Date: 11 August 2012
Our Ref: P12113

Pymble Ladies College
C/o PMDL
Suite 801, 28 Clarke St,
Crows Nest NSW 2065
Attention: Ms Vicki Van Dijic

Dear Vicki,

RE: PYMBLE LADIES COLLEGE - AVON RD, PYMBLE
BCA COMPLIANCE ASSESSMENT

Please find enclosed our BCA Compliance Report prepared in respect of the proposed design contained within the architectural documentation provided.

In reviewing the content of this Report, particular attention is drawn to the content of Parts 3 and 4, as: –

- Part 3 summarizes the compliance status of the proposed design in terms of each prescriptive provision of the BCA.

  The inclusion of this summary enables an immediate understanding of the compliance status of the proposed design to be obtained.

- Part 4 contains a detailed analysis of the proposed design, and provides informative commentary & recommendation in respect of each instance of prescriptive non-compliance and area of preliminary only (design) detail, as applicable.

  This commentary enables the project team to readily identify and understand the nature and extent of information required within the Construction Certificate application to demonstrate the attainment of BCA compliance.

Should you require any further information, please do not hesitate to contact me on the number provided.

Yours faithfully

Kieran Tobin
Director

BCA COMPLIANCE ASSESSMENT

PREPARED FOR

PYMBLE LADIES COLLEGE

REGARDING

PYMBLE LADIES COLLEGE
AVON RD, PYMBLE

Prepared By

BCA vision

REPORT REGISTER

The following report register documents the development and issue of this report and project as undertaken by this office, in accordance with the *Quality Assurance* policy of BCA Vision Pty Ltd.

Our Reference	Issue No.	Remarks	Issue Date
P12113	3	Stage 1 – Pre DA	11 August 2012

CONTENTS PAGE

1.0 INTRODUCTION

1.1 GENERAL

This "BCA Compliance Assessment" report has been prepared at the request of Pymble Ladies College, and relates to the premises located at Avon Rd, Pymble.

As part of a Master Plan for this School site it is proposed to provide a new Aquatic & Fitness centre.
The building will include a new indoor 50 metre pool and training pool, change rooms, administration and staff facilities, a cafe and upper level gym.
The proposed works will be connected to an existing building being the "Jeanette Buckham PE Centre".

This report is based upon, and limited to, the information depicted in the documentation provided for assessment, and does not make assumptions regarding "design intention" or the like.

1.2 REPORT BASIS

The content of this report reflects –

(a) The principles and provisions of BCA 2012,
(b) A site inspection undertaken by BCA Vision on the 1st of August 2012;
(c) Concept Architectural documentation provided by PMDL Architects –

Numbered	Titled	Dated
DA002	Locality Plan	January 2012
DA100	Aquatic Centre Site Plan	January 2012
DA101	Aquatic Centre Ground Level Plan	January 2012
DA103	Aquatic Centre Lower Ground Level Plan	January 2012
DA104	Aquatic Centre Roof Plan	January 2012
DA102	Aquatic Centre Upper Level Plan	January 2012
DA200	Aquatic Centre Elevations	January 2012
DA300	Aquatic Centre Sections	January 2012

1.3 EXCLUSIONS

It is conveyed that this report should not construed to infer that an assessment for compliance with the following has been undertaken –

(a) Structural and services design documentation;
(b) General building services (i.e. passenger lifts);
(c) The individual requirements of service providers (i.e. Telstra, Water Supply, Energy Australia);
(d) The individual requirements of the Workcover Authority;
(e) Disability Discrimination Act (DDA);

1.4 REPORT PURPOSE

The purpose of this report is to identify the extent to which the architectural design documentation complies with the relevant prescriptive provisions of BCA 2012.

Assessment of the proposed design considers each prescriptive BCA provision, and identifies such as either: –

(a) Being complied with; or
(b) Not being complied with; or
(c) Requiring the provision further detail with the future Building Permit or other application or
(d) Not being relevant to the particular building works proposal.

The status of the design, in terms of these four (4) categories, is summarised within Part 3 of this report.

Where prescriptive non-compliance is identified, suitable recommendations to remedy the non-compliance shall be detailed in Part 4.

In instances where preliminary only detail exists, summary of the information required from the project team for inclusion within future applications (i.e. Construction Certificate) shall also be outlined in Part 4.

2.0 BUILDING DESCRIPTION

2.1 GENERAL

In the context of the Building Code of Australia (BCA), the subject development is described within items 2.2 – 2.6 below.

2.2 RISE IN STOREYS (CLAUSE C1.2)

The buildings are proposed to have a rise in storeys of Four (4).

2.2 BUILDING CLASSIFICATION (CLAUSE A3.2)

The Buildings incorporate the following classifications:-

Class	Description
Class 9b	an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class

2.3 Effective Height (Clause A1.1)

The buildings have an effective height of less than 12m.

2.4 TYPE OF CONSTRUCTION (TABLE C1.1)

Specification C1.1 - Type A Construction would require Compliance with Table 3 of the BCA with Construction as follows:

External walls, common walls flooring and floor framing of lift pits must be non-combustible.

Any internal wall having an FRL must extend to –

(i) the underside of the floor above; or
(ii) the underside of a complying roof; or
(iii) if the roof is not required to comply, the underside of the non-combustible roof covering and must not be crossed by combustible building elements (except 75 x 50 mm roof battens); or
(iv) a ceiling immediately below the roof having a resistance to the incipient spread of fire to the roof space of not less than 60 minutes.

A loadbearing internal wall and fire wall (including part of a loadbearing shaft) must be of concrete or masonry.

Non-loadbearing fire-resisting internal walls, fire and non-fire rated lift, ventilating, pipe, garbage, or similar shaft not for the discharge of hot products of combustion, must be of non-combustible construction.

External column FRL's apply to any internal columns that face and are within 1.5 m of a window and are exposed through that window to a fire-source feature.

EXTERNAL WALL (including any column or building element within) or other external building element, where the distance from any fire-source feature to which it is exposed is

Loadbearing	**Class 2, 3 or 4 part**	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 or 8 (except car parks)**
Less than 1.5 m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/60/60	120/90/90	180/180/120	240/240/180
3 m or more	90/60/30	120/60/30	180/120/90	240/180/90
Non-loadbearing	**Class 2, 3 or 4 part**	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 or 8 (except car parks)**
Less than 1.5 m	– /90/90	– /120/120	–/180/180	– /240/240
1.5 to less than 3 m	– /60/60	– /90/90	–/180/120	– /240/180
3 m or more	– / – / –	– / – / –	– / – / –	– / – / –

EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed:

	Class 2, 3 or 4 part	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 (other Than a car park)**
Less than 3 m	90/ – / –	120/ – / –	180/–/–	240/ – / –
3m or more	– / – / –	– / – / –	– / – / –	– / – / –

FIRE RESISTING LIFT & STAIR SHAFTS

Loadbearing	Class 2, 3 or 4 part	90/90/90
	Class 5, 9 or 7 car park	120/120/120
	Class 6	180/120/120
	Class 8 or 7 (other than a car park)	240/120/120
Non-loadbearing	Class 2, 3 or 4 part	–/90/90
	Class 5, 9 or 7 car park	–/120/120
	Class 6	–/120/120
	Class 8 or 7 (other than a car park)	–/120/120

ROOF

A roof superimposed on a concrete slab roof need not comply if the –

(i) roof & construction between it and the concrete slab roof are non-combustible; and
(ii) concrete slab roof complies for the FRL.

Need not comply if its covering is non-combustible and the building –

(i) has a Spec. E1.5 sprinkler system throughout; or
(ii) has a rise in storeys of 3 or less; or
(iii) is Class 2 or 3; or
(iv) is not more than 25 m and the ceiling below the roof has a 60 minute resistance to the incipient spread of fire.

Class 2, 3 or 4 part	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 or 8 (other than a car park)**
90/60/30	120/60/30	180/60/30	240/90/60

FLOORS

Need not comply if –

(a) laid directly on ground; or
(b) in Class 2, 3, 5 or 9, the space below is not a storey, does not accommodate motor vehicles, a storage or work area, and is not used for any other ancillary purpose; or
(c) a timber stage floor in a Class 9b laid over a complying floor and the space below the stage is not a dressing room, store room, or the like; or
(d) it is in a Class 2, 3, or 4 sole-occupancy unit; or
(e) it is an open-access floor (accommodating electrical, electronic services and the like) above a complying floor.

In a Class 5 or 9b a floor designed for a live load not exceeding 3 kPa the–

(a) floor above (including floor beams) may have an 90/90/90 FRL; or
(b) roof, if above (including roof beams) may have an 90/60/30 FRL.

Class 2, 3 or 4 part	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 or 8 (other than a car park)**
90/90/90	120/120/120	180/180/180	240/240/240
OTHER INTERNAL LOADBEARING COLUMNS, WALLS, BEAMS & TRUSSES			
Class 2, 3 or 4 part	**Class 5, 9 or 7 car park**	**Class 6**	**Class 7 or 8 (other than a car park)**
90/–/–	120/–/–	180/–/–	240/–/–

2.5 GENERAL FLOOR AREA LIMITATIONS (TABLE C2.2)

Subject to the following maximum fire compartment floor area and volume limits for Construction: –

		Required	**Existing + Proposed**
Building Class		**Type A**	**PE Centre & New Aquatic Centre**
5, 9b, 9c	Max Floor area	**8000 m^2**	**7981 m^2**
	Max Volume	**48,000 m^3**	**32000 m^3**

3.0 BCA ASSESSMENT – SUMMARY

3.1 GENERAL

The tables contained within items 3.2 – 3.8 below summarise the compliance status of the proposed architectural design in terms of each prescriptive provision of the Building Code of Australia.

For those instances of either "prescriptive non-compliance" or "preliminary only detail", a detailed analysis and commentary is provided within Part 4.

3.2 SECTION B – STRUCTURE

BCA reference	Complies	Does not comply	Detail required	Not relevant
B1.1 – resistance to actions			✓	
B1.2 – determination of individual actions			✓	
B1.4 – Determination of Structural Resistance			✓	
B1.4 – Structural Software			✓	

3.3 SECTION C – FIRE RESISTANCE

BCA reference	Complies	Does not comply	Detail required	Not relevant
Spec. C1.1 – fire resisting construction			✓	
C1.3 – buildings of multiple classification				✓
C1.4 – mixed types of construction				✓
C1.5 – two storey Class 2 or 3 buildings				✓
C1.6 – Class 4 parts of a building				✓
C1.7 – open spectator stands & indoor sports stadiums				✓
C1.8 – lightweight construction			✓	
C1.10 – fire hazard properties			✓	
C1.11 – performance of external walls			✓	
C1.12 – non-combustible materials				✓
C2.2 – general floor area & volume limits	✓			
C2.3 – large isolated buildings				✓
C2.4 – requirements for open spaces & vehicular access				✓
C2.5 – Class 9a and 9c buildings				✓
C2.6 – vertical separation of openings in external walls		✓		
C2.7 – separation of firewalls				✓
C2.8 – separation of classifications in same storey				✓
C2.9 – separation of classifications in different storeys				✓
C2.10 – separation of lift shafts			✓	
C2.11 – stairways and lifts in one shaft				✓
C2.12 – separation of equipment			✓	
C2.13 – electricity supply system			✓	
C2.14 – public corridors in Class 2 and 3 buildings				✓
C3.2 – openings in external walls				✓
C3.3 – separation of external walls & associated openings				✓
C3.4 – acceptable methods of protection				✓
C3.5 – doorways in firewalls				✓
C3.6 – sliding fire doors				✓
C3.7 – doorways in horizontal exits				✓
C3.8 – openings in fire-isolated exits				✓
C3.9 – service penetrations in fire-isolated exits				✓
C3.10 – openings in fire-isolated lift shafts			✓	
C3.11 – bounding construction: Class 2, 3, 4 and 9 buildings				✓
C3.12 – openings in floors & ceilings for services			✓	
C3.13 – openings in shafts			✓	
C3.15 – openings for service installations			✓	
C3.16 – construction joints			✓	
C3.17 – columns protected with f/r lightweight construction			✓	

3.4 SECTION D – ACCESS AND EGRESS

BCA reference	Complies	Does not comply	Detail required	Not relevant
D1.2 – number of exits required	✓			
D1.3 – when fire-isolated exits are required				✓
D1.4 – exit travel distances			✓	
D1.5 – distance between alternative exits			✓	
D1.6 – dimensions of exits and paths of travel to exits			✓	
D1.7 – travel via fire-isolated exits			✓	
D1.8 – external stairways or ramps in lieu of fire-isolated exits				✓
D1.9 – travel via non-fire isolated stairways or ramps	✓			
D1.10 – discharge from exits	✓			
D1.11 – horizontal exits				✓
D1.12 – non-required stairways or ramps				✓
D1.16 – plant rooms and lift motor rooms: concession			✓	
D1.17 – access to lift pits			✓	
D2.2 – fire-isolated stairways and ramps				✓
D2.3 – non-fire isolated stairways and ramps				✓
D2.4 – separation of rising and descending stair flights				✓
D2.5 – open access ramps and balconies				✓
D2.6 – smoke lobbies				✓
D2.7 – installations in exits and paths of travel			✓	
D2.8 – enclosure of space under stairs and ramps			✓	
D2.9 – width of stairways			✓	
D2.10 – pedestrian ramps				✓
D2.11 – fire-isolated passageways				✓
D2.12 – roof as open space				✓
D2.13 – goings and risers			✓	
D2.14 – landings			✓	
D2.15 – thresholds			✓	
D2.16 – balustrades			✓	
D2.17 – handrails			✓	
D2.18 – fixed platforms, walkways, stairways and ladders			✓	
D2.19 – doorways and doors			✓	
D2.20 – swinging doors			✓	
D2.21 – operation of latch			✓	
D2.22 – re-entry from fire-isolated exits				✓
D2.23 – signs on doors			✓	
D3.1 – General Building Access Requirements			✓	
D3.2 – Access to Buildings		✓		
D3.3 – parts of buildings to be accessible			✓	
D3.4 – concessions				✓
D3.5 – car parking			✓	
D3.6 – signage			✓	
D3.7 – hearing augmentation services and features			✓	
D3.8 – tactile indicators			✓	
D3.9 – Wheelchair Seating			✓	
D3.10 – Swimming Pools			✓	
D3.11 - Ramps			✓	
D3.12 – Glazing on Access ways			✓	

3.5 SECTION E – SERVICES AND EQUIPMENT

BCA reference	Complies	Does not comply	Detail required	Not relevant
E1.3 – fire hydrants			✓	
E1.4 – fire hose reels			✓	
E1.5 – sprinklers				✓
E1.6 – portable fire extinguishers			✓	
E1.8 – fire control centres				✓
E1.9 – fire precautions during construction			✓	
E1.10 – provision for special hazards			✓	
E2.2a – general provisions			✓	
E2.2b – specific provisions				✓
E2.3 – provision for special hazards			✓	
E3.2 – stretcher facility in lifts				✓
E3.3 – warning against use of lifts in fire			✓	
E3.4 – emergency lifts				✓
E3.5 – landings			✓	
E3.6 – facilities for people with disabilities			✓	
E3.7 – fire service controls				✓
E3.8 – aged care buildings				✓
E4.2 – emergency lighting			✓	
E4.4 – design and operation of emergency lighting			✓	
E4.5 – exit signs			✓	
E4.6 – direction signs			✓	
E4.7 – Class 2 and 3 buildings and Class 4 parts: exemptions				✓
E4.8 – design and operation of exit signs			✓	
E4.9 – Sound Systems & Intercom Systems for Emergencies			✓	

3.6 SECTION F – HEALTH AND AMENITY

BCA reference	Complies	Does not comply	Detail required	Not relevant
F1.1 – stormwater drainage			✓	
F1.5 – roof coverings			✓	
F1.6 – sarking			✓	
F1.7 – water proofing of wet areas			✓	
F1.9 – damp proofing			✓	
F1.10 – damp proofing of floors on ground			✓	
F1.11 – floor wastes			✓	
F1.12 – sub-floor ventilation				✓
F1.13 – glazed assemblies			✓	
F2.1 – facilities in residential buildings				✓
F2.3 – facilities in Class 3 to 9 buildings			✓	
F2.4 – facilities for people with disabilities			✓	
F2.5 – construction of sanitary compartments			✓	
F2.7 – microbial (legionella) control				✓
F2.8 – waste management				✓
F3.1 – height of rooms	✓			
F4.1 – provision of natural light				✓
F4.2 – methods and extent of natural lighting				✓
F4.3 – natural lighting borrowed from adjoining room				✓
F4.4 – artificial lighting			✓	
F4.5 – ventilation of rooms			✓	
F4.6 – natural ventilation				✓
F4.7 – ventilation borrowed from an adjoining room				✓
F4.8 – restriction on position of water closets and urinals			✓	
F4.9 – airlocks			✓	
F4.11 – car parks				✓
F4.12 – kitchen local exhaust ventilation				✓
F5.2 – sound transmission class: interpretation				✓
F5.3 – sound transmission of floors between units				✓
F5.4 – sound insulation of walls between units				✓
F5.5 – sound insulation rating of walls				✓
F5.6 – sound insulation rating of services				✓
F5.7 – sound insulation of pumps				✓

3.7 SECTION G – ANCILLARY PROVISIONS

BCA reference	Complies	Does not comply	Detail required	Not relevant
G1.1 – swimming pools			✓	
G1.2 – refrigerated chambers, strong-rooms & vaults				✓
G2.2 – installation of appliances				✓
G2.3 – open fireplaces				✓
G2.4 – incinerator rooms				✓
G3.2 – dimensions of atrium well				✓
G3.3 – separation of atrium bounding walls				✓
G3.4 – construction of bounding walls				✓
G3.5 – construction at balconies				✓
G3.6 – separation at roofs				✓
G3.7 – means of egress				✓
G3.8 – fire and smoke control systems				✓
G4.3 – external doorways				✓
G4.4 – emergency lighting				✓
G4.5 – external ramps				✓
G4.6 – discharge of exits				✓
G4.7 – external trafficable structures				✓
G4.8 – fire-fighting services and equipment				✓
G4.9 – fire orders				✓
G5.2 – protection (in bushfire prone areas)				✓

3.8 SECTION J – ENERGY EFFICIENCY

BCA reference	Complies	Does not comply	Detail required	Not relevant
J1.2 – thermal construction general			✓	
J1.3 – roof and ceiling construction			✓	
J1.4 – roof lights				✓
J1.5 – walls			✓	
J1.6 – floors			✓	
J2.4 – glazing			✓	
J2.5 – shading			✓	
J3.2 – chimneys and flues				✓
J3.3 – roof lights				✓
J3.4 – external windows and doors			✓	
J3.5 – exhaust fans			✓	
J3.6 – construction of roofs, walls and floors			✓	
J3.7 – Evaporative coolers				✓
J5.2 – air conditioning and ventilation systems			✓	
J5.3 – time switch			✓	
J5.4 – heating and cooling systems			✓	
J5.5 – ancillary exhaust systems			✓	
J6.2 – interior artificial lighting			✓	
J6.3 – interior artificial lighting and power control			✓	
J6.4 – Interior and decorative lighting			✓	
J6.5 – Artificial lighting around perimeter of building			✓	
J6.6 – Building water and chilled storage units			✓	
J7.2 – hot water supply			✓	
J8.2 – access for maintenance			✓	

3.9 SECTION H -THEATRES STAGES & PUBLIC HALLS

BCA reference	Complies	Does not comply	Detail required	Not relevant
H1.2 - Separation				✓
H1.3 – Proscenium Wall				✓
H1.4 – Seating Area			✓	
H1.5 – Exits from Theatre Stage				✓
H1.6 – Access to Platforms & Lofts				✓
H1.7 – Aisle Lights in Theatres				✓

4.0 BCA ASSESSMENT – DETAILED ANALYSIS

4.1 GENERAL

With reference to the "BCA Assessment Summary" contained within Part 3 above, the following detailed analysis and commentary is provided.

This commentary is formulated to enable the design documentation to be further progressed, for the purpose of evidencing the attainment of compliance with the relevant provisions of the BCA.

4.2 SECTION B – STRUCTURE

Cl. B1.1	Resistance to actions The resistance of a building or structure must be greater than the most critical action effect resulting from different combinations of actions, where— (a) the most critical action effect on a building or structure is determined in accordance with B1.2 and the general design procedures contained in AS/NZS 1170.0; and (b) the resistance of a building or structure is determined in accordance with B1.4.	Further details of compliance will be required within the Construction Documentation
Cl. B1.2	Determination of individual actions The magnitude of individual actions must be determined in accordance with the following: (a) Permanent actions: (i) the design or known dimensions of the building or	Further details of compliance will be required within the Construction Documentation

	structure; and (ii) the unit weight of the construction; and (iii) AS/NZS 1170.1. (b) Imposed actions: (i) the known loads that will be imposed during the occupation or use of the building or structure; and (ii) *construction activity actions*; and (iii) AS/NZS 1170.1. (c) Wind, snow and ice and earthquake actions: (i) the applicable annual probability of design event for safety, determined by— (A) assigning the building or structure an Importance Level in accordance with Table B1.2a; and (B) determining the corresponding annual probability of exceedance in accordance with Table B1.2b; and (ii) (A) AS/NZS 1170.2 (2002); or (B) AS/NZS 1170.2 (2011) except that clause 2.3 Design Wind Speed and Figure 3.1(A) Wind Regions do not apply and are replaced by clause 2.3 and Figure 3.1 of AS/NZS 1170.2 (2002); and (iii) AS/NZS 1170.3 and AS 1170.4 as appropriate; and (iv) in cyclonic areas, metal roof cladding, its connections and immediate supporting members	

	must comply with Specification B1.2; and (v) for the purposes of (iv), cyclonic areas are those determined as being located in wind regions C and D in accordance with AS/NZS 1170.2 (2002). (d) Actions not covered in (a), (b) and (c) above: (i) the nature of the action; and (ii) the nature of the building or structure; and (iii) the Importance Level of the building or structure determined in accordance with Table B1.2a; and (iv) AS/NZS 1170.1. (e) For the purposes of (d) the actions include but are not limited to— (i) liquid pressure action; and (ii) ground water action; and (iii) rainwater action (including ponding action); and (iv) earth pressure action; and (v) differential movement; and (vi) time dependent effects (including creep and shrinkage); and (vii) thermal effects; and (viii) ground movement caused by— (A) swelling, shrinkage or freezing of the subsoil; and (B) landslip or subsidence; and (C) *siteworks* associated with the building or structure	

Cl. B1.4	Determination of structural resistance of materials and forms of construction The structural resistance of materials and forms of construction must be determined in accordance with the following, as appropriate: (a) Masonry (including masonry-veneer, unreinforced masonry and reinforced masonry): AS 3700. (b) Concrete construction (including reinforced and prestressed concrete): AS 3600. (c) Steel construction— (i) Steel structures: AS 4100. (ii) Cold-formed steel structures: AS/NZS 4600. (iii) Residential and low-rise steel framing: NASH Standard. (d) Composite steel and concrete: AS 2327.1. (e) Aluminium construction: AS/NZS 1664.1 or AS/NZS 1664.2. (f) Timber construction: (i) Design of timber structures: AS 1720.1. (ii) * * * * * (iii) Timber structures: AS 1684 Part 2, Part 3 or Part 4. (g) Piling: AS 2159. (h) Glazed assemblies: (i) The following glazed assemblies in an *external wall* must comply with AS 2047: (A) Windows excluding those listed in (ii).	Further details of compliance will be required within the Construction Documentation

	(B) Sliding doors with a frame. (C) Adjustable louvres. (D) Shopfronts. (E) Window walls with one piece framing. (ii) All glazed assemblies not covered by (i) and the following glazed assemblies must comply with AS 1288: (A) All glazed assemblies not in an *external wall*. (B) Hinged doors, including French doors and bi-fold doors. (C) Revolving doors. (D) Fixed louvres. (E) Skylights, roof lights and windows in other than the vertical plane. (F) Sliding doors without a frame. (G) Shopfront doors. (H) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047. (I) Second-hand windows, re-used windows, recycled windows and replacement windows. (J) Heritage windows. (K) Glazing used in balustrades and sloping overhead glazing. (i) Termite Risk Management: Where a *primary building element* is subject to attack by subterranean termites: AS 3660.1, and—	

	(i) for the purposes of this provision, a *primary building element* consisting entirely of, or a combination of, any of the following materials is considered not subject to termite attack: (A) Steel, aluminium or other metals. (B) Concrete. (C) Masonry. (D) Fibre-reinforced cement. (E) Timber — naturally termite resistant in accordance with Appendix C of AS 3660.1. (F) Timber — preservative treated in accordance with Appendix D of AS 3660.1; and (ii) a durable notice must be permanently fixed to the building in a prominent location, such as a meter box or the like, indicating— (A) the method of termite risk management; and (B) the date of installation of the system; and (C) where a chemical barrier is used, its life expectancy as listed on the National Registration Authority label; and (D) the installer's or manufacturer's recommendations for the scope and frequency of future inspections for termite activity. (j) Roof construction (except in cyclone areas): (i) Plastic sheeting: AS/NZS 1562.3, AS/NZS 4256 Parts 1, 2, 3 and 5. (ii) Roofing tiles: AS 2049, AS 2050.	

	(iii) Cellulose cement corrugated sheets: AS/NZS 2908.1 with safety mesh installed in accordance with AS/NZS 1562.3 clause 2.4.3.2 except for sub clause (g) for plastic sheeting. (iv) Metal roofing: AS 1562.1. (v) Asphalt shingles: ASTM D3018-90, Class A. (k) Particleboard structural flooring: AS 1860.2. (l) * * * * * (m) Lift *shafts* which are not *required* to have an FRL: AS 1735.2 Clause 11.1.2.	
Cl. B1.5	Structural Software (a) Structural software used in computer aided design of a building or structure, that uses design criteria based on the *Deemed-to-Satisfy Provisions* of the BCA, including its referenced documents, must comply with the ABCB Protocol for Structural Software. (b) The requirements of (a) only apply to structural software used to design steel or timber trussed roof and floor systems and framed building systems for buildings within the following geometrical limits: (i) The distance from ground level to the underside of eaves must not exceed 6 m. (ii) The distance from ground level to the highest point of the roof, neglecting chimneys must not exceed 8.5 m. (iii) The building width including roofed verandahs, excluding eaves, must not exceed 16 m.	For Reference

	(iv) The building length must not exceed five times the building width. (v) The roof pitch must not exceed 35 degrees. (c) The requirements of (a) do not apply to design software for individual frame members such as electronic tables similar to those provided in AS 1684.	

4.3 SECTION C – FIRE RESISTANCE

C1.1	Type of construction required (a) The minimum Type of *fire-resisting construction* of a building must be that specified in Table C1.1 and Specification C1.1	The Building is proposed to be of Type A Construction. The Required FRLs are detailed within Clause 2.4 of this report. Further details of compliance will be required within the Construction Documentation Generally it is our opinion that compliance can be achieved however, we note that the roof system is proposed as a metal roof but is required to have a Fire resistance level of 120/60/30.
C1.8	Lightweight construction (a) *Lightweight construction* must comply with Specification C1.8 if it is used in a wall system— (i) that is *required* to have an FRL; or (ii) for a lift *shaft*, stair *shaft* or service *shaft* or an *external wall* bounding a *public corridor* including a non *fire-isolated passageway* or non *fire-isolated ramp*, in a spectator stand, sports stadium, cinema or theatre, railway station, bus station or airport terminal. (b) If *lightweight construction* is used for the *fire-resisting* covering of a steel column or the like, and if— (i) the covering is not in continuous contact with the column, then the void must be filled solid, to a height of not less than 1.2 m above the floor to prevent indenting; and	Further details of compliance will be required within the Construction Documentation

	(ii) the column is liable to be damaged from the movement of vehicles, materials or equipment, then the covering must be protected by steel or other suitable material.	
C1.10	Fire Hazard Properties (a) The *fire hazard properties* of the following linings, materials and assemblies in a Class 2 to 9 building must comply with Specification C1.10: (i) Floor linings and floor coverings. (ii) Wall linings and ceiling linings. (iii) Air-handling ductwork. (iv) Lift cars. (v) In Class 9b buildings used as a theatre, public hall or the like— (A) fixed seating in the audience area or auditorium; and (B) a proscenium curtain *required* by Specification H1.3. (vi) Escalators, moving walkways and non-*required* non *fire-isolated stairway*s or pedestrian ramps subject to Specification D1.12. (vii) *Sarking-type materials*. (viii) Attachments to floors, ceilings, internal walls and the internal linings of external walls. (ix) Other materials including insulation materials other than *sarking-type materials*.	Further details of compliance will be required within the Construction Documentation

	(b) Paint or fire-retardant coatings must not be used to make a substrate comply with the *required fire hazard properties*. (c) The requirements of (a) do not apply to a material or assembly if it is— (i) plaster, cement render, concrete, terrazzo, ceramic tile or the like; or (ii) a *fire-protective covering*; or (iii) a timber-framed *window*; or (iv) a solid timber handrail or skirting; or (v) a timber-faced solid-core door or timber-faced fire door; or (vi) an electrical switch, socket-outlet, cover plate or the like; or (vii) a material used for— (A) a roof insulating material applied in continuous contact with a substrate; or (B) an adhesive; or (C) a damp-proof course, flashing, caulking, sealing, ground moisture barrier, or the like; or (viii) a paint, varnish, lacquer or similar finish, other than nitro-cellulose lacquer; or (ix) a clear or translucent roof light of glass fibre reinforced polyester if— (A) the roof in which it is installed forms part of a single *storey* building *required* to be Type C construction; and	

	(B) the material is used as part of the roof covering; and (C) it is not closer than 1.5 m from another roof light of the same type; and (D) each roof light is not more than 14 m^2 in area; and (E) the area of the roof lights per 70 m^2 of roof surface is not more than 14 m^2; or (x) a face plate or neck adaptor of supply and return air outlets of an air handling system; or (xi) a face plate or diffuser plate of light fitting and emergency *exit* signs and associated electrical wiring and electrical components; or (xii) a joinery unit, cupboard, shelving, or the like; or (xiii) an attached non-building fixture and fitting such as— (A) a curtain, blind, or similar decor, other than a proscenium curtain *required* by Specification H1.3; and (B) a whiteboard, *window* treatment or the like; or (xiv) any other material that does not significantly increase the hazards of fire.	
C1.11	Performance of external walls in fire Concrete *external walls* that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), in a building having a *rise in storeys* of not more than 2, must comply with Specification C1.11.	Further details of compliance will be required within the Construction Documentation

C2.6	Vertical separation of openings in external walls (a) If in a building of Type A construction, any part of a *window* or other opening in an *external wall* is above another opening in the *storey* next below and its vertical projection falls no further than 450 mm outside the lower opening (measured horizontally), the openings must be separated by— (i) a spandrel which— (A) is not less than 900 mm in height; and (B) extends not less than 600 mm above the upper surface of the intervening floor; and (C) is of *non-combustible* material having an FRL of not less than 60/60/60; or (ii) part of a *curtain wall* or *panel wall* that complies with (i); or (iii) construction that complies with (i) behind a *curtain wall* or *panel wall* and has any gaps packed with a *non-combustible* material that will withstand thermal expansion and structural movement of the walling without the loss of seal against fire and smoke; or (iv) a slab or other horizontal construction that— (A) projects outwards from the external face of the wall not less than 1100 mm; and (B) extends along the wall not less than 450 mm beyond the openings concerned; and (C) is *non-combustible* and has an FRL of not less than 60/60/60.	The Existing building and the proposed alterations do not comply with this requirement. The departure from the Deemed to Satisfy Requirements is due to the contemporary design of the building which includes large glass wall sections. If the building is to be constructed as proposed it will require further clarification from an accredited Fire Safety Engineer to validate how the building will remain consistent with Performance Provisions CP1, CP2, CP3, CP4, CP7 and CP8

	(b) The requirements of (a) do not apply to— (i) an *open-deck car park*; or (ii) an *open spectator stand*; or (iii) a building which has a sprinkler system complying with Specification E1.5 installed throughout; or (iv) openings within the same stairway; or (v) openings in *external walls* where the floor separating the *storeys* does not require an FRL with respect to *integrity* and *insulation*. (c) For the purposes of C2.6, *window* or other opening means that part of the *external wall* of a building that does not have an FRL of 60/60/60 or greater.	
C2.10	Separation of lift shafts (a) Any lift connecting more than 2 *storeys*, or more than 3 *storeys* if the building is sprinklered, (other than lifts which are wholly within an *atrium*) must be separated from the remainder of the building by enclosure in a *shaft* in which— (i) in a building *required* to be of Type A construction—the walls have the relevant FRL prescribed by Specification C1.1; and (ii) in a building *required* to be of Type B construction — the walls— (A) if *loadbearing*, have the relevant FRL prescribed by Table 4 of Specification C1.1; or (B) if non-*loadbearing*, be of *non-combustible* construction.	Further details of compliance will be required within the Construction Documentation

	(b) Any lift in a *patient care area* in a Class 9a *health-care building* or a *resident use area* in Class 9c *aged care building* must be separated from the remainder of the building by a *shaft* having an FRL of not less than— (i) in a building of Type A or B construction — 120/120/120; or (ii) in a building of Type C construction — 60/60/60. (c) An emergency lift must be contained within a *fire-resisting shaft* having an FRL of not less than 120/120/120. (d) Openings for lift landing doors and services must be protected in accordance with the *Deemed-to-Satisfy Provisions* of Part C3.	
C2.12	Separation of equipment (a) Equipment other than that described in (b) and (c) must be separated from the remainder of the building with construction complying with (d), if that equipment comprises— (i) lift motors and lift control panels; or (ii) emergency generators used to sustain emergency equipment operating in the emergency mode; or (iii) central smoke control plant; or (iv) boilers; or (v) a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours. (b) Equipment need not be separated in accordance with	Further details of compliance will be required within the Construction Documentation

	(a) if the equipment comprises— (i) smoke control exhaust fans located in the air stream which are constructed for high temperature operation in accordance with Specification E2.2b; or (ii) stair pressurising equipment installed in compliance with the relevant provisions of AS/NZS 1668.1; or (iii) a lift installation without a machine-room; or (iv) equipment otherwise adequately separated from the remainder of the building. (c) Separation of on-site fire pumps must comply with the requirements of AS 2419.1. (d) Separating construction must have— (i) except as provided by (ii)— (A) an FRL as *required* by Specification C1.1, but not less than 120/120/120; and (B) any doorway protected with a *self-closing* fire door having an FRL of not less than –/120/30; or (ii) when separating a lift *shaft* and lift motor room, an FRL not less than 120/–/–.	
C2.13	Electricity supply system (a) An electricity substation located within a building must— (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a *self-closing* fire door having an FRL of not	Further details of compliance will be required within the Construction Documentation

	less than –/120/30. (b) A main switchboard located within the building which sustains emergency equipment operating in the emergency mode must— (i) be separated from any other part of the building by construction having an FRL of not less than 120/120/120; and (ii) have any doorway in that construction protected with a *self-closing* fire door having an FRL of not less than –/120/30. (c) Electrical conductors located within a building that supply— (i) a substation located within the building which supplies a main switchboard covered by (b); or (ii) a main switchboard covered by (b), must— (iii) have a classification in accordance with AS/NZS 3013 of not less than— (A) if located in a position that could be subject to damage by motor vehicles — WS53W; or (B) otherwise — WS52W; or (iv) be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120. (d) Where emergency equipment is *required* in a building, all switchboards in the electrical installation, which sustain the electricity supply to the emergency equipment, must be constructed so that emergency	

	equipment switchgear is separated from non-emergency equipment switchgear by metal partitions designed to minimise the spread of a fault from the non-emergency equipment switchgear. (e) For the purposes of (d), emergency equipment includes but is not limited to the following: (i) Fire hydrant booster pumps. (ii) Pumps for *automatic* sprinkler systems, water spray, chemical fluid suppression systems or the like. (iii) Pumps for fire hose reels where such pumps and fire hose reels form the sole means of fire protection in the building. (iv) Air handling systems designed to exhaust and control the spread of fire and smoke. (v) Emergency lifts. (vi) Control and indicating equipment. (vii) Sound systems and intercom systems for emergency purposes.	
C3.10	Openings in fire-isolated lift shafts (a) Doorways — If a lift *shaft* is *required* to be fire-isolated, an entrance doorway to that *shaft* must be protected by –/60/– fire doors that— (i) comply with AS 1735.11; and (ii) are set to remain closed except when discharging or receiving passengers, goods or vehicles. (c) Lift indicator panels — A lift call panel, indicator	Further details of compliance will be required within the Construction Documentation

	panel or other panel in the wall of a fire-isolated lift *shaft* must be backed by construction having an FRL of not less than –/60/60 if it exceeds 35 000 mm^2 in area.	
C3.12	Openings in floors and ceilings for services (a) Where a service passes through— (i) a floor that is *required* to have an FRL with respect to *integrity* and *insulation*; or (ii) a ceiling *required* to have a *resistance to the incipient spread of fire*, the service must be installed in accordance with (b). (b) A service must be protected— (i) in a building of Type A construction, by a *shaft* complying with Specification C1.1; or (ii) in a building of Type B or C construction, by a *shaft* that will not reduce the fire performance of the building elements it penetrates; or (iii) in accordance with C3.15. (c) Where a service passes through a floor which is *required* to be protected by a *fire-protective covering*, the penetration must not reduce the fire performance of the covering.	Further details of compliance will be required within the Construction Documentation
C3.13	Openings in shafts In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service *shaft* must be protected by—	Further details of compliance will be required within the Construction Documentation

	(a) if it is in a *sanitary compartment* — a door or panel which, together with its frame, is *non-combustible* or has an FRL of not less than –/30/30; or (b) a *self-closing* –/60/30 fire door or hopper; or (c) an access panel having an FRL of not less than –/60/30; or (d) if the *shaft* is a garbage *shaft* — a door or hopper of *non-combustible* construction.	
C3.15	Openings for service installations Where an electrical, electronic, plumbing, mechanical ventilation, air-conditioning or other service penetrates a building element (other than an *external wall* or roof) that is *required* to have an FRL with respect to *integrity* or *insulation* or a *resistance to the incipient spread of fire*, that installation must comply with any one of the following: (a) Tested systems (i) The service, building element and any protection method at the penetration are identical with a prototype assembly of the service, building element and protection method which has been tested in accordance with AS 4072.1 and AS 1530.4 and has achieved the *required* FRL or *resistance to the incipient spread of fire*. (ii) It complies with (i) except for the *insulation* criteria relating to the service if— (A) the service is a pipe system comprised entirely	Further details of compliance will be required within the Construction Documentation

	of metal (excluding pipe seals or the like); and (B) any *combustible* building element is not located within 100 mm of the service for a distance of 2 m from the penetration; and (C) *combustible* material is not able to be located within 100 mm of the service for a distance of 2 m from the penetration; and (D) it is not located in a *required exit*. (b) Ventilation and air-conditioning — In the case of ventilating or air-conditioning ducts or equipment, the installation is in accordance with AS/NZS 1668.1. (c) Compliance with Specification C3.15 (i) The service is a pipe system comprised entirely of metal (excluding pipe seals or the like) and is installed in accordance with Specification C3.15 and it— (A) penetrates a wall, floor or ceiling, but not a ceiling *required* to have a *resistance to the incipient spread of fire*; and (B) connects not more than 2 *fire compartments* in addition to any *fire-resisting* service *shafts*; and (C) does not contain a flammable or combustible liquid or gas. (ii) The service is sanitary plumbing installed in accordance with Specification C3.15 and it— (A) is of metal or UPVC pipe; and (B) penetrates the floors of a Class 5, 6, 7, 8 or 9b building; and	

	(C) is in a *sanitary compartment* separated from other parts of the building by walls with the FRL *required* by Specification C1.1 for a stair *shaft* in the building and a *self-closing* –/60/30 fire door. (iii) The service is a wire or cable, or a cluster of wires or cables installed in accordance with Specification C3.15 and it— (A) penetrates a wall, floor or ceiling, but not a ceiling *required* to have a *resistance to the incipient spread of fire*; and (B) connects not more than 2 *fire compartments* in addition to any *fire-resisting* service *shafts*. (iv) The service is an electrical switch, outlet, or the like, and it is installed in accordance with Specification C3.15.	
C3.16	Construction joints Construction joints, spaces and the like in and between building elements *required* to be *fire-resisting* with respect to *integrity* and *insulation* must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the *required* FRL.	Further details of compliance will be required within the Construction Documentation
C3.17	Columns protected with lightweight construction to achieve an FRL A column protected by *lightweight construction* to achieve an FRL which passes through a building element that is *required* to have an FRL or a *resistance to the incipient spread of fire*, must be installed using a method and materials identical with a prototype assembly of the	Further details of compliance will be required within the Construction Documentation

	construction which has achieved the *required* FRL or *resistance to the incipient spread of fire*.	

4.4 SECTION D – ACCESS AND EGRESS

Cl. D1.4	Exit travel distances Class 5 to 9 buildings — Subject to (d), (e) and (f)— (i) no point on a floor must be more than 20 m from an *exit*, or a point from which travel in different directions to 2 *exits* is available, in which case the maximum distance to one of those *exits* must not exceed 40 m; and (ii) in a Class 5 or 6 building, the distance to a single *exit* serving a *storey* at the level of access to a road or *open space* may be increased to 30 m.	Generally compliance can be achieved within the building however we noted:- Travel distance around the perimeter of the pool needs further rationalization and clarification. Areas within the Basement plant area do not achieve compliance. Further details of compliance will be required within the Construction Documentation
Cl. D1.5	Distance between alternative exits *Exits* that are *required* as alternative means of egress must be— (a) distributed as uniformly as practicable within or around the *storey* served and in positions where unobstructed access to at least 2 *exits* is readily available from all points on the floor including lift lobby areas; and (b) not less than 9 m apart; and (c) not more than— (i) in a Class 2 or 3 building — 45 m apart; or (ii) in a Class 9a *health-care building*, if such *required exit* serves a *patient care area* — 45 m apart; or (iii) in all other cases — 60 m apart; and (d) located so that alternative paths of travel do not converge such that they become less than 6 m apart.	For Reference where the provision of alternate Exits are required.

Cl. D1.6	Dimensions of exits and paths of travel to exits In a *required exit* or path of travel to an *exit*— (a) the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and (b) the unobstructed width of each *exit* or path of travel to an *exit*, except for doorways, must be not less than— (i) 1m; or (ii) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a *treatment area* or *ward area*; and (iii) in a *public corridor* in a Class 9c *aged care building,* notwithstanding (c) and (d)— (A) 1.5 m; and (B) 1.8 m for the full width of the doorway, providing access into a *sole-occupancy unit* or communal bathroom; and (c) if the *storey* or *mezzanine* accommodates more than 100 persons but not more than 200 persons, the aggregate unobstructed width, except for doorways, must be not less than— (i) 1 m plus 250 mm for each 25 persons (or part) in excess of 100; or (ii) 1.8 m in a passageway, corridor or ramp normally used for the transportation of patients in beds within a *treatment area* or *ward area*; and	For Reference – Generally Compliance can be achieved.

	(d) if the *storey* or *mezzanine* accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to— (i) 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 (ii) in any other case, 2 m plus 500 mm for every 75 persons (or part) in excess of 200; and (e) in an *open spectator stand* which accommodates more than 2000 persons, the aggregate unobstructed width, except for doorways, must be increased to 17 m plus a width (in metres) equal to the number in excess of 2000 divided by 600; and (f) the unobstructed width of a doorway must be not less than— (i) in *patient care areas* through which patients would normally be transported in beds, if the doorway provides access to, or from, a corridor of width— (A) less than 2.2 m — 1200 mm; or (B) 2.2 m or greater — 1070 mm, and where the doorway is fitted with two leaves and one leaf is secured in the closed position in accordance with D2.21(a)(v), the other leaf must permit an unobstructed opening not less than 800 mm wide; or (ii) in *patient care areas* in a *horizontal exit* — 1250 mm; or	

	(iii) the unobstructed width of each *exit* provided to comply with (b), (c), (d) or (e), minus 250 mm; or (iv) in a Class 9c *aged care building*— (A) 1070 mm where it opens from a *public corridor* to a *sole-occupancy unit*; or (B) 870 mm in other *resident use areas*; or (C) 800 mm in non-*resident use areas*, and where the doorway is fitted with two leaves and one leaf is secured in the closed position in accordance with D2.21(a)(v), 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 areas*; or (v) in any other case except where it opens to a *sanitary compartment* or bathroom — 750 mm wide; and (g) the unobstructed width of a *required exit* must not diminish in the direction of travel to a road or *open space,* except where the width is increased in accordance with (b)(ii) or (f)(i); and (h) the *required* width of a stairway or ramp must— (i) be measured clear of all obstructions such as handrails, projecting parts of balustrades or other barriers and the like; and (ii) extend without interruption, except for ceiling cornices, to a height not less than 2 m vertically above a line along the nosing's of the treads or the floor surface of the ramp or landing.	

Cl. D1.16	Plant rooms, lift machine rooms and electricity network substations: Concession (a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a *floor area* of not more than 100 m^2; or (ii) 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 m^2. (b) A ladder permitted under (a)— (i) may form part of an *exit* provided that in the case of a *fire-isolated stairway* it is contained within the *shaft*; or (ii) may discharge within a *storey* in which case it must be considered as forming part of the path of travel; and (iii) must comply with— (A) AS 1657 for a plant room or a Class 8 *electricity network substation*; and (B) AS 1735.2 for a lift machine room.	For Reference
Cl. D1.17	Access to lift pits Access to lift pits must— (a) where the pit depth is not more than 3 m, be through the lowest landing doors; or (b) where the pit depth is more than 3 m, be provided through an access doorway complying with the	Further details of compliance will be required within the Construction Documentation

	following: (i) In lieu of D1.6, the doorway must be level with the pit floor and not be less than 600 mm wide by 1980 mm high clear opening, which may be reduced to 1500 mm where it is necessary to comply with (ii). (ii) No part of the lift car or platform must encroach on the pit doorway entrance when the car is on a fully compressed buffer. (iii) Access to the doorway must be by a stairway complying with AS 1657. (iv) In lieu of D2.21, doors fitted to the doorway must be— (A) of the horizontal sliding or outwards opening hinged type; and (B) self-closing and self-locking from the outside; and (C) marked on the landing side with the letters not less than 35 mm high: "DANGER LIFTWELL − ENTRY OF UNAUTHORIZED PERSONS PROHIBITED − KEEP CLEAR AT ALL TIMES"	
Cl. D2.7	Installations in exits and paths of travel (a) Access to service *shafts* and services other than to fire-fighting or detection equipment as permitted in the *Deemed-to-Satisfy Provisions* of Section E, must not be provided from a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*. (b) An opening to any chute or duct intended to convey	Further details of compliance will be required within the Construction Documentation

	hot products of combustion from a boiler, incinerator, fireplace or the like, must not be located in any part of a *required exit* or any corridor, hallway, lobby or the like leading to a *required exit*. (c) Gas or other fuel services must not be installed in a *required exit*. (d) Services or equipment comprising— (i) electricity meters, distribution boards or ducts; or (ii) central telecommunications distribution boards or equipment; or (iii) electrical motors or other motors serving equipment in the building, may be installed in— (iv) a *required exit*, except for fire-isolated *exits* specified in (a); or (v) in any corridor, hallway, lobby or the like leading to a *required exit*, if the services or equipment are enclosed by *non-combustible* construction or a *fire-protective covering* with doorways or openings suitably sealed against smoke spreading from the enclosure. (e) Electrical wiring may be installed in a fire-isolated *exit* if the wiring is associated with— (i) a lighting, detection, or pressurisation system serving the *exit*; or (ii) a security, surveillance or management system serving the *exit*; or	

	(iii) an intercommunication system or an audible or visual alarm system in accordance with D2.22; or (iv) the monitoring of hydrant or sprinkler isolating valves.	
Cl. D2.8	Enclosure of space under stairs and ramps (a) 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. (b) Non fire-isolated stairways and ramps — The space below a *required* non *fire-isolated stairway* (including an external stairway) or non *fire-isolated ramp* must not be enclosed to form a cupboard or other enclosed space unless— (i) the enclosing walls and ceilings have an FRL of not less than 60/60/60; and (ii) any access doorway to the enclosed space is fitted with a *self-closing* –/60/30 fire door.	Further details of compliance will be required within the Construction Documentation
Cl. D2.9	Width of required stairways and ramps A *required* stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division has a width of not more than 2 m.	Further details of compliance will be required within the Construction Documentation
Cl. D2.13	Goings and risers (a) A stairway must have— (i) not more than 18 nor less than 2 risers in each *flight*;	Further details of compliance will be required within the Construction Documentation

	and (ii) except as permitted by (b) and (c), going (G), riser (R) and quantity (2R + G) in accordance with Table D2.13; and (iii) except as permitted by (b) and (c), goings and risers that are constant throughout in one *flight*; and (iv) risers which do not have any openings that would allow a 125 mm sphere to pass through between the treads; and (v) treads which have a non-slip finish or an adequate non-skid strip near the edge of the nosing's; and (vi) treads of solid construction (not mesh or other perforated material) if the stairway is more than 10 m high or connects more than 3 *storeys*; and (vii) in a Class 9b building, not more than 36 risers in consecutive *flights* without a change in direction of at least 30°; and (viii) in the case of a *required* stairway, no winders in lieu of a landing. (b) In the case of a non-*required* stairway— (i) the stairway must have— (A) not more than 3 winders in lieu of a quarter landing; and (B) not more than 6 winders in lieu of a half landing; and (ii) the going of all straight treads must be constant throughout the same *flight*; and (iii) the going of all winders in lieu of a quarter or half	

	landing may vary from the going of the straight treads within the same *flight* provided that the going of all such winders is constant. (c) Where a stairway discharges to a sloping public walkway or public road— (i) the riser (R) may be reduced to account for the slope of the walkway or road; and (ii) the quantity (2R+G) may vary at that location	
Cl. D2.14	Landings In a stairway— (a) landings having a maximum gradient of 1:50 may be used in any building to limit the number of risers in each *flight* and each landing must— (i) be not less than 750 mm long, and where this involves a change in direction, the length is measured 500 mm from the inside edge of the landing; and (ii) have a non-slip finish throughout or an adequate non-skid strip near the edge of the landing where it leads to a *flight* below; and (b) in a Class 9a building— (i) the area of any landing must be sufficient to move a stretcher, 2 m long and 600 mm wide, at a gradient not more than the gradient of the stairs, with at least one end of the stretcher on the landing while changing direction between *flights*; or (ii) the stair must have a change of direction of 180°,	Further details of compliance will be required within the Construction Documentation

	and the landing a clear width of not less than 1.6 m and a clear length of not less than 2.7 m.	
Cl. D2.15	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 *patient care areas* in a Class 9a *health-care building*, the door sill is not more than 25 mm above the finished floor level to which the doorway opens; or (b) in a Class 9c *aged care building*, a ramp is provided with a maximum gradient of 1:8 for a maximum height of 25 mm over the threshold; or (c) in other cases— (i) the doorway opens to a road or *open space*, external stair landing or external balcony; and (ii) 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	Further details of compliance will be required within the Construction Documentation
Cl. D2.16	Balustrades or other barriers (a) A continuous balustrade or other barrier must be provided along the side of any roof to which public access is provided, any stairway or ramp, any floor, corridor, hallway, balcony, deck, verandah, *mezzanine*, access bridge or the like and along the side of any delineated path of access to a building, if— (i) it is not bounded by a wall; and (ii) its level above the surface beneath, is more than—	Further details of compliance will be required within the Construction Documentation

	(A) 4 m where it is possible for a person to fall through an openable *window*; or (B) 1 m in any other case. (b) The requirements of (a) do not apply to— (i) the perimeter of a *stage*, rigging loft, loading dock or the like; or (ii) areas referred to in D2.18; or (iii) a retaining wall unless the retaining wall forms part of, or is directly associated with a delineated path of access to a building from the road, or a delineated path of access between buildings. (d) A balustrade or other barrier in stairways and ramps, other than those covered in (c), must comply with (g) and (h)(ii). (e) A balustrade or other barrier along the side of a horizontal or near horizontal surface such as a— (i) roof to which public access is provided and any path of access to a building; and (ii) floor, corridor, hallway, balcony, verandah, *mezzanine*, access bridge or the like, must comply with (g) and (h) (ii). (f) A balustrade or other barrier in front of fixed seating on a *mezzanine* or balcony within an auditorium in a Class 9b building must comply with (g)(iv) and (h)(ii). (g) The height of a balustrade or other barrier must be constructed in accordance with the following: (i) The height is not less than 865 mm above the	

	nosing's of the stair treads or the floor of a ramp or other path of travel with a gradient not less than 1:20. (ii) The height is not less than— (A) 1 m above the floor of any access path, balcony, landing or the like where the path of travel has a gradient less than 1:20; or (B) 865 mm above the floor of a landing to a stair or ramp where the balustrade or other barrier is provided along the inside edge of the landing and does not exceed a length of 500 mm; or (C) 865 mm above the floor beneath an openable *window*. (iii) A transition zone may be incorporated where the balustrade or other barrier height changes from 865 mm on the stair *flight* or ramp to 1 m at the landing. (iv) For a balustrade or other barrier provided under (f), the height above the floor must be not less than— (A) 1 m; or (B) 700 mm and a horizontal projection extends not less than 1 m outwards from the top of the balustrade. (h) Openings in a balustrade or other barrier must be constructed in accordance with the following: (ii) For a balustrade or other barrier other than those provided under (c)— (A) any opening does not permit a 125 mm sphere	

	to pass through it and for stairs, the opening is measured above the nosing line of the stair treads; and (B) for floors more than 4 m above the surface beneath, any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing.	
Cl. D2.17	Handrails (a) Except for handrails referred to in D2.18, handrails must be— (i) located along at least one side of the ramp or *flight*; and (ii) located along each side if the total width of the stairway or ramp is 2 m or more; and (iii) in a Class 9b building used as a primary *school*— (A) have one handrail fixed at a height of not less than 865 mm; and (B) have a second handrail fixed at a height between 665 mm and 750 mm, measured above the nosing's of stair treads and the floor surface of the ramp, landing or the like; and (iv) in any other case, fixed at a height of not less than 865 mm measured above the nosing's of stair treads and the floor surface of the ramp, landing, or the like; and (v) continuous between stair *flight* landings and have no obstruction on or above them that will tend to break a hand-hold.	Further details of compliance will be required within the Construction Documentation

Cl. D2.18	Fixed platforms, walkways, stairways and ladders A fixed platform, walkway, stairway, ladder and any going and riser, landing, handrail, balustrade or other barrier attached thereto may comply with AS 1657 in lieu of D2.13, D2.14, D2.16 and D2.17 if it only serves: (a) machinery rooms, boiler houses, lift-machine rooms, plant-rooms, and the like; or (b) non-*habitable rooms*, such as attics, storerooms and the like that are not used on a frequent or daily basis in the internal parts of a *sole-occupancy unit* in a Class 2 building or Class 4 part.	Further details of compliance will be required within the Construction Documentation
Cl. D2.20	Swinging doors A swinging door in a *required exit* or forming part of a *required exit*— (a) must not encroach— (i) at any part of its swing by more than 500 mm on the *required* width (including any landings) of a *required*— (A) stairway; or (B) ramp; or (C) passageway, if it is likely to impede the path of travel of the people already using the *exit*; and (ii) when fully open, by more than 100 mm on the *required* width of the *required exit*, and the measurement of encroachment in each case is to include door handles or other furniture or attachments	Further details of compliance will be required within the Construction Documentation

	to the door; and (b) must swing in the direction of egress unless— (i) it serves a building or part with a *floor area* not more than 200 m^2, 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 (ii) it serves a *sanitary compartment* or airlock (in which case it may swing in either direction); and (c) must not otherwise impede the path or direction of egress.	
Cl. D2.21	Operation of latch (a) Except as *required* by (b), a door in a *required exit*, forming part of a *required exit* or in the path of travel to a *required exit* must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action or pushing action on a single device which is located between 900 mm and 1.1 m from the floor, except if it— (i) serves a vault, strong-room, *sanitary compartment*, or the like; or (ii) serves only, or is within— (A) a *sole-occupancy unit* in a Class 2 building or a Class 4 part; or (B) a *sole-occupancy unit* in a Class 3 building (other than an entry door to a *sole-occupancy unit* of a boarding house, guest house, hostel, lodging house or backpacker accommodation); or (C) a *sole-occupancy unit* with a *floor area* not	Further details of compliance will be required within the Construction Documentation

	more than 200 m^2 in a Class 5, 6, 7 or 8 building; or (D) a space which is otherwise inaccessible to persons at all times when the door is locked; or (iii) serves the secure parts of a bank, *detention centre*, mental health facility, *early childhood centre* or the like and it can be immediately unlocked— (A) by operating a fail-safe control switch, not contained within a protective enclosure, to actuate a device to unlock the door; or (B) by hand by a person or persons, specifically nominated by the owner, properly instructed as to the duties and responsibilities involved and available at all times when the building is lawfully occupied so that persons in the building or part may immediately escape if there is a fire; or (iv) is fitted with a fail-safe device which *automatically* unlocks the door upon the activation of any sprinkler system complying with Specification E1.5 or smoke, or any other detector system deemed suitable in accordance with AS 1670.1 installed throughout the building; or (v) is in a Class 9a or 9c building and— (A) is one leaf of a two-leaf door complying with D1.6(f)(i) or D1.6(f)(iv) provided that it is not held closed by a locking mechanism and is readily openable; and (B) the door is not *required* to be a fire door or	

	smoke door. (b) The requirements of (a) do not apply in a Class 9b building (other than a *school*, an *early childhood centre* or a building used for religious purposes) to a door in a *required exit*, forming part of a *required exit* or in the path of travel to a *required exit* serving a *storey* or room accommodating more than 100 persons, determined in accordance with D1.13, in which case it must be readily openable— (i) without a key from the side that faces a person seeking egress; and (ii) by a single hand pushing action on a single device such as a panic bar located between 900 mm and 1.1 m from the floor; and (iii) where a two-leaf door is fitted, the provisions of (i) and (ii) need only apply to one door leaf if the appropriate requirements of D1.6 are satisfied by the opening of that one leaf	
Cl. D2.23	Signs on doors (a) A sign, to alert persons that the operation of certain doors must not be impaired, must be installed where it can readily be seen on, or adjacent to, a— (i) (A) *required* fire door providing direct access to a fire-isolated *exit*, except a door providing direct egress from a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; and (B) *required* smoke door,	Further details of compliance will be required within the Construction Documentation

	on the side of the door that faces a person seeking egress and, if the door is fitted with a device for holding it in the open position, on either the wall adjacent to the doorway or both sides of the door; and (ii) (A) fire door forming part of a *horizontal exit*; and (B) smoke door that swings in both directions; and (C) door leading from a fire isolated *exit* to a road or *open space*, on each side of the door. (b) A sign referred to in (a) must be in capital letters not less than 20 mm high in a colour contrasting with the background and state— (i) for an *automatic* door held open by an *automatic* hold-open device— " FIRE SAFETY DOOR—DO NOT OBSTRUCT "; or (ii) for a *self-closing* door— " FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN "; or (iii) for a door discharging from a fire-isolated *exit*— "FIRE SAFETY DOOR—DO NOT OBSTRUCT".	
Cl. D3.1	General building access requirements Buildings and parts of buildings must be *accessible* as *required* by Table D3.1, unless exempted by D3.4.	Access within the subject building is required To and within all areas normally used by the occupants. Further details of compliance will be required within the

		Construction Documentation
Cl. D3.2	Access to buildings (a) An *access way* must be provided to a building *required* to be *accessible*— (i) from the main points of a pedestrian entry at the allotment boundary; and (ii) from another *accessible* building connected by a pedestrian link; and (iii) from any *required accessible* car parking space on the allotment. (b) In a building *required* to be *accessible*, an *access way* must be provided through the principal pedestrian entrance, and— (i) through not less than 50% of all pedestrian entrances including the principal pedestrian entrance; and (ii) in a building with a total *floor area* more than 500 m^2, a pedestrian entrance which is not *accessible* must not be located more than 50 m from an *accessible* pedestrian entrance, except for pedestrian entrances serving only areas exempted by D3.4. (c) Where a pedestrian entrance *required* to be *accessible* has multiple doorways— (i) if the pedestrian entrance consists of not more than 3 doorways — not less than 1 of those doorways must be *accessible*; and (ii) if a pedestrian entrance consists of more than 3	Due to the nature of this large (existing) school site access form the street and from a suitable number of car parking spaces is difficult to achieve in relation to the subject building. We recommend that the Performance requirements relative to Clause D3 – the relevant Performance Requirements are DP1, and DP8 are addressed within an Access Compliance Assessment Report. Further details of compliance will be required within the Construction Documentation

	doorways — not less than 50% of those doorways must be *accessible*. (d) For the purposes of (c)— (i) an *accessible* pedestrian entrance with multiple doorways is considered to be one pedestrian entrance where— (A) all doorways serve the same part or parts of the building; and (B) the distance between each doorway is not more than the width of the widest doorway at that pedestrian entrance (see Figure D3.2); and (ii) a doorway is considered to be the clear, unobstructed opening created by the opening of one or more door leaves (see Figure D3.2). (e) Where a doorway on an *access way* has multiple leaves, (except an automatic opening door) one of those leaves must have a clear opening width of not less than 850 mm in accordance with AS 1428.1.	
Cl. D3.3	Parts of buildings to be accessible In a building *required* to be *accessible*— (a) every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with— (i) for a ramp, except a *fire-isolated ramp*, clause 10 of AS 1428.1; and (ii) for a stairway, except a *fire-isolated stairway*,	Further details of compliance will be required within the Construction Documentation

	clause 11 of AS 1428.1; and (iii) for a *fire-isolated stairway*, clause 11.1(f) and (g) of AS 1428.1; and (b) every passenger lift must comply with E3.6; and (c) *access ways* must have— (i) passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an *access way* where a direct line of sight is not available; and (ii) turning spaces complying with AS 1428.1— (A) within 2 m of the end of *access ways* where it is not possible to continue travelling along the *access way*; and (B) at maximum 20 m intervals along the *access way*; and (d) an intersection of *access ways* satisfies the spatial requirements for a passing and turning space; and (e) a passing space may serve as a turning space; and (f) a ramp complying with AS 1428.1 or a passenger lift need not be provided to serve a *storey* or level other than the entrance *storey* in a Class 5, 6, 7b or 8 building— (i) containing not more than 3 *storeys*; and (ii) with a *floor area* for each *storey*, excluding the entrance *storey*, of not more than 200 m^2; and (g) clause 7.4.1(a) of AS 1428.1 does not apply and is replaced with 'the pile height or pile thickness shall not exceed 11 mm and the carpet backing thickness shall	

	not exceed 4 mm'; and (h) the carpet pile height or pile thickness dimension, carpet backing thickness dimension and their combined dimension shown in figure 8 of AS 1428.1 do not apply and are replaced with 11 mm, 4 mm and 15 mm respectively.	
Cl. D3.5	Accessible car parking *Accessible* car parking spaces— (a) subject to (b), must be provided in accordance with Table D3.5 in— (i) a Class 7a building *required* to be *accessible*; and (ii) a car parking area on the same allotment as a building *required* to be *accessible*; and (b) need not be provided in a Class 7a building or a car parking area where a parking service is provided and direct access to any of the car parking spaces is not available to the public; and (c) subject to (d), must comply with AS/NZS 2890.6; and (d) need not be designated where there is a total of not more than 5 car parking spaces, so as to restrict the use of the car parking space only for people with a disability.	Parking is required at 1 space for every 100 car parking spaces or part thereof. Further details of compliance will be required within the Construction Documentation
Cl. D3.6	Signage In a building *required* to be *accessible*— (a) braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access or deafness, as appropriate, in	Location of braille and tactile signs Signs including symbols, numbering and lettering must be designed and installed as follows: (a) Braille and tactile components of a sign must be located not less than 1200 mm and not higher than

	accordance with AS 1428.1 must identify each— (i) sanitary facility, except a sanitary facility within a *sole-occupancy unit* in a Class 1b or Class 3 building; and (ii) space with a hearing augmentation system; and (b) signage including the international symbol for deafness in accordance with AS 1428.1 must be provided within a room containing a hearing augmentation system identifying— (i) the type of hearing augmentation; and (ii) the area covered within the room; and (iii) if receivers are being used and where the receivers can be obtained; and (c) signage in accordance with AS 1428.1 must be provided for *accessible* unisex sanitary facilities to identify if the facility is suitable for left or right handed use; and (d) signage to identify an ambulant *accessible* sanitary facility in accordance with AS 1428.1 must be located on the door of the facility; and (e) where a pedestrian entrance is not *accessible*, directional signage incorporating the international symbol of access, in accordance with AS 1428.1 must be provided to direct a person to the location of the nearest *accessible* pedestrian entrance; and (f) where a bank of sanitary facilities is not provided with an *accessible* unisex sanitary facility, directional signage incorporating the international symbol of	1600 mm above the floor or ground surface. (b) Signs with single lines of characters must have the line of tactile characters not less than 1250 mm and not higher than 1350 mm above the floor or ground surface. (c) Signs identifying rooms containing features or facilities listed in D3.6 must be located— (i) on the wall on the latch side of the door with the leading edge of the sign located between 50 mm and 300 mm from the architrave; and (ii) where (i) is not possible, the sign may be placed on the door itself. Braille and tactile sign specification (a) Tactile characters must be raised or embossed to a height of not less than 1 mm and not more than 1.5 mm. (b) Sentence case (upper case for the first letter of each main word and lower case for all other letters) must be used for all tactile characters, and— (i) upper case tactile characters must have a height of not less than 15 mm and not more than 55 mm; and (ii) lower case tactile characters must have a height of 50% of the related upper case characters. (c) Tactile characters, symbols, and the like, must have rounded edges. (d) The entire sign, including any frame, must have all edges rounded.

	access in accordance with AS 1428.1 must be placed at the location of the sanitary facilities that are not *accessible*, to direct a person to the location of the nearest *accessible* unisex sanitary facility.	(e) The background, negative space or fill of signs must be of matt or low sheen finish. (f) The characters, symbols, logos and other features on signs must be matt or low sheen finish. (g) The minimum letter spacing of tactile characters on signs must be 2 mm. (h) The minimum word spacing of tactile characters on signs must be 10 mm. (i) The thickness of letter strokes must be not less than 2 mm and not more than 7 mm. (j) Tactile text must be left justified, except that single words may be centre justified. (k) Tactile text must be Arial typeface. Luminance contrast The following applies to *luminance contrast*: (a) The background, negative space, fill of a sign or border with a minimum width of 5 mm must have a *luminance contrast* with the surface on which it is mounted of not less than 30%. (b) Tactile characters, icons and symbols must have a minimum *luminance contrast* of 30% to the surface on which the characters are mounted. (c) *Luminance contrasts* must be met under the lighting conditions in which the sign is to be located. Lighting Braille and tactile signs must be illuminated to ensure

		luminance contrast requirements are met at all times during which the sign is required to be read. Braille The following applies to braille: (a) Braille must be grade 1 braille (uncontracted) in accordance with the criteria set out by the Australian Braille Authority. (b) Braille must be raised and domed. (c) Braille must be located 8 mm below the bottom line of text (not including descenders). (d) Braille must be left justified. (e) Where an arrow is used in the tactile sign, a solid arrow must be provided for braille readers. (f) On signs with multiple lines of text and characters, a semicircular braille locator at the left margin must be horizontally aligned with the first line of braille text. Further details of compliance will be required within the Construction Documentation
Cl. D3.7	Hearing augmentation (a) A hearing augmentation system must be provided where an inbuilt amplification system, other than one used only for emergency warning, is installed— (i) in a room in a Class 9b building; or (ii) in an auditorium, conference room, meeting room or room for judicatory purposes; or (iii) at any ticket office, teller's booth, reception area or	Further details of compliance will be required within the Construction Documentation

	the like, where the public is screened from the service provider. (b) If a hearing augmentation system *required* by (a) is— (i) an induction loop, it must be provided to not less than 80% of the *floor area* of the room or space served by the inbuilt amplification system; or (ii) a system requiring the use of receivers or the like, it must be available to not less than 95% of the *floor area* of the room or space served by the inbuilt amplification system, and the number of receivers provided must not be less than— (A) if the room or space accommodates up to 500 persons, 1 receiver for every 25 persons or part thereof, or 2 receivers, whichever is the greater; and (B) if the room or space accommodates more than 500 persons but not more than 1000 persons, 20 receivers plus 1 receiver for every 33 persons or part thereof in excess of 500 persons; and (C) if the room or space accommodates more than 1000 persons but not more than 2000 persons, 35 receivers plus 1 receiver for every 50 persons or part thereof in excess of 1000 persons; and (D) if the room or space accommodates more than 2000 persons, 55 receivers plus 1 receiver for every 100 persons or part thereof in excess of 2000 persons. (c) The number of persons accommodated in the room or	

	space served by an inbuilt amplification system must be calculated according to D1.13. (d) Any screen or scoreboard associated with a Class 9b building and capable of displaying public announcements must be capable of supplementing any public address system, other than a public address system used for emergency warning purposes only.	
Cl. D3.8	Tactile indicators (a) For a building *required* to be *accessible*, tactile ground surface indicators must be provided to warn people who are blind or have a vision impairment that they are approaching— (i) a stairway, other than a *fire-isolated stairway*; and (ii) an escalator; and (iii) a passenger conveyor or moving walk; and (iv) a ramp other than a *fire-isolated ramp*, step ramp, kerb ramp or *swimming pool* ramp; and (v) in the absence of a suitable barrier— (A) an overhead obstruction less than 2 m above floor level, other than a doorway; and (B) an *access way* meeting a vehicular way adjacent to any pedestrian entrance to a building, excluding a pedestrian entrance serving an area referred to in D3.4, if there is no kerb or kerb ramp at that point, except for areas exempted by D3.4. (b) Tactile ground surface indicators *required* by (a) must	Further details of compliance will be required within the Construction Documentation

	comply with sections 1 and 2 of AS/NZS 1428.4.1. (c) A hostel for the aged, nursing home for the aged, a *residential aged care building* Class 3 accommodation for the aged, Class 9a *health-care building* or a Class 9c *aged care building* need not comply with (a)(i) and (iv) if handrails incorporating a raised dome button in accordance with the requirements for stairway handrails in AS 1428.1 are provided to warn people who are blind or have a vision impairment that they are approaching a stairway or ramp.	
Cl. D3.9	Wheelchair seating spaces in Class 9b assembly buildings Where fixed seating is provided in a Class 9b *assembly building*, wheelchair seating spaces complying with AS 1428.1 must be provided in accordance with the following: (a) The number and grouping of wheelchair seating spaces must be in accordance with Table D3.9. (b) In a cinema— (i) with not more than 300 seats — wheelchair seating spaces must not be located in the front row of seats; and (ii) with more than 300 seats — not less than 75% of *required* wheelchair seating spaces must be located in rows other than the front row of seats; and (iii) the location of wheelchair seating is to be representative of the range of seating provided.	Further details of compliance will be required within the Construction Documentation

Cl. D3.10	Swimming pools (a) Not less than 1 means of *accessible* water entry/exit in accordance with Specification D3.10 must be provided for each *swimming pool required* by Table D3.1 to be *accessible*. (b) An *accessible* entry/exit must be by means of— (i) a fixed or movable ramp and an aquatic wheelchair; or (ii) a zero depth entry at a maximum gradient of 1:14 and an aquatic wheelchair; or (iii) a platform *swimming pool* lift and an aquatic wheelchair; or (iv) a sling-style *swimming pool* lift. (c) Where a *swimming pool* has a perimeter of more than 70 m in length, at least one *accessible* water entry/exit must be provided by a means specified in (b)(i), (ii) or (iii). (d) Latching devices on gates and doors forming part of a *swimming pool* safety barrier need not comply with AS 1428.1.	Fixed or moveable ramp A fixed or moveable ramp must— (a) have a slip-resistant surface; and (b) have a maximum gradient of 1:14; and (c) have handrails complying with the requirements for ramps in AS 1428.1, installed on both sides of the ramp; and (d) have kerbs in accordance with the requirements for ramps in AS 1428.1; and (e) extend to a depth of not less than 900 mm and not more than 1100 mm below the stationary water level; and (f) have landings in accordance with the requirements for ramps in AS, with a landing located at the bottom and top of each ramp and a landing must be located at a level between 900 mm and 1100 mm below the stationary water level. Zero depth entry A zero depth entry must have— (a) a slip-resistant surface; and (b) a maximum gradient of 1:14; and (c) a single handrail complying with the requirements for handrails in AS 1428.1, from the top of the entry point continuous to the bottom level area; and (d) a level area—

		(i) 1500 mm long for the width of the zero depth entry at the entry point; and (ii) located at the bottom of the zero depth entry at a level between 900 mm and 1100 mm below the stationary water level. Platform swimming pool lift A platform *swimming pool* lift must be— (a) capable of being operated from the *swimming pool* surround, within the *swimming pool*, and on the platform; and (b) located where the water depth is not more than 1300 mm; and (c) designed to withstand a weight capacity of not less than 160 kg and be capable of sustaining a static load of not less than 1.5 times the rated load. Sling-style swimming pool lift A sling lift must comply with the following: (a) A sling lift must be located where the water depth is not more than 1300 mm. (b) When the sling is in the raised position and in the transfer position, the centreline of the sling must be located over the *swimming pool* surround and not less than 450 mm from the *swimming pool* edge. (c) The surface of the *swimming pool* surround between the centreline of the sling and the *swimming pool* edge must have a gradient of not more than 1:50 and must be slip-resistant.

		(d) A clear space— (i) not less than 900 mm x 1300 mm; and (ii) with a gradient of not more than 1:50; and (iii) having a slip-resistant surface; and (iv) located so that the centreline of the space is directly below the lifting point for the sling, must be provided on the *swimming pool* surround parallel with the *swimming pool* edge on the side remote from the water (see Figure 5). (e) A sling lift must be capable of being operated from the *swimming pool* surround, within the *swimming pool* and from the sling. (f) A sling must be designed so that it will submerge to a water depth of not less than 500 mm below the stationary water level. (g) A sling lift must be designed to withstand a weight of not less than 136 kg and be capable of sustaining a static load not less than 1.5 times the rated load. Aquatic wheelchair An aquatic wheelchair must comply with the following: (a) The height of the top surface of the seat must be not less than 430 mm. (b) The seat width must not be not less than 480 mm. (c) A footrest must be provided. (d) Armrests must be located on both sides of the seat and must be capable of being moved away from the side of

		the chair to allow a person to transfer on and off the seat. Further details of compliance will be required within the Construction Documentation
Cl. D3.11	Ramps On an *access way*— (a) a series of connected ramps must not have a combined vertical rise of more than 3.6 m; and (b) a landing for a step ramp must not overlap a landing for another step ramp or ramp.	For Reference
Cl. D3.12	Glazing on an access way On an *access way*, where there is no chair rail, handrail or transom, all frameless or fully glazed doors, sidelights and any glazing capable of being mistaken for a doorway or opening, must be clearly marked in accordance with AS 1428.1.	Further details of compliance will be required within the Construction Documentation

4.5 SECTION E – SERVICES AND EQUIPMENT

Cl. E1.3	Fire hydrants (a) A fire hydrant system must be provided to serve a building— (i) having a total *floor area* greater than 500 m^2; and (ii) where a *fire brigade* is available to attend a building fire. (b) The fire hydrant system— (i) must be installed in accordance with AS 2419.1, except a Class 8 *electricity network substation* need not comply with clause 4.2 of AS 2419.1 if— (A) it cannot be connected to town main supply; and (B) one hour water storage is provided for fire fighting; and (ii) where internal fire hydrants are provided, they must serve only the *storey* on which they are located except that a *sole-occupancy unit*— (A) in a Class 2 or 3 building or Class 4 part may be served by a single fire hydrant located at the level of egress from that *sole-occupancy unit*; or (B) of not more than 2 *storeys* in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hydrant located at the level of egress from that *sole-occupancy unit* provided the fire hydrant can provide coverage to the whole of the *sole-occupancy unit*.	Further details of compliance will be required within the Construction Documentation

Cl. E1.4	Fire hose reels (a) E1.4 does not apply to— (i) a Class 8 *electricity network substation*; or (ii) a Class 9c *aged care building*; or (iii) classrooms and associated corridors in a primary or secondary *school*. (b) A fire hose reel system must be provided— (i) to serve the whole building where one or more internal fire hydrants are installed; or (ii) where internal fire hydrants are not installed, to serve any *fire compartment* with a *floor area* greater than 500 m^2, and for the purposes of this clause, a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part is considered to be a *fire compartment*. (c) The fire hose reel system must— (i) have fire hose reels installed in accordance with AS 2441; and (ii) provide fire hose reels to serve only the *storey* at which they are located, except a *sole-occupancy unit*— (A) in a Class 2 or 3 building or Class 4 part may be served by a single fire hose reel located at the level of egress from that *sole-occupancy unit*; and (B) of not more than 2 *storeys* in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hose	Further details of compliance will be required within the Construction Documentation

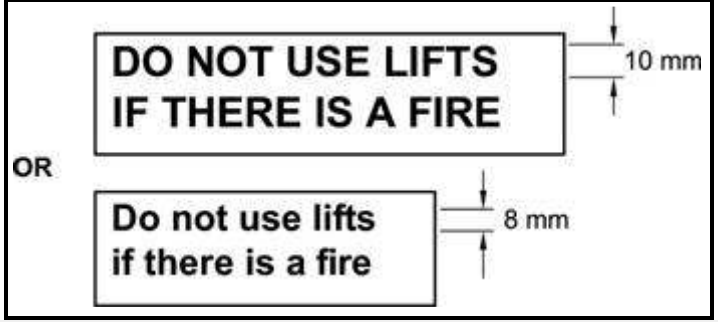
	reel located at the level of egress from that *sole-occupancy unit* provided the fire hose reel can provide coverage to the whole of the *sole-occupancy unit*. (d) Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441. (e) In achieving system coverage, one or a combination of the following criteria for individual internally located fire hose reels must be met in determining the layout of any fire hose reel system: (i) Fire hose reels must be located adjacent to an internal fire hydrant (other than one within a fire-isolated *exit*), except that a fire hose reel need not be located adjacent to every fire hydrant, provided system coverage can be achieved. (ii) Fire hose reels must be located within 4 m of an *exit*, except that a fire hose reel need not be located adjacent to every *exit*, provided system coverage can be achieved. (iii) Where system coverage is not achieved by compliance with (i)and (ii), additional fire hose reels may be located in paths of travel to an *exit* to achieve the *required* coverage. (f) Fire hose reels must be located so that the fire hose will not need to pass through doorways fitted with fire or smoke doors, except— (i) doorways in walls referred to in C2.5(a)(v) in a	

	Class 9a building and C2.5(b)(iv) in a Class 9c building, separating ancillary use areas of high potential *fire hazard*; and (ii) doorways in walls referred to in C2.12 or C2.13 separating equipment or electrical supply systems; and (iii) doorways in bounding construction in a Class 2 or 3 building or Class 4 part referred to in C3.11; and (iv) doorway openings to *shafts* referred to in C3.13. (g) Where the normal water supply cannot achieve the flow and pressures required by AS 2441, or is unreliable— (i) a pump; or (ii) water storage facility; or (iii) both a pump and water storage facility, must be installed to provide the minimum flow and pressures required by clause 6.1 of AS 2441.	
Cl. E1.6	Portable fire extinguishers Portable fire extinguishers must be provided as listed in Table E1.6 and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.	Further details of compliance will be required within the Construction Documentation
Cl. E1.9	Fire precautions during construction In a building under construction— (a) not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each *storey* adjacent to each *required exit* or	Further details of compliance will be required within the Construction Documentation

	temporary stairway or *exit*; and (b) after the building has reached an *effective height* of 12 m— (i) the *required* fire hydrants and fire hose reels must be operational in at least every *storey* that is covered by the roof or the floor structure above, except the 2 uppermost *storeys*; and (ii) any *required* booster connections must be installed.	
Cl. E1.10	Provision for special hazards Suitable additional provision must be made if special problems of fighting fire could arise because of— (a) the nature or quantity of materials stored, displayed or used in a building or on the allotment; or (b) the location of the building in relation to a water supply for fire-fighting purposes	Further details of compliance will be required within the Construction Documentation
Cl. E2.2a	General requirements (a) A building must comply with (b), (c), (d) and— (i) Table E2.2a as applicable to Class 2 to 9 buildings such that each separate part complies with the relevant provisions for the classification; and (ii) Table E2.2b as applicable to Class 6 and 9b buildings such that each separate part complies with the relevant provisions for the classification. (b) An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air	Further details of compliance will be required within the Construction Documentation

	from one *fire compartment* to another *fire compartment* or operates in a manner that may unduly contribute to the spread of smoke from one *fire compartment* to another *fire compartment* must— (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the *fire compartments* served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close *automatically* by smoke detectors complying with clause 4.10 of AS/NZS 1668.1; and for the purposes of this provision, each *sole-occupancy unit* in a Class 2 or 3 building is treated as a separate *fire compartment*. (c) Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1 serving more than one *fire compartment* (other than a *car park* ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. (d) A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS/NZS 1668.1 systems that are provided for	

	zone smoke control and *automatic* air pressurisation for fire-isolated *exits*. In a— or 9b *school* building or part of a building having a *rise in storeys* of more than 2 A Smoke control system in accordance with AS/NZS 1668.1, if the building has more than one *fire compartment*; or An *automatic* smoke detection and alarm system complying with Specification E2.2a or A sprinkler System complying with complying with Specification E1.5	
Cl. E3.3	Warning against use of lifts in fire A warning sign must— (a) be displayed where it can be readily seen— (i) near every call button for a passenger lift or group of lifts throughout a building; except (ii) a small lift such as a dumb-waiter or the like that is for the transport of goods only; and (b) comply with the details and dimensions of Figure E3.3 and consist of— (i) incised, inlaid or embossed letters on a metal, wood, plastic or similar plate securely and permanently attached to the wall; or (ii) letters incised or inlaid directly into the surface of	Further details of compliance will be required within the Construction Documentation

	the material forming the wall. Figure E3.3 WARNING SIGN FOR PASSENGER LIFTS  	
Cl. E3.5	Landings (a) The provisions of clause 12.2 — "Access" of AS 1735.2 do not apply. (b) The provisions of clause A3.2 — "Access to landings" of Appendix A of AS 1735.1 do not apply. (c) Access and egress to and from lift well landings must comply with the *Deemed-to-Satisfy Provisions* of Section D.	Further details of compliance will be required within the Construction Documentation
Cl. E3.6	Each of the passenger lifts shall be provided with handrails complying with AS 1735.12, have minimum internal floor dimensions complying with AS 1735.12, be fitted with door opening sensory devices and have car control buttons complying with Section 7 of AS 1735.12.	Further details of compliance will be required within the Construction Documentation

Cl. E4.2	Emergency lighting requirements An emergency lighting system must be installed— (a) in every *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*; and (b) in every *storey* of a Class 5, 6, 7, 8 or 9 building where the *storey* has a *floor area* more than 300 m^2— (i) in every passageway, corridor, hallway, or the like, that is part of the path of travel to an *exit*; and (ii) in any room having a *floor area* more than 100 m^2 that does not open to a corridor or space that has emergency lighting or to a road or *open space*; and (iii) in any room having a *floor area* more than 300 m^2; and (c) in every passageway, corridor, hallway, or the like, having a length of more than 6 m from the entrance doorway of any *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building to the nearest doorway opening directly to— (i) a *fire-isolated stairway*, *fire-isolated passageway* or *fire-isolated ramp*; or (ii) an external stairway serving instead of a *fire-isolated stairway* under D1.8; or (iii) an external balcony leading to a stairway, fire or *fire-isolated ramp*; or (iv) a road or *open space*; and (d) in every *required* non-*fire-isolated stairway*; and (e) in a *sole-occupancy unit* in a Class 5, 6 or 9 building	Further details of compliance will be required within the Construction Documentation

	if— (i) the *floor area* of the unit is more than 300 m^2; and (ii) an *exit* from the unit does not open to a road or *open space* or to an external stairway, passageway, balcony or ramp, leading directly to a road or *open space*; and (f) in every room or space to which there is public access in every *storey* in a Class 6 or 9b building if— (i) the *floor area* in that *storey* is more than 300 m^2; or (ii) any point on the floor of that *storey* is more than 20 m from the nearest doorway leading directly to a stairway, ramp, passageway, road or *open space*; or (iii) egress from that *storey* involves a vertical rise within the building of more than 1.5 m, or any vertical rise if the *storey* concerned does not admit sufficient light; or (iv) the *storey* provides a path of travel from any other *storey required* by (i), (ii) or (iii) to have emergency lighting; and (g) in a Class 9a *health-care building*— (i) in every passageway, corridor, hallway, or the like, serving a *treatment area* or a *ward area*; and (ii) in every room having a *floor area* of more than 120 m^2 in a *patient care area*; and (h) in every Class 9c *aged care building* excluding within *sole-occupancy units*; and (i) in every *required* fire control centre.	

Cl. E4.4	Design and operation of emergency lighting Every *required* emergency lighting system must comply with AS 2293.1.	Further details of compliance will be required within the Construction Documentation
Cl. E4.5	Exit signs An *exit* sign must be clearly visible to persons approaching the *exit*, and must be installed on, above or adjacent to each— (a) door providing direct egress from a *storey* to— (i) an enclosed stairway, passageway or ramp serving as a *required exit*; and (ii) an external stairway, passageway or ramp serving as a *required exit*; and (iii) an external access balcony leading to a *required exit*; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or *open space*; and (c) *horizontal exit*; and (d) door serving as, or forming part of, a *required exit* in a *storey required* to be provided with emergency lighting in accordance with E4.2.	Further details of compliance will be required within the Construction Documentation
Cl. E4.6	Direction signs If an *exit* is not readily apparent to persons occupying or visiting the building then *exit* signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a *required exit*.	Further details of compliance will be required within the Construction Documentation
Cl. E4.8	Design and operation of exit signs	Further details of compliance will be required within the Construction Documentation

	Every *required exit* sign must— (a) comply with AS 2293.1; and (b) be clearly visible at all times when the building is occupied by any person having the right of legal entry to the building.	
Cl. E4.9	Sound systems and intercom systems for emergency purposes A sound system and intercom system for emergency purposes complying where applicable with AS 1670.4 must be installed in a Class 9b building— (i) used as a *school* and having a *rise in storeys* of more than 3; or (ii) used as a theatre, public hall, or the like, having a *floor area* more than 1000 m^2 or a *rise in storeys* of more than 2.	Further details of compliance will be required within the Construction Documentation

4.6 SECTION F – HEALTH AND AMENITY

Cl. F1.1	Stormwater drainage Stormwater drainage must comply with AS/NZS 3500.3.	Further details of compliance will be required within the Construction Documentation
Cl. F1.5	Roof coverings A roof must be covered with metal sheet roofing complying with AS 1562.1; or	Further details of compliance will be required within the Construction Documentation
Cl. F1.6	Sarking *Sarking-type materials* used for weatherproofing of roofs and walls must comply with AS/NZS 4200 Parts 1 and 2.	Further details of compliance will be required within the Construction Documentation
Cl. F1.7	Waterproofing of wet areas in buildings In a Class 5, 6, 7, 8 or 9 building, building elements in the bathroom or shower room, a slop hopper or sink compartment, a laundry or *sanitary compartment* must— (i) be *water resistant* or *waterproof* in accordance with Table F1.7; and (ii) comply with AS 3740, as if they were in a Class 2 or 3 building or a Class 4 part of a building. (c) Where a slab or stall type urinal is installed— (i) the floor surface of the room containing the urinal must— (A) be an impervious material; and (B) where no step is installed— (aa) be graded to the urinal channel for a distance	Further details of compliance will be required within the Construction Documentation

	of 1.5 m from the urinal channel; and (bb) the remainder of the floor be graded to a floor waste; and (C) where a step is installed— (aa) the step must have an impervious surface and be graded to the urinal channel; and (bb) the floor behind the step must be graded to a floor waste; and (ii) the junction between the floor surface and the urinal channel must be impervious. (d) Where a wall hung urinal is installed— (i) the wall must be surfaced with impervious material extending from the floor to not less than 50 mm above the top of the urinal and not less than 225 mm on each side of the urinal. (ii) the floor must be surfaced with impervious material and graded to a floor waste. (e) In a room with timber or steel framed walls and containing a urinal— (i) the wall must be surfaced with an impervious material extending from the floor to not less than 100 mm above the floor surface; and (ii) the junction of the floor surface and the wall surface must be impervious.	
Cl. F1.9	Damp-proofing (a) Except for a building covered by (c), moisture from the	Further details of compliance will be required within the Construction Documentation

	ground must be prevented from reaching— (i) the lowest floor timbers and the walls above the lowest floor joists; and (ii) the walls above the damp-proof course; and (iii) the underside of a suspended floor constructed of a material other than timber, and the supporting beams or girders. (b) Where a damp-proof course is provided, it must consist of— (i) a material that complies with AS/NZS 2904; or (ii) impervious termite shields in accordance with AS 3660.1. (c) The following buildings need not comply with (a): (i) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (ii) A garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes. (iii) An *open spectator stand* or *open-deck car park.*	
Cl. F1.10	Damp-proofing of floors on the ground If a floor of a room is laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870, except damp-proofing need not be provided if— (a) weatherproofing is not *required*; or	Further details of compliance will be required within the Construction Documentation

	(b) the floor is the base of a stair, lift or similar *shaft* which is adequately drained by gravitation or mechanical means.	
Cl. F1.13	Glazed assemblies (a) Subject to (b) and (c), the following glazed assemblies in an *external wall*, must comply with AS 2047 requirements for resistance to water penetration: (i) Windows. (ii) Sliding doors with a frame. (iii) Adjustable louvres. (iv) Shopfronts. (v) Window walls with one piece framing. (b) The following buildings need not comply with (a): (i) A Class 7 or 8 building where in the particular case there is no necessity for compliance. (ii) A garage, tool shed, *sanitary compartment*, or the like, forming part of a building used for other purposes, except where the construction of the garage, tool shed, *sanitary compartment* or the like contributes to the weatherproofing of the other part of the building. (iii) An *open spectator stand* or *open-deck car park*. (c) The following glazed assemblies need not comply with (a): (i) All glazed assemblies not in an *external wall*. (ii) Hinged doors, including French doors and bi-fold doors.	Further details of compliance will be required within the Construction Documentation

	(iii) Revolving doors. (iv) Fixed louvres. (v) Skylights, roof lights and windows in other than the vertical plane. (vi) Sliding doors without a frame. (vii) Shopfront doors. (viii) Windows constructed on site and architectural one-off windows, which are not design tested in accordance with AS 2047. (ix) Second-hand windows, re-used windows, recycled windows and replacement windows. (x) Heritage windows.	
Cl. F2.3	Facilities in Class 3 to 9 buildings (a) Sanitary facilities must be provided for Class 3, 5, 6, 7, 8 and 9 buildings in accordance with Table F2.3. (b) If not more than 10 people are employed, a unisex facility may be provided instead of separate facilities for each sex. (c) If the majority of employees are of one sex, not more than 2 employees of the other sex may share toilet facilities if the facilities are separated by means of walls, partitions and doors to afford privacy. (d) Employees and the public may share the same facilities in a Class 6 and 9b building (other than a *school* or *early childhood centre*) provided the number of facilities provided is not less than the total number of facilities *required* for employees plus those *required*	Further details of compliance will be required within the Construction Documentation

	for the public. (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. (h) Class 9b theatres and sporting venues must be provided with one shower for each 10 participants or part thereof.	
Cl. F2.4	Accessible sanitary facilities In a building *required* to be *accessible*— (a) *accessible* unisex *sanitary compartments* must be provided in *accessible* parts of the building in accordance with Table F2.4(a); and (b) *accessible* unisex showers must be provided in accordance with Table F2.4(b); and (c) at each bank of toilets where there is one or more toilets in addition to an *accessible* unisex *sanitary compartment* at that bank of toilets, a *sanitary compartment* suitable for a person with an ambulant disability in accordance with AS 1428.1 must be provided for use by males and females; and (d) an *accessible* unisex *sanitary compartment* must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and (e) the circulation spaces, fixtures and fittings of all *accessible* sanitary facilities provided in accordance with Table F2.4(a) and Table F2.4(b) must comply with the requirements of AS 1428.1; and	Further details of compliance will be required within the Construction Documentation

	(f) an *accessible* unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and (g) where two or more of each type of *accessible* unisex sanitary facility are provided, the number of left and right handed mirror image facilities must be provided as evenly as possible; and (h) where male sanitary facilities are provided at a separate location to female sanitary facilities, *accessible* unisex sanitary facilities are only *required* at one of those locations; and (i) an *accessible* unisex *sanitary compartment* or an *accessible* unisex shower need not be provided on a *storey* or level that is not *required* by D3.3(f) to be provided with a passenger lift or ramp complying with AS 1428.1.	
Cl. F2.5	Construction of sanitary compartments (a) Other than in an *early childhood centre*, *sanitary compartments* must have doors and partitions that separate adjacent compartments and extend— (i) from floor level to the ceiling in the case of a unisex facility; or (ii) to a height of not less than 1.5 m above the floor if primary *school* children are the principal users; or (iii) 1.8 m above the floor in all other cases. (b) The door to a fully enclosed *sanitary compartment*	Further details of compliance will be required within the Construction Documentation

	must— (i) open outwards; or (ii) slide; or (iii) be readily removable from the outside of the *sanitary compartment*, unless there is a clear space of at least 1.2 m, measured in accordance with Figure F2.5, between the closet pan within the *sanitary compartment* and the doorway. (c) In an *early childhood centre*, facilities for use by children must have each *sanitary compartment* screened by a partition which, except for the doorway, is opaque for a height of at least 900 mm but not more than 1200 mm above the floor level.	
Cl. F4.4	Artificial lighting (a) Artificial lighting must be provided— (i) in *required* stairways, passageways, and ramps; and (ii) if natural lighting of a standard equivalent to that *required* by F4.2 is not available, and the periods of occupation or use of the room or space will create undue hazard to occupants seeking egress in an emergency, in— (A) Class 4 parts of a building — to *sanitary compartments*, bathrooms, shower rooms, airlocks and laundries; and (B) Class 2 buildings — to *sanitary compartments*, bathrooms, shower rooms, airlocks, laundries, common stairways and other spaces used in	Further details of compliance will be required within the Construction Documentation

	common by the occupants of the building; and (C) Class 3, 5, 6, 7, 8 and 9 buildings — to all rooms that are frequently occupied, all spaces *required* to be *accessible*, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress. (b) The artificial lighting system must comply with AS/NZS 1680.0. (c) The system may provide a lesser level of illumination to the following spaces during times when the level of lighting would be inappropriate for the use: (i) A theatre, cinema or the like, when performances are in progress, with the exception of aisle lighting *required* by Part H1. (ii) A museum, gallery or the like, where sensitive displays require low lighting levels. (iii) A discotheque, nightclub or the like, where to create an ambience and character for the space, low lighting levels are used.	
Cl. F4.5	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— (a) natural ventilation complying with F4.6; or (b) a mechanical ventilation or air-conditioning system complying with AS 1668.2 and AS/NZS 3666.1.	Further details of compliance will be required within the Construction Documentation

Cl. F4.8	Restriction on position of water closets and urinals A room containing a closet pan or urinal must not open directly into— (a) a kitchen or pantry; or (b) a public dining room or restaurant; or (c) a dormitory in a Class 3 building; or (d) a room used for public assembly (which is not an *early childhood centre*, primary *school* or *open spectator stand*); or (e) a workplace normally occupied by more than one person.	Further details of compliance will be required within the Construction Documentation
Cl. F4.9	Airlocks If a room containing a closet pan or urinal is prohibited under F4.8 from opening directly to another room— (a) in a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part of a building— (i) access must be by an airlock, hallway or other room; or (ii) the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation; and (b) in a Class 5, 6, 7, 8 or 9 building (which is not an *early childhood centre*, primary *school* or *open spectator stand*)— (i) access must be by an airlock, hallway or other room with a *floor area* of not less than 1.1 m^2 and fitted with *self-closing* doors at all access doorways; or	Further details of compliance will be required within the Construction Documentation

	(ii) the room containing the closet pan or urinal must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	
Cl. F4.12	Kitchen local exhaust ventilation A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where— (a) any cooking apparatus has— (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or (b) the total maximum power input to more than one apparatus exceeds— (i) 0.5 kW electrical power; or (ii) 1.8 MJ gas, per m^2 of *floor area* of the room or enclosure.	Further details of compliance will be required within the Construction Documentation

4.7 SECTION G – SWIMMING POOLS

Cl. G1.1	Swimming pools (a) Application: (i) NSW: (A) Safety fencing: G1.1(b) to (d) apply to the technical construction requirements for barriers to restrict access to *swimming pools*, subject to the walls of above ground pools, including inflatable pools, not being considered to be effective barriers. Note: The Swimming Pools Act 1992 and the Swimming Pools Regulation 2008, applicable to *swimming pools* with a depth of water of 300 mm or more, regulate the circumstances in which a barrier is required and prevail in the case of any inconsistency. (B) Water recirculation system: G1.1 (e) applies to the requirements for water recirculation systems. (b) Safety fencing: Subject to (c) and (d), a *swimming pool* associated with a Class 2 or 3 building or Class 4 part of a building, with a depth of water more than 300 mm must have suitable barriers to restrict access by young children to the immediate pool surrounds in accordance with AS 1926 Parts 1 and 2. (c) A child-resistant door set must not be used in a barrier for an outdoor *swimming pool*. (d) A side-hung door forming part of the barrier for an	Further details of compliance will be required within the Construction Documentation

	indoor *swimming pool* must be hung so that, when opening, it only swings away from the pool area. (e) A water recirculation system in a *swimming pool* with a depth of water more than 300 mm must comply with AS 1926.3.	

4.9 SECTION J – BUILDING FABRIC

The Building is within Zone 5

Cl. J1.2	Thermal construction — general (a) Where *required*, insulation must comply with AS/NZS 4859.1 and be installed so that it— (i) abuts or overlaps adjoining insulation other than at supporting members such as studs, noggings, joists, furring channels and the like where the insulation must be against the member; and (ii) forms a continuous barrier with ceilings, walls, bulkheads, floors or the like that inherently contribute to the thermal barrier; and (iii) does not affect the safe or effective operation of a *service* or fitting. (b) Where *required*, *reflective insulation* must be installed with— (i) the necessary airspace to achieve the *required R-Value* between a reflective side of the *reflective insulation* and a building lining or cladding; and (ii) the *reflective insulation* closely fitted against any penetration, door or *window* opening; and (iii) the *reflective insulation* adequately supported by framing members; and (iv) each adjoining sheet of roll membrane being— (A) overlapped not less than 50 mm; or (B) taped together. (c) Where *required*, bulk insulation must be installed so	Further details of compliance will be required within the Construction Documentation

	that— (i) it maintains its position and thickness, other than where it is compressed between cladding and supporting members, water pipes, electrical cabling or the like; and (ii) in a ceiling, where there is no bulk insulation or *reflective insulation* in the wall beneath, it overlaps the wall by not less than 50 mm. (d) Roof, ceiling, wall and floor materials, and associated surfaces are deemed to have the thermal properties listed in Specification J1.2.	
Cl. J1.3	Roof and ceiling construction (a) A roof or ceiling that is part of the *envelope*, other than of a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building, must achieve the *Total R-Value* specified in Table J1.3a for the direction of heat flow. (b) For compliance with Table J1.3a, roof and ceiling construction is deemed to have the thermal properties listed in Specification J1.3. (c) Where, for operational or safety reasons associated with exhaust fans, flues or recessed down lights, the area of *required* ceiling insulation is reduced, the loss of insulation must be compensated for by increasing the *R-Value* of the insulation in the remainder of the ceiling in accordance with Table J1.3b.	Further details of compliance will be required within the Construction Documentation

	(d) A roof that— (i) is *required* to achieve a minimum *Total R-Value*; and (ii) has metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and (iii) does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens (see Specification J1.3 Figure 2(c) and (f)), must have a thermal break, consisting of a material with an *R-Value* of not less than R0.2, installed between the metal sheet roofing and its supporting metal purlins, metal rafters or metal battens.	
Cl. J1.5	Walls (a) Each part of an *external wall* that is part of the *envelope*, other than of a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building, must satisfy one of the options in Table J1.5a except for— (i) opaque non-glazed openings in *external walls* such as doors (including garage doors), vents, penetrations, shutters and the like; and (ii) *glazing*; and (iii) an earth retaining wall or earth-berm, in other than *climate zone* 8.	Further details of compliance will be required within the Construction Documentation
Cl. J1.6	Floors	Further details of compliance will be required within the

	(a) A floor that is part of the *envelope* of a building, other than a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building, including a floor above or below a *car park* or a plant room— (i) must achieve the *Total R-Value* specified in Table J1.6; and (ii) with an in-slab heating or cooling system, must be insulated around the vertical edge of its perimeter with insulation having an *R-Value* of not less than 1.0. (b) In *climate zones* 1 to 6, the minimum *Total R-Value required* in (a) may be reduced by R0.5 provided R0.75 is added to the *Total R-Value required* for the roof and ceiling construction. (c) A concrete slab-on-ground— (i) with an in-slab heating or cooling system; or (ii) located in *climate zone* 8, must have insulation installed around the vertical edge of its perimeter. (d) Insulation *required* by (c) must— (i) have an *R-Value* of not less than 1.0; and (ii) be water resistant; and (iii) be continuous from the adjacent finished ground level— (A) to a depth of not less than 300 mm; or (B) for the full depth of the vertical edge of the concrete slab-on-ground.	Construction Documentation

	(e) Floor construction is deemed to have the thermal properties listed in Specification J1.6.	
Cl. J2.4	Glazing (a) The *glazing* in each *storey*, including any *mezzanine*, of a building must be assessed separately in accordance with (b) and (c) for— (i) *glazing* in the external *fabric* facing each orientation; and (ii) *glazing* with a P/H value of not less than 2 in the internal *fabric* using the south orientation sector energy constants in Table J2.4b and shading multipliers in Table J2.4c and Table J2.4d. (b) The aggregate *air-conditioning* energy value attributable to the *glazing* must not exceed the allowance obtained by multiplying the facade area that is exposed to the *conditioned space* for the orientation by the energy index in Table J2.4a.	Further details of compliance will be required within the Construction Documentation
Cl. J2.5	Shading Where shading is *required* to comply with J2.4, it must— (a) be provided by an external permanent projection, such as a verandah, balcony, fixed canopy, eaves or shading hood, which— (i) extends horizontally on both sides of the *glazing* for the same projection distance P in Figure J2.4; or (ii) provides the equivalent shading to (i) with a reveal	Further details of compliance will be required within the Construction Documentation

	or the like; or (b) be provided by an external shading device, such as a shutter, blind, vertical or horizontal building screen with blades, battens or slats, which— (i) is capable of restricting at least 80% of summer solar radiation; and (ii) if adjustable, is operated automatically in response to the level of solar radiation.	
Cl. J3.4	Windows and doors (a) A seal to restrict air infiltration must be fitted to each edge of a door, openable *window* or the like forming part of— (i) the *envelope* of a *conditioned space*; or (ii) the external fabric of a *habitable room* or public area in *climate zones* 4, 5, 6, 7 and 8. (b) The requirements of (a) do not apply to— (i) a *window* complying with AS 2047; or (ii) a fire door or smoke door; or (iii) a roller shutter door, roller shutter grille or other security door or device installed only for out-of-hours security. (c) A seal *required* by (a)— (i) for the bottom edge of an external swing door, must be a draft protection device; and (ii) for the other edges of an external door or the edges of an openable *window* or other such opening, may be a foam or rubber compression strip, fibrous seal	Further details of compliance will be required within the Construction Documentation

	or the like. (d) An entrance to a building, if leading to a *conditioned space* must have an airlock, *self-closing* door, revolving door or the like, other than— (i) where the *conditioned space* has a *floor area* of not more than 50 m^2; or (ii) where a café, restaurant, open front shop or the like has— (A) a 3 m deep un-conditioned zone between the main entrance, including an open front, and the *conditioned space*; and (B) at all other entrances to the café, restaurant, open front shop or the like, *self-closing* doors.	
Cl. J3.5	Exhaust fans A miscellaneous exhaust fan, such as a bathroom or domestic kitchen exhaust fan, must be fitted with a sealing device such as a self-closing damper or the like when serving— (a) a *conditioned space*; or (b) a *habitable room* in *climate zones* 4, 5, 6, 7 and 8.	Further details of compliance will be required within the Construction Documentation
Cl. J3.6	Construction of roofs, walls and floors (a) Roofs, ceilings, walls, floors and any opening such as a *window* frame, door frame, *roof light* frame or the like must be constructed to minimise air leakage in accordance with (b) when forming part of— (i) the *envelope*; or (ii) the external *fabric* of a *habitable room* or a public	Further details of compliance will be required within the Construction Documentation

	area in *climate zones* 4, 5, 6, 7 and 8. (b) Construction *required* by (a) must be— (i) enclosed by internal lining systems that are close fitting at ceiling, wall and floor junctions; or (ii) sealed by caulking, skirting, architraves, cornices or the like. (c) The requirements of (a) do not apply to openings, grilles or the like *required* for smoke hazard management.	
Cl. J5.2	Air-conditioning and ventilation systems (a) An *air-conditioning* unit or system must— (i) be capable of being deactivated when the *sole-occupancy unit*, building or part of the building served is not occupied; and (ii) where the *air-conditioning* unit or system has motorised outside air and return dampers, close the dampers when the *air-conditioning* unit or system is deactivated; and (iii) when serving a *sole-occupancy unit* of a Class 3 building, not operate when any external door including a door opening to a balcony, patio, courtyard or the like is open for more than 1 minute; and (iv) have any supply and return ductwork sealed and insulated in accordance with Specification J5.2; and (v) when serving more than one *air-conditioning* zone or area with different heating and cooling needs—	Further details of compliance will be required within the Construction Documentation

	(A) thermostatically control the temperature of each zone or area; and (B) not control the temperature by mixing actively heated air and actively cooled air; and (C) limit reheating to not more than— (aa) for a fixed supply air rate, a 7.5 K rise in temperature; and (bb) for a variable supply air rate, a 7.5 K rise in temperature at the nominal supply air rate but increased or decreased at the same rate that the supply air rate is respectively decreased or increased; and (vi) other than where a packaged *air-conditioning* unit is used, have a variable speed fan when its supply air quantity is varied; and (vii) where the *air-conditioning* system provides the *required* mechanical ventilation, in other than process related applications where humidity control is needed, have an *outdoor air economy cycle*— (A) in *climate zone* 2 and 3, when the *air-conditioning* unit capacity is over 50 kWr; and (B) in *climate zones* 4, 5, 6, 7 and 8, when the *air-conditioning* unit capacity is over 35 kWr; and (ix) be designed so that the total *fan power* of the *air-conditioning* supply air and return air fans in the building, divided by the *floor area* served by those fans is, in accordance with Table J5.2, except the following need not comply with this requirement:	

	(A) fans in unducted *air-conditioning* units with a supply air capacity of less than 1000 L/s, (B) The power for a fan in an energy reclaiming system that preconditions outdoor air. (C) The power for process related components such as high efficiency particulate air filters. (b) A system that provides mechanical ventilation to other than a *sole-occupancy unit* in a Class 2 building or a Class 4 part of a building, either as part of an *air-conditioning* system or as a separate ventilation system, must— (i) be capable of being deactivated when the building or part of the building served by that system is not occupied; and (ii) when serving a *conditioned space*— (A) not provide mechanical ventilation in excess of the minimum air quantity *required* by Part F4 for a mechanical ventilation system, where relevant, by more than 20% other than where there is— (aa) additional unconditioned outside air supplied to provide free cooling or to balance process exhaust such as from a *health-care building* or laboratory; or (bb) additional exhaust ventilation needed to balance the *required* mechanical ventilation; or (cc) an energy reclaiming system that preconditions all the outside air; and	

	(B) in other than *climate zone* 2, where the number of square metres per person is 1 or less as specified in D1.13 and the air flow rate is more than 1000 L/s, have— (aa) an energy reclaiming system that preconditions outside air; or (bb) the ability to automatically modulate the mechanical ventilation *required* by Part F4 in proportion to the number of occupants; and (iii) when the mechanical ventilation is provided by means other than an *air-conditioning* system and the air flow rate is more than 1000 L/s— (A) have a *fan power* to air flow rate ratio of 0.5 W/(L/s) without filters or 0.75 W/(L/s) with filters for a general mechanical ventilation system; and (B) for *car park* exhaust, when serving a *car park* with more than 40 vehicle spaces, be controlled by an atmospheric contaminant monitoring system in accordance with AS 1668.2. (c) The requirements of (a) and (b) must not inhibit— (i) the smoke hazard management operation of *air-conditioning* and mechanical ventilation systems; and (ii) essential ventilation such as for a garbage room, lift motor room, gas meter enclosure or gas regulator enclosure or the like. (d) The provisions of (b)(iii) do not apply to the following:	

	(i) The power for an energy reclaiming system that preconditions outside air. (ii) The power for process related components such as high efficiency particulate air filters. (iii) The power for a miscellaneous exhaust system complying with J5.5. (iv) The power for a mechanical ventilation system for a Class 8 *electricity network substation*.	
Cl. J5.3	Time switch (a) A time switch in accordance with Specification J6 must be provided to control each of the following: (i) An *air-conditioning* system of more than 10 kWr. (ii) A ventilation system with an air flow rate of more than 1000 L/s. (iii) A heating system of more than 10 $kW_{heating}$. (b) The requirements of (a) do not apply to— (i) an *air-conditioning* system or ventilation system that serves only one *sole-occupancy unit* of— (A) a Class 2 or 3 building; or (B) a Class 4 part of a building; or (C) a Class 9c *aged care building*; or (ii) a building where *air-conditioning* or ventilation is needed for 24 hour occupancy such as a manufacturing process or emergency services; or (iii) a Class 8 *electricity network substation*.	Further details of compliance will be required within the Construction Documentation
Cl. J5.5	Miscellaneous exhaust systems	Further details of compliance will be required within the Construction Documentation

	(a) A miscellaneous exhaust system with an air flow rate of more than 1000 L/s, that is associated with equipment having a variable demand such as a stove in a commercial kitchen or a chemical bath in a factory, must— (i) have the means for the operator to— (A) reduce the energy used, such as by a variable speed fan, and (B) stop the motor when the system is not needed; and (ii) be designed to minimise the exhausting of conditioned air. (b) The requirements of (a) do not apply— (i) within a *sole-occupancy unit* of a Class 2 or 3 building, Class 4 part of a building or Class 9c *aged care building*; or (ii) where additional exhaust ventilation is needed to balance the *required* outside air for ventilation; or (iii) where air flow must be maintained for safe operation; or (iv) to a Class 8 *electricity network substation*.	
Cl. J6.2	Artificial lighting (a) In a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building— (i) the *lamp power density* or *illumination power density* of artificial lighting must not exceed— (A) within the building, 5 W/m^2; and	Further details of compliance will be required within the Construction Documentation

	(B) on a verandah or balcony of the building 4 W/m^2; and (ii) the *illumination power density* in (i) may be increased by dividing it by the *illumination power density* adjustment factor for a control device in Table J6.2b; and (iii) when designing the *lamp power density* or *illumination power density*, the power of the proposed installation must be used rather than nominal allowances for exposed batten holders or luminaires; and (iv) halogen lamps must be separately switched from fluorescent lamps. (b) In a building other than a *sole-occupancy unit* of a Class 2 building or a Class 4 part of a building— (i) for artificial lighting, the aggregate design illumination power load must not exceed the sum of the allowances obtained by multiplying the area of each space by the maximum *illumination power density* in Table J6.2a; and (ii) the aggregate design illumination power load in (i) is the sum of the design illumination power loads in each of the spaces served; and (iii) in determining the design illumination power load for (ii) the following must be used: (A) Where there are multiple lighting systems serving the same space— (aa) the total illumination power load of all	

	systems; or (bb) for a control system that permits only one system to operate at a time, the design illumination power load is— (AA) based on the highest illumination power load; or (BB) determined by the formula— [H x T/2 + P x (100 - T/2)] / 100 Where: H = the highest illumination power load; and T = the time for which the maximum illumination power load will occur, expressed as a percentage; and P= the predominant illumination power load. (B) Where there is adjustable position lighting such as trapeze lighting or track lighting other than trunking systems that accept fluorescent lamps— (aa) the rating of the circuit breaker protecting the track; or (bb) of extra low voltage, 80% of the power rating of the transformer; or (cc) of mains voltage, 100 W per metre of track. (c) The requirements of (a) and (b) do not apply to the following: (i) Emergency lighting in accordance with Part E4. (ii) Signage and display lighting within cabinets and display cases that are fixed in place.	

	(iii) Lighting for accommodation within the residential part of a *detention centre*. (iv) A heater where the heater also emits light, such as in bathrooms. (v) Lighting of a specialist process nature such as in an operating theatre, fume cupboard or clean workstation. (vi) Lighting of performances such as theatrical or sporting. (vii) Lighting for the permanent display and preservation of works of art or objects in a museum or gallery other than for retail sale, purchase or auction.	
Cl. J6.3	Interior artificial lighting and power control (a) Artificial lighting of a room or space must be individually operated by a switch or other control device. (c) An artificial lighting switch or other control device in (a) must— (i) if an artificial lighting switch, be located in a visible position— (A) in the room or space being switched; or (B) in an adjacent room or space from where the lighting being switched is visible; and (ii) for other than a single functional space such as an auditorium, theatre, *swimming pool*, sporting stadium or warehouse—	Further details of compliance will be required within the Construction Documentation

	(A) not operate lighting for an area of more than 250 m^2 if in a Class 5 building or a Class 8 laboratory; or (B) not operate lighting for an area of more than— (aa) 250 m^2 for a space of not more than 2000 m^2; or (bb) 1000 m^2 for a space of more than 2000 m^2, if in a Class 3, 6, 7, 8 (other than a laboratory) or 9 building. (d) 95% of the light fittings in a building or *storey* of a building, other than a Class 2 or 3 building or a Class 4 part, of more than 250 m^2 must be controlled by— (i) a time switch in accordance with Specification J6; or (ii) an occupant sensing device such as— (A) a security key card reader that registers a person entering and leaving the building; or (B) a motion detector in accordance with Specification J6. (f) The requirements of (a), (b), (c), (d) and (e) do not apply to the following: (i) Emergency lighting in accordance with Part E4. (ii) Where artificial lighting is needed for 24-hour occupancy such as for a manufacturing process, parts of a hospital, an airport control tower or within a *detention centre*.	
Cl. J6.4	Interior decorative and display lighting (a) Interior decorative and display lighting, such as for a	Further details of compliance will be required within the Construction Documentation

	foyer mural or art display, must be controlled— (i) separately from other artificial lighting; and (ii) by a manual switch for each area other than when the operating times of the displays are the same in a number of areas such as in a museum, art gallery or the like, in which case they may be combined; and (iii) by a time switch in accordance with Specification J6 where the display lighting exceeds 1 kW. (b) Window display lighting must be controlled separately from other display lighting.	
Cl. J6.5	Artificial lighting around the perimeter of a building (a) Artificial lighting around the perimeter of a building, must— (i) be controlled by— (A) a daylight sensor; or (B) a time switch that is capable of switching on and off electric power to the system at variable pre-programmed times and on variable pre-programmed days; and (ii) when the total perimeter lighting load exceeds 100 W— (A) have an average *light source efficacy* of not less than 60 Lumens/W; or (B) be controlled by a motion detector in accordance with Specification J6; and (iii) when used for decorative purposes, such as facade lighting or signage lighting, have a separate time	Further details of compliance will be required within the Construction Documentation

	switch in accordance with Specification J6. (b) The requirements of (a)(ii) do not apply to the following: (i) Emergency lighting in accordance with Part E4. (ii) Lighting around a *detention centre*.	
Cl. J6.6	Boiling water and chilled water storage units Power supply to a boiling water or chilled water storage unit must be controlled by a time switch in accordance with Specification J6.	Further details of compliance will be required within the Construction Documentation
Cl. J7.2	Hot water supply A hot water supply system for food preparation and sanitary purposes, other than a solar hot water supply system in *climate zones* 1, 2 and 3, must be designed and installed in accordance with Section 8 of AS/NZS 3500.4.	Further details of compliance will be required within the Construction Documentation
	J7.3 Swimming pool heating and pumping (a) Heating for a *swimming pool* must be by— (i) a solar heater not boosted by electric resistance heating; or (ii) a heater using reclaimed energy; or (iii) a gas heater; or (iv) a heat pump; or (v) a combination of 2 or more of (i), (ii), (iii) and (iv). (b) Where some or all of the heating *required* by (a) is by a gas heater or a heat pump, the *swimming pool* must have— (i) a cover other than when located in a *conditioned*	Further details of compliance will be required within the Construction Documentation

	space; and (ii) a time switch in accordance with Specification J6 to control the operation of the heater. (c) A time switch must be provided in accordance with Specification J6 to control the operation of a circulation pump for a *swimming pool*. (d) For the purpose of J7.3, a *swimming pool* does not include a spa pool.	
Cl. J8.2	Access for maintenance Access for maintenance must be provided to— (a) adjustable or motorised shading devices; and (b) time switches and motion detectors; and (c) room temperature thermostats; and (d) plant thermostats such as on boilers or refrigeration units; and (e) motorised air dampers and control valves; and (f) reflectors, lenses and diffusers of light fittings; and (g) heat transfer equipment; and (h) plant that receives a concession under JV3(b) for the use of energy obtained from— (i) an on-site *renewable energy* source; or (ii) another process as reclaimed energy.	Further details of compliance will be required within the Construction Documentation
	J8.3 Facilities for energy monitoring (a) A building or *sole-occupancy unit* with a *floor area* of	Further details of compliance will be required within the Construction Documentation

	more than 500 m^2 must have the facility to record the consumption of gas and electricity. (b) A building with a *floor area* of more than 2,500 m^2 must have the facility to record individually the energy consumption of— (i) *air-conditioning* plant including, where appropriate, heating plant, cooling plant and air handling fans; and (ii) artificial lighting; and (iii) appliance power; and (iv) central hot water supply; and (v) internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and (vi) other ancillary plant. (c) The provisions of (b) do not apply to a Class 2 building with a *floor area* of more than 2,500 m^2 where the total area of the common areas is less than 500 m^2.	

4.8 SECTION H – NSW PLACE OF PUBLIC ENTERTAINMENT REQUIREMENTS

Cl. H1.4	Seating area In a seating area— (a) the gradient of the floor surface must not be steeper than 1 in 8, or the floor must be stepped so that— (i) a line joining the nosing's of consecutive steps does not exceed an angle of 30° to the horizontal; and (ii) the height of each step in the stepped floor is not more than 600 mm; and (iii) the height of any opening in such a step is not more than 125 mm; and (b) if an aisle divides the stepped floor and the difference in level between any 2 consecutive steps— (i) exceeds 230 mm but not 400 mm — an intermediate step must be provided in the aisle; and (ii) exceeds 400 mm — 2 equally spaced intermediate steps must be provided in the aisle; and (iii) the going of intermediate steps must be not less than 270 mm and such as to provide as nearly as practicable equal treads throughout the length of the aisle; and (c) the clearance between rows of fixed seats used for viewing performing arts, sport or recreational activities must be not less than— (i) 300 mm if the distance to an aisle is not more than	Further details of compliance will be required within the Construction Documentation

	3.5 m; or (ii) 500 mm if the distance to an aisle is more than 3.5 m.	

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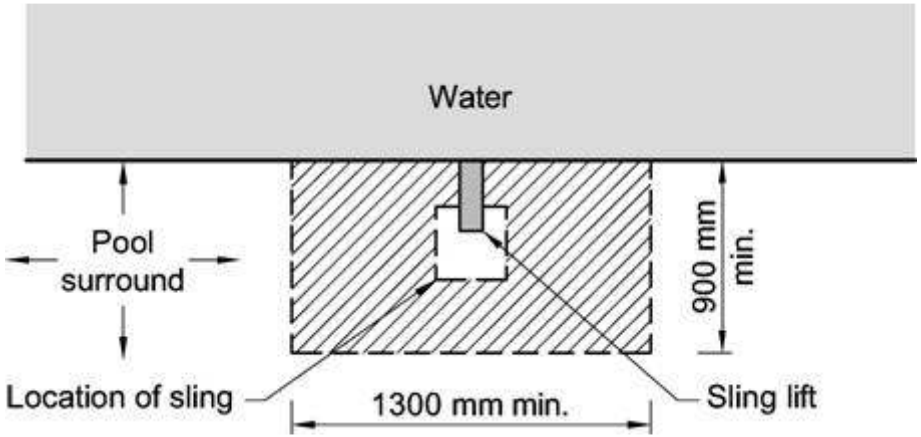
Table D3.9 WHEELCHAIR SEATING SPACES IN CLASS 9b ASSEMBLY BUILDINGS **Number of fixed seats in a room or space**	**Number of wheelchair seating spaces**	**Grouping and location**
Up to 150	3 spaces	1 single space; and 1 group of 2 spaces.
151 to 800	3 spaces; plus 1 additional space for each additional 50 seats or part thereof in excess of 150 seats	Not less than 1 single space; and not less than 1 group of 2 spaces; and not more than 5 spaces in any other group.
801 to 10 000	16 spaces; plus 1 additional space for each additional 100 seats or part thereof in excess of 800 seats	Not less than 2 single spaces; and not less than 2 groups of 2 spaces; and not more than 5 spaces in any other group; and the location of spaces is to be representative of the range of seating provided.
More than 10 000	108 spaces; plus 1 additional space for each additional 200 seats or part thereof in excess of 10 000 seats	Not less than 5 single spaces; and not less than 5 groups of 2 spaces; and not more than 10 spaces in any other group; and the location of spaces is to be representative of the range of seating provided.

Figure 5

CLEAR SWIMMING POOL SURROUND SPACE FOR SLING LIFT

Clear pool surround space for sling lift

Plan view



Clear space for sling lift in the transfer position

Sectional elevation

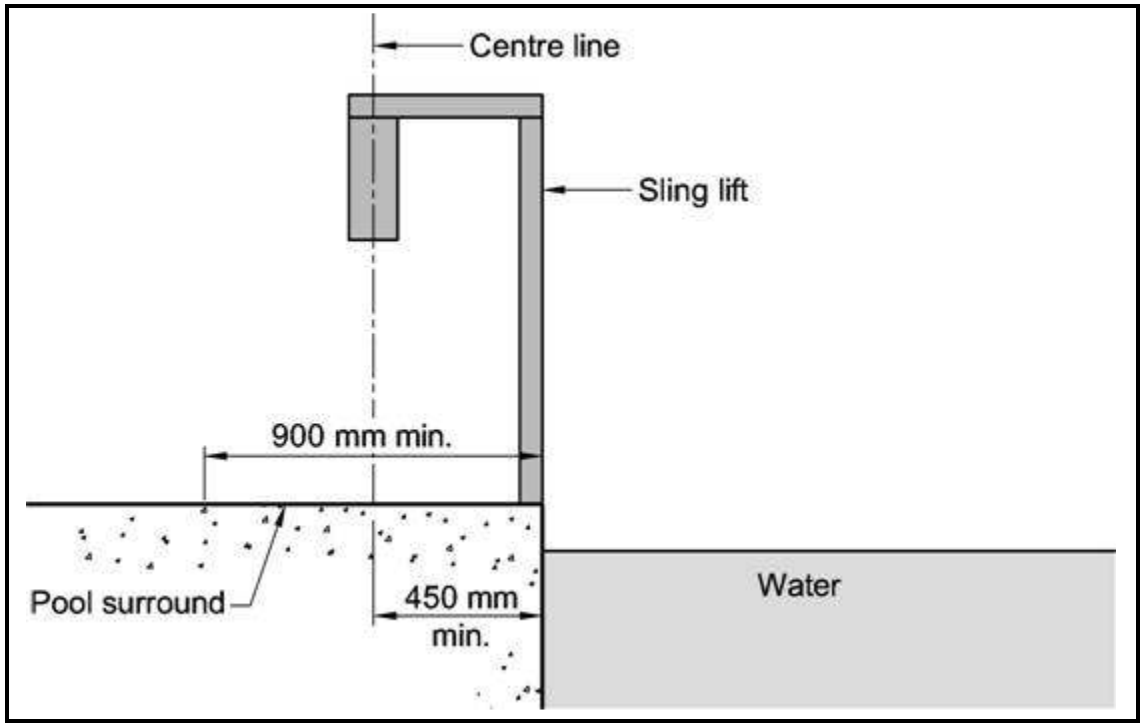

Centre line
Sling lift
900 mm min.
Pool surround
450 mm
min.
Water

Table F2.3 SANITARY FACILITIES IN CLASS 3, 5, 6, 7, 8 AND 9 BUILDINGS User Group	Closet Pans		Urinals		Washbasins	
	Design Occupancy	Number	Design Occupancy	Number	Design Occupancy	Number
Class 3, 5, 6 and 9 other than *schools*						
Male employees	1 — 20	1	1 — 10	0	1 — 30	1
	> 20	Add 1 per 20	11 — 25	1	> 30	Add 1 per 30
			26—50	2		
			>50	Add 1 per 50		
Female employees	1 — 15	1			1 — 30	1
	> 15	Add 1 per 15			> 30	Add 1 per 30
Class 7 and 8						
Male employees	1 — 20	1	1 — 10	0	1 — 20	1
	> 20	Add 1 per 20	11 — 25	1	> 20	Add 1 per 20
			26 —50	2		
			>50	Add 1 per 50		
Female employees	1 — 15	1			1 — 20	1
	> 15	Add 1 per 15			> 20	Add 1 per 20
Note: Sanitary facilities need not be provided for a Class 8 *electricity network substation*						
Class 6 — department stores, shopping centres						
Male patrons	1 — 1200	1	1 — 600	1	1 — 600	1
	> 1200	Add 1 per 1200	>600	Add 1 per 1200	>600	Add 1 per 1200
Female patrons	1 — 300	1			1 — 600	1
	301 — 600	2			601 — 1200	2
	>600	Add 1 per 1200			>1200	Add 1 per 1200

Note:	Sanitary facilities need not be provided for patrons if the building accommodates not more than 600 people.					
Class 6 — restaurants, cafes, bars						
Male patrons	1 — 100	1	1 — 50	1	1 — 50	1
	101 — 300	2	51 — 100	2	51 — 200	2
	>300	Add 1 per 200	101 — 150	3	>200	Add 1 per 200
			151 — 200	4		
			201 — 250	5		
			>250	Add 1 per 100		
Female patrons	1 — 25	1			1 — 50	1
	26 — 50	2			51 — 150	2
	51 — 100	3			>150	Add 1 per 200
	101 — 150	4				
	151 — 200	5				
	201 — 250	6				
	>250	Add 1 per 100				
Note:	Sanitary facilities need not be provided for patrons if the building accommodates not more than 20 people.					
Class 9a — *health-care buildings*						
Male patients	1 — 16	2			1 — 8	1
	>16	Add 1 per 8			> 8	Add 1 per 8
Female patients	1 — 16	2			1 — 8	1
	>16	Add 1 per 8			> 8	Add 1 per 8
Class 9b — *schools*						
Male employees	1 — 20	1	1 — 10	0	1 — 30	1
	> 20	Add 1 per 20	11 — 20	1	> 30	Add 1 per 30
			21 — 45	2		
			>45	Add 1 per 30		
Female employees	1 — 5	1			1 — 30	1
	>5	Add 1 per 15			> 30	Add 1 per 30
Male students	1 — 25	1	1 — 50	1	1 — 10	1

	26 — 75	2	51 — 100	2	11 — 50	2
	76 — 150	3	>100	Add 1 per 100	51 — 100	3
	151 — 200	4			> 100	Add 1 per 75
	> 200	Add 1 per 100				
Female students	1 —10	1			1 — 10	1
	11 — 25	2			11 — 50	2
	26 — 100	Add 1 per 25			51 — 100	3
	> 100	Add 1 per 50			> 100	Add 1 per 75
Class 9b — *early childhood centres*						
Children	1 — 30	2			1 — 30	2
	> 30	Add 1 per 15			> 30	Add 1 per 15
Note: Facilities for use by children must be— (a) junior pans; and (b) washbasins with a rim height not exceeding 600mm; and (c) accessible from both indoor and outdoor play areas.						
Class 9b — theatres and cinemas with multiple auditoria, art galleries or the like						
Male participants	1 — 20	1	1 — 10	1	1 — 10	1
	> 20	Add 1 per 20	> 10	Add 1 per 10	> 10	Add 1 per 10
Female participants	1 — 10	1			1 — 10	1
	> 10	Add 1 per 10			> 10	Add 1 per 10
Male spectators or patrons	1 — 250	1	1 — 100	1	1 — 150	1
	251 — 500	2	>100	Add 1 per 100	>150	Add 1 per 150
	>500	Add 1 per 500				
Female spectators or patrons	1 — 10	1			1 — 80	1
	11 — 50	2			81 — 250	2
	>51	Add 1 per 60			251 — 430	3
					> 430	Add 1 per 200
Class 9b —single auditorium theatres and cinemas						
Male patrons	1 — 50	0	1 — 50	0	1 — 50	0

	51 — 250	1	51 — 100	1	51 — 150	1
	251 — 500	2	>100	Add 1 per 100	>150	Add 1 per 150
	>500	Add 1 per 500				
Female patrons	1 — 50	0			1 — 50	0
	51 — 110	3			51 — 150	1
	111 — 170	4			>150	Add 1 per 150
	171 — 230	5				
	231 — 250	6				
	>250	Add 1 per 80				
Class 9b — sports venues or the like						
Male participants	1 — 20	1	1 — 10	1	1 — 10	1
	> 20	Add 1 per 20	> 10	Add 1 per 10	> 10	Add 1 per 10
Female participants	1 — 10	1			1 — 10	1
	> 10	Add 1 per 10			> 10	Add 1 per 10
Male spectators or patrons	1 — 250	1	1 — 100	1	1 — 150	1
	251 — 500	2	> 100	Add 1 per 100	> 150	Add 1 per 150
	> 500	Add 1 per 500				
Female spectators or patrons	1 — 15	1			1 — 60	1
	16 — 60	2			61 — 200	2
	61 — 120	3			201 — 350	3
	> 120	Add 1 per 70			> 350	Add 1 per 150
Class 9b — churches, chapels or the like						
Male patrons	1 — 300	1	1 — 200	1	1 — 250	1
	>300	Add 1 per 500	> 200	Add 1 per 200	> 250	Add 1 per 250
Female patrons	1 — 150	1			1 — 250	1
	> 150	Add 1 per 150			> 250	Add 1 per 250`
Class 9b — public halls, function rooms or the like						
Male patrons	1 — 100	1	1 — 50	1	1 — 50	1
	>100	Add 1 per 200	51 — 100	2	51 — 200	2

			101 — 150	3	>200	Add 1 per 200
			151 — 200	4		
			201 — 250	5		
			>250	Add 1 per 100		
Female patrons	1 — 25	1			1 — 50	1
	26 — 50	2			51 — 150	2
	51 — 100	3			>150	Add 1 per 200
	101 — 150	4				
	151 — 200	5				
	201 — 250	6				
	>250	Add 1 per 100				

Note: Sanitary facilities need not be provided for patrons if the building accommodates not more than 20 people.

Notes:

1. Number — means the number of facilities *required*.
2. > — means greater than
3. Employees — a reference to employees includes owners and managers using the building.
4. A reference to "add 1 per 100 or 150, 250, 500" etc. includes any part of that number.

Table F2.4(a) ACCESSIBLE UNISEX SANITARY COMPARTMENTS **Class of building**	**Minimum accessible unisex sanitary compartments to be provided**
Class 1b	(a) Not less than 1; and (b) where private *accessible* unisex *sanitary compartments* are provided for every *accessible* bedroom, common *accessible* unisex *sanitary compartments* need not be provided.
Class 2	Where *sanitary compartments* are provided in common areas, not less than 1.
Class 3 and Class 9c *aged care building*	(a) In every *accessiblesole-occupancy unit* provided with *sanitary compartments* within the *accessiblesole-occupancy unit*, not less than 1; and (b) at each bank of *sanitary compartments* containing male and female *sanitary compartments* provided in common areas, not less than 1.
Class 5, 6, 7, 8 and 9 — except for within a *ward area* of a Class 9a *health-care building*	Where F2.3 requires closet pans— (a) 1 on every *storey* containing *sanitary compartments*; and (b) where a *storey* has more than 1 bank of *sanitary compartments* containing male and female *sanitary compartments*, at not less than 50% of those banks.
Class 10a except— (a) a Class 10a appurtenant to another Class of building; and (b) a *sanitary compartments* dedicated to a single caravan/camping site	At each bank of *sanitary compartments* containing male and female *sanitary compartments*, not less than 1.

Table F2.4(b) ACCESSIBLE UNISEX SHOWERS **Class of building**	**Minimum accessible unisex showers to be provided**
Class 1b	(a) Not less than 1; and (b) where private *accessible* unisex showers are provided for every *accessible* bedroom, common *accessible* unisex showers need not be provided.
Class 2	Where showers are provided in common areas, not less than 1
Class 3 and Class 9c *aged care building*	(a) In every *accessiblesole-occupancy unit* provided with showers within the *accessiblesole-occupancy unit*, not less than 1; and (b) 1 for every 10 showers or part thereof provided in common areas.
Class 5, 6, 7, 8 and 9 — except for within a *ward area* of a Class 9a *health-care building*	Where F2.3 requires 1 or more showers, not less than 1 for every 10 showers or part thereof.
Class 10a except— (a) a Class 10a appurtenant to another Class of building; and (b) a *sanitary compartment* dedicated to a single caravan/camping site	Where showers are provided, 1 for every 10 showers or part thereof.

Table J1.3a ROOFS AND CEILINGS - MINIMUM TOTAL R-VALUE FOR EACH CLIMATE ZONE ***Climate zone***	**1, 2, 3, 4 and 5**	**6**	**7**	**8**
Direction of heat flow	**Downwards**		**Upwards**	
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorpance value of not more than 0.4	3.2	3.2	3.7	4.8
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorptance value of more than 0.4 but not more than 0.6	3.7	3.2	3.7	4.8
Minimum *Total R-Value* for a roof or ceiling with a roof upper surface solar absorptance value of more than 0.6	4.2	3.2	3.7	4.8

Table J1.3b ADJUSTMENT OF MINIMUM R-VALUE FOR LOSS OF CEILING INSULATION Percentage of ceiling area uninsulated	Minimum *R-Value* of ceiling insulation *required* to satisfy J1.3(a)										
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
	Adjusted minimum *R-Value* of ceiling insulation *required* to compensate for loss of ceiling insulation area										
0.5% to less than 1.0%	1.0	1.6	2.2	2.8	3.4	4.0	4.7	5.4	6.2	6.9	
1.0% to less than 1.5%	1.1	1.7	2.3	2.9	3.6	4.4	5.2	6.1	7.0		
1.5% to less than 2.0%	1.1	1.7	2.4	3.1	3.9	4.8	5.8	6.8			
2.0% to less than 2.5%	1.1	1.8	2.5	3.3	4.2	5.3	6.5				
2.5% to less than 3.0%	1.2	1.9	2.6	3.6	4.6	5.9					
3.0% to less than 4.0%	1.2	2.0	3.0	4.2	5.7						
4.0% to less than 5.0%	1.3	2.2	3.4	5.0			Not Permitted				
5.0% or more											

Note:

Where the minimum *R-Value* of ceiling insulation *required* to satisfy J1.3(a) is between the values stated, interpolation may be used to determine the adjusted minimum *R-Value*.

Table J1.5a OPTIONS FOR EACH PART OF AN EXTERNAL WALL THAT IS PART OF AN ENVELOPE ***Climate zone***	**Options**
1, 2 and 3	(a) (i) Achieve a minimum *Total R-Value* of 3.3. (ii) The minimum *Total R-Value* in (i) is reduced— (A) for a wall with a surface density of not less than 220 kg/m^2, by 0.5; and (B) for a wall that is— (aa) facing the south orientation as described in Figure J2.3, by 0.5; or (bb) shaded with a projection shade angle in accordance with Figure J1.5 of— (AA) 15 degrees to not more than 45 degrees, by 0.5; or (BB) more than 45 degrees, by 1.0; and (C) if the outer surface solar absorptance value is not more than 0.6, by 0.5. (b) Where the only space for insulation is provided by a furring channel, top hat section, batten or the like— (i) achieve a minimum *Total R-Value* of 1.4; and (ii) satisfy *glazing* energy index Option B of Table J2.4a.
4, 5 and 6	(a) (i) Achieve a minimum *Total R-Value* of 2.8. (ii) The minimum *Total R-Value* in (i) is reduced— (A) for a wall with a surface density of not less than 220 kg/m^2, by 0.5; and (B) for a wall that is— (aa) facing the south orientation as described in Figure J2.3, by 0.5; or (bb) shaded with a projection shade angle in accordance with Figure J1.5 of— (AA) 30 degrees to not more than 60 degrees, by 0.5; or (BB) more than 60 degrees, by 1.0. (b) Where the only space for insulation is provided by a furring channel, top hat section, batten or the like— (i) achieve a minimum *Total R-Value* of 1.4; and (ii) satisfy *glazing* energy index Option B of Table J2.4a.
7	(a) Achieve a minimum *Total R-Value* of 2.8.

	(b)	Where the only space for insulation is provided by a furring channel, top hat section, batten or the like—
		(i) achieve a minimum *Total R-Value* of 1.4; and
		(ii) satisfy *glazing* energy index Option B of Table J2.4a.
8	(a)	Achieve a minimum *Total R-Value* of 3.8.
	(b)	Where the wall is an earth retaining wall or earth-berm, achieve a minimum *Total R-Value* of 2.0.

Figure J1.5

MEASUREMENT OF PROJECTION FOR WALL SHADING

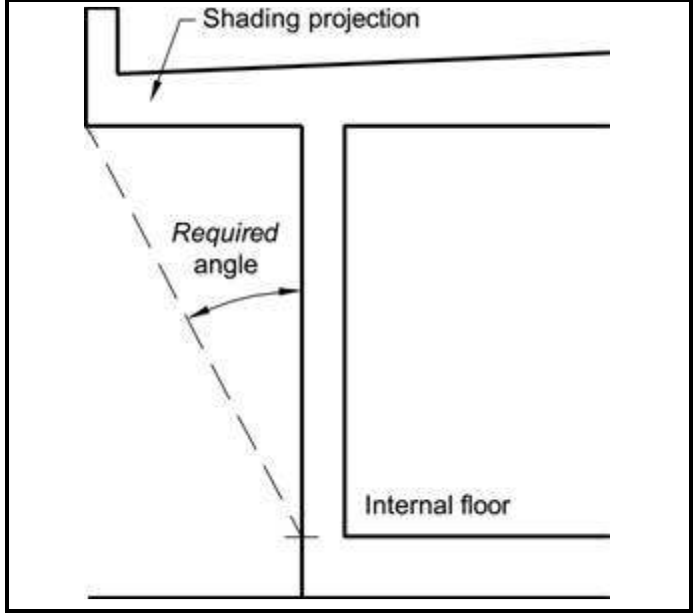


Table J1.5b AN ENVELOPE WALL OTHER THAN AN EXTERNAL WALL – MINIMUM TOTAL R-VALUE Location									
			Climate zone						
			1	2	3	4	5	6	7	8
(a)	With the non-*conditioned space*—									
	(i)	enclosed, with mechanical ventilation of not more than 1.5 air changes per hour of outside air; and	1.0	1.0	Nil	Nil	1.0	1.0	1.5	2.5
	(ii)	*glazing* not more than that *required* by Part J2.								
(b)	For other than (a)		2.3	2.3	2.3	1.8	1.8	1.8	2.8	3.8

Table J1.6 FLOORS — MINIMUM TOTAL R-VALUE Location										
			Climate zone							
			1	2	3	4	5	6	7	8
(a)	A slab on ground:									
	(i)	Without an in-slab heating or cooling system	Nil	Nil	Nil	Nil	Nil	Nil	1.0	2.0
	(ii)	With an in-slab heating or cooling system	1.25	1.25	1.25	1.25	1.25	1.25	1.25	2.25
(b)	A suspended floor without an in-slab heating or cooling system where the non-*conditioned space* is—		1.0	1.0	Nil	Nil	1.0	1.0	1.5	2.5
	(i)	enclosed; and								
	(ii)	where mechanically ventilated by not more than 1.5 air changes per hour.								
(c)	A suspended floor with an in-slab heating or cooling system where the non-*conditioned space* is—		1.25	1.25	1.25	1.25	1.25	1.25	1.75	2.75
	(i)	enclosed; and								
	(ii)	where mechanically ventilated by not more than 1.5 air changes per hour								

(d)	For other than (a), (b) or (c)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5
Direction of heat flow		Upwards	Downwards and upwards		Downwards				

Note:

A sub-floor space with not more than 150% of the *required* sub-floor ventilation is considered enclosed.