



# Mental Health Facility

Improving mental wellbeing in the Cook Islands, by providing compassionate healthcare services  
 Design Brief



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## Summary

The project involves an establishment of an acute inpatient mental health facility at Rarotonga Hospital. The facility is necessary for treating patients with acute and serve mental illness needing 24/7 care.

## List of Attachments

<b>Attachment 1</b>	Proposed design perspectives
<b>Attachment 2</b>	Anti-ligature products
<b>Attachment 3</b>	Design Guidelines and Cook Islands Building Standards

## Design objectives

1. Provide service and treatment in a safe and secure environment
2. Create a therapeutic, non-institutional treatment environment with residential character
3. Provide the necessary functions that will facilitate the effective delivery of compassionate healthcare services
4. Allow for future expansion

<p>Provide service and treatment in an accessible, safe and secure environment</p>	<p><u>Accessibility:</u></p> <ul style="list-style-type: none"> <li>○ Single story building for easy access by those with physical disabilities.</li> <li>○ Design reception desk to accommodate people in wheelchairs.</li> <li>○ Appropriate accommodations for disabled and bariatric patients.</li> </ul> <p><u>Safety:</u></p> <ul style="list-style-type: none"> <li>○ Two separate zones for secure care and open care;</li> <li>○ <u>Secure care</u> – High risk to self and others and aggressive behaviour. Zone must be fire proof, sound proof, include an internal courtyard for meditation purposes at the staffs discretion, secured emergency exits, minimal fixtures or anchor points.</li> <li>○ <u>Open care</u> – Risk of suicide or self-destructive behaviour. Ensuites have partition walls for added privacy.</li> <li>○ Building is within close proximity to other healthcare facilities should patients or staff require emergency services, yet also secluded so that the general public cannot see into the building or designated recreational areas.</li> <li>○ Elevated location – minimal threat from tsunamis and high seas.</li> <li>○ Dedicated emergency assembly points.</li> <li>○ Impact resistant glazing and doors.</li> <li>○ Carpark located safely away from building so vehicles do not become a fuel source in the event of a fire.</li> <li>○ Formed access provided for first responders (fire and police). The access may be treated as a drop off area for staff, visitors and open care patients. It must otherwise remain clear of obstructions in case of a fire.</li> <li>○ Fixtures and fittings that eliminate the opportunity for patients to self-harm or cause injury to others.</li> <li>○ Incorporate furniture and fixtures that are residential in appearance yet vandal proof</li> </ul> <p><u>Controls:</u></p> <ul style="list-style-type: none"> <li>○ A Central Control Unit (CCU) located within clear view of the nurses station and only accessible by staff, reduces risk of inappropriate use of locking systems, showers, toilets, hand basins and consequent flooding</li> <li>○ Sufficient external lighting to carpark or external courtyard for security</li> <li>○ Swipe card access to restricted areas enables staff to control their environments and manage visits</li> <li>○ Provide smoke alarms.</li> </ul> <p><u>Security:</u></p> <ul style="list-style-type: none"> <li>○ Floor layout is simple, has minimal blind spots and enables staff to monitor patient movements and activities as naturally as possible.</li> <li>○ Individual rooms where patients feel safe and secure.</li> </ul>
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	<ul style="list-style-type: none"> <li>○ Segregation of patients by clinical condition for added privacy.</li> <li>○ Separate entrance ways to ensure that open care patients and staff are not disrupted when a secure care patient is admitted to the treatment room. Open care patients, staff and patients enter via the main entrance. For staff and patient safety, visitors must make an appointment prior to visits.</li> </ul>
<p>Create a non-institutional treatment environment with residential character</p>	<ul style="list-style-type: none"> <li>○ Provide a therapeutic environment with intimate connections to external courtyards or green spaces for recreational activities or meditation.</li> <li>○ Replace fences and barriers with hedging as much as possible</li> <li>○ Large, impact resistant windows provide attractive views of the surrounding landscape and permit natural light penetration and ventilation without compromising the safety of patients. Windows to be fitted with superscreens/security mesh and anti-ligature latches.</li> <li>○ Incorporate natural material finishes and colour schemes that promote healing. Ceiling, wall and floor colours are different to encourage a sense of orientation.</li> <li>○ Quiet room, staff lounges, secure outdoor spaces where staff and patients alike can retreat and control their own social environment.</li> <li>○ Mitigate noise and disruptive incidences that may compromise the operations of the facility, by acoustically treating the roof, walls and floors.</li> </ul>
<p>Provide necessary functions that will facilitate the effective delivery of compassionate healthcare services</p>	<p><u>Ambulance Bay and car park:</u></p> <ul style="list-style-type: none"> <li>○ Weatherproof drop off area for secure care patients or patients with disabilities</li> <li>○ Sufficient parking space for staff and visitors</li> <li>○ Site plan shows potential spaces that can be used as assembly points during a fire (refer to <b>Figure 1</b>).</li> </ul> <p><u>Examination/ Treatment Room:</u></p> <ul style="list-style-type: none"> <li>○ Restricted access.</li> <li>○ Placed adjacent the ambulance bay for discreet transfer of high risk patients. If required, Nurses will administer medication and allow the patient to settle before transferring them to their bedrooms or any nearby health facility.</li> <li>○ Lockable cupboard for storage of necessary equipment and medication, provided.</li> </ul> <p><u>Separate zones for secure care and open care:</u></p> <ul style="list-style-type: none"> <li>○ Single bedrooms permit the separation of patients by clinical condition.</li> <li>○ Acoustically treated ceilings, walls and floors, minimize the transmission of noise between adjoining bedrooms.</li> <li>○ At the staff's discretion, open care patients are able to store personal items inside their bedrooms. Doors are lockable from the inside but able to be opened by staff during an emergency.</li> <li>○ Bedroom doors open outward to prevent patients from attempting to block themselves in their rooms. Viewing panels enable staff to monitor patients.</li> <li>○ Bed bases will be concrete or fixed to the floor to prevent patients from using it as a weapon.</li> <li>○ Where the use of ligature points cannot be avoided, vandal proof fixtures have been incorporated (refer to <b>Attachment 2</b>).</li> </ul> <p><u>Nurses Station:</u></p> <ul style="list-style-type: none"> <li>○ First point of contact for visitors.</li> <li>○ Centrally placed to enable clear line of sight to all common areas and entrances to bedrooms.</li> <li>○ Station consists of three parts. Due to limited space, two parts have been allocated for staff and the other will function as lockable cubicles for the safe storage of patient personal items</li> </ul>

	<ul style="list-style-type: none"> <li>○ Allow for information interaction with patients without compromising the confidentiality of patient records.</li> </ul> <p><u>Shared facilities (family room, kitchen and laundry areas)</u></p> <ul style="list-style-type: none"> <li>○ Enable patients to meet with their families in private as well as facilitate educational programs, therapy sessions, or other necessary meetings.</li> <li>○ Freedom for patients to do their laundry.</li> <li>○ Furniture selection should be appropriate for the various activities, comfortable, domestic in character and free of sharp edges so that it may not be used as weapons</li> <li>○ Staff bathroom can be accessed by visitors and a hand washing station is provided to maintain good hygiene. Visitors should not be permitted to use the facilities within patient's bedrooms.</li> </ul> <p><u>Activity/recreational spaces:</u></p> <ul style="list-style-type: none"> <li>○ Deck provides sheltered space for patients and staff to engage in recreational activities. The area is clearly observable by staff and extends to an external courtyard with therapeutic views of the surrounding landscape</li> <li>○ An internal courtyard at the High Risk section provides a safe and secure environment for patients to mediate and relax at any given time of the day</li> </ul>
Allow for future expansion	<ul style="list-style-type: none"> <li>○ Orientation of the building allows for extension on the western end, should additional rooms or facilities be required.</li> <li>○ Flexibility to sleep open care patients within the secure care unit whenever it is unoccupied.</li> </ul>

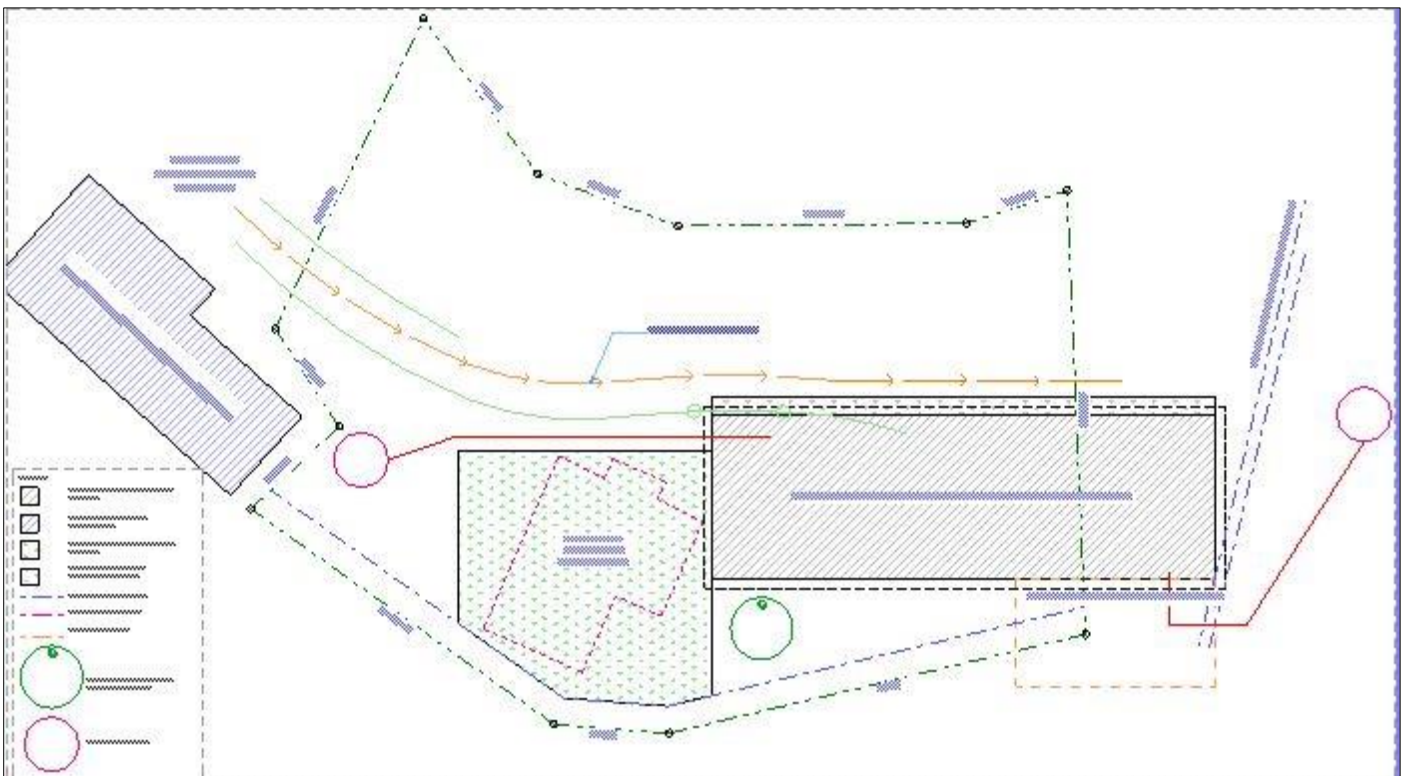


Figure 1: Site plan showing location of emergency assembly points

## Floor Area Requirements:

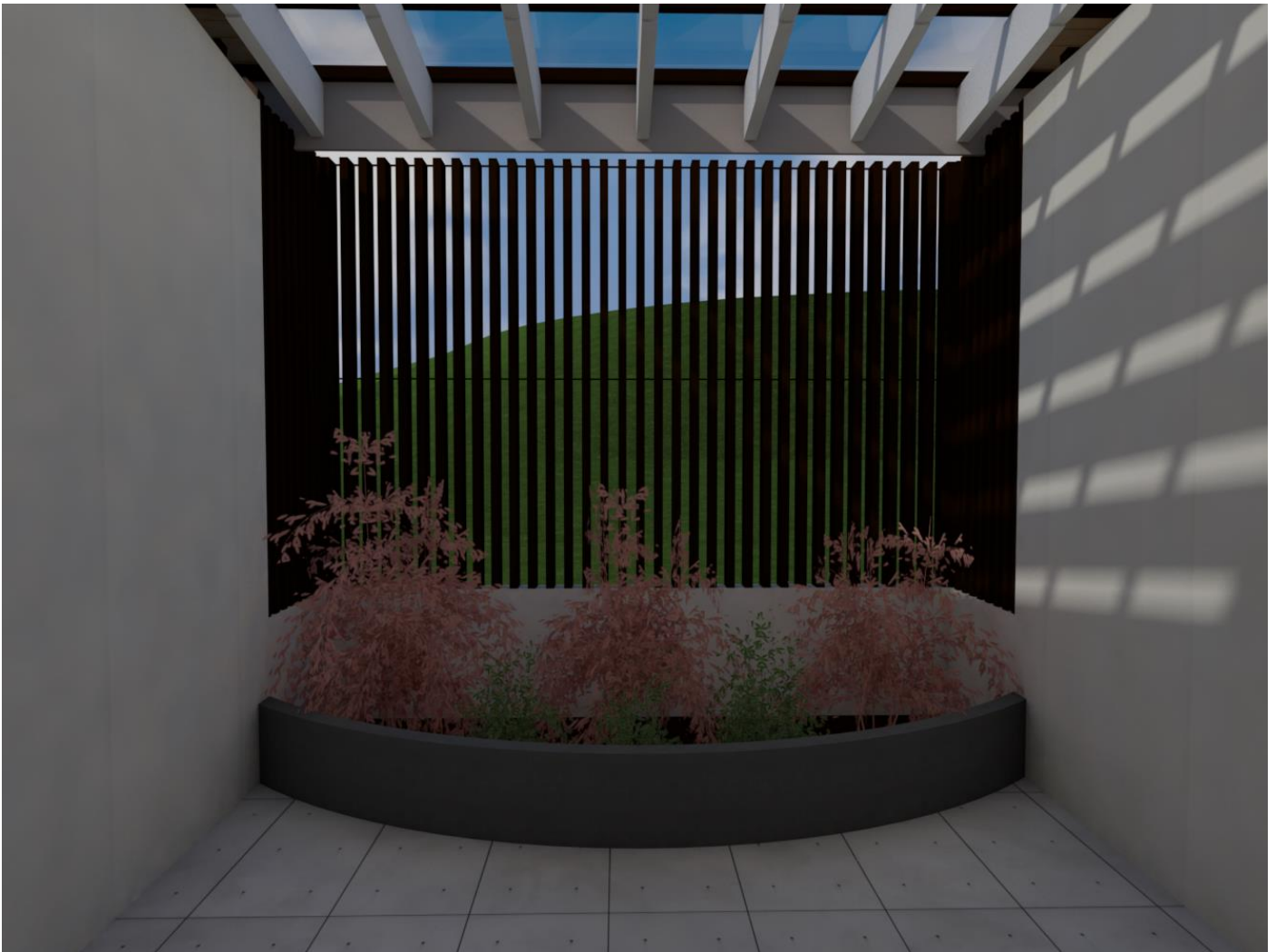
Area	Space requirement (m2 per person)	Quantity	Total (m2)
Patient rooms	16	4	64
Family / consultation room	8	1	8
Circulation – Secure Care	-	-	16
Circulation – Open Care	-	-	24
Nurses Station and general circulation area	-	1	24
Treatment and resus room	-	1	16
Storage	-	1	4
Toilet and shower (available for visitor use)	-	1	4
Kitchenette and laundry	-	1	8
Total			168

## Issues and management plan:

Issue	Management Plan
Covid-19 restrictions causing delays in shipping and air freight	Early design approval and procurement
Product maintenance, serviceability and replacements	Select products that are available locally or in New Zealand to avoid shipping delays or the high cost of engaging international expertise

## Attachment 1 | Perspectives

**General note:** The below renders are for illustration purposes only and may not accurately represent the actual condition of the final outcome.



Internal courtyard within the high security zone for meditation.

Maximizes natural sunlight and ventilation as much as practicable.

Incorporates natural materials finishes and colour schemes to promote healing.

Minimal exposure to visitors and other users of nearby healthcare facilities.



Sleeping areas maximize natural sunlight and ventilation as much as safely practicable.

Natural materials finishes and colour schemes to promote healing.

Furniture and fixtures that are residential in character yet vandal proof.

Walls are insulated to minimize noise pollution.

Attractive views of the external environment.



Quiet rooms, staff lounges, secure outdoor spaces where staff and patients alike can retreat and control their own social environment

Attractive views of the external environment.

Open layout and simple circulation paths without blind spots for ease of supervision.

Natural materials finishes and colour schemes to promote healing.

Furniture and fixtures that are residential in character yet vandal proof





Connection to external courtyards or green spaces for recreational activities or meditation.

Attractive views of the external environment.

Open layout and simple circulation paths without blind spots for ease of supervision.

Natural materials finishes and colour schemes to promote healing.

Furniture and fixture that are residential in appearance yet vandal proof.

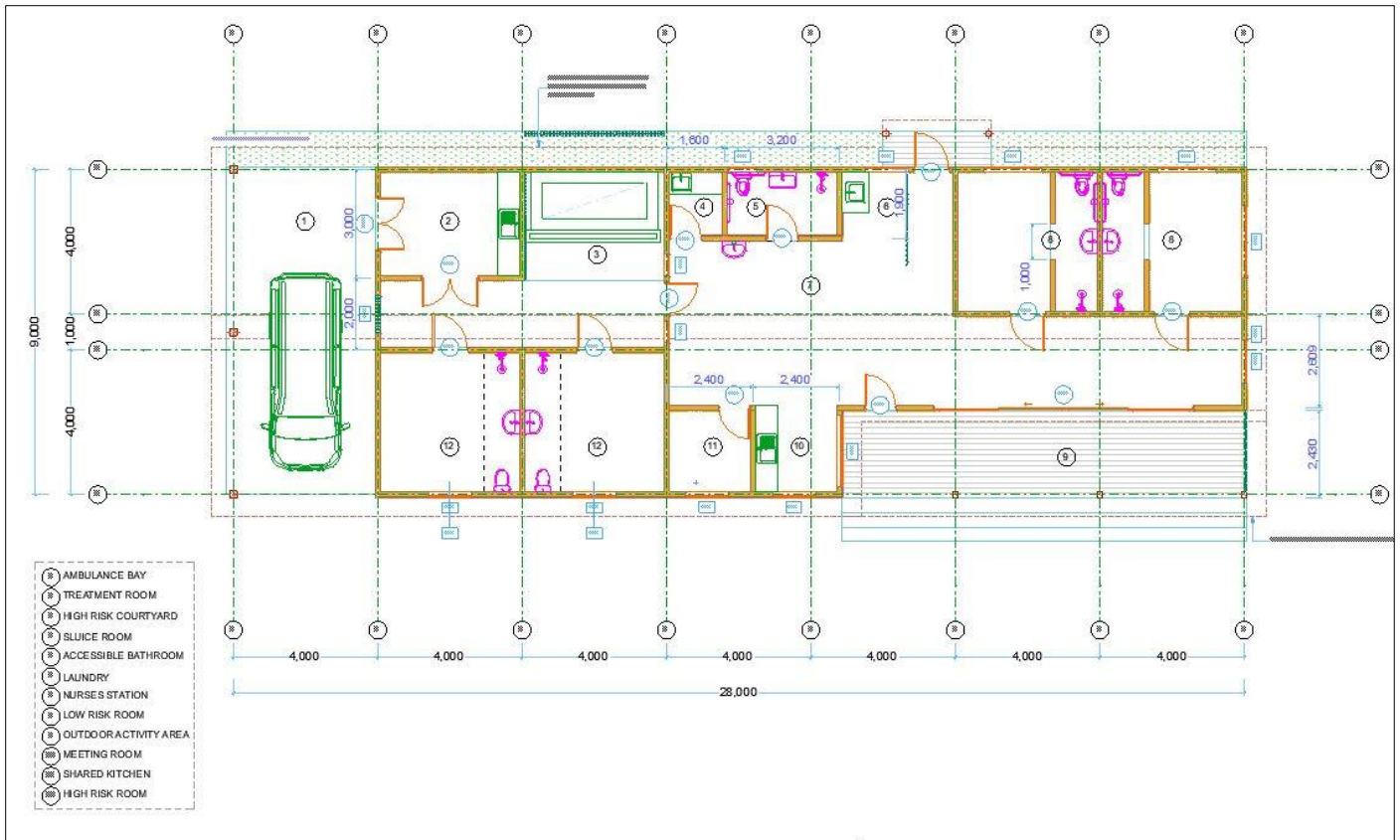


Figure 2: Proposed floor plan

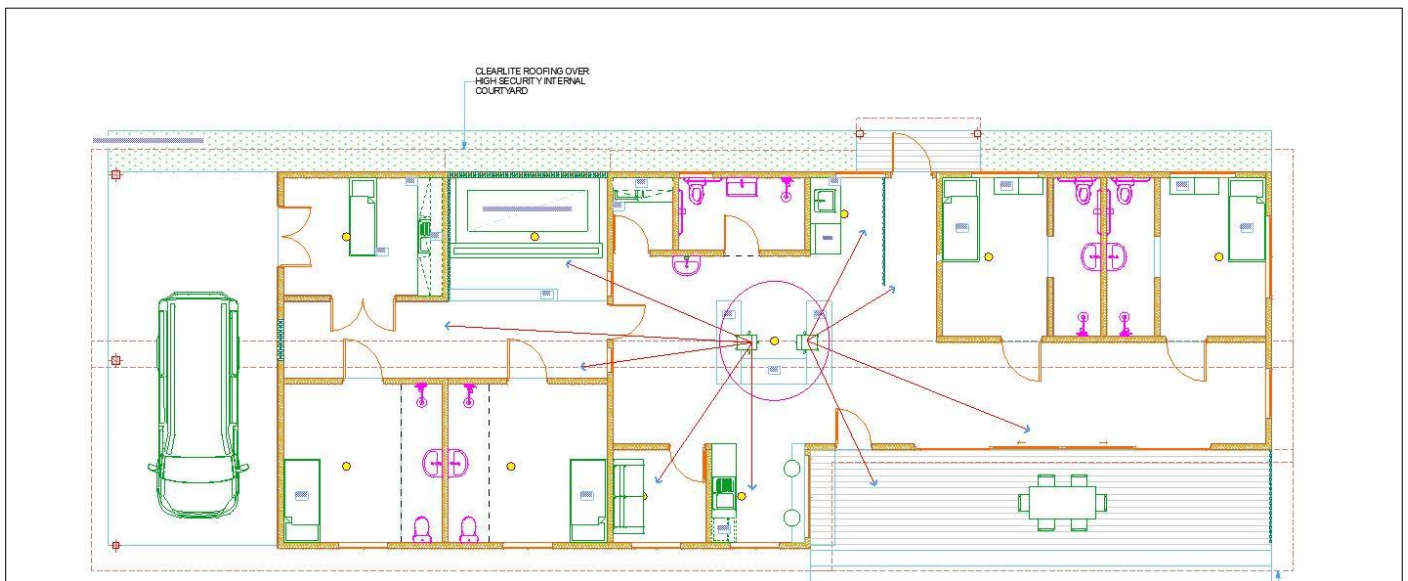










Figure 3: Floor plan showing lines of supervision from Nurses Station

## Attachment 2 | Proposed Anti-ligature Fixtures

Product code and description	Product	Notes
<a href="#">DV-SH07-040</a> Franke high security shower rose with tamper-proof locking plate		<u>Location:</u> High security care and low security showers (4)
<a href="#">MS-Z73M</a> Macdonald high security shower mixer with pressure balancing cartridge		<u>Location:</u> High security care and low security showers (4) For use where you have tempered hot water supply (no hotter than 45°C)
<a href="#">BE-SK3/900</a> Macdonald cleanseal slide shower system 900mm		<u>Location:</u> Staff bathroom and nurses station (1)
<a href="#">Z-7300</a> Zurn pressure balancing shower mixer with round face plate		<u>Location:</u> Staff bathroom (1) Pressure balancing means this will not feel any temperature fluctuations, even when a toilet is flushed
<a href="#">AS8203M-NZ</a> Asi folding shower seat 825x450mm		<u>Location:</u> Staff bathroom and nurses station (1)

<p><a href="#">BE-AL5/90</a> Macdonald stainless steel grab rail 750x750mm with anti-ligature infill</p>		<p><u>Location:</u> Low security care and staff bathroom (3)</p>
<p><a href="#">DV-VR01-011</a> Franke high security accessible toilet</p>		<p><u>Location:</u> Staff toilet and open care showers (3)</p>
<p><a href="#">DV-VR01-010</a> Franke high security toilet</p>		<p><u>Location:</u> High security care (2)</p>
<p><a href="#">DV-VR01-031</a> Franke high security wash basin with rear upstand and single outlet</p>		<p><u>Location:</u> Staff bathroom, open care bathrooms, high secure care rooms (5)</p>
<p><a href="#">RA-CO2111HP45</a> Rak compact 450 wash basin and shroud 450x360mm</p>		<p><u>Location:</u> Nurses station (1)</p>
<p><a href="#">FR-HDTX683E</a> Franke heavy duty toilet roll holder</p>		<p><u>Location:</u> All bathrooms</p>

<p><a href="#">AS0347</a> Asi stainless steel wall mounted soap dispenser</p>		<p>Location: Staff kitchen, staff bathroom, reception, open care bathrooms (5)</p>
<p><a href="#">AS0210</a> Asi stainless steel surface mounted paper towel dispenser</p>		<p>Location: Nurses station, kitchen, staff bathroom, assessment/treatment room (4)</p>
<p><a href="#">DE490006</a> Delabie electronic basin mixer, battery powered</p>		<p>Location: Nurses station (1)</p> <p>For hands-free operation allowing complete hand hygiene</p>

Product code and description	Product	Description
<p>PR-1-66 Latch-lock (key-turn) lockset</p>		<p>Latching lock, key (or swipe card) to enter from external side with internal handle always free to exit</p>
<p>PR-1-46 Bedroom Lockset</p>		<p>Roller catch Deadbolt, door will latch closed and can be manually locked/unlocked with external key or internal handle</p>
<p>Anti-ligature 727 Single Lipped Handle</p>		<p>Windows are not lockable. Supa Screens provided for security</p>

## Attachment 3 | Guidelines and Cook Islands Building Standards

### Design Guidelines:

1. WHO QualityRights Tool Kit – *Assessing and improving quality and human rights in mental health and social care facilities*
2. Australasian Health Facility Guidelines – *Part B – Health Facility Briefing and Planning, 0134 – Adult Acute Mental Health Inpatient Unit*

The preferred specifications of materials and works are being developed by the Cook Islands government, and will be included in the detailed design report. The following highlights the principles of the material standards and examples of how they are implemented by the Cook Islands government when constructing new or refurbishing existing buildings, through Cook Islands government procurement processes. The Cook Islands Building Code is the minimum acceptable standard.

### Material Standards

Essentially the selection and procurement of materials is guided by the principles of durability, sustainability and environmentally friendly.

#### a. Durability

- Allowing a minimum durability period of 50 years.
- Producer statements i.e. BRANZ, relating to durability, to verify test-and-pass of nominated materials, is provided by the Contractor for approval.

#### b. Sustainability and Environmentally Friendly

- All materials shall be new, not second hand or refurbished in anyway.
- All Hardware specifications shall be forwarded to the Principal for approval prior to their inclusion in the works.
- Random material samples will be tested before acceptance of delivered materials
- All sand and gravel for concrete must be washed in fresh water.
- All reinforcing steel must be deformed, rust free at time on concrete installation.
- Timber framing, lining and trim materials must be sustainably sourced but verified as appropriate for the tropical environment.
- Fibre cement must be organic / cellulose reinforced – must not contain mineral or asbestos.
- Roofing and flashings must be aluminium alloy with stainless steel fixings.
- All materials transported to Rarotonga shall be protected to minimise any loss and water damage inherent with the sea transportation of materials.

In addition to the producer statements, the Contractor must supply samples of materials and fittings for approval prior to them being shipped. The approved samples will be retained for comparison purposes as required for the duration of the Contract.

Independent assessors may be appointed by the Cook Islands government as required for quality assurance testing and verification.

The Contractor is required to supply defined amounts / percentages of spare materials and fittings when sourcing materials offshore to avoid construction delays through inability to procure materials locally; and to provide spares at the end of the project.

### Workmanship Standards

For the purpose of this concept note, we have provided (below) a list of typical requirements with references to the Cook Islands Building Code, and acceptable Australia/New Zealand (AS/NZS) standards where omitted in the Cook Islands Building Code.

The Cook Islands government will attempt to make the details in the detailed design report as clear as possible, to minimise the need for referencing to codes and standards.

**a. Construction and Supervision**

Generally, all work shall be supervised and completed by qualified and competent tradesmen. Construction supervisors must be onsite at all times during construction. Plumbers, drain layers and electricians must hold current certifications that meet the requirements of the Cook Islands regulatory authorities.

**b. Electrical Services**

Electricians must hold current certifications that meet the requirements of the Energy Act, as regulated by the Office of the Energy Commissioner. All electrical services shall be installed in order to comply with the general requirements of Cook Islands Building Code, DE Electricity or New Zealand Building Code (NZBC) G9 Electricity and AS/NZS 3000:2007 Electrical installations Known as the Australian/New Zealand Wiring Rules.

**c. Plumbing and Drain laying**

Plumbers and drain layers must hold current certificates that meet the requirements of the Cook Islands Building Code and Public Health (Sewage) Regulations (PHSR). All Plumbing services shall be installed in order to comply with the general requirements of the Cook Islands Building Code NF Health and Amenity, PHSR, and Infrastructure Cook Islands (ICI) Technical Standards for Water Supply in partnership with Institute of Professional Engineers Cook Islands (IPECI.)

**d. Solar Photovoltaic Installations**

Installations shall comply with AS/NZS 5033:2012 Installation and safety requirements for Photovoltaic (PV) arrays, and Cook Islands National Grid Connected Renewable Generators and Net-metering Policy.

**e. Windows**

All glazing and louver window frames to be supplied shall conform to the requirements of AS 2047:1999 Windows in Buildings - Selection and installation and NZS 4223: Part 1:2008 Glazing in buildings, Part 1: Glass selection and glazing, NZS 3504:1979 Specification for Aluminium Windows.

**f. Doors:**

Workmanship shall conform to AS/NZ Standards

NZBC C/AS1-AS7 Protection from Fire

NZBC F8/AS1 Signs

AS 1530.4 Methods for fire tests on building materials, components and structures - Fire-resistance test of elements of construction

AS 1191 Acoustics - method of laboratory measurement of airborne sound transmission insulation of building elements.

NZS 3602 Timber and wood-based products for use in building

NZS 3610 Specification form profiles of mouldings and joinery

NZS 4232.2 Performance criteria for fire resisting enclosures - Fire resisting glazing systems

NZS 4520 Fire resistant door sets

**g. Concrete Work and Concrete Masonry**

Workmanship shall conform to AS/NZ Standards.

NZBC B1/AS1 Structure

NZS 3101.1 Concrete structures standard

NZS 3104 Specification for concrete production (i.e fibre cement to be organic/ cellulose reinforced (i.e not mineral/ asbestos))

NZS 3109 Concrete construction

NZS 3114 Specification for concrete surface finishes

NZS 3112	Specification for Methods of Test for Concrete
NZS 3111	Methods of test for water and aggregate for concrete
AS/NZS 4671	Steel reinforcing materials (i.e reinforcing steel to be deformed, rust free at time of concrete installation)
CCANZ CP 01	Code of practice for weather tight concrete and concrete masonry construction
AS/NZS 2699	Built-in components for masonry
NZS 3103	Sands for mortars and plasters
NZS 3121	Specification for water and aggregate for concrete (i.e sand and gravel for concrete to be washed in fresh water)
NZS 4210	Masonry construction: Materials and workmanship
NZS 4229	Concrete masonry buildings not requiring specific engineering design
NZS 4230	Design of reinforced concrete masonry structures
AS/NZS 4455.1	Masonry units, pavers, flags, and segmental retaining wall units- Masonry units
NZS 3124	Specification for Concrete construction for minor works

#### **h. Carpentry**

Workmanship shall conform to AS/NZ Standards.

NZS 3604 Timber-framed buildings (i.e. timber framing; lining and trim materials to be sustainable sourced, but verified as appropriate for the tropical environment. Roofing & flashings etc to be 0.55mm Base Metal Thickness; with protective finish of aluminium alloy to 150g/m<sup>2</sup>)

AS/NZS 1860.1 Particleboard flooring – Specification

AS/NZS 2904 Damp-proof courses and flashings

NZS 3602 Timber and wood-based products for use in building

NZS 3603 Timber structures standard

NZS 3605:2001 Timber Piles and Poles for Use in Building.

NZS 3622 Verification of timber properties

NZS 3640 Chemical preservation of round and sawn timber

NZS AS 1884:2013 Floor covering – Resilient sheet and tiles – Installation practices

AS/NZS 4347 Damp-proof course and flashings – Methods of test

#### **i. Safe Work Practices and Accessibility**

All governmental policies for safe materials handling shall be implemented on this site.

At the end of each day's work, all active construction areas shall be cleaned and 'made safe'.

All loose materials shall be removed to an agreed storage area prior to final removal for recycling or burying at the dumpsite allocated by the principal.

NZS 8134.0:2008 Health and Disability Services (General) Standard

NZS 8134.1:2008 Health and Disability Services (Core) Standards

NZS 8134.2:2008 Health and Disability Services (Restraint Minimisation and Safe Practice) Standards

NZS 8134.3:2008 Health and Disability Services (Infection Prevention and Control) Standards

#### **GUIDELINES**