



Preliminary NCC BCA Compliance Report

Project: New construction of surf park facility
Site Address: P5 Carpark
Hill Road
Sydney Olympic Park
NSW 2127
Client: Wave Park Group
Our Ref: P171080
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QUALITY MANAGEMENT

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REFERENCED DOCUMENTS

This report has been prepared based on the review of the following documentation:

Drawing	Number	Revision	Date
Sydney UrbnSurf Development Application drawings package – Cover page	DA.00	D	14.06.2017
Location plan	DA.01	C	06.04.2017
Existing site context	DA.02	C	06.04.2017
Existing site topography	DA.03	C	06.04.2017
Existing services map	DA.04	C	06.04.2017
Proposed demolition plan	DA.05	C	06.04.2017
Proposed subdivision plans	DA.06	C	06.04.2017
Proposed site plan	DA.07	E	20.06.2017
Overshadowing diagrams	DA.08	D	14.06.2017
Lower level plan	DA.09	C	06.04.2017
Ground level plan	DA.10	E	14.06.2017
Upper level plan	DA.11	E	14.06.2017
Roof plan	DA.12	D	14.06.2017
Dimension plan	DA.13	D	14.06.2017
Fencing & secure perimeter plan	DA.13B	D	14.06.2017
E-House and water treatment floor plans	DA.14	D	14.06.2017
Workshop & surf academy floor plans	DA.15	D	14.06.2017
Change rooms & rentals floor plans	DA.16	E	14.06.2017
Cafe, ticketing & retail floor plans	DA.17	E	14.06.2017
Bar & alfresco floor plans	DA.18	E	20.06.2017
Bar & alfresco sections	DA.19	D	14.06.2017
Aerial view	DA20B	E	20.06.2017



Site plan components	DA.20	E	20.06.2017
Sections A, B, C	DA.21	D	14.06.2017
Site sections 1, 2, 3	DA.22	D	14.06.2017
Hill Rd edge condition	DA.23	D	14.06.2017
Ring Rd edge condition 1	DA.24	D	14.06.2017
Ring Rd edge condition 2	DA.25	D	14.06.2017
Built form elevations	DA.26	C	06.04.2017
Material palette	DA.27	C	06.04.2017
Built form image - entry view	DA.28	C	06.04.2017
Built form image – the side path	DA.29	C	06.04.2017
Built form image – the service yard	DA.30	C	06.04.2017
Built form image – the lagoon wall	DA.31	C	06.04.2017
Built form image – the cove lounge	DA.32	C	06.04.2017
Built form image – the promenade	DA.33	C	06.04.2017
Built form image – the hill	DA.34	C	06.04.2017
Built form image – upstairs view	DA.35	C	06.04.2017
Built form image – aerial view	DA.36	D	14.06.2017



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1. EXECUTIVE SUMMARY

The Preliminary BCA Compliance Report and Strategy has been prepared by CODE Building Surveyors for Wave Park Group to outline how the development will comply with the National Construction Code (NCC), Building Code of Australia (BCA) by satisfying the performance requirements of the Building Code of Australia.

The Preliminary Report identifies high level areas of compliance and as such we have not included every BCA clause. Additional review is necessary on the further developed documentation. A list of documentation is listed in this executive summary.

The following BCA strategy will outline the key BCA compliance criteria, whilst identifying aspects that will need to be addressed via the Performance provision of the BCA.

Preliminary NCC BCA Compliance Strategies

Fire Source Feature Identification

Allotment boundary status to determine fire source features and potential impacts on construction of external walls.

General floor area and volume limitations

The proposed entry, change rooms, surf academy and undercroft office / workshop buildings may be a single fire compartment and still satisfy the maximum fire compartment limitations set by Table C2.2 for a building of Type B fire resisting construction. However, separating the building by fire walls to create 2 or 3 fire compartments may be advantageous for other compliance matters such as Smoke Hazard Management provisions, or fire hydrant water supply requirements. Ideal locations for fire walls include bounding walls at each end of the single storey change room building.

Classification of the buildings for future flexibility

It may be appropriate to consider the upper floor of the main entry building as a Class 9b assembly building to provide for possible entertainment options such as small music events. This does have an effect on the type of fire resisting construction required for the building, increasing from Type C to Type B fire resisting construction. This will require fire rated construction to suspended floor and supporting elements as well as the requirement for external walls to be constructed of non-combustible materials.

Emergency Egress – NSW Environmental Planning & Assessment Regulations

If the facility is determined to be an entertainment venue as defined in the NSW Environmental Planning & Assessment Regulation 2000, then the upper floor of the entry building would require 6m of egress width for an occupancy load of 570 (determined in accordance with Table D1.13). If the facility is not an entertainment venue then the egress width required from the upper floor of the entry building will be 5.5 m.

Another consideration if the facility is deemed an entertainment venue is the requirement to limit egress width through the main entry to half the required width, with the remaining half through other exits.



Occupancy Numbers & Sanitary Facilities

Accommodation numbers have been calculated using Table D1.13 ratios as follows:

Location	Occupancy
Lower ground floor office and warehouse	14 staff
Surf Academy	114
Rental Shop	44 patrons & staff
Ground floor of entry building	100 patrons & 20 staff
1st floor of entry building	560 patrons & 7 staff
Toddlers Pool	24
Surf lagoon	84 (design number)
Facility total	940

Sanitary facilities indicated on the drawings are adequate for the following numbers of occupants:

Location	Occupancy
Lower ground floor unisex facility	10 staff
Change room facilities if used for participants only	100 participants 50 males 50 females
Change room facilities if used by 84 participants and the balance by spectators	84 participants and 200 spectators (Note that to achieve these numbers an additional male washbasin and 2 additional female washbasins will be required or participant numbers are reduced to 80 and the balance of the proposed change room facilities would be adequate for 120 spectators).
Ground floor entry building facilities	Unknown as no facility numbers shown
First floor entry building facilities	300 patrons and 20 staff
Total	714

Disability Access

All parts of the facility must be accessible for people with disabilities unless areas such as the water treatment plant room and E-House enclosure may be areas where D3.4 exemptions may be sought.



Other legislative considerations

The body of water is a surf lagoon and is to be assessed in the in the same way that a man-made lake or a water-ski park.

The NSW Public Health Act and Public Health Regulation set out specific requirements for occupiers of premises containing public swimming pools and spa pools.

The surf lagoon is not a swimming pool, therefore these provisions to not apply.

2. INTRODUCTION

This report has been developed to assist the client and the design team to address any high level areas of the project scope that require attention in relation to the deemed-to-satisfy provisions of the NCC Building Code of Australia, Volume 1 and Certificate of Design Compliance.

The proposed Urbnsurf Sydney facility will feature, and be designed around, a next-generation Wavegarden “Cove” open water surf sports lagoon (Cove).

The Cove will comprise of two zones within which waves of differing heights are produced. The various zones allow for beginner through to advanced levels of surfing to be accommodated contemporaneously.

The “Peak” zones will provide up to 2.0 metre-high, 15 second-long, steep left and right-hand pitching waves enabling the highest levels of performance surfing. Waves in this zone will form cleanly and break with constant power and shape throughout the ride, comparable to riding high quality ocean waves of similar sizes.

The “Bay” zones produces reformed, smooth, white-water waves at 1.0 metres in height which are preferred for novice surfers. The Bay is also an ideal location for children and other guests with limited knowledge or sense of open water safety, enabling the acquisition of the basic skills required for surfing. The Bay is well suited for both surfing lessons and free-surfing sessions.

The maximum capacity of the Cove is approximately 84 participants per hour, comprising 36 intermediate-to-advanced surfers in the “Peak” zone, and up to 48 beginner-to-novice surfers in the “Bays”. The Cove can accommodate all forms of surf craft, together with body surfing.

The facility will also feature a Surf Academy undercover teaching area, as well as retail outlets and a bar, cafe and restaurant facilities. Spectator viewing areas will be provided as well as a toddler pool and outdoor “Cove Lounge” area.



3. BUILDING ASSESSMENT DATA

The building assessment data is used to determine the BCA and risk status of the building.

BUILDING CHARACTERISTICS	
NCA BCA edition	2016
Permit Authority	City of Parramatta
Classification	5, 6, 7b, 8, 9b, 10a & 10b
Total floor area of building	2870 m ² roofed area
Total volume of building	Approximately 9000 m ³
No. of Storeys Contained	2
No. of basements	0
Rise in Storeys	2
Effective Height	Approximately 4 m
Largest fire compartment floor area	To be confirmed
Largest fire compartment volume	8280 m ³
Type of Construction	B (C1.1)
Climate zone	6



4. BUILDING IMPORTANCE LEVEL

The building Importance Level (IL) must be determined to ensure that the structural engineer includes the probabilities of the design events for safety in their building design.

The Building Importance Level is interpreted to be IL3. BCA Table B1.2a Importance Levels of Building and Structures.

Importance Level	Building Types
1	Building or structure presenting a low degree of hazard to life and other property in the case of failure.
2	Building or structures not included in importance Level 1, 3 and 4.
3	Building or structures that are designed to contain a large number of people.
4	Building or structures that are essential to post-disaster recovery or associated with hazardous facilities.

Notes:

- Whilst CODE has estimated the BIL for the building based on the information provided by our client, it is subject to agreement with the structural engineer for its compatibility with the use proposed.
- Occupancy load numbers are determined by BCA D1.13, Number of persons accommodated. If it is intended that the occupants converge for emergency purposes the owner/designer is to provide details.

5. SAFETY IN DESIGN

Occupational Safety and Health legislation requires a Designer to provide a Safety Report to the person who commissions the Design for commercial construction projects.

CODE offer a Safety in Design service to Architects and Designers to assist them to meet their legislated obligations under the Work Safety and Health Act.

Currently CODE are not engaged at this time to undertake safety in design for this project.

6. GENERAL REQUIREMENTS

6.1 Certificate of Title

Provide a current Certificate of Title and Diagram of Survey. Alternatively, Code Group will undertake a title search to obtain this information on behalf of the client. Any information on easements or development impediments are required to make informed decisions.

Comments

The lease boundary status to be determined for implications as a fire source feature.

All building work including cut / fill must be outside any easement unless written permission from



the easement holder is obtained.

6.2 Development Approval

Our assessment of the scope of works proposed indicates that a development approval is required.

Comments

Please contact the relevant planning authority for written confirmation of whether development approval is required for the scope of works.

6.3 Food Act Compliance

Aspects of this development may require approval under the Food Act.

Comments

Commercial kitchens and food preparation/storage areas to comply with relevant food premises standards.

6.4 Aquatic Facilities Regulations

The wave pool and toddler pool may be subject to enclosure and other requirements such as water quality under New South Wales Legislation..

Comments

This aspect of the proposed development should be confirmed with the Appropriate Authority.

6.5 Environment Planning & Assessment Regulations 2000

The proposed development may fall within the definition of an Entertainment Venue in accordance with NSW Environment Planning and Assessment Regulations 2000. These regulations define as Entertainment Venue as follows.

entertainment venue means a building used as a cinema, theatre or concert hall or an indoor sports stadium.

Comments

Implications for the design of the development, if applicable, include more onerous egress provisions. Whether this facility will be considered as an entertainment venue should be confirmed with the Appropriate Authority.

7. NCC BCA REVIEW

The results of this review are commensurate with the information provided the appropriate level of review and as such may not constitute a complete list of items for CDC. We can advise that the following BCA compliance issues require resolution and inclusion in documentation lodged for the next stage review.

7.1 Safe Movement & Egress

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 1m; or
- (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
- (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) the unobstructed width of each exit provided to comply with (b), (c), (d) or (e), minus 250 mm; 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; 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 nosings of the treads or the floor surface of the ramp or landing.

Comments

If the facility is determined to be an entertainment venue as defined in the NSW Environmental Planning & Assessment Regulation 2000, then the upper floor of the entry building would require 6 m of egress width for an occupancy load of 570 (determined in accordance with Table D1.13). If the facility is not an entertainment venue then the egress width required from the upper floor of the entry building will be 5.5 m.

Another consideration if the facility is deemed an entertainment venue is the requirement to limit egress width through the main entry to half the required width, with the remaining half through other exits.



D1.13 Number of persons accommodated

For the purposes of the Deemed-to-Satisfy Provisions, the number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by—

- (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D1.13 according to the use of that part, excluding spaces set aside for—
 - (i) lifts, stairways, ramps and escalators, corridors, hallways, lobbies and the like; and
 - (ii) service ducts and the like, sanitary compartments or other ancillary uses; or
- (b) reference to the seating capacity in an assembly building or room; or
- (c) any other suitable means of assessing its capacity.

Comments

Accommodation numbers have been calculated using Table D1.13 ratios as follows:

Lower ground floor office and warehouse - 14 staff

Surf Academy - 114 patrons & staff

Rental Shop - 44 patrons & staff

Ground floor of entry building - 100 patrons & 20 staff

1st floor of entry building - 560 patrons & 7 staff

D2.16 Barriers to prevent falls

- (a) A continuous barrier must be provided along the side of—
 - (i) a roof to which general access is provided; and
 - (ii) a stairway or ramp; and
 - (iii) a floor, corridor, hallway, balcony, deck, verandah, mezzanine, access bridge or the like; and
 - (iv) any delineated path of access to a building,if the trafficable surface is 1 m or more above the surface beneath.
- (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; or
 - (iv) a barrier provided to an openable window covered by D2.24.
- (c) A barrier required by (a) must be constructed in accordance with Table D2.16a. (d) Where a required barrier is constructed of wire, it is deemed to meet the requirements of Table D2.16a 2(c) if it is constructed in accordance with the following:
 - (i) For horizontal wire systems—
 - (A) when measured with a strain indicator, it must be in accordance with the tension values in Table D2.16b; or
 - (B) must not exceed the maximum deflections in Table D2.16d.
 - (ii) For non-continuous vertical wire systems, when measured with a strain indicator, must be in accordance with the tension values in Table D2.16b (see Note 4).
 - (iii) For continuous vertical or continuous near vertical sloped wire systems—
 - (A) must have wires of no more than 2.5 mm diameter with a lay of 7×7 or 7×19 construction; and
 - (B) changes in direction at support rails must pass around a pulley block without causing permanent deformation to the wire; and



- (C) must have supporting rails, constructed with a spacing of not more than 900 mm, of a material that does not allow deflection that would decrease the tension of the wire under load; and
- (D) when the wire tension is measured with a strain indicator, it must be in accordance with the tension values in Table D2.16c and measured in the furthest span from the tensioning device.

Comments

Table D2.16a requires barriers to floors more than 4 m above the surface beneath to have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that do not facilitate climbing. The chain mesh fencing proposed as balustrading will not comply with this requirement and level differences must be therefore be limited to 4 m or less.

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 used as a theatre, public hall, or the like, having a floor area more than 1000 m² or a rise in storeys of more than 2.

Comments

The proposed entry building only has a rise in storeys of 2, however the floor area will exceed 1000 m² and therefore the requirements of this clause should be considered for the design.

7.2 Sanitary & Accessible Facilities

F2.3 Facilities in Class 3 to 9 buildings

- (a) Except where permitted by (b), (c), (f), F2.4(a) and F2.4(b), separate sanitary facilities for males and females must be provided for Class 3, 5, 6, 7, 8 or 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 for the public.
- (e) Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females.
- (f) Class 9b theatres and sporting venues must be provided with one shower for each 10 participants or part thereof.
- (g) Not less than one washbasin must be provided where closet pans or urinals are provided.

Comments

Sanitary facilities indicated on the plans have been assessed as suitable for the following numbers:

- Lower ground floor unisex facility - 10 staff
- Change room facilities if used for participants only - 100 participants 50 males 50 females
- Change room facilities if used by 84 participants and the balance by spectators - 84 participants and 200 spectators



(Note that to achieve these numbers an additional male washbasin and 2 additional female washbasins will be required or participant numbers are reduced to 80 and the balance of the proposed change room facilities would be adequate for 120 spectators).

These calculations have counted the UAT's once only for each sex and for the males has counted 2 pans as urinals.

- Ground floor entry building facilities - unknown as no facility numbers shown.
- First floor entry building facilities - 300 patrons and 20 staff

F2.4 Accessible sanitary facilities

In a building required to be accessible—

- accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a); and
- accessible unisex showers must be provided in accordance with Table F2.4(b); and
- 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
- an accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels; and
- 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
- an accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only; and
- 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
- 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
- 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.

Comments

The sanitary facility provided to the lower ground level office and workshop area will need to be modified to suit people with disabilities in accordance with AS 1428.1.

All other banks of toilets incorporate UAT facilities.

7.3 Access for People with Disabilities

D3.3 Parts of buildings to be accessible

In a building required to be accessible—

- every ramp and stairway, except for ramps and stairways in areas exempted by D3.4, must comply with—
 - for a ramp, except a fire-isolated ramp, clause 10 of AS 1428.1; and
 - for a stairway, except a fire-isolated stairway, clause 11 of AS 1428.1; and
 - 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) accessways must have—
 - (i) passing spaces complying with AS 1428.1 at maximum 20 m intervals on those parts of an accessway 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 accessways where it is not possible to continue travelling along the accessway; and
 - (B) at maximum 20 m intervals along the accessway; and
- (d) an intersection of accessways satisfies the spatial requirements for a passing and turning space; and
- (e) a passing space may serve as a turning space.

Comments

Ensure all stairways are detailed to incorporate accessible features and corridors are configured to provide passing and turning spaces as required.

D3.4 Exemptions

The following areas are not required to be accessible:

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

Comments

Areas such as the water treatment plant room and E-House enclosure may be areas where D3.4 exemptions may be sought.

D3.5 Accessible carparking

Accessible carparking 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 carparking 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 carparking area where a parking service is provided and direct access to any of the carparking 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 carparking spaces, so as to restrict the use of the carparking space only for people with a disability.

Comments

An accessible car parking bay may be required within the service yard area.

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 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.

Comments

Hearing augmentation may be required to this facility at the entry counter, and any rooms with built in amplification systems.

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.

Comments

Accessible entry points should be provided to the lagoon.

E3.6 Passenger lifts

In an accessible building, every passenger lift must—

- (a) be one of the types identified in Table E3.6a, subject to the limitations on use specified in the Table; and
- (b) have accessible features in accordance with Table E3.6b; and
- (c) not rely on a constant pressure device for its operation if the lift car is fully enclosed.

Comments

Lifts to comply with this provision.



7.4 Fire Compartments & Separation

C2.2 General floor area and volume limitations

The proposed entry, change rooms, surf academy and undercroft office / workshop buildings may be a single fire compartment and still satisfy the maximum fire compartment limitations set by Table C2.2 for a building of Type B fire resisting construction.

Comments

However, separating the building by fire walls to create 2 or 3 fire compartments may be advantageous for other compliance matters such as Smoke Hazard Management provisions, or fire hydrant water supply requirements. Ideal locations for fire walls include bounding walls at each end of the single storey change room building.

Specification C1.1

- (a) The minimum Type of fire-resisting construction of a building must be that specified in Table C1.1 and Specification C1.1, except as allowed for—
- (i) certain Class 2, 3 or 9c buildings in C1.5; and
 - (ii) a Class 4 part of a building located on the top storey in C1.3(b); and
 - (iii) open spectator stands and indoor sports stadiums in C1.7.
- (b) Type A construction is the most fire-resistant and Type C the least fire-resistant of the Types of construction.

Comments

In accordance with Table C1.1 the building is required to be of Type B Construction. The required type of construction determines the required fire resistance levels of building elements. Refer to Appendix A of this report for the fire resistance levels required for the building elements in accordance with Specification C1.1.

Note that Clause 4.1 of Specification C1.1 requires external walls to buildings of Type B fire resisting construction to be non-combustible. This same Clause also requires floors separating storeys in a Type B fire resisting construction building to:

- (i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a resistance to the incipient spread of fire to the space above itself of not less than 60 minutes; or
- (ii) have an FRL of at least 30/30/30; or
- (iii) have a fire-protective covering on the underside of the floor, including beams incorporated in it, if the floor is combustible or of metal.

The requirements of Table 4 for loadbearing internal walls and columns to achieve 120/-/- will apply to the elements supporting the floors that separate storeys.

C3.2 Protection of openings in external walls

Openings in an external wall that is required to have an FRL must—

- (a) if the distance between the opening and the fire-source feature to which it is exposed is less than—
- (i) 3 m from a side or rear boundary of the allotment; or
 - (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or
 - (iii) 6 m from another building on the allotment that is not Class 10,



be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and
(b) if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.

Comments

Allotment boundary lines status to be confirmed to determine if these boundary lines represent fire source features.

7.5 Structure & Fire Resistance

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.

Comments

The structural engineer is to confirm the actions and loads used for design purposes in accordance with Clauses B1.1, B1.2, B1.4 & B1.6.

7.6 Fire Services & Equipment

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 m²; 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 firefighting; 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 of a building 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 occupancy unit provided the fire hydrant can provide coverage to the whole of the sole-occupancy unit.

Comments

A fire hydrant system will be required to serve the main buildings on site.

E1.4 Fire hose reels

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 m².

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 of not more than 2 storeys in a Class 5, 6, 7, 8 or 9 building may be served by a single fire hose 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.

Fire hose reels must be located internally, externally or in combination, to achieve the system coverage specified in AS 2441.

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.

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) doorway openings to shafts referred to in C3.13.

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.

Comments

[Fire hose reels will be required to serve the main buildings on site.](#)

E1.6 Portable fire extinguishers

(a) Portable fire extinguishers must be—

- (i) provided as listed in Table E1.6; and
- (ii) for a Class 2 or 3 building or Class 4 part of a building, provided—
 - (A) to serve the whole Class 2 or 3 building or Class 4 part of a building where one or more internal fire hydrants are installed; or
 - (B) where internal fire hydrants are not installed, to serve any fire compartment with a floor area greater than 500 m², and for the purposes of this clause, a sole-occupancy unit in a Class 2 or 3 building or Class 4 part of a building is considered to be a fire compartment; and
- (iii) subject to (b), selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444.

(b) Portable fire extinguishers provided in a Class 2 or 3 building or Class 4 part of a building must be—



- (i) an ABE type fire extinguisher; and
- (ii) a minimum size of 2.5 kg; and
- (iii) distributed outside a sole-occupancy unit—
 - (A) to serve only the storey at which they are located; and
 - (B) so that the travel distance from the entrance doorway of any sole-occupancy unit to the nearest fire extinguisher is not more than 10 m.

Comments

Portable fire extinguishers to be provided.

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.

Comments

Depending on chemicals and water treatment systems provided on site, this provision may apply.

7.7 Smoke Hazard Management

A building must be provided with smoke hazard management measures in accordance with the General Requirements and Tables E2.2a & E2.2b as appropriate.

E2.2 General requirements

Classification of building or part – All classifications	
Building characteristics	System requirements



Buildings with more than 1 fire compartment	<p>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 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—</p> <p>(i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or</p> <p>(ii)</p> <p>(A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and</p> <p>(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 7.5 of AS 1670.1;</p> <p>(c) Miscellaneous air-handling systems covered by Sections 5 and 6 of AS/NZS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.</p> <p>(d) A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS 1668.1 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.</p>
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Table E2.2a & b requirements

<p>Classification of the building – 9b Assembly Building (NSW Table E2.2b)</p> <p>Automatic shutdown: A building or part of a building used as an assembly building must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) which does not form part of the smoke hazard management system, on the activation of—</p> <p>(i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and</p> <p>(ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5.</p>
<p>(a) Unless otherwise described in (b), in a building or part of a building used as an assembly building (not being a night club, discotheque or the like; or an exhibition hall, museum or art gallery) where the floor area of a fire compartment is more than 2000 m², the fire compartment must be provided with—</p> <p>(i) an automatic smoke exhaust system complying with Specification E2.2b; or</p> <p>(ii) roof mounted automatic smoke-and-heat vents complying with Specification E2.2c, in a single storey building or the top storey of a multi storey building; or</p> <p>(iii) if the floor area of the fire compartment is not more than 5000 m² and the building has a rise in storeys of not more than 2—</p> <p>(A) an automatic smoke detection and alarm system complying with Specification E2.2a; or</p> <p>(B) a sprinkler system complying with Specification E1.5.</p> <p>(b) The following buildings are exempt from the provisions of (a):</p> <p>(i) Sporting complexes, (including sports halls, gymnasiums, swimming pools, ice and roller rinks, and the like) other than indoor sports stadiums with total spectator seating for more than 1000 persons.</p> <p>(ii) Churches and other places used solely for religious worship.</p>



(iii) School classrooms.

Comments

Mechanical services systems and fire compartment configurations should be used in conjunction to avoid the need for smoke hazard management systems.

7.8 Health & Amenity

F1.1 Stormwater drainage

Stormwater drainage must comply with AS/NZS 3500.3.

Comments

Details of stormwater management and disposal to be included in design documentation.

F4.4 Artificial lighting

- (a) Artificial lighting must be provided—
- (i) in required stairways, passageways, and ramps; and
 - (ii) if natural light 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 Class 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.

Comments

Design documentation to address this requirement.

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.

Comments

Design documentation to address this requirement.

F4.9 Airlocks

If a sanitary compartment is prohibited under F4.8 from opening directly to another room— 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 m² and fitted with self-closing doors at all access doorways; or
- (ii) the sanitary compartment must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.

Comments

Design documentation to address this requirement.

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 m² of floor area of the room or enclosure.

Comments

Design documentation to address this requirement.

7.9 Energy Efficiency

Buildings of Class 2 to 9, other than the sole-occupancy units of a Class 2 building or a Class 4 part of a building, must comply with Parts J1, J2 and J3.

All buildings services must comply with-

- (b) for air-conditioning and ventilation, Part J5; and
- (c) for artificial lighting and power, Part J6; and
- (d) for heated water supply and swimming pool and spa pool plant, Part J7; and
- (e) for facilities for monitoring, Part J8.

Comments

There may be spaces within the facility such as the Surf Academy that may achieve the concession provided for a conditioned space where the building envelope need not comply with the requirements of Section J if the input energy to an air-conditioning system is not more than 15 W/m² or 15 J/s.m² (54 KJ/hour.m²).

8. REPORT SCOPE & LIMITATIONS

The extent of the BCA Audit and or certification excludes assessment against the Safety Codes of Practice for “Safe Design of Buildings and Structures” unless formally engaged to undertake this assessment.

CODE Group (CODE) offer this advice based on our knowledge of the building and the information received from the client or client’s representative as described in the description of the building and classification listed in the building assessment data. This report is provided to and is to be used by the direct client to CODE and use of this report for any other purpose, project or any changes to the design without further assessment or certification from CODE will invalidate the content of and certification associated with this document. No part of this document may be reproduced in any form or by any means without written permission from CODE. This report is based solely on client instructions, and therefore should not be used by any third party without prior knowledge of such instructions.

All advice provided by CODE is in good faith and the provision of specialist design and certification (alternative design solutions, design and commissioning certificates and reports) by appropriately qualified consultants will be taken on face value. CODE will not be responsible for the accuracy, appropriateness or third party review of information provided for the purpose of determining compliance. CODE will not be held responsible for interpretations of other building surveyors, conditions of development approval or local laws associated with non-BCA matters prior to the submission of a permit application to the local authority.

The extent of this report does not include assessment for stock loss, goodwill, environmental impact (in fire situation), or any loss of trade or business interruption associated directly or indirectly with fire in these premises.

The report does not provide advice on the Access to Premises Standard Legislation, of which will be undertaken by other parties with suitable recommendations for compliance being provided.

9. REFERENCES

- Australian Building Codes Board, National Construction Code (2016), Building Code of Australia, Volume 1
- Australian Building Codes Board, National Construction Code (2016), Building Code of Australia, Volume 2
- Australian Building Codes Board, National Construction Code (2016), Guide to the Building Code of Australia, Class 2-9 Buildings
- Australian Standards: AS1428.1-2009 Design of Access and Mobility, Part 1: General Requirements for Access – New Building work

10. APPENDICES

- Appendix A: Fire Resistance Levels
Appendix B: Essential Safety - Design and Installation



Appendix A: Fire Resistance Levels

Table 4 Type B Construction: FRL of Building Elements (in minutes)

BUILDING ELEMENT	Class 2, 3 or 4 part	5, 7a or 9	6	7b or 8
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any fire-source feature to which it is exposed is -				
For load bearing parts -				
Less than 1.5m	90 / 90 / 90	120 / 120 / 120	180 / 180 / 180	240 / 240 / 240
1.5m to less than 3m	90 / 60 / 60	120 / 90 / 60	180 / 120 / 90	240 / 180 / 120
3m to less than 9m	90 / 30 / 30	120 / 30 / 30	180 / 90 / 60	240 / 90 / 60
9m to less than 18m	90 / 30 / -	120 / 30 / -	180 / 60 / -	240 / 60 / -
18m or more	- / - / -	- / - / -	- / - / -	- / - / -
For non-load bearing parts -				
Less than 1.5m	- / 90 / 90	- / 120 / 120	- / 180 / 180	- / 240 / 240
1.5m to less than 3m	- / 60 / 30	- / 90 / 60	- / 120 / 90	- / 180 / 120
3m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an external wall, where the distance from any fire source feature to which it is exposed is -				
Less than 3m	90 / - / -	120 / - / -	180 / - / -	240 / - / -
3m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS & FIRE WALLS	90 / 90 / 90	120 / 120 / 120	180 / 180 / 180	240 / 240 / 240
INTERNAL WALLS				
Fire-resisting lift and stair shafts -				
Load bearing	90 / 90 / 90	120 / 120 / 120	180 / 120 / 120	240 / 120 / 120
Non-load bearing	- / 90 / 90	- / 120 / 120	- / 120 / 120	- / 120 / 120
Fire-resisting stair shafts -				
Non-load bearing	- / 90 / 90	- / 120 / 120	- / 120 / 120	- / 120 / 120
Bounding public corridors, public lobbies and the like -				
Load bearing	60 / 60 / 60	120 / - / -	180 / - / -	240 / - / -
Non-load bearing	- / 60 / 60	- / - / -	- / - / -	- / - / -
Between or bounding sole-occupancy units -				
Load bearing	60 / 60 / 60	120 / - / -	180 / - / -	240 / - / -
Non-load bearing	- / 60 / 60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage and the like shafts not used for the discharge of hot products of combustion -				
Load bearing	90 / 90 / 90	120 / 90 / 90	180 / 120 / 120	240 / 120 / 120
Non-load bearing	- / 90 / 90	- / 90 / 90	- / 120 / 120	- / 120 / 120
OTHER LOAD BEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES AND COLUMNS	60 / - / -	120 / - / -	180 / - / -	240 / - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -



Appendix B: Essential Safety - Design & Installation Standards

The following safety measures to be installed in the proposed building are to be designed and installed to comply with the Building Code of Australia and referenced Standards unless forming part of an alternative solution. The applicable year of the adopted standards reflect those adopted by the BCA at the time of lodgment of the Building Permit Application.

Requirement	BCA Reference	Standard
Access for People with Disabilities	Part D3	AS 1428.1 – 2009
Accessible Facilities, Signage	D3.6	AS 1428.1 – 2009
Access Panels, Doors & Hoppers	C3.13	AS 1530.4 – 2005
Accessible Parking	D3.5	AS 2890.1
Automatic Fail Safe Devices	D2.21	
Automatic Fire Detection System	BCA Spec. E2.2a	AS/NZS 1668.1
Building Occupancy Warning Activated by Sprinklers	BCA Spec. E1.5	Clause 3.22 of AS 1670.1 – 2004
Car Park Ventilation	F4.11	AS 1668.2
Emergency Lighting	E4.2, E4.4	AS/NZS 2291.3
EWIS (SSISEP)	E4.9	AS 1670.4 – 2004
Exit Signs	E4.5, 4.6, 4.7	AS/NZS 2293.1
Exit Doors (power operated)	D2.19(b)	
Fire Control Room	Spec E1.8	
Fire Hazard Properties	Spec C1.10	AS 1530, AS 4254, AS 1735.2
Fire Resisting Construction	Spec C1.1	AS 1530
Fire Doors	Spec C3.4	AS/NZS 1905.1
Fire Stopping Systems	C3.15	AS 1530.4, AS 4072.1
Fire Hydrant System	E1.3	AS 2419.1
Fire Hose Reels	E1.4	AS 2441.1
Fire & Smoke Alarms	Table E2.2 & Spec E2.2	AS 1670.1
Fire Service Controls	E3.7	AS 1735.1
Glazed Assemblies	B1.4	AS 2047
Glass	B1.4	AS 1288
Latches	D2.21	
Lift Facilities	E3.69	AS 1735.12
Lightweight Construction	C1.8	AS 1530.3 – 1999
Mechanical Ventilation & Air Conditioning	E2.2	AS/NZS 1668.1 & AS 1668.2
Non-Combustible Materials	C1.12	AS 1530
Portable Fire Extinguishers	E1.6	AS 2444 – 2001
Power Operated Doors	D2.19	
Pressurising Systems	E2.2	AS/NZS 1668.1 – 1998
Structural Provisions	Part B1	As per BCA Part B1
Smoke Hazard Management	Table E2.2a	AS/NZS 1668.1
Sound Transmission	Part F5	AS/NZS 1276.1 / ISO 717.1
Sprinkler System	E1.5	AS 2118
Tactile Indicators	D3.8	AS 1428.1
Wall-Wetting Sprinklers	C3.4	AS 2118.2 – 1995

