GROUPDLA

Building Code of Australia 2022 Report – Vol1

Report for BCA Compliance – Rev E

PROJECT NAME: Tumbi Umbi Retirement Living Project – 14 Mingara Drive, Tumbi Umbi, 2261.
PROJECT NUMBER: **GDL230520**
DATE: **27/07/2024**

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REVISION HISTORY

Revision	Date	Details	Authorised	
			Name/Position	Signature
A	02/02/2024	Draft – SSDA Submission	Prepared: Alex Bate Building Regulations Consultant	
			Reviewed: Shane Berry Technical Director	
B	09/02/2024	Final – SSDA Submission	Prepared: Alex Bate Building Regulations Consultant	
			Reviewed: Shane Berry Technical Director	
C	19/04/2024	Final – SSD Submission (Updated based on correspondence received)	Prepared: Alex Bate Building Regulations Consultant	
			Reviewed: Shane Berry Technical Director	
D	12/07/2024	Final – Revised SSD Submission	Prepared: Alex Bate Senior Building Regulations Consultant	
			Reviewed: Shane Berry Technical Director	
E	27/07/2024	Final – Revised SSD Submission – Updated with close out comments	Prepared: Alex Bate Senior Building Regulations Consultant	
			Reviewed: Shane Berry Technical Director	

Table 1 - Revision History

1.0 EXECUTIVE SUMMARY

The report is for the assessment of the subject development known as Tumbi Umbi Retirement Living Project to assess compliance with the National Construction Code, Volume 1, Class 2-9 Buildings, Building Code of Australia 2022 ("BCA").

The information submitted at this stage of the design is not considered to be detailed to the extent where the development of a comprehensive BCA report is achievable and therefore this report is preliminary only. Refer Table 3 below Request for Further Information.

The following items have been noted as items of interest at this stage of the review. The items have been considered non-compliant and require further review against the detailed design, or may be able to be justified as a Performance Solution:

However, it is important to note that the items identified will NOT have an impact on the DA planning submission approval and therefore these noted items can be resolved at the Detailed Design Stage, prior to the issuance of the Construction Certificate.

	DTS non-compliant items requiring further consideration by the design team.
	DTS non-compliant items that have been resolved in principle, however, require final close out at a later stage, i.e., finalisation of the Fire Engineered Report, DDA Access Performance Solution Report, etc.
	Previous item CLOSED OUT

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
Section C – Fire Resistance					
C1	**Fire Resistance Levels (FRL's) - Relaxations** Certain FRL's are required to be reduced from the DTS provisions in the following locations: (a) **Building 2:** Class 6 portions of Ground Floor to be reduced to 120/120/120 FRL, in lieu of 180/180/120 FRL. (b) **Villas 1 – 13**: Carpark portions of Ground Floor to be reduced to 90/90/90 RFL in lieu of 120/120/120 FRL.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Architect is to complete the FRL plans in the detail design phase, refer Item A of Table 3. Once recevied, GDLA is to review and confirm any additional non-compliances in conjunction with the Structural Engineer.*	C2D2, Spec 5, C3D9 [C1.1, Spec C1.1, C2.8]	C1P1, C1P2 [CP1, CP2]	Refer to Section 4.4 for further information
C2	**Shaft Enclosure - Garbage Chute** **Building 1, 2, 3 and 4:** The garbage chutes provided will not contain a compliant fire rated top and bottom to the shaft.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Architect is to complete the FRL plans in the detail design phase, refer Item A of Table 3. Once recevied, GDLA is to review and confirm any additional non-compliances in conjunction with the Structural Engineer.*	C2D2, S5C8, C4D13 [C1.1, Spec C1.1: 2.7, C3.12]	C1P2, C1P8 [CP2, CP8]	Refer to Section 4.5 for further information
C3	**Combustible External Wall Elements – All Buildings** The following items have been identified as being combustible and located on the external wall, (a) Timber Fire Doors	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Architect is to complete the Door Schedule and External Wall Disclosure Statement in the detail design phase, refer Item G and L of Table 3. Once recevied, GDLA is to review and confirm any additional non-compliances,*	C2D10, C2D14 [C1.9, C1.14]	C1P1, C1P2 [CP1, CP2]	Refer to Section 4.8 for further information

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
C5	**Smoke Doors Swing – Building 2** The smoke door located in Building 2 Age Care storey, is proposed to only swing in one direction in lieu of both directions.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.	S12C4 Spec C3.4	C1P3 CP3	Refer to Section 4.12 for further information
C6	**Protection of Opening's – Not Provided** Protection of openings form a fire source feature in an external wall have not been provided in the following areas: (a) **Villas 1 – 13 -** Within 3m of the North, West, and South Boundary	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Architect is to complete the FRL plans in the detail design phase, refer Item A of Table 3. Once recevied, GDLA is to review and confirm any additional non-compliances in conjunction with the Structural Engineer.*	C4D3, C4D6 [C3.2, C3.4]	C1P2, C1P8 [CP2, CP8]	Refer to Section 4.20 for further information
Section D – Access and Egress					
D1	**Path of Travel to the Road (Adjoining Boundary – All Buildings** The egress paths from each building adjoins to another allotment boundary instead of a road and therefore the exits paths from each building do not have compliant path to the road	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.	D2D3, D2D15 [D1.2, D1.10]	D1P4 [DP4]	Refer to Section 4.29 for further information
D2	**Available Exits – Villas 1-13** The common lobby area on level 1 of the villas does not have access to a required exit stair.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.	D2D3 [D1.2]	D1P4 [DP4]	Refer to Section 4.29 for further information

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
D3	**Number of Exits – Building 2** *Design now illustrates compliance with this item.*				
D4	**Travel Distances to Exits – Excessive – Buildings 1, 2, 3 and 4** Extended travel distance DTS non-compliance as outlined in Table 21. Refer Appendix C for Travel Distance & Exit Plan Markup.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report. *Note: Assessment incomplete – Refer Item J of Table 3 for information that is required*	D2D5, D2D6 [D1.4, D1.5]	D1P4, E2P2 [DP4, EP2.2]	Refer to Section 4.31 for further information
D4.1	**Alternative Exits – Too close to each other** Building 2 – RAC (Level 1-3) - The two required exits which are used as an alternative means of egress, are located less than 9 m apart, actual 4.73m.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.	D2D6 [D1.5]	D1P4 [DP4]	Refer to Section 4.31 for further information
D4.2	**Alternative Paths of Travel - Converge to Close** The following alternative exits paths converge that they become less then 6m, (a) **Building 2** - Exits Paths Level 1-3 , actual 5.98m.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.	D2D6 [D1.5]	D1P4 [DP4]	Refer to Section 4.31 for further information

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
D5	**Path of Travel Widths – Undersized** The paths of travel widths to exits are illustrated at less than 1m & 1.5m wide in the following areas; ~~(a) **Building 2** GF: Distance between table and shelf in Consultation Room, actual 993mm.~~ ~~(b) **Building 2** GF: Distance between table and shelf in Consultation Room, less then 1m, actual 993mm,~~ (c) **Building 2** RAC Level 1-3: Distance in the corridor entering B2.156 SOU, less than 1500mm, actual 1280mm, (d) **Building 3** Basement: Distance between carpark and external wall, less then 1m, actual 940mm, ~~(e) **Building 4** Basement: Distance between carpark and external wall, less then 1m, actual 755mm, in two locations,~~ ~~(f) **Building 4** Basement: Distance between carpark and external wall coming from Elec Distribution Room, less than 1m, actual 647mm.~~	*Architect has confirmed the design will achieve compliance with the DtS provision.	D2D8 [D1.6]	D1P6 [DP6]	Refer to Section 4.32 for further information
D6	**Discharge from Fire-Isolated Exit – Passing the External Wall** Design now illustrates compliance *Note: The Architect is to complete the FRL plans and confirm the external egress paths in the detail design phase, refer Item A and J of Table 3.*				

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
D7	**Discharge from Exits as far apart as Practical** The discharge point of alternative exits must be far apart as practical so that if one exit is blocked, the other will still operate satisfactorily. The following non-compliances have been identified: a) **Building 2** – Both Fire Isolated Exits from the 9c Age Care Storeys discharge to the East Facade	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.	D2D15(4) [D1.10]	D1P4 [DP4]	Refer to Section 4.34 for further information
D8	**Discharge from Fire-Isolated Exit – Discharge to Enclosed Space** The following fire-isolated stairways do not discharge directly to open space and contain the following issues (a) **Building 1,** discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved. ~~(b) **Building 2** FS1, discharges into a covered area that is not open for 1/3 of perimeter, actual 1/4,~~ (c) **Building 3**, discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved. (d) **Building 4**, Both Fire Stairs, discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.	D2D12 [D1.7]	D1P4, D1P5, E2P2 [DP4, DP5, EP2.2]	Refer to Section 4.33 for further information

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
D9	**Automatic Sliding Exit Doors – Fail Safe Open** The BCA requires all sliding required exit doors to fail safe open on fire trip and on power failure. It is proposed for the following doors to not comply with this clause for security reasons: (a) **Building 2 -** Both sliding exit airlock doors on Ground Floor	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.	D3D24 [D2.19]	D1P2 [DP2]	Refer to Section 4.47 for further information
D10	**Swinging Door Encroachment** Design change now illustrates compliance with this item.				
D11	**Panic Bars – Omitted in certain cases** The following doors have been identified at this stage as not being provided with panic bars (a) **Building 2 -** Both sliding exit airlock doors on Ground Floor	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Architect is to complete the Door Schedule in the detail design phase, refer Item G of Table 3. Once recevied, GDLA is to review and confirm any additional non-compliances,*	NSW D3D26 [NSW D2.21]	D1P2 [DP2]	Refer to Section 4.48 for further information
Section E – Services and Equipment					

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
E1	**Fire Hydrant Booster System - Location (remote location) – All Buildings** Fire Hydrant/Sprinkler Booster not located: a) Boosters not within main sight of the principal pedestrian entrance and not adjacent to the site boundary and principal vehicle access. b) Booster is more than 20m from the facade of the building and more than 20m from principal pedestrian entrance. c) The site boundary is not adjacent to the road, meaning access to the booster is through another allotment.	The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report. *Note: The Design Practitioner for Fire Safety on the project is to review and confirm the fill list of non-compliances.*	E1D2 AS2419.1-2021 Cl 7.3 [E1.3]	E1P3 [EP1.3]	Refer to Section 4.52 for further information
E3	**Fire Hydrant - Locations** Design now illustrates compliance with this item.				
E4	**Fire Hose Reel - Location** The following FHR are located more than 4m from the exit in the following locations: a) **Building 1** Ground Floor, actual 12m, b) **Building 2** Ground Floor Lobby, actual 15m, c) **Building 2** Ground Floor (External) ~~d) **Building 3** Ground Floor Lobby, actual 5m,~~ ~~e) **Building 3** Bin Room, actual 8m,~~	*Architect has confirmed the design will achieve compliance with the DtS provision.	E1D3 [E1.4]	E1P1 [EP1.1]	Refer to Section 4.52 for further information

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
E5	**Fire Hose Reels – Omission** The following areas currently do not have provisions for FHR: a) ~~**Building 1** Ground Floor, Maintenance Storage~~ b) **Villas 1-13** – Ground Floor Class 7a Carparks.	a) *Architect has confirmed the design will achieve compliance with the DtS provision. b) The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report *Note: Fire Plans including Coverage are to be provided to confirm any additional non-compliances. See Item O of Table 3.*	E1D3 [E1.4]	E1P1 [EP1.1]	Refer to Section 4.52 for further information
E6	**Fire Extinguishers - Location** Design now illustrates compliance with this item.				
E7	**Electrical Vehicles – All Buildings** The Electrical Vehicle Charging Station are considered a hazard to fire authorities	The Fire Safety Engineer has confirmed they will provide a Performance Based DtS assessment of the EV proposed on the project to address BCA Clause E1D17 and E2D21. Please refer the ABCB advisory note on EV charging, dated 13/06/2023.	E1D1, E2D21	TBC	Refer to Section 4.52 for further information
E8	**Stair Pressurisation Missing - Building 2** Design now illustrates compliance with this item. Building 2 has Stair pressurisation				

Item	Query or DTS Non- Compliance	Suggested Resolution	BCA Clause	BCA Performance Requirements	Further Information (hyperlink)
Section F – Health and Amenity					
F1	**External Wall Weatherproofing – All Buildings** The proposed external wall materials noted below, are not listed in the BCA as compliant materials for weatherproofing: a) FC Cladding. b) Aluminium. c) Junctions between materials. d) Other – Architect to confirm.	Step 1 – Provide a copy of the required Performance Based Design Brief (PBDB) from the façade engineer for stakeholder review. *Ref: BCA Clause A2G2(4)(a)* Step 2 - Provide a justifiable Final Performance Solution from the Façade Engineer. *Note: Step 1 and Step 2 is to be completed during the detail design phase and provided provide to the issue of the Construction Certificate.*	F3D5 [Nil]	F3P1 [FP1.4]	Refer to Section 4.63 for further information

Table 2 - DtS Non-compliance Summary

*The architect has confirmed the design will achieve compliance with the DtS provision, refer to Aconex MPA-IntCorr-000174 and MPA-IntCorr-000180. The update plans will need to be provided as part of the next BCA Revision.

Note: The above summary is not an exhaustive list of all non-compliances for the development. The report in its entirety needs to be reviewed by the design team to obtain an understanding of all BCA related matters.

1.1 Additional Information required for further assessment

In order for Group DLA to confirm the design complies with the BCA, the following items listed in Table 3 below are required to be clarified, submitted, illustrated, etc. as the case may be:

However, it is important to note that the items identified will NOT have an impact on the DA planning submission approval and therefore these noted items can be resolved at the Detailed Design Stage, prior to the issuance of the Construction Certificate.

Item No.	Item	Comment	BCA Clause
A	Final Life Safety Plans (Fire Compartment / Fire Resistant Levels / Smoke Compartments)	The color-coded fire rating plans are required to be developed by the architect and are to include the following items to assist with our BCA reviews: (a) Plans are to be updated so they are consistent with the pending Fire Engineering Report. (b) The BCA defined exits, noted as the Running Man image, within Appendix C of this Report (c) 1:10, 1:20 detail of the fire wall and bounding fire rated wall construction, to external wall junctions – Typical. (d) Identification of Classification for each part of the building. Refer Appendix F, (e) Each individual fire compartment to have its floor area and volumes nominated and include the following measurements, as noted in Table 4 below: a. Max fire compartment area; and b. Max fire compartment volume; and c. Max building floor area; and d. Max building volume. (f) To include required fire ratings in accordance with Part C and Specification 5 inclusive of; external walls and columns, common walls, fire walls, internals wall bounding public corridors, public lobbies and sole-occupancies units, fire-resistant stairs and passageways, lift shafts, service shafts, floors, roofs, other loading building elements (walls, beams, trusses, columns, etc), lintels and building elements providing support to another building elements required to have an FRL. Refer to Appendix B for required FRLs. Particular attention is to be made to; a. C2D2 – External Walls, considering the distance from the Fire Source Feature b. C2D9 – Lightweight Construction c. C3D6 – Class 9 Buildings, including smoke compartments in Age Care buildings d. C3D9 – Separation of Classification in same story (Including Building 2 Carpark Entry Ramp separation to Ground Floor)	Section C / D / E

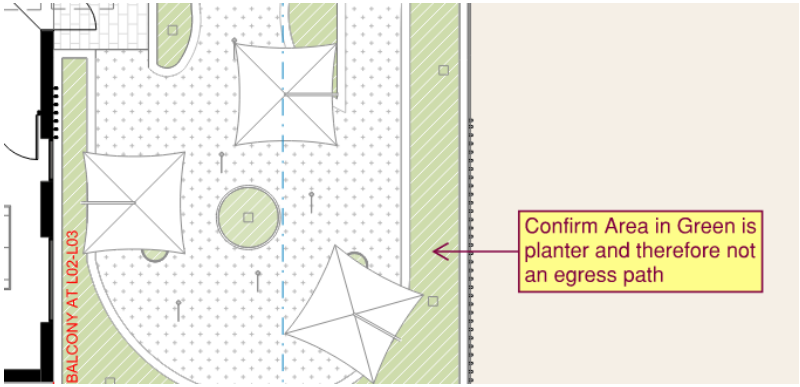
Item No.	Item	Comment	BCA Clause
		e. C3D13 – Separation of Equipment f. C3D14 – Electricity Supply System g. C4D3 – Protection of openings (including where protection occupies more than 1/3 of the area of the external wall of that storey) h. C4D4 – Separation of External Walls and Associated Openings in Different Fire Compartments i. C4D9 – Openings in Fire-Isolated Exits, including the window protection in Building 2 FS$ j. D2D4 – When Fire-isolated stairways and ramps are required. k. D2D12 – Travel via Fire-isolated Exits l. D3D9 – Enclosure of space under stair and ramps m. Fire Hydrant Booster / Pumps (g) To include fire rating and details on the required protection of openings. Particular attention is to be made to; a. C4D3 – Protection of Openings, including i. openings within external wall within close proximity to a fire source feature (Villas which are within 6m of another building) b. C4D4 – Separation of External Walls and Associated Openings in Different Fire Compartments c. C4D5 – Acceptable Methods of Protection (Openings) d. C4D6 – Doorways in a Fire Wall e. C4D9 – Openings in Fire-Isolated Exits f. C4D11 – Openings in Fire-isolated Lift Shafts g. C4D14 – Openings in Shafts a. D3D9 – Enclosure of space under stair and ramps (h) To include C4D12 doorway bounding construction FRL's to the sole-occupancy rooms and other rooms within the Class 2 parts. (i) To include D3D8 Smoke sealing (including either non-combustible construction, or fire-protective coverings) for service or equipment that comprises of electricity meters, distributions boards, central telecommunications distributions boards or equipment, (j) The locations of Fire Hydrants and Fire Hose Reels, including any required Hydrant Booster and Pumps Rooms in accordance with AS2419.1, etc	

Item No.	Item	Comment	BCA Clause
A1	Architectural - Smoke Wall and Doors	Architect drawing plan, sections and 1:20 wall type drawings are to be provided for all smoke proof walls and doors. Details must include section plan of the smoke reservoir.	NSW C3D6, Spec 11
A2	Building 2 Age Care – Kitchen Size	Architect is to provide a plan nominating the size of the kitchen. If it is greater than 30m^2,it will need to be separated from the sole-occupancy units by smoke proof walls complying with Spec 11	NSW C3D6, Spec 11
A3	Villas – Location to *fire source feature*[1]	Architect to provide set plan for each villa and the associated location of the closet fire source feature for further assessment. This is to include design between buildings and between building and allotment.	Various
B	Building Area and Volume	The total areas and volume of the building are to be confirmed by the Architect, as noted in Table 4 below	-
C	Lot Consolidation / Title Boundary Plan	Provide: (a) A title boundary plan, illustrating all Torrens Titles boundaries throughout the project site	Various
D	Population Review	The Project Team is to review and comment - The accuracy of occupant's numbers shown in D2D18 and F4D4, and - As per Item 43 on the Group DLA Plan Mark Up, the proposed number of staff. Note the in the sanitary assessment below under F4D4, an allowance for 20 staff has been assumed.	D2D18 / F4D4
E	Structure	The Project Team is to confirm if the building will be used for post disaster recovery. If yes, this will change the Building Important Level from 2 to 4 which will have an impact on the structural design. The Structure Engineer is to confirm the Earthquake design Category	Part B1

[1] ***Fire-source feature***

Any one or more of the following:
1. The far boundary of a road, river, lake or the like adjoining the allotment.
2. A side or rear boundary of the allotment.
3. An external wall of another building on the allotment which is not a Class 10 building.

Item No.	Item	Comment	BCA Clause
F	Earthquake actions Design of parts and components	All designers will be required to ensure any components and service installations comply for seismic impact in accordance with the earthquake code AS 1170.4-2007, EDC II or III. Note that all structures, including parts and components, are required to be designed for earthquake actions. Refer to Table in Section 4 of the report for more details.	Part B1
G	Non-combustible External wall review.	A detailed review/workshop is required to be conducted with the GDLA and architect to review all aspects of all of the proposed external wall systems, in order to confirm that no combustible materials are to be used. A Design Disclosure Statement is to be provided by the Architect. A template has been issued at the same time of issuance of this BCA Report Rev A. Detailed drawings are to be 1:5 or 1:10.	D2D10, C2D14
H	Fire Hazard Property Test Reports	Required for all floor, wall and ceiling materials other than plasterboard and wet area tiles. Refer Table 17 for specific requirements.	C2D11
I	Architectural Shafts Details	Provide illustrating detailed elevations and sections of the lift, fire-isolated stair, and services shafts extending above the roof line or fire rating lids. Other than the fire isolated stair shafts which must contain fire rated lids/ceiling.	D3D11, D2D4, Spec 5
J	Egress Assessment	<u>Remains Incomplete, the following is required:</u> (a) The architect will need to review the egress travel distance plans at Appendix C and confirm: i. Realistic paths of travel taken in our assessment or otherwise; and ii. Exit locations nominated are actual exits. iii. Highlights in all areas where reduced egress widths have not been achieved in accordance with D2D7-9 (b) Fitout of plantrooms, storerooms, functions, etc, for assessment against travel distance and egress widths (c) The proposed access details to the roof plant on all Buildings. If it is via an internal drop down ladder then this will need to be added to table 2 as a non-compliance	Part D2

Item No.	Item	Comment	BCA Clause
		(d) External egress paths are to be detailed, illustrating compliant paths of not less than 1m and include any proposed ramping or stairs from required exit doors to the boundary for further review. Currently, the following require egress discharge doors need to have a compliant trafficable walkway provided from the doorway to the main pathways i. Building 2 – Exits from Multi-Purposes Rooms ii. Building 4 – Cold Water Plant (e) A bollard is to be provided to all required egress doors where there is a risk of a vehicle blocking the exit. Architect is to ensure that the position so not restrict the door from opening and also maintains a clear 1m egress path for occupants. These doors include i. Building 1 and Building 3 (nearing car park entrance roller door) (f) Building 2 External Area – The external planter area of the Level 1 balconey is to be confirmed as a planter. Currently egress has not been taken through here on this basis 	
K	Stairs, Ramps & Barriers	- Detailed dimensioned drawings (1:50-1:10) for the following are required ○ Stairs, inclusive of number of risers, dimensions of risers and goings, nosing's, TGSI, handrails, landings, etc. Include: ▪ A detailed elevation plan of Building 2 Fire Stair 1. This stair must not have more than 18 risers.	D3D14, D3D15, D3D17, D3D18, D3D19, D4D4 AS1429.1-2009

Item No.	Item	Comment	BCA Clause
		▪ Details on Building 2 Fire Stair 2 as it transitions from the fire stair to the fire egress passageway. If steps are proposed must be not less than 2 and still include handrails. ○ Ramps including gradient, handrails, TGSI, landings, etc. This is to include all external ramps. ○ Barriers located along stairs, landing and general walkways. Drawings to include all openings and any near horizontal elements. - Provide a plan which has an identification number to stairs and ramps. - Project Team to Confirm – If the fire isolated stairs are proposed to be used as a communications stair for access between levels, they are required to contain full AS1428.1 compliant handrails to both sides, nosing, TGSI, etc. - Handrails to both sides of every passageway and corridors used by residents are to be documented. Refer to D3D14 and Appendix E for specific requirements. **Architect is to provide tolerances for onsite construction otherwise it may become an OC risk.**	
K1	Building 2 Fire Stair 1 and 2	Provide dimensioned drawings of the proposed Fire separation between Fire Stair 1 and 2.	D3D5, S11C2
L	Door Schedule	A door schedule is required for further review and comment. This schedule must include the following: (a) Operation of Latch (D3D26) which confirms if the door is; i. **Free Access** from the side that faces egress with complaint single handle in accordance with D3D26(1)(a)(b) ii. **Power operated** with a separate manual push button, in accordance with D3D26(2) iii. To remain locked however connected to an **Auto fail-safe** device which unlocks the door upon the fire trip, in accordance with iv. **Class 9b areas** - Required to be fitted with **Panic Bars** in accordance with NSW D3D26(5) ***Fire Engineering will need to be considered for any doors to remain locked.**	Part D3 Section C Section J

Item No.	Item	Comment	BCA Clause
		(b) The **Force** of all power operated doors (both sliding and swinging) must not be more than **110N** if there is a malfunction or failure to the power source, in accordance with D3D24, (c) In the case of for any power operated doors which lead directly to the road or open space, they must **Fail Safe Open** upon the power failure to the door or on the activation of a fire or smoke alarm with the compartment. (d) Additional items required to be shown on the door schedule such as but not limited to: i. Self-closing ii. Smoke sealing iii. Metal lining to be mechanically fixed to the inside face of the smoke sealed service cupboards. iv. Fire rated door hardware as required. v. Sealing for Section J	
M	Window Schedule	A windows schedule is required for further review and comment. This schedule must include. (a) If the window is openable and any protection required for D3D29. (b) Any sealing requirements for ventilation and Section J. (c) Natural Light assessment, include the total aggregate width against floor area	D3D29, Part F6, Section J
N	Accessibility / DDA Report	Provide a copy of the final DDA Access Report.	DDA/Part D4
O	Fire Services Plans	Complete Wet and Dry Fire Services Plans are to be provided for review. The plans must include but not limited to; (a) Fire Hydrant and Fire Hose Reel coverage plans. Where coverage is not achieved, additional services are to be provided in compliant locations. (b) Booster and Hardstand location, (c) Any window protection to the Villas as required by C4D3	Section E

Item No.	Item	Comment	BCA Clause
P	Electrical and Lighting Services Plan	Complete Electrical and Lighting Services Plans are to be provided for review. The plans must include but not limited to; (a) All exit signs for required egress doors, refer Appendix C (b) Confirmation if any exit sign is located above 2.7m or below 2.0m from the FFL, (c) Any electrical services listed under Clause C3D13 and C3D14	Part E4
Q	Section J / Building Envelope Plans	Provide a copy of the Final Section J report, which includes a set of colour coded building envelope plans which illustrate the required external and internal R rating insulation lines throughout the building, inclusive of external walls, internal walls, roof and floor slabs as developed by the ESD Consultant for further review and comment.	Section J
R	Plant Stairs and Access structures – AS 1657	Provide shop drawings for review and comment prior to manufacturer.	D2.18
S	Bushfire Protection	Provide a Bushfire Assessment Report confirming the design complies with the BCA and AS 3959-2018. If **Building 2**, which has a special fire protection purpose (Retirement Village), is subject to a BAL exceeding BAL—12.5, the building would need to comply with Performance Requirement NSW G5P2 by means of a Performance Solution The Bushfire Consultant is to confirm the BAL Rating for the building and confirm if it is greater than BAL-12.5. If it is, then this item will need to be added to Table 2 as a non-compliance and Performance Solution required with the following steps. 1. The Bushfire Consultant is to review and confirm if a justifiable Performance Solution is feasible. 2. Provide a copy of the required Performance Based Design Brief (PBDB) from the façade engineer for stakeholder review. *Ref: BCA Clause A2G2(4)(a)* 3. Provide a justifiable Final Performance Solution from the Façade Engineer.	Part G5

Item No.	Item	Comment	BCA Clause
T	Waterproofing Details / Compliance by the Waterproofing consultant.	Provide the following typical waterproofing details in accordance with F1D5, AS 4654.1-2012, AS 4654.2-2012, Part F2 and AS 3740-2021: 1. All External areas, including. a. External door and window threshold details, including compliant water stop, termination heights and drainage grate / strip drains (where internal and external floor finish level are the same). Consideration required for Building 4 b. Balcony sections with waterproofing, falls, floor wastes and the balustrade. c. Roof top stair details including water stop, membrane termination and strip drain. d. Plant and equipment penetrations (such as services and support posts) proposed on the roof top slab membrane. e. External above ground areas including over the open terraces, carparks, waterproofing of planters, roof plant, etc. Ensure all falls are documented. f. Basement Waterproofing. 2. All Internal areas, including a. Wet areas. Provide design confirmation from the Waterproofing Consultant that the plans comply with the relevant BCA Clauses and noted Australian Standards.	F1D5, AS 4654.1, AS 4654.2, Part F2, AS 3740
U	Internal Door Threshold	Provide details of any proposed internal door thresholds. This includes. (a) Plantroom hobs (b) General circulation doorways	D3D16, D4D2
V	Provision for Special Hazards	**Solar Panels** The Fire Safety Engineer to confirm whether or not any additional fire safety measures are required to be implemented. They may require a Dangerous Goods Assessment Report be provided. **Chemical Storage** The Fire Safety Engineer to confirm whether or not any additional fire safety measures are required to be implemented. They may require a Dangerous Goods Assessment Report be provided.	E1D17, E2D21

Item No.	Item	Comment	BCA Clause
		Refer Section 4 below for further details	
W	Mandatory Signage	Provide details and plan locations of all mandatory signage in accordance with (a) D3D26(2) – Door push button signage (b) D3D28 – Fire Door signage (c) D4D7(1)(ii) – Access required exit door signage. (d) E3D4 – Warning against use of lift (e) Clause 183 of the EP&A Regs 2000 for the "OFFENCE RELATING TO FIRE EXITS" (f) Fire Hose Reel, Fire Hydrant and Fire Extinguisher Signage (where services are located in an enclosure) (g) Fire Booster / Pump Room Signage	As Listed
X	Reflected Ceiling Plans	The Architect is to provide reflected ceiling plans for review. Include details of the ceiling height under the lift pit in Building 2 Basement.	F5D2
Y	Natural Light Assessment	The Architect is to provide a natural light assessment plan to show how all habitable rooms are provided with sufficient required natural light. Further details on any privacy screens are to be provided to show how compliant unobstructed light is provided. Note: Being external to the building this details may be important to be resolved for the DA Submission. The assessment will need to consider any proposed fire screen protection to any windows to the Villas as required by C4D3 Any proposed storage spaces which have replaced study nooks, must be clearly identified as storage and the area must include physical elements which allows for storage.	F6D2/3
Z	Acoustic Plans and Report	Acoustic Plans along with Acoustic Report is to be provided by an appropriately qualified Acoustic Consultant. Details on Discontinuous construction is to be included.	Part F7

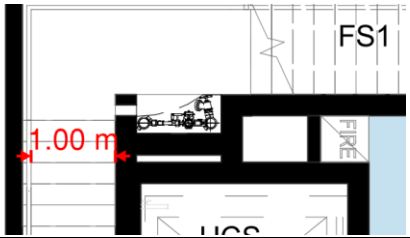
Item No.	Item	Comment	BCA Clause
AA	Performance Solutions – General	The various design team members are requested to advise of any/all known BCA related non-compliances that will require resolution via Performance Solutions, if known at this stage of the design.	Various
AB	Performance Based Design Briefs	Provide a copy of the project Performance Based Design Brief Reports for the relevant non-compliances noted above in Table 2 as follows: • Fire Engineering Brief • DDA Access Performance Based Design Brief • Section J – JV2/JV3 Performance Based Design Brief • Weatherproofing Performance Based Design Brief • Ergonomics Performance Solution Report • Other – N/A at this stage of the design review - TBC	A2.2(4)
AC	Performance Solutions – Reports	Provide a copy of the final project Performance Solution Reports justifying the relevant non-compliances noted above in Table 2 as follows: • Fire Engineering Report • DDA Access Performance Solution Report • Section J – JV2/JV3 Performance Solution Report • Weatherproofing Performance Solution Report • Ergonomics Performance Solution Report • Other – N/A at this stage of the design review - TBC	A2.2
AD	Buildability Tolerances	A numbers of areas have been illustrated at the BCA minimum limits and therefore are to be considered as an OC risk when considering practical buildability limitations. Areas includes • Fire stair widths where handrail is required illustrated at the minimum of 1m 	

Table 3 - Request for Further Information

2.0 INTRODUCTION

The subject BCA review has been limited to a desktop assessment of the listed Architectural Drawings which at this stage, do not detail sufficient information to allow a full BCA report to be produced. **The design are yet to be developed to the extent that a complete BCA assessment can be concluded and therefore this report is preliminary only.**

However, it is important to note that the items identified will NOT have an impact on the DA planning submission approval and therefore these noted items can be resolved at the Detailed Design Stage, prior to the issuance of the Construction Certificate.

The report is prepared based on a review of the documentation listed in Appendix D and the information provided by the client and is intended for their use only.

2.1 Reporting Team

The information contained within this report was prepared by Alex Bate (Building Regulations Consultant) and reviewed by Shane Berry, Register Certifier Grade A1 (BPB0721) from Group DLA.

2.2 Current Legislation

The applicable legislation governing the BCA version for buildings is the Environmental Planning and Assessment Act 1979.

The provisions of this Act require that all new building works are carried out in accordance with the Building Code of Australia (BCA). The applicable version of the BCA to be adopted will be the BCA version in force when the Construction Certificate or Complying Development Certificate is applied for on the NSW e-Planning Portal.

The BCA is now updated every three (3) years, the next updated will be BCA 2025 which is anticipated to come into force on the 1st May 2025.

2.3 Fire Brigade

As per BCA 2022 Clause A2G2(4) all Performance Solutions are required to undertake a Performance Based Design Brief (PBDB) process, NSW Fire Brigades have advised (https://www.fire.nsw.gov.au/page.php?id=9154) that they will only provide their stakeholder input via a Fire Engineering Brief Questionnaire (FEBQ) process prepared and lodged by the engaged Fire Safety Engineer. This applies to all projects irrespective of the approval process, Crown, REF, CDC or Construction Certificate projects, if there are any Performance Solutions affecting fire safety all need to undertake this stakeholder engagement with NSW Fire Brigade which the Fire Safety Engineering will lodge.

Construction Certificates - the Environmental Planning and Assessment (Development Certification and Fire Safety) Regulations 2021 (EP&A (DCFS) Reg 2021), Section 27 (previously Clause 144 of the Old Regulation), requires buildings the subject of Construction Certificate approval to have the Fire Engineering Report to be referred to Fire Brigade within seven (7) days of lodgement of the CC application on the NSW Government e-Planning Portal in certain cases.

From the 1st August 2023, Section 26 of the EP&A (DCFS) Reg 2021 will be amended to mandate that consultation with FRNSW is required for **all building works that involves a performance solution for a **fire safety requirement*.** This is regardless of the project size or the type of fire safety system which the Performance Solution is supporting.

This amendment means that;

- **Before lodging a Construction Certificate application**, the owner of a building must ensure that the person who develops a performance-based design brief (FEBQ) for a fire safety performance solution (usually a Fire Safety Engineer) for Class 2–9 buildings, where a construction certificate is to be issued, consults FRNSW during the development of the performance-based design brief, and
- **Before determining a Construction Certificate or Occupation Certificate application**, the Principal Certifying Authority, must refer all performance solutions involving a fire safety requirement for Class 2–9 buildings to FRNSW at both the Construction Certificate and Occupation Certificate stages.

*A '*Fire Safety Requirement'* is defined in the EP&A (DCFS) Reg 2021 as '*a requirement under the Building Code of Australia relating to a fire safety system within the meaning of the Building Code of Australia, or the safety of persons if there is a fire, or the prevention, detection or suppression of fire'*.

This design currently contains the following Fire Safety DtS Non-Compliant / Performance Solutions which are to be referred to Fire Rescue NSW;

- TBC – Refer Table 2

Under recent changes to the legislation and Fire Brigade advice, for Section 27 referrals of the Fire Engineering Report, the Fire Brigade are required to respond within 10 working days advising whether or not they will be proceeding with a review and providing the Initial Fire Safety Report. If so, they have not more than 28 working days from the initial lodgement to provide their report or the Certifier can choose to invoke the provisions under Clause 28(2) and issue the Construction Certificate after 28 days of officially lodging the Section 27 application. Further consultation is required on this issue with the engaged Certifier as in almost all cases the Certifier will await comments and adopt any recommendations made by NSW Fire & Rescue which may have programme implications to be planned for.

2.4 Limitations

This report does not constitute or include, nor imply or audit any assessment of the following;

- This assessment is limited to the developed documentation at the date of this report and as referenced within the "Documentation Assessed" section of the Report.
- Preparation of performance provisions of the BCA are excluded.
- This report does not include assessment of the documentation against the provisions of the Disability Discrimination Act 1992 or (Access to Premises Buildings) Standards 2010.
- Any roof top plant or the like has been assessed (assumed) as open to the sky. Covered areas to roof tops may constitute an extra storey thus BCA requirement for the entire building may change.
- Travel distances have been assessed on an open plan basis with an allowance made for travel around pending fixed structures. No consideration has been given to any future fixed structures and accordingly, further assessment will be required in the event of floor plan or fixture amendments if and when these are provided formally.
- This report excludes any form of Certification Work as defined in the regulations, and is for BCA Compliance purposes only
- Generally, the assessment does not include a detailed assessment of Australian Standards.
- Requirements of other Regulatory Authorities including, but not limited to, Telstra, Telecommunications Supply Authority, Water Supply Authority, Electricity Supply Authority, Work Cover, Roads and Maritime Services (RMS), Local Council, ARTC, Department of Planning, Liquor Licensing Act 1997 and the like; and
- Demolition Standards not referred to by the BCA;
- Work Healthy and Safety Act 2011 (Safety in Design);
- The National Construction Code – Plumbing Code of Australia Volume 3;
- The capacity of design of any Electrical, Fire, Hydraulic or Mechanical Services;
- Structural and services drawings have not been reviewed, nor any consideration given to the structural capacity (or inherent FRL's) of the building;

2.5 Latest BCA 2022 Amendment 1 Changes – Synopsis of Major Changes

<u>1Main Change is the Numbering, Clauses and Specification have all changed, and been relocated</u>

<u>Section A – Governing Requirements</u>

- A2.2 Performance Solution – The addition of clause A2.2(4), which details further requirements which must be met when addressing a performance solution in the BCA, being a Performance Based Design Brief and FEBQ process with NSW Fire Brigades as a stakeholder
- A5.7 Labelling of aluminium composite panels – An aluminium composite panel must be labelled in accordance with SA TS 5344.

<u>Section C – Fire Resistance</u>

(a) Clause C2D10 & C2D14 - Non-Combustible Building elements & Ancillary elements - a lot of additional elements added to the list of exempted materials and elements , Concrete for example is now exempted. Interesting note added that considers a balustrade on a balcony to be an ancillary elements,
(b) Clause C3D6, D2D3 - Class 9b Childhood centre - required to be fire separated from the remainder of the building, when in a mixed-use building, and has egress, fire compartmentation, egress requirements.
(c) Clause C2D15 - Laminated Panels (such as ACP products)- cannot be solely fixed with adhesives, and all layers must be mechanically fixed, details within the clause.

Section D – Access and Egress

- Clause D2D23 – Egress from Primary Schools - Can only be on a Storey that provides direct egress to road or open space (Ground floor only), but does not apply if the building has a Rise in Storeys as defined by the BCA of 4 or less where the "whole" building is used only as a "Primary school"
- Clause D3D19 D3D20 - Balustrades and climability rules to Fire Stairs serving a Class 9b early childhood centre – this rules out the concession for the wider gaps for fire stair balustrades, and also the 4m climability is required to be complied with as well for Class 9b Early Childhood centres.
- D3D27 - Re Entry to Fire Stairs - required for fire stairs that serve a Class 9b Childhood Centre now, in addition to the other uses.

Section E – Services and Equipment

- Clause E1D11 - Sprinklers are required to the whole building if it has a Class 9b Early Childhood centre , not just to the childhood centre part
- Clause E2D20 - Detection system - in addition to a Sprinkler system, Early Childhood Centres are also required to have Detection and Alarm system to the entire building (even other classes) if it has a Class 9b Early Childhood centre .

Section F – Health and Amenity

- Part F1 - Changes to Waterproofing, rainwater management and rising damp for all classes of building, weatherproofing etc.
- Part F2 -Changes to waterproofing of wet areas - All classes of building
- F1D4 – Exposed Joint provisions added for weatherproofing, additional requirements apply
- Clause F2D4 - Floor Wastes to Class 2, 3 or 4 Buildings - now requires a floor graded at a min of 1:80 and a maximum of 1:50 Grade to floor waste.
- Clause F3D2 - Roof Coverings - now allows Waterproof membranes as a roof covering to F1D5
- Clause F3D5 – Weatherproofing of External Wall – some external wall types are now DTS for weatherproofing and do not require a performance solution, these are- Brick veneer, Masonry, Concrete, and metal cladding that complies with AS 1562.1 – any other type needs Perf Solution still required.
- Clause F4D4 - Toilets have been further updated to reflect the requirements of separate male and female ambulant facilities
- Clause F4D5 - Ambulant Toilets - made it clear that cant be a unisex Ambulant facility, must be one for Male and One for Female (fixes an anomaly in the prior BCA versions which could have been read as allowing it.
- Part F8 - Condensation Management - is apparently changing but will not know till Later in 2022 what this will be and to which types of building it will apply to

Section G

- New Part G7 - Liveable Housing – Required for all Class 2 SOU's only in Class 2 Buildings - big change for apartments but not affecting other classes in Volume 1.
- Bushfire – G5D4 and Specification 43 - Bushfire Protection for Class 9 Buildings - affects Class 9b Health Care, Class 9b Childcare, and Primary and Secondary Schools, Class 9c Residential care building and Class 10a Building or Deck associated with one of these classes - Has a lot of impacts regarding setbacks to other buildings, Lot boundaries setbacks, pathways around the buildings, non-combustible walls and roof, Hydrant system (even if less than 500m2) or Static Water supply (details in Spec), Emergency Power supply, Large Isolated Building vehicular roads too for these types of buildings listed in BCA Clause G5D4

Section I – Special Use Buildings

- Section I added which is the home of these provisions for the National BCA Provisions for Class 9b Buildings
- NSW Part I – Entertainment Venues in NSW has been changed from Part H

Section J – Energy Efficiency

- Numerous changes to Section J are anticipated– Section J Consultant will need to provide update in regards to any impacts to the Design parameters. As the details of the changes have not been release yet, and will be forthcoming later in 2022.

Schedule 2 – Referenced Documents (Australian Standards) – the below is not exhaustive but the main standards that have changed, refer to Schedule 2 of NCC 2022 for full list of referenced documents.

- BCA 2022 has adopted numerous new versions of Australian Standards as follows:
  - AS1170.2-2021 -Structural Wind Actions - new version adopted
  - AS1288-2021 – Glazing Standard – new version adopted
  - AS 1562.1 -2018 – Metal roofing – new version adopted (AS 1562.3 Plastic roof also new version)
  - AS 1657-2018 – fixed platforms, walkways and ladders – new version adopted
  - AS 1684.2-2021 – Timber framing code – new version adopted
  - AS 1720.4 – 2019 Timber structures Fire resistance for structural adequacy – new version adopted
  - AS 2419.1-2021 – Hydrants – new version adopted
  - AS 2699 – 2020 – Built in components for masonry – new version adopted
  - AS 3500 – 2021 – Plumbing and Drainage – new version adopted
  - AS 3700 – 2018 - Masonry Structures – new version adopted
  - AS 3740-2021 – Waterproofing of domestic wet areas – new version adopted
  - AS 4100-2020 – Steel Structures – new version adopted
  - AS 4253-2021 – Ductwork for air handling systems – Flexible Duct – new version adopted
  - ABCB Livable Housing Design 2022 – New Section G7 (relates to Class 2 Buildings only)
  - FPAA101D-2021 – Sprinkler system – Drinking Water supply system
  - FPAA101H-2018 – Sprinkler system – Hydrant water supply system

3.0 BUILDING DESCRIPTION

3.1 Building Site

The site is located at 14 Mingara Drive, Tumbi Umbi, NSW 2261 within the Central Coast Local Government Area (LGA). The development site is legally described as Lot 13 DP1204397.

The broader Mingara Club Precinct also encompasses Lot 1 and Lot 2 in DP 1010532 and Lot 71 DP1011971 and currently contains a registered club, health and wellness centre (including aquatics, gym facilities, physio, hairdresser, beautician and martial arts studio), car parking, creche, bowling greens and green space with a regional athletics centre. A hotel is currently under construction.

Immediately surrounding the Mingara Club Precinct are fast food outlets and other restaurants, service station, car wash, retail, medical centre and a retirement village to the south and west. Industrial development is to the north of Wyong Road and residential development to the west. The specific area of the site, the subject of the proposed development, is land located to the west of the Mingara Recreation Club and south of the Athletics field. This development site is currently a vacant grassed area.

Figure 1 - Site Plan

Key features of the site are as follows:

- The topography of the site is generally flat, with some fill historically used to level the study area, particularly in the northern portion of the site.
- The development site is vacant grassland with some mature trees located on the eastern boundary.
- The western and southern boundary of the development site has a registered easement following the drainage corridor defining the site boundaries to the west and south.
- Vehicle access will continue to be provided via the existing Wyong Road access to the north and the existing access from Mingara Drive into the broader Mingara Club precinct to the east.

- The development site does not have a direct street frontage and is bounded by the Athletics field to the north, Club access road and Mingara carpark to the east and Glengara Retirement Village to the south and west and low density residential uses to the north-west. The Mingara Club precinct has frontage to Wyong Road and Mingara Drive.
- Vehicular access to the site from the local road network is available from Wyong Road, via left in and left out and from the signalised intersection at Mingara Drive/Wyong Road and then a roundabout on Mingara Drive.
- Internal pedestrian connectivity within the broader Mingara Precinct site includes pedestrian pathways from the north and west and pedestrian crossings from the car parking area into the main club building.
- A hotel is under construction on the broader Mingara precinct to the east of the development site.
- To the north west of the site is a constructed wetland / gross pollutant trap

The surrounding locality is described as follows:

- **North:** Immediately north of the development site is the athletics track/field, forming part of the broader Mingara Club precinct. Further north on the northern side of Wyong Road is industrial zoned land and the vast majority of the surrounding context comprises low density residential, environmental conservation, living and management.
- **East:** Directly east of the site is a hotel (under construction), the main Club building and car park, accessible from Mingara Drive and Wyong Road. Further east of the site are fast food and commercial land uses on Wyong Road, then low density residential uses. Further east is more residential development with the Bateau Bay Square shopping centre forming the major commercial node for the area.
- **South:** The Glengara Retirement Village is immediately south (and south west) of the site and is one to two storeys in height. Beyond that, the area of Tumbi Umbi is primarily larger environmental living residential lots.
- **West:** A drainage corridor and some taller vegetation is located directly west of the site. Further west is the northern portion of the Glengara Retirement Village.

3.2 Building Development

The proposed development comprises subdivision of land and the construction and operation of a seniors housing development. The proposal includes thirteen villa buildings, three multi storey independent living unit (ILU) buildings and one mixed high care and ILU building housing communal facilities together with car parking, open space and associated works including site preparation works and landscaping.

The proposed SSDA seeks approval to redevelop the site to accommodate a seniors living development inclusive of the following:

- Site establishment works, including minor excavation and tree removal and earthworks.
- Construction and operation of:
  - Thirteen (13) villa buildings, housing four (4) independent living units in each
  - Three (3) multi storey independent living unit (ILU) buildings of:
    - Building 1 – undercroft car parking, 5 levels of 2-bed and 3-bed ILUs
    - Building 3 - undercroft car parking, 6 levels of 2-bed and 3-bed ILUs
    - Building 4 - undercroft car parking, 5 levels of 2-bed and 3-bed ILUs
  - One (1) mixed high care and ILU building (Building 2) of:
    - Part undercroft car parking, part communal/amenities level at ground with 3 levels of high care suites and 3 levels of ILUs
    - The building will include communal facilities including a café, residential lounge, multi-function spaces, consultation/therapy rooms, library and staff/admin areas.
- Provision of 219 x 2-bed and 3-bed independent living units and 39 high care suites

- Total site GFA of 31,739.7sqm comprising:
  - Townhouses: 7,223.4sqm GFA
  - Building 1: 4,595.6sqm GFA
  - Building 2: 5,315.7sqm GFA
  - Building 3: 5,520.0sqm GFA
  - Building 4: 9,085.1sqm GFA
- Vehicle access will be provided via the existing road access from Wyong Road and via Mingara Drive. The site also accommodates a north-south internal shared access road and dedicated porte cochere in front of Building 2.
- Private, passive and communal open space, landscaping and perimeter and internal pedestrian pathways
- Subdivision of the land and two stage construction.

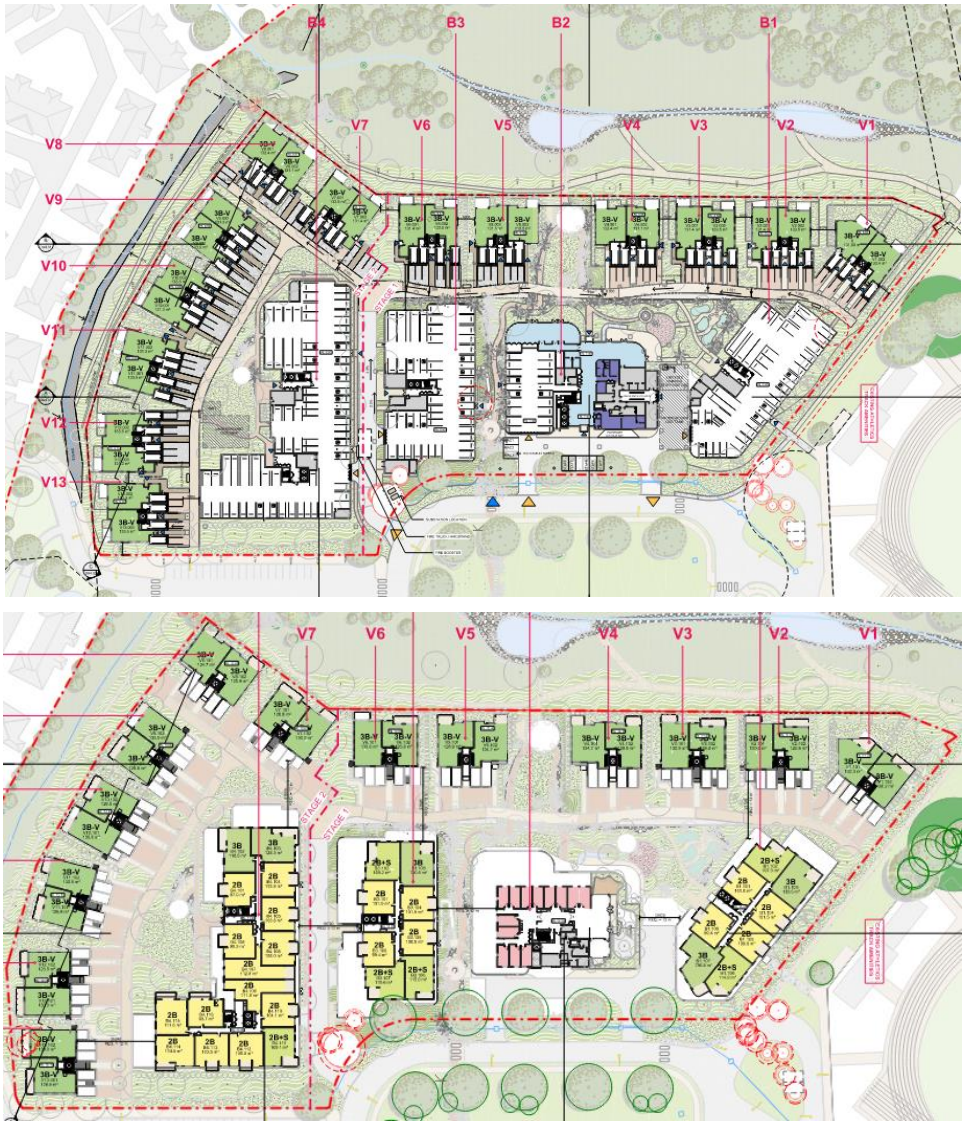


Figure 2 - Proposed Development

3.3 Building Description

3.3.1 Building 1

Characteristic	Description
BCA Classifications: (Refer Appendix E)	Class 7a – Carpark – Ground Floor Class 2 – Residential – Upper Levels
Type of Construction:	A
Floor Area of Whole Building:	*7,506m^2 – Architect to confirm
Volume of Whole Building:	*24,427m^3 – Architect to confirm
Max Fire Compartment Size (Floor Area):	*1,574m^2 – Architect to confirm
Max Fire Compartment Size (Volume):	*5,194m^3 – Architect to confirm
Rise in Storeys:	6 - Refer Section 3.4
Levels Contained:	6
BCA Effective Height:	**16.2 - Refer Section 3.4
Climate Zone:	5
Importance Level (BCA Table B1D3a):	2 – Structural Engineer to confirm
Earthquake Design Category:	II or III – Structural Engineer to confirm

Table 4 - Building Characteristic – Building 1

3.3.2 Building 2

Characteristic	Description
BCA Classifications: (Refer Appendix E)	Class 7a & 9b – Carpark and Assembly –Ground Floor Class 5 – Office – Ground Floor Class 6 – Retail – Ground Floor Class 9c – Age Care – Levels 1 - 3 Class 2 – Residential – Levels 4 - 6
Type of Construction:	A
Floor Area of Whole Building:	*7,484m^2 – Architect to confirm
Volume of Whole Building:	*26,747m^3 – Architect to confirm
Max Fire Compartment Size (Floor Area):	*1,814^2 – Architect to confirm
Max Fire Compartment Size (Volume):	*8,163m^3 – Architect to confirm
Rise in Storeys:	7 - Refer Section 3.4
Levels Contained:	7
BCA Effective Height:	**20.85 - Refer Section 3.4
Climate Zone:	5
Importance Level (BCA Table B1D3a):	2 – Structural Engineer to confirm
Earthquake Design Category:	II or III – Structural Engineer to confirm

Table 5 - Building Characteristic – Building 2

3.3.3 Building 3

Characteristic	Description
BCA Classifications: (Refer Appendix E)	Class 7a – Carpark – Ground Floor Class 2 – Residential – Upper Levels
Type of Construction:	A
Floor Area of Whole Building:	*8,774m^2 – Architect to confirm
Volume of Whole Building:	*28,495m^3 – Architect to confirm
Max Fire Compartment Size (Floor Area):	*1,785m^2 – Architect to confirm
Max Fire Compartment Size (Volume):	*5,890m^3 – Architect to confirm
Rise in Storeys:	7 - Refer Section 3.4
Levels Contained:	7
BCA Effective Height:	**19.41 - Refer Section 3.4
Climate Zone:	5
Importance Level (BCA Table B1D3a):	2 – Structural Engineer to confirm
Earthquake Design Category:	II or III – Structural Engineer to confirm

Table 6 - Building Characteristic – Building 3

3.3.4 Building 4

Characteristic	Description
BCA Classifications: (Refer Appendix E)	Class 7a – Carpark – Ground Floor Class 2 – Residential – Upper Levels
Type of Construction:	A
Floor Area of Whole Building:	*14,639m^2 – Architect to confirm
Volume of Whole Building:	*47,607m^3 – Architect to confirm
Max Fire Compartment Size (Floor Area):	*2,889m^2 – Architect to confirm
Max Fire Compartment Size (Volume):	*9,534m^3 – Architect to confirm
Rise in Storeys:	6 - Refer Section 3.4
Levels Contained:	6
BCA Effective Height:	**16.2 - Refer Section 3.4
Climate Zone:	5
Importance Level (BCA Table B1D3a):	2 – Structural Engineer to confirm
Earthquake Design Category:	II or III – Structural Engineer to confirm

Table 7 - Building Characteristic – Building 4

3.3.5 Villa 1 - 13

Characteristic	Description
BCA Classifications: (Refer Appendix E)	Class 2 – Residential Class 7a – Carpark
Type of Construction:	B
Floor Area of Whole Building:	*800m^2 – 832m^2 – Architect to confirm
Volume of Whole Building:	*4,960m^3 – 5,218m^3 – Architect to confirm
Max Fire Compartment Size (Floor Area):	*412m^2 – Architect to confirm
Max Fire Compartment Size (Volume):	*2,359m^3 – Architect to confirm
Rise in Storeys:	2 - Refer Section 3.4
Levels Contained:	2
BCA Effective Height:	**<5m (Varies) - Refer Section 3.4
Climate Zone:	5
Importance Level (BCA Table B1D3a):	2 – Structural Engineer to confirm
Earthquake Design Category:	II or III – Structural Engineer to confirm

Table 8 - Building Characteristic – Villa 1 - 13

***Note 1 –** Areas and volumes as guestimates only the architect will need to confirm actual measurements*

****Note:** "Effective height means the vertical distance between the floor of the lowest storey included in a determination 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)."*

3.4 Effective Height and Rise in Storey

3.4.1 Building 1

Building 1 has an effective height of 16.20m and the rise in storey is six (6).

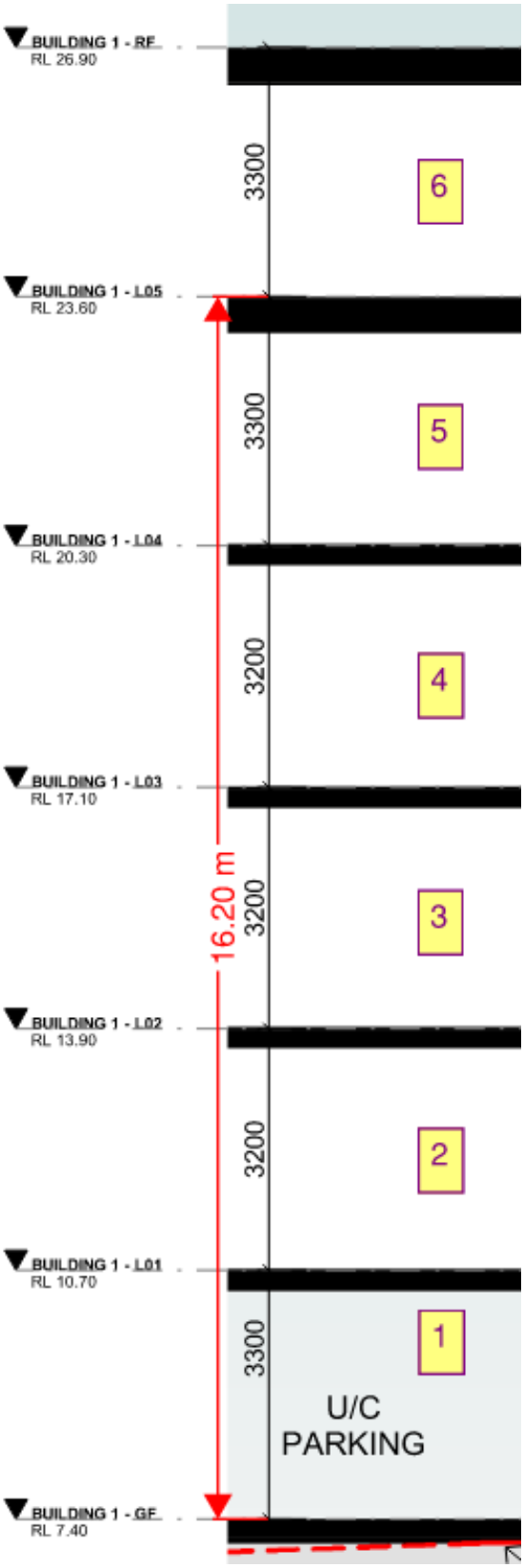


Figure 3 - Effective Height - Building 1

3.4.2 Building 2

Building 2 has an effective height of 20.85m and the rise in storey is seven (7).

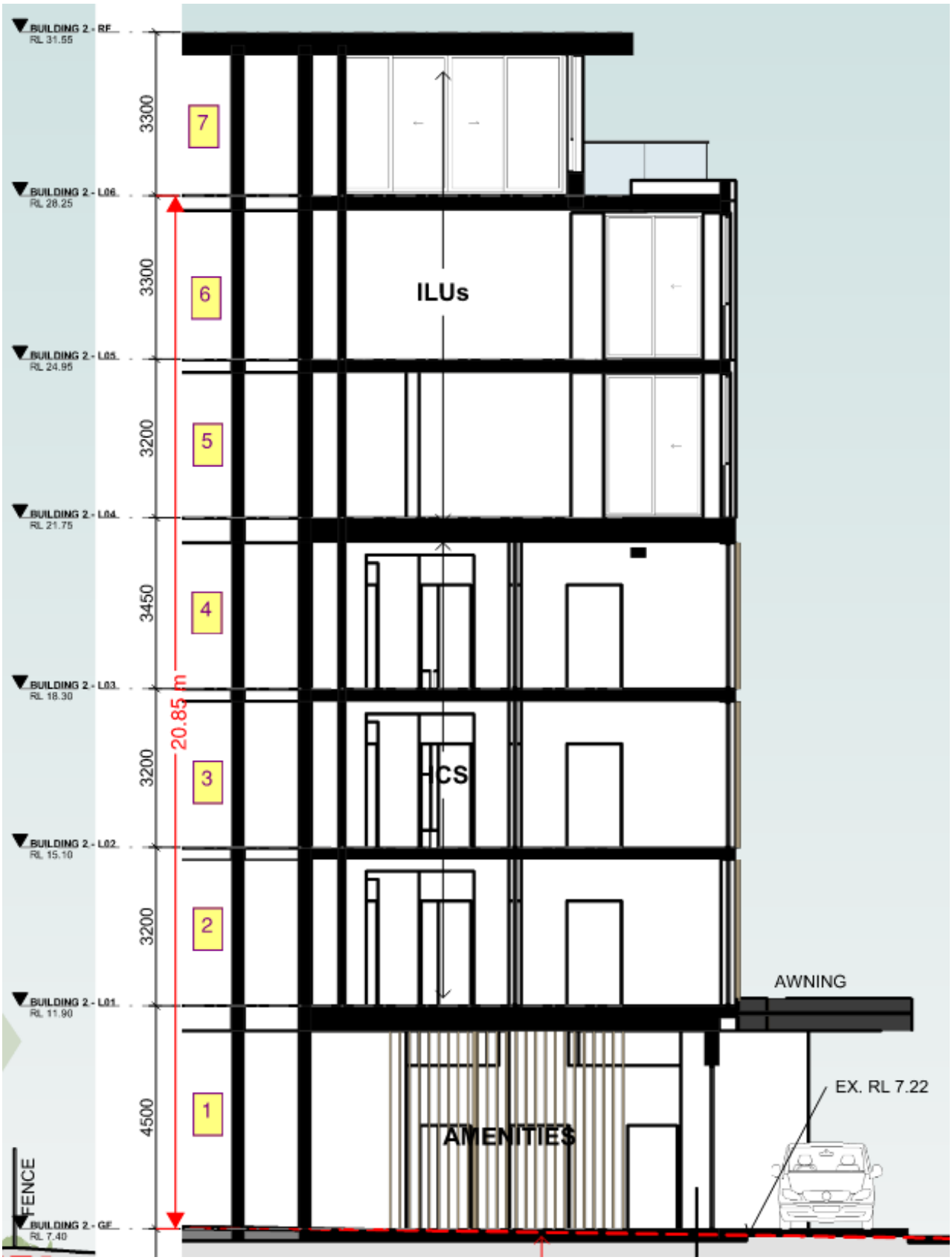


Figure 4 - Effective Height - Building 2

3.4.3 Building 3

Building 3 has an effective height of 19.41m and the rise in storey is seven (7).

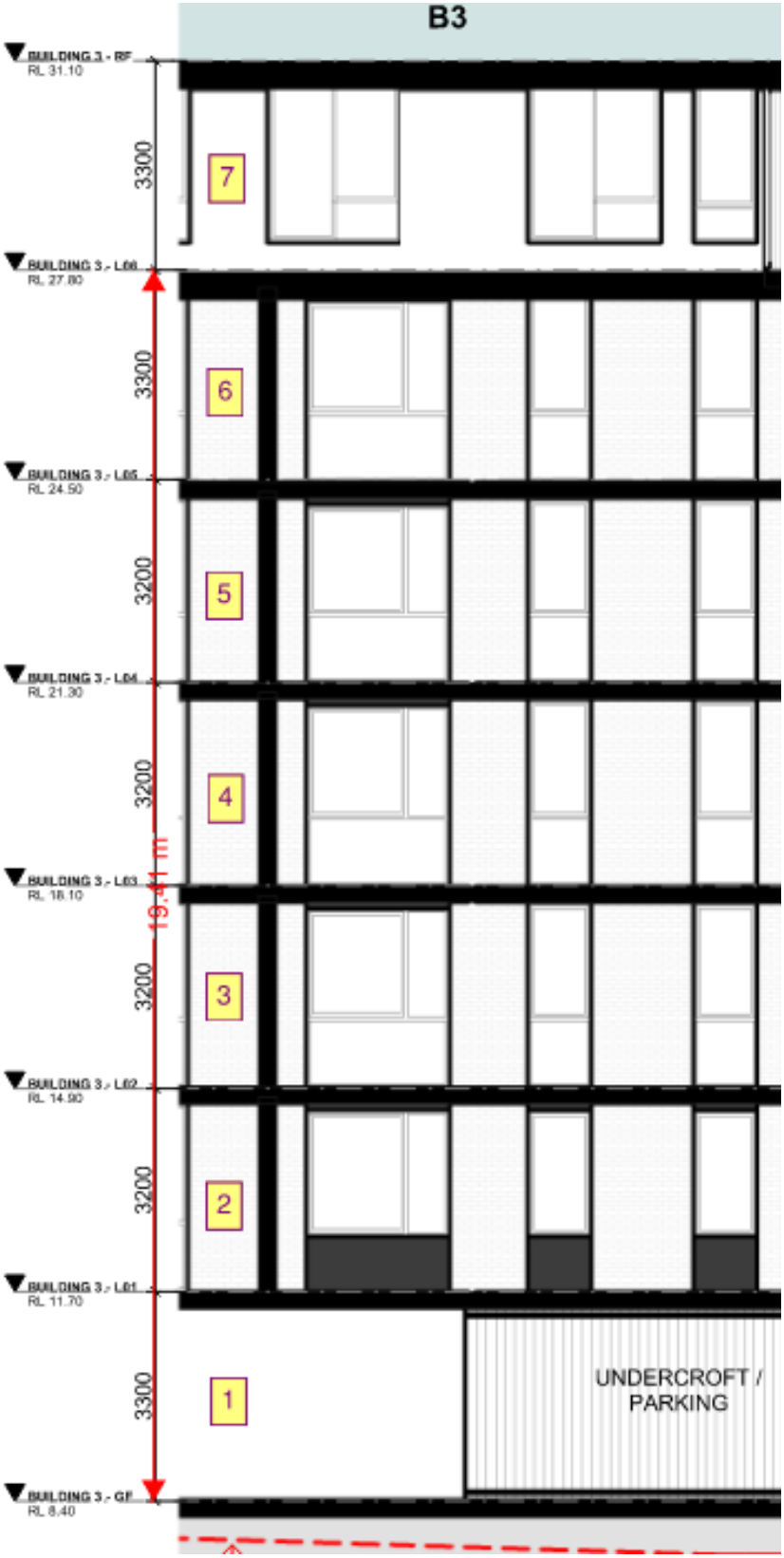


Figure 5 - Effective Height - Building 3

3.4.4 Building 4

Building 4 has an effective height of 16.20m and the rise in storey is six (6).

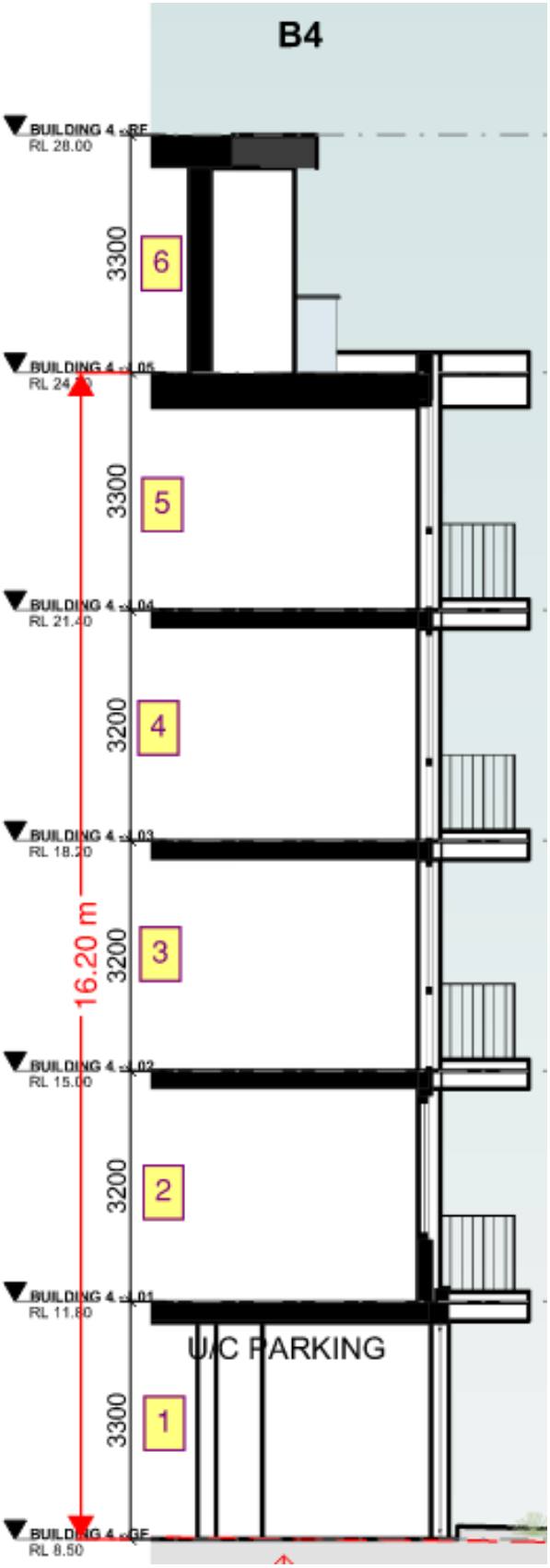


Figure 6 - Effective Height - Building 4

3.4.5 Villa 1 - 13

Villas 1 to 13 has a range of effective heights; however all buildings are under 5m. All buildings have a rise in storey of two (2).

Figure 7 - Effective Height – Villas 1 – 13

3.5 Fire Source Feature

3.5.1 Building 1

Building 1 is located the following distances from the BCA defined Fire Source Feature as shown in Table 9 and Figure 8 below.

Elevation	Fire Source Feature	Distance
North	Side Boundary (Northern Boundary)	=6m (Approx 6m)
East	Side Boundary (Eastern Boundary)	=6m (Approx 6m)
South	Another Building on the Allotment (Building 2)	>6m (Approx 11.5m)
West	Another Building on the Allotment (Villa 2)	>6m (Approx 12m)

Table 9 - Fire Source Feature – Building 1

3.5.2 Building 2

Building 2 is located the following distances from the BCA defined Fire Source Feature as shown in Table 10 and Figure 8 below.

Elevation	Fire Source Feature	Distance
North	Another Building on the Allotment (Building 1)	>6m (Approx 11.5m)
East	Side Boundary (Eastern Boundary)	>6m (Approx 14.5m)
South	Another Building on the Allotment (Building 3)	>6m (Approx 11m)
West	Another Building on the Allotment (Villa 4)	>6m (Approx 20m)

Table 10 - Fire Source Feature – Building 2

3.5.3 Building 3

Building 3 is located the following distances from the BCA defined Fire Source Feature as shown in Table 11 and Figure 8 below.

Elevation	Fire Source Feature	Distance
North	Another Building on the Allotment (Building 2)	>6m (Approx 11m)
East	Side Boundary (Eastern Boundary)	>1.5m & <6m (Approx 4m)
South	Another Building on the Allotment (Building 4)	>6m (Approx 12m)
West	Another Building on the Allotment (Villa 6)	>6m (Approx 14m)

Table 11 - Fire Source Feature – Building 3

3.5.4 Building 4

Building 4 is located the following distances from the BCA defined Fire Source Feature as shown in Table 12 and Figure 8 below.

Elevation	Fire Source Feature	Distance
North	Another Building on the Allotment (Building 3)	>6m (Approx 12m)
East	Side Boundary (Eastern Boundary)	>6m (Approx 13m)
South	Another Building on the Allotment (Villa 13)	>6m (Approx 12m)
West	Another Building on the Allotment (Villa 7)	>6m (Approx 11m)

Table 12 - Fire Source Feature – Building 4

3.5.5 Villas 1 - 13

Villas 1 - 13 is located the following distances from the BCA defined Fire Source Feature as shown in Table 13 and Figure 8 below.

Elevation	Fire Source Feature	Distance
North	Varies - Side Boundary (Northern Boundary), another Building on the Allotment (Building 4 and other Villas)	Variers - <1.5 to greater 18m*
East	Varies - Side Boundary (Eastern Boundary), another Building on the Allotment (Building 1 -4)	Variers - <1.5 to greater 18m*
South	Varies - Side Boundary (Southern Boundary), another Building on the Allotment (other Villas)	Variers - <1.5 to greater 18m*
West	Varies - Side Boundary (Western Boundary), another Building on the Allotment (other Villas)	Variers - <1.5 to greater 18m*

Table 13 - Fire Source Feature – Building 4

*Architect to provide set plan for each villa and the associated location of the closet fire source feature for further assessment

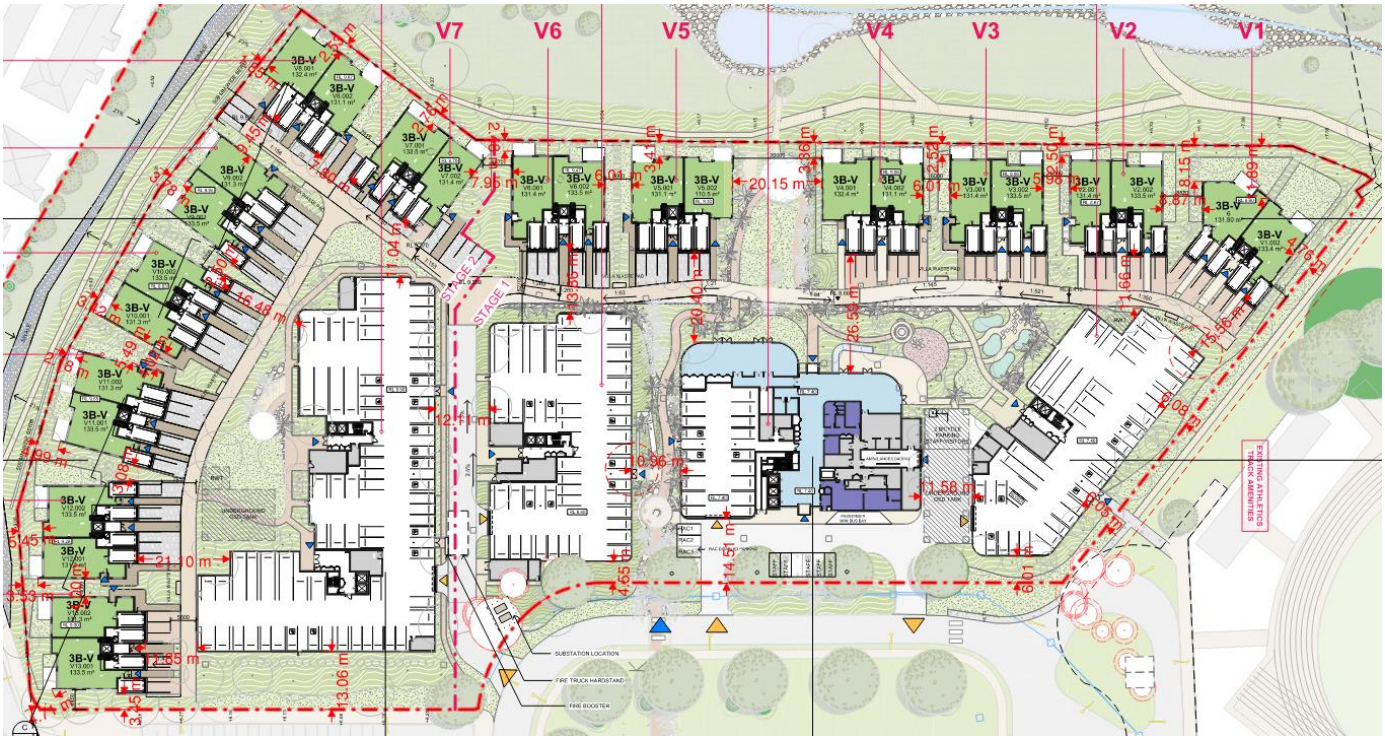


Figure 8 - Fire Source Feature

3.6 Documentation Assessed

The architectural plans are yet to be developed to the extent that a complete BCA assessment can be concluded and therefore this report is preliminary only. The plans are considered satisfactory for a planning submission.

This report is based on the documentation listed in Appendix D, prepared by Marchese Partners dated 04/07/2024 and the correspondence in Aconex MPA-IntCorr-000174 and MPA-IntCorr-000180.

3.7 Assumptions

Assumptions made in the preparation of the report are identified below;

1. There are 15 staff members for Building 2 however it has been advised that there will be a maximum of 10 staff onsite at any one time.

4.0 BCA COMPLIANCE DISCUSSION & DESIGN CONSIDERATIONS

The following assessment will provide an overview of the compliance with the BCA and identify issues that require particular attention at this stage of the development. Please read these issues outlined below in conjunction with the clause-by-clause assessment of this report as this section is a high level precis of the main issues affecting the design at this stage.

Legend:

Red – Non-compliance. Design rectification or performance solution required.

Blue – Further information or clarification required.

Green – Compliant/Compliance readily achievable through DtS or Performance Solution

Black – General Comment

Section A – Governing requirements

4.1 Part A7 – United Buildings

Note throughout this report where relevant, in terms of general commentary.

Section B – Structure

4.2 Part B1 - Structural Provisions

The Structural Engineer is required to determine compliance with regard to the various components of construction as noted within Part B and Part C of the BCA. The fire ratings have been nominated in Appendix B, the Structural Engineer will need to confirm that the design meets these ratings, which may contain some FRL's resulting from fire engineering analysis.

Some special considerations are:

- Slab set downs for waterproofing
- Protection of building elements providing support another building element that requires a fire rating (S5C3)
- Any proposed intumescent paint
- Any proposed structural steel crossing Fire Walls

The BCA determined Building Importance Level is 2 and will need to be considered by the Structural Engineering accordingly. *However, we have assumed that the building is not proposed to be used for post disaster recovery. If this is not the case, and the building is proposed to be used for post disaster recovery, the Building Importance Level would be 4 and the design would need to accommodate according.*

All designers will be required to ensure any new installations comply for seismic impact in accordance with the earthquake code AS 1170.4-2007, EDC II or III, *Structural Engineer to confirm.*

> *Note: during an earthquake, motion will be imposed on all parts of any construction, Therefore, parts of a structure (including non-loadbearing walls, etc) should be designed for lateral earthquake forces such as out-of-plane forces.*

All designers shall review Section 8 of AS 1170.4 and certify that the proposed design complies.

Areas to consider at this stage include but are not limited to:

Designer	Parts and components (Section 8 of AS 1170.4)
Architect Refer to Part 8.1.4 (a) of AS 1170.4 for more details	(i) All non-loadbearing walls. (ii) Appendages, including parapets, gables, verandas, awnings, canopies, chimneys, roofing components (tiles, metal panels) containers and miscellaneous components. (iii) Connections (fasteners) for wall attachments, curtain walls, exterior non-loadbearing walls. (iv) Partitions. (v) Floors (including access floor systems, where the weight of the floor system shall be determined in accordance with Clause 6.2.2 of AS 1170.4). (vi) Ceilings. (vii) Architectural equipment including storage racks
Service Engineers Refer to Part 8.1.4(b) of AS 1170.4 for more details	(a) Smoke control systems. (b) Emergency electrical systems (including battery racks). (c) Fire and smoke detection systems. (d) Fire suppression systems (including sprinklers). (e) Life safety system components. (f) Boilers, furnaces, incinerators, water heaters, and other equipment using combustible energy sources or high-temperature energy sources, chimneys, flues, smokestacks, vents and pressure vessels. (g) Communication systems (such as cable systems motor control devices, switchgear, transformers, and unit substations). (h) Reciprocating or rotating equipment. (i) Utility and service interfaces. (j) Anchorage or lift machinery controllers. (k) Lift and hoist components including structural frames providing supports for guide rail brackets, guide rails and brackets, car and counterweight members, (l) Lighting fixtures. (m) Electrical panel boards and dimmers. (n) Conveyor systems (non-personnel). (o) Ducts, cabling and piping distribution systems. (p) Supports for ducts, cabling and piping distribution systems, except individually supported services, in the following situations: (A) In structures classified as being in EDC 1. (B) For gas piping less than 25mm inside diameter. (C) For piping in boiler and mechanical rooms less than 32mm inside diameter. (D) For all other piping less than 64mm inside diameter. (E) For all electrical conduit less than 64mm inside diameter. (F) For all rectangular air-handling ducts less than 0.4m^2 in cross-sectional area. (G) For all round air-handling ducts less than 700 mm in diameter.

	(H) For all ducts and piping suspended by individual hangers 300 mm or less in length.
All Designers Refer to Part 8.1.4(c) of AS 1170.4 for more details	All other components similar to those abovementioned items.

Table 14 - Earthquake Design Requirements

4.3 **B1D6 - Construction of buildings in flood hazard areas**

Construction of buildings in flood hazard areas, requires the building to be designed in accordance with the ABCB Standard for Construction of Buildings in Flood Hazard Areas ("Standard".)

Comment: The building is proposed to be constructed on flood prone land, refer Figure 9 below, extracted from the Central Coast Council Online Mapping Tool, however, is subject to an assessment from the Development Consent Authority.

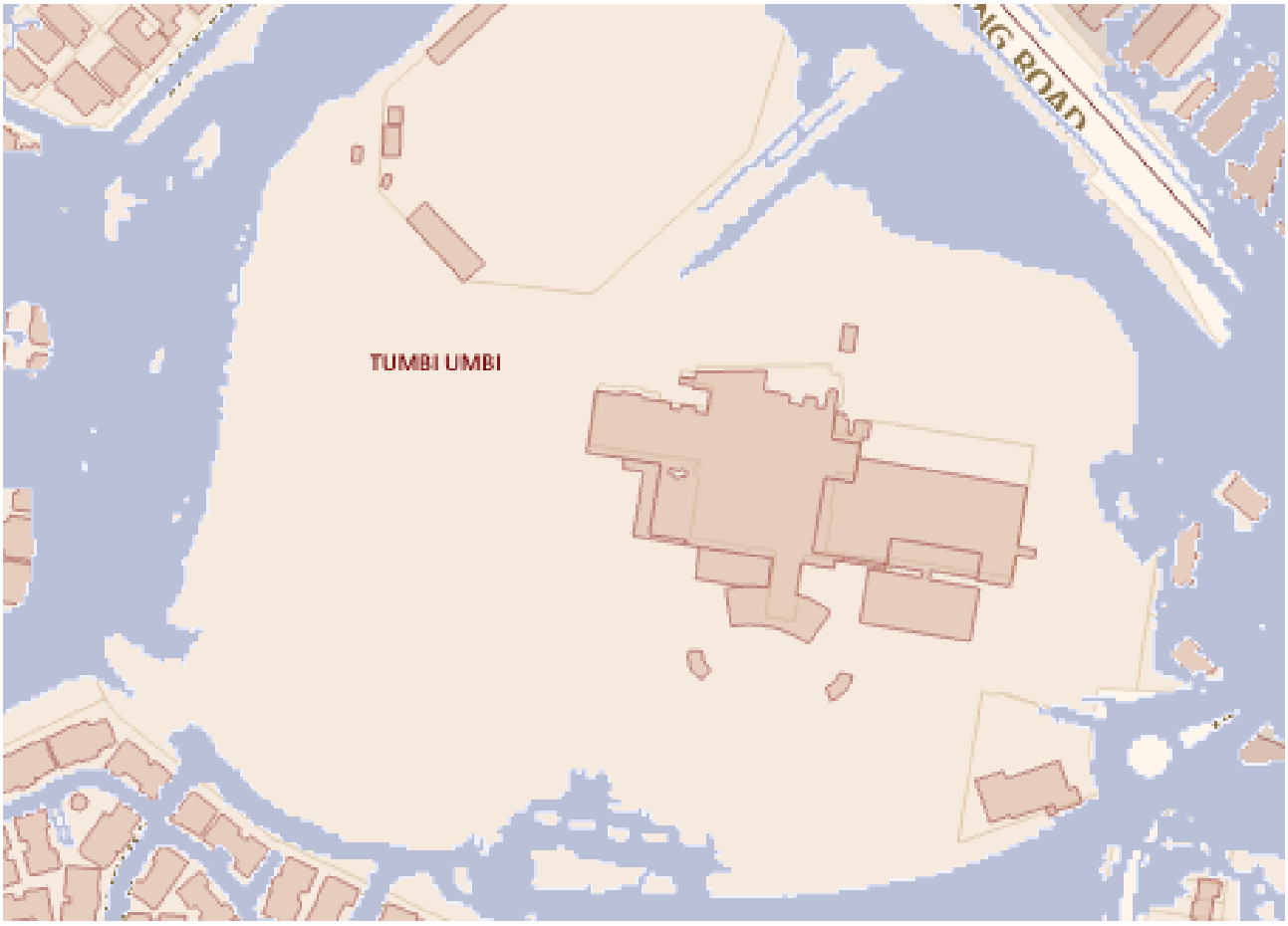


Figure 9 - Flood Map From ePlanning Spatial Viewer

Section C – Fire Resistance

4.4 C2D2 - Type of Construction Required

Buildings 1, 2, 3 and 4 are subject to Type A Fire Resistance Construction requirements as per Specification 5. Refer to Appendix B for required FRL's.

Villas 1 – 13 are subject to Type B Fire Resistance Construction requirements as per Specification 5. Refer to Appendix B for required FRL's.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

However, there are certain FRL's are that proposed to be reduced from the DTS provisions in the following locations.

(a) ***Building 2:*** *Class 6 portions of Ground Floor to be reduced to 120/120/120 FRL, in lieu of 180/180/180 FRL.*

(b) ***Villas 1 – 13****: Carpark portions of Ground Floor to be reduced to 90/90/90 RFL in lieu of 120/120/120 FRL.*

The Fire Safety Engineer has confirmed on the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

External walls generally require to be provided with a Fire Resistance Level, depending on whether it is a loadbearing or non-loadbearing part and it's distance from a fire source feature[2]. This includes the protection of openings as per C4D3, see below.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.5 S5C8 – Enclosure of Shafts

Shafts that are required to have an FRL must be enclosed at the top and bottom by construction having an FRL not less than that required for the walls of a non-loadbearing shaft in the same building, unless the top of a shaft extends beyond the roof covering (other than one enclosing a fire-isolated stairway or ramp which requires an enclosed roof) or the bottom of a shaft if it is non-combustible and laid directly on the ground.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and I of Table 3 above stipulates what is needed in terms of developing these plans.

However, the following issues have been identified at this stage of the design.

(a) ***Building 1, 2, 3 and 4:*** *Each building is proposed to be provided with a garbage chute which will not contain a compliant fire rated bottom and top to the shaft.*

The Fire Safety Engineer has confirmed on the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

[2] *Fire source feature means:*

(a) *The far boundary of a road, river, lake or the like adjoining the allotment; or*

(b) *A side or rear boundary of the allotment; or*

(c) *An external wall of another building on the allotment which is not a class 10 building.*

4.6 **S5C16 – Type A Fire-resisting construction – Roof Lights**

A roof light, which is located in a roof which is required to have an FRL or non-combustible coverings, must have an aggregate area of not more than 20% of the roof surface.

Comment: Compliance appears to have been readily achieved.

A roof light, which is located in a roof which is required to have an FRL or non-combustible coverings, must not be located with 3m of;

(a) any boundary of the allotment other than the boundary with a road or public place

(b) any part of the building which projects above it, unless that part has the FRL required of a fire wall and any openings in that part of the wall for 6 m vertically above the roof light or the like are protected in accordance with C4D5.

(c) any roof light or the like in an adjoining sole-occupancy unit if the walls bounding the unit are required to have an FRL.

(d) any roof light or the like in an adjoining fire-separated section of the building

Comment: Compliance appears to have been readily achieved. The plant equipment (solar panels, Hot water, AC condensers, etc) on top the building, has not been considered part of the building and therefore not applicable to S5C216(b)(ii).

4.7 **C2D9 – Lightweight Construction**

Lightweight construction must comply with Specification 6, if it is used in a wall system that is required to have an FRL, or it is used for a lift shaft, stair shaft or service shaft.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.8 **C2D10 – Non-Combustible Building Elements / C2D14 – Ancillary Elements**

BCA Clause C2D10, C2D14 and Specification 5, illustrate the restrictions on using combustible materials for external walls, inclusive of internal linings, and other building elements, refer to Table 16 below.

Any new materials to the external wall shall comply with the DtS Provisions of the BCA. AS 1530.1 non-combustibility test reports will also be required in order to determine if compliance has been achieved.

Refer to subclause (4), (5) and (6) for building elements which do not apply or are deemed to be non-combustible.

In a **Type A Building**, the following elements are to be non-combustible, concrete, masonry, or fire-protected timber.

Building Element	Type A Construction
External Wall	Non-Combustible
Common Wall	Non-Combustible
Floor and Floor Framing of Lift Pits	Non-Combustible
All Loadbearing Internal walls (including those of shafts)	Concrete, Masonry or Fire-protected Timber
Loadbearing Fire Walls (Excluding External Walls)	Concrete, Masonry or Fire-protected Timber
Non-loadbearing walls required to be fire-resistant	Non-Combustible
Non-loadbearing lift, ventilation, pipe garbage and like shafts which do not discharge hot products of combustion	Non-Combustible

Table 15 - Non-Combustible Building Elements – Type A

In a **Type B Building**, the following elements are to be non-combustible, concrete, masonry, or fire-protected timber.

Building Element	Type B Construction
External Wall	Non-Combustible
Common Wall	Non-Combustible
Floor and Floor Framing of Lift Pits	Non-Combustible
All Load bearing Internal walls (including those of shafts)	Concrete, Masonry or Fire-protected Timber
Loadbearing Fire Walls	Concrete, Masonry or Fire-protected Timber
Non-loadbearing walls required to be fire-resistant	Non-Combustible
Non-Loadbearing lift, ventilation, pipe garbage and like shafts which do not discharge hot products of combustion	Non-Combustible

Table 16 - Non-Combustible Building Elements – Type B

Comment: Further details, specifications and test reports are required to be provided prior to the Construction Certificate applications. Test reports to AS 1530.1 are to be provided for each element. Item G of Table 3 above stipulates what is needed in terms of developing these plan and disclosure statement.

The following elements need to be considered at this stage of the design.

(a) FC Cladding

(b) External green wall or planter boxes

However, the following materials have been identified at this stage of the design;

*(a) **All Buildings:** The following items have been identified as being combustible and located on the external wall;*

(a) Timber Fire Doors

Design change is required, or the Fire Safety Engineer is to comment on the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

4.9 **C2D11 – Fire Hazard Properties**

The Fire Hazard Properties of floor linings and floor coverings, wall and ceiling lining's, and other material as noted within Clause C2D11, must comply with the provisions of Specification 7, which are noted in Table 17 and Table 18 below.

Refer to sub clause (3) for materials and assembly which do not need to comply with C2D11.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. It is recommended that the Fire Hazard Property Test Reports of the various linings and coverings are submitted to this office for a compliance check prior to procurement/installation. Notwithstanding this they will be required to be verified prior to the issuance of the OC, which is often too late in the case of the use of non-compliant materials.

The following material need to be considered at this stage of the design.

(a) TBC

Buildings 1, 2, 3 and 4 – Fire Hazard Properties

Item	Location	Requirement
Floor linings or coverings	*Fire Isolated Exits*	**CRF of no less than 4.5kW/m²*
	Class 9c Resident Use Areas / Lift Cars	**CRF of no less than 2.2kW/m²*
	All Other Areas	**CRF of no less than 1.2kW/m²*
Wall and ceiling linings	*Fire Isolated Exits*	****Group Number 1*
	Class 9c Public Corridors / Lift Cars	****Group Number 1 or 2*
	All Other Areas	****Group Number 1, 2 or 3*
Air-handling Rigid and Flexible Ductwork	*All areas*	*AS4254.1-2021 and AS4254.2-2012*
Other Materials and Insulations	*All areas*	*Must not Exceed;* ○ *Spread of Flame index of 9* ○ *Smoke-Development Index of 8 (only if the spread of Flame index if more then 5)*

Table 17 - Fire Hazard Properties – Buildings 1, 2, 3 and 4

Villas 1 - 13 – Fire Hazard Properties

Item	Location	Requirement
Floor linings or coverings	*All Areas*	**CRF of no less than 2.2kW/m²* ***SDR max 750 percent-minute* ****Group Number 1 or, where floor covering continues more than 150mm up a wall*
Wall and ceiling linings	- *Class 2 and 7a Public Corridors, and* - *Class 7a Specific Area (Ceilings Only)* - *Lift Cars*	****Group Number 1 or 2* *****SGRI not more than 100* *****ASEA less than 250 m²/kg*
	All Other Areas	****Group Number 1, 2 or 3* *****SGRI not more than 100* *****ASEA less than 250 m²/kg*
Air-handling Rigid and Flexible Ductwork	*All areas*	*AS4254.1-2021 and AS4254.2-2012*

Item	Location	Requirement
Other Materials and Insulations	*All areas*	*Must not Exceed;* ○ *Spread of Flame index of 9* ○ *Smoke-Development Index of 8 (only if the spread of Flame index if more then 5)*

Table 18 - Fire Hazard Properties – Buildings Villas 1 -13

**Note: CRF stands for critical radiant flux, which is a BCA defined term as follows – "Critical radiant flux means the critical heat flux at extinguishment as determined by AS ISO 92391.1 – 2003."*
***Note SDR means the smoke development rate as determined by testing flooring materials in accordance with AS ISO 9239.1*
****Note Group Number is a BCA defined term as follows – "Group number means the number of one of 4 groups of materials used in the regulation of fire hazard properties and applied to materials used as a finish, surface, lining, or attachment to a wall or ceiling."*
The Group Numbers are as follows –
(a) For the purposes of this Clause, the method/procedure of determining the Group number is dictated via AS 5637.1-2015. Then in accordance with AS 5637.1-2015, the group number of a material is determined by either—
(i) physical testing in accordance with AS ISO 9705 ; or
(ii) prediction in accordance with Clause 3 of Specification A2.4 using data obtained by testing the material at 50 kW/m2 irradiance in the horizontal orientation with edge frame in accordance with AS/NZS 3837 .
(b) The group number of a material is as follows when tested or predicted in accordance with subclause (a):
(i) A Group 1 material is one that does not reach flashover when exposed to 100 kW for 600 seconds followed by exposure to 300 kW for 600 seconds.
(ii) A Group 2 material is one that reaches flashover following exposure to 300 kW within 600 seconds after not reaching flashover when exposed to 100 kW for 600 seconds.
(iii) A Group 3 material is one that reaches flashover in more than 120 seconds but within 600 seconds when exposed to 100 kW.
(iv) A Group 4 material is one that reaches flashover within 120 seconds when exposed to 100 kW.
(c) A material used as a finish, surface, lining or attachment to a wall or ceiling must be a Group 1, Group 2 or Group 3 material used in accordance with Table 3 and for buildings not fitted with a sprinkler system complying with Specification E1.5, have—
(i) a smoke growth rate index not more than 100; or
(ii) an average specific extinction area less than 250 m 2/kg.
*****Note SGRI is the smoke growth rate index and ASEA is the average specific extinction area. Both must be determined in accordance with AS 5637.1*

4.10 C3D3 – Fire Compartment Floor Areas

The size of any fire compartment within a building must not exceed the relevant maximum floor area nor the relevant maximum volume area, as set out in Table C3D3. The maximum permissible fire compartment size is noted below in Table 19 below. This is divided between the Classification type.

Comment: Compliance appears to have been readily achieved, however the architect is to review and confirm the max floor area and volume for each building and provide Fire rating and compartmentation plans to determine compliance or otherwise with these provisions. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

Classification / Compartment	*Table C3D3 BCA Max floor area (m^2) / volume (m^3) permitted Type A Const. per classification*	*Adjusted Max floor area (m^2) / volume (m^3) based on classification split*	*Proposed Max floor area (m^2) / volume (m^3)*	*Compliance Achieved*
Class 2	*The Class 2 portions of the building are not subject to the floor area and volume limitations of BCA Clause C3D3 as S5C11 (Table S5C11e) of Specification 5 of the BCA regulates the compartmentation of separation provisions applicable to buildings or building portions of Class 2 Classifications.*			
Class 7a	*The carpark is to be provided with sprinkler system (other than a FPAA 101D or FPAA101H system) complying with Specification 17 and as such there are no maximum floor area or volume limitations for this area*			
Building 2				
Ground Floor *(Class 5, 9b) @ 61%* *(Class 6, 7) @ 39%*	*8,000 / 48,800* *5,000 / 30,000*	*6,841 / 41, 048*	*1,814 / 8,163*	✓
Level 1 (Class 9c)	*8,000 / 48,000*	*n/a*	*897 / 2,870*	✓

Table 19 - Max Permitted Compartment Sizes

**Note 1 – Fire Compartment Plans are required to be provided by the Architect.*

4.11 NSW C3D6 Class 9 Buildings / Specification 11 Smoke-Proof Walls in Residential Care Buildings

A Class 9c building must comply with the following:

(a) A building must be divided into areas not more than 500m2 by smoke proof walls complying with Specification 11.

(b) A fire compartment must be separated from the remainder of the building by fire walls and notwithstanding C3D8 and Specification 5, floors with an FRL of not less than 60/60/60.

Smoke-proof walls required by C3D6 must comply with the following:

(a) The wall may be lined on one side only.

(b) Linings on the wall must be non-combustible and extend to the underside of—

  a. the floor above; or

  b. a non-combustible roof covering; or

  c. a flush plasterboard ceiling lined with 13 mm standard grade plasterboard or a fire-protective covering, with all penetrations sealed against the free passage of smoke.

(c) If plasterboard is used in the lining on a wall, it must be a minimum of 13 mm standard grade plasterboard.

(d) Not incorporate any glazed areas unless the glass is safety glass as defined in AS 1288.

(e) Only have doorways which are fitted with smoke doors complying with Specification 12.

(f) 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.

(g) 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.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and A1 of Table 3 above stipulates what is needed in terms of developing these plans.

Note: The Age Care building has been designed to be divided into areas not more than 500m2 by smoke proof walls complying with Specification 11. Refer Figure 10 below. Final compartment lines are to be confirmed by the Architect.

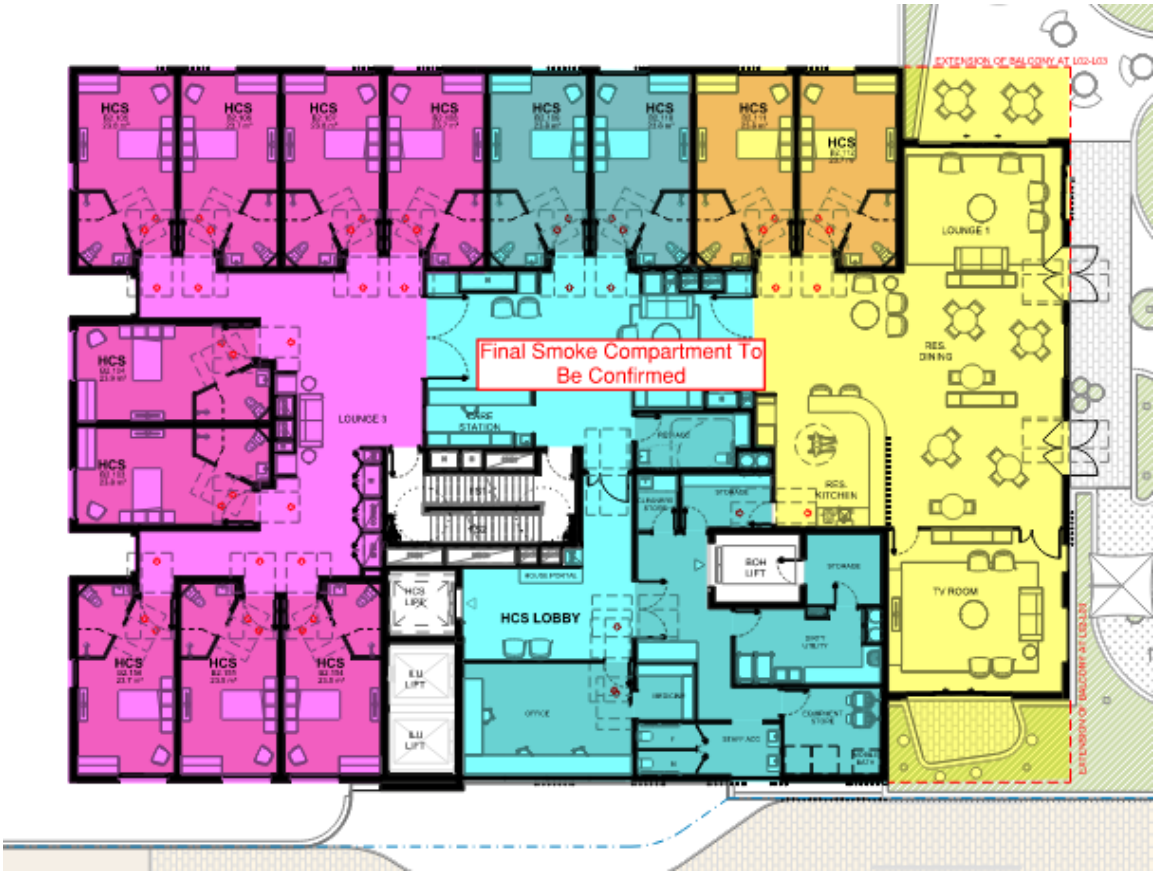


Figure 10 – Age Care Smoke Compartments

A door required by C3D6 or this Specification to be smoke-proof or have an FRL, must provide a smoke reservoir by not extending within 400 mm of the underside of,

(a) a roof covering; or

(b) the floor above; or

(c) an imperforate false ceiling that will prevent the free passage of smoke.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and A1 of Table 3 above stipulates what is needed in terms of developing these plans.

Except for smoke and fire walls provided above, all non-loadbearing internal walls between and bounding sole-occupancy units and bounding a public corridor in a resident use area must:

(a) be lined on each side with standard grade plasterboard not less than 13 mm thick or a material with at least an equivalent level of fire protection; and

(b) if provided with cavity insulation, contain only non-combustible insulation; and

(c) extend to the underside of—

- the floor next above; or
- a ceiling lined with standard grade plasterboard not less than 13 mm thick or an equivalent non-combustible material; or
- a non-combustible roof covering; and

(d) not incorporate any penetrations above door head height unless the penetrations are adequately stopped to prevent the free passage of smoke; and

(e) be smoke sealed with intumescent putty or other suitable material at any construction joint, space or the like between the top of the wall and the floor, ceiling or roof.

Loadbearing Internal walls must comply with the requirements of Specification 5 and (b) - (e) above.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and A1 of Table 3 above stipulates what is needed in terms of developing these plans.

Ancillary use areas containing equipment or materials that are a high potential fire hazard, must be separated from the sole-occupancy units by smoke proof walls complying with Specification 11.

Ancillary use areas included, but are not limited to, a kitchen and related food preparation areas having a combined floor area of more than 30 m2, a laundry, where items of equipment are of the type that are potential fire sources (e.g. gas fire dryers), and storage rooms greater than 10 m2 used predominantly for the storage of administrative records.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and A2 of Table 3 above stipulates what is needed in terms of developing these plans. Architect is to provide a plan nominating the size of the kitchen. If it is greater than 30m2,it will need to be separated from the sole-occupancy units by smoke proof walls complying with Spec 11.

Openings in fire walls must be protected as follows:

- Doorways — self-closing or automatic closing –/60/30 fire doors.
- Windows — automatic or permanently fixed closed –/60/– fire windows or –/60/– automatic fire shutters.
- Other openings — construction having an FRL not less than –/60/–.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.12 Specification S12C3 / S12C4 – Smoke Doors

Smoke doors are required to be side hung and

(a) must swing in the direction of egress or

(b) in both directions.

If the smoke door is located in the path to alternative exits, then it must swing in both directions.

Comment: The smoke door located in Building 2 Age Care storey, is proposed to only swing in one direction in lieu of both directions. The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

4.13 C3D8 Separation by Fire Walls

Construction — A fire wall must have the relevant FRL prescribed by Specification 5 for each of the adjoining parts, and if these are different, the greater FRL. any openings in a fire wall must be in accordance with Part C4. Any building elements, other than roof battens with dimensions of 75 mm x 50 mm or less or sarking-type material, must not pass through or cross the fire wall unless the required fire-resisting performance of the fire wall is maintained.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

Separation of fire compartments — A part of a building separated from the remainder of the building by a fire wall may be treated as a separate fire compartment if it is constructed as a compliant fire wall in C3D8(a) and the fire wall extends to the underside of a floor having an FRL required for a fire wall or the roof covering

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.14 C3D9 / C3D10 – Separation of Classifications in the same storey and different storey

The building/s has parts of different classification within the same storey and are required to separate by fire walls, or the building elements of that storey are to have the highest FRL prescribe in Specification 5 of the highest Classification. The building also has different classification on different storeys, where the floor between the adjoining storeys must have the FRL as prescription in Specification 5 for the classification of the lower storey.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

However, it is anticipated that due to the mixed classification in the following areas, certain FRL's are proposed to be reduced from the DtS Provisions,

*(a) **Building 2:** Class 6 portions of Ground Floor to be reduced to 120/120/120 FRL, in lieu of 180/180/180 FRL.*

*(b) **Villas 1 – 13**: Carpark portions of Ground Floor to be reduced to 90/90/90 RFL in lieu of 120/120/120 FRL.*

The Fire Safety Engineer has confirmed on the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

4.15 C3D11 – Separation of lift shafts

A lift connecting more than 2 storeys in an unsprinklered building or more than 3 storeys in a building fitted with sprinklers must be separated from the remainder of the building by an enclosure shaft which is;

- Type A - constructed in accordance with Specification 5,
- Type B – if loadbearing, constructed in accordance with Specification 5, or if non-loadbearing be of non-combustible construction.

Openings for lift landing doors and services must be protected in accordance with of Part C4.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans. Structural Engineer is to confirm if the lift shaft is loadbearing or non-loadbearing.

4.16 C3D12 – Stairways and lifts in one shaft

A stairway and lift must not be within the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft

Comment: Compliance appears to have been readily achieved.

4.17 C3D13 – Separation of equipment

The following equipment, if provided, will need to be fire separated from the remainder of the building by construction having an FRL as required by Specification 5, but no less than 120/120/120.

- Lift motors and control panels.
- Emergency generators used to sustain emergency equipment operating in emergency mode including standby power systems.
- Central smoke control plant,
- Boilers,
- Battery systems that are 12 V or more with a storage capacity of 200 kWh or more.

Separation of on-site fire pumps must comply with the requirements of AS 2419.1.

Comment: Electrical Engineer or Other Service Consultants are to confirm which equipment is or isn't required for the building. Where required, further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.18 C3D14 – Electricity supply system

An Electricity Substation or Main Switchboard which sustains emergency equipment operating in the emergency mode, located within the building, must be separated from any other part of the building by construction having an FRL of not less than 120/120/120 and and have self-closing fire doors constructed with -/120/30.

Comment: Electrical Engineer and Other Service Consultants are to confirm which equipment is or isn't required for the building. Where required, further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.19 C3D15 – Public corridors in Class 2 and 3 Buildings

In a Class 2, a public corridor, if more than 40 m in length, must be divided at intervals of not more than 40 m with smoke-proof walls complying with S11C2.

Comment: Compliance appears to have been readily achieved. Note the corridor length of the typical floors of Building 4 are currently designed to 3982m. The Architect is to ensure this corridor does not exceed 40m in length, or if so, includes the provision for smoke-proof walls.

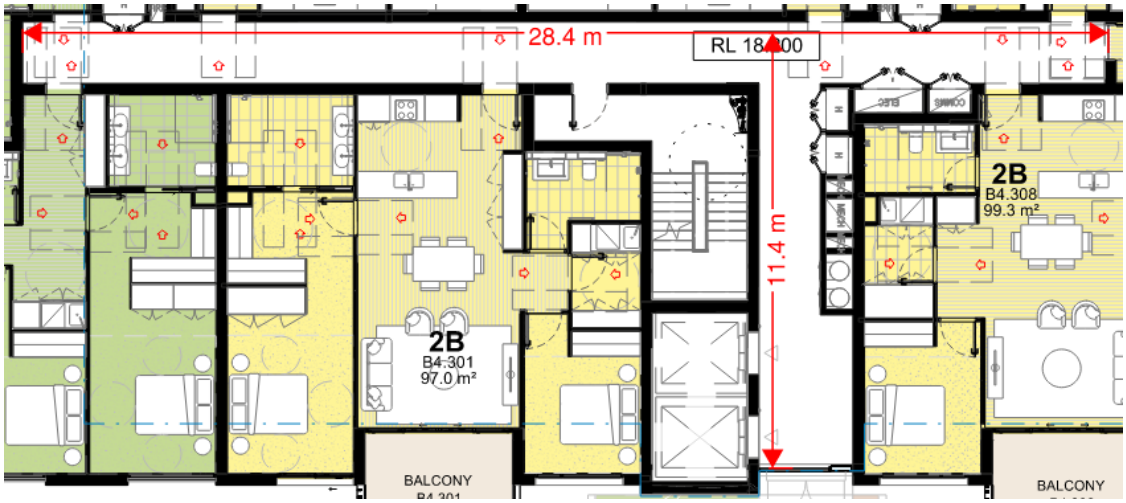


Figure 11 - Building 4 Corridor Length

4.20 C4D3 – Protection of openings

Openings in an external wall, that is required to have an FRL, require appropriate fire protection as nominated below in Clause C4D5. This is only required where the opening is located within close proximity to a fire source feature[3]. Close proximity is described as:

- 6 m from a far boundary of a road, river, lake or the like adjoining the allotment; or
- 3 m from the side or rear boundary of the allotment; or
- 6 m from an external wall of another building on the allotment which is not a class 10 building

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and A3 of Table 3 above stipulates what is needed in terms of developing these plans.

However, at this stage of the design, Protection of openings form a fire source feature in an external wall have not been provided in the following areas,

*(a) **Villas 1 – 13**, Within 3m of the North, West and South Boundary*

The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

*Note: Any openings in the Villas that are within 6m of another building, are to be protected in accordance with C4D5. An example of these areas has been shown in **Error! Reference source not found.** below. These windows m ust be permanently shut or be self-closing and be coordinated with Fire, Natural lighting, ESD and Mechanical (Ventilation) Engineer. There is likely a Performance Solution required as a result of the C4D5 protection requirements.*

[3] *Fire source feature means:*

(d) The far boundary of a road, river, lake or the like adjoining the allotment; or

(e) A side or rear boundary of the allotment; or

(f) An external wall of another building on the allotment which is not a class 10 building.

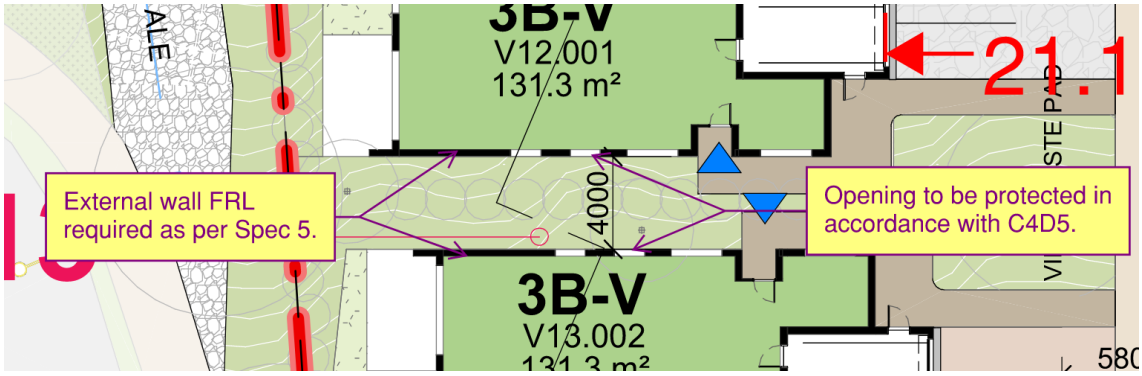


Figure 12 - Villa Protection Requirements

Openings that are required to be protected in an external wall that is required to have an FRL, must not occupy more than 1/3 of the area of the external wall of the storey.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.21 C4D4 – Separation of external walls and associated openings in different fire compartments

The distance between any external walls from different fire compartments must be separated by no less then BCA Table C4D4, refer Table 20 below, unless that part of the wall is provided with an FRL no less then 60/60/60 and any openings protected in accordance with C4D5

Angle between walls	Minimum distance (m)
0° (walls opposite)	6
more than 0° to 45°	5
more than 45° to 90°	4
more than 90° to 135°	3
more than 135° to less than 180°	2
180° or more	Nil

Table 20 - Table C4D4

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.22 C4D5 – Acceptable methods of protection

Protection of openings in accordance with C4D5 consists of:

(a) Where protection is required, doorways, windows and other openings must be protected as follows:
  (i) Doorways—
    (A) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or
    (B) –/60/30 fire doors that are self-closing or automatic closing.
  (ii) Windows—
    (A) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or
    (B) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or
    (C) –/60/– automatic closing fire shutters.
  (iii) Other openings—
    (A) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or
    (B) construction having an FRL not less than –/60/–.
(b) Fire doors, fire windows and fire shutters must comply with Specification 12.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.23 C4D6 – Doorways in Fire Walls

The aggregate width of openings for doorways in a fire wall must not exceed ½ of the length of the fire wall,

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

Each doorway must be protected by a fire door or fire shutter which has an FRL of not less than that required by Specification 5 for the fire wall except that each door or shutter must have an insulation level of at least 30. The fire door and fire shutter required above must be self-closing or automatic closing initiated by a fire trip.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.24 Specification S12C2 – Fire Doorset Testing

It is understood that several current fire door and jamb test reports conducted under the latest BCA standard (AS 1530.4-2015 and some older ones to AS 1530.4-2004) may contain the use of pop-up fire bolts or the like which uphold the integrity of the fire door. Such pop-ups or the like are not permitted to be used on doors that are 'required' exits doors or doors that are required path of travel doors which are to maintain egress operation in the event of a fire. **Figure 13** below illustrates a compliant egress fire door because it contains fire bolt.

Prior to procurement, all fire door test reports are to be submitted to Group DLA for a compliance review.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed.

The design team will need to provide the specific fire test reports for each fire door for review and comment. We suggest that this is actioned as soon as possible in case the FER is required to be updated.

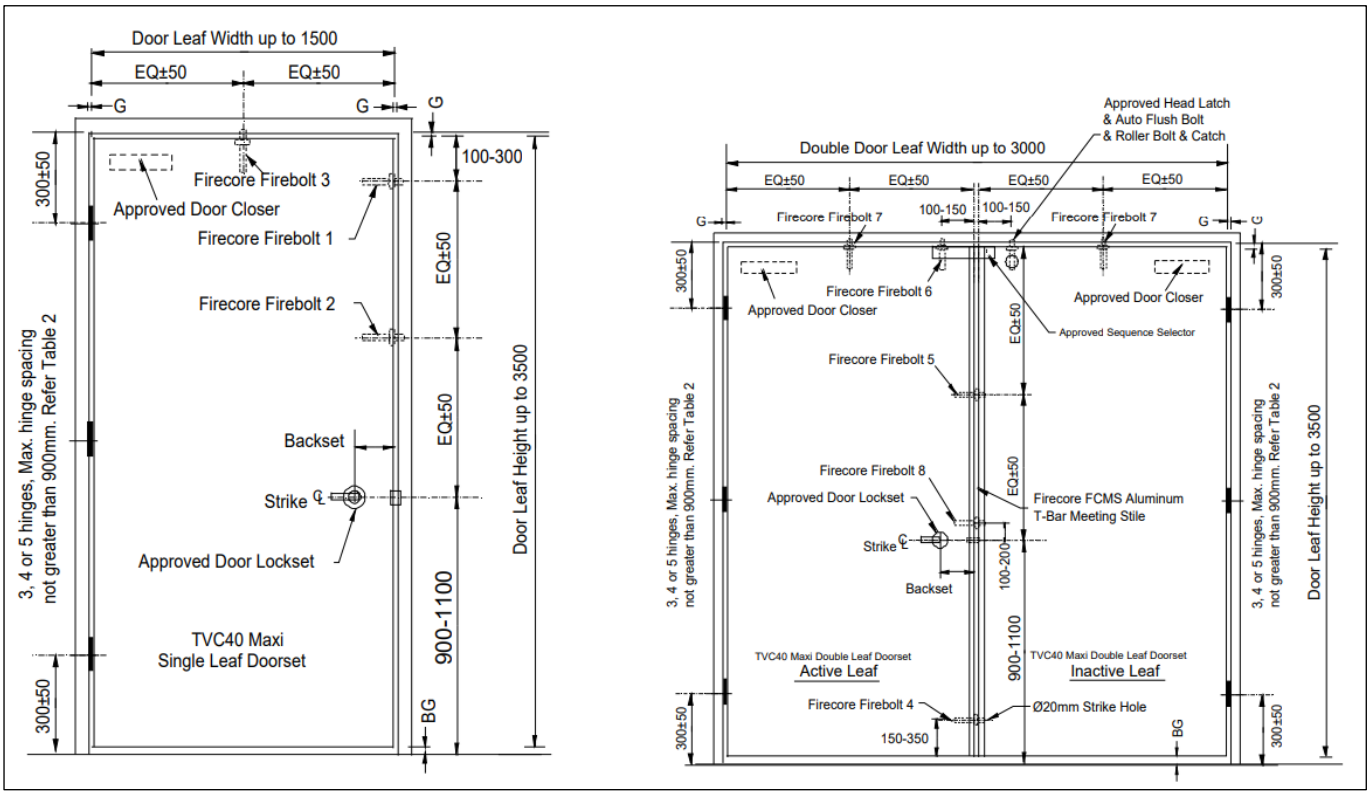


Figure 13 – Non-compliant fire rated egress door.

4.25 C4D9 – Openings in fire-Isolated Exits

Doorways that open to fire-isolated stairways, fire-isolated passageways or fire-isolated ramps, and are not doorways opening to a road or open space, must be protected by –/60/30 fire doors that are self-closing, or automatic closing in accordance with C4D9 (2) and (3).

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

A window in an external wall of a fire-isolated stairway, must be protected in accordance with C4D5 if it is within 6m of, and exposed to, a window or other opening in a wall of the same building, other than in the same fire-isolated enclosure.

Comment: This applies to the windows in the Building 2 FS4 stair. Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.26 C4D12 – Bounding Construction

A doorway in a Class 2 or 3 building must be provided with a self-closing;

Type A -/60/30 fire doors,

Type B tight fitting, solid core door, not less than 35 mm thick,

if it provides access from a sole-occupancy unit or any other room, to a public corridor, public lobby, any other room not within a SOU, a landings of an internal non-fire-isolated stairway or any other SOU.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.27 C4D13 – Openings in floors and ceiling for services

All services which pass through a floor that is required to have an FRL, must be protected by a shaft complying with Specification 5, or protected in accordance with C4D15.

Buildings 1, 2, 3 and 4: An opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be protected in accordance with C4D14.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.28 C4D15 – Openings for service installations

All penetrations through fire rated elements (walls, floors, ceilings, etc) are required to be appropriately fire stopped in accordance with this section.

Comment: A design statement (or other means) from an appropriately qualified third-party fire stopping consultant, is required to confirm that that the building will comply with this clause prior to the installation of any fire stopping. This is to include all services in the building that will penetrate a fire and/or smoke rated building element.

At the completion of the above works, an inspection and installation certification from the appropriately qualified third-party fire stopping consultant, will be required to be submitted prior to the issue of Occupation Certificate. The inspection and installation certificate must show that all services in the building that has penetrated a fire and/or smoke rated building element, has been completed in accordance with this Clause and relevant Test Report.

Services penetrations are potentially non-compliant as the pass though elements that are required to be fire rated that have fire engineering relaxations. Provide manufacturers test reports (AS 1530.4 & AS 4072.1) illustrating the required FRL achieved, through an identical tested prototype. Alternatively, if this is not available, Fire Safety Engineer to comment on the feasibility of a justifiable performance solution.

Section D – Access & Egress

For the purpose of this egress assessment, BCA defined required exits have been assumed as noted in Appendix C, Exit & Travel Distance Assessment Plan Mark-ups, by the illustration of the running man symbol.

Comment: *The architect will need to review Appendix C and confirm that the nominated exits are correct.*

4.29 **D2D3 – Number of exits required**

Every building must be provided with at least one exit from each storey.

In a Basement, not less than 2 exits must be provided from any storey if egress from that storey involves a vertical rise within the building of more than 1.5 m, unless the floor area of the storey is not more than 50 m²; and the distance of travel from any point on the floor to a single exit is not more than 20 m.

Every Class 9 building must be provided with at least two exits from the following:

- Each storey if the building has a rise in storeys of more than 6 or an effective height of more than 25 m.
- Any storey that contains sleeping areas in a Class 9c building.
- Any storey or mezzanine that accommodates more than 50 persons, calculated under D2D18.

This does not apply to a part of a storey that is a plant room, machinery room, storeroom, lift-machine room or the like; and is provided with direct egress to a road, open space or a fire-isolated exit complying with D2D12(2); and complies with the maximum travel distance to a single exit under D2D5.

Access to exits must be available without passing through another sole-occupancy unit, and where two exits are required from the storey, each part of the storey must have access to at least two exits

Comment: *The following issues have been identified at this stage*

(a) All Buildings - The egress paths from each building adjoins to another allotment boundary instead of a road and therefore the exits paths from each building do not have compliant path to the road.

(b) Villas 1-13 - The common lobby area on level 1 of the villas, has not been provided with a require exit stair from the common space, and instead egress is required through the SOU's.

The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.

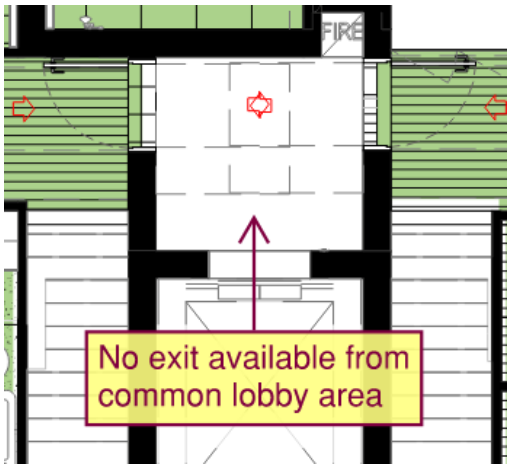


Figure 14 - Villa Level 1 Lobby

In a Class 9c building, at least one exit must be provided from every part of a storey which has been divided into fire compartments in accordance with C3D3 or C3D6.

Comment: *Compliance has been illustrated throughout the building.*

4.30 D2D4 – When fire-isolated stairways and ramps are required

Class 2 - Every stairway or ramp servings as a required exit, must be fire-isolated unless it connects, passes through, or passes by no more than 3 consecutive storeys for a Class 2 building. One extra storey may be included if it is only for the accommodation of motor vehicles or other ancillary purpose, or, the building has a sprinkler system installed in accordance with Specification 17 throughout.

Class 5, 6, 7 and 9 (excluding 9c) - Every stairway or ramp servings as a required exit, must be fire-isolated unless it connects, passes through, or passes by no more than 2 consecutive storeys. One extra storey may be included if the building has a sprinkler system installed in accordance with Specification 17 throughout.

Class 9c - Every stairway or ramp servings as a required exit, must be fire-isolated.

Comment: Compliance appears to have been readily achieved, however further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.31 D2D5 – Exit Travel Distance / D2D6 – Distance between alternative exits

Class 2 Area

The BCA maximum permitted travel distances are measured from the doorway of the apartment and

- must not be more than 12 m from an exit, or from a point from which travel in different directions to 2 alternative exits are available, or
- 30 m from a single exit serving the storey at the level of egress to a road or open space.

The above travels distances consider the Spec 18 Clause 4 concession as the Building is provided with a Sprinkler system throughout.

Additionally, any point on the floor of a room which is not an apartment or sole-occupancy unit, must not be more than 20 m from an exit or from a point from which travel in different directions to 2 alternative exits are available.

Exits that are required as alternative means must not be less then 9m apart and not more than 45 m apart, when measured back through the point of choice, and must not converge such that they become less than 6m apart.

Class 5, 6 7 and 9 Areas

The BCA maximum permitted exit related travel distances are:

- 20 m to an exit; or
- 20 m to a point in which travel in two different directions to two alternative exits are available, where then the maximum distance is 40 m to the nearest exit of the two, measured back from the starting point; and
- 60 m between alternative exits measure through the point of choice.

Exits that are required as alternative means must not be less then 9m apart and must not converge such that they become less than 6m apart.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item J of Table 3 above stipulates what is needed in terms of developing these plans.

However, at this stage of the design, the following DTS non-compliant exit travel distances have been identified in Table 21 below - worst cases only. Refer Appendix C for the Exit & Travel Distance Assessment Plan Mark-ups.

Location	DTS Travel Distance Requirement	Actual	Design Team Nominated Resolution
A: Building 1 TYP – SOU B1.302	*12*	***14***	*The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle,*
B: Building 1 TYP – SOU B1.307	*12*	***13***	
C: Building 2 GF – Temporary Bin Holding	*20/40/60*	***22/44/****42*	

Location	DTS Travel Distance Requirement	Actual	Design Team Nominated Resolution
D: Building 2 L01-L03 – Northwest Balcony	20/40/60	**26**/30/18	*subject to review of the Fire Engineering Report.*
E: Building 2 L01-L03 – Northeast Balcony	20/40/60	**31**/34/18	
F: Building 2 L01-L03 – TV Room Balcony	20/40/60	**26**/28/18	
G: Building 3 TYP – SOU B3.307	12	**13**	
H: Building 3 TYP – SOU B3.302	12	**14**	
I. Building 4 GF – Southeast Parking	20/40/60	**26**/35/52	
J. Building 4 L1-L04 – SOU B4.315	12	**13**	
K. Building 4 L1-L04 – SOU B4.302	12	**15**	

Table 21 - Travel Distance Assessment

Comment:

In addition, the following addition issues have been identified,

(a) Building 2 – RAC (Level 1-3) The two required exits which are used as an alternative means of egress, are located less than 9 m apart, actual 4.73m. Refer Figure 15 below.

(b) Building 2 RAC (Level 1-3) – The alternative exit paths converge that they become less than 6m, actual 5.98m.

The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.

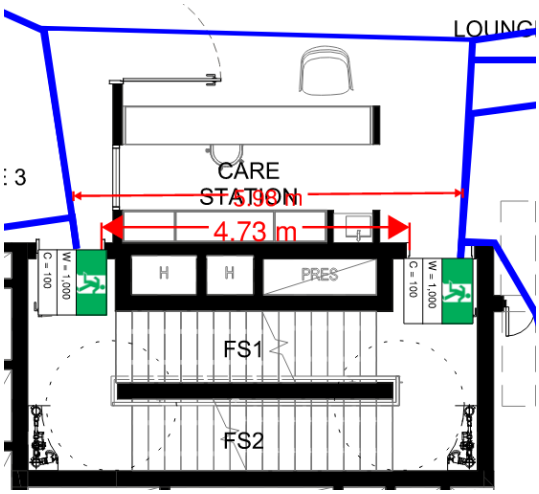


Figure 15 - Inadequate distance between required exits and convergence of alternative exit paths

4.32 **D2D7 / 8 / 9 – Heights and Widths of required exits plus the path of travel to exits, including doorways**

The unobstructed height in a required exits and path of travel to an exit, must not less than 2m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm.

The unobstructed width of each required exit or path of travel to an exit, must be not less than,

- 1 m; or
- in a public corridor in a Class 9c aged care building
    - 1.5m, and
    - 1.8 m for the full width of the doorway, providing access into a sole-occupancy unit or communal bathroom.

The unobstructed width of a doorway must be not less than

- in a Class 9c parts, 800 mm, except—
    - in resident use areas the minimum unobstructed width must be 870 mm; and
    - for doorways leading from a public corridor to a sole-occupancy unit the minimum unobstructed width must be 1070 mm; and
    - where the doorway is fitted with two leaves and one leaf is secured in the closed position in accordance with D3D26(3)(e), the other leaf must permit an unobstructed opening not less than 870 mm wide in resident use areas and 800 mm wide in non-resident use area; or
- in any other case — 750 mm wide

However, increased limits are required to areas for the purposes of access for persons with disabilities and health and amenity issues in relation to minimum ceiling heights, see Part D4 and F5 below accordingly.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item J, K and L of Table 3 above stipulates what is needed in terms of developing these plans.

However, the following reduced egress widths have been identified at this stage of the design. These areas have also been highlighted in the Travel Distance & Exit Plan Mark up in Appendix C.

*(a) **Building 2** RAC Level 1-3: Distance in the corridor entering B2.156 SOU, less than 1500mm, actual 1280mm,*

*(b) **Building 3** Basement: Distance between carpark and external wall, less than 1m, actual 940mm*

**Architect has confirmed the design will achieve compliance with the DtS provision.*

If the storey, mezzanine or open spectator stand accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than 1 m plus 250 mm for each 25 persons (or part) in excess of 100;

If the storey, mezzanine or open spectator stand accommodates more than 200 persons, the aggregate unobstructed width of required exits or paths of travel to an exit, except for doorways, must be not less than 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons if egress involves a change in floor level by a stairway or ramp with a gradient steeper than 1 in 12; or in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200.

Comment: Table 22 below illustrates the maximum number of persons permissible based on the available exit widths under BCA Clause D2D8. Compliance has been illustrated throughout the building.

Building 1

Location	*No. of Occupants*	*DTS required width (m)*	**Illustrated width (m)*	*Compliance achieved?*
Ground Floor	44	1	8.5	✓
Residents Levels 1 – 4 (Typical)	34	1	1	✓
Residents Level 5	24	1	1	✓

Table 22 - Exit Width Analysis Building 1

Building 2

Location	*No. of Occupants*	*DTS required width (m)*	**Illustrated width (m)*	*Compliance achieved?*
Ground Floor	291	3	20	✓
Age Care Levels 01 - 03	23	1	2	✓
Residents Levels 04 - 05	24	1	1	✓
Residents Levels 06	18	1	1	✓

Table 23 - Exit Width Analysis Building 2

Building 3

Location	*No. of Occupants*	*DTS required width (m)*	**Illustrated width (m)*	*Compliance achieved?*
Ground Floor	49	1	12.5	✓
Residents Levels 1 – 5 (Typical)	34	1	1	✓
Residents Level 6	24	1	1	✓

Table 24 - Exit Width Analysis Building 3

Building 4

Location	*No. of Occupants*	*DTS required width (m)*	**Illustrated width (m)*	*Compliance achieved?*
Ground Floor	80	1	14.5	✓
Residents Levels 1 – 4 (Typical)	68	1	1	✓
Residents Level 5	48	1	1	✓

Table 25 - Exit Width Analysis Building 4

4.33 D2D12 – Travel via fire-isolated exits

A doorway from a room must not open directly into a fire-isolated stairway, passageway or ramp unless it is from a public corridor, public lobby or the like; or a sole-occupancy unit occupying all of a storey; or a sanitary compartment, airlock or the like.

Comment: Compliance appears to have been readily achieved.

All fire-isolated stairways or ramps must discharge directly

(a) to a road or open space, or
(b) to a point
  i. in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least ⅔ of its perimeter; and
  ii. from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or
(c) into a covered area that
  i. adjoins a road or open space; and
  ii. is open for at least ⅓ of its perimeter; and
  iii. has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and
  iv. provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m.

Comment: At this stage of the design, the following issues have been identified:

***(a) Building 1,** the fire-isolated stair discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved.*

*(b) **Building 3**, the fire-isolated stair discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved.*

*(c) **Building 4**, Both Fire Stairs, the fire-isolated stair discharges into the confines of the building (lobby area) that is not open for 2/3 of perimeter, actual no opening achieved.*

The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

Where the path of travel from the discharge passes within 6m of the any part of the external wall of the same building, that part, measured horizontally at right angles to the path of travel, must have an FRL of not less than 60/60/60 and all openings protected internally in accordance with C4D5. This protection must extend 3m above and below to the level of the path of travel or to the height of the wall, which ever is lesser.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A and J of Table 3 above stipulates what is needed in terms of developing these plans.

Architect to ensure all door openings along the external wall where the path of travel from the fire-isolated stair discharge passes within 6m, are protected.

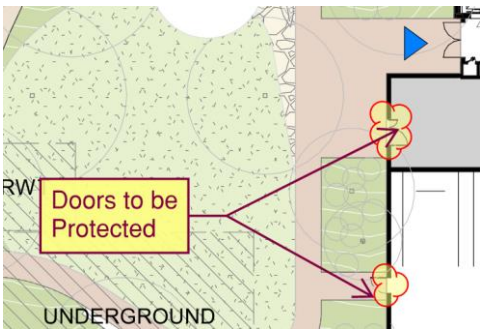


Figure 16 - Doorways in External Wall Protection

If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit within the same storey, a smoke lobby in accordance with D3D7 must be provided; or the exit must be pressurised in accordance with AS 1668.1.

Comment: Compliance appears to have been readily achieved. Only one access door is provided to each fire-isolated stair on every storey.

4.34 D2D15 – Discharge from exits

All exit discharges must not be blocked, must maintain an unobstructed path of travel width of the required exit or 1 m to the open space, must, if at a different level to the open space, have a path of travel by ramp or stairway no steeper then 1:8 or not steeper the 1:14 if required to be accessible via Part D4.

Where two exits have been used as alternative exits, they must discharge as far apart as practical.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item J of Table 3 above stipulates what is needed in terms of developing these plans.

At this stage of the design, the following issues have been identified.

(a) ***All Buildings*** *- The egress paths from each building adjoins to another allotment boundary instead of a road and therefore the exits paths from each building do not have compliant path to the road. The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.*

(b) ***Building 2*** *- The discharge point of alternative exits must be far apart as practical so that if one exit is blocked, the other will still operate satisfactorily. Both Fire Isolated Exits from the 9c Age Care Storeys discharge to the East Façade. The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, in principle, subject to review of the Fire Engineering Report.*

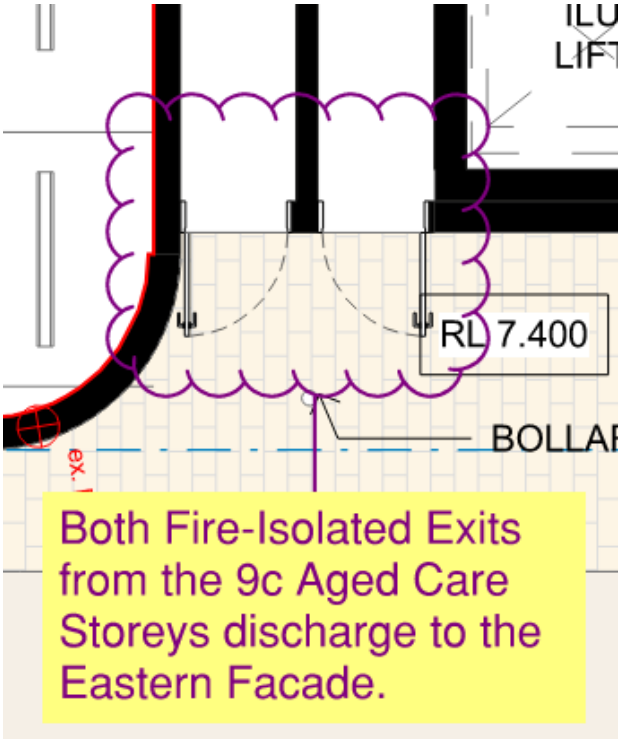


Figure 17 - ***Stairs discharging not as far as part from each other.***

4.35 NSW D2D18 – Number of Persons Accommodated

This clause allows for the calculation of occupants per storey. It is determined with consideration to the purpose for how which the storey or room is used. The floor area for each part is divided by the square meter per person listed in Table D2D18. Other means of calculation can be used by reference to a seating capacity or other means of assessing capacity.

Comment: The below illustrate the population of the building and the method of calculation for each part. If these numbers appear to be particularly high, then further discussion with the design team is required to establish realistic occupant loads at the worst-case scenario / peaks.

The Project Team is to provide further details on the proposed number of staff in Building 2

This determination will need to be endorsed by the client/user or Project Team. If more accurate numbers are available, such as seating or licencing capacity, then these are to be provided and can be used.

BUILDING 1

Location	Area m²	Person Usage Factor %	Tenancy Person Usage Area m²	m²/persons		Calculation Method	Persons Accommodated
Ground Floor							
Carpark	1,346	90	1,212	30	Carpark	Table D2D18	**40.38**
Storage	92	70	65	30	Storage	Table D2D18	**2.17**
Plant	38.4	70	27	30	Plant	Table D2D18	**0.90**
TOTAL							**44**
TYP							
Residents	-	-	-	-	-	Bed Count	**36.00**
TOTAL							**36**
L05							
Residents	-	-	-	-	-	Bed Count	**26.00**
TOTAL							**24**

BUILDING 2

Location	Area m²	Person Usage Factor %	Tenancy Person Usage Area m²	m²/persons		Calculation Method	Persons Accommodated
Ground Floor							
Staff (Max at any one Time)	-	-	-	-	-	As Advised	**10.00**
Carpark	506	90	456	30	Carpark	Table D2D18	**15.2**
Storage	75	70	53	30	Storage	Table D2D18	**1.77**
Café Servery + Community Lounge (Internal)	-	-	-	-	-	Seat Count	**62.00**
Café Servery (External)	-	-	-	-	-	Seat Count	**48.00**
Multi-Purpose	183	80	147	1	Hall	Table D2D18	**147**
Consultant Room	-	-	-	-	-	Seat Count	**7.00**
TOTAL							**291**
L01 / L03							
Residents	-	-	-	-	-	Bed Count	**13.00**
Staff (Max at any one Time)	-	-	-	-	-	As Advised	**10.00**
TOTAL							**23**

L04 / L05							
Residents	-	-	-	-	-	Bed Count	**24.00**
TOTAL							**24**
L06							
Residents	-	-	-	-	-	Bed Count	**18.00**
TOTAL							**18**

BUILDING 3

Location	Area m²	Person Usage Factor %	Tenancy Person Usage Area m²	m²/persons		Calculation Method	Persons Accommodated
Ground Floor							
Carpark	1,514	90	1,363	30	Carpark	Table D2D18	**45.43**
Storage	71.91	70	50.34	30	Storage	Table D2D18	**1.68**
Plant	53.33	70	37.34	30	Plant	Table D2D18	**1.25**
TOTAL							**49**
TYP							
Residents	-	-	-	-	-	Bed Count	**34.00**
TOTAL							**34**
L06							
Residents	-	-	-	-	-	Bed Count	**24.00**
TOTAL							**24**

BUILDING 4

Location	Area m²	Person Usage Factor %	Tenancy Person Usage Area m²	m²/persons		Calculation Method	Persons Accommodated
Ground Floor							
Carpark	2,495	90	2,246	3	Carpark	Table D2D18	**74.87**
Storage	127.62	70	89.34	3	Storage	Table D2D18	**2.98**
Plant	51.03	70	35.73	3	Plant	Table D2D18	**1.2**
TOTAL							**80**
TYP							
Residents	-	-	-	-	-	Bed Count	**68.00**
TOTAL							**68**
L05							
Residents	-	-	-	-	-	Bed Count	**48.00**
TOTAL							**48**

Table 26 - Occupant Numbers

4.36 **D2D21 – Access to plantroom and substations.**

A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area of not more than 100 m2; or all but one point of egress from a plant room, a lift machine room, or a Class 8 electricity network substation with a floor area of not more than 200 m2. As ladder reference here must comply with D2D21(2)

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item J of Table 3 above stipulates what is needed in terms of developing these plans.

4.37 **D3D3 – Fire-isolated stairways and ramps**

A stairway or ramp, including the landings, that is required to be within a fire-resisting shaft, must be constructed of non-combustible material and so that if there is local failure, it will not cause structural damage to, or impair the fire-resistance of, the shaft.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed

4.38 **D3D5 – Separation of rising and descending stair flights**

Fire-isolated stairways must not have any direct connection between, a flight rising from a storey below the lowest level of access to a road or open space, and a flight descending from a storey above that level. Any construction that separates the rising and descending flights must be non-combustible and smoke proof in accordance with S11C2.

Comment: Building 2 has two fire stairs (1 and 2) which are proposed to be smoke separated. Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item K1 of Table 3 above stipulates what is needed in terms of developing these plans.

4.39 **D3D8 – Installation in exits and paths of travel**

Any service or equipment that comprises of electricity meters, distributions boards, central telecommunications distributions boards or equipment, must be suitable sealing against the spread of smoke and be made of:

- Non-combustible construction, or
- Fire-protective coverings

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.40 **D3D9 – Enclosure of space under stairs and ramps**

Fire-isolated stairways and ramps — If the space below a required fire-isolated stairway or fire-isolated ramp is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item A of Table 3 above stipulates what is needed in terms of developing these plans.

4.41 D3D11 – Pedestrian Ramps

A ramp serving as a required exit must

(a) where the ramp is also serving as an accessible ramp under Part D3, be in accordance with AS 1428.1; or

(b) in any other case, have a gradient not steeper than 1:8.

The floor surface of a ramp must have a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586.

Refer Appendix E Stair Analysis for various requirements for the various stair and ramp scenarios and related provisions for your convenience.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item K of Table 3 above stipulates what is needed in terms of developing these plans.

The Access Consultant is to review these drawing and provide compliance confirmation with AS1428.1-2009.

4.42 D3D14 – Goings and Risers / D2D15 – Landings

All stairs must comply with the number of risers across the flight; the dimensions of the risers and goings, including consistent dimensions between adjacent treads, achieve the minimum slip resistance, achieve the minimum landing length at the top, middle and bottom of the flight, as well as other requirements required by BCA Clause D3D14 and D2D15 and AS1428.1-2009.

Refer Appendix E Stair Analysis for various requirements for the various stair and ramp scenarios and related provisions for your convenience.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item K of Table 3 above stipulates what is needed in terms of developing these plans. The Access Consultant is to review these drawing and provide compliance confirmation with AS1428.1-2009.

However, Table 27 below illustrates the current design compliance of all stairs and ramps for the project. This includes provisions for handrails and barriers along the stairs.

✓	Stair Complies
X	Stair Does Not Comply
?	Further Information Required

Stair #	*Location*	*Stair Type**	*Compliance Achieved*
B1 - FS	*Fire Stair*	*S1*	?
B2 – FS1	*Fire Stair*	*S1*	?
B2 – FS2	*Fire Stair*	*S1*	?
B3 - FS	*Fire Stair*	*S1*	?
B3 – External Egress Stair	*External Egress Stair from Carpark to the Northern Façade*	*S2*	?
B4 - FS (West)	*Fire Stair*	*S1*	?
B4 – FS (East)	*Fire Stair*	*S1*	?

Table 27 - Stair / Ramp Requirements

**Appendix E lists the type of stair and ramp based on its use and location and set the minimum requirements.*

4.43 D3D16 – Door Thresholds

The threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaf unless,

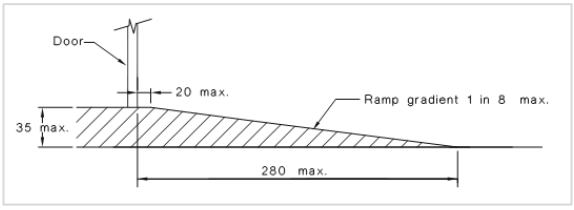
(a) in resident use areas in a Class 9c building, a ramp is provided with a maximum gradient of 1:8 for a maximum height of 25 mm over the threshold; or

(b) in a building required to be accessible by Part D4, the doorway

- opens to a road or open space; and
- is provided with a threshold ramp or step ramp in accordance with AS 1428.1, refer **Error! R eference source not found.**; or

(c) in other cases

- the doorway opens to a road or open space, external stair landing or external balcony; and
- the door sill is not more than 190 mm above the finished surface of the ground, balcony, or the like, to which the doorway opens.



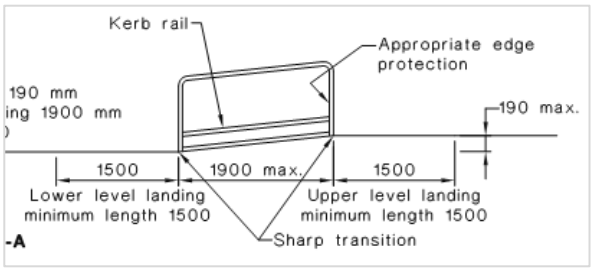


Figure 18 - Threshold Ramp & Step Ramp

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item T of Table 3 above stipulates what is needed in terms of developing these plans.

4.44 D3D17 / D3D18 / D3D19 / D3D20 / D3D21 – Barriers

Fall barriers are to be provided along a surface edge where the trafficable surface is 1 m or more above the surface beneath.

Fall barriers are mostly required to be 1m or higher in height, with lower provisions allowed along stairway or ramp.

Openings in a barrier must not allow a 125mm sphere to pass through, except for fire-isolated stairs, where this can be increased to 300mm: or where rails are used, 150mm from the noising to the bottom rail and 460mm between rails.

Where trafficable surface is 4 m or more above the surface beneath, the fall barrier can not have any near horizontal elements that could facilitate climbing between 150mm and 760mm from the standing surface. This does not apply to fire-isolated exits.

All fall barriers are to be designed and installed to AS1170.0-2002, AS1170.1-2002 and AS1288-2021 (where glazing is used) by a suitably qualified Structural Engineer.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item K of Table 3 above stipulates what is needed in terms of developing these plans.

4.45 D3D22 – Handrails

All stairs and ramps must contain complaint handrails including the number of handrails on the side of the stair or ramp, the height of the handrail including the consistent height across the flight, as well as other requirements required by BCA Clause D3D22. In Areas required to assist people with a disability, handrails must be provided in accordance with D4D4.

Refer Appendix E Stair Analysis for various requirements for the various stair and ramp scenarios and related provisions for your convenience.

Handrails in a Class 9c aged care building must be provided along both sides of every passageway or corridor used by residents, and must be fixed not less than 50 mm clear of the wall and where practicable, continuous for their full length.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item K of Table 3 above stipulates what is needed in terms of developing these plans.

The Access Consultant is to review these drawing and provide compliance confirmation with AS1428.1-2009.

4.46 D3D23 – Fixed platforms, walkways, stairways and ladder

Any fixed platform, walkway, stairway, ladder are required to comply with AS 1657-2018 if it only serves machinery rooms, boiler houses, lift-machine rooms, plant-rooms, and the like. This can be provided in lieu of D3D14, D3D15, D3D17, D3D18, D3D19, D3D20, D3D21 and D3D22.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item R of Table 3 above stipulates what is needed in terms of developing these plans.

4.47 D3D24 – Doorways and doors

A doorway in a resident use area of a Class 9c building must not be fitted with a sliding fire door, a sliding smoke door, a revolving door, a roller shutter door, or a tilt-up door.

A doorway serving as a required exit or forming part of a required exit must not be fitted with a revolving door or a sliding door unless it opens directly to a road or open space.

If a door is serving a required exit, forming part of a required exit, or in the path of travel to a required exit, and is fitted with a power-operated function, then it must be able to be opened manually under a force not more than 110N on the malfunction to the power failure.

However, if a power operated door which is serving as a required exit or forming part of a required exit, leads directly to the road or open, it must **fail safe open automatically** if there is a power failure to the door or on the activation of a fire or smoke alarm anywhere in the fire compartment served by the door.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item L of Table 3 above stipulates what is needed in terms of developing these plans.

The BCA requires all sliding required exit doors to fail safe open on fire trip and on power failure. It is proposed for the following doors to not comply with this clause for security reasons.

*(a) **Building 2 -** Both sliding exit airlock doors on Ground Floor*

The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report

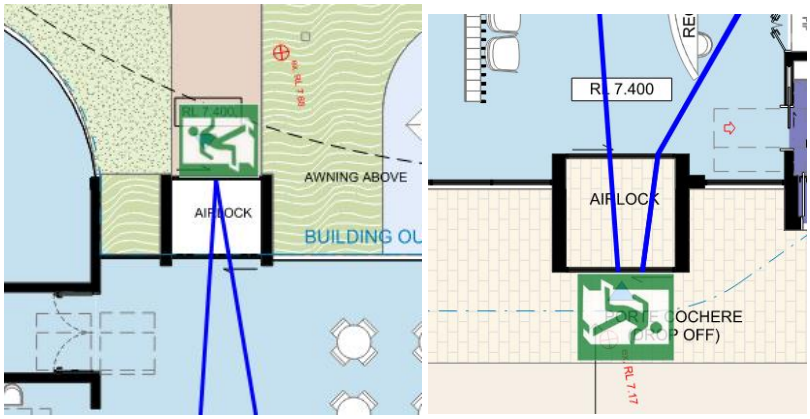


Figure 19 - Sliding Doors Auto Open

D3D25 – Swinging Doors

A swinging door in a required exit or forming part of a required exit

(a) must not encroach;

a. at any part of its swing, by more than 500 mm on the required width (including any landings) of a required, stairway, ramp, or passageway, if it is likely to impede the path of travel of the people already using the exit; and

b. when fully open, by more than 100 mm on the required width of the required exit,

(b) Must not otherwise impede the path of direction of egress.

Comment: Compliance has now been readily achieved.

Generally, all **required exit doors** must swing in the direction of egress unless:

(a) it serves a building or part with a floor area not more than 200 m2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or

This does not include doors in the path of travel to an exit.

Comment: A number of plant and bins rooms located on Ground Floor which discharge directly to the outside have the doors swinging in. This is permitted as long as they are fitted with a device for holding it in the open position. Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item L of Table 3 above stipulates what is needed in terms of developing these plans.

4.48 **D3D26 – Operation of latch**

All required exit doors, doors forming part of a required exit and doors in the path of travel, must be readily openable without a key from the side that faces a person seeking egress. This can be by;

- A single hand downward actions on a single device located between 900mm and 1100mm from the floor. If servicing an area required to be accessible by Part D4, this device must be such that the hand of the person cannot slip off the device and have a clearance between the handle and the back plate not less than 35mm and not more than 45mm, or
- A single hand pushing action on a single device which is located between 900 mm and 1.2 m from the floor.

Where, the latch operation device is not located on the door leaf itself, the controls must be installed in accordance with D3D26(2).

This clause does not apply to a door fitted with a fail-safe device which automatically unlocks the door upon the activation of any sprinkler system or smoke detection system installed throughout the buildings and is then readily openable when unlocked.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item L of Table 3 above stipulates what is needed in terms of developing a door schedule.

For the Class 9b building, the requirements above do not apply to the doors serving a storey or room accommodating more than 100 persons, in which case it must be readily openable without a key from the side that faces a person seeking egress; and by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.2 m from the floor.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item L of Table 3 above stipulates what is needed in terms of developing a door schedule.

However, at this stage of the design, both sliding exits doors from Building 2 Ground Floor, due to the function of a sliding door, will not be provided with panic bars. The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report.

4.49 **D3D27 – Re-Entry from Fire-Isolated Stairs**

Doors of a fire-isolated exit must not be locked from the inside in a Class 9c building.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.50 **D3D29 – Protection of Openable Windows**

Class 2 Areas –

A window (or other opening) in a Class 2 bedroom, where the floor below the window is 2m or more above the surface beneath it, and the lowest level of the window opening is less than 1.7m above the floor, the openable portion of the window must be provided with protection with

(a) A device capable of restricting the window opening, or

(b) A screen with secure fittings

The device or screen must

(a) not permit a 125 mm sphere to pass through the window opening or screen; and

(b) must resist an outward horizontal action of 250 N against the window device or screen, and

(c) must have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden. If the screen and device is able to be removed, unlocked or overridden, the windows must also have a barrier with a height no less than 865mm above the floor.

In all other areas, such as apartment kitchens, bathrooms, living rooms and including common areas, where the floor below the openable window is 4 m or more above the surface beneath, it must be provided with a barrier with a height not less than 865 mm above the floor, and the barrier must not permit a 125 mm sphere to pass through it and have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.

Note: If the windows are restricted to open no more than 125 mm, the natural ventilation provisions of BCA Part F6 will need to be assessed and complied with if the relevant building areas do not contain compliant mechanical ventilation in accordance with BCA Clause F6D6. Generally speaking, natural ventilation must be provided to all habitable rooms via the actual window opening aggregate size to be no less than 5% of the floor area, as the rooms did not contain mechanical ventilation.

Other Areas -

A barrier with a height not less than 865 mm above the floor, is required to an openable window where the floor below the window is 4 m or more above the surface beneath. The barrier must not permit a 125 mm sphere to pass through it and have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing, except in the fire-isolated stair and carpark, it must not permit a 300m sphere to pass through it.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item M of Table 3 above stipulates what is needed in terms of developing these plans.

4.51 Part D4 – Access for people with a disability

Refer to the Access Report, issued by Purple Apple Access dated 27/03/2024, for an assessment of the Project under this part.

Section E –Services & Equipment

4.52 Part E1 – Fire Fighting Equipment

The building is to be provided with the following firefighting equipment;

a) **Fire Hydrants** in accordance with Clause E1D2, G6D6, and AS 2419.1-2021, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

b) **Fire Hose Reels (Only for Class 7a, 6, 9b)** in accordance with Clause E1D3, G6D6, and AS 2441-2005, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

c) **Sprinkler System (Building 1, 2, 3 and 4)** in accordance with Clause E1D4, Specification 17, G6D6, and AS 2118.1-2017, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

d) **Portable fire extinguishers** in accordance with Clause E1D14, G6D6, and AS 2444-2001 as limited by Clause E1D14, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

e) **Fire precautions during construction** in accordance with Clause E1D16. Note that additional Fire Engineering may be applicable during construction / staging etc.

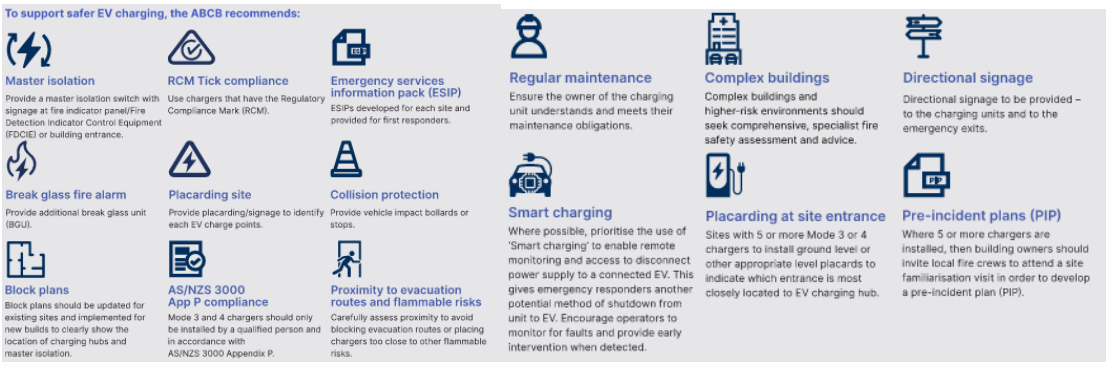
f) **Provision for Special Hazards** in accordance with Clause E1D17, relates to provisions for special hazards to be considered for any special problems or firefighting hazards.

E1D17 Electrical Vehicle Charging Station - The Electrical Vehicle Charging Station are considered a hazard to fire authorities.

Comment:

The Fire Safety Engineer is to provided Performance Based DtS assessment of the EV proposed on the project to address BCA Clause E1D17 and E2D21. Please refer the ABCB advisory note on EV charging, dated 13/06/2023. A link and summary have been provided below for consideration.

https://www.abcb.gov.au/sites/default/files/resources/2023/ABCB%20EV%20Guidance%20Document%20June%202023.pdf



E1D17 Solar panels - The photovoltaic panels are considered a hazard to fire authorities and FRNSW has provided the following requirements accordingly.

a. A schematic diagram shall be clearly displayed at the FIP indicating the presence of solar panels and shall achieve the following requirements:

   i. The schematics diagram must be constructed of all-weather fade resistant material

   ii. Heading on the schematics diagram to be 25mm in red – 'SOLAR PANELS', with a contrasting-coloured background.

   iii. The schematics diagram must clearly identify the location of the solar panels along with the type of alternative electrical generation system installed.

   iv. If the solar panels automatically isolate on fire trip, this should be indicated on the schematics diagram.

b. A block plan is to be provided and displayed at the FIP showing the location of all associated isolation switches, AC and DC isolators for the shut-off of generated electricity.

c. Solar panel equipment must be suitable labelled in accordance with the above relevant Australian Standards as shown in **Error! Reference source not found.** below:

d. Please also refer to the Electrical Engineers report for specific requirements regarding isolation of the solar panels at the main switchboard.

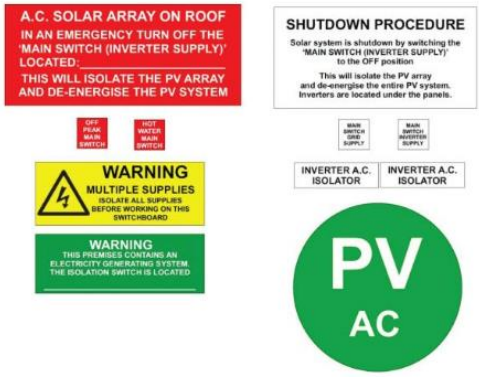


Figure 20 - PV Labelling

E1D17 Chemical Storage – The chemical storage is considered a hazard under this clause. The Fire Safety Engineer to confirm whether or not any additional fire safety measures are required to be implemented. They may require a Dangerous Goods Assessment Report be provided.

a) **Any enhanced or additional systems** that are deemed to be required by the Fire Safety Engineer.

Comment: A satisfactory Design Certificate from the relevant Consultant Engineers (Accredited Fire Safety Practitioners) for each of these E1 services is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

*The following issues have been noted at this stage of the design which the Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report, or *Architect has confirmed the design will achieve compliance with the DtS provision.*

Fire Hydrant/Sprinkler Booster is not located:

a. *Boosters not within main sight of the principal pedestrian entrance and not adjacent to the site boundary and principal vehicle access*

b. *Booster is more then 20m from the facade of the building and more then 20m from principal pedestrian entrance*

c. *The site boundary is not adjacent to the road, meaning access to the booster is through another allotment*

d. *Other - The Design Practitioner for Fire Safety on the project is to review and confirm the fill list of non-compliances.*

(b) The following FHR are located more than 4m from the exit in the following locations

a. ***Building 1** Ground Floor, actual 12m,*

b. ***Building 2** Ground Floor Lobby, actual 15m*

c. ***Building 2** Ground Floor (External),*

(c) The following areas currently do not have provisions for FHR

a. ***Villas 1-13** Ground Floor Class 7a Carparks, The Fire Safety Engineer has confirmed the feasibility of a justifiable Performance Solution for inclusion within the Fire Engineering Report*

b. *Other – To be confirmed. Fire Compartment plans are to be provided for further review.*

Note: a number of internal rooms have been provided FHR which may not require them, example below. These locations appear to not have compliant clearances. Further coordination required with Service Engineer where these FHR is not required should be removed

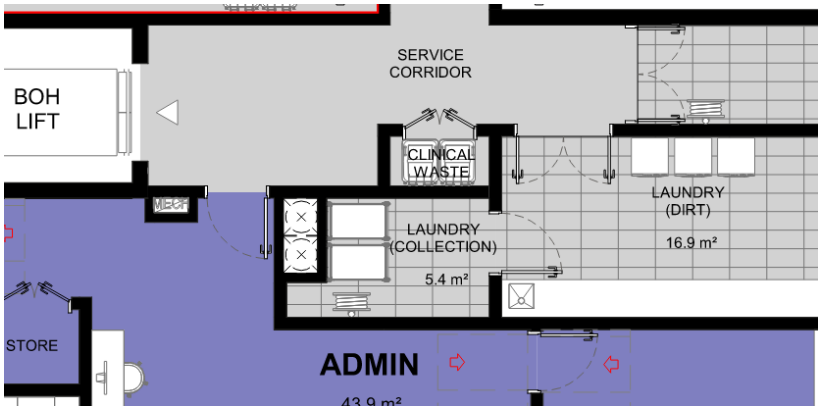


Figure 21 - Internal FHR

The Electrical Vehicle Charging Station are considered a hazard to fire authorities. The Fire Safety Engineer has confirmed they will provide a Performance Based DtS assessment of the EV proposed on the project to address BCA Clause E1D17 and E2D21.

4.53 Part E2 – Smoke Hazard Management

The building is to be provided with the following smoke hazard management systems in accordance with the requirements of Clause E2D2.

b) **Smoke detection and alarm system** in accordance with Part E2, Clause S20C4, S20C6 and AS 1670.1-2018, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

c) **Stair Pressurisation (Building 2 Class 9c Only)** in accordance with E2D4 and AS 1668.1, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

d) **Automatic Shutdown** of any Mechanical Air Handling System which does not form part of the smoke hazard management system, in accordance with Clause E2D3 and AS 1668.1, and any additional Fire Engineering requirements *(to be confirmed by the Fire Engineer)*

e) **Building Occupant Warning Syste**m in accordance with S20C7, S17C8, and AS 1670.1-2018

f) **Fire and smoke dampers** in accordance with Clause C4D15 of the BCA, AS 1668.1-2015 and AS 1682.1

g) **Fire Alarm Monitoring system / Alarm signalling Equipment (Building 2)** in accordance with Clause S20C8 and AS 1670.3-2018 – *to be confirmed by the Fire Services Engineer.*

Comment: A satisfactory Design Certificate from the relevant Consultant Engineers (Accredited Fire Safety Practitioners) for each of these E2 services is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.54 Part E3 – Lift Installation

The building is to be provided with the following lift provisions;

- **Stretcher facilities (Buildings 1, 2, 3 and 4)** as required by Clause E3D3.
- **Warning signage**, i.e. “Do not use lifts if there is a fire”
- **Landings** are to comply with the access and egress provision of Section D of the BCA.
- The lifts must be a type of lift noted in **E3D7** and must have **Accessible features** in accordance with **E3D8**, i.e. handrails, certain dimensions, etc.
- **Fire services controls** in accordance with Clause E3D9 and E3D11.
- The lift cars must have **emergency lighting** in accordance with **Specification S24C3.**

- An **electric passenger lift** installation and an electrohydraulic passenger lift installation must comply with **Specification 24**, including
- **Lift cars exposed to solar radiation**, in accordance with **Specification S24C2,** must have mechanical ventilation at a rate of one air change per minute or mechanical cooling. As well as a 2 hour alternative power source for the mechanical system in the event of power loss.
- **Cooling of the lift shaft** in accordance with **Specification S24C4**, to ensure that the dry bulb air temperature in the lift shaft does not exceed 40oC and if the cooling is by ventilated system, be provided with an air change rate determined using a temperature rise of no more than 5 K.
- **Access to Lift Pits** in accordance with D2D22

Comment: A satisfactory Design Certificate from the relevant Consultant Engineers (Lift Manufacturer/Vertical transport consultant and Mechanical Consultant including Access Consultant where relevant) for each of these E3 services is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.55 **Part E4 – Visibility in an emergency, exit sign and warning systems**

The building is to be provided with the following emergency lighting and warning provisions;

- **Emergency lighting** in accordance with Clause E4D2, G6D8, and AS 2293.1-2018.
- **Exit signs** in accordance with Clause E4D5, E4D6, G6D8 and AS 2293.1-2018.

Note: If exits signs are proposed that are to be installed at a height or more than 2.7m or less than 2m above FFL, then details are to be provided and the requirement for a Performance Solution from a Fire Safety Engineer will likely to be required (Clause 5.8.1 of AS 2293.1-2009).

Note: If dark version theatre style exit signs are proposed then detail as to the location and rooms, they are to be provided to Group DLA for assessment to determine if appropriate (Clause 5.4.2 of AS 2293.1-2018)

Comment: A satisfactory Design Certificate from the relevant Consultant Engineers (Electrical Engineer) for each of these E4 services is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

Section F – Health and Amenity

4.56 F1D3 – Stormwater Drainage

Storm water drainage must comply with Clause F1D3 - AS/NZS 3500.3 and the NCC Plumbing Code of Australia.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.57 F1D5 – External Waterproofing 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. Balcony surface water must drain

Balcony surface water must drain to the drainage outlet via a finished floor fall of no flatter than 1:100.

Careful design consideration will need to be applied in the areas of the balconies and the like in this development. There may be conflict with the accessible provisions of Part D4 of the BCA which will need to be comment on further by the access consultant, as this Standard may require hobs at the thresholds to the rooftop, see **Error! Reference s ource not found.** below. There is relief available as the Standard does allow for a gutter system at the threshold of the door sill, which is to be fitted with an AS1428.1-2009 approved grate, in lieu of a hob (Ref: AS 4654.2). However, such detail should only be determined in accordance with the hydraulic engineer and the access consultant. Note that the accessible Standard contains restrictions on heights differences between abutting surfaces, such as the flooring and door sill, and a review of Section 7 of AS 1428.1-2009 should be considered as part of the threshold designs.

Error! Reference source not found. below also illustrates the membrane termination heights which are given in T able A1 of Appendix of the Waterproofing Standard. Note that the heights are related to the determined wind class from AS 4055-2012 and should only be determined by the appropriate project engineer, i.e. structural, hydraulic or façade engineer.

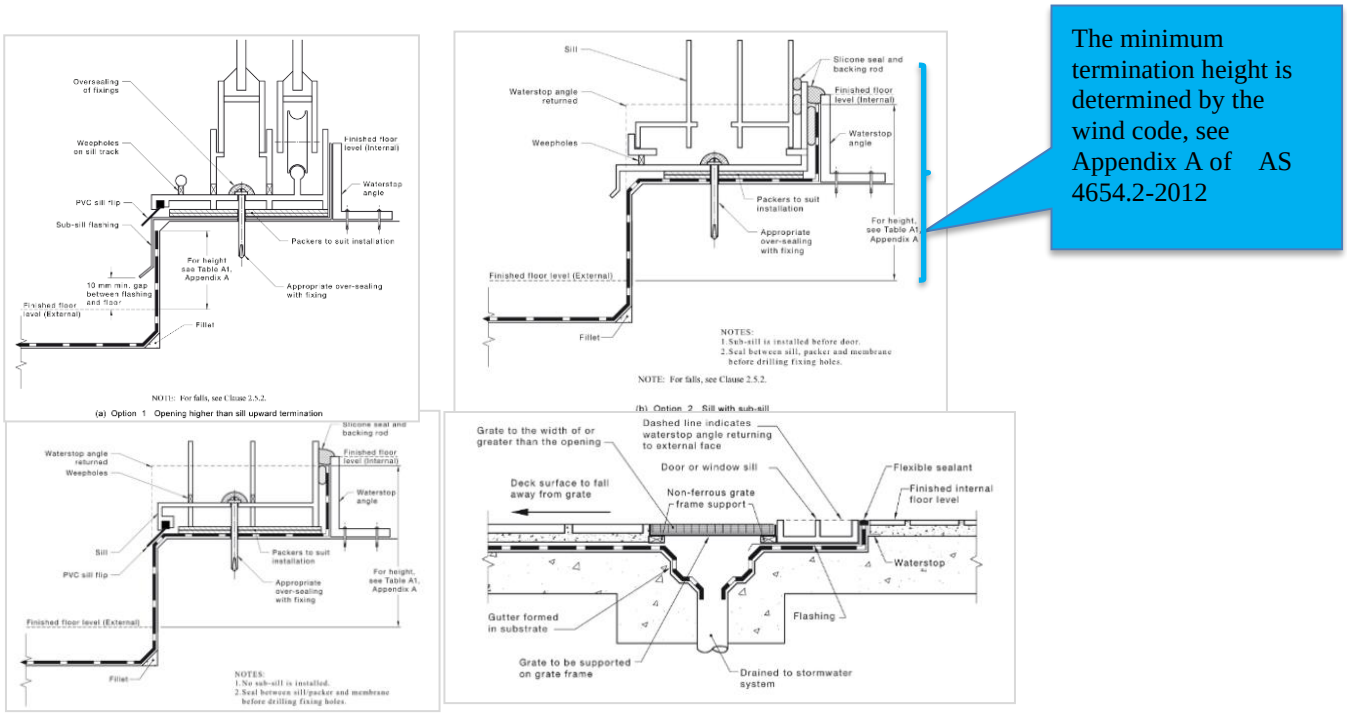


Figure 22 - Various waterproofing options at threshold and outlets.

Comment: A satisfactory Design Certificate from a qualified Waterproofing Consultant is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.58 F1D7 – Damp-proofing of floors on the ground

Moisture from the ground must be prevented from reaching the building elements such as the flooring, walls above DPC levels, etc. Vapour barriers must comply with AS 2870-2011.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.59 F2D2 – Wet Area Construction

Class 2 part of a building, building elements in *wet areas* must be water resistant or waterproof in accordance with Specification 26 and comply with AS 3740.

Wet area includes an area within a building supplied with water from a water supply system, which includes bathrooms, showers, laundries, and sanitary compartments however excludes kitchens, bar areas, kitchenettes or domestic food and beverage preparation areas.

In a Class 5, 6, 7 or 9 building, building elements in a bathroom or shower room, a slop hopper or sink compartment, a laundry or sanitary compartment must be water resistant or waterproof in accordance with Specification 26; and comply with AS 3740

Comment: A satisfactory Design Certificate from a qualified Waterproofing Consultant is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.60 F2D4 – Floor Waste

In a Class 2 building, a bathroom or laundry located at any level above a sole-occupancy unit or public space must have a floor waste where, 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.

Falls are to be located in substrate material which is a new BCA 2022 requirement.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Certificate to permit the commencement of construction works.

The Structural Engineer is to note this item as it's becoming an issue for structural floor thickness. The Structural engineer to review and the design is to illustrate compliance.

4.61 F3D2 – Roof Coverings

A roof must be covered with roof tiles complying with AS 2049, 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, except in cyclonic areas; or an external waterproofing membrane complying with F1D5.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works

4.62 F3D4 – Glazed Assemblies

The following glazed assemblies in an external wall, must comply with AS 2047 requirements for resistance to water penetration:

a) Windows.
b) Sliding and swinging glazed doors with a frame, including French and bi-fold doors with a frame.
c) Adjustable louvres.
d) Shopfronts.
e) Window walls with one piece framing.

Exemptions apply under F3D4(2) and (3)

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works

4.63 F3D5 – Wall Cladding

With reference to the new proposed external walls, the systems used will need to meet the requirements of Part F3. The DtS provision of the BCA only cover the following materials;

- Masonry, including masonry veneer, unreinforced and reinforced masonry: AS 3700.
- Autoclaved aerated concrete: AS 5146.3.
- Metal wall cladding: AS 1562.1.

Comment: Designer to review the DtS and Performance Provisions of the BCA. Any systems of the proposed design that do not meet the strict DtS requirements of the BCA shall form part of a Performance Solution by the Architect / façade engineer.

4.64 F4D2 – Sanitary Facilities in Residential Buildings

Residential Class 2 - Sanitary facilities and quantities are to be in accordance with BCA Clause F4D2 and F4D3. A summary of the facilities provided in the building is as follows:

Comment: Each of the sole occupancy units are provided with a laundry, bathroom and kitchen facilities in accordance with this Clause. The Architect is to confirm that there are provisions for clothes drying within each SOU as it appears there is not common space provided for this.

Class 9c buildings, the following facilities are to be provided,

(a) For residents in each building,

  a. a closet pan and wash basin for each 6 residents or part thereof where private facilities are not provided, and

  b. a shower for each 7 residents or part thereof for where private facilities are not provided; and

  c. a suitable bath, fixed or mobile.

(b) one kitchen or other adequate facility for the preparation and cooking or reheating of food including a kitchen sink and washbasin; and

(c) laundry facilities for the cleaning and drying of linen and clothing or adequate facilities for holding and dispatch or treatment of soiled linen and clothing and the like and the receipt and storage of clean linen; and

(d) one clinical hand washing basin for each 16 residents or part thereof.

Comment: The Architect is to ensure the kitchen has adequate means for the preparation and cooking or reheating of food, including a sink and wash basin.

4.65 F4D4 – Sanitary Facilities in Class 3 to 9 Buildings

Class 3 - 9 - Sanitary facilities and quantities are to be in accordance with BCA Clause F4D3, F4D4 & Tables F4D4. A summary of the facilities required in the building based on population in the building, determined in D3D18 is as follows:

Patron (Class 6 Café / Bar Expresso) – F4D4d		**Required**		
Gender	Total 110 persons	Closet Pans	Urinals	Wash Basins
Male	55	0.55	1.1	1.03
Female	55	2.1	N/A	1.03
Patron (Class 9b Multipurpose) – F4D4l		**Required**		
Gender	Total 147 persons	Closet Pans	Urinals	Wash Basins
Male	74	0.74	1.48	1.16

Female	74	2.48	N/A	1.24
BUILDING TOTAL		**Required v Illustrate**		
Gender		**Closet Pans**	**Urinals**	**Wash Basins**
Male		**2 / 3***	**3 / 3***	**3 / 4**
Female		**5 / 5**	**N/A**	**3 / 4**

Table 28 - Sanitary Facilities Count

Employees (Class 5 / 6 / 9) - F4D4a		**Required**
Gender	Total 10 persons	Unisex Accessible Compartment
Combined	10	**1 / 1**

Note

*- *One male pan has been counted towards a male urinal.*

- The 'required' AWC has been counted once for each sex as permitted.

Comment: Compliance at this stage has been achieved.

The following assumption have been made at this stage of the design

- *There will be a total of 15 Staff in building 2 however there will only even be a maximum of 10 staff onsite at any given time, therefore sanitary provisions for the staff have been assessed at 10. This includes the Admin Area located on Ground Floor.*
- *Sanitary Facilities have been counted for the Staff within the building and external occupants for the Café, Bar / Expresso and Multipurpose.. The Library area is understood to be used exclusive for use of the residents within the Care Hub and ILU across the entire retirement village (Buildings 1-4 and all Villas), and therefore sanitary facilities have not been counted as required by the BCA as they have been provided a required toilet within the SOU.*
- *Only the required Unisex DDA Compartment next to the Male and Female toilet block has been counted once for male and female. Other unisex, male and female DDA compartments are deemed not required by the BCA therefore cannot be counted.*

4.66 **F4D5/6 – Accessible Sanitary Facilities / Unisex Sanitary Compartments**

Class 2

Not Less than 1 accessible unisex facility is required to be provided where sanitary compartments are provided in common areas.

Class 9c

In every accessible sole-occupancy unit provided with sanitary compartments within the accessible sole-occupancy unit, not less than 1; and at each bank of sanitary compartments containing male and female sanitary compartments provided in common areas, not less than 1.

Class 5, 6, and 9

An accessible unisex facility is requited to be provided on every storey containing sanitary compartments and where a storey has more than 1 bank of sanitary compartments containing male and female, at no less than 50% of banks of toilets.

Accessible and ambulant sanitary facilities are required to be designed and constructed in accordance with AS 1428.1-2009.

Comment: Further assessment of plan and elevation details at 1:20 is required for further comment by the Access Consultant.

At each bank of toilets which is required to contain an accessible sanitary facility, a sanitary compartment, suitable for a person with an ambulant disability in accordance with AS 1428.1-2009, must be provided for use by males and a separate one provided for the use by females.

Comment: Further assessment of plan and elevation details at 1:20 is required for further comment by the Access Consultant.

4.67 **F4D8 – Construction of Sanitary Compartments**

Sanitary compartments must have doors and partitions that separate adjacent compartments and extend from floor level to the ceiling in the case of a unisex facility or in other case, 1.8 m above the floor. Clear space below sprinklers deflectors through the washroom and toilet cubicles shall be no less then 250mm, otherwise a sprinkler will be required in each cubicle.

The door to a fully enclosed sanitary compartment must open outwards, slide, or be readily removable from the outside of the sanitary compartment, unless there is a clear space of at least 1.2 m between the closet pan within the sanitary compartment and the doorway.

Comment: Further review of the developed construction documentation is required before a final assessment against this part of the BCA can be completed.

Architect and fire services Engineer is to coordinate sprinkler coverage with partition heights with the bathrooms.

Note: Refer to F6D9 – Restriction on Location of Sanitary Compartments 4.72 for additional requirements on sanitary compartments

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4.68 **F5D2 Height of Rooms and Other Spaces**

Class 2

The ceiling height must be not less than;

- kitchen, laundry, or the like — 2.1 m;
- a corridor, passageway or the like — 2.1 m;
- a habitable room excluding a kitchen — 2.4 m;
- in a habitable room, or space within a habitable room, with a sloping ceiling or projections below the ceiling line
  - in an attic — a height of not less than 2.2 m for not less than two-thirds of the floor area of the room or space; and
  - in other rooms — a height of not less than 2.4 m for not less than two-thirds of the floor area of the room or space; and
- in a habitable room, or space within a habitable room, with a sloping ceiling or projections below the ceiling line a height of not less than 2.1 m for not less than two-thirds of the floor area of the room or space.

Class 5, 6, 7

The ceiling height must be not less than.

- Generally throughout - 2.4 m, except for
- Corridors, passageway, or the like - 2.1 m; and
- General stores, plant or the like - 2.1 m; and
- for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like- 2.1 m; and
- a commercial kitchen - 2.4 m; and
- above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like, and 2.1m above the stair/ramp landings.
- for a required accessible adult change facility — 2.4 m.

Class 9b

The ceiling height must be not less than.

- a school classroom or other assembly building or part that accommodates not more than 100 persons — 2.4 m; and
- a theatre, public hall or other assembly building or part that accommodates more than 100 persons — 2.7 m; and
- for a corridor
  - that serves an assembly building or part that accommodates not more than 100 persons — 2.4 m; or
  - that serves an assembly building or part that accommodates more than 100 persons — 2.7 m.

In other rooms used

- for a bathroom, shower room, sanitary compartment, other than an accessible adult change facility, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like- 2.1 m; and
- a commercial kitchen - 2.4 m; and
- above a stairway, ramp, landing or the like — 2 m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like, and 2.1m above the stair/ramp landings.
- for a required accessible adult change facility — 2.4 m.

Comment: Compliance cannot be confirmed at this stage, awaiting submission of RCP's and Section plans with relevant dimensions.

4.69 **F6D2/3 – Provision for Natural Light**

Natural light must be provided in;

- A Class 2 building— to all habitable rooms.
- Class 9c buildings — to all rooms used for sleeping purposes.

Required Natural Light must be provided by

- Windows that have an aggregate light transmitting measured exclusive of framing members, glazing bars or other obstructions area 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 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).

Any natural light borrowed from an adjoining room must comply with F6D4.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item Y of Table 3 above stipulates what is needed in terms of developing these plans. Design Certification is required from the relevant Consultant prior to the issue of a Construction Certificate for the commencement of construction works

*Note: A study area is defined as a habitable room and must be provided with natural light. Areas within an apartment which have been converted from a study to a storage must have the design clearly illustrate a storage area, including the provision for storage shelves. An area that **could** be considered to be used as a study, may still be defined as a study and require natural light provided. If an area has not been provided natural light and is later converted to a study, then a design change will be required, or a Performance Solution will need to be developed.*

Class 2 - The required window which is providing the natural light in the habitable room, must be set back from the title boundary, or a wall on the same building or another building on the allotment, by not less than the greater of 1 m or 50% the square root of the exterior height of the wall in which the window is located, measured in meters from its sill.

Class 9c - The required window must be transparent and located in an external wall with the windowsill not more than 1 m above the floor level; and where the window faces an adjoining allotment, another building or another wall of the same building, it must not be less than a horizontal distance of 3 m from the adjoining allotment, other building or wall.

Comment: Compliance appears to be readily achievable, however further review of the developed documentation is required before an assessment against this part of the BCA can be completed. Item M of Table 3 above stipulates what is needed in terms of developing these plans. Design Certification is required from the relevant Consultant prior to the issue of a Construction Certificate for the commencement of construction works.

4.70 **F6D5 – Artificial Lighting**

Artificial lighting must be provided to all rooms in accordance with Clause F6D5, G6D9, and AS/NZS 1680.0-2009.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works

4.71 **NSW F6D6 – Ventilation of Rooms**

A habitable room, office, shop, factory, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation complying with F6D7, or a mechanical ventilation or air-conditioning system complying with AS 1668.2.lc

Any natural ventilation borrowed from an adjoining room must comply with F6D8.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works

4.72 **F6D9 – Restriction on Location of Sanitary Compartments**

A sanitary compartment must not open directly into, a kitchen or pantry; a public dining room or restaurant; a room used for public assembly; or a workplace normally occupied by more than one person.

If it does, then the compartment must

Class 2 - Be accessed via an airlock, hallway or other room; or be provided with mechanical exhaust ventilation.

Class 5, 6, 7 or 9 - Be accessed via an airlock, hallway or other room with a floor area of not less than 1.1 m2 and fitted with self-closing doors at all access doorways; or the sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.

Comment: Compliance appears to be readily achieved. The Unisex DDA compartment in Building 2 Age care storey, which is there for the use of patients, has been designed to open up in a narrow corridor and away from the dining area. The intention for the Project to is maintain some visibility into the compartment for security reason.

4.73 **F6D11 - Carparks**

Every storey of a carpark, except an open-deck carpark, must have a system of mechanical ventilation complying with AS 1668.2; or a system of natural ventilation complying with Section 4 of AS 1668.4.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works

Mechanical Engineer is to provide the design of the mechanical exhaust system, along with any non-compliances which need to be address through fire engineering.

4.74 **F6D12 – Kitchen Local Exhaust Ventilation**

Any commercial cooking it must have a kitchen exhaust system complying with AS 1668.1-2012 & AS 1668.2-2012.Any duct work passing through fire compartments will need to be carefully considered in terms of fire separation of the duct as dampers are not permitted.

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Certificate to permit the commencement of construction works

4.75 **Part F7 – Sound Transmission and Insulation**

The Building is required to contain the minimum requirements for sound insulation for walls, floors and penetrations through walls and floors for services such as pipework, required by this part.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed. This includes Acoustic Plans and an Acoustic Report for assessment against this part, issued by an appropriately qualified Acoustic Consultant. Details on discontinued construction to be provided.

4.76 **Part F8 – Condensation Management**

The Deemed-to-Satisfy Provisions of this Part only apply to a sole-occupancy unit of a Class 2 building.

<u>External Wall Construction</u>

Where a pliable building membrane is installed in an external wall, it must—

a) comply with AS 4200.1; and

b) be installed in accordance with AS 4200.2; and

c) be located on the exterior side of the primary insulation layer of wall assemblies that form the external envelope of a building.

Where a pliable building membrane, sarking-type material or insulation layer is installed on the exterior side of the primary insulation layer of an external wall it must have a vapour permeance of not less than—

a) in climate zones 4 and 5, 0.143 µg/N.s; and

b) in climate zones 6, 7 and 8, 1.14 µg/N.s.

Except for single skin masonry and single skin concrete, where a pliable building membrane is not installed in an external wall, the primary water control layer must be separated from water sensitive materials by a drained cavity.

Comment: Architect to confirm compliance.

Exhaust Systems

Minimum ventilation and exhaust flow rates are to be met in accordance with BCA Clause F8D4.

Comment: Mechanical Engineer to confirm compliance.

Ventilation of Roof Spaces

In climate zones 6, 7 and 8, a roof must have a roof space that—

a) is located—

(i) immediately above the primary insulation layer; or

(ii) immediately above sarking with a vapour permeance of not less than 1.14 µg/N.s, which is immediately above the primary insulation layer; or

(iii) immediately above ceiling insulation which meets the requirements of J3D7(3) and J3D7(4); and

b) has a height of not less than 20 mm; and

c) is either—

(i) ventilated to outdoor air through evenly distributed openings in accordance with Table F8D5; or

(ii) located immediately underneath roof tiles of an unsarked tiled roof.

The requirements of a), b) and c) above do not apply to a—

a) concrete roof; or

b) roof that is made of structural insulated panels; or

c) roof that is subject to Bushfire Attack Level FZ requirements in accordance with AS 3959.

Comment: Architect to confirm compliance.

Section G – Ancillary Provisions

4.77 G1D3 – Refrigeration Chambers,

The kitchen Cool Rooms and Freezer Room are required to comply with the various provisions of this part of the BCA such as:

- Have a door which is capable of being opened by hand from inside without a key, with clear width of not less than 600 mm and a clear height not less than 1.5 m ; and
- Internal lighting controlled only by a switch which is located adjacent to the entrance doorway inside the rooms; and
- an indicator lamp positioned outside the rooms which is illuminated when the interior lights required by are switched on; and
- an alarm that is—
    - located outside but controllable only from within the room; and
    - able to achieve a sound pressure level outside the room or of 90 dB(A) when measured 3 m from the sounding device.

The materials used for the cool room panels is required to comply with industry best practice (PFPA TBG-003 Sandwich Panels and Associated Materials Version 2 – August 2004), FRNSW guidelines, including the labelling requirements of IPCA Ltd 003:2010 Code of Practice Version 3.0, see **Error! Reference source not found.** below.

Figure 23 - Cool Room Panels Labelling

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

4.78 NSW G1D5 - Provision for Cleaning Windows

A building must provide for a safe manner of cleaning any windows located 3 or more storeys above ground level or provision is made for the cleaning of the windows by a method complying with the Work Health and Safety Act 2011 and regulations made under that Act.

Comment: Further review of the developed documentation is required before an assessment against this part of the BCA can be completed.

4.79 Part G2 – Boilers, Pressure Vessels, Heating Appliances, Fire laces, Chimneys and Flues

Class 2

The installation of a stove, heater or similar appliance in a building must comply with, Domestic solid-fuel burning appliances — installation: AS/NZS 2918 and for boilers and pressure vessels: Specification 30

Comment: Further review .of the developed documentation is required before an assessment against this part of the BCA can be completed.

4.80 Part G3 – Atrium Construction

This Part is not applicable to this development.

4.81 Part G5 – Construction in Bushfire Prone Areas

This Part applies to the following buildings located in a designated bushfire prone area;

(a) Class 2 or 3 building; or

(b) Class 4 part of a building

(c) Class 9 building that is a *special fire protection* purpose located in an area subject to a Bushfire Attack Level BAL) not exceeding BAL—12.5, determined in accordance with Planning for Bush Fire Protection; or

(d) a Class 10a building or deck associated with a building or part referred to in (a), (b) or (c).

Note; If a building of a type listed in (c) or (d) where associated with a building listed in (c) is subject to a BAL exceeding BAL—12.5, the building would need to comply with Performance Requirement NSW G5P2 by means of a Performance Solution.

A Class 2, Class 3, Class 4, building or part of a building, or a Class 10a building or deck immediately adjacent or connected to such a building or part, must comply with AS 3959 and as amended by Planning for Bush Fire Protection, BCA Clause NSW G5D3 and any potential condition noted in a Development Consent.

A Class 9 building that is a *special fire protection* purpose or a Class 10a building or deck immediately adjacent or connected to a such a building or part, must comply with NSW G5D4;

- for a Class 9 building that is special fire protection purpose, Specification 43 except as amended by Planning for Bush Fire Protection; or
- for a Class 10a building or deck, AS 3959 except as amended by Planning for Bush Fire Protection; and S43C13; or
- any potential condition noted in a Development Consent.

Comment: The building appears to be located within Bushfire Prone Area, refer ***Error! Reference source not found.*** *below of Bushfire Prone Mapping from NSW ePlanning Spatial Viewer, however, is subject to an assessment from the Development Consent Authority.*

Bushfire Assessment Report is to be provided against the provision of this part.

Comment: If ***Building 2,*** *which has a special fire protection purpose (Retirement Village), is subject to a BAL exceeding BAL—12.5, the building would need to comply with Performance Requirement NSW G5P2 by means of a Performance Solution. The Bushfire Consultant is to confirm the Bal for the building. This includes any Class 10a building or deck associated with it.*

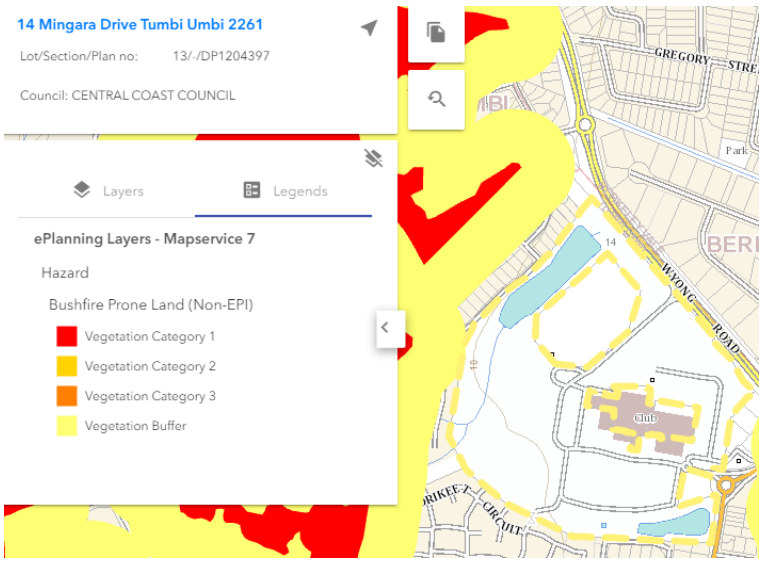


Figure 24 - Bushfire Prone Mapping (ePlanning Portal)

4.82 Part G6 – Occupiable Outdoor Areas

The part applies to all areas which are deemed occupiable outdoor areas. This is defined as 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.

- Clause G6D2 - Fire hazard properties
- Clause G6D3 - Fire separation
- Clause G6D4 - Provision for escape
- Clause G6D5 - Construction of exits
- Clause G6D6 - Firefighting equipment
- Clause G6D7 – Lift Installations
- Clause G6D8 - Visibility in an emergency, exit signs and warning systems
- Clause G6D9 - Artificial Lighting
- Clause G6D10 – Fire orders

Comment: A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.

Section J – Energy Efficiency

4.83 Part J1 Energy efficiency performance requirements

Compliance with Section J is required for this development. The building is located within Climate Zone 5

Comment: An appropriately qualified ESD/Energy Efficiency consultant is to provide a Section J Report that confirms compliance of all new proposed building works against Section J of the BCA.

Below is an assessment to BCA 2022 provisions, note that this will need to be updated once the ESD consultant has provided their report.

- BCA Part J1 – Performance Requirements: Noted
- BCA Part J2 – Energy Efficiency: Noted
- BCA Part J3 – Provisions for a sole-occupancy unit of a Class 2 building: *This part applies to the building elements forming the external building fabric and domestic services in each sole-occupancy unit of a Class 2 building and a Class 4 part of a building. A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*
- BCA Part J4 – Building Fabric / Glazing/wall: A Total System U-Value of wall and glazing construction in accordance with Clause J1.5 must not be exceeded. *A satisfactory Design Certificate, including Submission of the system calculations, is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*

  Roof Lights must have a total area of not more than 5% of the floor area of the room or space it serves;

  ESD/Energy Efficiency consultant is to provide a Section J Report that confirms compliance with the proposed roof light.
- BCA Part J5 – Building Sealing: *Details of compliance with this provision is required to be illustrated within the architectural documentation, i.e. where required, self-closing doors, window and doors seals to be illustrated within the schedules.*

  If any of the retail tenancies are proposed to be cafes, they may require a 3 m deep unconditioned zone to the open shop front, and all other doors self-closing with air seals. *Mechanical Plans will need to illustrate accordingly.*
- BCA Part J6 – Air-conditioning and Ventilation Systems: *A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*
- BCA Part J7 – Artificial Lighting and Power – *A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*
- BCA Part J8 - Heated Water Supply and Swimming Pool and Spa Plant: *A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*
- BCA Part J9 – Energy Monitoring: *A satisfactory Design Certificate is to be provided to the Principal Certifier prior to the issuance of a Construction Certificate to permit the commencement of construction works.*

Please note that BASIX applies to Class 2 parts of the building except where:

- The DA requires compliance with thermal insulation; and
- Thermal breaks are required to comply fully with the Section J provisions.

5.0 PERFORMANCE SOLUTIONS

The Following are Performance Solutions proposed or expected as a result of our assessment of the listed documentation:

Fire Engineering Performance Solutions

The Following measures are proposed to be justified via Performance Solutions for the proposed building/works as follows

- TBC – Refer Table 2

Disabled Access Performance Solutions

Disabled Access consultant is to advise if any Performance Solutions are proposed for any Disabled Access matters for the building – see separate Access consultant's report for details.

Section J Energy Efficiency

It is expected that a Verification Method approach is proposed for the building based off the design, if that is the case then the Provision of the Section J report will be required to meet the requirements of the relevant Verification Clause of Section J and be provided as part of the Construction Certificate/Crown Certificate/Complying Development Certificate Application to the Certifier.

See Section J Consultants report for requirements relating to the design of the building and services requirements, which may differ from the BCA clauses contained in this report.

Weatherproofing of External Walls

As the materials that can be used as external walls under the DTS provisions (BCA Clause F3D5) are limited, and the proposed design is expected to contain other external wall material/cladding a Performance Solution to BCA Clause F3P1 is to be provided as part of the Construction Certificate/Crown Certificate/Complying Development Certificate Application to the Certifier.

Note: Design team is to establish which consultant will be preparing this Report, and the required PBDB for it as well, this is not as simple as a Design Statement but involves the preparation of a Performance Solution Report.

Important Note to Design Team / Consultants

Should the Architect or any Design Consultants believe that additional items need to be the subject of a Performance Solution or the Deemed to Satisfy provisions of the BCA or referenced Australian Standard is not able to be achieved for the design.

Then please advise Group DLA, Project Manager and Design Team as soon as possible to ensure that the team is informed to ensure captured, and solutions evaluated by the relevant consultant as soon as possible and before the design progresses to completion. Please do not assume elements will be included, if they are not listed in the above section of the Report then they are not and either the design will need to change to ensure compliance, or an additional Performance Solution will need to be discussed and assessed by the relevant consultant preparing the Performance Solution.

6.0 ESSENTIAL FIRE SAFETY MEASURES (EFSM)

Below is a list of essential fire safety services that are required/expected to be installed / designed for the building, and the relevant standards of performance for each measure to be designed/constructed to. This table may be required to be updated as the design develops.

To Be Completed In Detail Design

Fire Safety Measure	Standard of Performance	BCA 2022 Clause/Specification(s)	Proposed Fire Safety Measures
			☐

Table 7 – Essential Fire Safety Measures (EFSM)

Appendix A:

BCA Provisions Checklist

BCA 2022

A Detailed Assessment has been complete in this Report

The full clause by clause checklist will be included in the final Report prior to the issuance of a Construction Certificate

Appendix B:
Fire Resistance Levels (FRL's)

Specification 5, BCA Tables S5C11a, S5C11b, S5C11c, S5C11d, S5C11e, S5C11f and S5C11g – Type A Construction: FRL of Building Elements

Item	Class 2, 3 or 4 part	Class 5, 7a or 9b	Class 6	Class 7b or 8
Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	90/90/90 90/60/60 90/60/30	120/120/120 120/90/90 120/60/30	180/180/180 180/180/120 180/120/90	240/240/240 240/240/180 240/180/90
Non-Loadbearing External Walls • Less than 1.5m to a fire source feature • 1.5 – less than 3m from a fire source feature; • 3m or more from a fire source feature	-/90/90 -/60/60 -/-/-	-/120/120 -/90/90 -/-/-	-/180/180 -/180/120 -/-/-	-/240/240 -/240/180 -/-/-
External Columns • Loadbearing • Non-loadbearing	90/-/- -/-/-	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	180/180/180	240/240/240
Stair and Lift Shafts required to be fire-resisting • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/120/120 -/120/120	180/120/120 -/120/120	240/120/120 -/120/120
Internal walls bounding sole occupancy units • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Internal walls bounding public corridors, public lobbies and the like: • Loadbearing • Non-loadbearing	90/90/90 -/60/60	120/-/- -/-/-	180/-/- -/-/-	240/-/- -/-/-
Ventilating, pipe, garbage and like shafts: • Loadbearing • Non-loadbearing	90/90/90 -/90/90	120/90/90 -/90/90	180/120/120 -/120/120	240/120/120 -/120/120
Other loadbearing internal walls, 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

Note: See concessions in Spec 5 for concessions to these above tabulated requirements, as this may reduce or remove fire rating requirements subject to certain criteria and haven't been captured in this report.

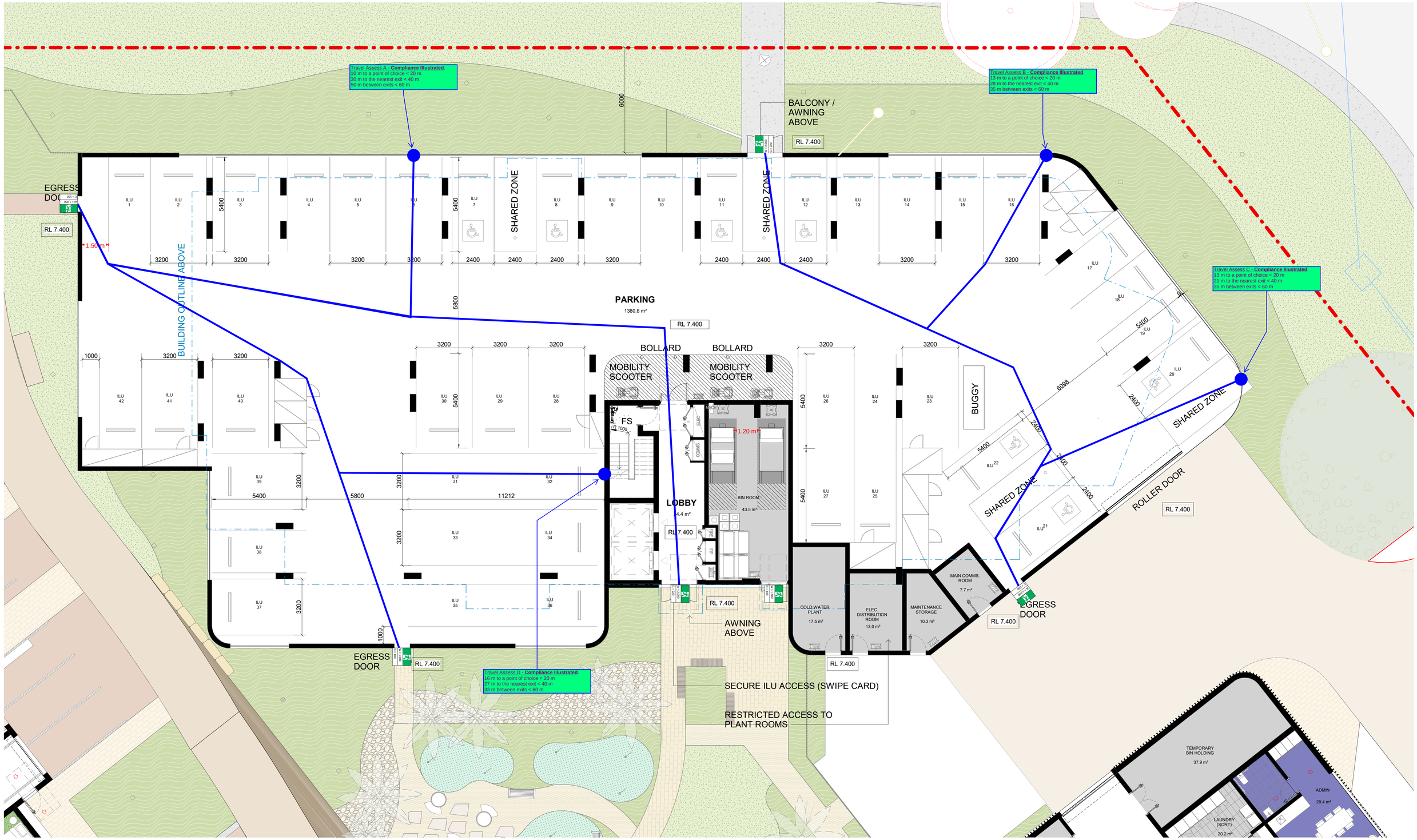
Specification 5, BCA Tables S5C21a, S5C21b, S5C21c, S5C21d, S5C21e, S5C21f and S5C21g – Type B Construction: FRL of Building Elements

Item	Class 2, 3 or 4 part	Class 5, 7a or 9b	Class 6	Class 7b or 8
Loadbearing External Walls				
• Less than 1.5m to a fire source feature	90/90/90	120/120/120	180/180/180	240/240/240
• 1.5 - less 3m from fire source feature;	90/60/30	120/90/60	180/120/90	240/180/120
• 3 - less 9m from a fire source feature	90/30/30	120/30/30	180/90/60	240/90/60
• 9 - less 18m from a fire source feature	90/30/-	120/30/-	180/60/-	240/60/-
• 18m or more from a fire source feature	-/-/-	-/-/-	-/-/-	-/-/-
Non-Loadbearing External Walls				
• Less than 1.5m to a fire source feature	-/90/90	-/120/120	-/180/180	-/240/240
• 1.5 - less 3m from fire source feature;	-/60/30	-/90/60	-/180/120	-/180/120
• 3m or more from a fire source feature.	-/-/-	-/-/-	-/-/-	-/-/-
Loadbearing External Columns				
• Less than 18m	90/-/-	120/-/-	180/-/-	240/-/-
• 18m or more	-/-/-	-/-/-	-/-/-	-/-/-
Non-Loadbearing External Columns	-/-/-	-/-/-	-/-/-	-/-/-
Common Walls & Fire Walls	90/90/90	120/120/120	180/180/180	240/240/240
Stair and Lift Shafts required to be fire-resisting				
• Loadbearing Stair & Lift shaft	90/90/90	120/120/120	180/120/120	240/120/120
• Non-loadbearing Stair shaft only	-/90/90	-/120/120	-/120/120	-/120/120
Internal walls bounding sole occupancy units				
• Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
• Non-loadbearing	-/90/90	-/-/-	-/-/-	-/-/-
Internal walls bounding public corridors, public lobbies and the like:				
• Loadbearing	60/60/60	120/-/-	180/-/-	240/-/-
• Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Other loadbearing internal walls and columns	60/-/-	120/-/-	180/-/-	240/-/-
Roofs	-/-/-	-/-/-	-/-/-	-/-/-

Note: See concessions in Spec 5 for concessions to these above tabulated requirements, as this may reduce or remove fire rating requirements subject to certain criteria, and haven't been captured in this report

Appendix C:

Exit Locations and Travel Distances



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BUILDING 1 - PARKING (GROUND)

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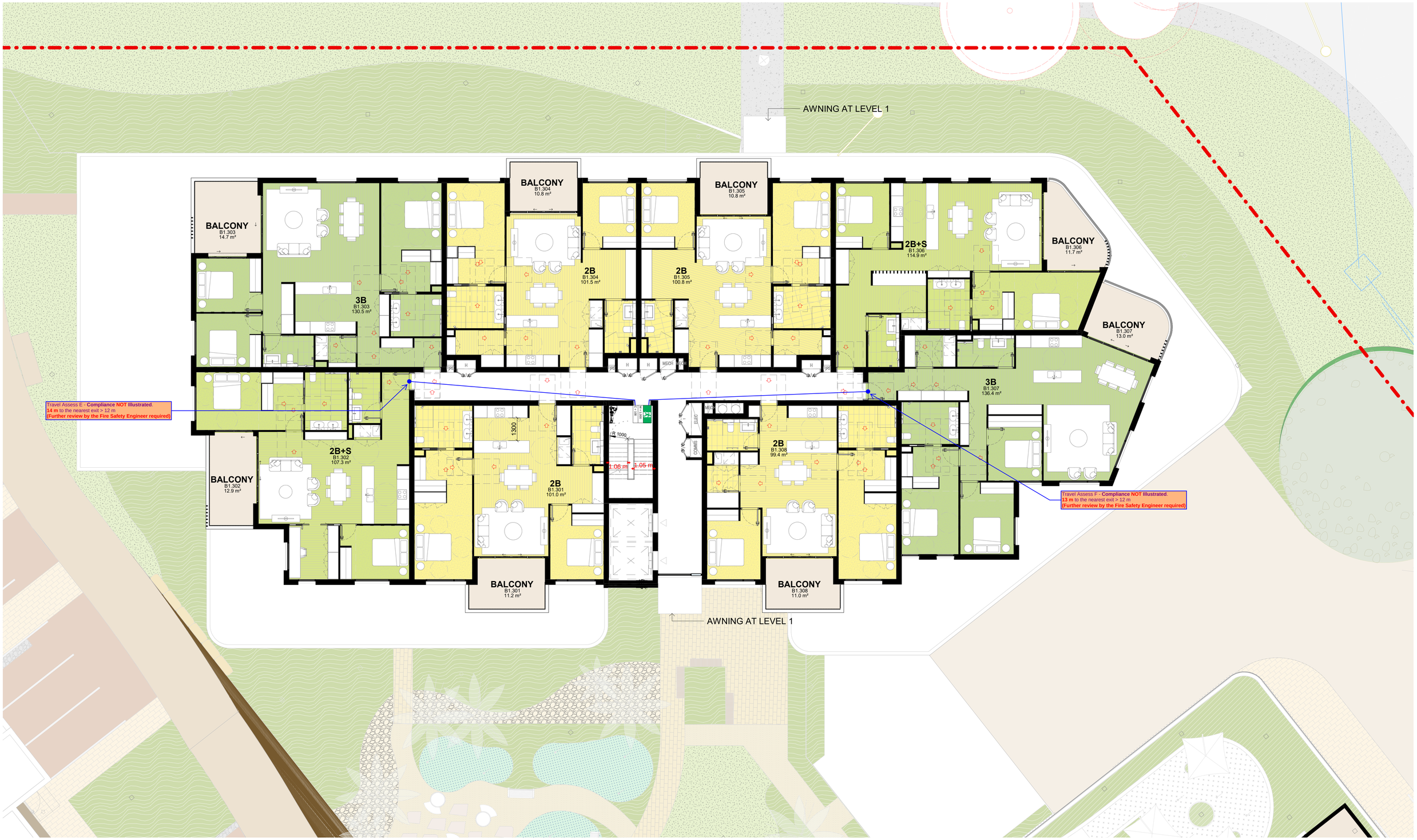

BUILDING 1 - TYP (BUILDING PLAN)

1 : 100

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BUILDING 1 - TYPICAL (LEVEL 1-4)

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BUILDING 1 - L05 (BUILDING PLAN)

1 : 100

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BUILDING 1 - PENTHOUSE (LEVEL5)

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MULTI-PURPOSE
182.8 m²
MULTIPURPOSE ROOM 2
MULTIPURPOSE ROOM 1
STORAGE
STORAGE
AV
AIRLOCK
RL 7.400
AWNING ABOVE
BUILDING OUTLINE ABOVE
CAFE SERVERY + COMMUNITY LOUNGE
332.0 m²
BAR
RL 7.400
ex RL 8.30
ex RL 7.95
ex RL 7.88
Travel Assess H - Compliance Illustrated.
18 m to a point of choice < 20 m
28 m to the nearest exit < 40 m
42 m between exits < 60 m
ILU 9
ILU 8
ILU 7
ILU 6
ILU 5
ILU 4
ILU 3
ILU 2
ILU 1
ILU 10
ILU 11
ILU 12
ILU 13
ILU 14
ILU 15
ILU 16
ILU 17
ILU 18
3200
2400
1000
1150
5400
5800
5400
WAITING
CONSULT 2
CONSULT 1
STORAGE
COLD WATER PLANT
ELEC. DISTRIBUTION ROOM
MAIN COMMS. ROOM
H
ELEC
COMMS
1.10 m
RL 7.400
AIRLOCK
FS2
FS1
1.00 m
HCS LIFT
ILU LIFT
FIRE EGRESS
FIRE EGRESS
1.10 m
RL 7.400
BOLLARD
ROLLER DOOR
M.WC
ACC
F.WC
MECH
KITCHEN
55.7 m²
1.00 m
TEMPORARY BIN HOLDING
27.5 m²
CLEANERS STORE
SALES / MEETING ROOM
GARBAGE ROOM
9.4 m²
DRY STORE
7.1 m²
COLD ROOM
5.9 m²
AMBULANCE/ WASTE LOADING
1.00 m
GARBAGE ROOM
17.7 m²
SERVICE CORRIDOR
BOH LIFT
CLINICAL WASTE
LAUNDRY (COLLECTION)
5.4 m²
LAUNDRY (DIRT)
16.9 m²
LAUNDRY (SOIL)
20.2 m²
926.20 mm
TEMPORARY BIN HOLDING
37.1 m²
RECEPTION
STORE
PARCEL
MAIL ROOM
ADMIN
43.9 m²
STAFF TOILET
STAFF LOCKER
RL 7.400
RL 7.400
RL 7.400
RL 7.600
ROLLER DOOR
1.15 m
AIRLOCK
PORTE COCHERE (DROP OFF)
PASSENGER MINI BUS BAY
ex RL 7.28
ex RL 7.17
ex RL 7.03
Travel Assess I - Compliance Illustrated.
17 m to a point of choice < 20 m
34 m to the nearest exit < 40 m
42 m between exits < 60 m
Travel Assess J - Compliance NOT Illustrated.
22 m to a point of choice > 20 m
44 m to the nearest exit > 40 m
42 m between exits < 60 m
(Further review by the Fire Safety Engineer required)
Travel Assess K - Compliance Illustrated.
20 m to a point of choice < 20 m
28 m to the nearest exit < 40 m
36 m between exits < 60 m
SECURE ILU ACCESS (SWIPE CARD)
SECURE ACCESS AFTER HOURS IN CO
Travel Assess L - Compliance Illustrated.
20 m to a point of choice < 20 m
30 m to the nearest exit < 40 m
42 m between exits < 60 m

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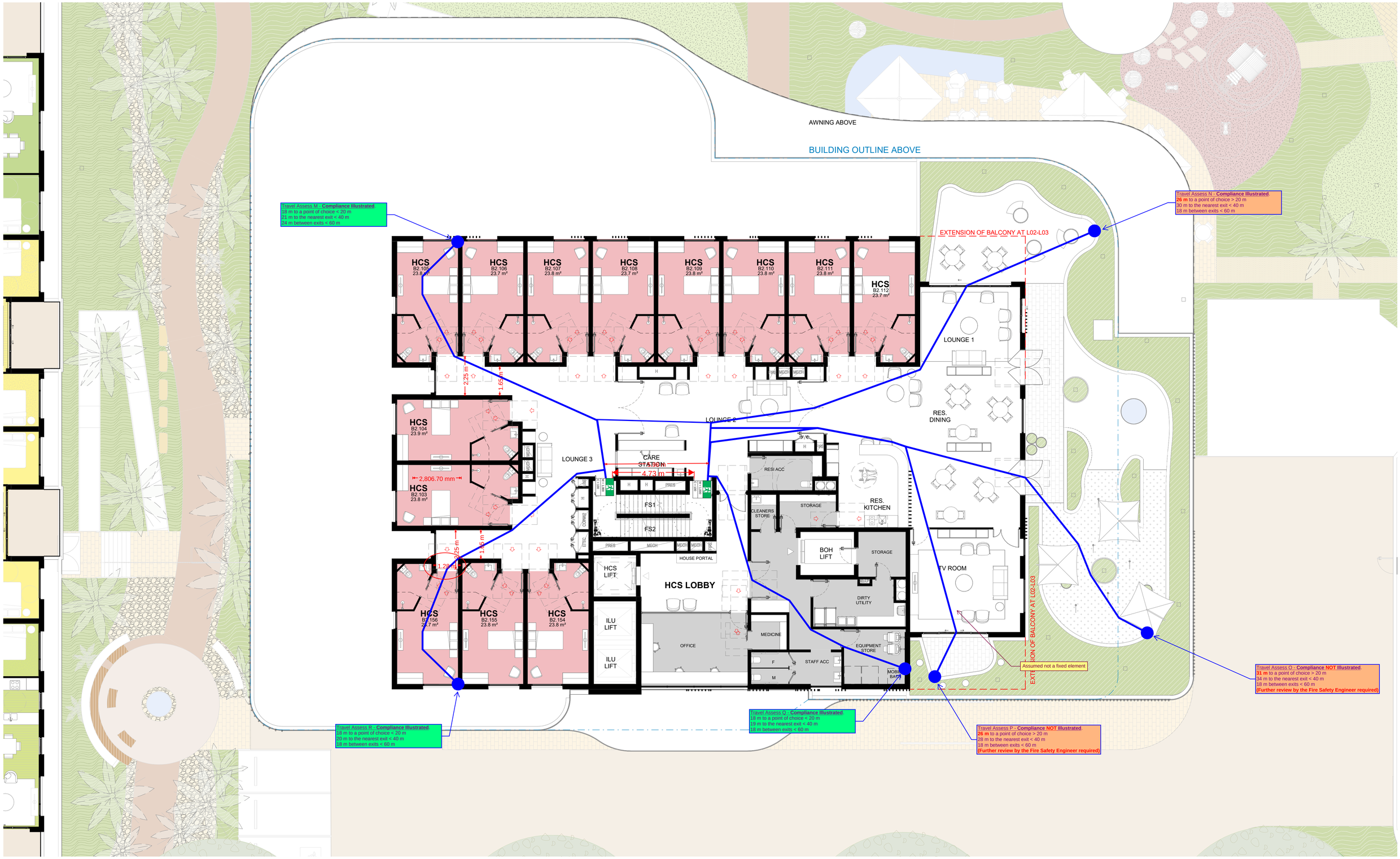

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BUILDING 2 - RAC (LEVEL 1-3)

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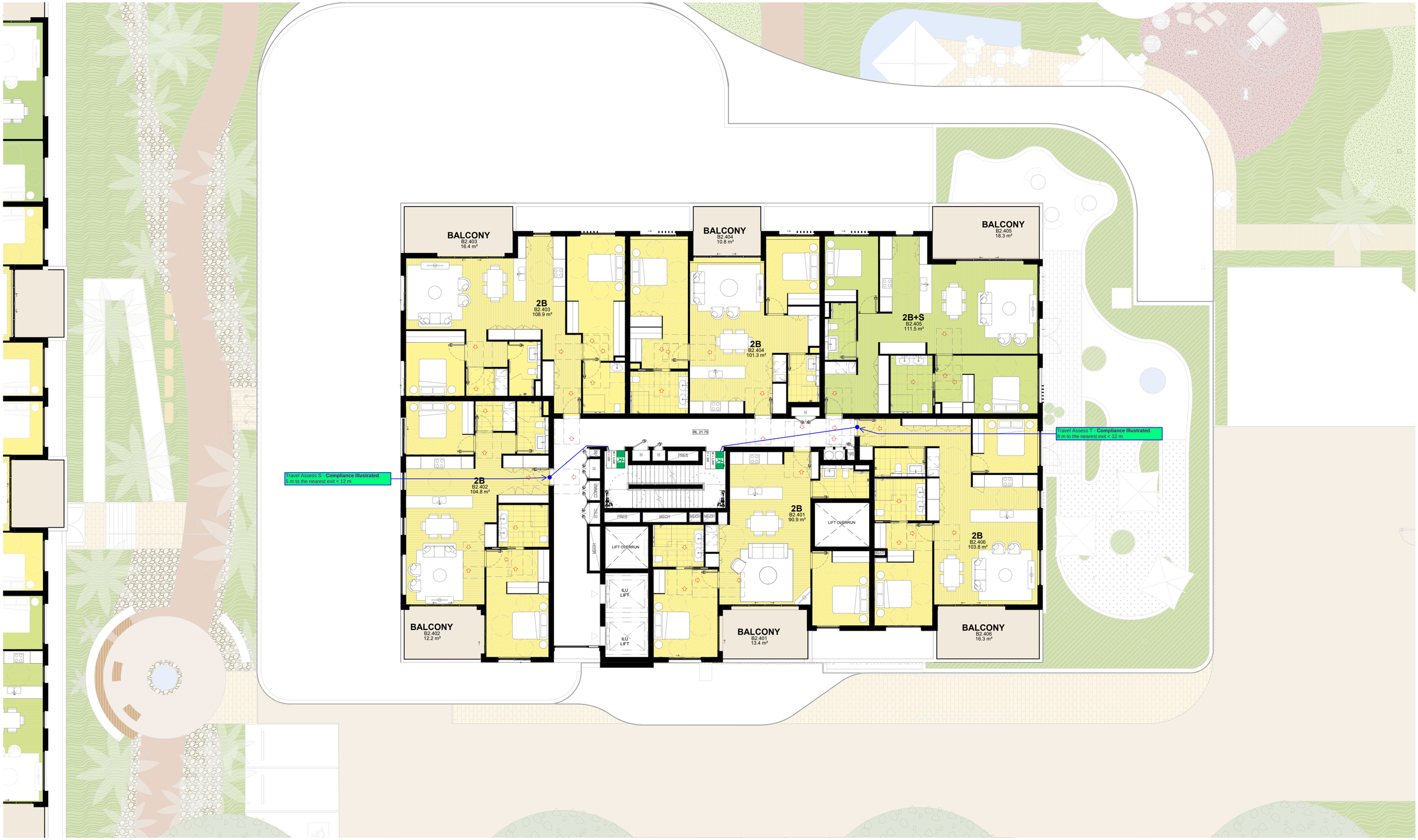

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BUILDING 2 - ILU (LEVEL 4)

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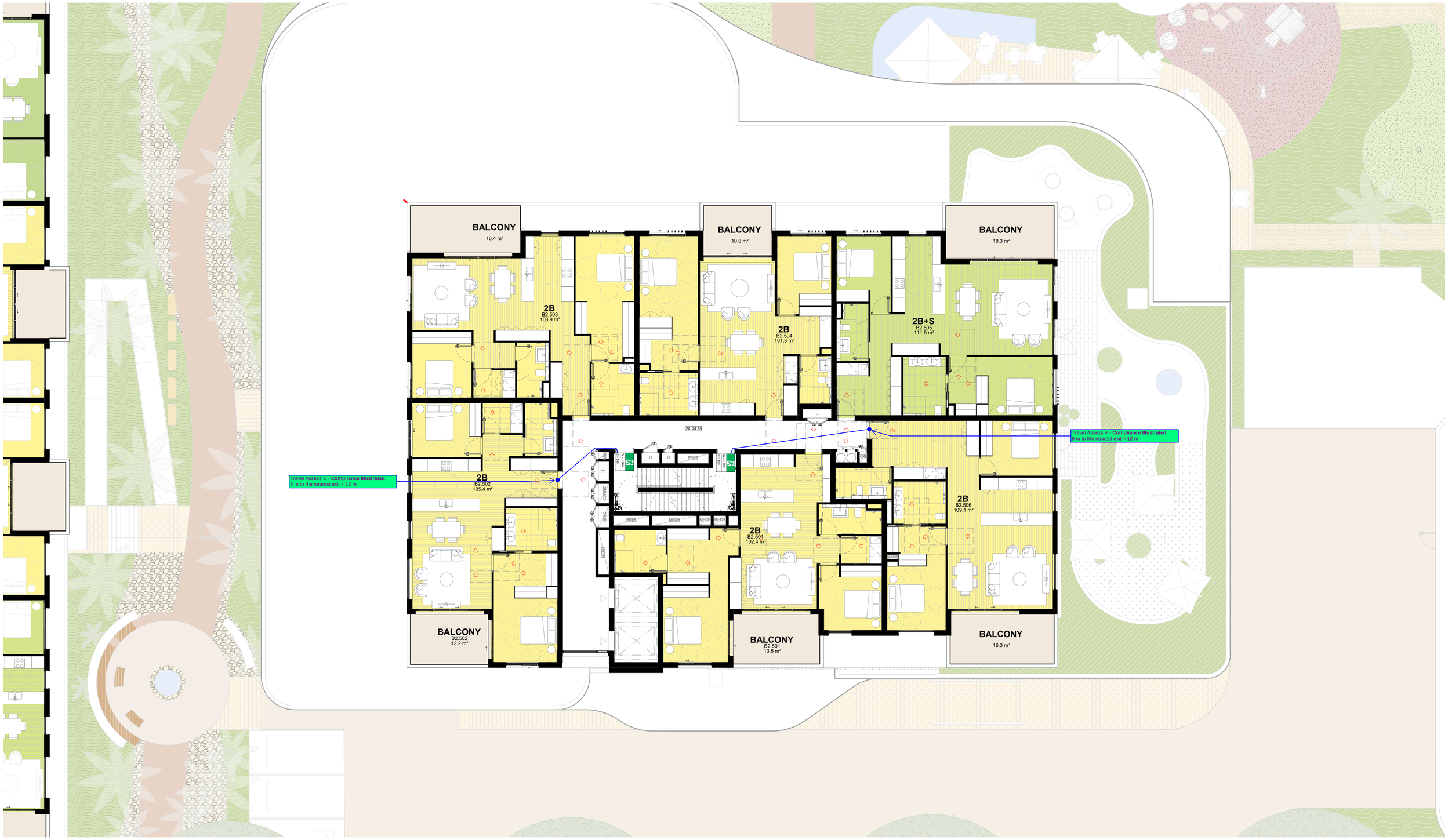

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BUILDING 2 - ILU (LEVEL 5)

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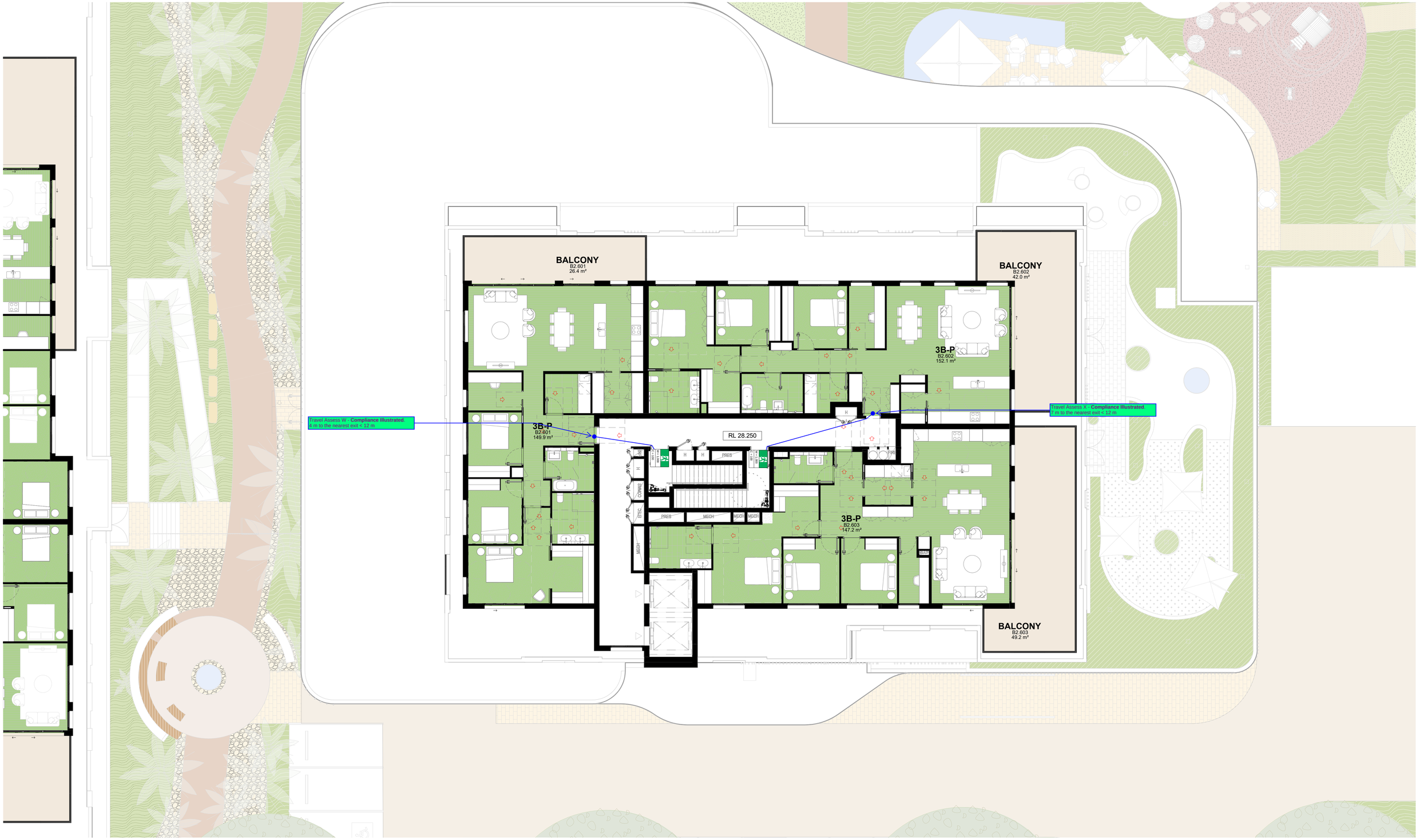

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PROJECT
TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE
BUILDING 2 - ILU PENTHOUSE (LEVEL 6)

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING	REVISION
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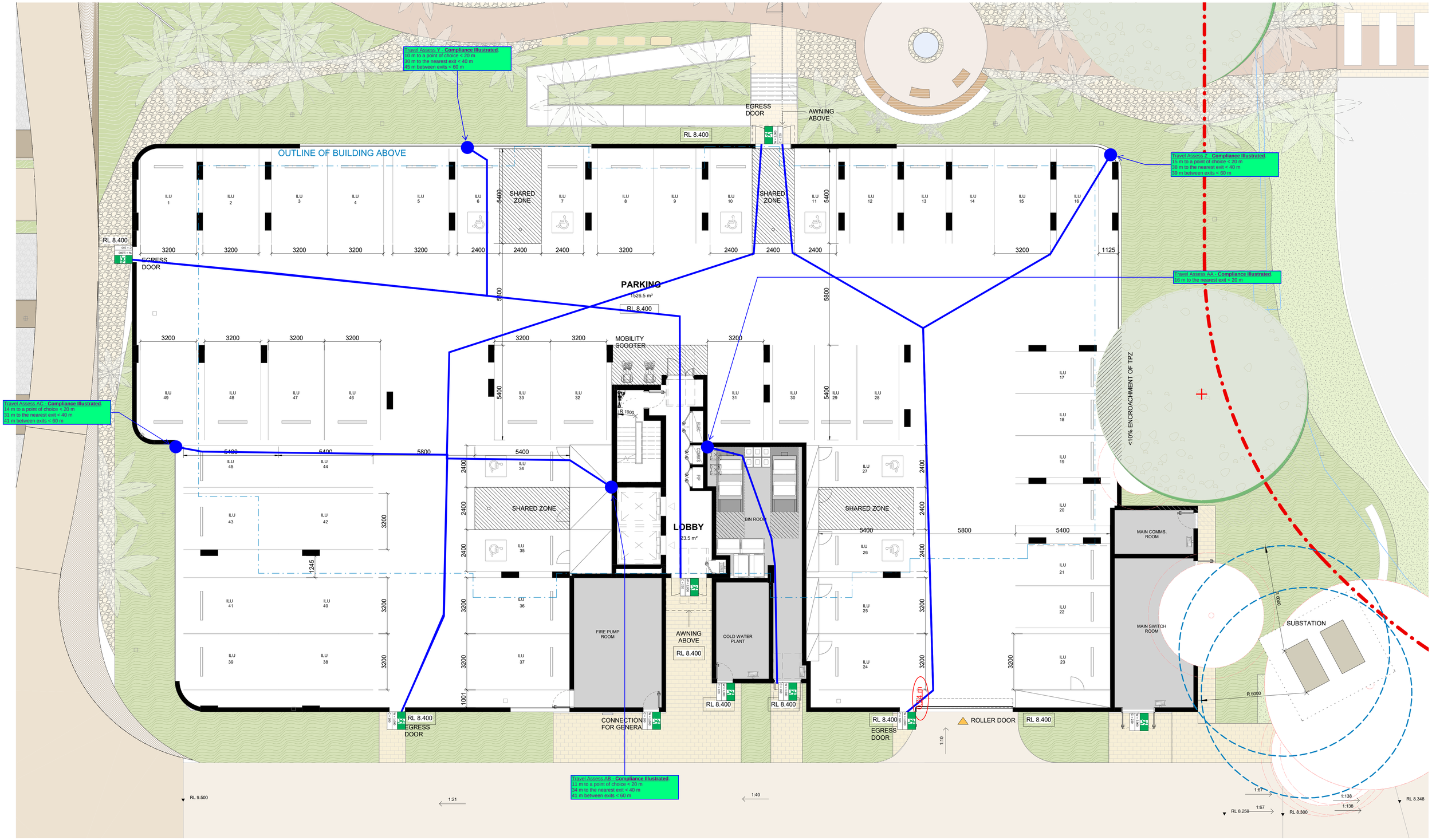

BUILDING 3 - GF (BUILDING PLAN)

1 : 100

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TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 3 - PARKING (GROUND)

SCALE	DATE	DRAWN	CHECKED
1:100 @A1 1:200 @A3	04/07/2024	Author	Checker
JOB	DRAWING		REVISION
16072	DA2.71		2

BUILDING 3 - TYPICAL (BUILDING PLAN)

1 : 100

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DATE STAMP: 04/07/2024 12:26:08

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TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 3 - TYPICAL (LEVEL 1-4)

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING		REVISION
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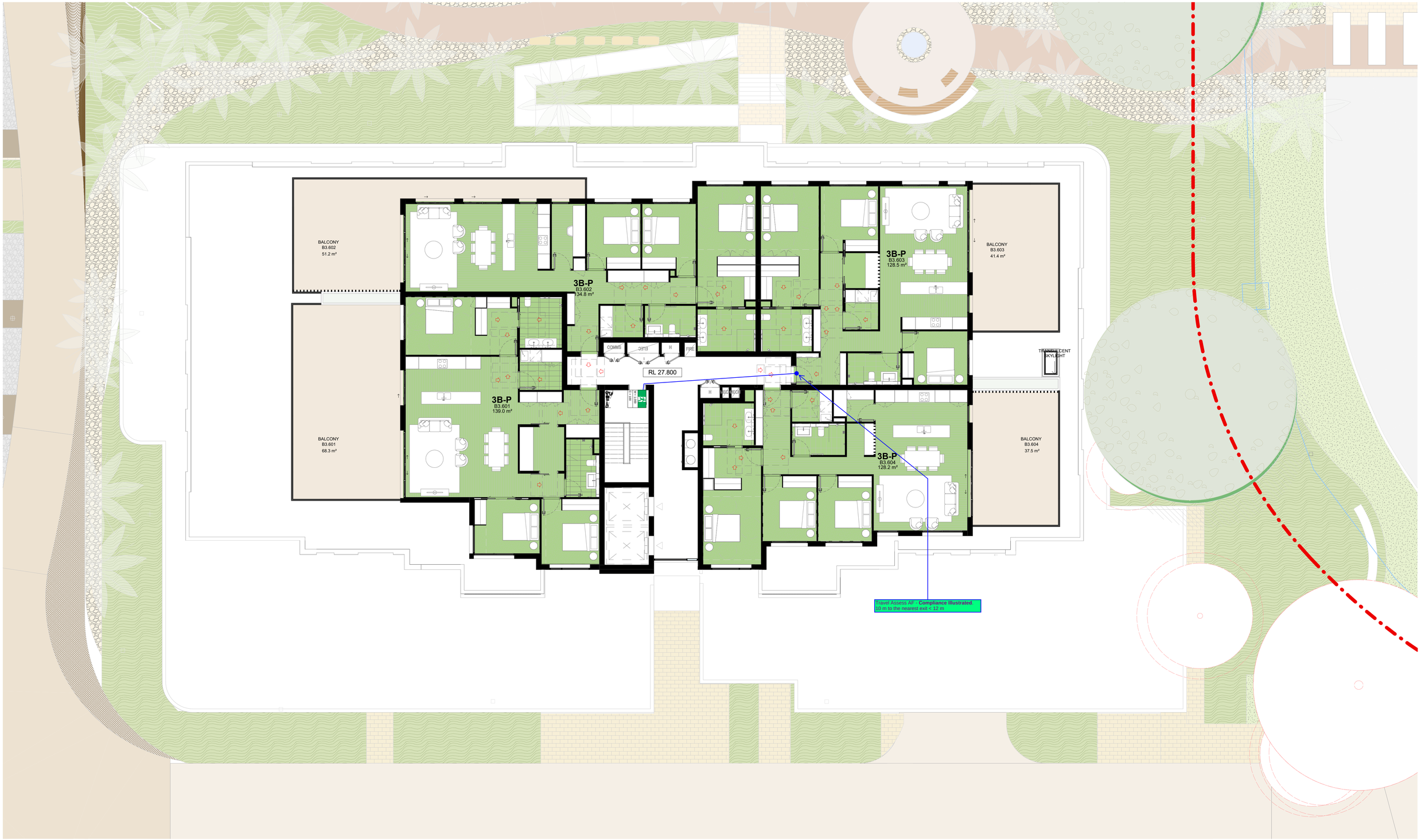

BUILDING 3 - L06 (BUILDING PLAN)

1 : 100

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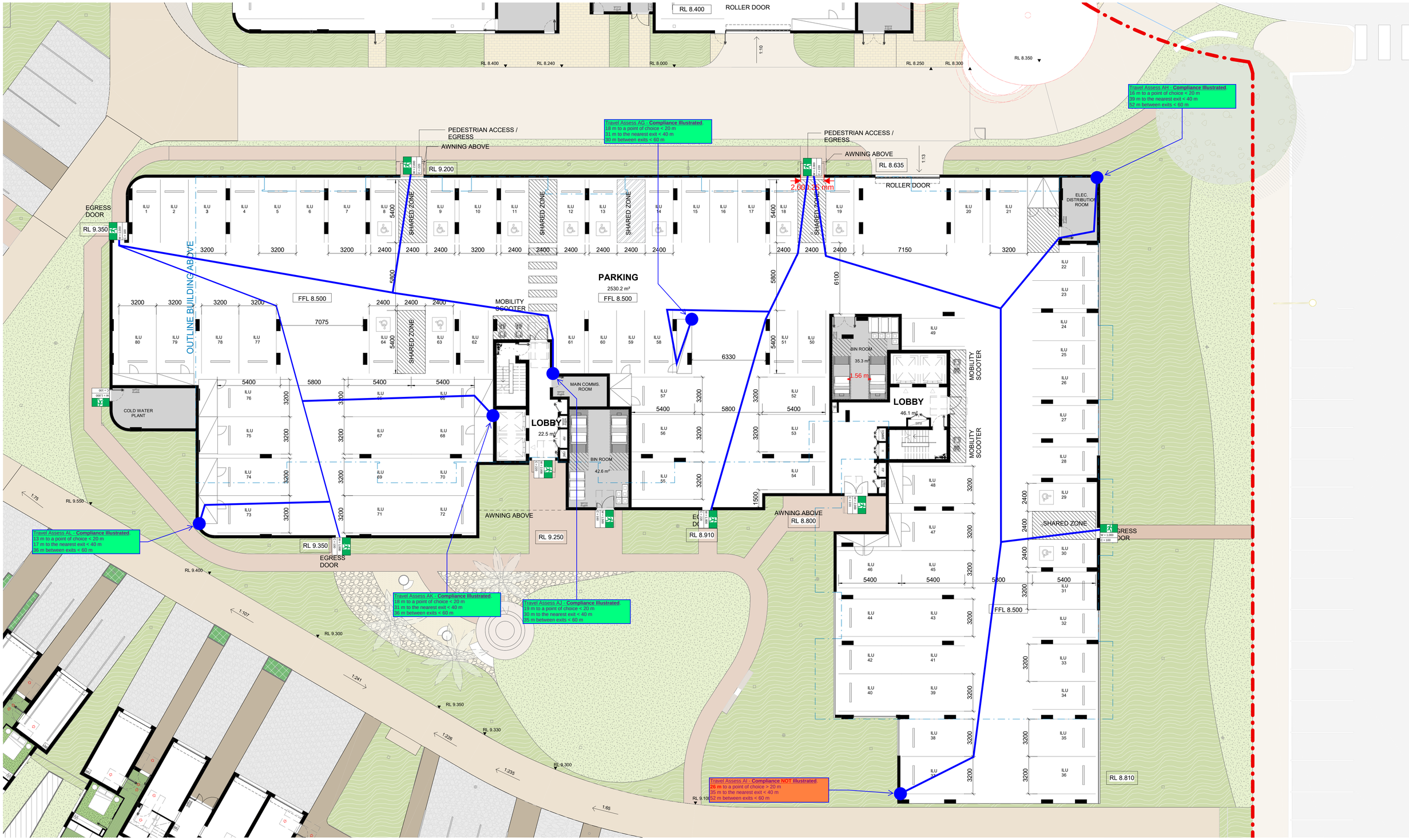
TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 3 - PENTHOUSE (LEVEL 6)

SCALE	DATE	DRAWN	CHECKED
1:100 @A1 1:200 @A3	04/07/2024	Author	Checker

JOB	DRAWING	REVISION
16072	DA2.73	2



BUILDING 4 - GF (BUILDING PLAN)

1 : 150

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 4 - PARKING (GROUND)

SCALE	DATE	DRAWN	CHECKED
1:150 @A1 1:300 @A3	04/07/2024	ML	AK
JOB	DRAWING		REVISION
16072	DA2.81		2

BUILDING 4 - TYP (BUILDING PLAN)

1 : 150

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 4 - TYPICAL (LEVEL 1-4)

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING		REVISION
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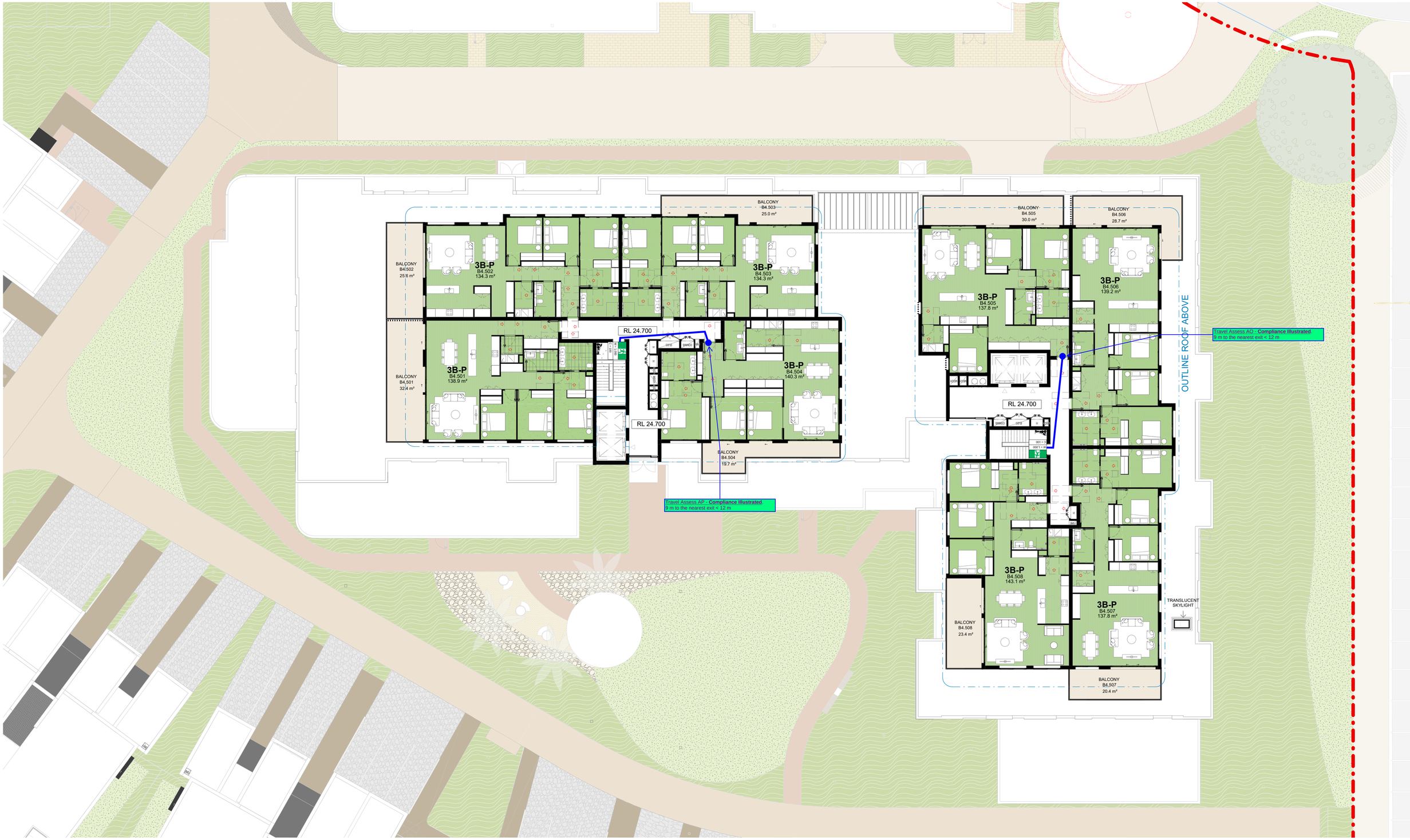

BUILDING 4 - L05 (BUILDING PLAN)

1 : 150

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

BUILDING 4 - PENTHOUSE (LEVEL 5)

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING	REVISION
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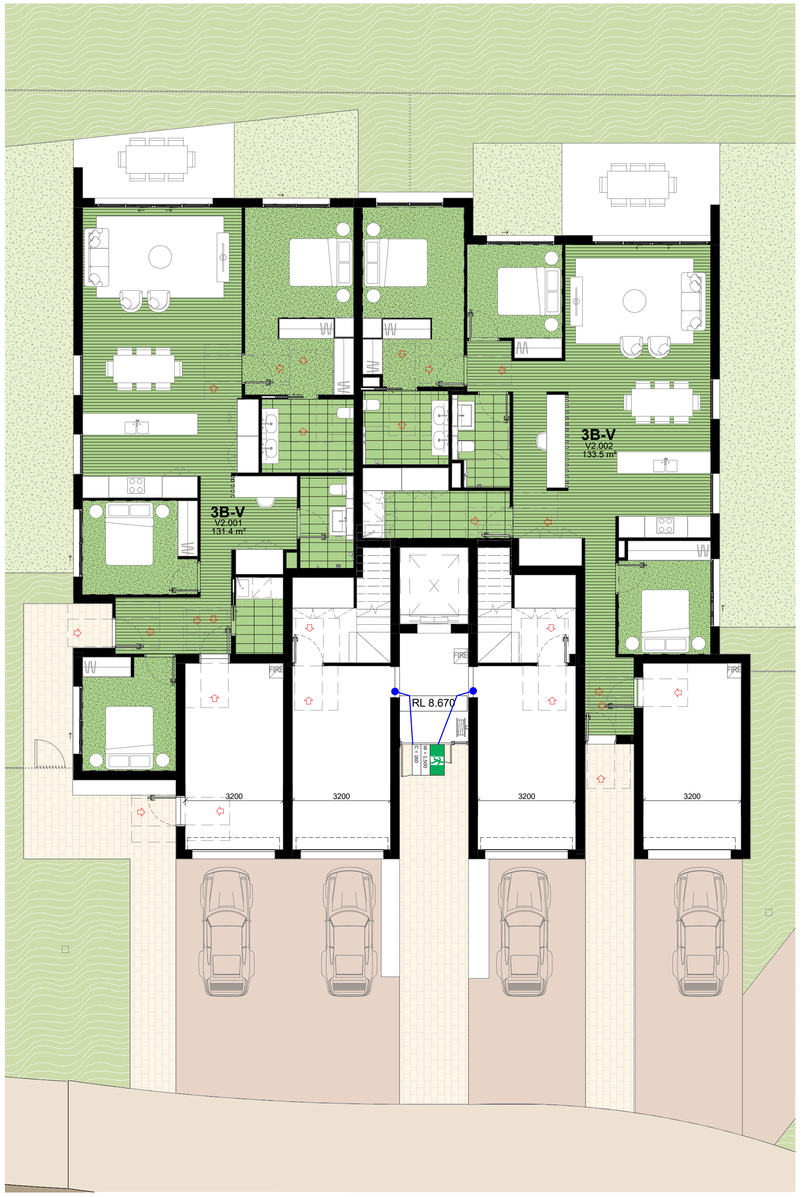

VILLA 1 DETAIL PLAN - GF

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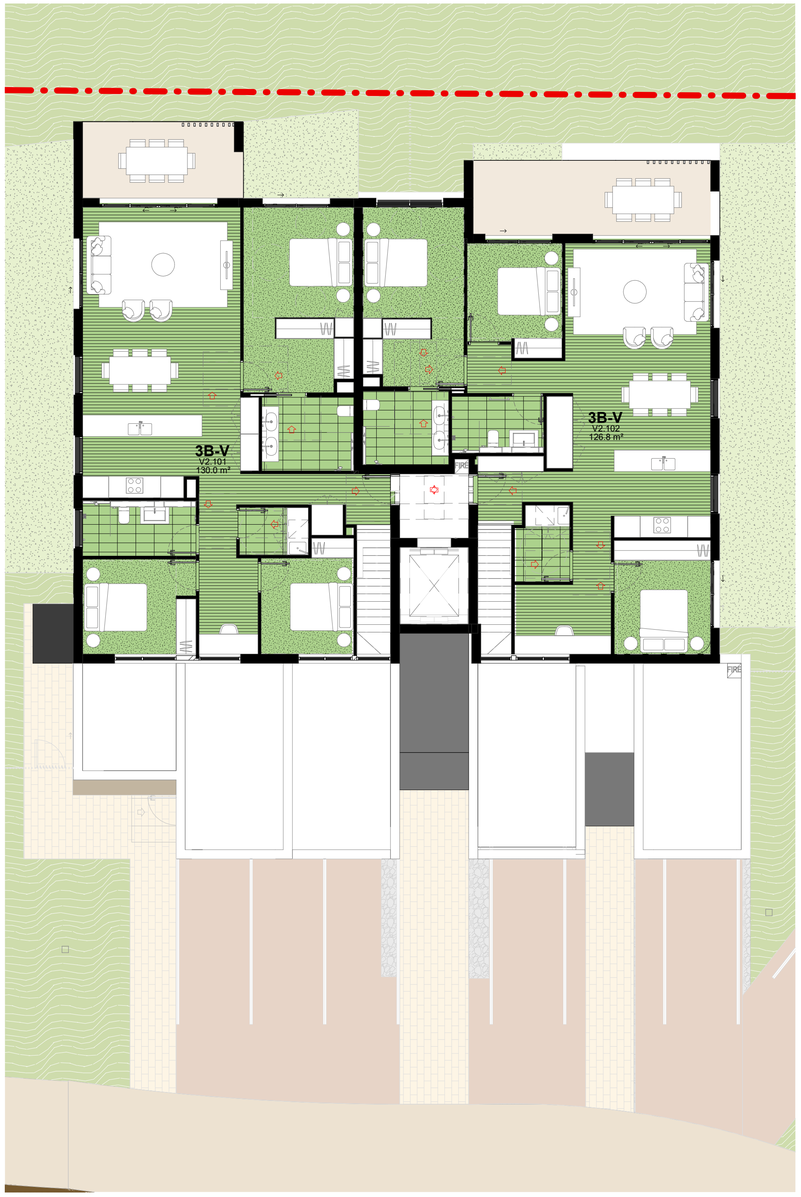

VILLA 1 DETAIL PLAN - L01

1 : 100

DATE STAMP 04/07/2024 12:27:42

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

VILLA 1 FLOOR PLANS

SCALE	DATE	DRAWN	CHECKED
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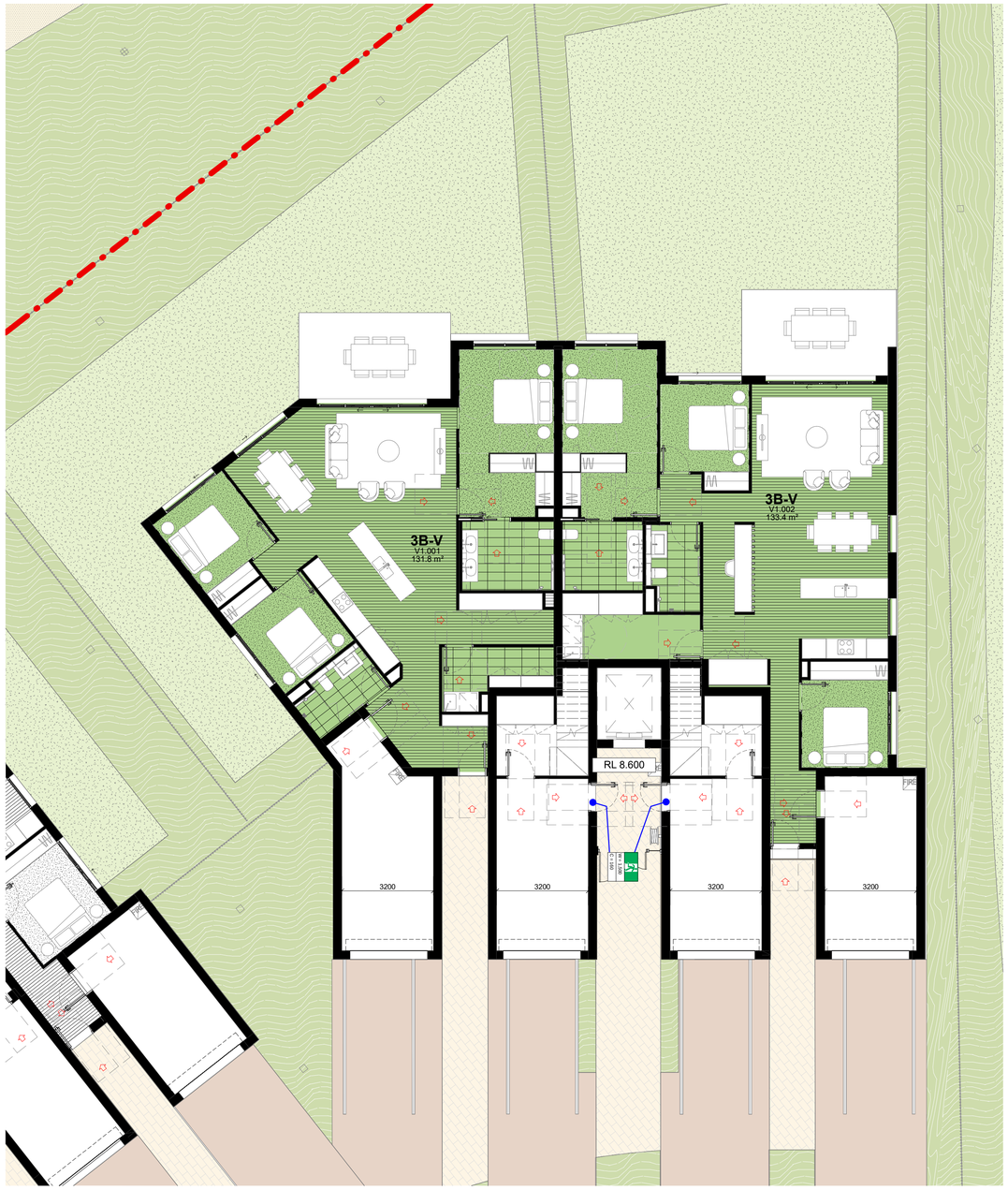
JOB	DRAWING	REVISION
16072	DA2.90	2



VILLA 2 DETAIL PLAN - GF

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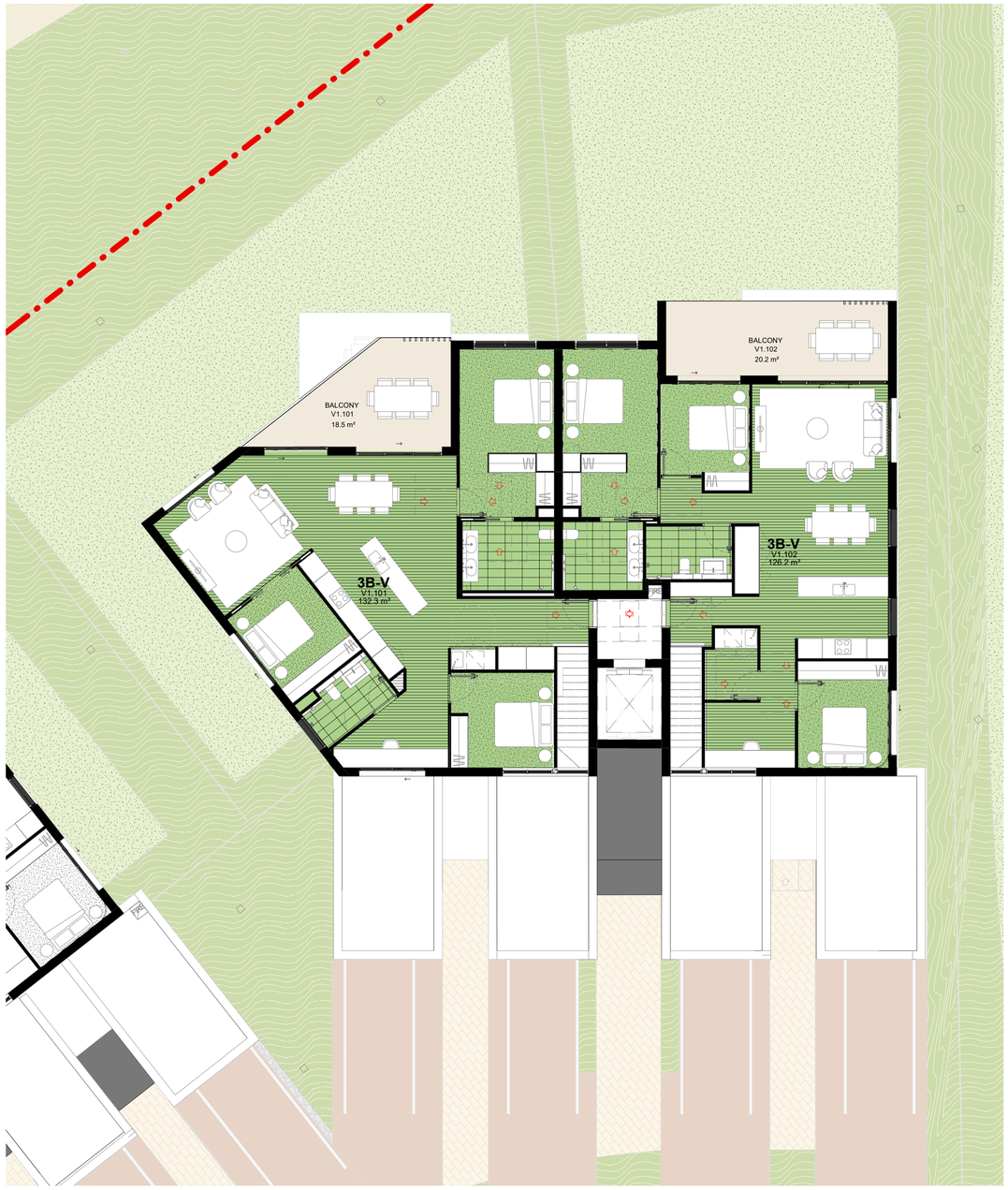

VILLA 2 DETAIL PLAN - L01

1 : 100

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

VILLA 2 FLOOR PLANS

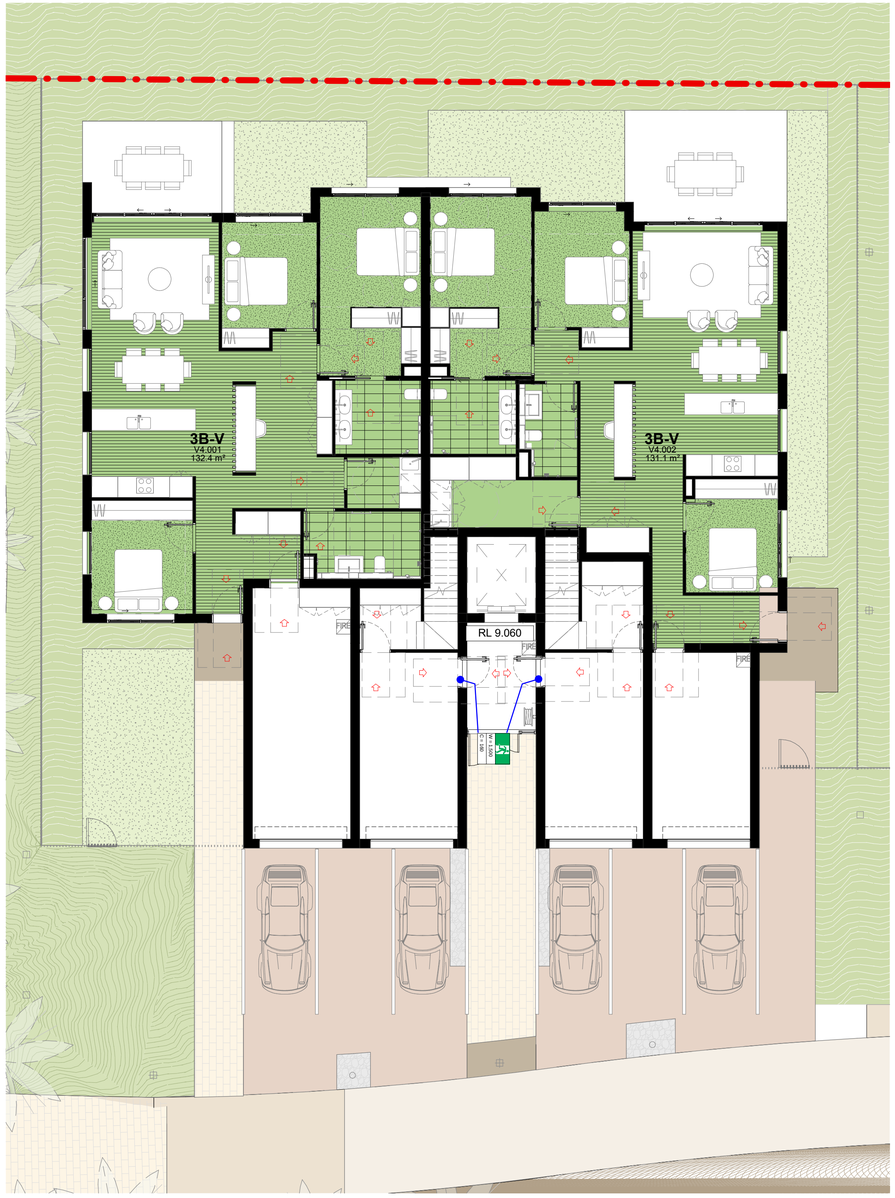
SCALE	DATE	DRAWN	CHECKED
1:100 @A1 1:200 @A3	04/07/2024	ML	AK

JOB 16072

DRAWING DA2.91

REVISION 2

DATE STAMP: 04/07/2024 12:27:54



VILLA 3 DETAIL PLAN - GF

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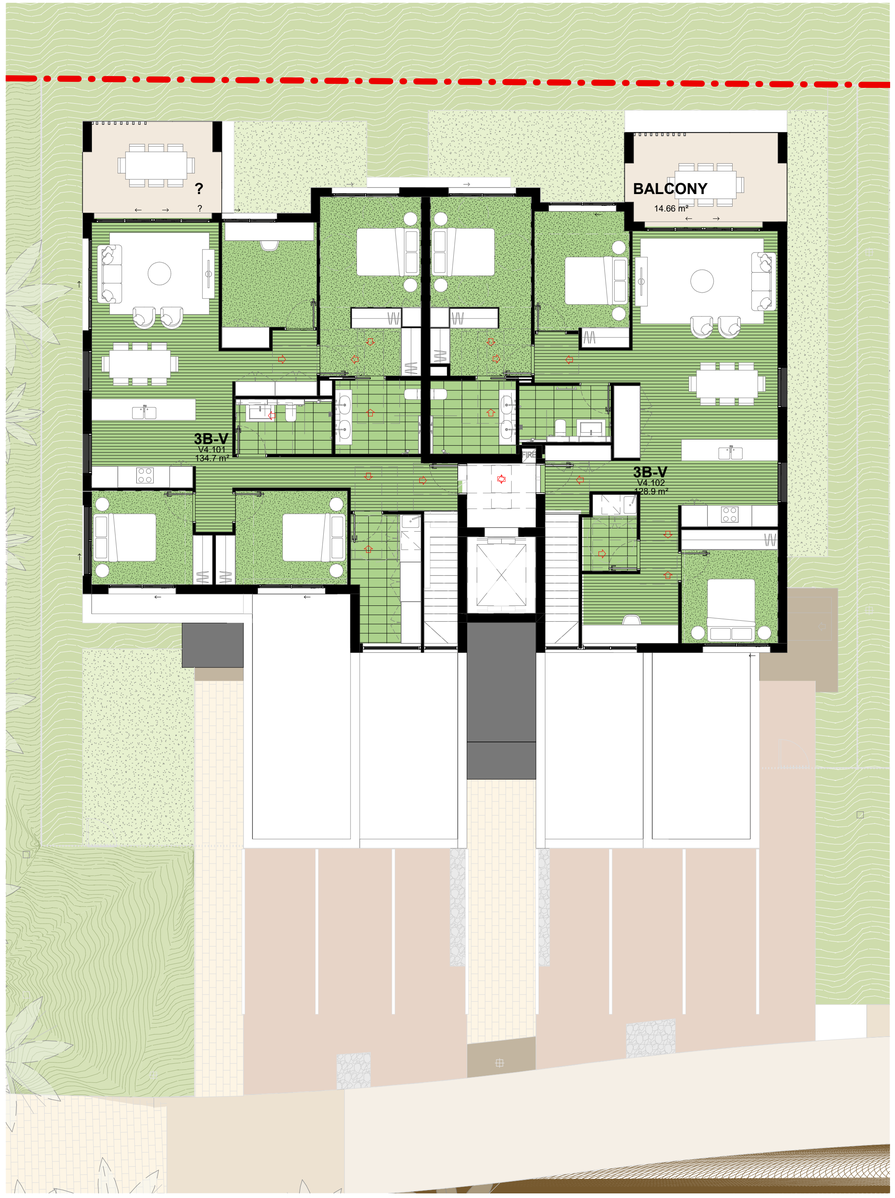

VILLA 3 DETAIL PLAN - L01

1 : 100

DATE STAMP 04/07/2024 12:28:04

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

VILLA 3 FLOOR PLANS

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING	REVISION
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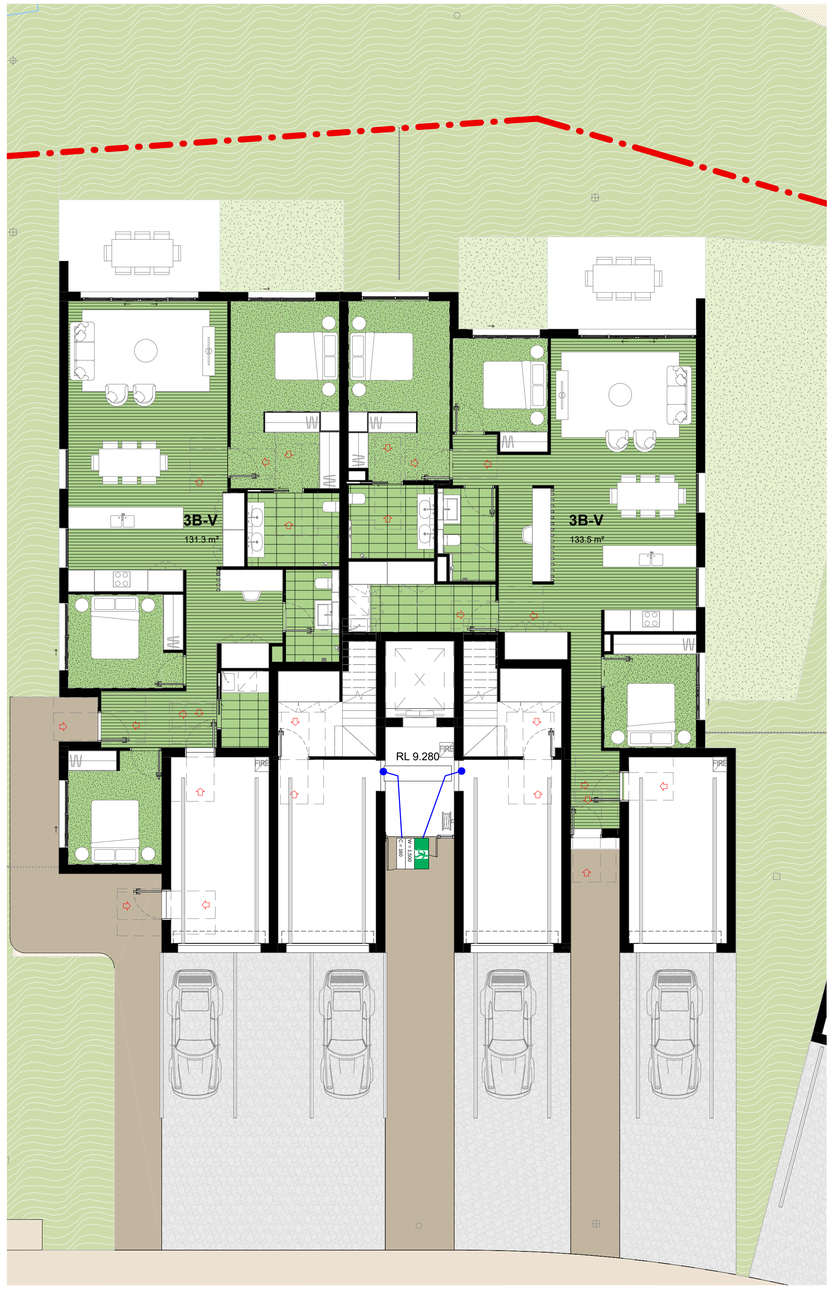

1 DA3.18 VILLA 4 DETAIL PLAN - GF
1 : 100

2 DA3.18 VILLA 4 DETAIL PLAN - L01
1 : 100

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PRELIMINARY

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12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE
VILLA 4 FLOOR PLANS

SCALE	DATE	DRAWN	CHECKED
1:100 @A1 1:200 @A3	04/07/2024	ML	AK
JOB	DRAWING		REVISION
16072	DA2.93		2

Appendix D:

Documentation Assessed

DA DRAWING LIST

DWG NO.	TITLE	REV
DA0.00	PRELIMINARIES	
DA0.01	PROJECT DETAILS	2
DA0.02	DEVELOPMENT DATA	2
DA1.00	SITE ANALYSIS	
DA1.01	CONTEXT ANALYSIS- URBAN CONTEXT	2
DA1.02	CONTEXT ANALYSIS- LOCAL CONTEXT	2
DA1.03	PLANNING CONTROLS	2
DA1.04	SITE ANALYSIS- CLIMATE & EXISTING CONDITIONS	2
DA1.05	SITE ANALYSIS- USES & CONNECTIVITY	2
DA1.06	SITE ANALYSIS- OPPORTUNITIES & CONSTRAINT	2
DA1.07	SITE ANALYSIS-TOPOGRAPHY, & EXISTING VEGETATION	2
DA1.08	EXISTING VIEWS	2
DA1.10	VISION & DESIGN DRIVERS	2
DA1.11	DESIGN PRINCIPLES	2
DA1.12	SITE RESPONSE- DESIGN ELEMENTS & KEY PRINCIPALS	2
DA1.13	SITE RESPONSE- BUILT FORM SHAPING	2
DA1.14	SITE RESPONSE- BUILDING AESTHETICS + MATERIALITY	2
DA1.20	LOOK & FEEL	2
DA1.30	RETIREMENT VILLAGE BOUNDARY PLAN AND PROPOSED SUBDIVISION PLAN	2
DA1.40	EXISITING + DEMOLITION PLAN	2
DA1.41	PRECINCT MASTERPLAN	2
DA1.42	STAGING PLAN	2
DA1.51	EXTENDED SCOPE OF WORKS AND DEVELOPMENT SITE	2
DA2.00	GENERAL FLOOR PLANS	
DA2.01	GROUND LEVEL	2
DA2.02	LEVEL 01	2
DA2.03	LEVEL 02	2
DA2.04	LEVEL 03	2
DA2.05	LEVEL 04	2
DA2.06	LEVEL 05	2
DA2.07	LEVEL 06	2
DA2.08	ROOF LEVEL	2
DA2.50	BUILDING FLOOR PLANS	
DA2.51	BUILDING 1 - PARKING (GROUND)	2
DA2.52	BUILDING 1 - TYPICAL (LEVEL 1-4)	2
DA2.53	BUILDING 1 - PENTHOUSE (LEVEL5)	2
DA2.54	BUILDING 1 - ROOF LEVEL	2
DA2.62	BUILDING 2 - GROUND LEVEL	2
DA2.63	BUILDING 2 - RAC (LEVEL 1-3)	2
DA2.64	BUILDING 2 - ILU (LEVEL 4)	2
DA2.65	BUILDING 2 - ILU (LEVEL 5)	2
DA2.66	BUILDING 2 - ILU PENTHOUSE (LEVEL 6)	2
DA2.67	BUILDING 2 - ROOF LEVEL	2
DA2.71	BUILDING 3 - PARKING (GROUND)	2
DA2.72	BUILDING 3 - TYPICAL (LEVEL 1-4)	2
DA2.73	BUILDING 3 - PENTHOUSE (LEVEL 6)	2
DA2.74	BUILDING 3 - ROOF LEVEL	2
DA2.81	BUILDING 4 - PARKING (GROUND)	2
DA2.82	BUILDING 4 - TYPICAL (LEVEL 1-4)	2
DA2.83	BUILDING 4 - PENTHOUSE (LEVEL 5)	2
DA2.84	BUILDING 4 - ROOF LEVEL	2
DA2.90	VILLA 1 FLOOR PLANS	2
DA2.91	VILLA 2 FLOOR PLANS	2

DA DRAWING LIST

DWG NO.	TITLE	REV
DA2.92	VILLA 3 FLOOR PLANS	2
DA2.93	VILLA 4 FLOOR PLANS	2
DA3.00	ELEVATIONS	
DA3.01	SITE / STREETSCAPE ELEVATIONS - SHEET 1	2
DA3.02	SITE / STREETSCAPE ELEVATIONS - SHEET 2	2
DA3.03	SITE / STREETSCAPE ELEVATIONS - SHEET 3	2
DA3.10	BUILDING 1 ELEVATION - SHEET 1	2
DA3.12	BUILDING 2 ELEVATION - SHEET 1	2
DA3.13	BUILDING 3 ELEVATION - SHEET 1	2
DA3.14	BUILDING 4 ELEVATION - SHEET 1	2
DA3.15	VILLAS (TYPE 1) ELEVATION - SHEET 1	2
DA3.16	VILLAS (TYPE 2) ELEVATION - SHEET 2	2
DA3.17	VILLAS (TYPE 3) ELEVATION - SHEET 3	2
DA3.18	VILLAS (TYPE 4) ELEVATION - SHEET 4	2
DA3.20	BUILDING AESTHETICS CONCEPT	2
DA3.30	EXTERNAL COLOUR FINISHES- MATERIAL BOARD	2
DA4.00	SECTIONS	
DA4.01	SITE SECTIONS - SHEET 1	2
DA4.02	SITE SECTIONS - SHEET 2	2
DA4.11	RETIREMENT VILLAGE BOUNDARY SECTIONS - SHEET 01	2
DA4.12	RETIREMENT VILLAGE BOUNDARY SECTIONS - SHEET 02	2
DA6.00	DETAIL PLANS	
DA6.01	ADAPTABLE UNITS - TYPE 1	2
DA6.02	ADAPTABLE UNITS - TYPE 2	2
DA6.03	ADAPTABLE UNITS - TYPE 3	2
DA6.04	ADAPTABLE UNITS - TYPE 4	2
DA6.05	ADAPTABLE UNITS - TYPE 5	2
DA6.20	BUILDING 1 - UNIT LAYOUT - 1	2
DA6.21	BUILDING 1 - UNIT LAYOUT - 2	2
DA6.22	BUILDING 1 - UNIT LAYOUT - 3	2
DA6.23	BUILDING 1 - UNIT LAYOUT - 4	2
DA6.24	BUILDING 1 - UNIT LAYOUT - 5	2
DA6.25	BUILDING 1 - UNIT LAYOUT - 6	2
DA6.30	BUILDING 2 - UNIT LAYOUT - 1	2
DA6.31	BUILDING 2 - UNIT LAYOUT - 2	2
DA6.32	BUILDING 2 - UNIT LAYOUT - 3	2
DA6.33	BUILDING 2 - UNIT LAYOUT - 4	2
DA6.34	BUILDING 2 - UNIT LAYOUT - 5	2
DA6.35	BUILDING 2 - UNIT LAYOUT - 6	2
DA6.36	BUILDING 3 - UNIT LAYOUT - 1	2
DA6.37	BUILDING 3 - UNIT LAYOUT - 2	2
DA6.38	BUILDING 3 - UNIT LAYOUT - 3	2
DA6.39	BUILDING 3 - UNIT LAYOUT - 4	2
DA6.40	BUILDING 3 - UNIT LAYOUT - 5	2
DA6.41	BUILDING 4 - UNIT LAYOUT - 1	2
DA6.42	BUILDING 4 - UNIT LAYOUT - 2	2
DA6.43	BUILDING 4 - UNIT LAYOUT - 3	2
DA6.44	BUILDING 4 - UNIT LAYOUT - 4	2
DA6.45	BUILDING 4 - UNIT LAYOUT - 5	2
DA6.46	BUILDING 4 - UNIT LAYOUT - 6	2
DA6.47	BUILDING 4 - UNIT LAYOUT - 7	2
DA6.48	BUILDING 4 - UNIT LAYOUT - 8	2
DA7.00	COMPLIANCE DIAGRAMS	

DA DRAWING LIST

DWG NO.	TITLE	REV
DA7.01	SHADOW DIAGRAMS- 21st JUNE	2
DA7.01B	SHADOW DIAGRAMS- 21st MARCH	2
DA7.01C	SHADOW DIAGRAMS- 21st DEC	2
DA7.02	SUN EYE DIAGRAMS	2
DA7.03	SUN EYE DIAGRAMS	2
DA7.06	SOLAR ACCESS DIAGRAMS	2
DA7.08	SOLAR ACCESS - COMPLIANCE SCHEDULE	2
DA7.09	CROSS VENTILATION DIAGRAMS	2
DA7.31	AREA DIAGRAMS - GFA	2
DA7.41	BUILDING 1 STORAGE DIAGRAMS	2
DA7.42	BUILDING 2 STORAGE DIAGRAMS	2
DA7.43	BUILDING 3 STORAGE DIAGRAMS	2
DA7.44	BUILDING 4 STORAGE DIAGRAMS	2
DA7.45	BUILDING 4 STORAGE DIAGRAMS	2
DA7.46	VILLAS STORAGE DIAGRAMS	2
DA7.47	VILLAS STORAGE DIAGRAMS	2
DA8.00	3D VIEWS & MATERIAL BOARD	
DA8.01	CGI 01	2
DA8.02	CGI 02	2
DA8.03	CGI 03	2

Appendix E:

Stair & Ramp Analysis

Stair Analysis

TYPE	Stairs	Access requirement	Handrails	Balustrade	Slip Resistance	Treads, Risers, Widths, Other	TGSI	Common Issues
S1	**Required Fire Isolated Stairs (FIS)**	**NO** Only minor provisions made for egress.	**YES:** 1 handrail required which must resemble that required by the accessibility provisions, i.e.: • 180 degrees handrail turndown or return to wall, 300 mm past last riser. • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above nosing line. And must be at consistent height through the stairs and landings. • Continuous rail, no handhold breaks. • Clear area for 270 degrees to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(iii) & Cl 12 of AS 1428.1-2009.	**YES:** No less than 865 mm above stair nosing lines, no less than 1 m above landings. No openings greater than 300 mm OR in the case of rails, top rail, mid rail and bottom rail required. No gaps greater than 150 mm above nosing line and 460 mm between rails. **Ref:** BCA D2.16(g)(h)(i)	**YES:** P3 rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Tread:** 250 to 355 mm. **Riser:** 115 to 190 mm **Quantity:** Must be between 550 to 700 when applying (2 x Riser + Tread.) **Open Riser:** Permitted to 125 mm. **Stair Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Stair Height Clearance:** No less than 2 m. **Ref:** BCA D2.13, D1.6	**NO**	• Lip of the nosing strip excessive in height. • No site allowance for balustrade tolerances. • If separate handrail and balustrade is not used, this usually causes a conflict with the requirement to have the same heights throughout the landings and stairs. • Tread and riser dimensions not constructed uniform in dimension.
S2	**Required Fire Isolated Stairs & Communication Stairs (FIS)**	**YES**	**YES:** Fully accessible handrails required to both sides as follows • 180 degrees handrail turndown or return to wall, • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above nosing line. And must be at consistent height through the stairs and landings. • Continuous rail, no handhold breaks • Clear area for 270 degrees to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(ii) & Cl 11 & 12 of AS 1428.1-2009.	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Tread:** 250 to 355 mm. (Public) **Tread:** 240 to 355 mm. (Private) **Riser:** 115 to 190 mm. **Quantity:** Must be between 550 to 700 when applying (2 x Riser + Tread.) **Open Riser:** Not permitted, must be opaque. **Riser Splay Back:** Be vertical or max 25 mm. **Stair Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Stair Height:** No less than 2 m. **Ref:** BCA D2.13, D1.6	**YES:** Required to the top and bottom of landings. No requirement for the mid landing. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Lip of the nosing strip excessive in height. • Outer handrail not continuous due to allowing for fire hydrant equipment. • No site allowance for balustrade tolerances. • If separate handrail and balustrade is not used, this usually causes a conflict with the requirement to have the same heights throughout the landings and stairs. • Tread and riser dimensions not constructed uniform in dimension.
S3a	**Required Non-Fire Isolated Stair – communication (NFIS)**	**YES**	**YES:** Fully accessible handrails required to both sides as follows: • 180 degrees handrail turndown or return to wall, • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above nosing line. And must be at consistent height through the stairs and landings. • Continuous rail, no handhold breaks. • Clear area for 270o to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(ii) & Cl 11 & 12 of AS 1428.1-2009.	**YES:** No Less than 865 mm above stair nosing line, no less than 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Tread:** 250 to 355 mm. (Public) **Tread:** 240 to 355 mm. (Private) **Riser:** 115 to 190 mm. **Quantity:** Must be between 550 to 700 when applying (2 x Riser + Tread.) **Open Riser:** Not permitted, must be opaque. **Riser Splay Back:** Be vertical or max 25 mm. **Stair Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Stair Height:** No less than 2 m. **Ref:** BCA D2.13, D1.6	**YES:** Required to the top and bottom of landings. No requirement for the mid landing. And around base of stair stringer or stair when it can be considered as an overhead obstruction within 2 m from floor level. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Lip of the nosing strip excessive in height. • No site allowance for balustrade tolerances. • If separate handrail and balustrade is not used, this usually causes a conflict with the requirement to have the same heights throughout the landings and stairs.
S3b	**Non-Required Non-Fire Isolated Stair – Communication (NFIS)** (Throughout general floor area of a building or between tenancy levels, and not deemed as a fire egress stair or exit)							
S4a	**Required Not Fire Isolated Stair – Non-Accessible (NFIS)**	**NO**	**YES:** • 1 handrail required, expect, • 2 handrails are required where stairway is more than 2m. And; • Located between 865 mm and 1 m above nosing line. And must be at consistent. • Continuous rail, no handhold breaks. Additional items for consideration • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. **Ref**: BCA D2.17,	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing. **Ref:** BCA D2.13, D2.14	**Tread:** 250 to 355 mm. (Public) **Tread:** 240 to 355 mm. (Private) **Riser:** 115 to 190 mm. **Quantity:** Must be between 550 to 700 when applying (2 x Riser + Tread.) **Open Riser:** Not permitted, must be opaque. **Riser Splay Back:** Be vertical or max 25 mm. **Stair Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Stair Height:** No less than 2 m. **Ref:** BCA D2.13, D1.6	**NO**	• Lip of the nosing strip excessive in height. • No site allowance for balustrade tolerances. • If separate handrail and balustrade is not used, this usually causes a conflict with the requirement to have the same heights throughout the landings and stairs. • Tread and riser dimensions not constructed uniform in dimension.
S4b	**Non-Required Not Fire Isolated Stair – Non-Accessible (NFIS)** (Throughout non-required accessible parts of and not deemed as a fire egress stair or exit)							
R1	**Accessible Ramp** (1:14 max. gradient)	**YES**	**YES:** Fully accessible handrails required to both sides as follows: • 180 degrees handrail turndown or return to wall, • 30 to 50 mm diameter with a 270 degrees clearance around the top of the handrail, • 50 mm clearance to back of handrail, and to a height of 600 mm above the handrail. • Located between 865 mm and 1 m above the surface. And must be at consistent height through the ramp and mid-landings. • Continuous rail, no handhold breaks. • Continuous kerbing on both sides in compliance with AS1428.1 Figures (18 & 19). • Handrails not to protrude into over the traverse path. • Clear area for 270 degrees to the top of the handrail. **Ref:** BCA D2.17, D3.3(a)(i) & Cl 1.3 & 12 of AS 1428.1-2009.	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii) & Cl 11, 7.2, 7.3 of AS 1428.1-2009.	**Ramp Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Ref:** BCA D2.13, D1.6	**YES:** Required to the top and bottom of landings. No requirement for the mid landing. **Ref:** BCA D3.8, AS/NZS 1428.4.1-2009	• Handrails extension protruding over traverse path or side boundary. Note: TGSI are not required for residential aged care and nursing homes buildings.
R2	**Non-Accessible ramps** (Steeper than 1:14)	**NO** Only minor provisions made for egress.	**YES:** 1 non-accessible handrail with no accessible features required for egress purposes only. **Ref:** BCA D2.17	**YES:** No Less than 865 mm above stair nosing line, no less tanh 1 m above landings. No openings greater than 125 mm. No climbable members between 150 and 760 mm where the floor level is 4 m or more above the surface beneath. **Ref:** BCA D2.16(g)(h)(ii)	**YES:** P3 (dry) and P4 (wet) rated slip resistance and highlighted nosing's to no less than 30% luminance contrast to the background. Nosing widths to be between 50 & 75 mm. Strip may be set back 15 mm from the front edge of the nosing but where it is not set back the luminance contrast must not extend down the riser by more than 10 mm. The lip between the tread and strip must not exceed 3 mm, or 5 mm where the edges are chamfered. **Ref:** BCA D2.13, D2.14, D3.3(a)(iii)	**Ramp Width:** Minimum unobstructed width of 1000 mm, measured clear of handrails. Note: 1000 mm clear width will only allow for 100 persons, occupancy quantity review may be required. **Ref:** BCA D2.13, D1.6	**NO**	• Lack of non-accessible handrail in shallow non-accessible ramps may be found

Appendix F:

BCA Classification Plans

Building Characteristics

Description

- Class 2
- Class 5
- Class 6
- Class 7a
- Class 9b
- Class 9c

B4 B3 B2 B1

V8 V9 V10 V11 V12 V13

V7 V6 V5 V4 V3 V2 V1

3B-V V8.001 132.4 m²
3B-V V8.002 131.1 m²
3B-V V7.001 133.5 m²
3B-V V7.002 131.4 m²
3B-V V9.002 131.3 m²
3B-V V9.001 133.5 m²
3B-V V10.002 133.5 m²
3B-V V10.001 131.3 m²
3B-V V11.002 131.3 m²
3B-V V11.001 133.5 m²
3B-V V12.002 133.5 m²
3B-V V12.001 131.3 m²
3B-V V13.002 131.3 m²
3B-V V13.001 133.5 m²
3B-V V6.001 131.4 m²
3B-V V6.002 133.5 m²
3B-V V5.001 131.1 m²
3B-V V5.002 110.5 m²
3B-V V4.001 132.4 m²
3B-V V4.002 131.1 m²
3B-V V3.001 131.4 m²
3B-V V3.002 133.5 m²
3B-V V2.001 131.4 m²
3B-V V2.002 133.5 m²
3B-V 6 131.80 m²
3B-V V1.002 133.4 m²

SWALE
600 MM WIDE BERM
VILLA WASTE PAD
STAGE 2
STAGE 1
RWT
UNDERGROUND OSD TANK
2 BICYCLE PARKING (STAFF/VISITORS)
AMBULANCE LOADING
PASSENGER MINI BUS BAY
RAC1
RAC2
RAC3
RAC DISABLED PARKING
STAFF
SUBSTATION LOCATION
FIRE BOOSTER
EXISTING ATHLETICS TRACK AMENITIES

Proposed Storage is less then 10% of the storey, therefore considered Class 7a.

Proposed Storage is less then 10% of the storey, therefore considered Class 7a.

Proposed Storage is less then 10% of the storey, therefore considered Class 7a.

Proposed Storage is less then 10% of the storey, therefore considered Class 7a.

IMPORTANT NOTES

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LEGEND

- SURVEYED TREES TO BE RETAINED (TPZ)
- PROPOSED TREES
- EXISTING TREES TO BE REMOVED
- VEHICLE ENTRY
- PEDESTRIAN ENTRY

TN

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MINGARA

PROJECT

TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

GROUND LEVEL

SCALE	DATE	DRAWN	CHECKED
1:500 @A1	04/07/2024	ML	AK
JOB	DRAWING		REVISION
16072	DA2.01		2

Building Characteristics

Description

- Class 2
- Class 5
- Class 6
- Class 7a
- Class 9b
- Class 9c

B4 B3 B2 B1

V8 V7 V6 V5 V4 V3 V2 V1

V9

V10

V11

V12

V13

STAGE 2

STAGE 1

EXISTING ATHLETICS TRACK AMENITIES

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TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

LEVEL 01

SCALE	DATE	DRAWN	CHECKED
1 : 500 @A1	04/07/2024	ML	AK

JOB	DRAWING	REVISION
16072	DA2.02	2

DATE STAMP: 04/07/2024 12:16:14

Building Characteristics

Description

- Class 2
- Class 5
- Class 6
- Class 7a
- Class 9b
- Class 9c

B4 B3 B2 B1

V8 V7 V6 V5 V4 V3 V2 V1

V9

V10

V11

V12

V13

STAGE 2

STAGE 1

EXISTING ATHLETICS TRACK AMENITIES

3B B4.202 118.5 m²
3B B4.203 125.3 m²
2B B4.201 97.0 m²
2B B4.204 103.8 m²
2B B4.205 103.8 m²
2B B4.208 99.3 m²
2B B4.206 105.0 m²
2B B4.207 112.8 m²
2B B4.209 111.8 m²
2B B4.210 103.9 m²
2B B4.215 111.6 m²
2B B4.216 98.7 m²
2B B4.214 114.5 m²
2B B4.213 103.5 m²
2B B4.212 105.0 m²
2B+S B4.211 109.1 m²

2B+S B3.202 109.2 m²
3B B3.203 130.5 m²
2B B3.201 101.0 m²
2B B3.204 101.5 m²
2B B3.205 100.8 m²
2B B3.208 99.4 m²
2B+S B3.206 115.0 m²
2B+S B3.207 115.6 m²

2B+S B1.202 107.3 m²
3B B1.203 130.5 m²
2B B1.201 101.0 m²
2B B1.204 101.5 m²
2B B1.208 99.4 m²
2B B1.205 100.8 m²
3B B1.207 136.4 m²
2B+S B1.206 114.9 m²

RL 15.00
RL 14.90
RL 15.10
RL 13.00

18805 REQ. = 12 m
19010 REQ. = 12 m
22425 REQ. = 12 m

A DA4.01
B DA4.01
C DA4.02
D DA4.02
E DA4.02

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PROJECT
TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE
LEVEL 02

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JOB	DRAWING	REVISION
16072	DA2.03	2

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Building Characteristics

Description	
Class 2	
Class 5	
Class 6	
Class 7a	
Class 9b	
Class 9c	

B4 B3 B2 B1

STAGE 2 STAGE 1

EXISTING ATHLETICS TRACK AMENITIES

18805 REQ. = 12 m

19010 REQ. = 12 m

22425 REQ. = 12 m

RL 18.23 RL 18.10 RL 18.20 RL 18.30 RL 17.10

3B B4.302 118.5 m²	3B B4.303 125.3 m²		
2B B4.301 97.0 m²	2B B4.304 103.8 m²		
	2B B4.305 103.8 m²		
2B B4.308 99.3 m²	2B B4.306 105.0 m²		
2B B4.307 112.8 m²			
2B B4.309 111.8 m²			
2B B4.315 111.6 m²	2B B4.316 98.7 m²	2B B4.310 103.9 m²	
2B B4.314 114.5 m²	2B B4.313 103.5 m²	2B B4.312 105.0 m²	2B+S B4.311 109.1 m²

2B+S B3.302 109.2 m²	3B B3.303 130.5 m²		
2B B3.301 101.0 m²	2B B3.304 101.5 m²		
	2B B3.305 100.8 m²		
2B B3.308 99.4 m²		2B+S B3.306 115.0 m²	
2B+S B3.307 115.6 m²			

2B+S B1.302 107.3 m²	3B B1.303 130.5 m²		
2B B1.301 101.0 m²	2B B1.304 101.5 m²		
2B B1.308 99.4 m²	2B B1.305 100.8 m²		
3B B1.307 136.4 m²	2B+S B1.306 114.9 m²		

A DA4.01 B DA4.01 C DA4.02 D DA4.02 E DA4.02

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PROJECT
TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE
LEVEL 03

SCALE	DATE	DRAWN	CHECKED
1 : 500 @A1	04/07/2024	ML	AK
JOB	DRAWING		REVISION
16072	DA2.04		2

Building Characteristics

Description

- Class 2
- Class 5
- Class 6
- Class 7a
- Class 9b
- Class 9c

B4 B3 B2 B1

STAGE 2 STAGE 1

EXISTING ATHLETICS TRACK AMENITIES

18805 REQ. = 18m

19010 REQ. = 18m

22425 REQ. = 18m

IMPORTANT NOTES

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DRAWING TITLE

LEVEL 04

SCALE	DATE	DRAWN	CHECKED
1 : 500 @A1	04/07/2024	ML	AK

JOB	DRAWING	REVISION
16072	DA2.05	2

Building Characteristics

Description
Class 2
Class 5
Class 6
Class 7a
Class 9b
Class 9c

B4 B3 B2 B1

STAGE 2 STAGE 1

3B-P B4.501 138.9 m² | 3B-P B4.502 134.3 m² | 3B-P B4.504 140.3 m² | 3B-P B4.503 134.3 m² | 3B-P B4.508 143.1 m² | 3B-P B4.505 137.8 m² | 3B-P B4.507 137.8 m² | 3B-P B4.506 139.2 m²

2B+S B3.502 109.2 m² | 3B B3.503 130.5 m² | 2B B3.501 101.0 m² | 2B B3.504 101.5 m² | 2B B3.505 100.8 m² | 2B B3.508 99.4 m² | 2B+S B3.507 115.6 m² | 2B+S B3.506 115.0 m²

2B B2.503 108.9 m² | 2B B2.504 101.3 m² | 2B+S B2.505 111.5 m² | 2B B2.502 105.4 m² | 2B B2.501 102.4 m² | 2B B2.506 109.1 m²

3B-P B1.501 139.0 m² | 3B-P B1.502 134.9 m² | 3B-P B1.504 128.2 m² | 3B-P B1.503 128.5 m²

20330 REQ. = 18m | 19010 REQ. = 18m | 23625 REQ. = 18m

EXISTING ATHLETICS TRACK AMENITIES

IMPORTANT NOTES

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TN

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marchesepartners | Life3A
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CLIENT
PARITER
MINGARA

PROJECT
TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE
LEVEL 05

SCALE	DATE	DRAWN	CHECKED
1 : 500 @A1	04/07/2024	ML	AK
JOB	DRAWING		REVISION
16072	DA2.06		2

Building Characteristics

Description
Class 2
Class 5
Class 6
Class 7a
Class 9b
Class 9c

B3

B2

STAGE 2

STAGE 1

RL 28.000

RL 24.700

RL 28.000

RL 29.740

3B-P
B3.601
139.0 m²

3B-P
B3.602
134.8 m²

RL 27.80

3B-P
B3.604
128.2 m²

3B-P
B3.603
128.5 m²

22055
REQ. = 18m

3B-P
B2.602
152.1 m²

3B-P
B2.601
149.9 m²

RL 28.25

3B-P
B2.603
147.2 m²

RL 28.100

RL 26.900

EXISTING ATHLETICS TRACK AMENITIES

A DA4.01

B DA4.01

C DA4.02

D DA4.02

E DA4.02

IMPORTANT NOTES

Do not scale from drawings. All dimensions to be checked on site before commencement of work. All discrepancies to be brought to the attention of the Architect. Larger scale drawings and written dimensions take preference. This drawing is copyright and the property of the author, and must not be retained, copied or used without the express authority of MARCHESE PARTNERS INTERNATIONAL PTY. LTD.

FOR APPROVAL

NOT FOR CONSTRUCTION

DATE STAMP: 04/07/2024 12:22:34

REV	DATE	DESCRIPTION	BY
1	11/04/2024	TOA SUBMISSION	AK
2	04/07/2024	SSD SUBMISSION	AK

TN

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PROJECT

TUMBI UMBI RETIREMENT VILLAGE
12-14 MINGARA DRIVE, TUMBI UMBI

DRAWING TITLE

LEVEL 06

SCALE	DATE	DRAWN	CHECKED
1 : 500 @A1	04/07/2024	ML	AK

JOB	DRAWING	REVISION
16072	DA2.07	2

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