)
84	RFP for Design Consultants	6 w	Mon 12/06/23	Fri 21/07/23	REP	for Design Consultants
85	Review & Approvals for Engagement	8 w	Mon 24/07/23	Fri 15/09/23	R	eview & Approvals for Engagement
86	CAF OPD & North Swale	290 d	Mon 18/09/23	Thu 21/11/24		AF OPD & North Swale
87	Design Works - CAF OPD	42 w	Mon 18/09/23	Tue 30/07/24		Design Works - CAF OPD
88	SoQ	4 w	Wed 31/07/24	Tue 27/08/24		soq
89	Market Engagement for Contractors (GETS)	6 w	Wed 28/08/24	Tue 8/10/24		Market Engagement for Contractors (GETS)
90	RFT for Contractors	6 w	Wed 28/08/24	Tue 8/10/24		RFT for Contractors
91	Review & Approvals for Engagement	6 w	Wed 9/10/24	Thu 21/11/24		Review & Approvals for Engagement
92	Resource Consents	14 w	Tue 7/05/24	Tue 13/08/24		Resource Consents
93	Building Consent	12 w	Wed 14/08/24	Wed 6/11/24		Building Consent
94	South Campus - Demolition (CAF & Lincoln Green)	260 d	Mon 8/06/26	Mon 28/06/27		South Campus - Demolition (CAF & Lincoln Green)
95	Demolition Documentation	20 w	Mon 8/06/26	Fri 23/10/26		
90	SUQ	5 W	Tue 27/10/26	Tue 1/12/26		SQU
91	RET for Contractors	0 W 6 w	Wed 2/12/20	Mon 25/01/27		PET tel Contractore
90	Review & Approvals for Engagement	6 w	Mon 17/05/27	Mon 28/06/27		Review & Approvals for Engagement
100	Resource Consents	14 w	Tue 27/10/26	Tue 16/02/27		Resource Composition Engagements
100	Demolition Consents	14 W	Wed 17/02/27	Fri 14/05/27		Demolition Consents
102	Stage 3 & 4	655 d	Mon 29/04/24	Fri 18/12/26		Stage 3 & 4
103	Consultant Engagement Documents	6 w	Mon 29/04/24	Mon 10/06/24		Consultant Engagement Documents
104	Market Engagement (GETS)	6 w	Tue 11/06/24	Mon 22/07/24		Market Engagement (GETS)
105	RFP for Design Consultants	6 w	Tue 11/06/24	Mon 22/07/24		RFP for Design Consultants
106	Review & Approvals for Engagement	8 w	Tue 23/07/24	Mon 16/09/24		Review & Approvals for Engagement
107	Forensic Services	555 d	Tue 17/09/24	Fri 18/12/26		Forensic Services
108	Design Works - Forensic Services Phases 1 & 2	94 w	Tue 17/09/24	Wed 19/08/26		Design Works - Forensic Services Phases 1 & 2
109	SoQ	5 w	Thu 20/08/26	Wed 23/09/26		■ SoQ
110	Market Engagement for Contractors (GETS)	6 w	Thu 24/09/26	Thu 5/11/26		Market Engagement for Contractors (GETS)
111	RFT for Contractors	6 w	Thu 24/09/26	Thu 5/11/26		RFT for Contractors
112	Review & Approvals for Engagement	6 w	Fri 6/11/26	Fri 18/12/26		Review & Approvals for Engagement
113	Resource Consents	14 W	Wed 27/05/26	Wed 2/09/26		Resource Consents
114		12 W	Thu 3/09/26	Fri 27/11/26		Building Consent
115	Consultant Engagement Documents	505 U	Tue 25/05/27	Tue 6/07/27		Staty 3
117	Market Engagement (GETS)	6 W	Wed 7/07/27	Tue 17/08/27		Market Engagement / (CETE)
118	REP for Design Consultants	6 w	Wed 7/07/27	Tue 17/08/27		BEP for Design Consultants
119	Review & Approvals for Engagement	8 w	Wed 18/08/27	Tue 12/10/27		Review & Approvals for Engagement
120	AIS/Detox Extension Design	485 d	Wed 13/10/27	Fri 5/10/29		AlS/Detox Extension Design
121	Design Works - AIS/Detox	80 w	Wed 13/10/27	Fri 8/06/29		Design Works - AIS/Detox
122	SoQ	5 w	Mon 11/06/29	Fri 13/07/29		SoQ
123	Market Engagement for Contractors (GETS)	6 w	Mon 16/07/29	Fri 24/08/29		 Market Engagement for Contractors (GETS)
124	RFT for Contractors	6 w	Mon 16/07/29	Fri 24/08/29		RFT for Contractors
125	Review & Approvals for Engagement	6 w	Mon 27/08/29	Fri 5/10/29		Review & Approvals for Engagement
126	Resource Consents	14 w	Tue 13/03/29	Fri 22/06/29		Resource Consents
127	Building Consent	12 w	Mon 25/06/29	Fri 14/09/29		Building Consent
128	Stage 6	570 d	Tue 23/05/28	Mon 16/09/30	G M M	Stage 6
129	Consultant Engagement Documents	6 W	Tue 23/05/28	Tue 4/0//28		Consultant Engagement Documents Marine Decements
130	PED for Design Consultants	o W	Wed 5/07/28	Tue 15/08/28		EPEP for Costan Consultants EPEP for Costan Consultants
132	Review & Approvals for Engagement	0 W R w	Wed 16/08/29	Tue 10/00/20		Paview & Annovals for Enganement
133	IDPH PSAID & Central Energy Centre	470 d	Wed 11/10/28	Mon 16/09/30		IDPH PSAD & Contral Encry Centre
134	Design Works - IDPH PSAID	62 w	Wed 11/10/28	Mon 28/01/30		
135	SoQ	5 w	Tue 29/01/30	Tue 5/03/30		
136	Market Engagement for Contractors (GETS)	6 w	Tue 4/12/29	Mon 28/01/30		Market Engagement for Contractors (GETS)
137	RFT for Contractors	6 w	Wed 6/03/30	Tue 16/04/30		RFT for Contractors
138	Review & Approvals for Engagement	6 w	Wed 17/04/30	Fri 31/05/30		Review & Approvals for Engagement
139	Bore Consents	32 w	Tue 29/01/30	Mon 16/09/30		Bore Consents
140	Resource Consents	14 w	Fri 19/10/29	Tue 12/02/30		Resource Consents
141	Building Consent	12 w	Wed 13/02/30	Fri 10/05/30		Building Consent
142	Stage 7	485 d	Wed 24/07/30	Thu 15/07/32		Stage 7
143	Consultant Engagement Documents	6 w	Wed 24/07/30	Tue 3/09/30		Consultant Engagement Documents
144	Market Engagement (GETS)	6 w	Wed 4/09/30	Tue 15/10/30		Market Engagement (GETS)
145	RFP for Design Consultants	6 w	Wed 4/09/30	Tue 15/10/30		RFP for Design Consultants
146	Review & Approvals for Engagement	8 w	Wed 16/10/30	Thu 12/12/30		Review & Approvals for Engagement
147	High & Complex Needs & Tupuna Villa	385 d	Fri 13/12/30	Thu 15/07/32		High & Complex Needs & Tupuna Villa
148	Design Works - High & Complex Needs & Demolition Documentation	60 w	Fn 13/12/30	Fri 12/03/32		Design Works - High & Complex Needs & Demolition Documentation
149	SoQ	5 w	Mon 15/03/32	Tue 20/04/32		■ SoQ
150	Market Engagement for Contractors (GETS)	6 w	Wed 21/04/32	Wed 2/06/32		Market Engagement for Contractors (GETS)

File: Hillmorton - Master Plan - Option 2 - V02c (200806) Printed: Thu 6/08/20

CANTERBURY DISTRICT HEALTH BOARD

HILLMORTON HOSPITAL REVELOPMENT

MASTER PLAN - Option 2

ID	Task Name	Dur	Start	Finish	2020 2021 Q2 Q3 Q4 Q1 Q2 Q3 Q	2022 4 Q1 Q2 Q3 Q4	2023 4 Q1 Q2 Q3 Q4	2024 Q1 Q2 Q3 Q4	2025 4 Q1 Q2 Q3 Q4	2026 Q1 Q2 Q3 Q4	2027 Q1 Q2 Q3 Q4	2028 Q1 Q2 Q3 Q4	2029 Q1 Q2 Q3 Q4	2030 Q1 Q2 Q3 Q4	2031 Q1 Q2 Q3 Q4	2032 Q1 Q2 Q3 Q4 Q	2033 Q1 Q2 Q3 Q4 Q	2034 Q1 Q2 Q3 Q4	2035 Q1 Q2 Q3 Q4	2036 Q1 Q2 Q3 Q4	2037 4 Q1 Q2 Q3 C	24 Q1
151	RFT for Contractors	6 w	Wed 21/04/32	Wed 2/06/32												RFT for C	ontractors					
152	Review & Approvals for Engagement	6 w	Thu 3/06/32	Thu 15/07/32												Review	& Approvals for	Engagement				
153	Resource Consents	14 w	Mon 8/12/31	Fri 26/03/32												Resource Co	onsents					
154	Building Consent	12 w	Mon 29/03/32	Thu 24/06/32												Building	Consent					
155	Stage 8	415 d	Tue 20/07/32	Thu 30/03/34												Stage 8	<u> </u>					
156	Consultant Engagement Documents	4 w	Tue 20/07/32	Mon 16/08/32												Consu	Itant Engagemer	nt Documents				
157	Market Engagement (GETS)	6 w	Tue 17/08/32	Mon 27/09/32												Mark	ket Engagement	(GETS)				
158	RFP for Design Consultants	6 w	Tue 17/08/32	Mon 27/09/32												RFP	for Design Cons	sultants				
159	Review & Approvals for Engagement	6 w	Tue 28/09/32	Tue 9/11/32												E Re	eview & Approval	s for Engagem	ient			
160	"Empty Chair", Car Park Extension & New Roading	335 d	Wed 10/11/32	Thu 30/03/34												<u>"E</u>	mpty Chair", Ca	ar Park Extens	sion & New Roa	ding		
161	Design Works - Car Park Extension & New Roading	52 w	Wed 10/11/32	Thu 1/12/33										C			D	esign Works -	Car Park Extens	ion & New Road	ding	
162	SoQ	3 w	Fri 2/12/33	Thu 22/12/33													5	SoQ				
163	Market Engagement for Contractors (GETS)	6 w	Fri 23/12/33	Thu 16/02/34														Market Enga	gement for Con	ractors (GETS)		
164	RFT for Contractors	6 w	Fri 23/12/33	Thu 16/02/34														RFT for Con	tractors			
165	Review & Approvals for Engagement	6 w	Fri 17/02/34	Thu 30/03/34									\sim					Review & A	Approvals for En	gagement		
166	Resource Consents	14 w	Wed 7/09/33	Thu 15/12/33													F	Resource Cons	ents			
167	Building Consent	8 w	Fri 16/12/33	Thu 23/02/34														Building Cor	nsent			

RELEASED UNDER THE OFFICIAL MEDIANATION

CANTERBURY DISTRICT HEALTH BOARD

HILLMORTON HOSPITAL REVELOPMENT

MASTER PLAN - Option 2 VERSION 02c

ID	Task Name	Dur	Start	Finish	2020 2021 2022 2023 2024 2025 2020 2021 2022 2023 2024 2025		
168	CONSTRUCTION	3337 d	Wed 24/11/21	Fri 20/07/35	<u>CONSTRUCTION</u>		
169	Stage 1A (circa 5150 new & 1275 refurb)	675 d	Wed 24/11/21	Thu 29/08/24	Stage 1A (circa 5150 new & 1275 refurb)		
170	Construction - Ferguson OPD (circa1295m2)	48 w	Wed 24/11/21	Wed 16/11/22	Construction - Ferguson OPD (circa1295m2)		
171	Construct New Entrance to Sylvan Street	15 w	Tue 2/08/22	Wed 16/11/22	Construct New Entrance to Sylvan Street		
172	Decant Avon into New Buildings	4 w	Thu 17/11/22	Wed 14/12/22	Decant Avon into New Buildings		
173	Demolish Avon Building	16 W	Thu 15/12/22	Fri 21/04/23	Demolish Avon Building	0	
174	Decent Culture & Whanau/Consumer from Waimekibi to Central	54 W	Ned 2/08/22	Tue 20/08/23	Decent Culture & Whanau/Consum	/III2)	
175	Heart	4 W	Weu 2/06/23	Tue 29/00/23			
176	Decan Training Library into Campus Heart	4 w	Wed 2/08/23	Tue 29/08/23	Decan Training Library into Campus	Heart	
177	Demolish Training Library Buildings	8 w	Wed 30/08/23	Wed 25/10/23	Demolish Training Library Building	js	
178	Construction Forensic Rehab (circa 2155m2 on West Campus)	60 w	Mon 30/05/22	Tue 15/08/23	Construction Forensic Rehab (circa 2	155m2 on West Campus)	
179	Decant Forensic OPD from Te Waimokihi	4 w	Wed 16/08/23	Tue 12/09/23	Decant Forensic OPD from Te Wair	nokihi	
180	Decant Forensic Rehab from Te Ware Mauriora	4 W	Wed 16/08/23	Tue 12/09/23	Decant Forensic Rehab from Te Wa	re Mauriora	
101	Reluidish Te whate Walmokini (circa 1275m2)	20 W	Mon 25/03/24	FII 22/03/24	Relurbish Te whate waining Decant Detay Te Whate I	Jkini (cica 12/3iii2) Vauri Ora into Te Whare Waimekibi	
183	Decail Delox re Whate Mauri Ora	4 W	Wed 21/01/21	Thu 18/07/24	Demolish Te Whate N		
184	Relocate Building 13	4 w	Thu 26/10/23	Thu 23/11/23	Relocate Building 13		
185	Site Decontamination (Provisional Allowance)	6 w	Fri 19/07/24	Thu 29/08/24	Site Decontamination	n (Provisional Allowance)	
186	South Campus	120 d	Mon 2/05/22	Mon 17/10/22	South Campus		
187	Relocate Community/Dental Building to South Campus	8 w	Mon 2/05/22	Mon 27/06/22	Relocate Community/Dental Building to South Campus		
188	Car Park	12 w	Tue 28/06/22	Mon 19/09/22	Car Park		
189	Upgrade Laundry (Duration provisional)	16 w	Tue 28/06/22	Mon 17/10/22	Upgrade Laundry (Duration provisional)	Ω	
190	Stage 1B (circa 8650 new)	485 d	Thu 16/05/24	Fri 8/05/26	Stage 1B (circa 8650 ne	<u>/w/)</u>	
191	Construction AIS/Detox -Te Awakura (circa 8,650m2)	82 w	Fri 30/08/24	Fri 8/05/26		Construction AIS/Detox -Te Awakura (circa 8,650m2)	
192	Construct New North Energy Centre	48 w	Thu 16/05/24	Thu 8/05/25	Construct	t New North Energy Centre	
193	Car Park (where existing Dental Buildings removed)	20 w	Thu 16/05/24	Thu 3/10/24	Car Park (where e	kisting Dental Buildings removed)	
194	Stage 2 (circa 3200 new & 1500 swale)	405 d	Mon 11/05/26	Thu 23/12/27		Stage 2 (circa 3200 new & 1500 swale)	
195	Decant Te Awakura in AIS/Detox Flexi Space	4 w	Mon 11/05/26	Mon 8/06/26		Decant Te Awakura in AIS/Detox Flexi Space	
196	Decant Forensic into South End Te Awakura	4 w	Mon 11/05/26	Mon 8/06/26		Decant Forensic into South End Te Awakura	
197	Construction - CAF OPD (circa 3200m2)	62 W	Mon 11/05/26	Tue 10/08/27		Construction - CAF OPD (circa 3200m2)	
190	Demolish Forencic Services	10 W	Tue 9/06/26	Mon 14/09/26			
200	Site Decontamination (Provisional Allowance)	6 w	Tue 29/09/26	Tue 10/11/26		Site Decontamination (Provisional Allowance)	
200	Construct North Swale (1500m2)	10 w	Wed 11/11/26	Tue 2/02/27		Construct North Swale (1500m2)	
202	South Campus	95 d	Wed 11/08/27	Thu 23/12/27		South Campus	
203	Relocate CAF (Nth) to New Building on North campus	3 w	Wed 11/08/27	Tue 31/08/27		Relocate CAF (Nth) to New Building on North campus	
204	Demolish CAF (Nth)	12 w	Wed 1/09/27	Thu 25/11/27		Demolish CAF (Nth)	
205	Demolish Lincoln Green Buildings	16 w	Wed 1/09/27	Thu 23/12/27		Demolish Lincoln Green Buildings	
206	Stage 3 (circa 2270 new)	415 d	Wed 3/02/27	Wed 4/10/28		Stage 3 (circa 2270 new)	
207	Construction Phase 1 of New Forensic & AT&R (circa 2270m2)	61 w	Wed 3/02/27	Tue 2/05/28		Construction Phase 1 of New Forensic & AT&R (circa 2270m)	2)
208	Decant back into New Forensic Services Phase 1	4 w	Wed 3/05/28	Tue 30/05/28		Decant back into New Forensic Services Phase 1	
209	Demolish South Section Te Awakura	12 w	Wed 31/05/28	Wed 23/08/28		Demolish South Section Te Awakura	
210	Site Decontamination (Provisional Allowance)	6 w	Thu 24/08/28	Wed 4/10/28		Site Decontamination (Provisional Allowance)	
211	Stage 4 (circa 2220 new)	325 d	Thu 5/10/28	Wed 13/02/30		Stage 4 (circa 2220 new)	
212	Construction Phase 2 of New Forensic & AT&R (circa 2220m2)	61 W	Inu 5/10/28	Tue 15/01/30		Construction Phase 2 of New For	ensic & AT&R (circa 2220m2)
213	Stage 5 (circa 1600 pow)	4 W	Wed 16/01/30	Wed 13/02/30		Stage 5 (circa 1600 new)	
215	Construction - AIS/Detox Extension (circa 1600m2)	50 w	Wed 16/01/30	Wed 22/01/31		Construction - A	IS/Detox Extension (circa 1600m2)
216	Decant Detox from Te Waimokihi	4 w	Thu 23/01/31	Thu 20/02/31		Decant Detox f	rom Te Waimokihi
217	Demolish Te Waimokihi	15 w	Fri 21/02/31	Wed 11/06/31		Demolish	Te Waimokihi
218	Site Decontamination (Provisional Allowance)	6 w	Thu 12/06/31	Wed 23/07/31		🖾 Site Dec	contamination (Provisional Allowance)
219	Stage 6 (circa 2500 new & 250 energy centre)	500 d	Tue 17/09/30	Wed 29/09/32		Stage 6 (circa 2500 n	ew & 250 energy centre)
220	Construction - IDPH PSAID & PSAID OPD (circa 2,500m2)	63 w	Thu 23/01/31	Wed 5/05/32			Construction - IDPH PSAID & PSAID OPD (circa 2,500m2)
221	Expand Central Energy Centre & Bore Field	42 w	Tue 17/09/30	Tue 29/07/31		Expand	Central Energy Centre & Bore Field
222	Decant Aroha Pai to PSAID	4 w	Thu 6/05/32	Wed 2/06/32	S		Decant Aroha Pai to PSAID
223	Demolish Aroha Pai	10 w	Thu 3/06/32	Thu 12/08/32			Demolish Aroha Pai
224	Site Decontamination (Provisional Allowance)	6 W	Fri 13/08/32	Thu 23/09/32		Out t	Site Decontamination (Provisional Allowance)
225	South Campus	290 d	Wed 30/07/31	Wed 29/09/32		South C	<u>rampus</u>
220	Extend Food Services	12 W	Wed 30/07/31	Tue 21/10/31			Extend Food Services
221	Construct New Rold (Scope & Duration TRC)	20 W	Fri 13/02/32	Wed 20/00/22			Construct New BoH (Scope & Duration TBC)
220	Stage 7 (circa 2000 new)	417 d	Fri 24/09/32	Wed 14/06/34			Stage 7 (circa 2000 new)
230	Construction - HCN-2 (circa 2000m2)	58 w	Fri 24/09/32	Tue 29/11/33			Construction - HCN-2 (circa 2000m2)
231	Construction - Links	26 w	Wed 8/06/33	Thu 8/12/33			Construction - Links
232	Decant Tupuna Villas to HCN	4 w	Fri 9/12/33	Wed 18/01/34			Decant Tupuna Villas to HCN
233	Demolish Te Tupuna	14 w	Thu 19/01/34	Tue 2/05/34			Demolish Te Tupuna
234	Demolish Hereford	14 w	Wed 30/11/33	Tue 21/03/34			Demolish Hereford
235	Site Decontamination (Provisional Allowance)	6 w	Wed 3/05/34	Wed 14/06/34			Site Decontamination (Provisional Allowance)
236	Stage 8 (circa 1700 new)	300 d	Wed 3/05/34	Fri 20/07/35			Stage 8 (circa 1700 new)
237	Extend Car Park (Ferguson) & Roading Link	26 w	Wed 3/05/34	Thu 2/11/34			Extend Car Park (Ferguson) & Roading Link
238	Construct "Empty Chair" (circa 1,700m2)	54 w	Thu 15/06/34	Fri 20/07/35			Construct "Empty Chair" (circa 1,700m2)
239	Stages 9 & 10 (South Campus)	0 d	Fri 20/07/35	Fri 20/07/35			 Stages 9 & 10 (South Campus)
240	Scope & Durations to be Confirmed	0 d	⊢n 20/07/35	⊢ri 20/07/35			Scope & Durations to be Confirmed

GREEN STAR REQUIREMENTS FOR SMHS RELOCATION TO HILLMORTON



то:	Chair & Members, Canterbury District Health Board									
PREPARED BY:	Brad Cabell, Programme Director, Construction & Facilities Beng-Cheng Chan, Corporate Support									
APPROVED BY:	Dr Rob Ojala, Executive Director of Facilities David Green, Acting Executive Director, Finance & Corporate Services									
DATE:	18 February 2021				, pC`					
Report Status – For:	Decision 1	Noting		Information						

1. ORIGIN OF THE REPORT

This report has been generated to seek approval of the additional budget for Green Star requirements for facility development for relocation of Specialist Mental Health Services (*SMHS*) services from The Princess Margaret Hospital (*TPMH*) to Hillmorton Hospital, as required by the delegation of authority.

2. <u>RECOMMENDATION</u>

That the Board, as recommended by the Quality, Finance, Audit and Risk Committee:

- i. notes the crown funded budget of \$79m approved by the Minister of Health and Minister of Finance in December 2018 for the Integrated Family Services Centre and High and Complex Unit for the relocation of Specialist Mental Health Services (*SMHS*) from The Princess Margaret Hospital (*TPMH*) to Hillmorton Hospital campus, did not include an allowance for Green Star requirements and certification;
- ii. notes that in January 2020, the Minister for Climate Change announced the first group of projects from the New Zealand Upgrade Programme's clean powered public service fund (previously referred to as State Sector Decarbonisation Investment), which included upgrading the facilities approved for TPMH SMHS relocation to Hillmorton Hospital to achieve Green Star 4 rating;
- iii. notes the Scope Change Request as outlined in Appendix 1;
- iv. notes the January 2020 Minister for Climate Change announcement as outlined in Appendix 2;
- v. approves the additional capital budget of \$2.8m, increasing the total project budget from \$79m to \$81.8m to uplift the facility development to a Green Star 4 rating, noting that the additional \$2.8m to meet the Green Star 4 rating is to be initially funded from CDHB cashflow as the funding from the New Zealand Upgrade Programme's clean powered public service funding as announced by the Government in January 2020 will only be available on project completion with the 4 Green Star design and As-Built NZ v1.0 certification; and
- vi. notes the \$2.8m of funding is expected as equity drawdown from the MoH and discussions with the MoH on accessing this funding are underway.

3. <u>SUMMARY</u>

As outlined in the Scope Change (Appendix 1), the original approved budget did not include an allowance for Green Star certification, therefore the design process only incorporated Green Star principles, where possible within the approved budget of \$79m.

With the \$2.8m funding announced by the Minister of Climate Change in January 2020, the design for the SMHS facility has incorporated the requirement to meet the Green Star 4 rating.

Financials

Based on previous experience with Green Star projects and quantity surveying estimates, the calculated figure of \$2,800,000 equates to the historical 3% increase in the overall budget along with an allowance for introducing this at a late stage of the design of the building.

The budget has now been split further and \$500,000 is related to design and \$2,300,000 to physical works.

CDHB has not yet had formal confirmation from the MoH of the additional funding to be provided. The MoH have advised that they have a draft MoU between themselves and EECA regarding the capital drawdown process.

Progress as at January 2021

- The detailed design incorporating Green Star 4 rating requirements has been completed.
- Drilling for ground source heat pump bores has commenced; with confirmation of suitability to be available early 2021.
- Construction contract tenders are underway.
- Occupation by end of November 2022 is still on track.

4. APPENDICES

Appendix 1:	Scope Change for \$2.8m to achieve Green Star 4 rating
Appendix 2:	Government Media Release in January 2020.
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697 **Scope Change Request**

Project Overview

Project Manager Project Sponsor	Sue McGregor Dr Rob Ojala	Date of Request Requester Name	14 December 2020 Sue McGregor
Project Sponsor	Dr Rob Ojala	Requester Name	Sue McGregor
			No.
Scope Change F	Zr		

Scope Change Request

	Original Scope	Current State	Requested change			
Completion Date	November 2022	November 2022	0			
Budget	\$79,000,000	\$81,800,000	\$2,800,000			
Deliverables	Facilities (for the relocation of SMHS from The Princess Margaret Hospital TPMH) on Hillmorton site to be designed and built based on Green Star principles as much as possible within the approved budget	Detailed design completed has incorporated Green Star 4 requirements. Drilling has commenced on site for ground source heat pump bores, pending confirmation of suitable water supply and reinjection ability by early 2021. At contract tender stage	Facilities (for the relocation of SMHS from TPMH) on Hillmorton site to be designed and built to Green Star 4 rating			
Reason for the change						

Reason for the change

The original budget for SMHS did not include an allowance for Green Star Certification though the design has incorporated Green Star principles where possible within the budget.

The project team was requested by the Central Agency to provide an estimate of the funding required to meet at least Green Star 4 Accreditation. This was estimated at \$2,800,000 for Green Star 4, because the design was already underway it would not have been possible to achieve Green Star 5.

In January 2020, the Minister of Climate Change announced funding of up to \$2,800,000 from the New Zealand Upgrade Programme's clean powered public service fund, to upgrade this Hillmorton Hospital mental health unit to a higher Green Star rating.

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698 **Scope Change Request**

Financials

Given the time constraints (early this year when most consultants were still on Christmas leave combined with a one hour turn-around) placed on providing the anticipated uplift in cost for the Project to achieve a 4 star rating a high level costing was provided that was in-line with previous projects. The calculated figure of \$2,800,000 equates to the historical 3% increase in the overall budget along with an allowance for introducing this at a late stage of the design of the building. The budget has been split further now and \$500,000 is related to design and \$2,300,000 to physical works.

Options Evaluated

Do Nothing is not an option as this is part of the Government's programme to upgrade infrastructure and modernise the economy as part of the solution to climate change through a clean-powered public service.

Impact Assessment

Impact Assessr	mpact Assessment					
Risk	N/A G					
Resources	Engagement of Green Star Professionals to achieve Certification – cost included in the funding.					
Financial Impact	Crown equity and Asset value Increase from \$79,000,000 to \$81,800,000.					
Schedule	No adverse impact on delivery.					
Deliverables / Quality	The facility will be Green Star 4 rated .					
Benefits	Green Star 4 facility Benefit Measure: • Green Star 4 rating certification					
Transition	An Independent Commissioning Agent will be appointed to ensure a smooth transition from design, handover and first year of operation.					

Endorsement and Approval

Endorsed by	Brad Cabell (Programme Director, Properties & Construction)	Approved by	Dr Rob Ojala (Acting Executive Director, Facilities)
Date of Endorsement	17/12/2020	Date of Approval	
Signature		Signature	

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Scope Change Request

X

Financial Approval

CDHB QFARC	CDHB BOARD
Meeting: 26 January 2021	Meeting: 18 February 2021
Recommendation to Board required to approve \$2,800,000 for Green Star 4 rating	Approval by Board required for \$2,800,000 to achieve Green Star 4 rating
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Authorised by:	Owner:	Issue Date:13/03/2019		
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Releases (/releases)

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29 JANUARY 2020

Flicking the switch on a clean powered CIAL INFOF public service

Hon James Shaw

Climate Change

Our Government's programme to upgrade infrastructure and modernise the economy will help more communities to be part of the solution to climate change through a cleanpowered public service.

Minister for Climate Change James Shaw today announced the first group of projects from the New Zealand Upgrade Programme's clean powered public service fund. Eight schools and two hospitals will receive support so they can upgrade to run on clean energy.

"Our Government is helping more hospitals, schools and other public organisations switch to clean, climate-friendly ways of keeping people warm and the lights on," James Shaw said.

"The places our kids go to learn and our loved ones go to be cared for can be part of the solution to climate change. However, decisions by successive previous Governments left many of these places with no option but to burn climate-polluting fossil fuels like coal to keep their kids and patients warm.

"Many of our schools have old, dirty, climate-polluting boilers that in most cases were installed in the 1950s and 1960s. Because of our support, current and future generations of kids will be kept warm at school by clean energy as we help them upgrade to using biomass instead of coal.

"Climate-polluting fuels have been used for too long to heat some of New Zealand's most important public buildings. Today's announcement is another step towards changing this and ensuring climate-friendly energy solutions are a part of our everyday lives," James Shaw said.

"This is a major expansion of our Government's work to move our economy away from fossil fuels and demonstrates leadership on lowering emissions," Energy and Resources Minister Megan Woods said.

"The capital announced today means that the Government is moving in the right direction to be able to reach our goals of 100% renewable electricity by 2035 and net zero carbon by 2050."

The first projects announced under the \$200 million for a clean powered public service are:

- 1. Up to a total of \$4.8 million to replace coal boilers used for heating at eight schools this year, with biomass boilers:
 - 1. Wallacetown primary school
 - 2. Waverly Park primary school
 - 3. Te Anau primary school
 - 4. Catlins School
 - 5. Opoho school
 - 6. Fiordland College
 - 7. James Hargest College
 - 8. Ruapehu College
- 2. Up to \$2.4 million to replace a coal boiler at Ashburton Hospital.
- 3. Up to \$2.8 million to upgrade Hillmorton Hospital's mental health unit to a higher Green Star rating. Construction is expected to begin in 2020.

These changes will help us meet the commitments we made to all New Zealanders in the Zero Carbon Act.

Further projects will be announced soon.

08	

Name	Date modif	Туре	Size
🔁 1819 Hillmorton AlS HCA Internal Doors replacement.pdf	29/03/2021	Adobe Acr	3,152 KB
🔁 1819 Hillmorton AT&R Feasibility, Concept options.pdf	29/03/2021	Adobe Acr	1,145 KB
🔁 1819 Hillmorton Building management system upgrade.pdf	29/03/2021	Adobe Acr	2,430 KB
🔁 1819 Hillmorton PSAID Bathroom Configuration.pdf	29/03/2021	Adobe Acr	2,497 KB
🔁 1819 Hillmorton Te Awakura East and South fencing.pdf	29/03/2021	Adobe Acr	976 KB
🔁 1920 Hillmorton AlS Ventilation scope change budget.pdf	29/03/2021	Adobe Acr	96 KB
🔁 1920 Hillmorton AT&R HCA Scope Change Budget.pdf	29/03/2021	Adobe Acr	233 KB
🔁 1920 Hillmorton AT-R Interim Alterations.pdf	29/03/2021	Adobe Acr	950 KB
🔁 1920 Hillmorton Facility Master Planning Scope Change 2 budget.pdf 👘	29/03/2021	Adobe Acr	188 KB
🔁 1920 Hillmorton Facility Master Planning Scope Change Budget.pdf	29/03/2021	Adobe Acr	111 KB
🔁 1920 Hillmorton Facility Master Planning.pdf	29/03/2021	Adobe Acr	6;124 KB
🔁 1920 Hillmorton Food Services Building EQ Works.pdf	29/03/2021	Adobe Acr	23,123 KB
🔁 1920 Hillmorton Forensic Security System.pdf	29/03/2021	Adobe Acr	512 KB
🔁 1920 Hillmorton HCA Fence Alteration.pdf	29/03/2021	Adobe Acr	179 KB
🔁 1920 Hillmorton Laundry repurposing.pdf	29/03/2021	Adobe Acr	345 KB
🔁 1920 Hillmorton Te Awakura External Doors.pdf	29/03/2021	Adobe Acr	177 KB
🔁 1920 SMHS Relocation to Hillmorton Greenstar design.pdf	29/03/2021	Adobe Acr	565 KB
🔁 2021 Ashburton Mental Health Roof Replacement.pdf	29/03/2021	Adobe Acr	10,160 KB
🔁 2021 Hillmorton Duress System.pdf	29/03/2021	Adobe Acr	11,884 KB
🔁 2021 Hillmorton Facility Master plan Scope Change PBC.pdf 💦 💦	29/03/2021	Adobe Acr	842 KB
🔁 2021 Hillmorton Fergusson upgrade concept plan.pdf	29/03/2021	Adobe Acr	7,283 KB
🔁 2021 Hillmorton Food Services Building EQ Works Scope Change.pdf 👘	29/03/2021	Adobe Acr	6,221 KB
🔁 2021 Hillmorton Laundry repurposing Scope Change 2.pdf	29/03/2021	Adobe Acr	84 KB
🔁 2021 Hillmorton Laundry Strengthening.pdf	29/03/2021	Adobe Acr	5,882 KB
🔁 2021 Maia Health SMHS CAF Sensory Modulation Equipment.pdf	29/03/2021	Adobe Acr	4,168 KB
2021 SMHS CAF OP Relocation to Hillmorton Laundry.pdf	29/03/2021	Adobe Acr	1,302 KB
🔁 2021 SMHS CAF South Ashburton Hub Alterations.pdf	29/03/2021	Adobe Acr	5,328 KB
🔁 2021 SMHS Relocation to Hillmorton Greenstar.pdf	29/03/2021	Adobe Acr	376 KB
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CDHB 10563 Appendix 2

	Service	Adult Acute Inpatient	Child and Adolescent	Forensic	Intellectual Disability	Specialty*	Rehab	Alcohol & Other Drug	Total Occupancy
	Apr-16	97%	50%	78%	84%	98%	88%	79%	86%
	May-16	96%	57%	80%	78%	87%	92%	88%	85%
	Jun-16	93%	41%	80%	68%	87%	88%	86%	82%
	Jul-16	93%	56%	75%	52%	76%	96%	81%	80%
	Aug-16	95%	54%	76%	58%	81%	94%	102%	82%
	Sep-16	91%	43%	73%	75%	90%	93%	88%	82%
	Oct-16	94%	38%	75%	86%	82%	97%	92%	83%
	Nov-16	91%	50%	74%	78%	71%	95%	84%	82%
	Dec-16	91%	44%	78%	70%	56%	87%	86%	77%
ſ	Jan-17	98%	33%	80%	78%	76%	94%	75%	82%
ſ	Feb-17	98%	46%	72%	80%	63%	83%	85%	84%
	Mar-17	94%	54%	77%	78%	82%	93%	92%	83%
	Apr-17	92%	39%	80%	73%	84%	94%	95%	83%
	May-17	93%	43%	74%	78%	89%	91%	80%	81%
	Jun-17	94%	56%	80%	89%	76%	91%	93%	86%
ſ	Jul-17	87%	55%	81%	91%	60%	100%	69%	82%
ſ	Aug-17	94%	47%	83%	63%	83%	98%	73%	83%
ſ	Sep-17	96%	51%	85%	49%	79%	95%	88%	84%
	Oct-17	101%	50%	86%	62%	65%	101%	78%	85%
F	Nov-17	93%	57%	81%	63%	84%	91%	81%	83%
	Dec-17	102%	52%	82%	48%	82%	92%	71%	83%
ſ	Jan-18	97%	46%	85%	58%	75%	92%	84%	82%
ſ	Feb-18	96%	53%	77%	65%	80%	87%	76%	85%
ſ	Mar-18	91%	55%	90%	66%	86%	93%	83%	83%
	Apr-18	97%	62%	89%	69%	63%	92%	82%	86%
F	May-18	98%	60%	93%	67%	80%	97%	72%	87%
	Jun-18	100%	54%	86%	68%	100%	93%	81%	89%
Ī	Jul-18	97%	42%	90%	50%	88%	94%	54%	82%
Ī	Aug-18	88%	63%	94%	46%	77%	90%	83%	81%
	Sep-18	90%	49%	89%	49%	60%	81%	81%	78%
	Oct-18	95%	54%	92%	59%	82%	86%	97%	83%
	Nov-18	95%	56%	90%	47%	79%	89%	82%	83%
	Dec-18	89%	47%	98%	46%	61%	90%	84%	79%
ſ	Jan-19	85%	53%	96%	53%	51%	93%	76%	78%
ſ	Feb-19	89%	69%	86%	59%	52%	82%	62%	82%
ſ	Mar-19	90%	63%	98%	72%	61%	85%	86%	82%
ſ	Apr-19	96%	52%	91%	75%	61%	78%	80%	82%
ſ	May-19	100%	58%	90%	71%	58%	93%	84%	85%
	Jun-19	96%	59%	84%	64%	87%	91%	85%	86%

Table one: 'Bed occupancy' in Specialist Mental Health and Addiction facilities

Service	Adult Acute Inpatient	Child and Adolescent	Forensic	Intellectual Disability	Specialty*	Rehab	Alcohol & Other Drug	Total Occupancy
Jul-19	96%	60%	86%	57%	92%	97%	88%	85%
Aug-19	97%	68%	87%	52%	79%	103%	84%	86%
Sep-19	88%	67%	88%	61%	69%	93%	83%	83%
Oct-19	89%	47%	87%	60%	100%	96%	83%	83%
Nov-19	90%	37%	87%	55%	88%	88%	82%	81%
Dec-19	91%	24%	88%	65%	58%	84%	91%	77%
Jan-20	88%	33%	88%	65%	47%	83%	74%	75%
Feb-20	88%	47%	82%	70%	71%	72%	81%	78%
Mar-20	78%	49%	85%	81%	70%	72%	66%	73%
Apr-20	56%	36%	82%	67%	31%	76%	0%	60%
May-20	54%	53%	81%	68%	51%	87%	54%	65%
Jun-20	82%	65%	90%	68%	55%	84%	86%	79%
Jul-20	82%	45%	92%	69%	59%	87%	83%	77%
Aug-20	76%	58%	84%	49%	74%	95%	98%	76%
Sep-20	85%	67%	78%	56%	71%	92%	82%	79%
Oct-20	89%	56%	77%	58%	92%	97%	86%	81%
Nov-20	85%	60%	75%	47%	93%	91%	81%	79%
Dec-20	69%	42%	79%	44%	59%	88%	82%	68%
Jan-21	79%	50%	82%	51%	60%	92%	64%	73%
Feb-21	81%	42%	79%	45%	74%	82%	63%	76%
Mar-21	78%	71%	90%	51%	79%	94%	80%	78%

Notes:

'Specialty' = includes Eating Disorders and Mothers and Babies
 These figures do not include patients who are on leave but are still under care of the unit.

Table three: Unplanned readmission rates

Month	Adult Acute Inpatient
Mar-16	17.4%
Apr-16	17.4%
May-16	21.9%
Jun-16	9.4%
Jul-16	12.0%
Aug-16	19.0%
Sep-16	21.3%
Oct-16	25.2%
Nov-16	21.2%
Dec-16	17.3%
Jan-17	16.7%
Feb-17	16.5%
Mar-17	18.4%
Apr-17	16.9%
May-17	20.2%
Jun-17	20.6%

Month	Adult Acute Inpatient	
Jul-17	27.3%	
Aug-17	29.0%	
Sep-17	20.8%	
Oct-17	21.5%	
Nov-17	20.5%	
Dec-17	19.7%	
Jan-18	25.8%	
Feb-18	25.4%	\sim
Mar-18	27.9%	
Apr-18	13.2%	
May-18	16.2%	~
Jun-18	16.8%	
Jul-18	18.6%	
Aug-18	29.0%	\triangleright
Sep-18	20.0%	
Oct-18	29.1%	
Nov-18	17.3%	
Dec-18	18.2%	
Jan-19	25.7%	
Feb-19	28.8%	
Mar-19	19.2%	
Apr-19	16.9%	
May-19	26.7%	
Jun-19	26.4%	
Jul-19	18.7%	
Aug-19	21.9%	
Sep-19	18.3%	
Oct-19	15.4%	
Nov-19	17.4%	
Dec-19	25.7%	
Jan-20	13.7%	
Feb-20	22.0%	
Mar-20	8.8%	
Apr-20	7.0%	
May-20	16.0%	
Jun-20	29.4%	
Jul-20	23.9%	
Aug-20	17.8%	
Sep-20	23.1%	
Oct-20	18.9%	
Nov-20	13.5%	
Dec-20	19.6%	
Jan-21	29.6%	
Feb-21	16.5%	

Please note: We only routinely capture readmission rates for adult general services. **Table three** (above) shows the readmission rates within 28 days of discharge.