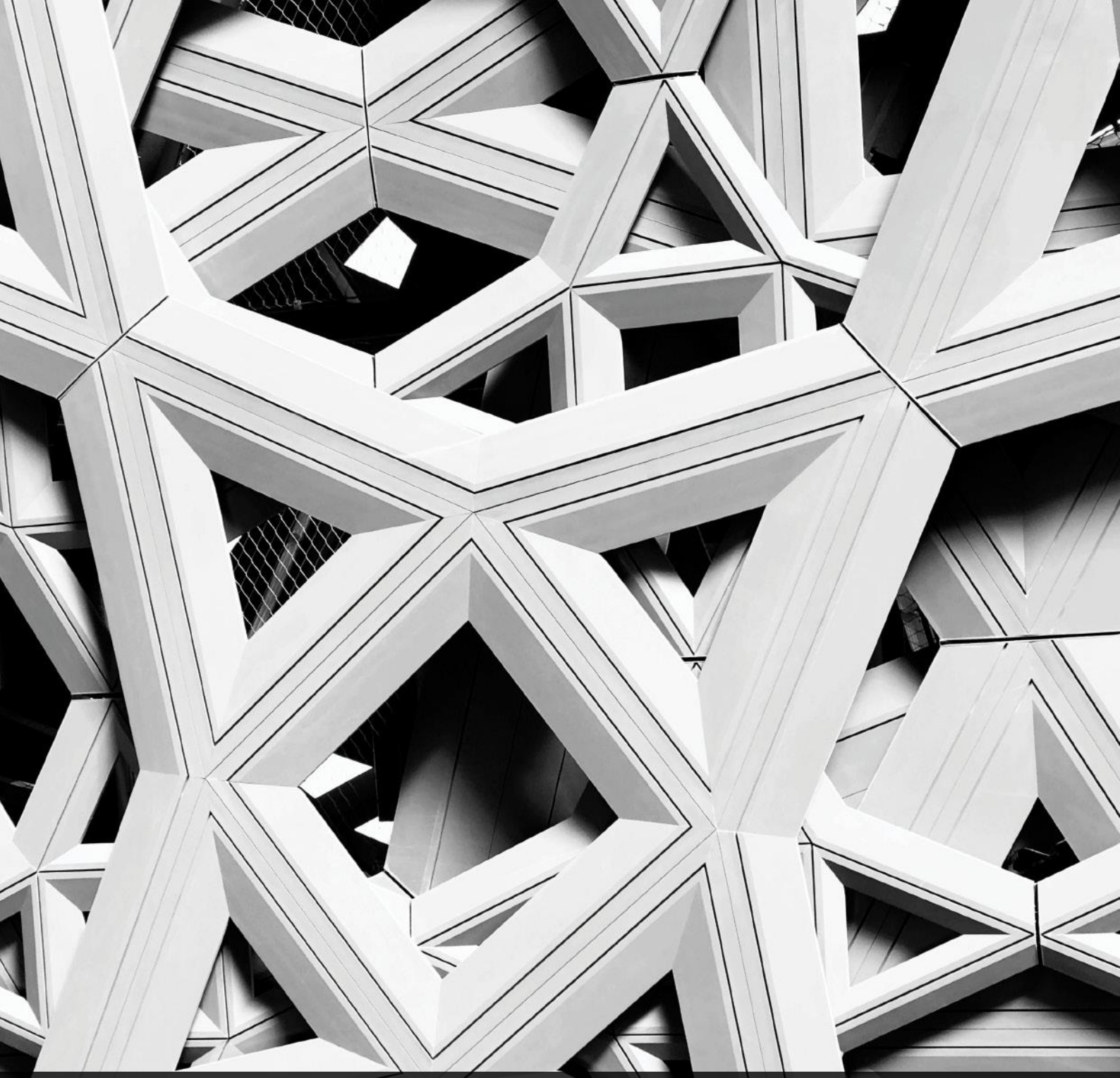

BCA Assessment Report

Design Development Report
World Class End of Life Program
Tamworth Hospital

Prepared for:
Health Infrastructure

Revision 2
26 March 2025
Reference: N240096

bmplusg.com.au

Executive Summary

The following comprises a summary of the key compliance items identified under the clause-by-clause assessment in Section 3.0 and 4.0 that will be addressed prior to the issue of the BCA Crown Certificate for the project.

A. Key Compliance Items:

+	+ BCA (DTS) Clause	+ Description
1.	B1D3	*Importance Level* The new works will be required to be designed and constructed in accordance with the requirements of Importance Level 4. The Structural Engineer together with Services Engineers are to nominate the Importance Level that has been assigned to the building in accordance with Table B1D3a i.e., Importance Level 4.
2.	C2D10	*Non-Combustible Building Elements* All materials and or components incorporated in an external wall or fire-rated wall must be non-combustible. This includes but not limited to: + Any external wall claddings. + Any framing or integral formwork systems i.e., timber framing, sacrificial formwork, etc. + Any external linings or trims i.e., external UPVC window linings, timber window blades, etc. + Any sarking or insulation contained within the wall assembly. This is not an exhaustive list, and any element incorporated within any external wall assembly must be identified and approved prior to the issue of a Crown Certificate. Refer to Table 1 in Appendix 1 for the elements required to be non-combustible. Note that these works are subject to NSW HI DGN 32 and as such bonded laminate cladding is not permitted. *Use of Timber Noggins in Fire Walls* All parts of fire walls are required to be constructed of non-combustible construction which extends to timber noggins, plywood used within fire walls. Timber noggins are proposed to be located within the internal fire walls throughout the extension in order to support services, handrails etc. The use of timber noggins within fire walls throughout the extension will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
3.	C3D6	*Fire & Smoke Compartment Sizes* Having regard to the proposed design, the following key items are noted: + The proposed Palliative Care extension will be required to be fire separated from the existing building by a fire wall with an FRL of 120/120/120 separating internal parts of the building. + The enclosed linkway will be required to be fire separated from both the existing hospital building along with the proposed palliative care unit by a fire wall with an FRL of 120/120/120 as detailed in the figure below.

		+ Smoke compartments with a maximum compartment size of 500 m^2 will be required to be provided within the proposed Inpatient Unit (IPU). It is noted that the Smoke Compartment of the extensions contains a Smoke Compartment with a total size of 579 m2. The size of the smoke compartment which exceeds the maximum smoke compartment size of the DTS Provisions is proposed to be assessed as part of the Fire Engineering Performance Solution to be prepared by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
4.	**C3D15**	*Public Corridors serving the Overnight Room* The overnight room is classified as Class 3 (refer to Clause A6G4 above and note included). In this instance, technically a public corridor within a Class 3 building if more than 40 m in length, is required to be separated at intervals of not more than 40 m in length with smoke proof walls. Consistent with the proposed Performance Solution assessment identified to be undertaken as detailed in Clause C4D12 below, the requirement for a corridor length not exceeding 40 m in length without smoke separation will be proposed to be addressed as part of a Fire Engineering Assessment noting that the IPU will be subject to smoke compartmentation being a Class 9a health care building.
5.	**C4D4**	*Protection of External Walls and associated Openings in Different Fire Compartments* Where an internal fire wall intersects at the junction of an external wall, the external walls of the different compartments and any associated openings that are exposed to one another are required to be protected in accordance with Clause C4D4. Based on the proposed design, exposure between fire compartment occurs in a number of locations. The protection of openings and external walls of different fire compartments that are exposed to each other is proposed to be addressed as part of the Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
6.	**C4D12**	*Bounding Construction to Overnight Room* The Class 3 overnight room located within the proposed Palliative Care Unit is required to be fire separated from the remainder of the palliative care unit (refer to Specification 5 – Fire Resisting Construction). The doorway opening into the overnight room from the public corridor is required to be protected with a self-closing -/60/30 fire door. In accordance with Clause C4D12, any room not within a sole occupancy that opens onto the public corridor is also technically required to be fire rated and provided with a self-closing fire door with a minimum FRL of -/60/30. This a technical requirement of the BCA which does not take into consideration a design scenario where a single Class 3 overnight room is located within an IPU within a hospital building with patients in non-fire separated rooms, 24 hr upright staff, sprinkler system installed etc. In this instance the non-protection of the adjoining rooms and doorways opening onto the public corridor will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
7.	**Spec. 5**	*Fire Separation of Overnight Room* *Separation **of Class 3 Overnight Room*** The Class 3 overnight room located within the Palliative Care extension is required to be separated from the remainder of the storey by fire rated walls with an FRL of -

		/60/60 (for a non-loadbearing wall). As detailed under Clause C4D12, the doorway accessing the room is required to be provided with a self-closing -/60/30 fire doors. The walls bounding the overnight room are required to extend to the underside of the non-combustible roof sheeting and except for roof battens with dimensions of 75 mm x 50 mm or less or sarking type material, the fire rated walls must not be crossed by timber or other combustible building elements.
8.	**Spec.11**	*Use of Timber Noggins in Smoke Walls* All parts of smoke walls are required to be constructed of non-combustible construction which extends to timber noggins, plywood used within fire walls. Timber noggins are proposed to be located within the internal fire and smoke walls throughout the building in order to support services, handrails etc. The use of timber noggins within smoke walls throughout the building is proposed to be assessed as part of the Fire Engineering Assessment to be undertaken by Arup in order to demonstrate compliance with the nominated Performance Requirements of the NCC.
9.	**Spec.12**	*Swing of Smoke Doors* All required smoke doors are required to swing in the direction of egress. The fire safety door within the Linkway is required to swing in both directions. If the fire safety door is not dual swing, then the swing of the door against the direction of egress will be required assessed as part of a Fire Engineering Performance Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
10.	**D2D5**	*Exit Travel Distances* Upon review of the Design Development Architectural Drawings, the following is noted in relation to egress travel distance between alternative exits: + Egress travel distance to an alternative exit from within the Palliative Care extension is up to 31 m - 35 m to an alternative exit. + Egress travel distance to an alternative exit from the Eastern Palliative Care Courtyard is up 47m to an alternative exit (17 m over the maximum permitted DTS travel distance from a patient care area). + Egress travel distance to a point of choice from the Eastern Palliative Care Courtyard is up to 19 m to a point of choice (7 m over the maximum permitted DTS travel distance from a patient care area). + Egress travel distance from the Western Palliative Care Courtyard is up to 41m to an alternative exit (10 m over the maximum permitted DTS travel distance from a patient care area). The extended travel distances will be required to be assessed as part of a Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA.
11.	**D2D5**	*Distance Between Alternative Exits* Upon review of the Design Development Architectural Drawings, the following is noted in relation to egress travel distance between alternative exits: + Egress travel distance between alternative exits from within the proposed Palliative Care extension is up 58 m between alternative exits (13 m over the maximum permitted DTS travel distance from a patient care area). + Egress travel distance from the Palliative Care Courtyard is up to 70 m between alternative exits (25 m over the maximum permitted travel distance between exits from a patient care area). It is noted that most of the extended travel distance is external.

		The extended travel distances will be required to be assessed as part of a Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA.
12.	**D2D12**	*Discharge from existing Fire Isolated Stairways* The proposed Palliative Care Unit extension and enclosure of the courtyards results in the occupants discharging from the existing fire isolated stairways having to discharge within 6 m of the façade of the proposed extension along with of 6m of the enclosed linkway and the back within the confines of the building. Where an occupant passes within 6m of an external wall of the building and any associated openings, the external wall and openings are required to be protected in accordance with the DTS Provisions of the BCA. Furthermore, once occupants discharge to open space, they are not permitted to discharge back within the confines of the building. The proposed discharge from the existing fire isolated stairways is proposed to be addressed as a part of a Fire Engineering Assessment to be undertaken by the Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. The basis of the of the proposed Performance Solution will be that occupants have the ability to travel in alternative directions upon discharge from the fire isolated stairway including entering the palliative care unit. The existing base building Fire Engineering Report will need to be reviewed to ensure that there are no limitations placed on the discharge of the existing fire isolated stairways.
13.	**D2D15**	*Discharge from Exits:* In accordance with the DTS provisions of the BCA, once an exit discharges to open space from a hospital building, the path of travel leading from the exit to the public roadway cannot incorporate any stairways or steps. As a result of the proposed Palliative Care extension the on-grade discharge from the existing fire isolated stairways via the covered walkway serving the Acute Services Building has been removed. The below photographs detail the existing on-grade discharge from the existing exits. As a result of the redevelopment works, occupants upon discharge from the Fire Stairs serving the Acute Services Building (as part of the proposed Fire Engineering Assessment via the internal courtyards) will discharge via the existing Northern Entry to the Staff Core of the Acute Services Building and then will be required to egress via an existing external stairway that adjoins the Multi-Purpose / Spiritual Care part of the Acute Services Building. The provision of an external stair located within the external path of travel upon discharge form the fire isolated stairways and new linkway will be required to be addressed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
14.	**D2D16**	*Horizontal Exits* In accordance with the BCA, a horizontal exit may be counted as a required exit if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartment which has at least one required exit which is not a horizontal exit.

		As a result of the proposed Palliative Care Extension to the existing ASB, the existing exit door serving the existing Palliative Care Unit which currently discharges directly to open space will become a horizontal exit discharging into the extension. The modification of the existing exit arrangement creates a non-compliance in relation to travel via horizontal exits serving the existing Medical IPU within ASB. The proposed travel via the horizontal exits from the existing Medical Inpatient Unit will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineering to demonstrate compliance with the nominated Performance Requirements of the BCA.
15.	**D3D24**	*Doorways and Doors* Doorways located in a patient care area must not incorporate a sliding door unless that door leads directly to open space and is able to be manually opened under a force of not more than 110 N and open automatically upon fire trip or power failure. Doors in the path of travel in patient care areas are not permitted to be sliding doors. The Design Development Architectural documentation indicates the provision of a sliding door to the Dining and Recreation Room which is proposed to be refurbished as part of the works within the existing Palliative Care Unit. The provision of the sliding door within the patient care area will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. Verification is required to be provided that the other doorway serving the Dining and Recreation Room is a swing door rather than a sliding door.
16.	**D3D25**	*Swing of Horizontal Exit Doors* All exit doors including horizontal exit doors are required to swing in the direction of egress. The horizontal exit within the Linkway is required to serve as a horizontal exit in both directions. If the horizontal exit door is not dual swing, then the swing of the door against the direction of egress will be required assessed as part of a Fire Engineering Performance Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
17.	**Part D4**	*Access for a Person with a Disability* Access for persons with disabilities must be provided, at a minimum, to and within all areas normally used by the occupants throughout the refurbishment. This includes too and within all beds, throughout all patient care areas, staff areas and communal areas. Based on a review of the Design Development Architectural Drawings, the proposed development works can comply with the requirements of Part D4 of the BCA. This BCA Report contains high level comments in relation to access for a person with a disability. A separate Access Report will be prepared in relation to Access for Person with a disability

18.	E1D2	*Fire Hydrants* Fire hydrant coverage is required to be provided to the extension in accordance with AS2419.1–2021. Fire hydrant coverage is required to be achieved by either external hydrants or internal fire hydrants to the extension. Compliant fire hose coverage will be required to be provided to the courtyard areas (occupiable outdoor areas). Fire hydrant coverage plans will be required to be submitted by the Fire Services Consultant confirming that the proposed fire hydrants provide coverage to the extension.
19.	E1D2	*Fire Hose Reels* Fire hose reels are required to provide coverage throughout the extension within 4 m of exits or alternatively adjacent to an internal fire hydrant in accordance with AS 2441 – 2005. Compliant fire hose reel coverage will be required to be provided to the courtyard areas (occupiable outdoor areas). Fire hose reel coverage plans will be required to be submitted by the Fire Services Consultant confirming that the proposed fire hose reels provide compliant coverage to all areas of the extension. *Fire Hose Reels Located > 4m from Exit Doors* As noted above, internal fire hose reels are required to be located not more than 4m from an exit or adjacent to an internal fire hydrant. The Architectural Drawings indicate an internal fire hose reel FHR 97.07.003 is located more than 4 m from the exit doorway from the Linkway with the fire hose reel being up to 6 m from the exit door. The fire hose reel will be required to be relocated to within 4m of the exit, be installed adjacent to an internal fire hydrant or it will need to be determined by the Fire Safety Engineer whether the location of the fire hose reel can be subject of a Fire Engineering Assessment in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
20.	E1D4	*Sprinklers* The existing hospital building is noted as being provided with an Automatic Fire Suppression System. An Automatic Fire Suppression System is required to be installed throughout the extension including the enclosed linkways in accordance with AS 2118.1 – 2017. Verification from the Fire Services Consultant will be required as to whether the proposed unenclosed links are required to be provided sprinklers.
21.	E2D3 – E2D21	*Automatic Fire Detection & Alarm System* An Automatic Fire Detection & Alarm System is required to be installed throughout the extensions in accordance with AS 1670.1 - 2018. *Manual Call Points*

		Manual call points are required to be installed in evacuation routes so that no point on a floor is more than 30m from a manual call point. All Manual Call Points that activate the buildings Fire Alarm System are required to be red. *Manual Call Points in Fire Hose Reel / Fire Hydrant Cupboards* In accordance with AS 1670.1 – 2018, manual call points are required to be mounted between 750 mm and 1200 mm above floor level and a clear space of 300 mm on both sides and 600 mm directly in front are required to be provided in an arc in front of the manual call points. Where manual call points are installed within fire hose reel cupboards to avoid them being visible and being subject to unintended use, the clearance requirements of AS 1670.1 – 2018 around the manual call point will be unable to be achieved. If they are proposed to be installed in cupboards, then the clear space around the manual call points will be required is proposed to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. *Mechanical Air Handling Systems* Any air-handling system which does not form part of the Zone Smoke Control System (other than non-ducted systems with a capacity not more than 1000 litres/second, systems serving critical treatment areas and miscellaneous exhaust air system installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) must shut down automatically on the activation of the Automatic Fire Detection & Alarm System and Automatic Fire Suppression System.
22.	E4D9	*Emergency Warning & Intercom Systems (EWIS)* An Emergency Warning & Intercom System (EWIS) is required to be provided within a Class 9a Hospital Building with a floor area of more than 1000 m^2. In this instance a EWIS will be required to be installed throughout the entire building. *Rationalisation of EWIS Speakers* Verification is required as to whether EWIS speakers are proposed to be rationalized from patient bedrooms where the activation of the speaker within the room may cause trauma to the patient. If speakers are proposed to be rationalized, then the rationalization of EWIS system from within patient care areas will be required to be assessed as part of the Fire Engineering Assessment undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA.
23.	F3D5	*Weatherproofing of External Walls and Roof* Wall cladding is required to comply with one of the following in accordance with NCC 2022 as part of a DTS Solution: + Masonry, including masonry veneer, unreinforced and reinforced masonry in accordance with AS 3700 + Autoclaved aerated concrete in accordance with AS 5146.3 + Metal cladding in accordance with AS 1562.1 If the proposed wall cladding is not designed in accordance with one of the above, then a Performance Solution will be required to be prepared to demonstrate compliance with Performance Requirement F3P1 with regards to adequate weatherproofing.

24.	F4D4	*Island-Type Plunge Bath in Storeys Containing Ward Areas* The DTS Provisions of the BCA require that within ward areas of a hospital, one (1) island type plunge bath is required to be provided. If an island-type plunge bath is not proposed to be provided with ward areas due to the clinical requirements of the LHD, then omission of the island type plunge bath will be required to be assessed as part of a Performance Solution to be prepared by the Architect or independent BCA Consultant. Any proposed Performance Solution will require written consent from the LHD. *Wc's for Staff* Having regard to the proposed design, the following requires verification: + Total staff numbers within the proposed palliative care unit at any one time. + Location of existing staff sanitary facilities within the existing ASB that staff within proposed Palliative Care extension could access. *Wc's for Patients* The Design Development Architectural Drawings indicates that an adequate ratio of water closets has been provided for patients throughout the patient care areas of the building. *Provision of Unisex Sanitary Compartments containing Water Closets* Sanitary compartments containing water closets are required to be provided separately for males and females. The provision of unisex sanitary compartments containing water closets in lieu of separate facilities for males and females throughout the building will be required to be assessed as part of Performance Solution to be prepared by the Architect or independent BCA Consultant. Any proposed Performance Solution will require written consent from the LHD.
25.	F4D5	*Accessible Sanitary Facilities* The following sanitary facilities for a person with a disability will be required to be provided: + A unisex accessible sanitary facility + A unisex ambulant sanitary compartment Having regard to the proposed design, we provide the following comments: + Verification is required as to whether the accessible sanitary facility proposed within the existing Palliative Care Unit will be a communal unisex accessible sanitary facility that could be used by the public and staff. + The unisex staff sanitary facility proposed within the new Palliative Care Unit will be required to be a unisex ambulant sanitary compartment. It is noted that the Design Development Architectural Drawings indicate the provision of an ambulant sanitary compartment. *Provision of Unisex Ambulant Sanitary Compartment* Ambulant Sanitary Compartments are required to be provided separately for males and females and unlike Unisex Accessible Sanitary Facilities receive no concession for the provision of unisex facilities.

		The provision of unisex ambulant sanitary compartments in lieu of separate facilities for males and females throughout the building will be required to be assessed as part of a Performance Solution to be prepared by an independent Access Consultant.
26.	F6D2 & F6D3	*Provision of Natural Lighting* Natural lighting must be provided to all rooms used for sleeping purposes within ward areas in accordance with Clause F6D3 including existing bedrooms that are impacted by the Palliative Care extension. *Provision of Natural Light to existing Bedrooms within the Acute Services Building:* There are two existing 1 Bed Room(s) (01.06.005 & 01.06.006) within the Acute Services Building that have a ballast roof that extends beyond the external wall as detailed in the photograph and the figure below. As a result of the proposed Palliative Care extension, there is new roof structure associated with the entry to the Unit that is constructed near the existing ballast roof. The new roof over the entry way and the existing ballast roof extending beyond the extenral wall together will have an impact on the current provision of natural light to the subject bedrooms. In this instance, the following will be required to be undertaken: + Architectural Assessment as to whether natural light can be provided in accordance with the DTS Provisions of the BCA to the existing windows because of the proposed works in association with the existing ballast roof. If compliance with the DTS Provisions cannot be achieved, then: + Cut back the existing ballast roof either in entirety or locally above the subject windows providing natural light to the 1 Bed Rooms; or + Investigate as to whether a Performance Assessment could be undertaken in relation to the provision of natural light to existing bedrooms.
27.	F7D4 & F7D5	*Sound Transmission & Insulation* The overnight room will be required to achieve the required sound transmission and insulation ratings in accordance with Clause F7D4 & F7D5.

B. Summary of Items Requiring a Fire Engineering Performance Solution:

+ BCA DTS Clause		+ BCA Performance Requirement	+ Description
1.	**C2D10**	C1P1, C1P2, C1P3, C1P4	Timber noggins located within fire walls.
2.	**C4D4**	C1P2, C1P8	Protection of external walls and associated openings in different fire compartments
3.	**S11C2**	C1P1, C1P2, C1P3, C1P4	Timber noggins located within smoke walls.
4.	**S12C4**	C1P3, D1P2	Swing of fire safety doors against the direction of egress.
5.	**D2D5**	D1P4, E2P2	Extended travel distance to a point of choice and alternative exit.

6.	**D2D6**	D1P4, E2P2	Extended travel distance between alternative exits
7.	**D2D12**	D1P4, D1P5, E2P2	Discharge of existing fire isolated stairways serving the ASB not directly to open space
8.	**D2D15**	DP4	External stairway within a path of travel from a fire isolated stairway
9.	**D2D16**	D1P4	Travel via horizontal exits serving the existing Medical IPU within the ASB
10.	**D3D24**	D1P2, D1P4	Sliding door in a patient care area
11.	**D3D25**	CP3, D1P2	Swing of horizontal exit door against the direction of egress
12.	**E1D3**	E1P1	Internal fire hose reels located greater than 4m from an exit.
13.	**Spec. 20**	S20C4	Manual call points located
14.	**E4D9**	E2P1, E4P3	Rationalisation of EWIS speakers within ward and treatment rooms.

C. Summary of Items Requiring a Performance Solution:

+ BCA (DTS) Clause		+ BCA Performance Requirement	+ Description
1.	**F3D5**	F3P1	Weatherproofing of external walls
2.	**F4D4**	F4P1	Omission of island type plunge bath from ward areas
3.	**F4D4**	F4P1	Males and females sharing unisex ambulant sanitary compartments

+ Contents

+ Report Status

+ Date	26 March 2025
+ Revision	3
+ Status	Issued for Design Development Phase
+ Author	Adam Durnford
+ Reviewed	David Blackett

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+ Revision History

+ Revision	0	**+ Date**	02.05.2024
+ Status	Masterplan Report Phase		

+ Revision	1	**+ Date**	30.07.2024
+ Status	Concept Design Report Phase		

+ Revision	2	**+ Date**	27.11.2024
+ Status	Schematic Design Report Phase		

+ Revision	3	**+ Date**	26.03.2025
+ Status	Design Development Report Phase		

1.0 Description of Project

1.1 Proposal

BM+G Pty Ltd have been commissioned by Health Infrastructure C/- Capital Insight Pty Ltd to undertake an assessment of the Concept Design comprising delivery six (6) new Palliative Care beds for the Hunter New England Local Health District (HNELHD) within Level 00 of the Existing Acute Services Building (ASB) at Tamworth Hospital against the relevant provisions of the Building Code of Australia 2022 (BCA).

For the Tamworth Campus, a total of ten locations were considered in 3 separate workshops to locate the new Palliative Care Unit. Throughout the workshop and multiple reviews between stakeholders, Option 1C has been selected as the proposed Masterplan Design.

Option 1C is located Level 00 and adjoins the existing Palliative Care Unit within the ASB with the proposed extension providing a physical link back to the ASB core in an enclosed linkway for bed movements into the ASB (i.e. not traversing through the medical IPU) and for the healthshare trolley link. The proposed extension is detailed in the figure below.

An assessment of BCA compliance with respect to the new works is included within Section 3.0.

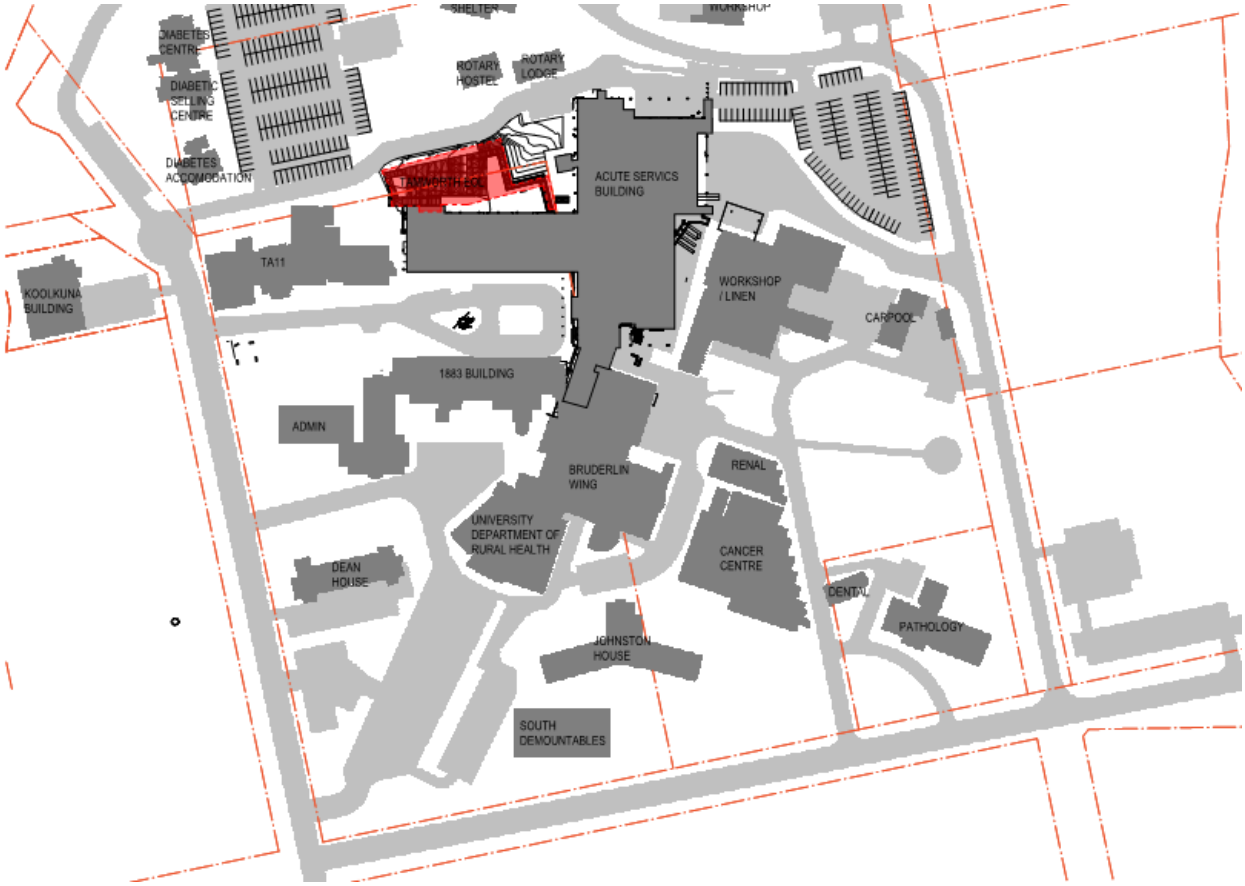


Figure 1: Site plan detailing the proposed Palliative Care extension to Level 00 of the existing ASB

1.2 Aim

The aim of this report is to:

+ Undertake an assessment of the proposed development against the deemed-to-satisfy provisions of the BCA.
+ Identify matters that require plan amendments in order to achieve compliance with the BCA.
+ Identify matters that are to be required to be addressed by Performance Solutions.
+ Enable the Public Authority to satisfy its statutory obligations under Section 6.28 of the Environmental Planning and Assessment Act, 1979.
+ Identify matters relating to the existing building that are required to be addressed as an upgrade strategy to accommodate the new works and / or to deal with significant fire safety issues within the building.

1.3 Project Team

The following BM+G team members have contributed to this Report:

+ **Adam Durnford** – Report Preparation (Associate Director) | Building Surveyor-Unrestricted
+ **David Blackett** – Peer Review (Director) | Building Surveyor-Unrestricted

1.4 Referenced Documentation

The following documentation has been reviewed, referenced and/or relied upon in the preparation of this report:

+ Building Code of Australia 2022 (BCA)
+ NSW Health Infrastructure Design Guidance Note 32.
+ NSW Heath Engineering Services Guide dated 12 December 2022.
+ Fire Engineering Brief Questionnaire Version 01 prepared by E-Lab dated 22 August 2024
+ Design Development Architectural Drawings issued by Architectus Conrad Gargett dated 07 March 2025 (Revision A) and 14 March 2025 (Revision A & B).

1.5 Regulatory Framework

Pursuant to S6.28 of the Environmental Planning and Assessment Act 1979, the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the time of the date of invitation for tenders to carry out the Crown building work.

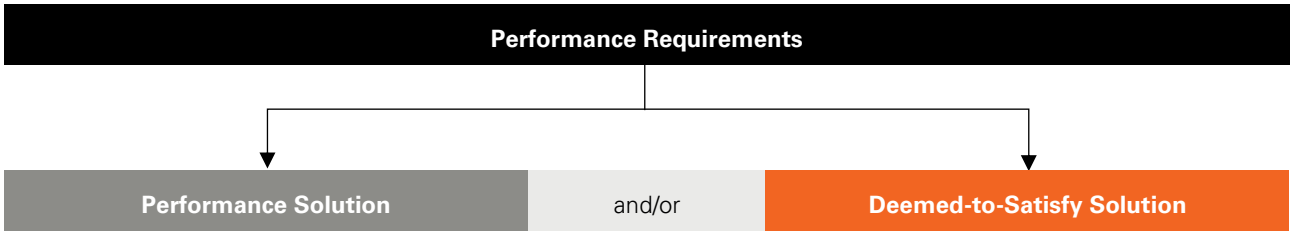
1.6 Relevant Version of the NCC Building Code of Australia

Pursuant to Section 6.28 of the Environmental Planning and Assessment Act 1979, the proposed building is subject to compliance with the relevant requirements of the BCA as in force at the time of the date of invitation for tenders to carry out the Crown building work. The current BCA that is in force is BCA 2022, with BCA 2025 coming in to force 1 May 2025. As the invitation to tender is likely to be / has been lodged after 1 May 2023, this report assesses the design against compliance with the requirements of BCA 2022.

The following parts of the BCA are subject to transitional provisions:

+ NCC 2022 Energy Efficiency provisions – 1 October 2023.
+ NCC 2022 Condensation Management provisions under BCA Part F8 – 1 October 2023.

1.7 Compliance with the National Construction Code



Compliance with the NCC is achieved by complying with:

+ the Governing Requirements of the NCC; and
+ the Performance Requirements.

Performance Requirements are satisfied by one of the following, as shown in the Figure below:

+ A Performance Solution.
+ A Deemed-to-Satisfy Solution.
+ A combination of the above two options.

Where a *Performance Requirement* is proposed to be satisfied by a *Performance Solution*, the following steps must be undertaken:

+ Prepare a performance-based design brief in consultation with relevant stakeholders.
+ Carry out analysis, using one or more of the Assessment Methods listed in A2G2(2), as proposed by the performance-based design brief.
+ Evaluation the results against the acceptance criteria in the performance-based design brief.
+ Prepare a final report that includes:
  - All Performance Requirements and/or Deemed-to-Satisfy provisions identified through A2.2(3) or A2G4(3) as applicable; and
  - Identification of all Assessment Methods used; and
  - Details of steps (a) to (c); and
  - Confirmation that the Performance Requirement has been met; and
  - Details of conditions or limitations, if any exist, regarding the Performance Solution.

1.8 Limitations and Exclusions

The limitations and exclusions of this report are as follows:

+ No assessment has been undertaken with respect to the Disability Discrimination Act 1992 (DDA). The building owner needs be satisfied that their obligations under the DDA have been addressed.
+ Please note that whilst the BCA specifies a minimum standard of compliance with AS1428 (Parts 1-3) and Part D4 of the BCA for access and facilities for people with disabilities, compliance with such requirements may not necessarily preclude the possibility of a future complaint made under the DDA 1992. The DDA is a complaint based legislation and is presently not identified by the State Building Codes and Regulations. In this regard the building owner should be satisfied that their obligations under the DDA have been addressed.
+ No assessment has been undertaken with respect to the following areas of the NCC:
    - Structural
    - Weatherproofing
    - Waterproofing
    - Acoustic
    - Passive Fire Protection
    - DDA / Accessibility
    - Section J / ESD
    - Fire Safety Engineering
+ No assessment has been undertaken with respect to SEPP (Housing) 2021. It is understood that suitably qualified consultants will be engaged to determine the relevance of any Council planning requirements or SEPP requirements and provided detailed assessment reports where applicable.
+ Where relevant to this development, it is assumed that these assessments will be undertaken by others.
+ This report does not consider BCA Part G5 (Volume 1) which makes provision for construction of buildings in bushfire-prone areas, therefore no assessment has been undertaken in consideration of RFS, Planning for Bushfire Protection and AS 3959. Where Part G is applicable to the site, then it is required that assessment / due diligence is undertaken by a specialist consultant to verify compliance.
+ This report does not constitute a detailed assessment of the architectural documentation against the requirements of Section J. It is understood that a suitably qualified consultant will be engaged to determine compliance in this regard.
+ BM+G has not undertaken an assessment of any Performance Solution Reports at the time of the preparation of this report.
+ The Report does not address matters in relation to the following Local Government Act and Regulations:
    - Work Health and Safety Act and Regulations.
    - Work Cover Authority requirements.
    - Water, drainage, gas, telecommunications and electricity supply authority requirements.
    - Disability Discrimination Act 1992.
+ BM+G cannot guarantee acceptance of this report by Local Council, Fire & Rescue NSW or other approval authorities.
+ This report may not be relied upon under the provisions of the Design and Building Practitioners Act & Regulation for the purposes of issuing a Design Compliance Declaration.
+ No part of this document may be reproduced in any form or by any means without written permission from BM+G. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

1.9 Report Terminology

BCA Completion Certificate – A certificate issued at the completion of works which confirms the building is suitable for occupation in accordance with its classification under the BCA.

BCA Crown Certificate – A certificate issued against building works carried out by or on behalf of the Crown which verifies that the works comply with the requirements of the BCA prior to works

commencing, subject to S6.28 of the Environmental Planning and Assessment Act 1979.

Building Code of Australia – Document published on behalf of the Australian Building Codes Board. The BCA is a uniform set of technical provisions for the design and construction of buildings and other structures throughout Australia and is adopted in NSW under the provisions of the Environmental Planning & Assessment Act & Regulation.

Climatic Zone – Means an area defined in Figure 2 and in Table 2 (of BCA Schedule 3) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

Construction Certificate – Building Approval issued by the Certifying Authority pursuant to Part 6 of the EP&A Act 1979.

Construction Type – The construction type is a measure of a buildings ability to resist a fire. The minimum type of fire-resisting construction of a building must be that specified in Table C2D2 and Specification 5, except as allowed for:

+ certain Class 2, 3 or 9c buildings in C2D6; and
+ a Class 4 part of a building located on the top storey in C2D4(2); and
+ open spectator stands and indoor sports stadiums in C2D8.

Note: *Type A construction is the most fire-resistant and Type C the least fire-resistant of the types of construction.*

Deemed-to-Satisfy (DTS) Provisions of the BCA – Means the prescriptive provisions of the BCA which are deemed to satisfy the performance requirements.

Effective Height – The vertical distance between the floor of the lowest storey included in the calculation of rise in storeys and the floor of the topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift, or other equipment, water tanks or similar service units).

Exit – Any, or any combination of the following if they provide egress to a road or open space:

+ An internal or external stairway.
+ A ramp.
+ A fire-isolated passageway.
+ A doorway opening to a road or open space.

Fire Compartment – The total space of the building; or when referred to in

+ The Performance Requirements – any part of a building separated from the remainder by barriers to fire such as walls and/or floors having an appropriate resistance to the spread of fire with any openings adequately protected; or
+ The Deemed-to-Satisfy Provisions – any part of a building separated from the remainder by walls and/or floors each having an FRL not less than that required for a fire wall for that type of construction and where all openings in the separating construction are protected in accordance with the Deemed-to-Satisfy Provisions of the relevant part.

Fire Resistance Level (FRL) – The grading periods in minutes for the following criteria:

+ structural adequacy; and
+ integrity; and
+ insulation.

and expressed in that order.

Fire Source Feature (FSF) – The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

Health-care building: A building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

+ a public or private hospital; or
+ a nursing home or similar facility for sick or disabled persons needing full-time care; or
+ a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

Horizontal exit: A required doorway between 2 parts of a building separated from each other by a fire wall.

National Construction Code Series (NCC) – The NCC was introduced 1 May 2011 by the Council of Australian Governments (COAG). The BCA Volume One (Class 2 to 9 Buildings) is now referenced as the National Construction Code Series Volume One — BCA.

Occupiable outdoor area means a space on a roof, balcony or similar part of a building:

+ that is open to the sky; and
+ to which access is provided, other than access only for maintenance; and
+ that is not open space or directly connected with open space.

Occupation Certificate (OC) – Building Occupation Approval issued by the Principal Certifying Authority pursuant to Part 6 of the EPA Act 1979.

Open Space – Means a space on the allotment, or a roof or other part of the building suitably protected from fire, open to the sky and connected directly with a public road.

Patient Care Area – A part of a healthcare building normally used for the treatment, care, accommodation, recreation, dining and holding of patients including a ward area and treatment area.

Performance-based Design Brief – Means the process and the associated report that defines the scope of work for the performance-based analysis, the technical basis for analysis, and the criteria for acceptance of any relevant Performance Solution as agreed by stakeholders.

Performance Requirements of the BCA – A Building Solution will comply with the BCA if it satisfies the Performance Requirements. A Performance requirement states the level of performance that a Building Solution must meet.

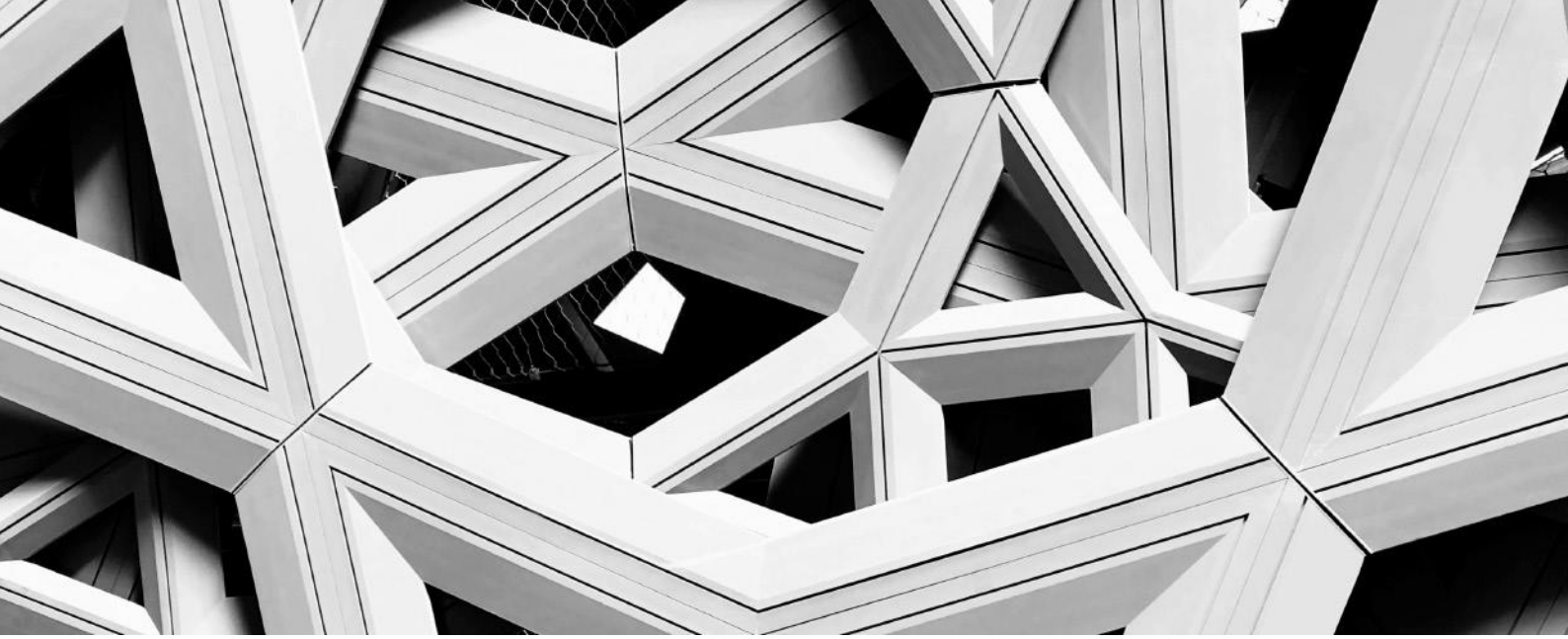
Compliance with the Performance Requirements can only be achieved by-

+ complying with the Deemed-to-Satisfy Provisions; or
+ formulating an Alternative Solution which-
  - complies with the Performance Requirements; or
  - is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or
+ a combination of the above.

Performance Solution – Means a method of complying with the performance requirements other than by a Deemed-To-Satisfy Solution.

Treatment area – An area within a patient care area such as an operating theatre and rooms used for recovery, minor procedures, resuscitation, intensive care and coronary care from which a patient may not be readily moved.

Ward area – That part of a patient care area for resident patients and may contain areas for accommodation, sleeping, associated living and nursing facilities.



2.0 Building Characteristics

2.1 Proposed Development

The existing building is classified as follows:

BCA Classifications:	Proposed Development – Class 3 & 9a Existing Building - Class 9a
Storeys Contained:	Six (6)
Rise in Storeys:	Five (5)
Type of Construction:	Type A Construction
Importance Level (Structural)	4
Sprinkler Protected Throughout	Yes
Effective Height	< 25 m
Floor Area	TBC
Largest Fire Compartment	TBC
Climate Zone	Zone 4

2.2 Fire Compartment Floor Area Limitations

Maximum size of fire compartment/atria is:

+ Classification		+ Type A	+ Type B	+ Type C
6, 7, 8 or 9a	Max. floor area	5,000m^2	3,500m^2	2,000m^2
	Max. volume	30,000m^3	21,000m^3	21,000m^3
5, 9b or 9c	Max. floor area	8,000m^2	5,500m^2	3,000m^2
	Max. volume	48,000m^3	33,000m^3	18,000m^3

2.3 Distance to Fire Source Features

Based upon a review of the plans, it is noted that each elevation of the building is located within the following distances from fire source features on the site.

+ Elevation	+ Fire Source Feature	+ Distance
North	Acute Services Building	Palliative Care assessed as an extension of the existing building
East	Acute Services Building	Palliative Care assessed as an extension of the existing building
West	Rotary Hostel & Rotary Lodge	> 6m
South	TA 11	> 6m

Note: Fire Source Feature (FSF) – The far boundary of a road adjoining the allotment; or a side or rear boundary of the allotment; or an external wall of another building on the allotment which is not a Class 10 building.

3.0 BCA Assessment

We note the following BCA compliance matters with relation to proposed building works are capable of complying with the BCA. Please note that this is not a full list of BCA clauses, they are the key requirements that relate to the proposed work and the below should be read in conjunction with the BCA.

3.1 Section A – Structure

Part A6	Building Classification
A6G4 & A6G6	The existing hospital building is classified as Class 9a (Health Care Building). The proposed Palliative Care extension is classified as follows: + Class 3 (Overnight Room) + Class 9a (Health Care Building) *Note: Verification will be required as to whether the existing hospital building that the Palliative Care Extension is connected to contains any overnight rooms. If it does, the overnight room, will be classified as Class 3. If the overnight room in Palliative Care is the only overnight room in the entire hospital building, it will be classified as Class 4.*

3.2 Section B – Structure

Part B1	**Structural Provisions:**
	+ New building works are to comply with the structural provisions of the BCA 2022 and referenced standards. Structural engineering details prepared by an appropriately qualified structural engineer to be provided to demonstrate compliance with Part B1. This will include the following Australian Standards (where relevant):
	  - AS 1170.0 – 2002: Structural Design Actions - General Principles
	  - AS 1170.1 – 2002: Structural Design Actions – Permanent, Imposed and Other Actions including certification for balustrading (dead and live loads)
	  - AS 1170.2 – 2021: Structural Design Actions – Wind Actions
	  - AS 1170.4 – 2007: Structural Design Actions – Earthquake Actions in Australia
	  - AS 3700 – 2018: Masonry Structures
	  - AS 3600 – 2018: Concrete Structures
	  - AS 4100 – 2020: Steel Structures
	  - AS/NZS 4600 – 2018: Cold formed steel.
	  - AS 2047 – 2014: Windows and External Glazed Doors in Buildings
	  - AS 1288 – 2021: Glass in buildings.
	+ The structural engineer will need to certify that the structural capacity of the existing building will not be reduced as a result of the new works and that the building is considered structurally adequate for its intended use.
	+ The Importance Level provisions of BCA (Section B) are to be acknowledged by the Structural Engineer and addressed to the degree necessary. The existing ASB is understood to have

been designed to Importance Level 4 based on the fact that the building was completed in 2015.

In this instance, the extension will be required to be constructed in accordance with Importance Level 4.

The Structural Engineer together with Services Engineers are to nominate the Importance Level that has been assigned to the extension in accordance with Table B1D3a i.e., Importance Level 4.

+ New building works to the existing building must be compliant with earthquake provisions of AS1170.4 – Earthquake Actions in Australia.

3.3 Section C – Fire Resistance

Part C2 Fire Resistance and Stability

C2D2 / Spec 5

Type of Construction Required:

The building is required to comply with the requirements of Type A Construction as stated within Specification 5. The table below provides an overview of the requirements of each. Refer to Table 6 of Appendix 1 for the FRL requirements of Type a Construction.

+ Type A Construction:

+ Load-bearing external walls and columns must achieve an FRL regardless of distance from boundary / separate building.
+ Non load-bearing external walls (and columns incorporated within) need not achieve an FRL if > 3m from a boundary or separate building.
+ Floors must achieve a 2-hour FRL.
+ Roof must be of non-combustible construction.
+ Internal columns and walls in the floor immediately below the roof are permitted to have an FRL of 60/60/60.

All new works will be required to be constructed in accordance with the requirements of the Type A Construction as applicable.

C2D10

Non-Combustible Building Elements:

All materials and or components incorporated in an external wall or fire-rated wall must be non-combustible. This includes but not limited to:

+ Any external wall claddings.
+ Any framing or integral formwork systems i.e., timber framing, sacrificial formwork, etc.
+ Any external linings or trims i.e., external UPVC window linings, timber window blades, etc.
+ Any sarking or insulation contained within the wall assembly.

This is not an exhaustive list, and any element incorporated within any external wall assembly must be identified and approved prior to the issue of a Crown Certificate.

Refer to Table 1 in Appendix 1 for the elements required to be non-combustible.

Note that these works are subject to NSW HI DGN 32 and as such bonded laminate cladding is not permitted.

Ancillary Components within the External Wall Assembly

NCC 2022 permits the following building elements to be constructed within an external wall of a building of Type A or B Construction (or a building subject to HI DGN 32).

+ Caulking
+ Sealants

- Termite management systems
- Thermal breaks associated with –
  - Glazing systems, or
  - External wall systems, where the thermal breaks –
    - Are no larger than necessary to achieve thermal objectives, and
    - Do not extent beyond one storey, and
    - Do not extend beyond one fire compartment.
- Damp proof courses
- Compressible fillers and backing materials, including those associated with articulation joints, closing gaps not wider than 50 mm.
- Isolated—
  - construction packers and shims; or
  - blocking for fixing fixtures; or
  - fixings, including fixing accessories; or
  - acoustic mounts.
- Waterproofing materials applied to the external face, used below ground level and up to 250 mm above ground level.
- Joint trims and joint reinforcing tape and mesh of a width not greater than 50 mm.
- Weather sealing materials, applied to gaps not wider than 50 mm, used within and between concrete elements.
- Wall ties and other masonry components complying with AS 2699 Part 1 and Part 3 as appropriate and associated with masonry wall construction.
- Reinforcing bars and associated minor elements that are wholly or predominately encased in concrete or grout.
- A paint, lacquer or a similar finish or coating.
- Adhesives, including tapes, associated with stiffeners for cladding systems.
- Fire-protective materials and components required for the protection of penetrations.

The following materials, when entirely composed of itself, are non-combustible and may be used wherever a non-combustible material is required:

- Concrete.
- Steel, including metallic coated steel.
- Masonry, including mortar.
- Aluminium, including aluminium alloy.
- Autoclaved aerated concrete, including mortar.
- Iron.
- Terracotta.
- Porcelain.
- Ceramic.
- Natural stone.
- Copper.
- Zinc.
- Lead.
- Bronze.
- Brass.

The following materials may be used where a non-combustible material is required:

- Plasterboard
- Perforated gypsum lath with a normal paper finish
- Fibrous-plaster sheet

	+ Fibre-reinforced cement sheeting + Pre-finished metal sheeting having combustible surface finish not exceeding 1mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. + Sarking type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5. *Note: Bonded laminated materials (façade panels) are not permitted to be installed on the external façade of the building in accordance with Health Infrastructure Design Guidance Note 32 for external wall construction.* *Use of Timber Noggins in Fire Walls* All parts of fire walls are required to be constructed of non-combustible construction which extends to timber noggins, plywood used within fire walls. Timber noggins are proposed to be located within the internal fire walls throughout the extension in order to support services, handrails etc. The use of timber noggins within fire walls throughout the extension will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.
CDD14	**Ancillary Elements:** An ancillary element (attachment) must not be fixed, installed, or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following: + An ancillary element that is non-combustible. + A gutter / downpipe / other plumbing fixture + A flashing. + A grate / grille < 2m2 associated with a building service. + An electrical switch/GPO/cover plate, or the like. + A light fitting. + A required sign. + A combustible non-required sign may be permitted if achieving a Group Number of 1 or 2 and not extending beyond one storey or fire compartment and is separated vertically from other signs permitted. + This issue must be carefully noted in relation to any proposed signage structures. + A combustible awning, sunshade, canopy, blind, or shading hood may be permitted at ground storey or a storey immediately above ground storey if complying as relevant to fire hazard properties and not affecting a required exit. + A part of a security, intercom, or announcement system. + Wiring. + Waterproofing material installed in accordance with AS 4654.2 and applied to an adjacent floor surface, including vertical upturn, or a roof surface. + Collars, sleeves and insulation associated with service installations. + Screens applied to vents, weepholes and gaps complying with AS 3959. + Wiper and brush seals associated with doors, windows or other openings. + A gasket, caulking, sealant, or adhesive associated with the above ancillary elements.

Part C3 Compartmentation and Separation

C3D6	**Class 9a Buildings:** The following fire and smoke compartmentation requirements apply to Class 9a patient care areas.

Area Use		Max. Compartment Size	
Patient Care Area (max 2,000m²)	Ward Area	Where total floor area is less than 500m² :	Where total floor area is greater than 500m², but less than 1000m² :
		Separate from other areas with Smoke Walls	Separate with smoke walls into areas less than 500m²
	Treatment Area	Where total floor area is less than 1000m² :	
		Separate from other areas with Smoke Walls	

- Fire and smoke compartmentation within the proposed extension will be required to be provided in accordance with the above table.
- Ancillary use spaces are required to be 1-hour fire separated from patient care areas. Ancillary use spaces in a Class 9a comprise:
  - A kitchen and related food preparation areas having a combined floor area of more than 30m².
  - A room containing a hyperbaric facility.
  - A room used predominately for the storage of medical records having a floor area of more than 10m².
  - A laundry, where items of equipment are the type that are potential fire sources (e.g., gas fire dryers).

Having regard to the proposed design, the following key items are noted:

- The proposed Palliative Care extension will be required to be fire separated from the existing building by a fire wall with an FRL of 120/120/120 separating internal parts of the building as detailed in the figure below.
- The enclosed linkway will be required to be fire separated from both the existing hospital building along with the proposed palliative care unit by a fire wall with an FRL of 120/120/120 as detailed in the figure below.

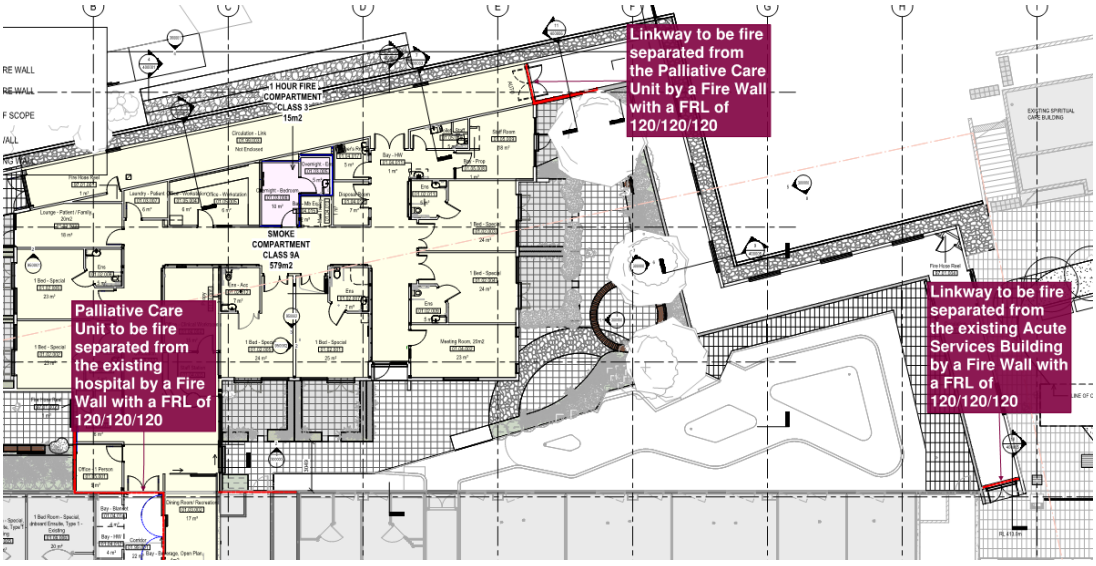


Figure 2: Required fire separation of the proposed Palliative Care Unit from the existing building and Linkway on the Ground Floor

- Smoke compartments with a maximum compartment size of 500 m² will be required to be provided within the proposed Inpatient Unit (IPU).

It is noted that the Smoke Compartment of the extensions contains a Smoke Compartment with a total size of 579 m² as detailed in the figure below.

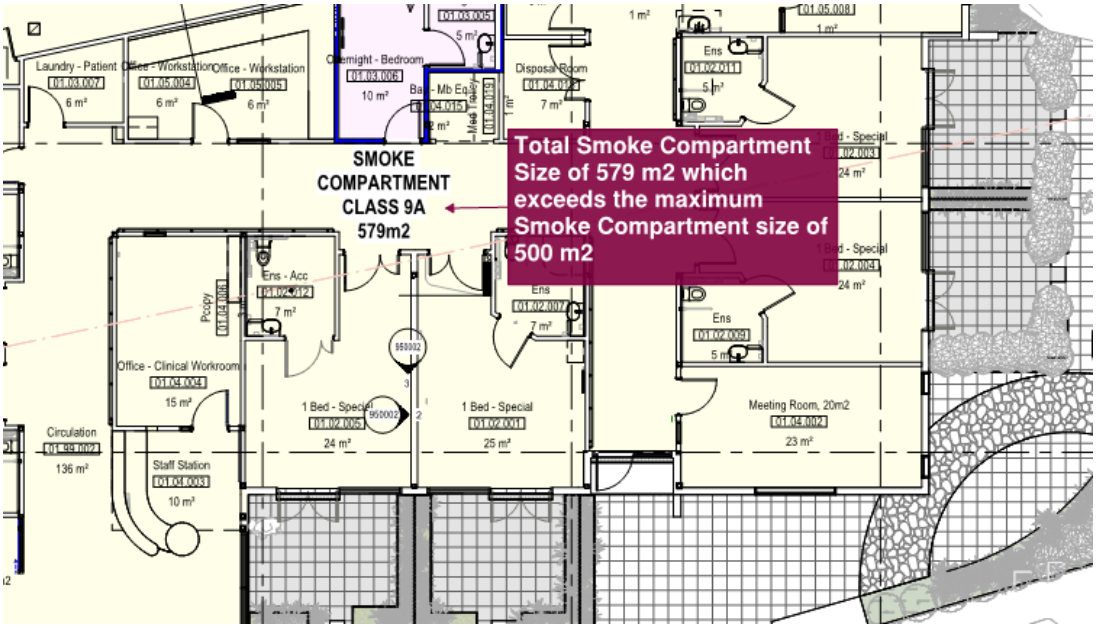


Figure 3: Excessive smoke compartment contained within the Palliative Care Extension

The size of the smoke compartment which exceeds the maximum smoke compartment size of the DTS Provisions is proposed to be assessed as part of the Fire Engineering Performance Solution to be prepared by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

C3D8

Separation by Fire Walls:

A part of a building, separated from the remainder by a fire wall, may be treated as a separate fire compartment if the fire wall extends to the underside of:

+ A floor having an FRL required for a fire wall; or
+ The roof covering.

The proposed fire walls within the proposed extension will be required to be designed and constructed in accordance with the provisions of Clause C3D8 along with the fire wall separating the proposed extension from the existing Medical IPU along with the fire wall separating the proposed Linkway from the existing lobby of the Hospital.

C3D15

Public Corridors in Class 2 and 3 Buildings:

The overnight room is classified as Class 3 (refer to Clause A6G4 above and note included). In this instance, technically a public corridor within a Class 3 building if more than 40 m in length, is required to be separated at intervals of not more than 40 m in length with smoke proof walls.

Consistent with the proposed Performance Solution assessment identified to be undertaken as detailed in Clause C4D12 below, the requirement for a corridor length not exceeding 40 m in length without smoke separation will be proposed to be addressed as part of a Fire Engineering Assessment noting that the IPU will be subject to smoke compartmentation being a Class 9a health care building.

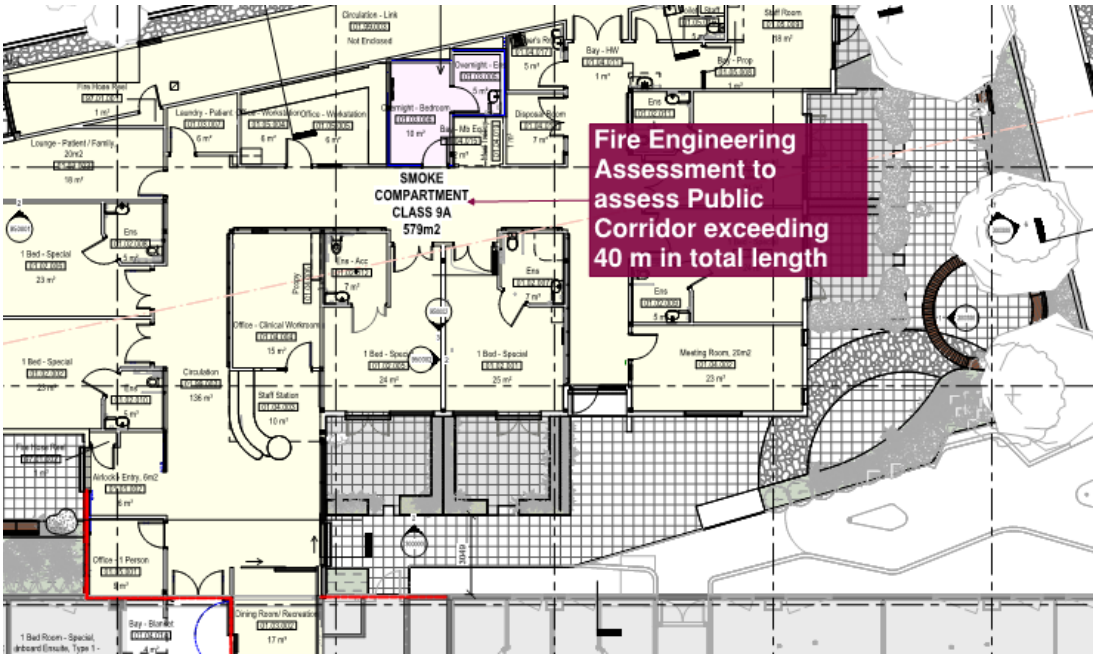


Figure 4: Length of public serving the overnight room proposed to be subject of a fire engineering assessment

Part C4 Protection of Openings

C4D3

Protection of Openings in External Walls:

Openings in the external wall of the building are required to have an FRL are to be protected if they are located less than –

- 3m from a side or rear boundary of the allotment
- 6m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or
- 6m from another building on the allotment that is not Class 10.

Based on a review of the Design Development Drawings, it is noted that the Palliative Care extension is located more than 6 m from Building TA11 and the Rotary Hostel and Rotary Lodge as detailed in the figure below. The Palliative Care extension is assessed as part of the ASB including the Spiritual Care Centre and thus exposure is not measured to another building but rather exposure between compartments (refer to C4D4 below).

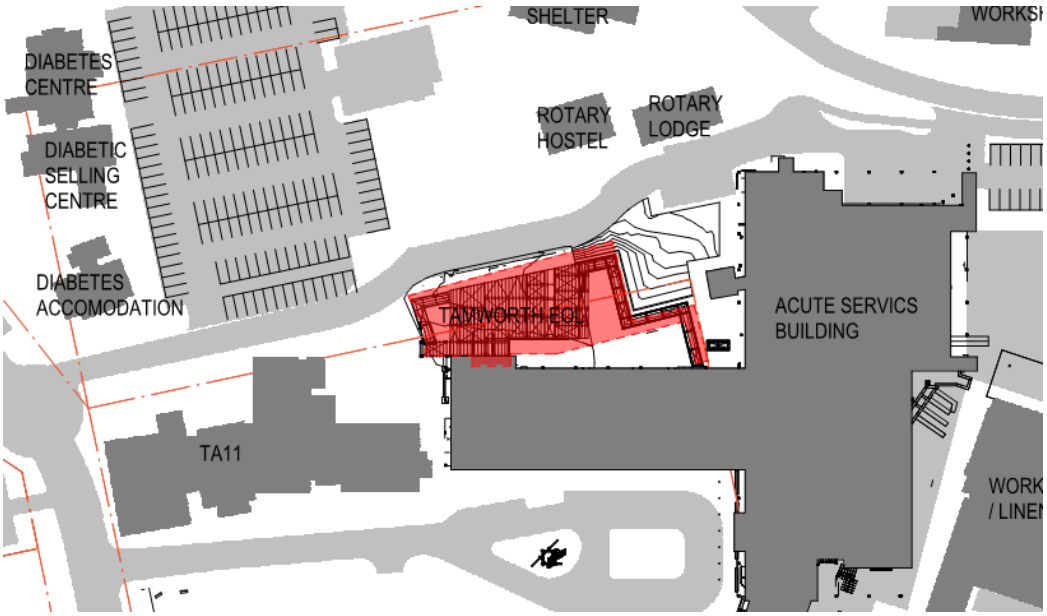


Figure 5: Palliative Care extension located more than 6 m from existing buildings on site

C4D4

Separation of external walls and associated openings in different fire compartments:

External walls and openings of adjacent fire compartments must be protected in accordance with this clause where exposed to one another. The extent of fire-rating is driven by the angle of exposure, refer to the below table for the applicable distances.

+ Angle between walls	+ Min. Distance
0^0 (walls opposite)	6m
More than 0^0 to 45^0	5m
More than 45^0 to 90^0	4m
More than 90^0 to 135^0	3m
More than 135^0 to 180^0	2m
0^0 or more	Nil

Based on the proposed design, exposure between fire compartment occurs in the following locations as detailed in the figure below.

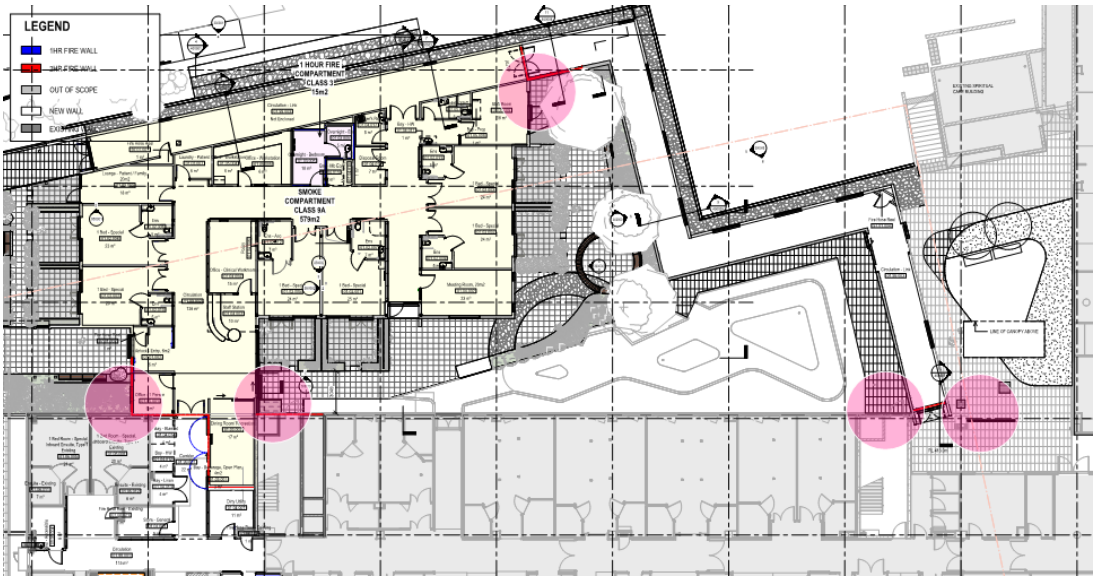


Figure 6: Locations of exposure between fire compartments between the proposed palliative care unit and the existing building and the linkway

The protection of openings and external walls of different fire compartments that are exposed to each other is proposed to be addressed as part of the Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

C4D6

Doorways in Fire Walls:

All doors located within fire walls must be fire rated to achieve the same rating as the fire wall itself i.e., 120 mins.

All fire doors are required to be self-closing or automatic closing. All automatic closing doors are required to close upon activation of the fire alarm system within the building i.e., Automatic Fire Detection & Alarm System and Automatic Fire Suppression System.

Smoke detectors must be installed within 1500 mm of the automatic closing doors (on both sides of the door).

C4D8

Protection of Doorways in Horizontal Exits:

All horizontal exits are required to have a FRL of -/120/30.

All horizontal exit doors are required to be self-closing or automatic closing. All automatic closing doors are required to close upon activation of the fire alarm system within the building i.e., Automatic Fire Detection & Alarm System, Automatic Fire Suppression System etc.

Smoke detectors must be installed within 1500 mm of the automatic closing doors (on both sides of the door).

The doors that are horizontal exits are identified in the figure below.

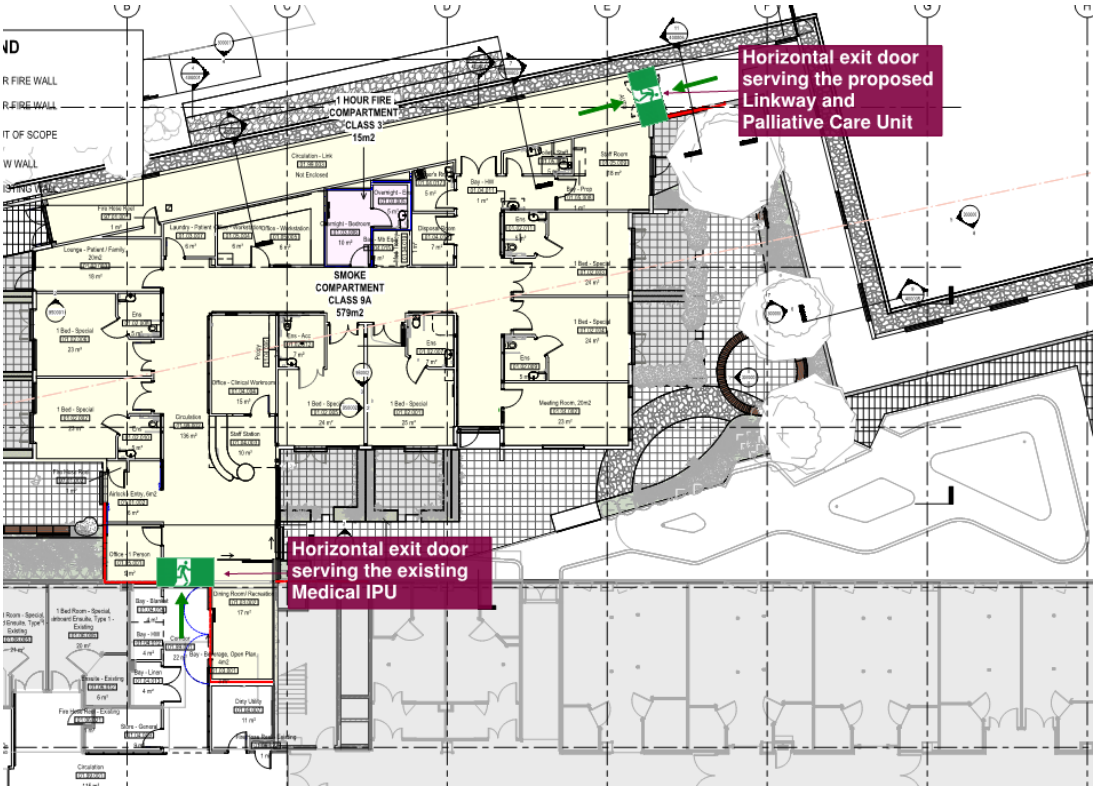


Figure No. 7: Horizontal exit doors that require a minimum FRL of -/120/30

C4D12

Bounding Construction: Class 2 and 3 buildings and Class 4 parts:

The Class 3 overnight room located within the proposed Palliative Care Unit is required to be fire separated from the remainder of the palliative care unit (refer to Specification 5 – Fire Resisting Construction).

The doorway opening into the overnight room from the public corridor is required to be protected with a self-closing -/60/30 fire door.

In accordance with Clause C4D12, any room not within a sole occupancy that opens onto the public corridor is also technically required to be fire rated and provided with a self-closing fire door with a minimum FRL of -/60/30. This a technical requirement of the BCA which does not take into consideration a design scenario where a single Class 3 overnight room is located within an IPU within a hospital building with patients in non-fire separated rooms, 24 hr upright staff, sprinkler system installed etc.

In this instance the non-protection of the adjoining rooms and doorways opening onto the public corridor will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

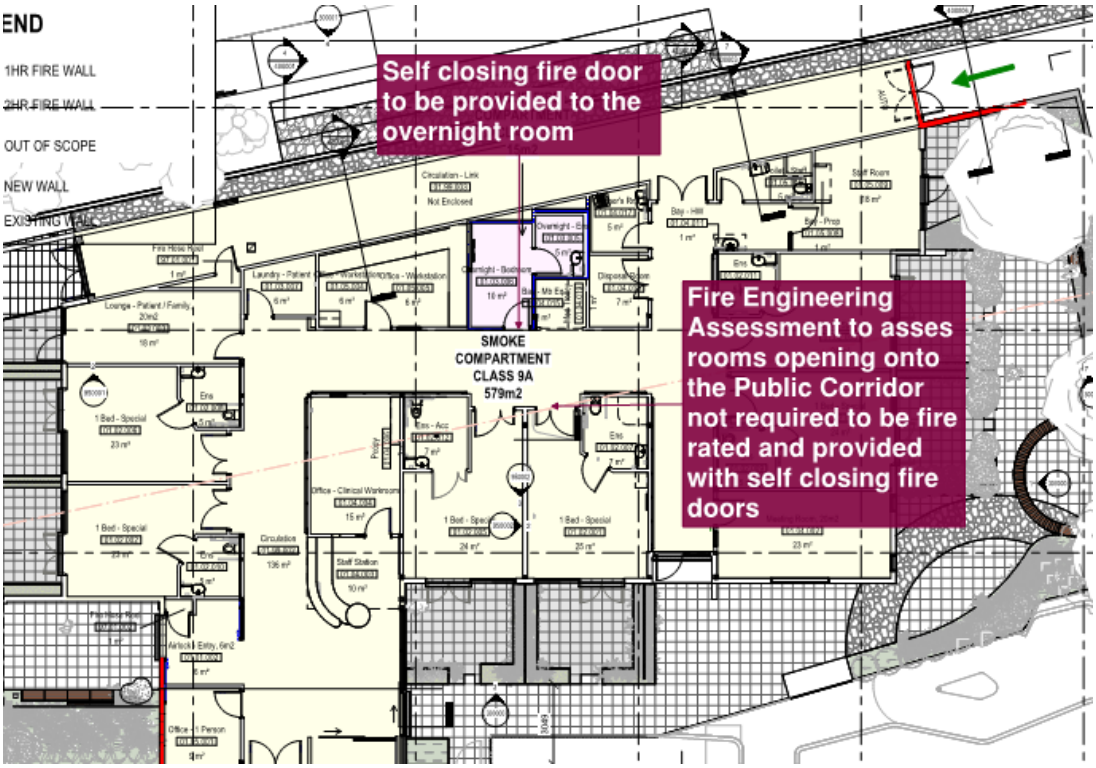


Figure No. 8: Horizontal exit doors that require a minimum FRL of -/120/30

C4D15

Openings For Service Installations:

Where service installations penetrate the walls or floors required to have an FRL with respect to integrity and insulation they are to be protected by fire seals having an FRL of the building element concerned. Fire seals are required to comply with Specification 13. Where the mechanical ventilation system penetrates floors or walls that require an FRL the installation is to comply with AS/NZS 1668.1.

The proposed installation of pipework containing combustible liquids or gas (i.e., natural gas) is prohibited in accordance with Clause C4D15 unless it is a tested system.

Note 1: -

Where a wall is required to achieve both smoke and fire compartmentation, the penetrations must be protected to accommodate both i.e., combined fire and smoke dampers through all fire walls that bound or separate patient care areas throughout the building.

All fire walls double up as smoke walls when they are within or bound patient care areas and thus must be combined fire and smoke dampers.

The motorised component of the Damper is to be located no more than 600mm from the fire/smoke wall.

Note 2: -

A pipe system comprised entirely of metal that is not normally filled with liquid must not be located within 100mm, for a distance of 2000mm from the penetration of any combustible building element or a position where a combustible material may be located and must be constructed of:

+ Copper alloy or stainless steel with a wall thickness of at least 1mm; or
+ Cast iron or steel (other than stainless steel) with a wall thickness of at least 2 mm.

Note 3: -

All pipes normally filled with water cannot be less than 200mm from another service penetration unless protected with a fire wrap installed in accordance with a Tested System approved by a registered Testing Authority.

Note 4: -

A Tested System approved by a registered Testing Authority may be used as an alternative to complying Specification 13.

Spec 5 Fire Resisting Construction

Spec. 5

The building design is required to comply with the requirements of Specification 5 for a building of Type A Construction. The following key items of Specification 5 are identified:

General Requirements

The following requirements of Specification 5 are applicable to the proposed design:

- Where part of a building required to have an FRL depends on direct vertical or lateral support from another part to maintain its FRL, that supporting part must:
  - Have an FRL not less than the required by other provisions of Specification 5; and
  - If located within the same fire compartment as the part its supports have an FRL in respect of structural adequacy the greater of that required –
    - For the supporting part itself; and
    - For the part is supports
  - Be non-combustible –
    - If required by other provisions of Specification 5; or
    - If the part is supports is required to be non-combustible
- All internal walls that are required to have a fire rating must extend to the underside of the slab above.
- All loadbearing internal walls must be constructed of concrete or masonry.
- Since the building is required to be constructed of Type A Construction, the FRL to the load bearing elements of the external applies in both directions.
- Any load bearing structural steel columns located within the external wall assembly of the building will require an FRL in accordance with the S5C11. This applies to Structural Steel columns located in the external wall that may be supporting the roof etc.
- Internal walls and columns (not located within the external wall assembly) that support the non combustible roof structure are required to have a minimum FRL of 60/60/60.
- All internal non-loadbearing walls that are required to be fire resisting and lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion is required to be constructed of non-combustible construction.
- Based on the provision of an Automatic Fire Suppression System installed throughout the building, the roof is not required to be fire rated, but rather be constructed with non-combustible materials.

Separation of Class 3 Overnight Room

The Class 3 overnight room located within the Palliative Care extension is required to be separated from the remainder of the storey by fire rated walls with an FRL of -/60/60 (for a non-loadbearing wall). The Design Development Architectural Drawings indicate the provision of a 60 minute wall around the overnight room.

As detailed under Clause C4D12, the doorway accessing the room is required to be provided with a self-closing -/60/30 fire door.

The walls bounding the overnight room are required to extend to the underside of the non-combustible roof sheeting and except for roof battens with dimensions of 75 mm x 50 mm or less or sarking type material, the fire rated walls must not be crossed by timber or other combustible building elements.

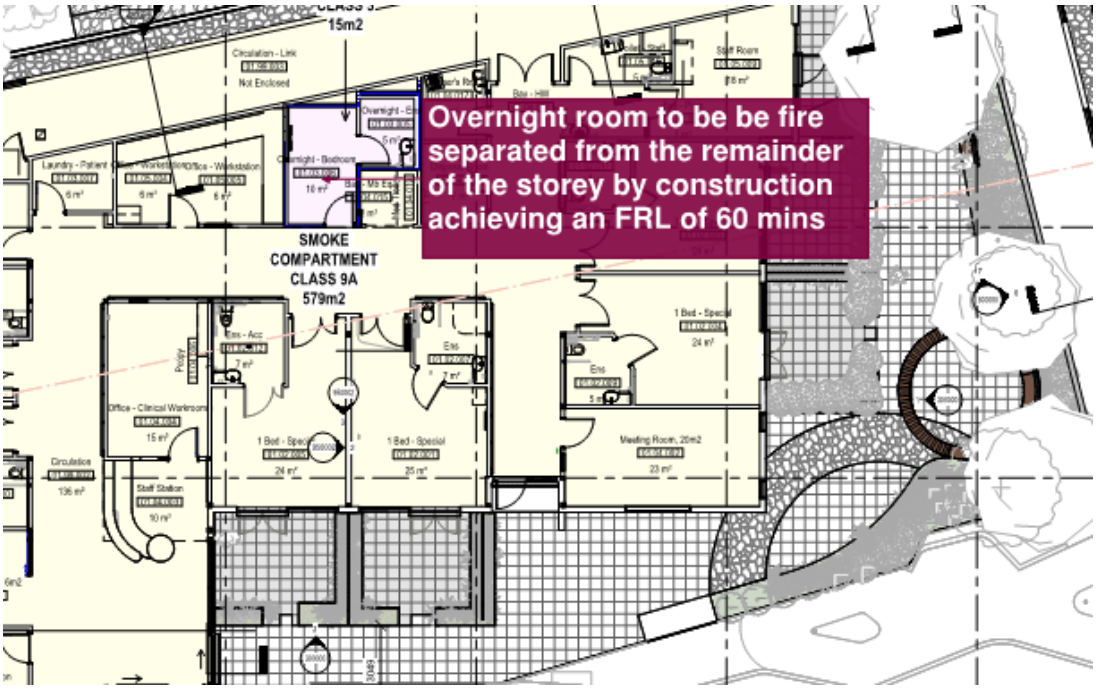


Figure No. 9: Overnight room located within Palliative Care to be fire separated from the remainder of the floor

Spec 11 Smoke Proof Walls in Health Care and Residential Care Buildings

Spec. 11

Smoke Proof Walls in Health Care Buildings:

Smoke proof walls within all patient care areas (or bounding patient care area) are required to comply with the following:

- Be non-combustible and extend to the underside of –
  - The floor above; or
  - A non-combustible roof covering; or
  - A ceiling having a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes.
- Not incorporate any glazed areas unless the glass is safety glass as defined in AS 1288.
- Only have doorways which are fitted with smoke doors.
- Have all openings around penetrations and the junctions of the smoke-proof wall and the remainder of the building stopped with non-combustible material to prevent the free passage of smoke.
- Incorporate smoke dampers where air-handling ducts penetrate the wall unless the duct forms part of a smoke hazard management system required to continue air movement through the duct during a fire.

Note: -

All ducts that penetrate fire and smoke walls within patient care areas system must be provided with smoke dampers.

The fire safety doors provided in fire and smoke walls are required to be provided with a smoke reservoir which extends a minimum distance of 400 mm above the door to the underside of –

- A roof covering; or
- The floor above; or

An imperforate false ceiling that will prevent the free passage of smoke

Use of Timber Noggins in Smoke Walls

All parts of smoke walls are required to be constructed of non-combustible construction which extends to timber noggins, plywood used within fire walls.

Timber noggins are proposed to be located within the internal smoke walls throughout the extension in order to support services, handrails etc.

The use of timber noggins within smoke walls throughout the extension will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

Spec 11	Fire Doors, Smoke Doors, Fire Windows and Shutters

Spec. 12

Fire Doors, Smoke Doors, Fire Windows and Shutters:

All required smoke doors are required to swing in the direction of egress.

The fire safety door within the Linkway is required to swing in both directions. If the fire safety door is not dual swing, then the swing of the door against the direction of egress will be required assessed as part of a Fire Engineering Performance Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

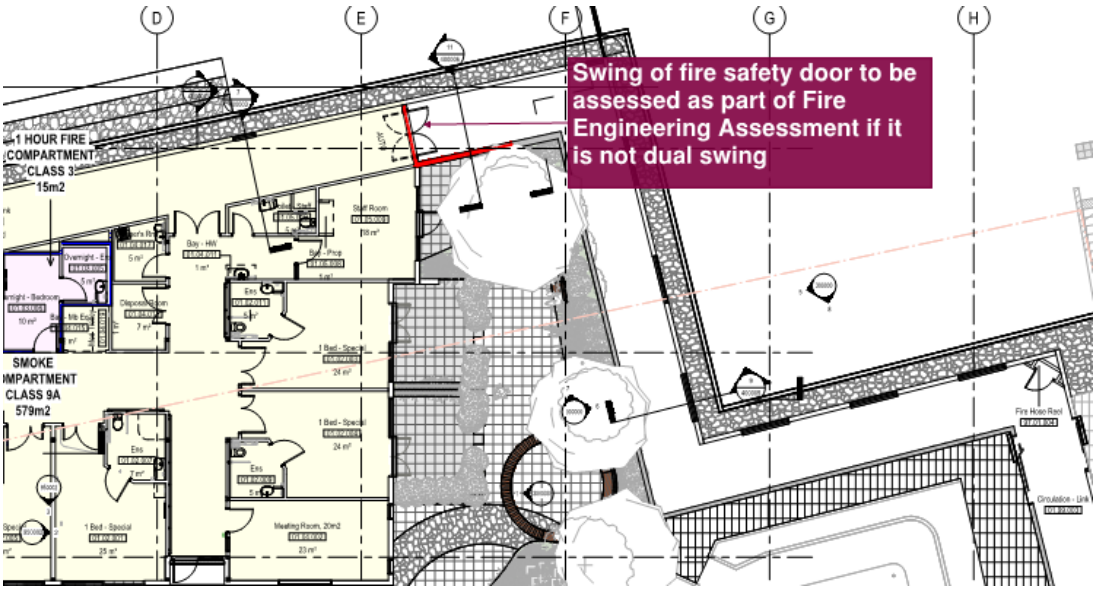


Figure No. 10: Fire safety door located in the Linkway to be addressed as part of FER if it is not dual swing

3.4 Parts D – Provision for Escape and Construction of Exits

Part D2	Provision for Escape

D2D3

Number of Exits Required:

Each storey containing patient care areas is required to be provided with a minimum of two (2) exits serving each storey.

The proposed extension and refurbishment works will be provided with a minimum of two (2) exits as detailed in the figure below including existing exits provided from the existing Palliative Care Unit within the existing ASB.

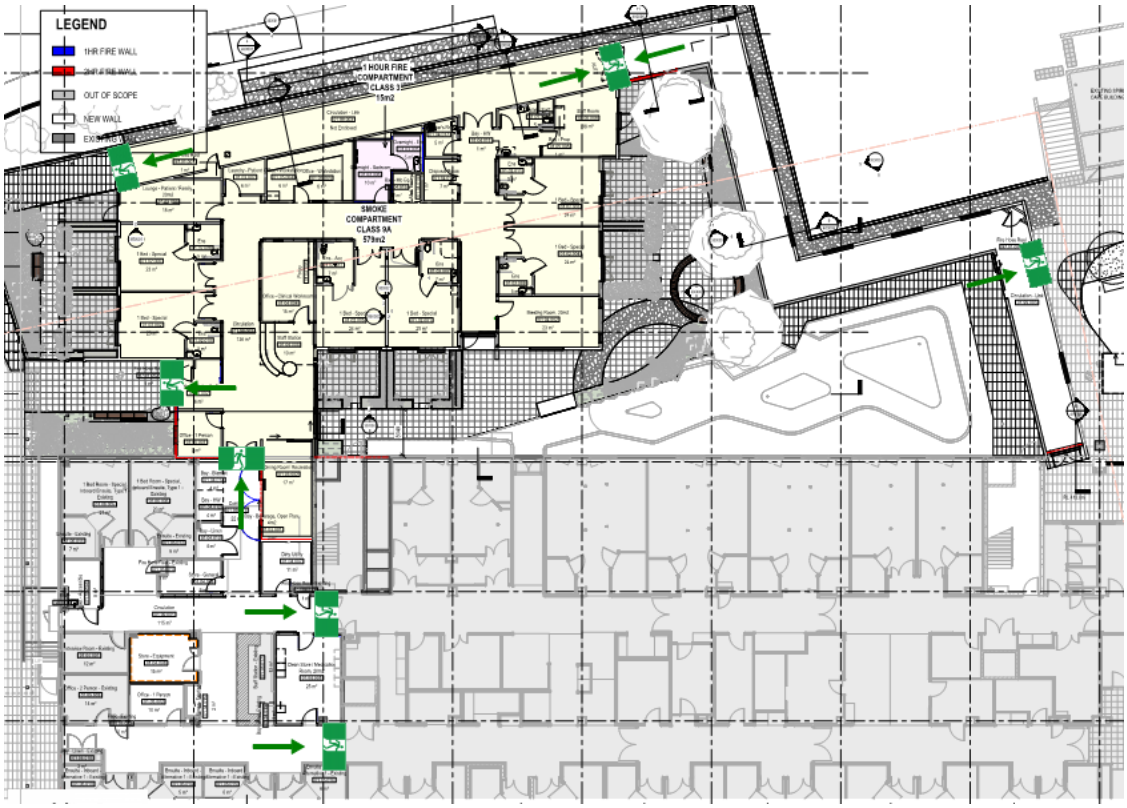


Figure 11 : Required exits from the proposed palliative care unit along with existing exits from palliative care unit within the existing ASB

D2D5

Exit Travel Distances:

The following is noted in relation to egress travel distance:

- Travel distances are permitted to extend to 20 m to a point of choice and 40m to a single exit in non-patient care areas.
- Travel distances in patient care areas are permitted to extend to 12 m to a point of choice and 30 m to a single exit.

Upon review of the Design Development Drawings, the following is noted in relation to egress travel distance between alternative exits:

- Egress travel distance to an alternative exit from within the Palliative Care extension is up to 31 m - 34 m to an alternative exit (4 m over the maximum permitted DTS travel distance from a patient care area).
- Egress travel distance to an alternative exit from the Eastern Palliative Care Courtyard is up 46m to an alternative exit (16 m over the maximum permitted DTS travel distance from a patient care area).
- Egress travel distance to a point of choice from the Eastern Palliative Care Courtyard is up to 21 m to a point of choice (9 m over the maximum permitted DTS travel distance from a patient care area).
- Egress travel distance from the Western Palliative Care Courtyard is up to 38 m & 40 m to an alternative exit (10 m over the maximum permitted DTS travel distance from a patient care area).

The extended travel distances are detailed in the figure below.

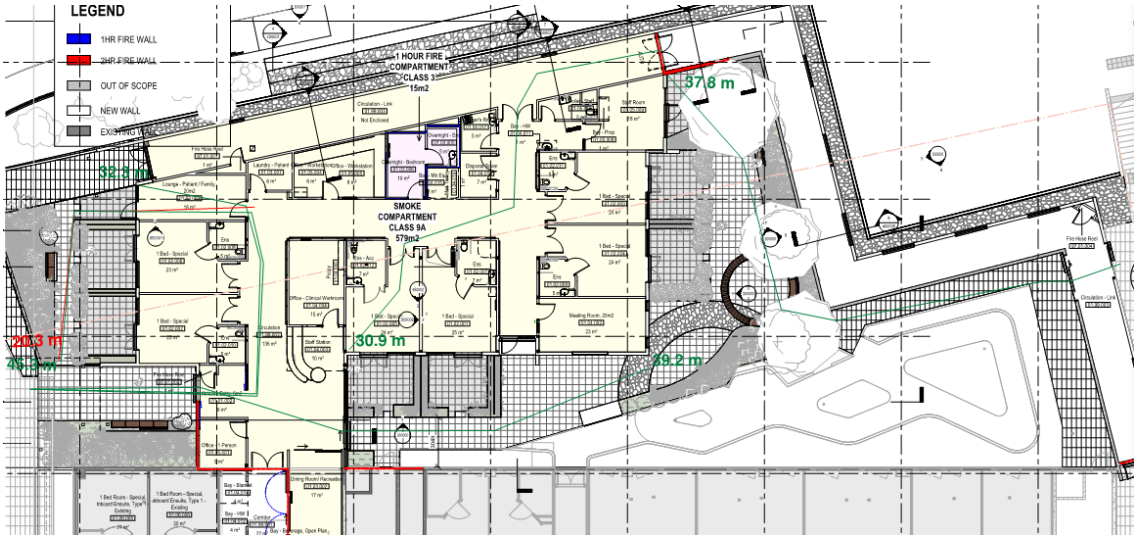


Figure 12: Locations of extended travel distance from the proposed palliative care unit

The extended travel distances will be required to be assessed as part of a Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA.

D2D5

Distance Between Alternative Exits:

The maximum distance permitted between alternative exits is 45 m from patient care areas and 60 m from non-patient care areas. This must be measured back through the point of choice. Alternative egress paths are not permitted to converge to less than 6 m, and alternative exits must be located more than 9 m apart.

Upon review of the Design Development Drawings, the following is noted in relation to egress travel distance between alternative exits:

+ Egress travel distance between alternative exits from within the proposed Palliative Care extension is up 58 m between alternative exits (13 m over the maximum permitted DTS travel distance from a patient care area).
+ Egress travel distance from the Palliative Care Courtyard is up to 70 m between alternative exits (25 m over the maximum permitted travel distance between exits from a patient care area). It is noted that most of the extended travel distance is external.

The extended travel distances are detailed in the figure below.

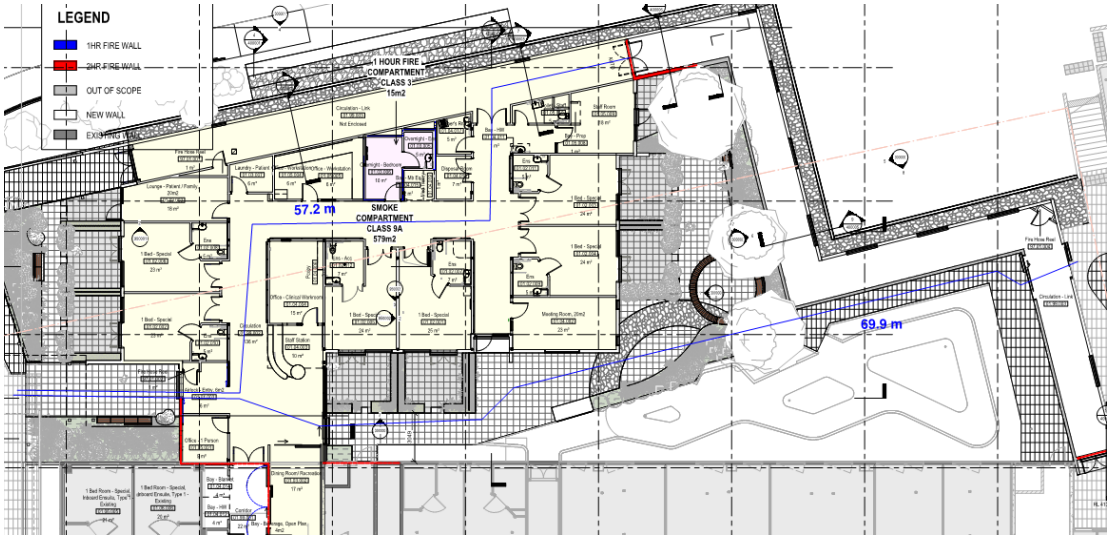


Figure 13: Locations of extended travel distance from the proposed palliative care unit

	The extended travel distances will be required to be assessed as part of a Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA.
D2D7	**Height of Exits, Paths of Travel to Exits and Doorways:** The unobstructed height throughout an exit or a path of travel to an exit must not be less than 2000 mm, except for doorways which may be reduced to not less than 1980 mm. The Design Development Drawings indicate that compliance is achieved in this instance.
D2D8	**Width of Exits and Paths of Travel to Exits:** The unobstructed width of an exit or a path of travel to an exit must not be less than 1000 mm except where patients are normally transported in beds within treatment and ward areas in which case a minimum of 1800 mm corridor and passageway widths are required. The Design Development Drawings indicate that compliance is achieved in this instance.
D2D9	**Width of Doorways in Exits and Paths of Travel to Exits:** The unobstructed width of all doors throughout the patient care areas where patients are normally transported in beds are as follows: + Doorways leading to or from a corridor with a corridor width of less than 2200 mm must not be less than 1200 mm, or + Doorways leading to or from a corridor with a corridor width greater than 2200 mm must not be less than 1070 mm. Horizontal exit fire doors are to achieve a clear unobstructed width of 1250 mm. Where a single door is provided as a horizontal exit, it will need to achieve a clear unobstructed width of 1250 mm. All other doorways other than the above are to achieve an unobstructed width of not less than 850mm. The Design Development Drawings indicate that compliance is achieved in this instance.
D2D12	**Travel via Fire Isolated Exits:** *Discharge from the Fire Isolated Stairways serving the existing Hospital Building* The proposed Palliative Care Unit extension and enclosure of the courtyards results in the occupants discharging from the existing fire isolated stairways having to discharge within 6 m of the façade of the proposed extension along with of 6m of the enclosed linkway and the back within the confines of the building. Where an occupant passes within 6m of an external wall of the building and any associated openings, the external wall and openings are required to be protected in accordance with the DTS Provisions of the BCA. Furthermore, once occupants discharge to open space, they are not permitted to discharge back within the confines of the building. The proposed discharge from the existing fire isolated stairways is proposed to be addressed as a part of a Fire Engineering Assessment to be undertaken by the Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

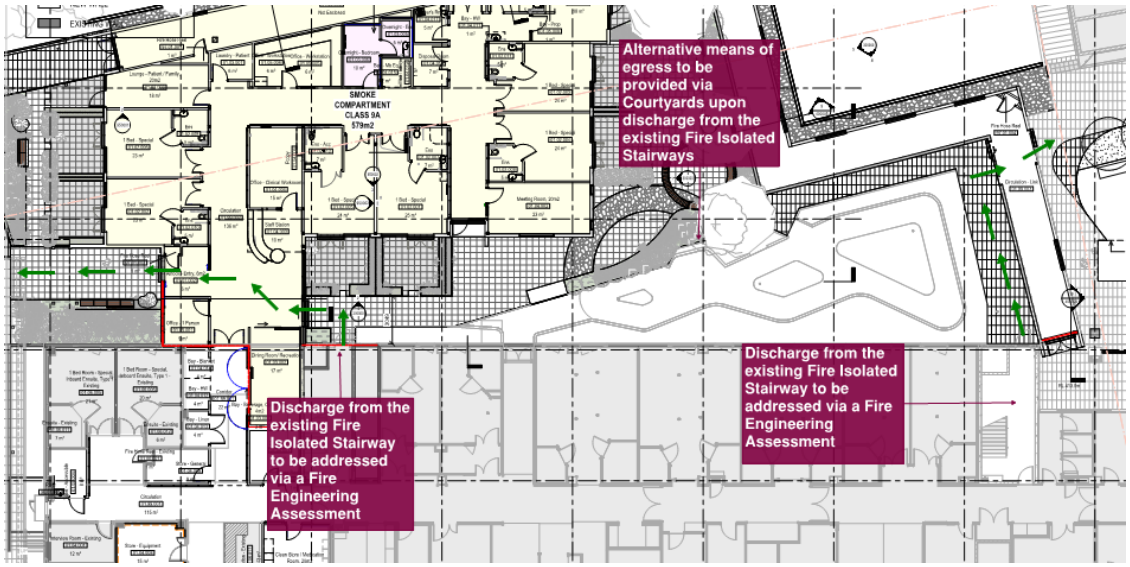


Figure 14: Proposed discharge from existing Fire Isolated Stairways serving the Acute Services Building that discharge within the confines of internal courtyards as a result of the Palliative Care extension

The basis of the of the proposed Performance Solution will be that occupants have the ability to travel in alternative directions upon discharge from the fire isolated stairways serving the existing Acute Services Building including entering the palliative care unit.

Note: Further review needs to be undertaken of the alternative egress path from the existing Fire Stair detailed below between Grids H & I in consultation with the appointed Fire Safety Engineer.

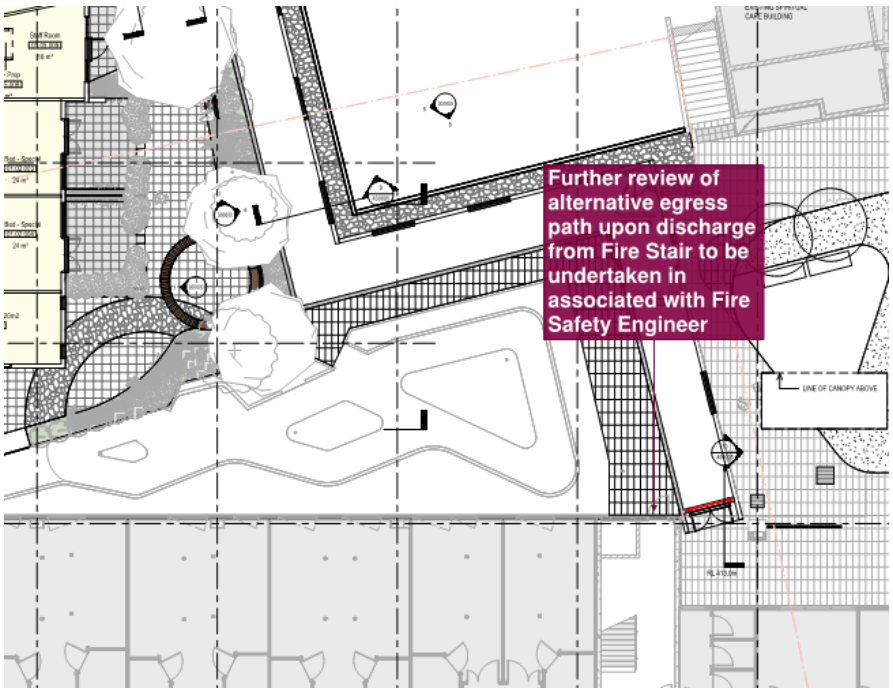


Figure 15: Alternative paths of egress from existing Fire Stair to be further reviewed with the Fire Safety Engineer

The existing base building Fire Engineering Report will need to be reviewed to ensure that there are no limitations placed on the discharge of the existing fire isolated stairways.

D2D15 **Discharge from Exits:**

In accordance with the DTS provisions of the BCA, once an exit discharges to open space from a hospital building, the path of travel leading from the exit to the public roadway cannot incorporate any stairways or steps.

As a result of the proposed Palliative Care extension the on-grade discharge from the existing fire isolated stairways via the covered walkway serving the Acute Services Building has been removed. The photographs below detail the existing on-grade discharge from the existing exits.

Photograph No 1: Existing Norther Entry to Staff Core of ASB – current external path of travel upon discharge from fire stair(s)

Photograph No 2: Existing covered walkway (northwest view) north of the existing ASB

The figure below details the external covered walkway that occupants used to egress under has been removed as part of the redevelopment works.

Figure 16: Existing external covered walkway removed as part of the redevelopment works

As a result of the redevelopment works, occupants upon discharge from the Fire Stairs serving the Acute Services Building (as part of the proposed Fire Engineering Assessment via the internal courtyards) will discharge via the existing Northern Entry to the Staff Core of the Acute Services Building and then will be required to egress via an existing external stairway that adjoins the Multi-Purpose / Spiritual Care part of the Acute Services Building as detailed in the photograph and figure below.

Photograph No 3: External stairway located adjacent to the existing Spiritual Care Centre

The provision of an external stair located within the external path of travel upon discharge from the fire isolated stairways and the new link way will be required to be addressed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

Figure No 17: External stairway located adjacent to the existing Spiritual Care Centre

In relation to discharge from the exit serving the linkway as detailed in the figure below, verification is required that occupants reach open space once discharging beyond the covered new unenclosed link as detailed in the figure below.

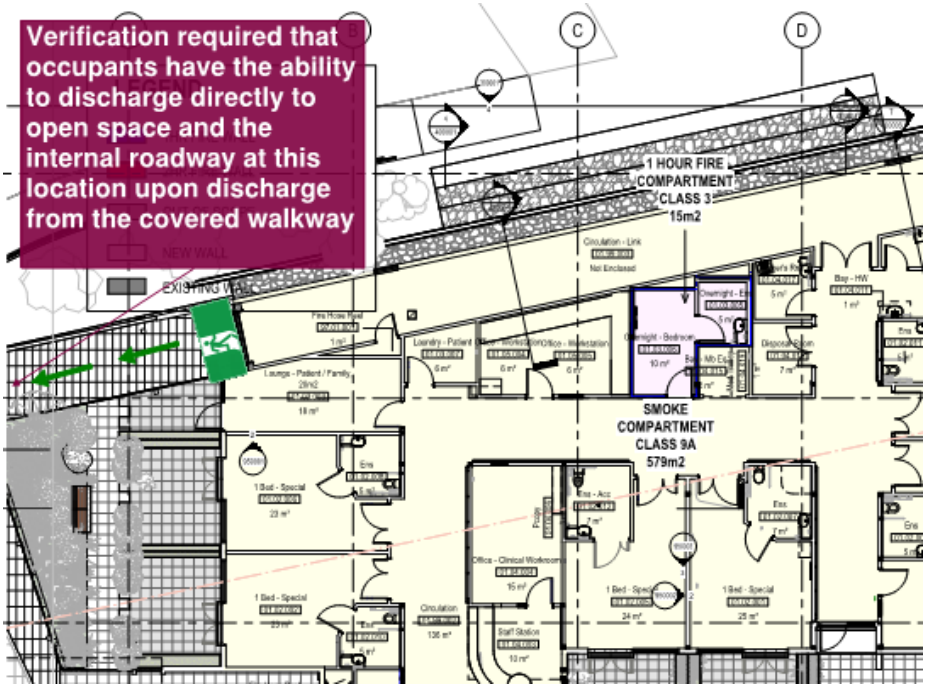


Figure 18: Exit discharge from enclosed linkway via covered walkway

D2D16 **Horizontal Exits:**

In accordance with the BCA, a horizontal exit may be counted as a required exit if the path of travel from a fire compartment leads by one or more horizontal exits directly into another fire compartment which has at least one required exit which is not a horizontal exit.

As a result of the proposed Palliative Care Extension to the existing ASB, the existing exit door serving the existing Palliative Care Unit which currently discharges directly to open space will become a horizontal exit discharging into the extension.

The modification of the existing exit arrangement creates a non-compliance in relation to travel via horizontal exits serving the existing Medical IPU within ASB. Currently occupants egressing from

Fire Compartment A in the figure below discharge via horizontal exits into Fire Compartment B and can then discharge directly to open space as detailed in the figure below.

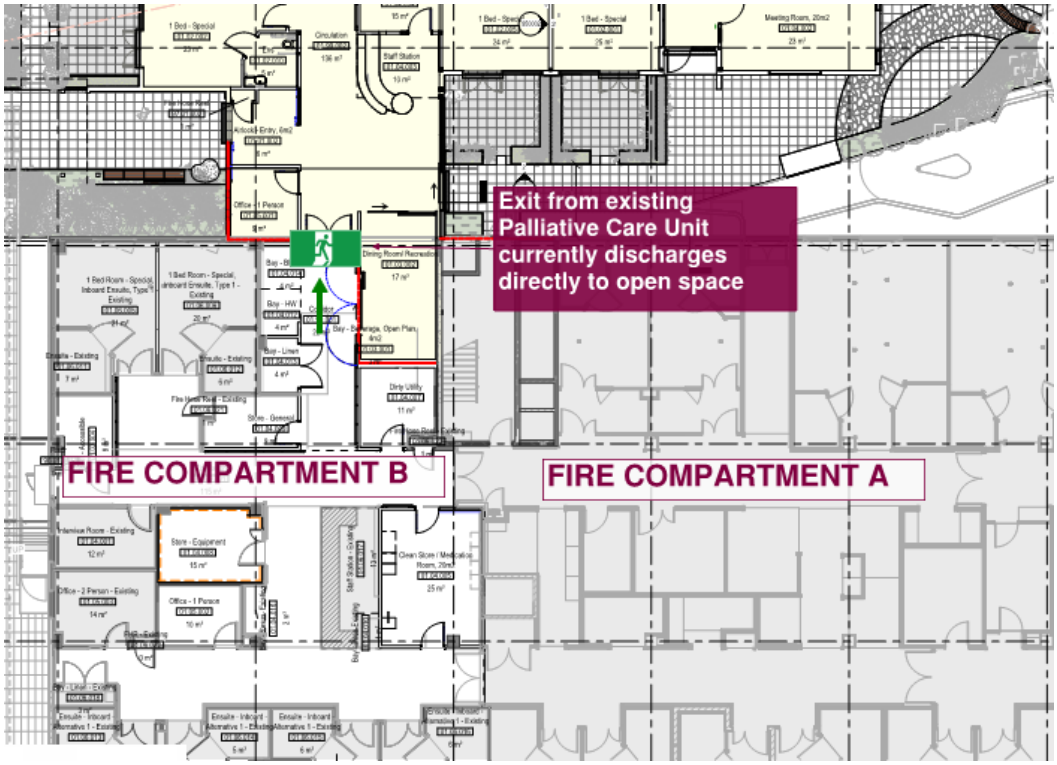


Figure 19: Current egress arrangement from the existing Palliative Care and adjoining Medical IPU

As a result of the proposed works, occupants egressing from Fire Compartment A discharge into Fire Compartment B which is no longer provided with an exit direct to open space, with occupants instead having to egress via a further horizontal exit into Fire Compartment C prior to be provided with an exit direct to open space.

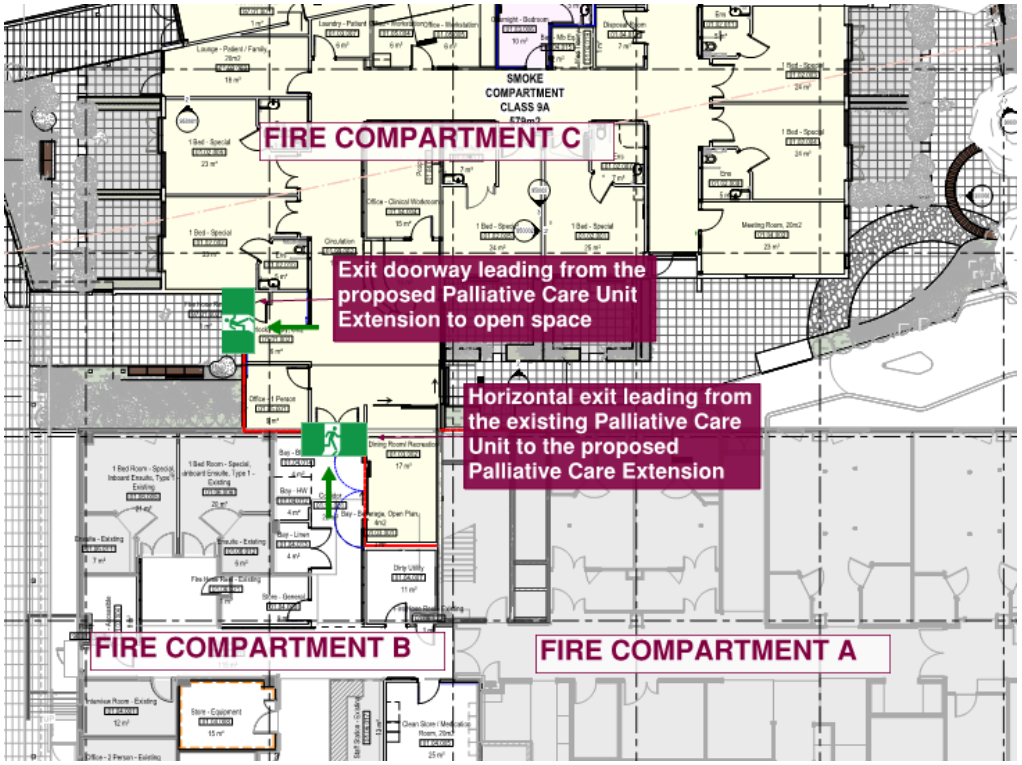


Figure No. 20: Modified egress arrangement where travel via the horizontal exit serving Fire Compartment A has been impacted

The proposed design is quite common in a hospital where occupants can sometimes have to travel via multiple fire compartments prior to reaching an exit that is provided with an exit direct to open space or a fire isolated stairway.

The proposed travel via the horizontal exits from the existing Medical Inpatient Unit will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineering to demonstrate compliance with the nominated Performance Requirements of the BCA.

Part D3 Construction of Exits

D3D8

Installations in Exits and Paths of Travel:

Any electrical meters, distribution boards or ducts, central communications distribution boards or equipment or electrical motors are permitted to be located within corridors, hallways etc. leading to exits subject to the enclosures being suitably sealed against smoke spreading from the enclosure and be constructed of non-combustible construction or a fire protected covering.

Note:

The smoke sealing is required around the entire enclosure and not simply up to ceiling level.

D3D16

Thresholds:

No steps can be located within the internal door thresholds including doorways leading to the internal patient courtyards.

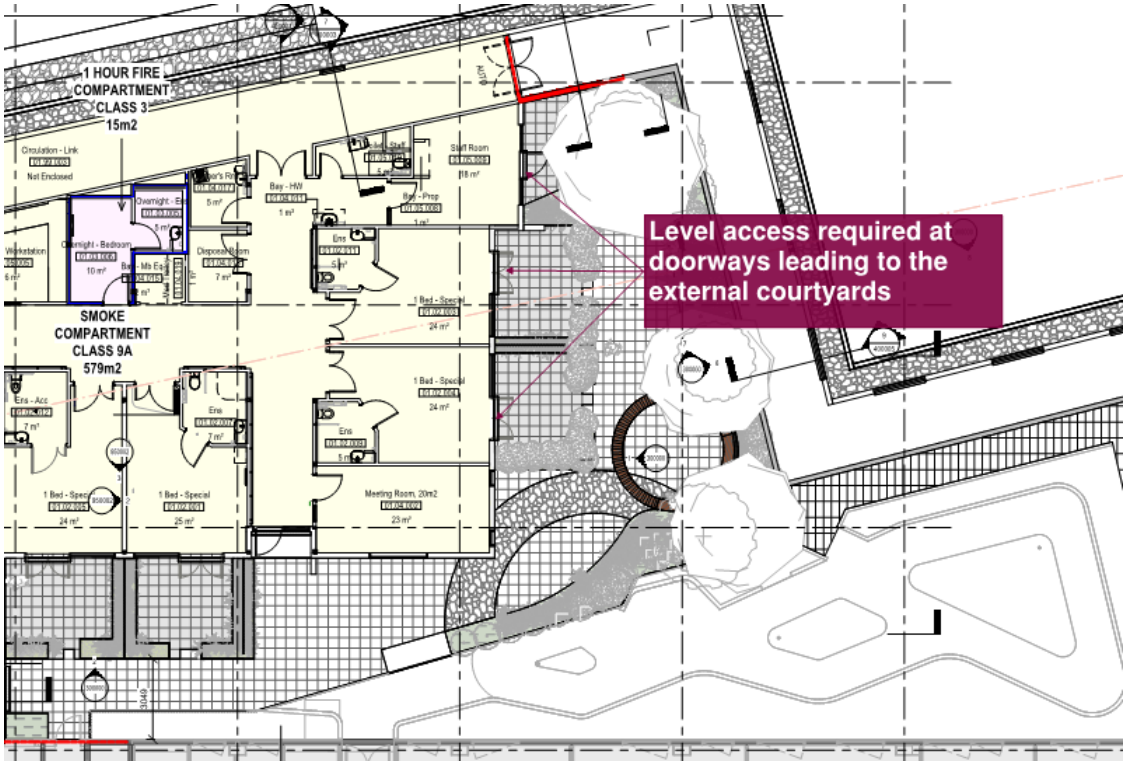


Figure No. 21: Modified egress arrangement where travel via the horizontal exit serving Fire Compartment A has been impacted

If any proposed steps are to be located within internal door thresholds or doors leading to the internal courtyards, they will be required to be provided with a door threshold ramp as part of a proposed Access Performance Solution. Any threshold ramp will be required to be designed in accordance with Clause 10 of AS 1428.1 which requires the following:

+ Maximum rise of 35 mm
+ Maximum length of 280 mm
+ Maximum gradient of 1:8

+ Be located within 20 mm of the door leaf it serves.

Where the threshold ramp does not abut a wall, the edges of the threshold ramp are required to be tapered or splayed at a minimum of 45°.

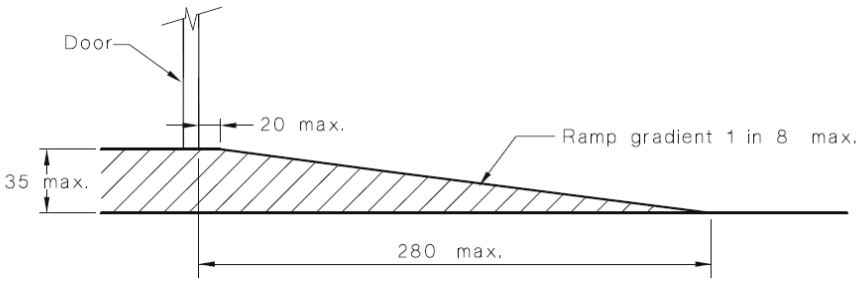


Figure No. 22: Threshold ramp dimensions

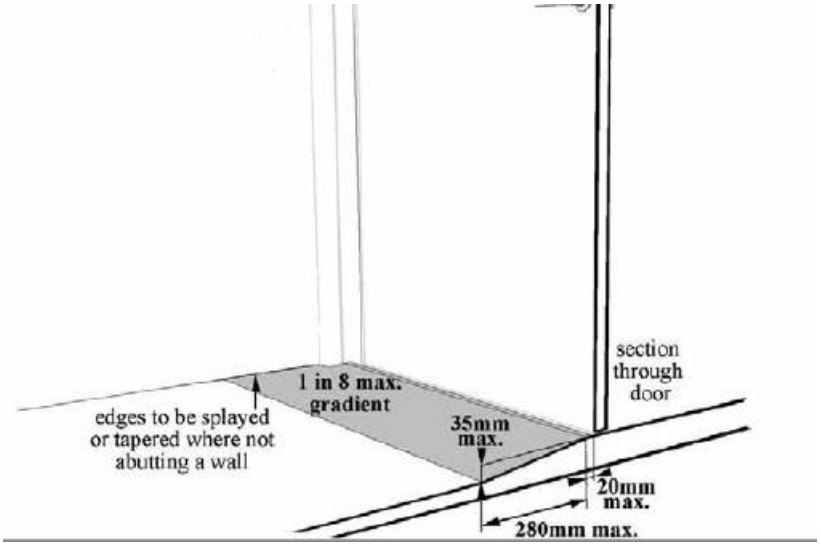


Figure No. 23: Threshold Ramp

D3D22 **Handrails:**

Handrails are to be provided along at least one side of all corridors in the patient care areas, which are fixed not less than 50 mm from the wall and continuous where practical.

The below figures details the corridors that will be used by patients that require the provision of a handrail to at least one side of the corridor.

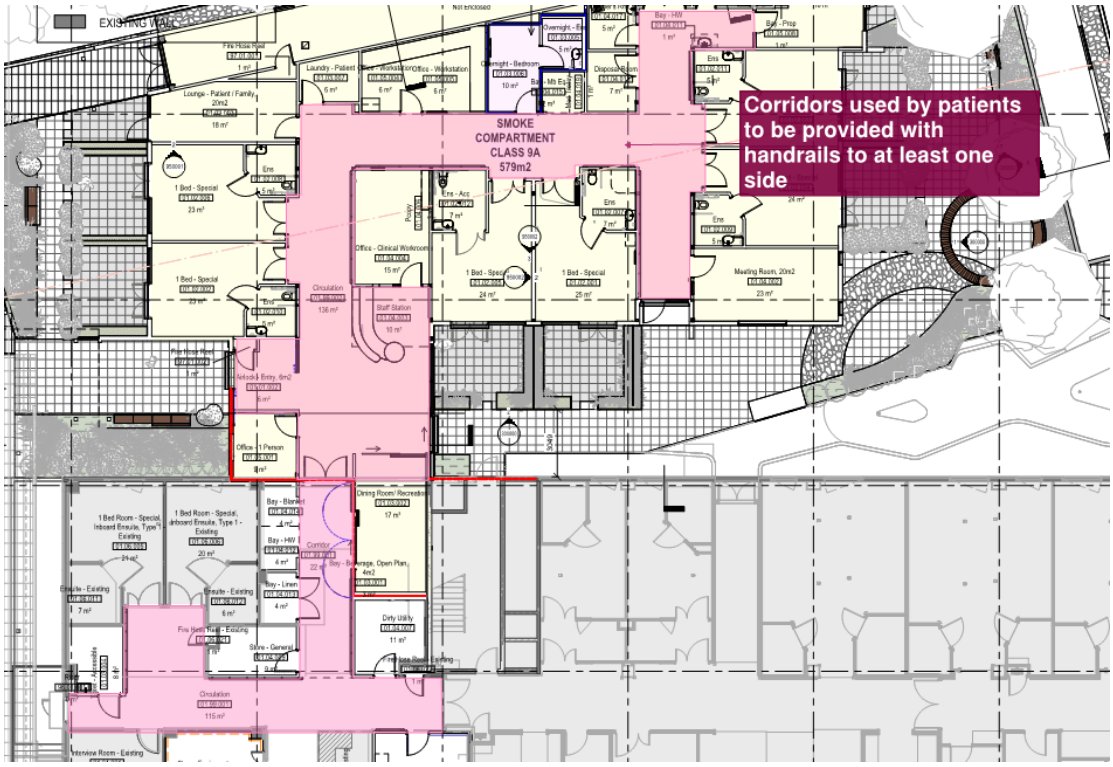


Figure No. 24: Extent of corridors used by patients associated with the works that require the provision of a handrail to at least one side of the corridor.

The Design Development Architectural Drawings indicate the provision of handrails to at least one side of the corridors used by patients and they where practicable full length as detailed in the figure below.

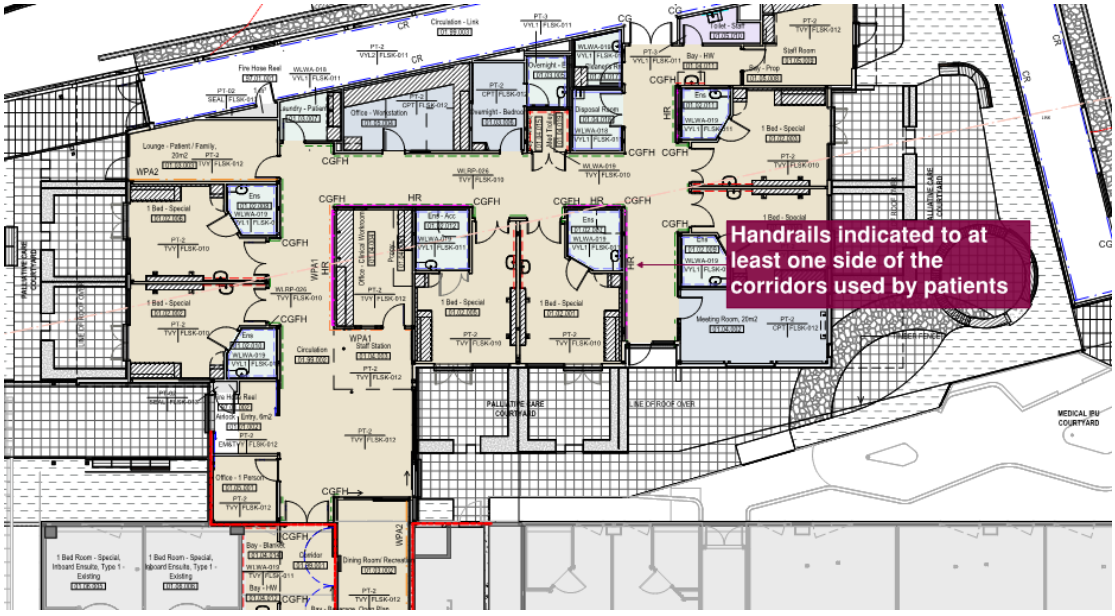


Figure No. 25: Proposed provision of handrails to at least one side of the corridors

D3D24

Doorways and Doors:

Doorways located in a patient care area must not incorporate a sliding door unless that door leads directly to open space and is able to be manually opened under a force of not more than 110 N and open automatically upon fire trip or power failure.

Doors in patient care areas are not permitted to be sliding doors.

The Design Development Architectural documentation indicates the provision of a sliding door to the Dining and Recreation Room which is proposed to be refurbished as part of the works within the existing Palliative Care Unit as detailed in the figure below.

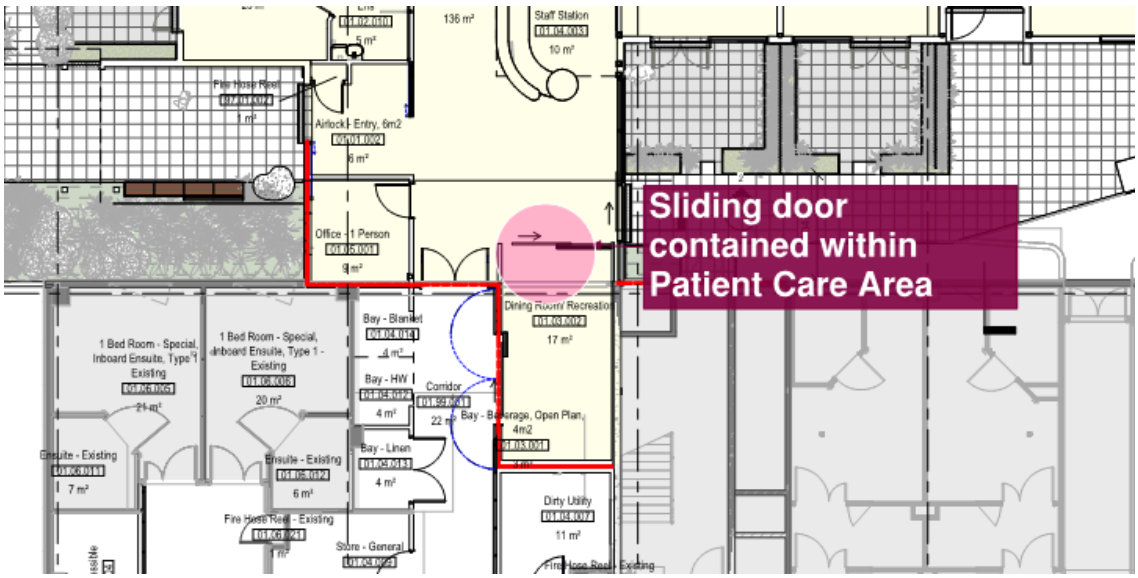


Figure No. 26: Sliding door contained within patient care area

The provision of the sliding door within the patient care area will be required to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

Verification is required to be provided that the doors detailed in the figure below which is located within the proposed fire wall are swing doors and not a sliding door.

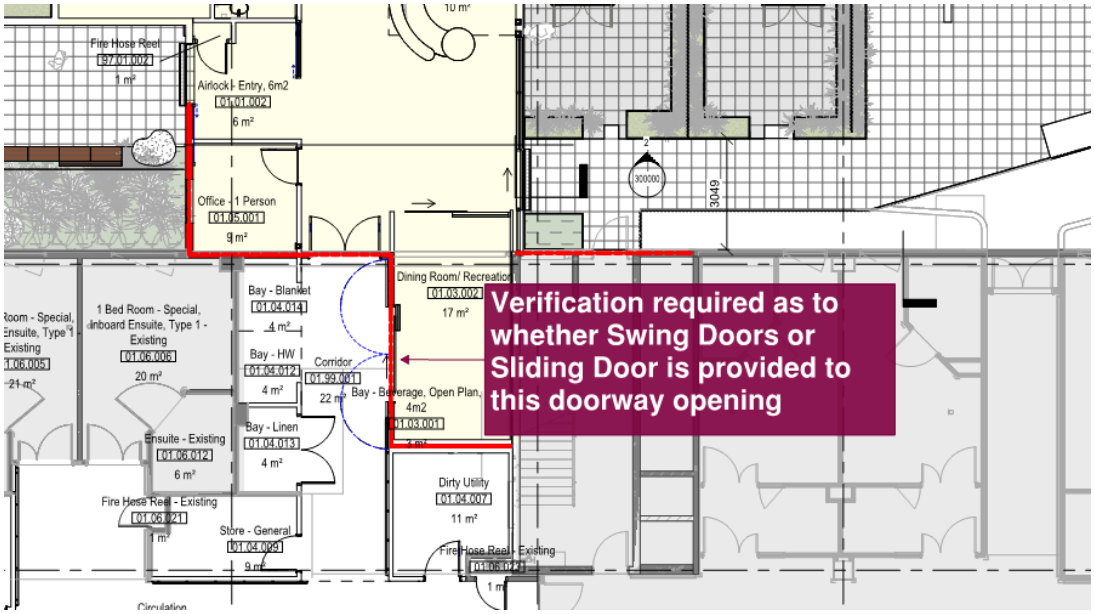


Figure No. 27: Verification required as to proposed doorway located within the fire wall

D3D25 **Swinging Doors:**

A swinging door in a required exit or forming part of a required exit is required to swing in the direction of egress including horizontal exit doors.

The horizontal exit within the Linkway is required to serve as a horizontal exit in both directions. If the horizontal exit door is not dual swing, then the swing of the door against the direction of egress will be required assessed as part of a Fire Engineering Performance Assessment to be undertaken by the appointed Fire Safety Engineer in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

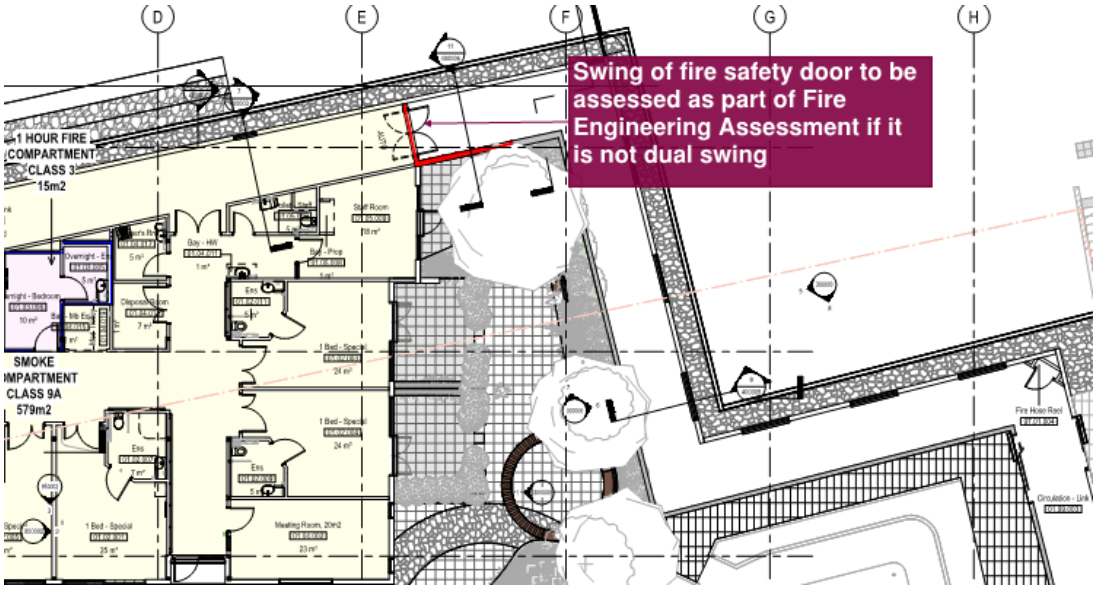


Figure No. 28: Horizontal exit door located within the Linkway required to be addressed as part of Fire Engineering Assessment if it does not swing in both directions

D3D26 **Operation of Latch:**

All exit doors and doors in a path of travel are required to be provided with door hardware that is openable by a single-handed downward action without recourse to a key or locking device and meet the following criteria:

+ The door hardware is to be of a design that the hand of a person who cannot grip will not slip from the handle during the operation of the latch: and
+ Have a clearance between the handle and the back plate or door face at the centre grip section of the handle of not less than 35 mm and not more than 45 mm more.

The door hardware is to be positioned between 900 – 1100 mm from the ground.

Where the door hardware is operated by a single hand pushing action on a single device, it is required to be located between 900 mm – 1200 above FFL.

Where the latch operation devices is not located on the door itself –

+ Manual controls to power operate doors are required to be at least 25 mm wide, proud of the surrounding surface and located –
  - Not less than 500 mm from an internal corner; and
  - For a hinged door, between 1 m and 2 m from the door leaf in any position; and
  - For a sliding door, within 2 m of the doorway and clear of a surface mounted door in the open position; and
  - Braille and tactile signage complying with Clause C3 and C6 of Specification 15 of the BCA.

Doors providing re-entry to the building from courtyard areas etc. must be fitted with key-operated fastenings only, the tongues of which must be locked in the retracted position whenever the building is occupied so that the door can yield to pressure.

D2D28 **Signs on Doors:**

All self-closing fire and/or smoke doors located within fire and smoke walls are to be provided with signage that states:

FIRE SAFETY DOOR

DO NOT OBSTRUCT

DO NOT KEEP OPEN

All automatic closing fire and/or smoke doors located within fire and smoke walls are to be provided with signage that states:

FIRE SAFETY DOOR

DO NOT OBSTRUCT

Part D4 Access for People with a Disability

D4D2

General Building Access Requirements:

Access for persons with disabilities must be provided, at a minimum, to and within all areas normally used by the occupants throughout the refurbishment. This includes too and within all beds, throughout all patient care areas, staff areas and communal areas.

Based on a review of the Design Development Architectural Documentation, the proposed development works can comply with the requirements of Part D4 of the BCA.

This BCA Report contains high level comments in relation to access for a person with a disability. A separate Access Report has been prepared by BM+G in relation to Access for Person with a disability.

D4D3

Access to Buildings:

In accordance with the Access to Premises Standards, access will be required to be provided from the Main Entrance of the building to the refurbishment area on Level 01.

In this instance, an inspection of the affected path from the main entrance through to the refurbishment area will be required to be undertaken to ensure that the path of travel complies with the requirements of the BCA and AS 1428.1 – 2009.

Accessible Path of Travel

- The minimum unobstructed height of a continuous accessible path of travel is required to be 2000 mm and 1980 mm at doorways.

  Unless otherwise specified (such as at doors, curved ramps and similar), the minimum unobstructed with of a continuous accessible path of travel is required to be 1000 mm and following elements cannot intrude into the minimum width:

  - Fixtures and fittings such as lights, awnings, windows that when open intrude into the circulation space, telephones, skirtings, and similar objects.
  - Essential fixture and fittings such as fire hose reels, fire extinguishers and switchboards.
  - Door handles less than 900 mm above the finished floor.

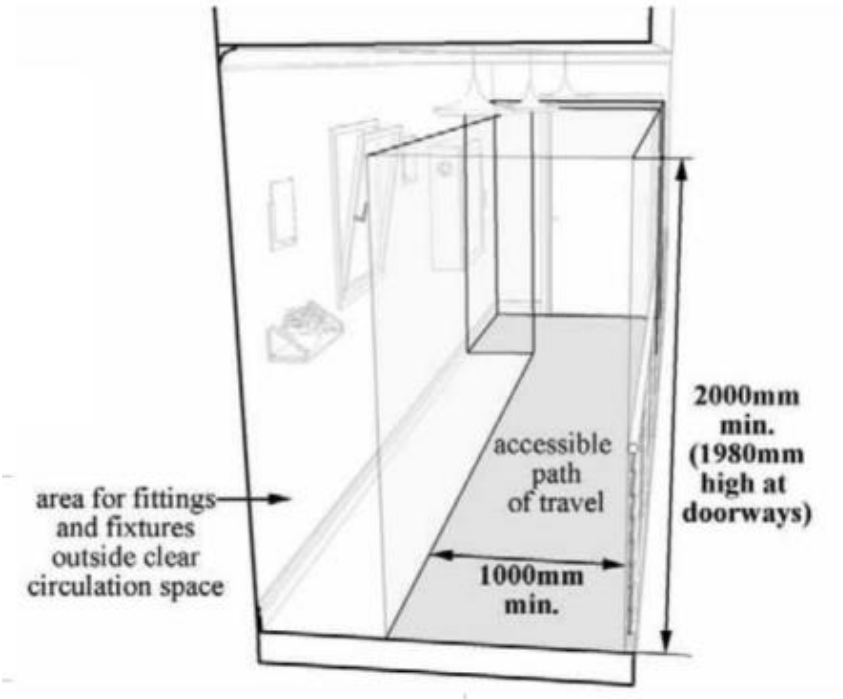


Figure No. 29: Minimum height and width of accessible path of travel

+ The minimum width of an accessible doorway must have a clear opening width of not less than 850mm in accordance with AS1428.1. Where double doors are provided, at least one leaf must have a clear unobstructed width of 850mm.

Note: -

Please refer to Clause D2D7 - D2D11 above having regard to the clear width of doorways where patient transportation in beds is required.

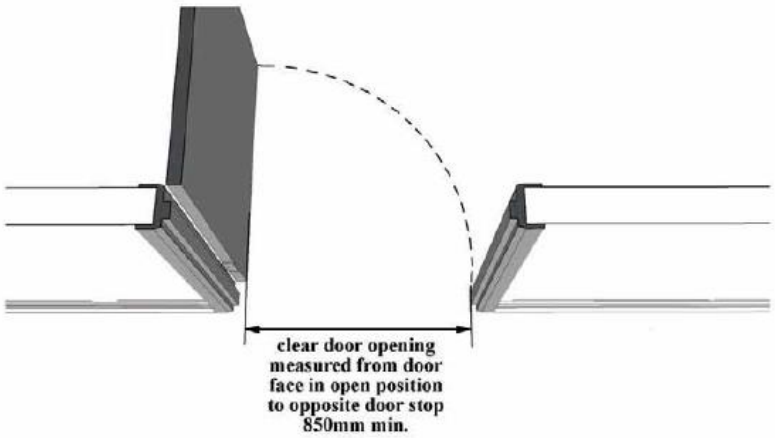


Figure No.30: Clear Unobstructed Width of Doorway

+ All new doorways shall have a minimum luminance contrast of 30% provided between -
  - (a) door leaf and door jamb;
  - (b) door leaf and adjacent wall;
  - (c) architrave and wall;
  - (d) door leaf and architrave; or
  - (e) door jamb and adjacent wall.

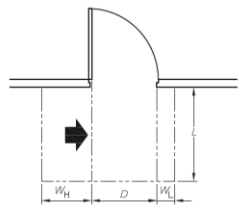
The minimum width of the area of luminance contrast shall be 50 mm.

Doorways providing access to rooms that are not required to be accessible, are not required to be provided with a luminance contrast i.e., clean utility rooms, dirty utility rooms, equipment stores etc.

+ Circulation space is required to all doorways throughout the building that are required to Circulation space is not required to be provided to rooms where access for a person with a disability is not required i.e. dirty utility / clean utility rooms, plant rooms, comms rooms etc. See below required doorway circulation space for swinging and sliding doors.be accessible in accordance with Section 13 of AS 1428.1 – 2009 (see diagrams below).

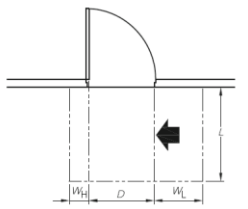
Note: -

Where doorways are provided with one and half leaves, the half leaf is required to permit the required latch side circulation space as required by AS 1428.1 – 2009.



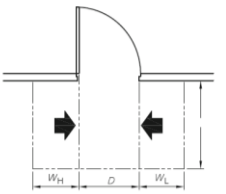
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1220	560	340
900	1185	510	340
950	1160	460	340
1000	1140	410	340

(a) Hinge-side approach, door opens away from user



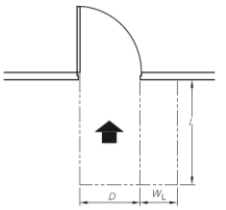
Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1240	240	660
900	1210	190	660
950	1175	140	660
1000	1155	90	660

(b) Latch-side approach, door opens away from user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1240	560	660
900	1210	510	660
950	1175	460	660
1000	1155	410	660

(c) Either side approach, door opens away from user



Dimension D	Dimension L	Dimension W_H	Dimension W_L
850	1450	0	510
900	1450	0	510
950	1450	0	510
1000	1450	0	510

(d) Front approach, door opens away from user

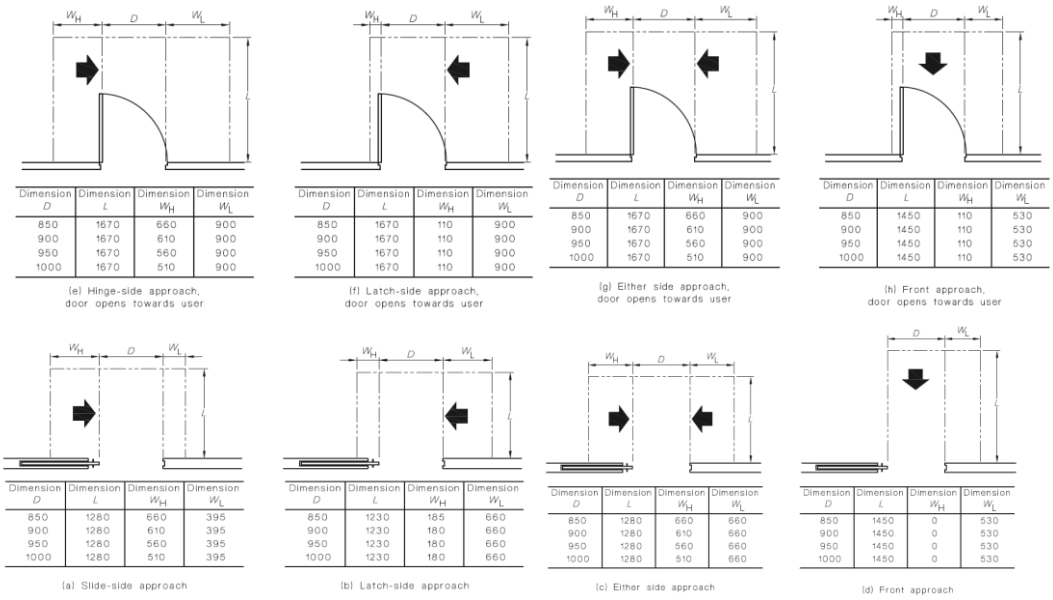


Figure No. 31: Circulation Space at Swing Doors

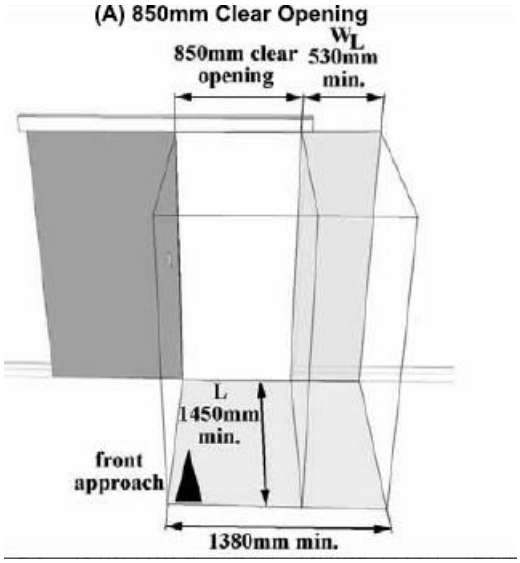


Figure No. 32: Circulation Space dimensions at swing doors

D4D4 **Parts of Buildings to be Accessible:**

Accessways

+ Accessways throughout the building are required to have –
  - Passes spaces complying with AS 1428.1 at a maximum 20m intervals on those parts of an access where a direct line of sight is not available; and
  - Turning spaces complying with AS 1428.1 –
    - Within 2 m of the end of accessways where it is not possible to continue travelling along the accessway, and
    - At maximum 20 m intervals along the accessway
+ All dead-end corridors where a person in a wheelchair is required to make a 90° to 180° turn is required to be not less than 2070 mm in the direction of travel and not less than 1540 mm wide.

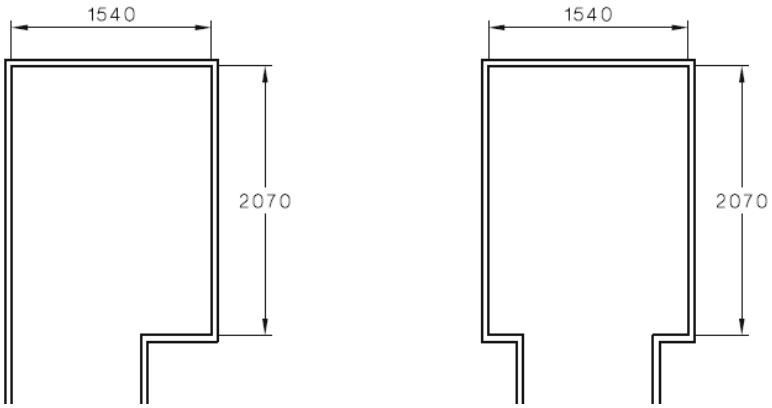


Figure No. 33: Minimum space required for >90o to 180o turn.

Access Control

Access control swipe readers are required to be installed between 900 – 1100mm above FFL and not closer than 500 mm to an internal corner.

Door release buttons are required to be located between 900 – 1100 mm above FFL and closer than 500 mm to an internal corner. Door release buttons will need to be large format switches (35mm x 35 mm rocker style switches) or a 'mushroom' push button type.

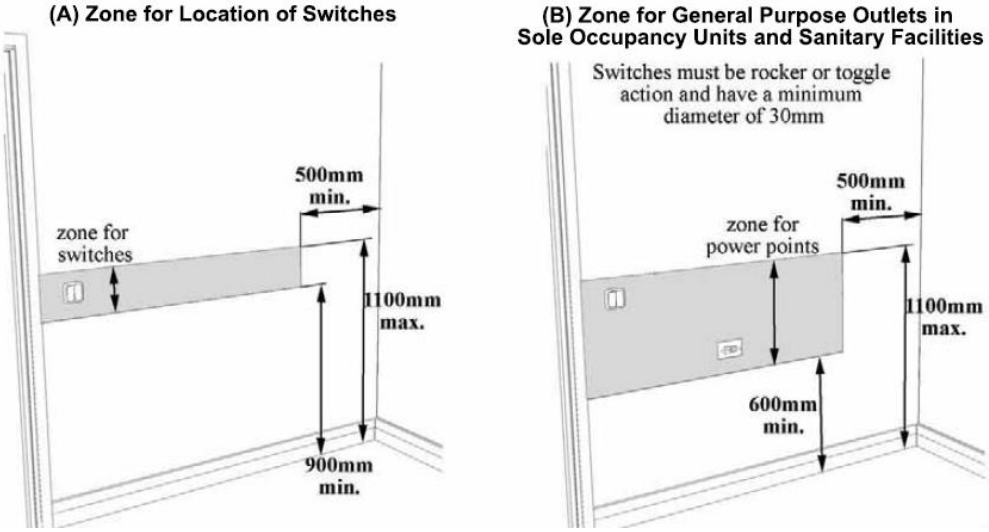


Figure No.34: Zones for the location of switches and power outlets

Clear Turning Space Behind Workstations

A minimum clearance of 1550 mm is required to be provided between the edge of workstations / desks and the wall behind or between workstations located back-to-back to ensure that a staff member who is wheel chairbound has sufficient space to ensure maneuverability.

Wheelchair Seating in Waiting Areas

Within the waiting areas at least one zone of 1300 mm x 800 mm is required to be provided for a wheelchair seating location for a person with a disability.

Accessible Counters

The reception counters associated with the entrance to the building or department entries is to include a portion of the counter that is accessible to a person with a disability. The height of the counter should be 850 mm +/- 20 mm.

The knee and foot clearances below the counter or bench are required to be provided in accordance with AS 1428.2 – 1992.

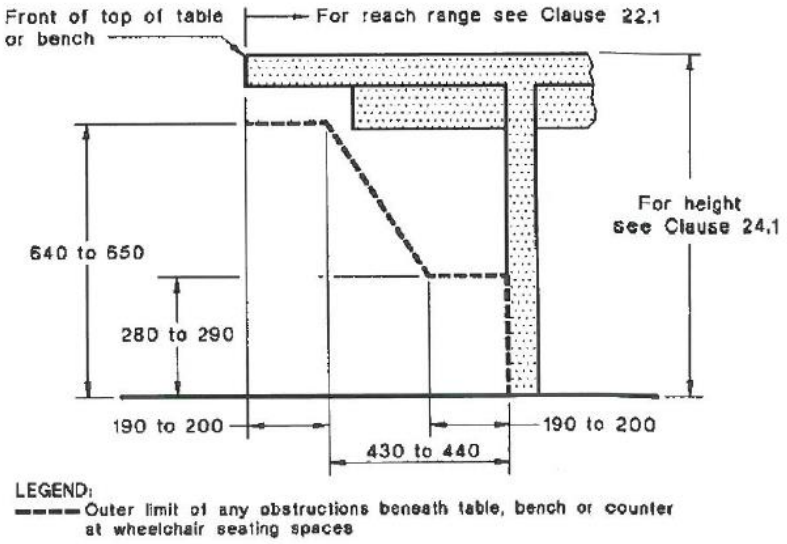


Figure No. 35: Clearances below an accessible counter or bench

Beverage Bays

Where Beverage Bays are proposed to be installed, they are required to be designed as follows:

+ If the beverage bays are located within a room, the circulation space within the room will be required to comply with the provisions of AS 1428.1 – 2009 with a zone of 1500 mm x 1500 mm provided to ensure that that an occupant can make a 180° turn.
+ The distance between the beverage bay counter and any adjacent wall cannot be less than 1540 mm.
+ Where the beverage bay is located adjacent to a doorway, circulation space around the doorway is required to be provided as detailed above.
+ Water zip taps cannot be located closer than 500 mm from an internal corner.
+ Side reach access to the tap hardware of the beverage bay is permitted. Side reach access is required to be provided in accordance with AS 1428.2 – 1992 as detailed in the below Figure.

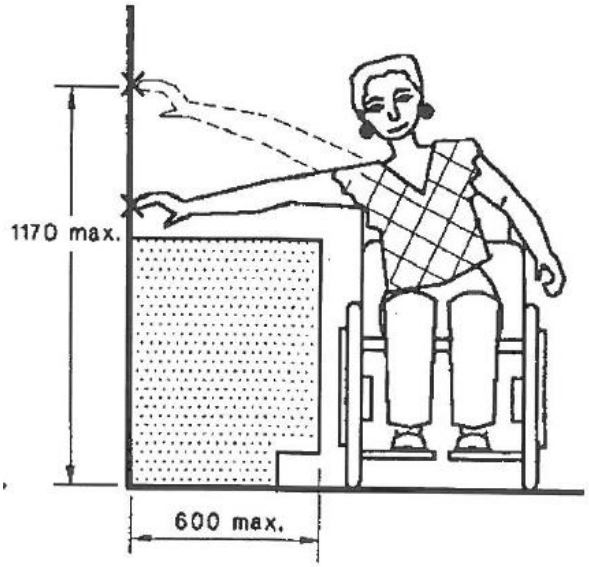


Figure No. 36: Side reach requirements for a wheelchair user

Carpet

The pile height or pile thickness cannot exceed 11 mm and the carpet backing thickness cannot exceed 4 mm.

Exposed edges of floor covering are required to be fastened to the floor surface and is required to have a trim along the entire length of any exposed edge.

At the leading edges, carpet trims and any soft flexible materials are required to have a vertical face no higher than 3 mm or a rounded bevelled edge no higher than 5mm or above that height a gradient of 1 in 8 up to a total maximum height of 10 mm.

Note: In accordance with Clause D4D4 (h), the dimensions of 10 mm, 6 mm and 4 mm are to be replaced with 11 mm, 4 mm and 15 mm respectively.

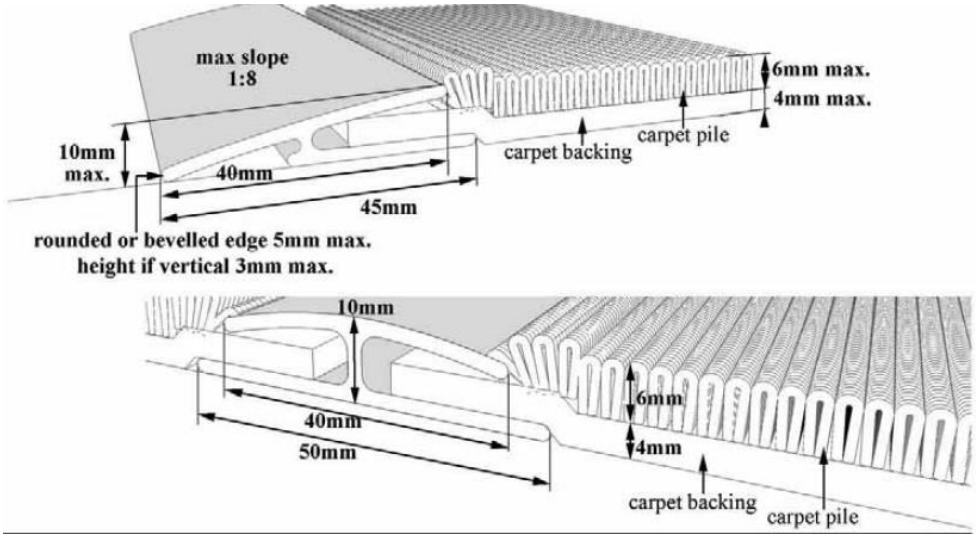


Figure No. 37: Carpet joints on an accessible path of travel

Recessed Matting

Matting recessed within a continuous accessible path of travel is required to comply with the following:

- Where of metal and bristle type construction or similar, its surface cannot be more than 3 mm if vertical or 5 mm if rounded or bevelled, above or below the surrounding surface; and
- Where a mat or carpet type material, it is required to have the fully compressed surface level with or above the surrounding surface with a level difference no greater than 3 mm if vertical or 5 mm if rounded or bevelled.

Grates

Grates installed are required to comply with the following:

- Circular openings cannot be greater than 13 mm in diameter.
- Slotted openings cannot be greater than 13 mm wide and be orientated so that the long dimension is transverse to the dominant direction of travel.

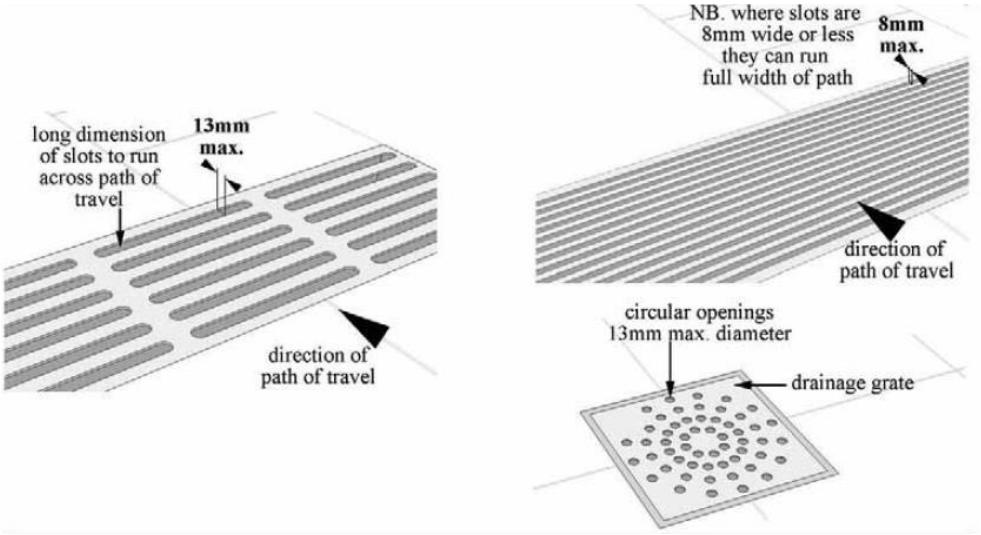


Figure No. 38: Maximum size of openings in grates

Accessible Fixtures & Fittings:

- All fixtures, fittings and door hardware are to comply with Section 13.5 & Section 14 of AS1428.1-2009.
- Door hardware to swing doors is to be in accordance with the following diagrams:

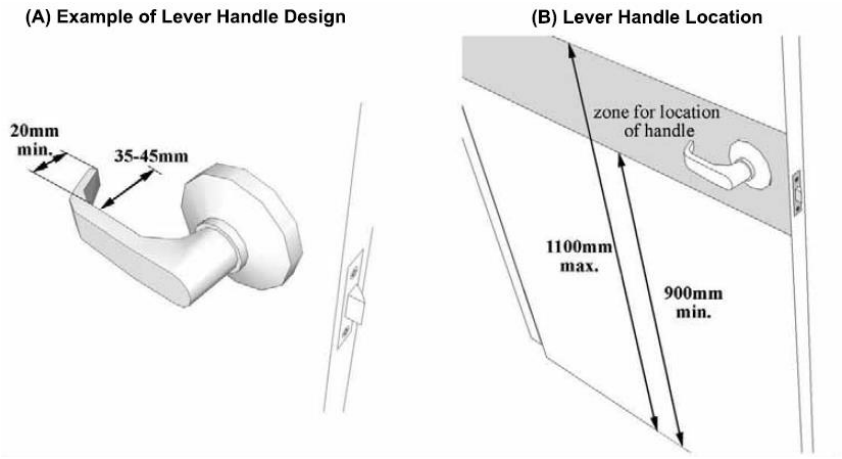


Figure No. 39: Door hardware to swing doors.

Door hardware to sliding doors is to be in accordance with the following diagram:

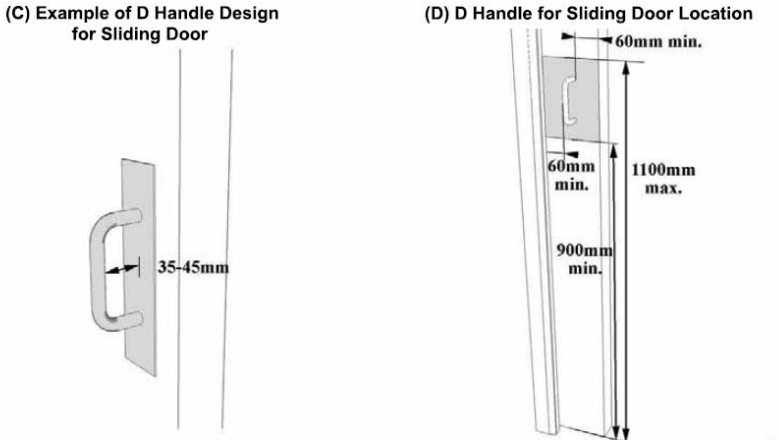


Figure No. 40: Door hardware to sliding doors.

- Toggle style light switches and GPO outlets etc. should be provided within all patient care areas and to all accessible sanitary facilities (unless automatic lighting is provided within the sanitary facility)
- Braille tactile signage will be required to be installed throughout the building identifying accessible sanitary facilities, exits and lifts in accordance with the DTS Provisions of the BCA and AS 1428.1.

Signage to identify any ambulant or accessible sanitary facility is required to be located on the wall on the latch side of door or on the door itself leading to the sanitary facility.

D4D5

Exemptions:

The following areas are not required to be accessible:

- An area where access would be inappropriate because of the particular purpose for which the area is used.
- An area that would pose a health or safety risk for people with a disability.
- Any path of travel providing access only to an area exempted by (a) or (b).

Areas / rooms that may not be required to be accessible for a person with a disability include the following:

- Dirty Utility Rooms

- Clean Utility Rooms
- Equipment Storerooms
- General Storerooms
- Cleaners Rooms
- Disposal Rooms
- Plant Rooms

The below figure details the rooms that are available for the proposed D4D5 concession.

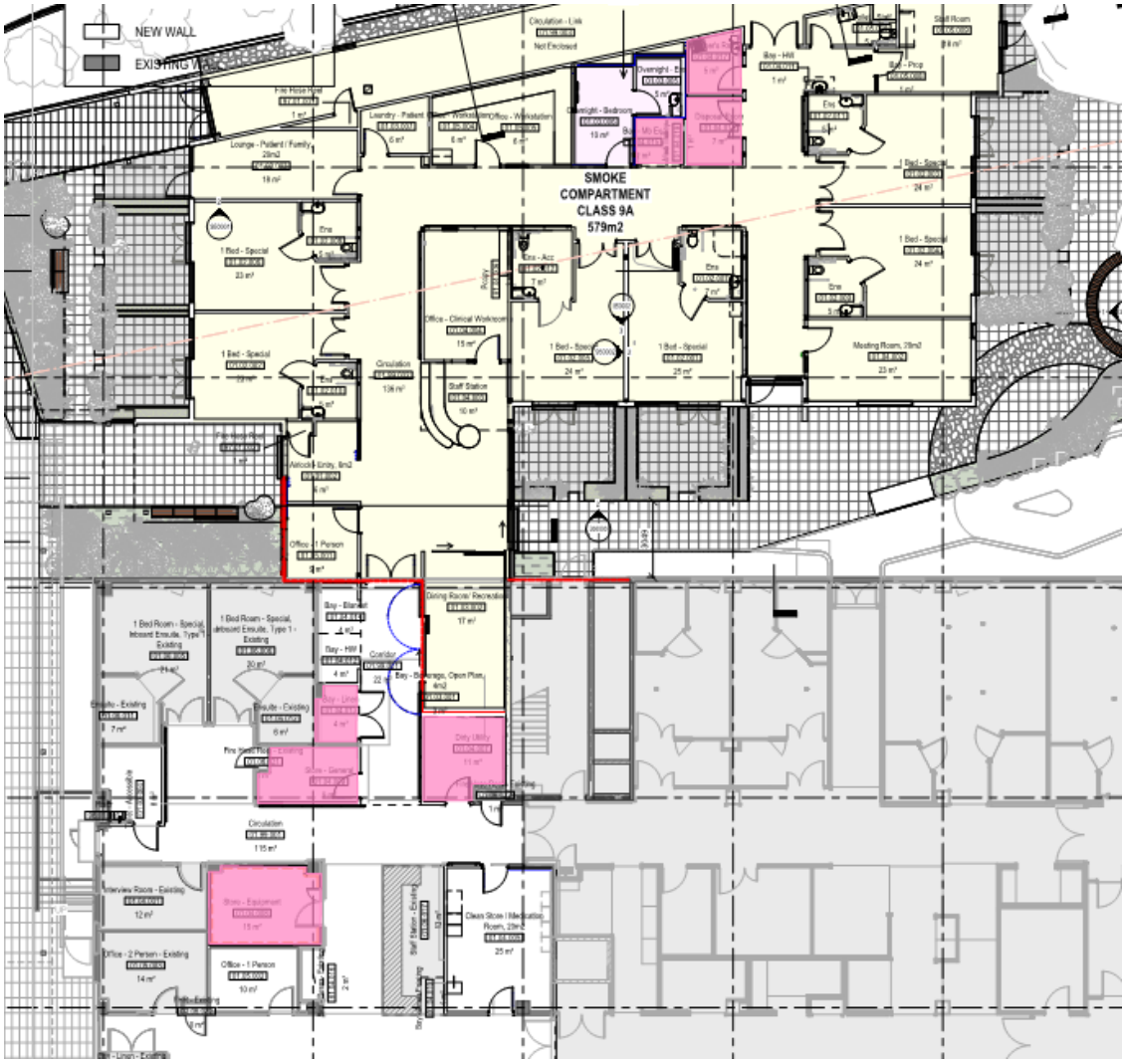


Figure No. 41: Room available for a D4D5 concession

The LHD are to provide written confirmation that access for any staff members with a disability is not required to be provided to the abovementioned rooms.

D4D6 **Accessible Carparking:**

It is understood that no new car parking is provided in association with the proposed works.

D4D7 **Signage:**

Braille and tactile signage complying the requirements of Specification 15 is required to:

- Incorporate the international symbol of access or deafness, as appropriate, in accordance with AS 1428.1 and identify each -
- Sanitary facility; and
- A space with a hearing augmentation system; and
- Identify each door required by E4D5 (door to be provided with exit signs) to be provided with an exit sign and state –

- "Exit"; and
- "Level" followed by the floor number.
- Signage including the international symbol for deafness in accordance with AS 1428.1 must be provided within a room containing a hearing augmentation system identifying –
  - The type of hearing augmentation; and
  - The are covered within the room; and
  - If receivers are being used and where the receivers can be obtained
- Signage in accordance with AS 1428.1 must be provided for accessible unisex sanitary facilities to identify the facility is suitable for left or right-handed use.
- Signage to identify an ambulant accessible sanitary facility in accordance with AS 1428.1 must be located on the door of the facility.
- Where a pedestrian entrance is not accessible, directional signage incorporating the international symbol of access, in accordance with AS 1428.1 must be provided to the location of the nearest accessible pedestrian entrance.
- Where a bank of sanitary facilities is not provided with an accessible unisex sanitary facility, directional signage incorporating the international symbol of access in accordance with AS 1428.1 must be placed at the location of the sanitary facilities that are not accessible, to direct a person to the location of the nearest accessible unisex sanitary facility.
- Signs identifying a door required by E4D5 to be provided with an exit sign must be located:
  i. On the side that faces a person seeking egress; and
  ii. On the wall on the latch side of the door with the leading edge of the sign located between 50mm and 300mm from the architrave; and
  iii. Where (ii) is not possible, the sign may be placed on the door itself.

  The provision of Braille and tactile exit signage with the message, for example. "Exit - Level 1" assists people with vision impairment to orientate themselves in case of an emergency situation and to find an exit and evacuate the area in a safe and equitable manner.

Location of Braille and Tactile Signs

Braille tactile signage including symbols, numbering and lettering is required to be designed in accordance with the following: -

- Braille and tactile components of the sign must be located not less than 1200 - 1600mm above the ground or floor surface.
- Signs with single lines of characters are to have the line of the tactile characters not less than 1250 mm and not more than 1350 mm above the floor or ground surface.
- Signs identifying rooms containing features or facilities listed in D4D7 are required to be located –
  - On the wall on the latch side of the door with the leading edge of the sign located between 50 mm and 300 mm from the architrave; and
  - Where the above is not possible, the sign is permitted to be located on the door itself.
- Signs identifying a door required to by Clause E4D5 to be provided with an exit must be located –
  - On the side that faces a person seeking egress; and
  - On the wall on the latch side of the door with the leading edge of the sign located between 50 mm and 300 mm from the architrave; and

The Braille & tactile egress signage is to be located adjacent or on (see above) each door that: -

- Provides direct egress into a fire isolated stairway
- Provides direct discharge from the storey into a passageway or lobby (airlock) associated with the fire isolated stairway
- Provide direct discharge from a fire isolated stairway to open space (discharge door)
- Horizontal exit doors providing egress into an adjoining fire compartment.
- Provides direct egress to a roadway or open space

The below signage is an example of what will be required: -

Signage Specification: -

- Tactile characters must be raised or embossed to a height of not less than 1 mm and not more than 1.5 mm.
- Title case must be used for all tactile characters, and
  - Upper case tactile characters must have a height of not less than 15 mm and not more than 55 mm, except that the upper-case tactile characters on a sign identifying a door required by Clause E4D5 to be provided with an exit sign must have of not less 20 mm and not more than 55 mm; and
  - Lower case tactile characters must have a minimum height of 50% of the related uppercase characters.
- Tactile characters, symbols, and the like, must have rounded edges.
- The entire sign, including any frame, must have all edges rounded.
- The background, negative space or fill of signs must be of matt or low sheen finish.
- The characters, symbols, logos and other features on signs must be matt or low sheen finish.
- The minimum letter spacing of tactile characters on signs must be 2 mm.
- The minimum word spacing of tactile characters on signs must 10 mm.
- The thickness of letter strokes must not be less than 2 mm and not more than 7mm.
- Tactile text must be left justified, except that single words may be centre justified.

Tactile text must be Aerial typeface.

D4D8

Hearing Augmentation:

A hearing augmentation system will be required to be installed to all rooms / areas where a built-in amplification system is installed.

A built-in amplification system is a system where either speakers are installed within a room or a wall mounted monitor has built in speakers. Such installations are typically found in meeting rooms, training rooms and waiting areas.

Where the wall mounted screen is not capable of broadcasting sound and any audio is provided by speakers attached to a laptop or that are portable, the hearing augmentation provisions will not need to be applied.

If a hearing augmentation system is:

- An induction loop, it must be provided to not less than 80% of the floor area of the room or space served by the inbuilt amplification system; or
- A system requiring the use of receivers or the like, it must be available to not less than 95% of the floor area of the room or space served by the inbuilt amplification system, and the number of receivers must not be less than -
  - If the room or space accommodates up to 500 persons, 1 receiver for every 25 persons or part thereof, or 2 receivers, whichever is the greater; and

If the room or space accommodates more than 500 persons but not more than 1000 persons, 20 receivers plus 1 receiver for every 33 persons or part thereof in excess of 500 persons.

D4D13

Glazing on an Accessway:

On an accessway where there is no chair rail, handrail or transom provided to all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly line marked in accordance with the following:

- Must be clearly marked for the full width of the glazed element,
- Must be a solid and non-transparent contrasting line,
- The contrasting line must have a minimum of 30% luminance contrast when viewed against the floor surface or surfaces within 2m of the glazing of the opposite side.
- Must be not less than 75mm in width

	The lower edge of the contrasting line must be located between 900mm and 1000mm above the finished floor level.

3.5 Section E – Services and Equipment

Part E1	Fire Fighting Equipment
E1D1	**Fire Hydrants:** Fire hydrant coverage is required to be provided to the extension in accordance with AS2419.1–2021. Fire hydrant coverage is required to be achieved by either external hydrants or internal fire hydrants to the extension. Compliant fire hose reel coverage will be required to be provided to the courtyard areas (occupiable outdoor areas). *Internal Fire Hydrants* Internal fire hydrants are required to be located within the fire isolated stairways (existing) and within 4m of exit doorway leading to open space. If compliant fire hydrant coverage cannot be achieved by locating fire hydrants in accordance with the above, then the provision of additional on floor hydrants to serve the extension will be required to be subject of a Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. Verification from the Fire Services Consultant will be required as to the proposed location of the fire hydrant locations. Fire hydrant coverage plans will be required to be submitted by the Fire Services Consultant confirming that the existing / proposed fire hydrants provide compliant coverage to all areas of the extension.
E1D3	**Fire Hose Reels:** Fire hose reels are required to provide coverage throughout the extension within 4 m of exits or alternatively adjacent to an internal fire hydrant in accordance with AS 2441 – 2005. Compliant fire hose reel coverage will be required to be provided to the courtyard areas (occupiable outdoor areas). Fire hose reel coverage plans will be required to be submitted by the Fire Services Consultant confirming that the proposed fire hose reels provide compliant coverage to all areas of the extension. *Note: -* 1. *A fire hose reel need not be located adjacent to every exit or internal fire hydrant provided system coverage can be achieved.* 2. *Where coverage cannot be achieved by locating a hose reel in accordance with the above, additional fire hose reels may be located in paths of travel to an exit in order to achieve coverage.* 3. *Fire hose reels are not permitted to pass through fire and smoke doors separating compartments.* 4. *Fire hose reels are permitted to pass through fire doors serving shafts or doors serving equipment or electrical supply systems i.e., main switchboard, electrical conductors etc.*

Fire Hose Reels Located > 4m from Exit Doors

As noted above, internal fire hose reels are required to be located not more than 4m from an exit or adjacent to an internal fire hydrant.

The Architectural Drawings indicate an internal fire hose reel FHR 97.01.001 is located more than 4 m from the exit doorway from the Linkway with the fire hose reel being up to 6 m from the exit door.

The fire hose reel will be required to be relocated to within 4 m of the exit, be installed adjacent to an internal fire hydrant or it will need to be determined by the Fire Safety Engineer whether the location of the fire hose reel can be subject of a Fire Engineering Assessment in order to demonstrate compliance with the nominated Performance Requirements of the BCA.

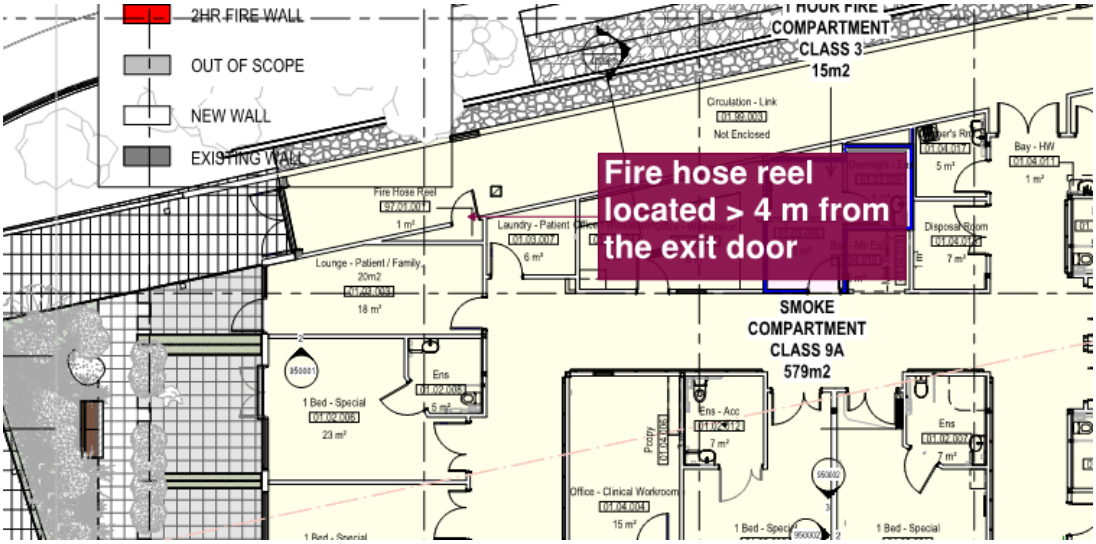


Figure No. 42: Internal fire hose reel currently located > 4m from an exit

All other internal fire hose reels are indicated as being located in complying locations.

Services within cupboards Housing FHRs

In accordance with AS 2441 – 2005, the cupboards housing fire hose reels are not permitted to contain non-fire equipment services.

Doors to Cupboards Housing FHR's

Doors to cupboards housing fire hose reels and fire hydrants are to be designed in such a manner that when they are open, they do not impede the path of travel leading to an exit. In this instance, doors to cupboards will be required to swing 180o open against the wall face or in some instances, two smaller doors may need to be provided to cupboards so as not to impede the width of exits. Special attention is required to cupboards located directly adjacent to fire safety doors throughout the building.

E1D4 – E1D13

Sprinklers:

The existing hospital building is noted as being provided with an Automatic Fire Suppression System.

An Automatic Fire Suppression System is required to be installed throughout the extension including the enclosed linkways in accordance with AS 2118.1 – 2017.

Verification from the Fire Services Consultant will be required as to whether the proposed unenclosed links are required to be provided sprinklers.

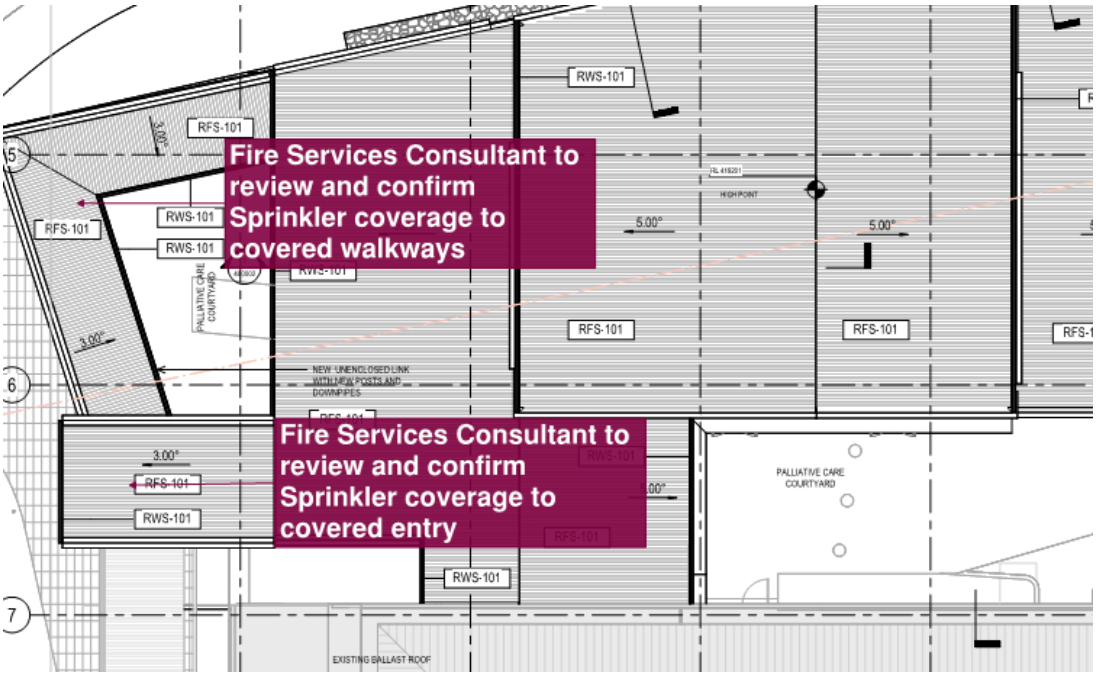


Figure No. 43: Confirmation required as to sprinkler coverage to covered walkways and covered entry

Location of Sprinklers

The sprinkler system will be required to be installed to all EDB cupboards, Fire Services cupboards, Services cupboards etc throughout the building in accordance with AS 2118.1 – 2017.

The sprinkler system is required to be installed to any void spaces/under croft areas where access to the space is provided.

Where full height curtains are proposed to be installed within treatment areas, ward areas etc, they will be required to be reviewed by the Fire Services Consultant to determine the impact on Sprinkler coverage. If sprinkler coverage is proposed to be impeded, the curtains will be required to contain an open mesh for at least 500 mm from the top of the curtain.

In accordance with AS 2118.1 – 2017, sprinklers are required to be installed in any roof void unless the following criteria achieved:

+ The roof void is to be constructed entirely of non-combustible materials and contains only.
+ Fire resistant cables to AS/NZS 3000.
  - Non-bundled electrical wiring and lighting installed in accordance with AS/NZS 3000;
  - Piping; and
  - Metal ducting with flexible connections and insulation complying with AS 4254.
+ The roof void cannot have readily permanent access or be capable of being used either intermittently or permanently as a storage area.

Sprinkler Coverage to Cupboards

Sprinklers are not required to be installed within built in service cupboards, cupboards and wardrobes, or shower and toilet cubicles in protected bathrooms for Light Hazard and Ordinary Hazard occupancies, provided: -

+ The floor area of the cupboard does not exceed 2.5 m^2;
+ The walls and ceilings are lined or backed with non-combustible materials;
+ The cupboard is not used for the storage of flammable liquids; and

  Sprinklers in the adjoining room are positioned so they shall cover the unprotected area (obstructions caused by lintels or bulkheads are not considered in this case).

E1D14

Fire Extinguishers:

Portable fire extinguishers are to be provided and designed in accordance with AS 2444-2001 throughout the refurbishment area.

In accordance with Clause E1.6, Type E Extinguishers are permitted to be installed nurse and staff stations.

Powder Type fire extinguishers are not permitted to be provided within any patient care areas.

Part E2 Smoke Hazard Management

E2D4/ E2D9/ E2D11/ E2D12/ E2D13

Smoke Hazard Management:

The following smoke hazard management systems are to be modified / extended to the proposed extension:

+ An Automatic Fire Detection and Alarm System complying with AS 1670.1 – 2018 and S20C4.
+ Automatic shut-down of mechanical air handling systems upon fire trip in accordance with Section 5 and 6 of AS/NZS 1668.1.

Automatic Fire Detection & Alarm System

An Automatic Fire Detection & Alarm System is required to be installed throughout the refurbishment area in accordance with AS 1670.1 - 2018. Photoelectric type smoke detectors are required to be installed in patient care areas and in paths of travel to exits from patient care areas.

Key elements of Specification 20 and AS 1670.1 - 2018 which require close attention are as follows:

+ Photoelectric type smoke detectors are required to be installed in all patient care areas in paths of travel to exits from patient care areas.
+ In rooms where there is the likelihood of spurious alarms i.e., Dirty Utilities, Cleaners Rooms etc smoke detectors may be replaced with thermal detectors.
+ Where a sole occupancy unit i.e., bedroom consists of one main room and water closet/shower/bathroom (which is not used for other purposes i.e., laundry), it may be protected by one smoke detector located in the main room provided that the total area of the whole unit is less than 50m² i.e., when less than 50m², the water closet/shower/bathroom is not required to be protected.
+ Where an area is divided into sections by walls, partitions, or storage racks reaching within 300 mm of the ceiling (or the soffits of the joists where there is no ceiling) each section is to be treated as a room and is required to be protected.
+ Where full height curtains are proposed to be installed within treatment areas, ward areas etc, they must be of open mesh material for at least 300mm to permit smoke to pass through, otherwise the curtains will be considered a wall and smoke detectors will have to be installed either side of the curtains.
+ A clear space of at least 300 mm radius, to a depth of 600 mm is required to be maintained from the smoke detector.
+ Detectors are required to be located a minimum distance of 900 mm from supply air fans or ceiling fans.
+ Detectors are required in all sanitary facilities with a floor area greater than 3.5 m^2.
+ Any cupboard with a floor area > 3 m^3 is required to be protected.
+ All electrical cupboards, comms cupboards etc. irrespective of the size are required to be protected.

Manual Call Points

Manual call points are required to be installed in evacuation routes so that no point on a floor is more than 30 m from a manual call point. All Manual Call Points that activate the buildings Fire Alarm System are required to be red.

The Fire Services Consultant will be required to verify the location of the manual call point(s) serving the proposed Palliative Care extension.

Manual Call Points in Fire Hose Reel / Fire Hydrant Cupboards

In accordance with AS 1670.1 – 2018, manual call points are required to be mounted between 750 mm and 1200 mm above floor level and a clear space of 300 mm on both sides and 600 mm directly in front are required to be provided in an arc in front of the manual call points.

	Where manual call points are installed within fire hose reel cupboards to avoid them being visible and being subject to unintended use, the clearance requirements of AS 1670.1 – 2018 around the manual call point will be unable to be achieved. Verification is required as to whether any manual call points are proposed to be installed within fire hose reel cupboards. If they are proposed to be installed in cupboards, then the clear space around the manual call points will be required is proposed to be assessed as part of the Fire Engineering Assessment to be undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. *Mechanical Air Handling Systems* Any air-handling system which does not form part of the Zone Smoke Control System (other than non-ducted systems with a capacity not more than 1000 litres / second, systems serving critical treatment areas and miscellaneous exhaust air system installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) must shut down automatically on the activation of the Automatic Fire Detection & Alarm System and Automatic Fire Suppression System.
Part E4	**Visibility in Emergency, Exit Signs and Warning Systems**
E4D2 & E4D4	**Emergency Lighting:** Emergency Lighting is required throughout the refurbishment area in accordance with AS/NZS 2293.1 - 2018 in the following locations: + In every passageway, corridor, hallway or the like that is part of the path of travel to an exit; + In every passageway, corridor, hallway or the like serving a treatment area or a ward area; + In every room having a floor area of more than 120 m^2 in a patient care area, corridors, passageways, hallways or the like leading to required exits; and All covered balconies, walkways etc. that a person is required to egress under.
E4D5, E4D6 & E4D8	**Exits Signs:** Exit signs are to be installed throughout the building in accordance with AS/NZS 2293.1 - 2018 in the following locations: + Horizontal exit doors; + Fire Safety Doors (i.e., fire/smoke doors) separating compartments; + Doors leading directly to open space; + Doors leading from balcony areas, courtyards etc. back into the building; and + Above doorways in a path of travel where the location of the exit is not clear. Directional exit signs are to be installed throughout the building where the exits are not readily apparent to occupants in accordance with AS/NZS 2293.1 -2018.
E4D9	**Emergency Warning & Intercom Systems (EWIS):** An Emergency Warning and Intercom System (EWIS) is required to be installed throughout the extension as required in accordance with AS 1670.4 – 2018 consistent with the base building design. *Rationalisation of EWIS Speakers* Verification is required as to whether EWIS speakers are proposed to be rationalized from patient bedrooms where the activation of the speaker within the room may cause trauma to the patient. If speakers are proposed to be rationalized, then the rationalization of EWIS system from within patient care areas will be required to be assessed as part of the Fire Engineering Assessment undertaken by the appointed Fire Safety Engineer to demonstrate compliance with the nominated Performance Requirements of the BCA. *Location of Warden Intercom Points (WIP)* Warden Intercom Points (WIP) are required to be in the following areas: + On each floor as determined by the emergency control organisation defined in AS 3745;

	+ At the designated building entry point (in accordance with AS 1670.1), if remote from the Emergency Intercom Control and Indicating Equipment (EICIE); + In each emergency zone as determined by the emergency control organisation defined in AS 3745; + If required by FRNSW, in or adjacent to the pump rooms, sprinkler valve rooms and hydrant relay booster pumps; and + Adjacent to the Fire Detection Control Indicating Equipment (FDCIE) (if remote from the EICIE). The Fire Services Consultant will be required to identify the proposed location of the WIPs.

3.6 Section F – Health and Amenity

Part F1	Surface Water Management, Rising Damp & External Waterproofing
F1D3	**Stormwater Drainage:** All new Stormwater Drainage serving the development is required to be designed and construction in accordance with AS/NZS 3500.3 – 2021.
F1D4	**Exposed Joints:** Exposed joints in the drainage surface on a roof, balcony, podium or similar horizontal surface part of a building must – + Be protected in accordance with Section 2.9 of AS 4654.2; and + Not be located beneath or run through a planter box, water feature or similar part of the building.
F1D5	**External Above Ground Membranes:** A roof, balcony, podium or similar horizontal surface part of a building must be provided with a waterproofing membrane – + Consisting of materials complying with AS 4654.1; and + Designed and installed in accordance with AS 4654.2
Part F2	**Wet Areas and Overflow Protection**
F2D2	**Wet Area Construction:** Building elements in the bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment is required: + Be water resistant or waterproof in accordance with Specification 26 (Specification 26 of NCC 2022); and + Be constructed in accordance with AS 3740
F2D3	**Rooms Containing Urinals:** Where a slab or stall type urinal is installed – + The floor surface of the room containing the urinal must be an impervious material; and ▲ Where no step is installed, must – - Be graded to the urinal for a distance of 1.5 m from the urinal channel; and - Have the remainder of the floor graded to a floor waste; and ▲ Where a step is installed – - The step must have an impervious surface and be graded to the urinal channel; and - The floor behind the step must be graded toa floor waste; and

	+ The junction between the floor surface and the urinal channel must be impervious. Where a wall hung urinal is installed – + The wall must be surfaced with impervious material extending from the floor to the top of the urinal and not less than 225 mm on each side of the urinal; and + The floor must be surfaced with an impervious material and be graded to a floor waste. In a room with timber or steel-framed walls and containing a urinal – + The wall must be surfaced with an impervious material extending from the floor to not less than 100 mm above the floor surface; and The junction of the floor surface and the wall surface must be impervious
F2D4	Floor **Wastes:** Where a floor waste is installed - + The minimum continuous fall of a floor plane to the waste must be 1:80; and + The maximum continuous fall of a floor plane to the waste must be 1:50 Where unisex accessible sanitary facilities contain a shower, a minimum continuous fall of 1:80 must be maintained throughout the entire room.

Part F3 Roof and Wall Cladding

F3D2	**Roof Coverings:** A roof covering is required to comply with one of the following in accordance with NCC 2022 as part of a DTS Solution: + Roof tiles complying with AS 2049 and fixed in accordance with AS 2050; or + Metal sheet roofing complying with AS 1562.1; or + Plastic sheet roofing designed and installed in accordance with AS 1562.3; or + Terracotta, fibre-cement and timber slates and shingles designed and installed in accordance with AS 4597. + An external waterproofing membrane consisting of materials complying with AS 4654.1 and designed and installed in accordance with AS 4654.2 If the proposed roof covering is not designed in accordance with one of the above, then a Performance Solution will be required to be prepared to demonstrate compliance with Performance Requirement F3P1 with regards to adequate weatherproofing.
F3D3	**Sarking:** Sarking-type material used for weatherproofing of roofs and walls is required to comply with AS/NZS 4200.1 and AS 4200.2.
F3D4	**Glazed Assemblies:** The following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration: + Windows. + Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame. + Adjustable louvres. + Shopfronts. + Window walls with one piece framing. The following glazed assemblies are not required to comply with the above: + All glazed assemblies not in an external wall. + Revolving doors. + Fixed louvres. + Skylights, roof lights and windows in other than the vertical plane.

- Sliding and swinging glazed doors without a frame.
- Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047.
- Second-hand windows, re-used windows and recycled windows.
- Heritage windows.

F3D5

Wall Cladding:

Wall cladding is required to comply with one of the following in accordance with NCC 2022 as part of a DTS Solution:

- Masonry, including masonry veneer, unreinforced and reinforced masonry in accordance with AS 3700
- Autoclaved aerated concrete in accordance with AS 5146.3
- Metal cladding in accordance with AS 1562.1

If the proposed wall cladding is not designed in accordance with one of the above, then a Performance Solution will be required to be prepared to demonstrate compliance with Performance Requirement F3P1 with regards to adequate weatherproofing.

Part F4 Sanitary and Other Facilities

Part F4

Sanitary Facilities:

Sanitary facilities must be provided to comply with the requirements of F4D2 and F4D4 as applicable for the subject part for both staff and patients.

The following facilities are also required to be provided:

- one shower for each eight (8) patients or part thereof; and
- one island-type plunge bath in each storey containing a ward area.

Island-Type Plunge Bath in Storeys Containing Ward Areas

The DTS Provisions of the BCA require that within ward areas of a hospital, one (1) island type plunge bath is required to be provided.

If an island-type plunge bath is not proposed to be provided with ward areas due to the clinical requirements of the LHD, then omission of the island type plunge bath will be required to be assessed as part of a Performance Solution to be prepared by the Architect or independent BCA Consultant.

Any proposed Performance Solution will require written consent from the LHD.

Sanitary facilities for staff and patients are required to be provided in accordance with the following tables:

+ Required Sanitary Facilities for Staff

Occupancy Class as per F4D4

	Closet Pans		Urinals		Washbasins	
	Design Occupancy	Number	Design Occupancy	Number	Design Occupancy	Number
Male Staff	1 – 20 > 20	1 Add 1 per 20	1 11 – 25 26 – 50 > 50	0 1 2 Add 1 per 50	1 – 30 > 30	1 Add 1 per 30
Female Staff	1 – 15 > 15	1 Add 1 per 15	-	-	1 – 30 > 30	1 Add 1 per 30

+ Required Sanitary Facilities for Patients

Occupancy Class as per F4D4

	Closet Pans		Urinals		Washbasins	
	Design Occupancy	Number	Design Occupancy	Number	Design Occupancy	Number
Male Patients	1 – 16 > 16	2 Add 1 per 8			1 –8 > 8	1 Add 1 per 30
Female Patients	1 – 16 > 16	2 Add 1 per 16	-	-	1 – 8 >8	1 Add 1 per 8

Wc's for Staff

Having regard to the proposed design, the following requires verification:

+ Total staff numbers within the proposed palliative care unit at any one time.
+ Location of existing staff sanitary facilities within the existing Acute Services Building that staff within proposed Palliative Care extension could access.

Wc's for Patients

The Design Development Documentation indicates that an adequate ratio of water closets has been provided for patients throughout the patient care areas of the building.

F4D5

Accessible Sanitary Facilities:

The following sanitary facilities for a person with a disability will be required to be provided:

+ A unisex accessible sanitary facility
+ A unisex ambulant sanitary compartment

Having regard to the proposed design, we provide the following comments:

+ Verification is required as to whether the accessible sanitary facility proposed within the existing Palliative Care Unit will be a communal unisex accessible sanitary facility that could be used by the public and staff.
+ The unisex staff sanitary facility proposed within the new Palliative Care Unit will be required to be a unisex ambulant sanitary compartment. It is noted that the Design Development Drawings indicate the provision of a unisex ambulant sanitary compartment for staff.

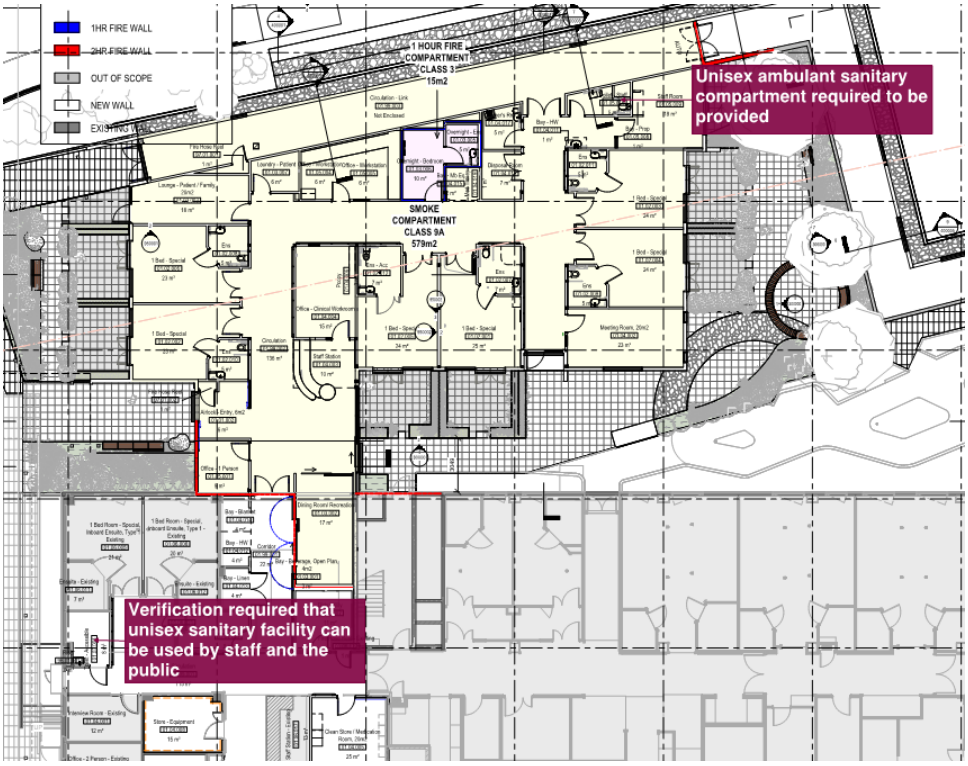


Figure No. 44: Accessible sanitary facilities for a person with a disability

Provision of Unisex Ambulant Sanitary Compartment

Ambulant Sanitary Compartments are required to be provided separately for males and females and unlike Unisex Accessible Sanitary Facilities receive no concession for the provision of unisex facilities.

The provision of unisex ambulant sanitary compartments in lieu of separate facilities for males and females throughout the building will be required to be assessed as part of a Performance Solution to be prepared by an independent Access Consultant.

Accessible Sanitary Facilities

The unisex accessible sanitary facility to be provided is required to be designed spatially in accordance with the following figures:

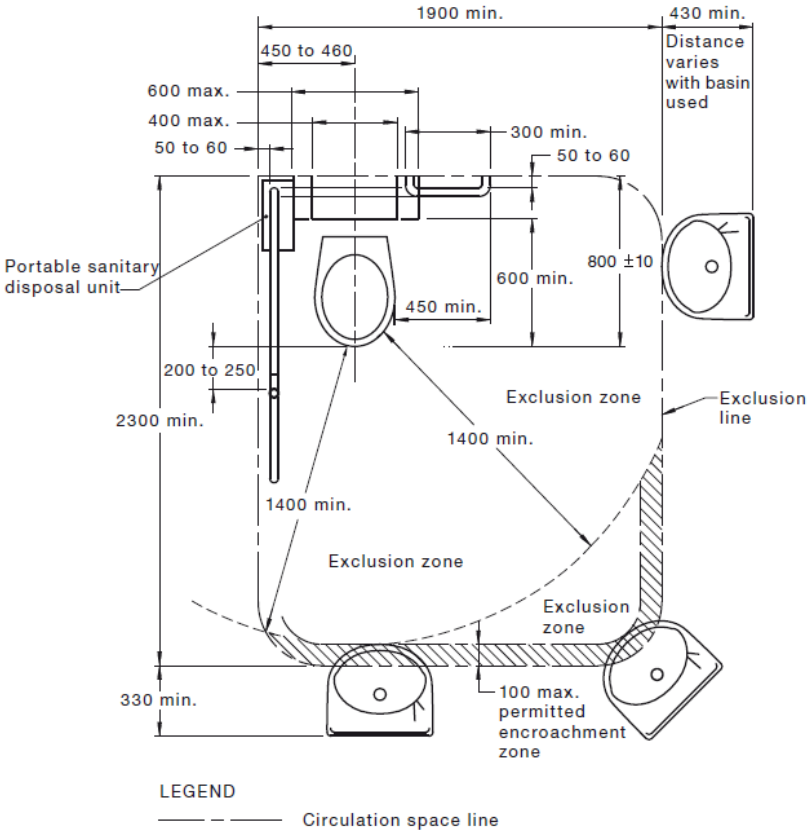


Figure No. 45: Circulation space required within the accessible sanitary facility.

Clearances around the water closet are to be in accordance with the figure below:

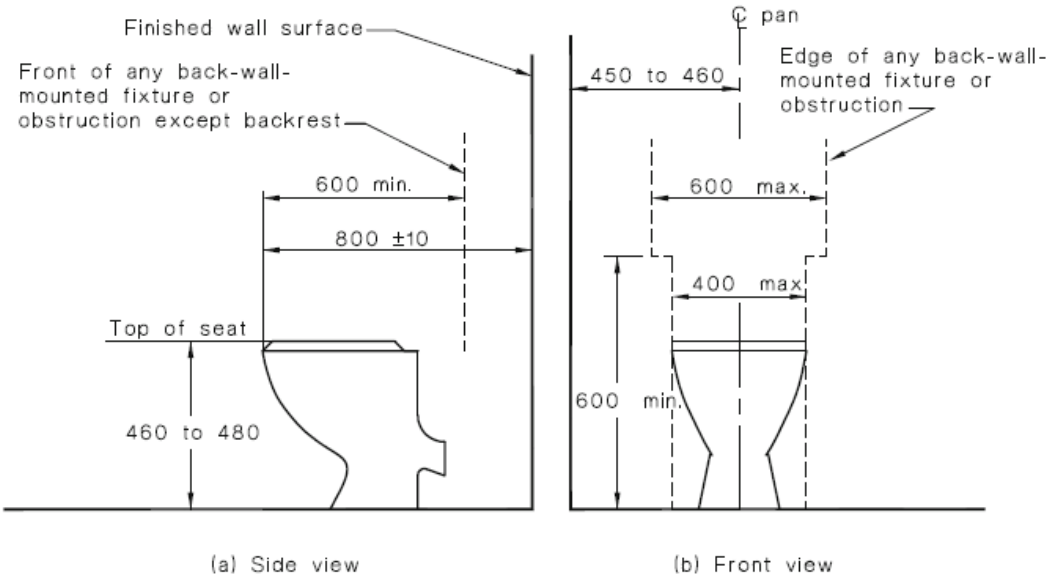


Figure No. 46: Required clearances around the water closet.

Basins are permitted to encroach within the circulation space of doorways as detailed within the following Figure:

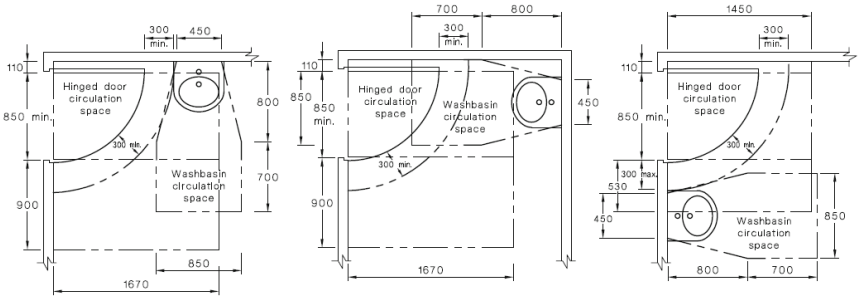


Figure No. 47: Allowable encroachment of a washbasin into the hinged door circulation space

The following specific items are required to be installed within the unisex accessible sanitary facility:

- Rocker action and toggle switches are required to be installed which have a minimum dimension of 30 mm x 30 mm. Push-pad switches are to have a minimum dimension of 25mm in diameter.
- General purpose outlets are to be located between 600 mm to 1100 mm above FFL and not less than 500 mm from any internal corner.
- The outlet for the toilet paper dispenser is to be in accordance with the following figure. The toilet paper cannot encroach upon the clearance space required around the grabrail.

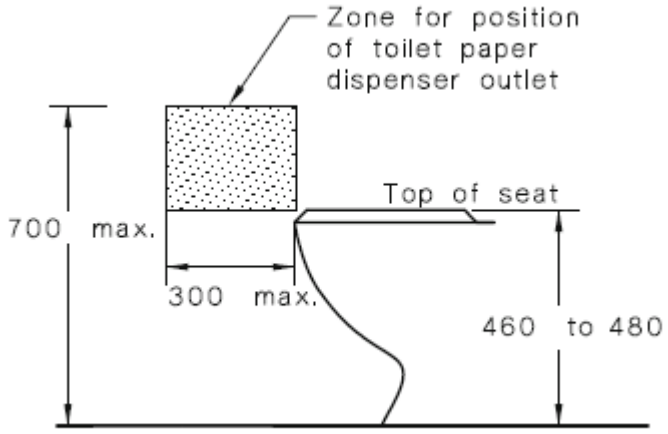


Figure No. 48: Required zone for toilet paper dispenser.

Shelf space is required to be provided adjacent to the washbasin in accordance with the one of the following:

- As a vanity top at a height of 800 mm to 830 mm and a minimum width of 120 mm and a depth of 300 mm to 400 mm without encroaching into any circulation space.
- As a separate fixture –
  - Within any circulation space at a height of 900 mm to 1000mm with a width of 120 mm to 150 mm and length of 300 mm to 400 mmm; and
  - External to all circulation spaces at a height of 790 mm to 1000 mm with a minimum width of 120 mm and a minimum length of 400 mm.
  - Where provided, Soap dispensers, towel dispensers, hand dryers and similar fittings are required to be operable by one hand and are to be installed with the height of their operative component or outlet not less than 900 mm and not more than 1100 mm above FFL and no closer than 500 mm from an internal corner.

A coat hook is to be provided at a height between 1200 mm to 1350 mm above FFL and not less than 500 mm from an internal corner.

F4D8

Construction of Sanitary Compartments:

The door to a fully enclosed sanitary compartment is required to: -

- Open outwards; or
- Slide; or
- Be readily removable from the outside of the sanitary compartment i.e., removable hinges.

Unless there is a clear space of at least 1200 mm measured in accordance with the below figure, between the closet pan within the sanitary compartment and the doorway.

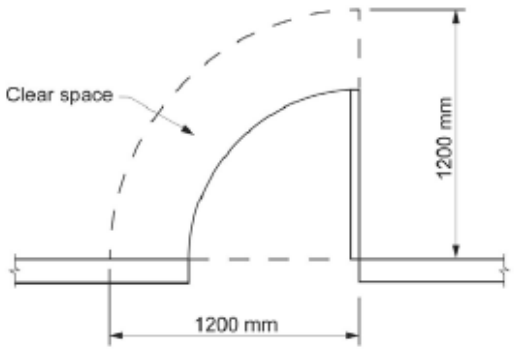


Figure No. 49: Minimum distance required between doorway and pan in a fully enclosed sanitary compartment.

F4D10	**Microbial (legionella) Control:** How water, warm water and cooling water systems within the building are to be designed in accordance with AS/NZS 3666.1.
F4D11	**Waste Management:** In class 9a areas at least one slop hopper or other device must be provided on any storey containing ward areas or bedrooms and must have a flushing apparatus, tap and grating. The Design Development Architectural Drawings indicate the provision of a Dirty Utility.

Part F5 Room Heights

Part F5	**Ceiling Heights:** The minimum ceiling heights in a Class 9a building are as follows – + A patient care area – 2400 mm; + A treatment room, clinic, waiting room, passageway, corridor, or the like – 2400 mm. + Bathrooms, sanitary compartments, tea preparations rooms, pantries, storerooms or the like – 2100 mmm. The Design Development Architectural Reflected Ceiling Plans indicate that the minimum ceiling heights have been designed in accordance with Clause F5D2.

Part F6 Light and Ventilation

F6D2	**Provision of Natural Lighting:** Natural lighting must be provided to all rooms used for sleeping purposes within ward areas in accordance with Clause F6D3 including existing bedrooms that are impacted by the Palliative Care extension.
F6D3	**Methods and Extent of Natural Light:** Natural lighting must be provided to all rooms used for sleeping purposes within ward areas in accordance with Clause F6D2. Required natural light must be provided by: + windows, excluding roof lights, that— ▲ have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and ▲ are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or + roof lights, that— ▲ have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and ▲ are open to the sky; or + a proportional combination of windows and roof lights required by (a) and (b). In a Class 9a building, a required window that faces a boundary of an adjoining allotment or a wal of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or walls that is greater of – + In a patient care rea or other room used for sleeping purposes in a Class 9a building - 3m; and + 50% of the square root of the exterior height of the wall in which the window is located, measures in metres from its sill

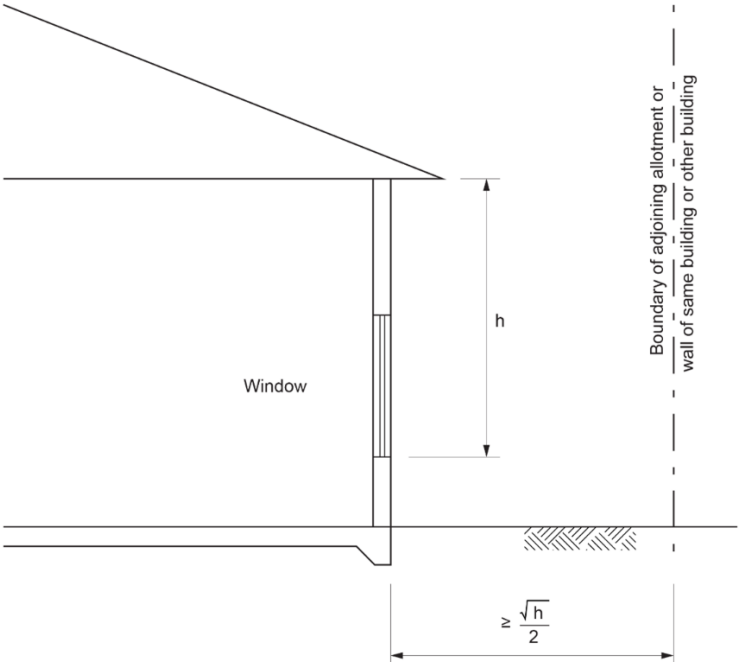


Figure No. 50: Elevation showing method of measuring distances of window form a boundary or the external wall of another building on the allotment

The Design Development Architectural Drawings indicate that the bedrooms within the Palliative Care extension provided for sleeping purposes can comply with the above requirements. Verification will be provided from the Architect that the window providing natural light comply with the above requirements.

Provision of Natural Light to existing Bedrooms within the Acute Services Building:

There are two existing 1 Bed Rooms (01.06.005 & 01.06.006) within the Acute Services Building that have a ballast roof that extends beyond the external wall as detailed in the photograph and the figure below.

Photograph No. 4: Photograph detailing the existing ballast roof extending over the 1 Bed Rooms within the existing Acute Services Building.

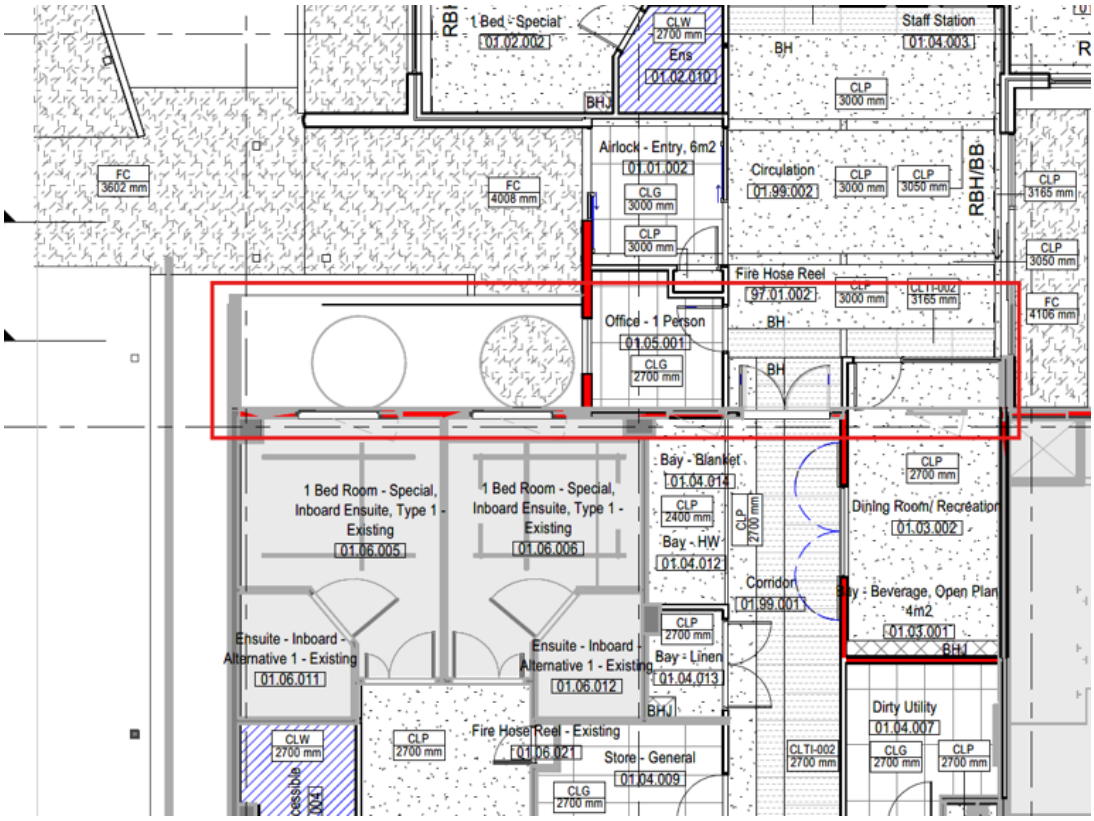


Figure No. 51: Floor Plan detailing the extent of the ballast roof extending over the 1 Bed Rooms within the existing Acute Services Building.

As a result of the proposed Palliative Care extension, there is a new roof structure associated with the entry to the Unit that is constructed in close proximity to the existing ballast roof as detailed in the figure below.

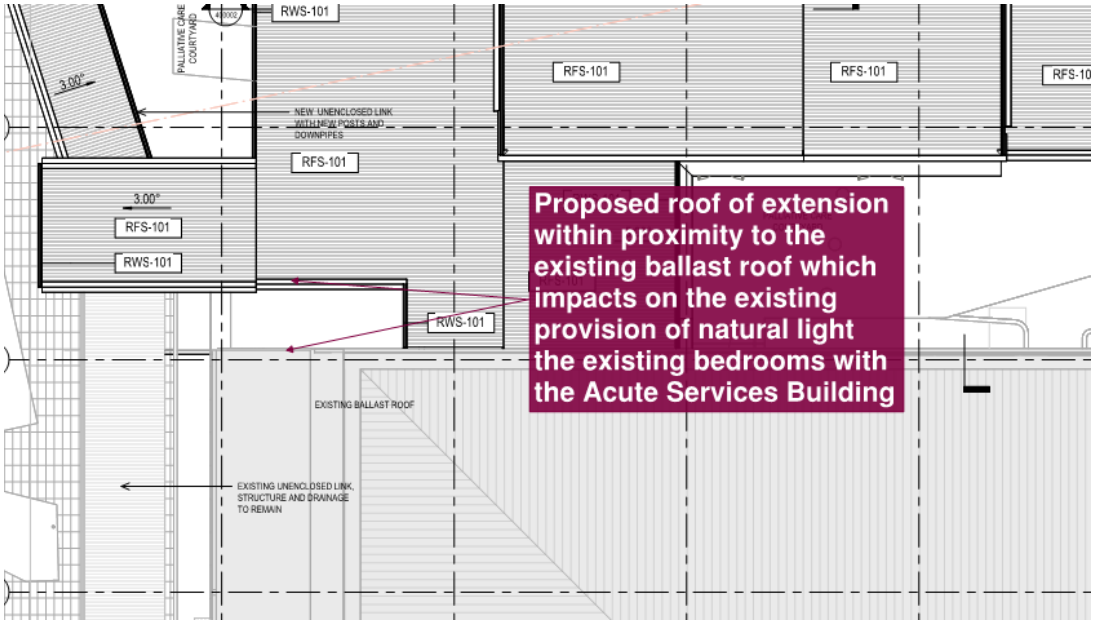


Figure No. 52: Proposed roof over the new entry to the Palliative Care extension within proximity to the existing ballast roof of the existing Acute Services Building

The new roof over the entry way and the existing ballast roof extending beyond the extenral wall together will have an impact on the current provision of natural light to the subject bedrooms.

In this instance, the following will be required to be undertaken:

+ Architectural Assessment as to whether natural light can be provided in accordance with the DTS Provisions of the BCA to the existing windows as a result of the proposed works in association with the existing ballast roof.

If compliance with the DTS Provisions cannot be achieved, then:

+ Cut back the existing ballast roof either in entirety or locally above the subject windows providing natural light to the 1 Bed Rooms; or
+ Investigate as to whether a Performance Assessment could be undertaken in relation to the provision of natural light to existing bedrooms.

As part of any proposed Performance Solution, it would need to be demonstrated that compliance with Performance Requirement F6P1 can be achieved. The Performance Requirement states the following:

Performance Requirements

F6P1 Natural lighting

Sufficient openings must be provided and distributed in a building, appropriate to the function or use of that part of the building so that natural light, when available, provides an *average daylight factor* of not less than 2%.

The Verification Method for determining the average daylight factor is as follows:

F6V3 Verification of suitable provision of natural light

Compliance with F6P1 is verified for the provision of natural light when the *average daylight factor* for each *window* is determined in accordance with the formula:

$$\text{Average Daylight Factor} = \frac{W}{A}\frac{T\theta}{(1-R^2)}, \text{ where—}$$

(a) W = the net area of the light transmitting *window* (m^2); and

(b) A = the total area of the *internal wall*, floor and ceiling surfaces (m^2); and

(c) T = the diffuse light transmittance of the *window*; and

(d) θ = visible sky angle in degrees, measured in a vertical plane normal to and from the centre of the *window*; and

(e) R = the area-weighted average reflectance of area A.

The following is further commentary provided on the verification method by the Guide section of the BCA.

F6V3 Verification of suitable provision of natural light

The average daylight factor (ADF) is used as the measure of the general illumination from outdoor natural light within a room. Where two or more windows in a room face different obstructions, or diffe transmittance, the ADF should be found separately for each window by adding the ADF for each window together to get the total ADF for the room.

W is the net area of the glazing panel (m2). This excludes the glazing frame and only includes the transparent or translucent elements.

A is the total area of the internal surfaces (m2). This includes the total area ofthe ceiling, floor andwalls, including windows.

T is the diffuse light transmittance of the glazing. The measurement of light transmittance is specified in the Technical Protocols and Procedures Manual for Energy Rating of Fenestration Products of t Australian Fenestration Rating Council. Typical examples of light transmittance of glazing materials are given in the table below.

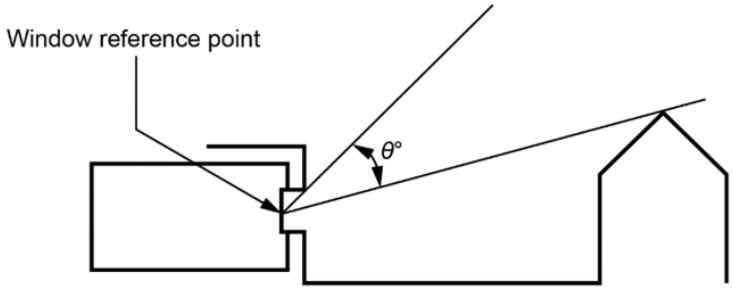
Table F6V3a: Typical light transmittance of glazing materials

Material	Diffuse light transmittance
Clear 6mm glass	0.87
Tinted 6mm glass (bronze)	0.50
Tinted 6mm glass (grey)	0.44
Tinted 6mm glass (green)	0.75
Strongly reflecting 6mm glass	0.78
Double glazed unit (x2 6 mm clear glass)	0.76

θ is visible sky angle in degrees, measured in a vertical plane normal to the glass from the centre of the window (i.e. the window reference point) as shown in the figure below. The determination of this is to take into account objects such as shading projections, eaves, window reveals, fences, adjoining buildings, structures and the like. Figure F6V3 shows an example of a scenario when θ is measure

Figure F6V3: Angle of visible sky

Image



R is the area-weighted average reflectance area of the internal surfaces. Typical examples of reflectance of light values of materials are given in Table F6V3b.

Table F6V3b: Typical reflectance of light values of materials

Material	Reflectance
Paving	0.20
Earth	0.20
Granite	0.20
Brickwork (red)	0.30
Concrete	0.40
Carpet (cream)	0.40
Carpet (deep colours)	0.10
Wood (unfinished pine)	0.20
Paint (white)	0.85
Paint (cream)	0.81
Paint (light grey)	0.68
Paint (mid grey)	0.45

Verification will be required to be provided as to which design option will be adopted along with documentary evidence as to compliance with the provision of natural light the subject bedrooms.

F6D5 **Artificial Lighting:**

Artificial lighting is required to be provided in accordance with AS 1680.0 - 2009.

Artificial lighting is required to be provided to all stairways, passageways and ramps.

If natural light of a standard equivalent to that required by Clause F6D3 is not available, and the periods of occupant or use of the room or space will create undue hazard to occupants seeking egress in an emergency then artificial lighting is required to be provided to all rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress.

F6D6 **Ventilation of Rooms:**

The building is required to be ventilated by either natural or mechanical ventilation in accordance with the DTS Provisions of the BCA and AS 1668.2.

F6D7 **Natural Ventilation:**

Natural ventilation provided in accordance with F6D6 above is required to consist of openings, windows, doors or other devices which can be opened—

- With a ventilating area not less than 5% of the floor area of the room required to be ventilated; and
- open to -
  - a suitably sized court, or space open to the sky; or
  - an open verandah, carport, or the like.

Part F7 Sound Transmission & Insulation

F7D4	**Determination of Impact Sound Insulation Ratings:** The walls bounding the Class 3 overnight rooms are required to be constructed of discontinuous construction which requires the wall having a minimum 20 mm cavity between two separate leaves, and + for masonry, where wall ties are required to connect leave, the ties are of the resilient type; and + for other than masonry, there is no mechanical linkage between leaves except at the periphery. Discontinuous construction applies to walls that separate a bathroom in one overnight room from the adjoining overnight room.
F7D6	**Sound Insultation of Rating of Walls:** The walls bounding the overnight rooms are required to comply with the following: + Have an $R^w + C_{tr}$ (airborne) not less than 50 where it is a wall separating overnight rooms from each other; and + Have an R_w (airborne) not less than 50, if it separates an overnight room from a from a plant room, lift shaft, stairway, public lobby or the like, or parts of a different classification. The doors in the bounding construction of the overnight rooms are required to have an R_w not less than 30.

3.7 Section G – Ancillary Provisions

Part G6	Occupiable Outdoor Areas
G6D1	**Application of Part:** The Deemed-to-Satisfy Provision of Part G6 apply to an occupiable outdoor area. An occupiable outdoor area is defined as: A space on a roof, balcony or similar part of a building – *(a) That is open to the sky; and* *(b) Which access is provided, other than access only for maintenance; and* *(c) That is not open space or directly connected with open space* From a review of the Design Development Architectural Design Drawings, the external courtyard areas in the figure below are considered occupiable outdoor areas.

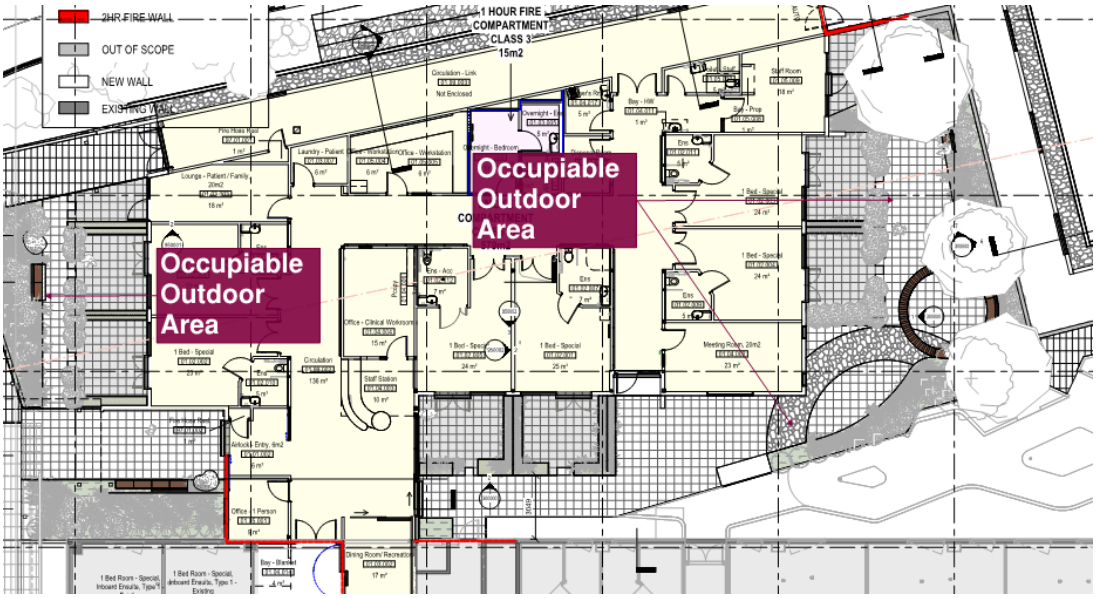


Figure No. 53: Occupiable outdoor areas associated with proposed Palliative Care extension

G6D2

Fire Hazard Properties:

Any lining, material or assembly in an occupiable outdoor area is required to comply with the requirements of Specification 7 as if it were an internal lining.

Note: The following fire hazard properties of a lining, material or assembly in an occupiable outdoor area are not required to comply with Specification 7:

- *Average specific extinction area*
- *Smoke Developed Index*
- *Smoke Development rate*
- *Smoke Growth Rate Index*

G6D6

Fire Fighting Equipment:

Fire hydrant and fire hose reel coverage will be required to be provided to all occupiable outdoor areas. Refer to comments provided under Clauses E1D2 and E1D3.

G6D8

Visibility in an Emergency, Exit Signs and Warning Signs

The outdoor occupiable areas are required to be provided with Exit Signage above the doors leading from the external areas back into the building.

As noted under Clause E4D9 above, the EWIS speakers are required to be extended to all outdoor areas.

3.8 Section F – Energy Efficiency

Part J

Energy Efficiency:

The new building works subject to compliance with the Energy Efficiency Provisions of BCA 2022 Section J relating to (as applicable):

- J1: Energy Efficiency Performance Requirements
- J2: Energy Efficiency
- J4: Building Fabric
- J5: Building Sealing
- J6: Air-Conditioning and Ventilation
- J7: Artificial Lighting and Power

+ J8: Heated Water Supply and Swimming Pool and Spa Pool Plant
+ J9: Energy Monitoring and On-Site Distributed Energy Resources

4.0 Conclusion

This report contains an assessment of the referenced Design Development Architectural Documentation for the proposed delivery of six (6) new Palliative Care beds for the Hunter New England Local Health District (HNELHD) within Level 00 of the existing ASB.

Further reviews will be undertaken by BM+G as the design progresses to Design Development to ensure that the development can comply with the requirements of the Building Code of Australia.

Appendices

+ Appendix 1 – References Tables

Table 1: Non-Combustibility Requirements

+ Building Element	+ Type A Construction
External wall	Non-combustible
Common wall	Non-combustible
Floor and floor framing of lift pit	Non-combustible
All loadbearing internal walls (including those of shafts)	Concrete, masonry or fire-protected timber
Loadbearing fire walls	Concrete, masonry or fire-protected timber
Non-loadbearing internal walls required to be fire-resistant	Non-combustible
Non-loadbearing lift, ventilating, pipe, garbage and the like shafts which do not discharge hot products of combustion.	Non-combustible (subject to conditions outlined in C2D10)

Table 5: Fire-Resisting Construction – Type A Construction

TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS				
+ Building Element	+ Class of Building - FRL: (in minutes) Structural adequacy/integrity/insulation			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL – (Including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is:				
For loadbearing parts:				
Less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90
For non-loadbearing parts:				
less than 1.5m	–/90/90	–/120/120	–/180/180	–/240/240
1.5 to less than 3m	–/60/60	–/90/90	–/180/120	–/240/180
3m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN - Not incorporated in an external wall				
For loadbearing columns	90/–/–	120/–/–	180/–/–	240/–/–
For non-loadbearing columns	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS	90/90/90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS				
Fire-resisting lift and stair shafts				

Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120s
Non-loadbearing	–/90/90	–/120/120	–/120/120	–/120/120
Bounding public corridors, public lobbies and the like:				
Loadbearing	90/90/90	120/–/–	180/–/–	240/–/–
Non-loadbearing	–/60/60	–/–/–	–/–/–	–/–/–
Between or bounding sole-occupancy units:				
Loadbearing	90/90/90	120/–/–	180/–/–	240/–/–
Non-loadbearing	–/60/60	–/–/–	–/–/–	–/–/–
Ventilating, pipe, garbage, and the like shafts not used for the discharge of hot products of combustion:				
Loadbearing	90/90/90	120/90/90	180/120/120	240/120/120
Non-loadbearing	–/90/90	–/90/90	–/120/120	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES, AND:				
COLUMNS	90/–/–	120/–/–	180/–/–	240/–/–
FLOORS	90/90/90	120/120/120	180/180/180	240/240/240
ROOFS	90/60/30	120/60/30	180/60/30	240/90/60

Notes:

1. Any lightweight construction in a fire wall or an internal wall required to have an FRL is to comply with Specification 11.
2. A loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be constructed from; concrete or masonry.
3. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL, that supporting part must typically achieve the same FRL. Where that part is also required to be non-combustible, the supporting part must also be non-combustible.
4. The method of attaching or installing a finish, lining, ancillary element, or service installation to a building must not reduce the fire-resistance of that element to below that required.
5. Fire rated shafts are required to be enclosed at the top and bottom by construction having an FRL of not less than what the shaft requires (in both directions)
6. The concession granted under S5C15 results in the roof of the building not being required to be fire rated (the building is provided throughout with sprinklers). Notwithstanding, the Atrium provisions override this general concession in BCA Specification 5.
7. Lift shafts are required to be enclosed at the top of the shaft with fire rated construction having an FRL of 120/120/120.
8. Fire isolated exits are to be provided with a fire rated "lid" that achieves an FRL of 120/120/120.
9. Where roof lights are proposed they are required to be located not less than 3 metres from a roof light in an adjoining fire separated part; and must not be more than 20% of the area of the roof.
10. Any loadbearing internal walls or loadbearing fire walls are to be masonry or concrete.
11. External walls must be non-combustible construction. Non-loadbearing parts of an external wall that are more than 3m from a fire source feature need not be fire rated.

12. Internal columns in this building (being less than 25m in effective height) that are in the storey immediately below the roof, can be constructed as follows:

    a. Building with a rise in storeys exceeding 3 – FRL 60/60/60

    b. *Building with a rise in storeys not exceeding 3 – no FRL*