

## PROPOSED COFFS HARBOUR CULTURAL AND CIVIC SPACE DEVELOPMENT KNOWN AS “ALL WELCOME”

Report prepared for: Coffs Harbour Council c/- BVN Architecture  
Level 11, 255 Pitt Street,  
Sydney NSW 2000  
Attention: Matthew Blair / Tim Crawshaw

Report prepared by: Philip Chun Building Code Consulting  
Suite 404, 44 Hampden Road  
Artarmon NSW 2064  
Contact: Philip Smillie

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R01	Abraham Mahilraj and Philip Smillie	BCA Report	30/4/19
R02a	Philip Smillie	BCA Report	18/6/19

## Introduction

At the request of BVN Architecture, we offer comments and recommendations in respect to Building Code of Australia 2019 compliance for the proposed Coffs Harbour Cultural and Civic Space development which comprises of one below ground carpark and six above ground levels of public use areas and offices located at 23 – 31 Gordon Street, Coffs Harbour NSW 2450.

The project involves construction of a new building and associated infrastructure and is summarised as follows:

- Demolition of existing buildings and site clearance works.
- Earthworks and associated excavation for footings and basement area.
- Construction of a new building to accommodate the proposed Cultural and Civic Space including a regional gallery, central library, regional museum, multi-purpose meeting rooms, co-working space, shop, café, function space (including use as Council Chambers), customer service area, Council staff office accommodation and underground car parking.
- Basement carpark.
- Access to and from the site in Gordon Street.
- Minor adjustments to Riding Lane.
- Landscaping.

Philip Chun has been appointed to report on compliance with respect to parts C, D, E, F, H and J of the Building Code of Australia 2019.

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The documentation assessed includes the following architectural drawings by BVN Architecture:

Drawing No./Rev	Title	Dated
AR-B10-B1-00 / 4	BASEMENT LEVEL FLOOR PLAN	17/5/19
AR-B10-00-00 / 4	GROUND LEVEL FLOOR PLAN	17/5/19
AR-B10-01-00 / 4	LEVEL 01 FLOOR PLAN	17/5/19
AR-B10-02-00 / 4	LEVEL 02 FLOOR PLAN	17/5/19
AR-B10-03-00 / 4	LEVEL 03 FLOOR PLAN	17/5/19
AR-B10-04-00 / 4	LEVEL 04 FLOOR PLAN	17/5/19
AR-B10-05-00 / 4	LEVEL 05 FLOOR PLAN	17/5/19
AR-B10-06-00 / 4	LEVEL 06 FLOOR PLAN	17/5/19
AR-C10-XX-01 / 3	GORDON ST ELEVATION	17/5/19
AR-C10-XX-02 / 3	SOUTH ELEVATION	17/5/19
AR-C10-XX-03 / 3	RIDING LANE ELEVATION	17/5/19
AR-C10-XX-04 / 3	NORTH ELEVATION	17/5/19
AR-D10-XX-01 / 5	SECTION N-S	17/5/19
AR-D10-XX-02 / 1	SECTION E-W	17/5/19

***The non-compliant items requiring attention are in bold italic text throughout the report.***

## Building Code of Australia 2019 Comments

### 1. Building Assessment

Building Classifications	Basement	Class 7a Carpark, Class 9b End of trip facilities and bike store
	Ground Floor	Class 9b Community uses – Library, Gallery, Museum) and Class 6 Café
	Level 1	Class 9b Library and Makerspace, Class 5 Offices for Customer service
	Level 2	Class 9b Library, Class 5 Offices for Library Staff
	Level 3	Class 9b Public meeting room, Multipurpose Hall, External event space Class 5 Offices for Mayor, Councillors and Admin Staff
	Level 4	Class 5 Offices for Admin Staff
	Level 5	Class 5 Offices for Admin Staff
	Level 6 and Roof	Class 5 Plant room and Roof
Rise in Storeys		6
Type of Construction		Type A Construction
Effective Height (m)		20.75m (L5 25.51m – L0 4.76m)
Total floor area		13,889m <sup>2</sup>

### Section C – Fire Resistance / Compartmentation / Separation

2. **Type of construction (C1.1)** – The building has a rise in storeys exceeding 3 in which case is required to be of not less than Type A construction. *The building needs to comply with BCA Table 3 for Type A Construction (See Appendix A).* Structural engineer will need to confirm at CC stage the Fire Resistance Levels (FRL's) of the columns, slabs and load bearing walls meet Table 3 of Spec C1.1 -

Class 5 and 9b parts – 120 mins

Class 7a carpark parts – 120 mins

Substation and Class 6 parts – 180 mins, however as the café is less than 10% of ground floor area, it need not be considered separately for the addition level of fire rating. **Seek 2 hours FRL throughout and 3 hours FRL for the substation.**

*A concession applies under Clause 3.5 of Spec C1.1 to exclude the roof from meeting the minimum FRL if the covering is non-combustible. However, the underside of the non-combustible roof covering must comply with Clause 3.5(d) (60 minutes RISF) or be sprinkler protected. In this case concrete appears to be used.*

*A Concession applies under Clause 3.7 of Spec C1.1 where a building with an effective height of not more than 25 m and having a roof without an FRL in accordance with Clause 3.5, in the storey immediately below that roof, internal columns other than those referred to in Clause 3.1(f) and internal walls other than fire walls and shaft walls may have FRL 60/60/60.*

3. **Non-combustible building elements (C1.9)** – External walls and common walls, non-loadbearing internal walls where they are required to be fire-resisting must not be constructed of combustible materials. This includes all components incorporated within them. Flooring and floor framing of lift pits are also to be of non-combustible building elements. – *External wall types, insulation and sarking type not stated. Strongly recommend no use of Aluminium Composite Cladding. Details needed at Design Development stage*
4. **Fire hazard properties (C1.10)** – All new surface finishes, assemblies and linings are to comply with BCA Clause C1.10 and Specification C1.10 with regard to Fire Hazard Properties. Paint or fire-retardant coatings must not be used to make a material comply with fire a required fire hazard property unless referred to in NSW Spec C1.10, NSW Table 4 – Notes 4 and 5. *Compliance readily achievable.*
5. **Fire Protected Timber (C1.13)** – Whilst use of timber structures is not permissible under BCA 2016 for a Class 9b Building (only permissible for Class 2, 3 and 5), this Class restriction is missing from the BCA 2019 preview. *It is understood timber will not be utilised.*

6. **Ancillary elements (C1.14)** – Ancillary elements must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is non-combustible or an item listed under this Clause in the BCA. *Architect to note.*

**Table 1 - Fire Compartment Size and Egress Width Analysis**

Level	Floor area	Volume	Fire compartment floor area	Stated Population	Exit width Required	Exit width Available	Complies
Basement	3105m <sup>2</sup>	11,488m <sup>3</sup>		93	1.0m	2.0m	Yes
Ground	2375m <sup>2</sup>	11,800m <sup>3</sup>	6298m <sup>2</sup>	93 central 272 south 172 north	2m central 3m south 2m north	3.0 5.0 2.0	Yes
Level 1	1860m <sup>2</sup>	6603 m <sup>3</sup>		149 north 136 south	1.5m north 1.5m south	3m north 1.5m south	Yes
Level 2	2063m <sup>2</sup>	8870m <sup>3</sup>		526	5.0m	5.5m	Yes
Level 3	2066m <sup>2</sup>	7148m <sup>3</sup>	3849m <sup>2</sup>	376 north 110 south	3.5 north 1.25 south	3.75m nth 1.5m south	Yes Yes
Level 4	921m <sup>2</sup>	3269m <sup>3</sup>		81	1.0	1.5m south	Yes
Level 5	862m <sup>2</sup>	3060m <sup>3</sup>		82	1.0	1.5m south	Yes
Level 6	200m <sup>2</sup>	653m <sup>3</sup>	200m <sup>2</sup>	6	1.0	1.5 south	Yes
				<b>2096</b>			

**Compliance notes:**

- (a) Type A construction limits for compartment size are not exceeded (8000m<sup>2</sup> max).  
 (b) Level 2 and 3 do not comply with aggregate exit widths.  
 (c) **The linking of Levels 3, 4 and 5 in one fire compartment exceeds the maximum allowed by D1.12 and the atrium provisions of Part G3 will need to be considered in any alternative solution.**

7. **Vertical separation of openings in external walls (C2.6)** – 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) 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.

**None shown at present – assume building will be sprinkler protected.**

8. **Separation of classifications in different storeys (C2.9)** – If parts of different classification are located one above the other in adjoining storeys, the floor separating the Class 9b or 6 parts from the Class 7a part below must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. Compliance readily achievable - details to be provided at CC stage.
9. **Separation of lift shafts (C2.10)** – A lift connecting more than 2 storeys, or more than 3 storeys in sprinklered building, must be separated from the remainder of the building by enclosure in a shaft with an FRL not less than 120 mins. *Compliance readily achievable.*
10. **Separation of equipment (C2.12)** – Equipment comprising of lift motors, lift control panels, emergency generators, central smoke control plant, boilers or a battery or batteries installed in the building that have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours must be constructed with an FRL in accordance with Spec C1.1 but not less than 120/120/120 and any doorway protected with a self-closing fire door having an FRL of not less than -/20/30 or when separating a lift shaft and lift motor room, an FRL of not less than 120/-/-. *Services engineer to provide further details.*

Separation of on-site fire pumps must comply with the requirements of AS 2419.1 – i.e. 2 hours FRL and doorway leading directly to open space or a fire stair – hydrant pump room location to be noted.



Equipment need not be separated if comprises of smoke control exhaust fans constructed in accordance with Spec E2.2b, or stair pressurising equipment installed in accordance with AS/NZS 1668.1, or a lift installation without a machine-room, or equipment otherwise adequately separated from the remainder of the building. *Note.*

**11. Electricity supply system (C2.13) –**

- i. An electricity substation located within a building must:
  - (a) Be separated from other parts of the building by construction having an FRL of not less than 120/120/120, and
  - (b) Doorways in that construction to be self-closing fire doors with an FRL of not less than -/120/30.
- ii. The main switchboard located within the building that sustains emergency equipment operating in the emergency mode must:
  - (a) Be separated from other parts of the building by construction having an FRL of not less than 120/120/120, and
  - (b) Doorways in that construction to be self-closing fire doors with an FRL of not less than -/120/30.
- iii. Electrical conductors located within a building that supply:
  - (a) A substation located within the building which supplies a main switchboard covered by (ii), or
  - (b) A main switchboard covered by (ii) must
  - (c) Have a classification in accordance with AS/NZS 3013 of not less than WS53W or WS52W, or
  - (d) Be enclosed or otherwise protected by construction having an FRL of not less than 120/120/120.

Where emergency equipment is required in a building, all switchboards in the electrical distribution system, which sustain the electricity supply to the emergency equipment, must provide full segregation by way of enclosed metal partitions designed to prevent the spread of any fault from non-emergency equipment switchgear to the emergency equipment switchgear. *Substation to comply with Energy Network standards – ie 3 hours fire separation - show details at DD stage.*

12. **Protection of openings in external walls (C3.2)** – Any openings in an external wall required to have an FRL must be protected in accordance with BCA C3.4 and if used, wall-wetting sprinklers are to be externally fitted to fixed shut windows. *Required to the relevant north and south Level G and Level 1 openings.*
13. **Openings in fire isolated exits (C3.8)** – Any doors opening to fire-isolated stairways, and are not doorways opening to a road or open space, must be a fire door with an FRL of not less than -/60/30 that are self-closing or an automatic closing door activated by smoke detector or other detector suitable in accordance with AS 1670.
14. **Openings in fire isolated lift shafts (C3.10)** – Entrance doorways in lift shafts must be constructed to comply with AS 1735.11 with an FRL of not less than -/60/- and remain close when not in use. Lift call, indicator or other panels in the wall of a fire-isolated lift shaft that is greater than 35 000 mm<sup>2</sup> in area, must be backed by construction having an FRL of not less than -/60/60.
15. **Openings in floors and ceilings for services (C3.12)** – Services passing through a floor that requires an FRL with respect to integrity and insulation or ceiling required to have a resistance to the incipient spread of fire, must be protected by a shaft complying with Specification C1.1. *Compliance readily achievable – details to be provided at CC stage.*
16. **Openings in shafts C3.13** – An opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be protected by a door or panel which, together with its frame, is non-combustible or has an FRL of not less than -/30/30 if it is located in a sanitary compartment. In other locations it must have a self-closing -/60/30 fire door or hopper, or an access panel having an FRL not less than -/60/30. *Compliance readily achievable – details to be provided at CC stage.*

## Section D – Access and Egress

### 17. Access and Egress

- (a) In Class 9 buildings not less than 2 exits must be provided where the rise in storeys is more than 6 and any storey that accommodates more than 50 persons (D1.2). *Complies generally if the central internal non fire isolated stair is capable of being used as an exit.*
- (b) Every stairway serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey may be included if the building has a sprinkler system complying with Spec E1.5 installed throughout (D1.3). ***Does not comply – the central stair to be used as an exit for Levels is not fire-isolated. A fire Engineered solution is being carried out to address this.***
- (c) No point on a floor must be more than 20m from an exit, or 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 40m. In a Class 9b building the distance to one of the exits may be 60m if:
  - a. The path of travel from the room to that exit is through another area which is a corridor, hallway, lobby or other circulation space, and
  - b. The room is smoke-separated from the circulation space by construction having an FRL of not less than 60/60/60 with every doorway in that construction protected by a tight fitting, self-closing, solid core door not less than 35mm thick, and
  - c. The maximum distance of travel does not exceed 40m within the room and 20m from the doorway to the room through the circulation space to the exit (D1.4). *Compliance readily achievable – details of walls and doors required at CC stage.*

***Non compliances: -***

- (i) ***The class 7a basement part does not comply with travel distances up to 59m to a single exit in lieu of 40m max.***
- (ii) ***An additional exit door is required to the ground floor newspaper area.***
- (iii) ***Chiller plant room at L1 has 30m travel to point of choice of exits in lieu of 20m.***
- (iv) ***Levels 2 and 3 have 44m (SEW L2) and 47m (NE L3) travel to a single exit in lieu of 40m.***
- (v) ***Level 4 and 5 have 37m travel to a single exit in lieu of 20m max.***

***A fire Engineered solution is being carried out to address the above items.***

Exits that are required as alternative means of egress must be located so that alternative paths of travel do not converge such that they become less than 6m apart or more than 60m apart (D1.5). ***Does not comply – the distance between alternative exits is 77m in lieu of 60m at Basement level. A fire Engineered solution is being carried out to address the above items.***

- (d) Widths of exits and corridors must be sufficient to provide safe passage for occupant egress. The unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1m (D1.6). *Generally complies.*
- (e) A doorway must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from a public corridor, public lobby or the like, a single occupancy unit occupying the entire storey or a sanitary compartment or air lock. *Generally complies.*
- (f) The fire-isolated stairway must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway to a road or open space or a point in a storey or space within the confines of the building that is used only for pedestrian movement, and is open for at least 2/3 of its perimeter allowing an unimpeded path of travel not further than 20m to a road or open space. *Generally complies*
- (g) A ramp must be provided at any change in level less than 600mm in a fire-isolated passageway in a Class 9 building (D1.7). *Architect to note.*
- (h) An external stairway or ramp may serve as a required exit in lieu of a fire-isolated exit serving a storey below an effective height of 25m if the stair way or ramp is non-combustible throughout and

protected in accordance with D1.8(c) if it is within 6m of and exposed to any part of the external wall of the building it serves. *Compliance readily achievable – construction drawings to show detail.*

- (i) A non-fire-isolated stairway or ramp serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on a floor to a point of egress to a road or open space must not exceed 80m. **Does not comply – the central stair is discontinuous and has a travel distance from the L3 SE office area to the ground floor of approx 99m. Alternative solution needed and being obtained.**

In a 9b building the discharge point of the non-fire-isolated stairway or ramp must not be more than 20m from a doorway providing egress to a road or open space or from a fire-isolated passageway leading to a road or open space, or 40m from one of 2 such doorways or passageways if travel to each of them is in opposite or approximately opposite directions (D1.9). *Complies.*

- (j) The discharge point of alternative exits must be located as far apart as practical (D1.10). *Complies.*
- (k) A non required non fire isolated stair cannot link more than 2 levels (D1.12). **Does not comply to the internal circulation stair linking Levels 3, 4, 5 administration areas at south end as links 3 levels a Fire Engineer has been engaged to address and consider the Part G3 atrium requirements.**
- (l) Access to lift pits to comply with D1.17. *Compliance readily achievable – construction drawings to show detail.*
- (m) A stairway that is required to be within a fire-resisting shaft must be constructed of non-combustible materials and not cause structural damage to or impair the fire-resistance of the shaft if there is local failure (D2.2). *Compliance readily achievable – construction drawings to show detail.*
- (n) Non-fire-isolated stairways and ramps must be constructed in accordance with D2.2 or:
  - a. Reinforced or prestressed concrete,
  - b. Steel with minimum 6mm thickness throughout,
  - c. Timber that:
    - i. Has minimum finished thickness of 44mm, and
    - ii. Average density of minimum 800kg/m<sup>3</sup> at moisture content of 12%, and
    - iii. Not been joined by glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue.

*Compliance readily achievable – construction drawings to show stair type materials detail – presume stairs will be concrete.*

- (o) The space below a required fire-isolated stairway must not be enclosed to form a cupboard. Non-fire-isolated stairways and ramps including external stairways must not be enclosed to form a cupboard or other enclosed space unless the walls and ceilings are of FRL 60/60/60 and access door is fitted with a self-closing -/60/30 fire door. *Compliance readily achievable – construction drawings to show detail.*
- (p) Goings and risers to comply with D2.13 – *details required at CC stage.*
- (q) A continuous barrier with a minimum height of 865mm required for stairways. Landing and balconies require a minimum 1m high barrier. A 125mm sphere must not be able to pass through any opening. Where the drop exceeds 4m – no climbable elements are permitted in the 150mm to 760mm zone. *Compliance readily achievable at CC stage – construction drawings to show detail.*
- (r) Handrails to be located along the full length on at least one side of the flight of stairs with the top surface to be a minimum height of 865mm measured vertically above the nosings of the stair treads. *Compliance readily achievable – construction drawings to show detail.*
- (s) Panic bars needed to auditorium area exit doors where there are more than 100 persons.

## 18. Access for People with a Disability

- (a) All areas normally used by the occupants of the Class 9b building must be accessible. *Complies.*
- (b) An accessway must be provided to a building required to be accessible from the main points of a pedestrian entry at the allotment boundary and from another accessible building connected by a pedestrian link and from any required accessible carparking space on the allotment. *Complies.*
- (c) Ramps must comply with Clause 10 of AS1428.1 and stairways except in fire-isolated stairways must comply with Clause 11 of AS1428.1. Fire-isolated stairways must comply with Clause 11.1(f) and (g) of AS1428.1. *Compliance readily achievable – details required at CC stage.*
- (d) A series of doors will need amendment to show sufficient circulation clearance space at doorways. *Details to be provided at DD Stage.*
- (e) Accessible parking to be provided for each 50 car spaces. *Approx. 80 cars in the basement shown, 4 accessible spaces are provided – satisfactory.*
- (f) Signage complying with Spec D3.6 must be installed in accordance with D3.6. *Compliance readily achievable – details required at CC stage.*
- (g) Hearing augmentation system/s must be installed in the rooms fitted with a PA systems or microphones in accordance with D3.7(b). *Compliance readily achievable – details required at CC stage.*
- (h) Tactile indicators must be installed throughout the building in accordance with D3.8. *Compliance readily achievable – details required at CC stage.*
- (i) Vision bands are required on all full height glazing located on an accessway in accordance with AS1428.1. *Compliance readily achievable – details required at CC stage.*

## Section E – Services and Equipment

- 19. **Fire Hydrants (E1.3)** – The building must be served with fire hydrants complying with the requirements of BCA Clause E1.3 and AS 2419.1-2005. *Location of hydrants and hydrant booster needed to assess compliance. **Booster near main entry needs to be protected with a shield wall up to 4m high and 2m either sides of the equipment. Amendment needed at DD stage.***
- 20. **Fire Hose-reels (E1.4)** – Must be provided to serve the whole building where one or more internal fire hydrants are installed. The fire hose reel system must be installed to AS 2441 and serve only the storey at which they are located. Hose-reels are to be located within 4m of an exit or an internal fire hydrant. *Fire services contractor to provide details. Under BCA 2019 – no hose reels needed to Class 5 parts under BCA 2019.*
- 21. **Sprinklers (E1.5)** – The basement carpark will need sprinklers as more than 40 car spaces are present. The upper levels will require sprinklers if a timber structure building is proposed. *Fire services contractor to provide details.*
- 22. **Extinguishers (E1.6)** – Required to cover Class AE or E fire risks associated with emergency services switchboards. *Fire consultant to confirm location.*
- 23. **Smoke detection and alarm systems (Spec E2.2a)** – Must be provided with automatic shutdown of any air-handling system (other than 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 -
  - i. Smoke detectors installed complying with Clause 4 of Spec E2.2a. *Details required at CC stage.*
  - ii. Any other installed fire detection and alarm system, including a sprinkler system complying with Spec E1.5. *Details required at CC stage.*

**Levels 3, 4, 5 are connected in lieu of 2 max (D1.12) and form an atrium - fire stair pressurisation needed.**

**A smoke exhaust system required to Levels G, 1, 2 as a result of a library and gallery being present in a fire compartment exceeding 2000m<sup>2</sup> (NSW E2.2b). This fire compartment is 6298m<sup>2</sup>.**

24. **Lift Installation (E3.1)** – An electric passenger lift must comply with Spec E3.1. *Compliance readily achievable – Further information is available in Appendix C.*
25. **Warning Against Use of Lifts in Fire (E3.3)** – Warning sign must be displayed near every call button and comply with Clause E3.3(b). *Compliance readily achievable – details of lift required.*
26. **Landings (E3.5)** – Access and egress to and from liftwell landings must comply with the Deemed-to-satisfy provisions of Section D of the BCA. *Compliance readily achievable – details of lift required.*
27. **Passenger Lifts (E3.6)** – The passenger lift must have accessible features in accordance with Table E3.6b and not rely on constant pressure device for its operation. *Compliance readily achievable – details of lift required.*
28. **Emergency Lights and Exit / Directional Signs (E4.2, E4.5, E4.6) –**
  - i. Emergency lighting complying with AS 2293.1 is required in:
    - o Every fire-isolated stairway and in every storey that has as floor area greater than 300m<sup>2</sup>. It is also required in areas where it forms the path of travel to an exit and in any room with a floor area greater than 100m<sup>2</sup> that does not open to a corridor or space that has emergency lighting, or to a road, or open space.
    - o Where there is public access on every storey – any point on the floor of that storey is more than 20m from the nearest doorway leading directly to a stairway, passageway, road or open space.
    - o Egress from that storey involves a vertical rise within the building of more than 1.5m, or any vertical rise if the storey does not admit sufficient light.
  - ii. Exit signs complying with AS 2293.1 are required to be installed above or adjacent to each:
    - o Door providing direct egress from a storey to:
      - An enclosed stairway or passageway serving as a required exit
      - External stairway or passageway serving as a required exit
      - External access balcony leading to a required exit.
    - o Door from an enclosed stairway or passageway at every level of discharge to road or open space.
  - iii. If an exit is not readily apparent then exit signs must be installed in appropriate positions in areas such as corridors, hallways and lobbies, indicating the direction to a required exit.  
*Compliance achievable and details not shown as yet. Electrical engineer to provide details at CC stage.*
29. **Sound systems and intercom systems for emergency purposes (E4.9)** - A sound system and intercom system for emergency purposes complying where applicable with AS 1670.4 must be installed in a building with an effective height of more than 25 m or 9b building having a public hall and greater than 1000m<sup>2</sup>. *Compliance readily achievable – Fire services consultant to provide details.*

## Section F – Health and Amenity

30. **Damp and Weatherproofing (Part F1)** – Stormwater drainage is to comply with F1.1 and AS/NZS 3500.3. Roof coverings must comply with F1.5. Sarking for weatherproofing of roofs and walls must comply with F1.6 and AS/NZS 4200 Parts 1 and 2. Sanitary compartments must be water resistant or waterproof in accordance with Table F1.7 and comply with AS 3740. Damp-proofing of the flooring is to comply with F1.9 and F1.10. Glazed assemblies in an external wall must comply with F1.13 and AS 2047. *Architect to note and provide details at CC stage.*



31. **Sanitary and Other Facilities (Part F2)** – Sanitary facilities must be provided on the basis of equal numbers of males and females. A unisex facility required for people with a disability may be counted once for each sex and must contain one closet pan, one washbasin and means for the disposal of sanitary towels (F2.2). Separate sanitary facilities for males and females must be provided unless permitted by F2.4(a) and (b), and adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females (F2.3).

***Population numbers (staff and patrons) have been provided by the architect and client to determine sanitary facility requirements.***

Stated Population	
93	(public)
93 central	(public)
272 south	(public)
172 north	(public)
149 north	(public)
136 south	(staff)
526	(506 public) (20 staff)
376 north	(public)
110 south	(staff)
81	(staff)
82	(staff)
6	(staff)
<b>Total 2096</b>	

Sanitary Facility Requirements (50:50 Ratio)	
Male	Female
1048	1048

Briefly: Of 2096 total population, 429 are estimated staff and 1667 public.

On a whole building basis:

Total number of **STAFF** male facilities (215):

Required – 11 pans, 6 urinals 8 washbasins

Provided – 9 pans, 7 urinals 10 washbasins (includes 2 unisex)

***Two male staff pans short***

Total number of **STAFF** female facilities (215):

Required – 15 pans, 8 washbasins

Provided – 14 pans, 10 washbasins (includes 2 unisex)

***One female staff pan short***

Using F2.3 public halls function rooms and the like:

Total number of male facilities (**PATRONS 834**):

Required – 5 pans, 11 urinals 5 washbasins

Provided – 6 pans, 9 urinals 10 washbasins (Plus 3 unisex)

***Satisfactory***

Total number of female facilities (**PATRONS 834**):

Required – 12 pans, 5 washbasins

Provided – 13 pans, 10 washbasins (Plus 4 unisex)

***Satisfactory***

Accessible sanitary facilities are generally provided at each level where there are toilets. LH / RH transfer types to be detailed at DD stage.

32. **Height of Rooms and Other Spaces (F3.1)** – In a Class 9b building that accommodates more than 100 persons, the minimum ceiling height of 2.7m is required to all rooms and corridors excluding sanitary compartments. All other rooms are required to have a minimum height of 2.1m. *Complies.*
33. **Provision of Natural Light (F4.1)** – No requirements for Class 9b buildings that are not primary or secondary schools.
34. **Artificial Lighting (F4.4)** – Artificial lighting complying with Clause F4.4 of the BCA and AS/NZS 1680.0-1998 to be provided to:
- Required stairways and passageways
  - All rooms that are frequently occupied, all spaces required to be accessible, all corridors, lobbies, internal stairways, other circulation spaces and paths of egress.
- Compliance readily achievable – details to be provided.*
35. **Ventilation of Rooms (F4.5)** – Mechanical ventilation complying with AS 1668.2 and AS/NZS 3666.1 must be provided where natural ventilation cannot be provided. *Compliance readily achievable – Mechanical services consultant to provide details. Each room needs minimum 5% of the floor area of the room to be ventilated.*
36. **Restriction on Location of Sanitary Compartments (F4.8)** – Sanitary compartments must not open directly into a room used for public assembly. *Architect to note*
37. **Carparks (F4.11)** – The carpark must have a system of mechanical ventilation complying with AS 1668.2 or a system of natural ventilation complying with Section 4 of AS 1668.4. *Mechanical services consultant to note.*
38. **Condensation Management (Part F6 – new to BCA 2019)** – Not applicable to Class 5 and 9 Buildings.

#### Section I – Class 9b Buildings

39. **Seating area (H1.4)** – The gradient of the floor surface must not be steeper than 1 in 8. *Complies.*

#### Section J – Energy Efficiency

**Energy Efficiency (Part J)** – This section is mandatory for Class 9b projects.

The building is within Climate Zone 2 and will be required to comply with *Parts J1, J2, J3, J5, J6, J7 and J8. Architectural, mechanical services and electrical services consultants' confirmation will be required at CC stage.* BCA 2019 has many Part J changes to consider.

**A Section J Consultants report will be required.** *Services consultant to note Clause J8.3 Facilities for energy monitoring*

*(a) A building or sole-occupancy unit with a floor area of more than 2500m<sup>2</sup> must have the facility to record the consumption of gas, electricity, lifts, air conditioning, lighting and power and hot water supply.*

#### Conclusion

We have assessed the listed BVN Architecture drawings with respect to the Building Code of Australia 2019. We are confident that the design can be readily modified as part of the detailed design and documentation phase to satisfy the requirements of the Building Code of Australia 2019 without causing and consistency with the approved SSD documentation.

## Appendix A

**Table 3 - TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS**

Building element	Class of building-FRL: (in minutes)			
	Structural adequacy/Integrity/Insulation			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
<b>EXTERNAL WALL</b> (including any column and other building element incorporated within it) or other external building element, where the distance from any fire-source feature to which it is exposed is-				
For loadbearing parts				
Less than 1.5m	90/90/90	120/120/120	180/180/180	240/240/240
1.5 to less than 3m	90/60/60	120/90/90	180/180/120	240/240/180
3m or more	90/60/30	120/60/30	180/120/90	240/180/90
For non-loadbearing parts				
Less than 1.5m	-/90/90	-/120/120	-/180/180	-/240/240
1.5 to less than 3m	-/60/60	-/90/90	-/180/120	-/240/180
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
<b>EXTERNAL COLUMN</b> not incorporated in an external wall -				
Less than 3m	90/-/-	120/-/-	180/-/-	240/-/-
3m or more	-/-/-	-/-/-	-/-/-	-/-/-
<b>COMMON WALLS and FIRE WALLS-</b>	90/90/90	120/120/120	180/180/180	240/240/240
<b>INTERNAL WALLS</b>				
Fire- resisting lift and stair shafts-				
Loadbearing	90/90/90	120/120/120	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/120/120	-/120/120	-/120/120
Bounding public corridors, public lobbies and the like-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Between or bounding sole-occupancy units-				
Loadbearing	90/90/90	120/-/-	180/-/-	240/-/-
Non-loadbearing	-/60/60	-/-/-	-/-/-	-/-/-
Ventilating, pipe, garbage, and like shafts not used for the discharge of hot products of combustion				
Loadbearing	90/90/90	120/90/90	180/120/120	240/120/120
Non-loadbearing	-/90/90	-/90/90	-/120/120	-/120/120
<b>OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS-</b>				
	90/-/-	120/-/-	180/-/-	240/-/-
<b>Floors</b>	90/90/90	120/120/120	180/180/180	240/240/240
<b>Roofs</b>	90/60/30	120/60/30	180/60/30	240/90/60

## Appendix B

**Table 3.9 REQUIREMENTS FOR CARPARKS**

Building element		FRL (not less than) Structural adequacy/Integrity/Insulation
		ESA/M (not greater than)
<b>Wall</b>		
(a)	<i>external wall</i>	
	(i) less than 3 m from a <i>fire-source feature</i> to which it is exposed:	
	<i>Loadbearing</i>	60/60/60
	<i>Non-loadbearing</i>	-/60/60
	(ii) 3 m or more from a <i>fire-source feature</i> to which it is exposed	-/-/-
(b)	<i>internal wall</i>	
	(i) <i>loadbearing</i> , other than one supporting only the roof (not used for carparking)	60/-/-
	(ii) supporting only the roof (not used for carparking)	-/-/-
	(iii) <i>non-loadbearing</i>	-/-/-
(c)	<i>fire wall</i>	
	(i) from the direction used as a <i>carpark</i>	60/60/60
	(ii) from the direction not used as a <i>carpark</i>	as required by <a href="#">Table 3</a>
<b>Column</b>		
(a)	supporting only the roof (not used for carparking) and 3 m or more from a <i>fire-source feature</i> to which it is exposed	-/-/-
(b)	steel column, other than one covered by (a) and one that does not support a part of a building that is not used as a <i>carpark</i>	60/-/- or 26 m <sup>2</sup> /tonne
(c)	any other column not covered by (a) or (b)	60/-/-
<b>Beam</b>		
(a)	steel floor beam in continuous contact with a concrete floor slab	60/-/- or 30 m <sup>2</sup> /tonne
(b)	any other beam	60/-/-
<b>Fire-resisting lift and stair shaft</b> (within the <i>carpark</i> only)		60/60/60
<b>Floor slab and vehicle ramp</b>		60/60/60
<b>Roof</b> (not used for carparking)		-/-/-
<b>Notes:</b>		
1.	ESA/M means the ratio of exposed surface area to mass per unit length.	
2.	Refer to <a href="#">Specification E1.5</a> for special requirements for a sprinkler system in a <i>carpark</i> complying with Table 3.9 and located within a multi-classified building.	

## Appendix C

**Table E3.6B APPLICATION OF FEATURES TO PASSENGER LIFTS**

Feature	Application
Handrail complying with the provisions for a mandatory handrail in <a href="#">AS 1735.12</a>	All lifts except—
	(a) a stairway platform lift complying with <a href="#">AS 1735.7</a> ; and
	(b) a low-rise platform lift complying with <a href="#">AS 1735.14</a> .
Lift floor dimension of not less than 1400 mm x 1600 mm	All lifts which travel more than 12 m.
Lift floor dimensions of not less than 1100 mm x 1400 mm	All lifts which travel not more than 12 m except a stairway platform lift complying with <a href="#">AS 1735.7</a> .
Lift floor dimensions of not less than 810 mm x 1200 mm	A stairway platform lift complying with <a href="#">AS 1735.7</a> .
Minimum clear door opening complying with <a href="#">AS 1735.12</a>	All lifts except a stairway platform lift complying with <a href="#">AS 1735.7</a> .
Passenger protection system complying with <a href="#">AS 1735.12</a>	All lifts with a power operated door.
Lift landing doors at the upper landing	All lifts except a stairway platform lift complying with <a href="#">AS 1735.7</a> .
Lift car and landing control buttons complying with <a href="#">AS 1735.12</a>	All lifts except—
	(a) a stairway platform lift complying with <a href="#">AS 1735.7</a> ; and
	(b) a low-rise platform lift complying with <a href="#">AS 1735.14</a> .
Lighting in accordance with <a href="#">AS 1735.12</a>	All enclosed lift cars.
(a) Automatic audible information within the lift car to identify the level each time the car stops; and	All lifts serving more than 2 levels.
(b) audible and visual indication at each lift landing to indicate the arrival of the lift car; and	
(c) audible information and audible indication <i>required</i> by (a) and (b) is to be provided in a range of between 20–80 dB(A) at a maximum frequency of 1 500 Hz	
Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received	All lifts except a stairway platform lift complying with <a href="#">AS 1735.7</a> .



# SCHEMATIC DESIGN REVIEW

## ACCESS

## All Welcome

**Gordon Street,  
Coffs Harbour NSW 2450**

**Report Prepared for:** BVN Architecture Pty Ltd.  
**Report Prepared by:** David Choe – Philip Chun Access  
**Our Ref:** AN19-212471  
**Date:** 28<sup>th</sup> May 2019





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## DOCUMENT ACCEPTANCE

	Name	Signed	Date
Prepared by	David Choe <i>Access Consultant</i> <i>ACAA Affiliate Membership No. 574</i>		28 <sup>th</sup> May 2019

## REVISION HISTORY

Revision No.	Prepared by	Description	Date
00	David Choe	DRAFT for comments	28 <sup>th</sup> May 2019

This report has been prepared based on the available time allocated to conduct the review, and all reasonable attempts have been made to identify key compliance matters pursuant to the BCA and additional issues which have been deemed an impediment to access provision and may increase Client risk of attracting a complaint under the DDA.

The information provided within this report is relevant to this project and the documentation referenced. As such the information provided may not be transferred to other projects. This report must not be issued for public comment or be used for any other purpose without prior permission from Philip Chun Access.

Philip Chun Access accepts no responsibility for any loss suffered as a result of any reliance upon such assessment or report other than providing guidance to alleviate access barriers in the built environment and reduce Client risk of attracting a complaint under the DDA.



## 1. INTRODUCTION

This report documents a comprehensive review of the proposed project documentation with consideration to all aspects of accessibility to the site and throughout the development and with reference to the Building Code of Australia (BCA), Disability (Access to Premises – Buildings) Standards 2010 (Premises Standards), relevant Australian Standards as they relate to access to premises and the spirit and intent of the Disability Discrimination Act 1992 (Cth) (DDA).

This report has been prepared by Philip Chun Access with the aim of providing reasonable recommendations in regards to access to premises. Philip Chun Access has endeavoured to clearly identify each issue of concern with respect to the building element and with reference to relevant legislation and guidelines.

Matters that fall outside the scope of this report include structure or installation methods and assessment against Occupational Health and Safety legislation.

### 1.1 Site and Context

The site for 'All Welcome' is located in between Riding Lane to the west and Gordon Street to the east with existing neighbouring buildings to the north and south, which are outside the site boundary.

Vehicular access is available from Gordon Street to the east via the proposed vehicular ramp down to the basement carpark and pedestrian access to the site are available from both Riding Lane and Gordon Street via the proposed through link/internal street on the ground floor, which divides the building into north and south wings.

*\*With an overarching theme of 'All Welcome', this preliminary schematic design has six strong principles that support the decision-making processes for the building design. Each building element will also match the desired experiences to 'gather, create and discover' in this reimagined space to combine arts, community and culture.*

*Influenced by Coffs Harbour's unique environment – the sea, the harbour, the fig tree, the sense of place – this exciting building form is shaped to promote the idea of all welcome and to be readily apparent on the Coffs Harbour skyline.*

*The preliminary schematic design includes shared open space and blurred boundaries between the public, cultural and library functions of the building.*

*A public space on level three is open to the sky and is designed for small events, such as council meetings, smoking ceremonies and other community functions.*

*The building wraps around the fig tree in Riding Lane, providing views to it from all levels as a wayfinding, orientation and contact with nature.*

*Designed to combine arts, community and culture to create a lively community and civic space for a vibrant and active City Centre, this exciting facility will incorporate the central library, museum, regional gallery and centralised council facilities to improve services for the Coffs Harbour region.*

*\*Reference*

<https://www.news.coffsharbour.nsw.gov.au/2019/05/09/exciting-new-vision-for-coffs-harbour-cultural-and-civic-space/>



## 1.2 Reviewed Documentation

This report is based upon the following relevant design documents produced by BVN Architecture Pty Ltd. for Philip Chun Access review.

Document No	Title	Revision
AR-B10-B1-00	BASEMENT LEVEL FLOOR PLAN	04
AR-B10-00-00	GROUND LEVEL FLOOR PLAN	04
AR-B10-01-00	LEVEL 01 FLOOR PLAN	04
AR-B10-02-00	LEVEL 02 FLOOR PLAN	04
AR-B10-03-00	LEVEL 03 FLOOR PLAN	04
AR-B10-04-00	LEVEL 04 FLOOR PLAN	04
AR-B10-05-00	LEVEL 05 FLOOR PLAN	04
AR-B10-06-00	LEVEL 06 FLOOR PLAN	04
AR-D10-XX-01	SECTION N-S	05
AR-D10-XX-02	SECTION E-W	01

## 1.3 Council Requirements

Coffs Harbour DCP 2015 requirements (e.g. Section D1.8 of DCP) pertinent to accessibility and universal design can be addressed, coordinated and detailed during subsequent detailed design development stages.

## 1.4 Methodology

Philip Chun Access aims to provide achievable recommendations related to the provision of access to premises based on current legislation and best practice options, enabling independent, equitable and functional access for all.

Accessibility is paramount in providing an inclusive environment for all users. Phillip Chun Access looks beyond basic compliance issues to ensure that all users are offered the opportunity to participate in society. We incorporate the principles of Universal Design into all of our work, taking a holistic approach in the provision of access for people with disabilities.

This report should be read in conjunction with the attached marked plans, included as Appendix A. which should be read in conjunction with the subsequent sections of this report.





## 2. LEGISLATION

### 2.1 National Construction Code / The Building Code of Australia

The National Construction Code (NCC) comprises the Building Code of Australia (BCA) and the Plumbing Code of Australia (PCA). NCC is all encompassing and contains Volumes One, Two and Three; The Guide; and the Consolidated Performance Requirements. Detailed of these are as follows:

- Volume One contains the requirements for Class 2 to 9 (multi-residential, commercial, industrial and public) buildings and structures (BCA).
- Volume Two contains the requirements for Class 1 (residential) and Class 10 (non-habitable) buildings and structures.
- Volume Three contains the requirements for plumbing and drainage for all classes of buildings.
- The Guide is a companion manual to Volume One. The Guide provides clarification, illustration and examples for complex NCC provisions.
- Consolidated Performance Requirements provides a compilation of all NCC Performance Requirements and the supporting General Requirements in a single document.

The primary classification for the proposed buildings pursuant to the BCA is a Class 9b as advised by the relevant Building Surveyor.

Level	Proposed Use	Building Classification
Basement	Car Park	Class 7a
Basement	End of Trip Facilities and Bike Store	Class 9b
Ground Floor	Library, Gallery & Museum	Class 9b
Ground Floor	Cafe	Class 6
Level 1	Library	Class 9b
Level 1	Offices for Customer Service	Class 5
Level 2	Library, Public Meeting Rooms	Class 9b
Level 2	Offices for Library Staff	Class 5
Level 3	Public Meeting Rooms, Multi-Purpose, External Event Space	Class 9b
Level 3	Offices for Mayor and Admin Staff	Class 5
Level 4	Roof Garden	Class 9b
Level 4	Offices for Admin Staff	Class 5
Level 5	Offices for Admin Staff	Class 5
Level 6 and Roof	Plant and Roof	Class 5



Part D3 of the BCA and Premises Standards prescribes the minimum requirement for access to a building. Access for people with disabilities is required through the principal pedestrian entrance and throughout the building in accordance with Table D3.1. The following table outlines the general building access requirements for this project:

Class of building	Access requirements
<b>Class 5</b>	To and within all areas normally used by the occupants
<b>Class 6</b>	To and within all areas normally used by the occupants
<b>Class 7a</b>	To and within any level containing <i>accessible</i> carparking spaces
<b>Class 9b</b>	
An <i>assembly building</i> not being a <i>school</i> or an <i>early childhood centre</i>	To wheelchair seating spaces provided in accordance with Part D3.9 To and within all other areas normally used by the occupants, except that access need not be provided to tiers or platforms of seating areas that do not contain wheelchair seating spaces

## 2.2 Disability Discrimination Act 1992 (Cth) (DDA)

The accessibility assessment process covers all aspects of the infrastructure (premises), to the extent required to meet the objectives of the Disability Discrimination Act 1992 (Cth), including, however not limited to, Section 23 which relates to access to premises and facilities which the public may enter or use.

The Act is enforced primarily through a complaints mechanism, which allows individuals who have directly or indirectly experienced unlawful discrimination to seek a conciliated outcome through the Australian Human Rights Commission and, in the instance of unsuccessful conciliation, to bring an action in the Federal Magistrates Court or the Federal Court of Australia.

## 2.3 Access to Premises Standards – General

In contrast to building regulations, the DDA is not prescriptive. The implementation of the Premises Standards in 2010, and corresponding changes to the BCA, is a significant step towards achieving equal access to premises and is crucial to justice and social inclusion for people with disabilities.

It is noted that the Premises Standards are limited in scope, covering aspects of building compliance applicable under the BCA. It is acknowledged that the Premises Standards could address a broader range of accessibility issues including considerations to accessibility of parkland, playgrounds, transport vehicles, interior fit-out of buildings, and fixtures and fittings. As such, there are features which fall beyond the scope of the Standards which may be subject to the general complaints provisions of the DDA.

## 2.4 Access to Premises Standards – New Work

Where new work that requires building or construction approval is undertaken on an existing building, such as an extension or refurbishment, there is a requirement to ensure the new or modified part of the building complies with the Premises Standards.



### 3. COMPLIANCE SUMMARY

We have assessed the architectural documentation available to date and have reviewed the proposed building works with respect to the Building Code of Australia 2019 and Premises Standards. The design is at a point where the inherent BCA philosophies have been checked and Development Consent can be sought. The finer details with respect to BCA 2019 compliance can be finalised prior to the issue of a Construction Certificate/Tender Documentation.

Item	Description	Compliant			Comments
		Yes	No	TBC	
Access and Approach					
4.1	Approach from Allotment Boundary			•	Further details/confirmations to be provided during subsequent detailed design development stages.
4.2	Approach from Accessible Carparking	•			The proposed design is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.
4.3	Approach Between Buildings				Not applicable.
4.4	Accessible Carparking	•			The proposed design is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.
4.5	Building Entrance	•			The proposed design is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.
Accessibility Provisions – Internal Areas					
5.1	Internal Paths of Travel	•			The proposed design is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.
5.2	Floor Finishes			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.3	Internal Doors			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.4	Exemptions			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.5	Signage			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.6	Hearing Augmentation			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.7	Tactile Indicators			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.8	Wheelchair Seating			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.10	Glazing on an Accessway			•	Further details/confirmations to be provided during subsequent detailed design



Item	Description	Compliant			Comments
		Yes	No	TBC	
					development stages.
5.11	Slip Resistance			•	Further details/confirmations to be provided during subsequent detailed design development stages.
5.12	Thresholds			•	Further details/confirmations to be provided during subsequent detailed design development stages.
<b>Vertical Circulation</b>					
6.1	Passenger Lifts			•	Further details/confirmations to be provided during subsequent detailed design development stages.
6.4	Accessible Ramps			•	Further details/confirmations to be provided during subsequent detailed design development stages.
6.5	Stairs		•		This will need to be addressed, coordinated and detailed to comply during subsequent detailed design development stages.
6.6	Fire Isolated Stairs			•	
<b>Sanitary Facilities</b>					
7.1	Unisex Accessible Toilets		•		This will need to be addressed, coordinated and detailed to comply during subsequent detailed design development stages.
7.2	Unisex Accessible Shower	•			The proposed design is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.
7.3	PAD Cubicles		•		This will need to be addressed, coordinated and detailed to comply during subsequent detailed design development stages.
7.4	Unisex Adult Change Facility/ies			•	Further details/confirmations to be provided during subsequent detailed design development stages.
<b>Additional Accessibility</b>					
10.1	Additional Accessibility Considerations – Changing Places facility	•			The proposed Changing Places facility is considered capable of compliance subject to further detailed design coordination during subsequent detailed design development stages.



## 4. ACCESS AND APPROACH - EXTERNAL AREAS

External areas of the development generally comprise of a newly proposed through link/internal street on the ground floor. Pedestrian access to the site is available from both Riding Lane and Gordon Street site boundaries via the proposed through link/internal street on the ground floor, which divides the building into north and south wings.

Generally, further information such as proposed RLs, gradients and cross falls along proposed through link/internal street from respective site boundaries along Riding Lane and Gordon Street is required for a comprehensive assessment.

### 4.1 Approach from the Allotment Boundary (BCA Part D3.2)

The BCA requires that a continuous accessible path of travel within the meaning of AS1428 be provided from the allotment boundary at the main points of pedestrian entry to the main entrance.

*Please provide further information such as proposed RLs, gradients and cross falls along proposed through link/internal street from respective site boundaries along Riding Lane and Gordon Street is required for a comprehensive assessment.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### 4.2 Approach from the Accessible Carparking (BCA Part D3.2)

The BCA requires that a continuous accessible path of travel within the meaning of AS1428.1 (2009) be provided from the accessible carparking areas to the main entrance.

*Drawings indicate that a formed footpath with areas conducive to an accessible path of travel has been provided from the accessible carparking on the basement level to the building entrance on the ground floor via the lifts.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### 4.3 Approach between Buildings on Site (BCA Part D3.2)

The BCA requires that a continuous accessible path of travel within the meaning of AS1428 be provided between associated accessible buildings.

*Not applicable to this development as there appears to be only one single building proposed within the site boundary.*

### 4.4 Accessible Carparking (BCA Part D3.5)

Accessible carparking, designed and constructed in accordance with AS 2890.6 (2009), is required to be provided as per the below ratio:

Class of building to which the Class 7a building or carparking area is associated	Number of accessible carparking spaces required
Class 5 and 7	1 space for every 100 carparking spaces or part thereof.
Class 6	





Class of building to which the Class 7a building or carparking area is associated	Number of accessible carparking spaces required
(a) Up to 1 000 carparking spaces; and	1 space for every 50 carparking spaces or part thereof.
(b) for each additional 100 carparking spaces or part thereof in excess of 1 000 carparking spaces.	1 space.
<b>Class 9b</b>	
(b) Other assembly buildings: (i) up to 1 000 carparking spaces; and (ii) for each additional 100 carparking spaces or part thereof in excess of 1 000 carparking spaces.	1 space for every 50 carparking spaces or part thereof. 1 space.

An accessible carparking space need not be designated where the total number of carparking spaces available does not exceed 5.

*From drawings provided, there appears to be a total of 72 car parking spaces provided on the basement level of which 4 spaces are designated as accessible spaces. General configuration of the spaces appears to offer compliance with AS 2890.6 (2009). Refer to Appendix B for compliance requirements.*

*However, need a parking schedule showing the distribution of car spaces incl. accessible spaces for different building classes (e.g. 30 spaces for office, 30 spaces for library, gallery and museum and 12 spaces for retail etc.).*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

#### **4.5 Building Entrance (BCA Part D3.2)**

A continuous, accessible path of travel must be provided through the principal pedestrian entrance and not less than 50% of all pedestrian entrances / exits.

Where the total floor area of the building exceeds 500m<sup>2</sup>, therefore the distance of travel between accessible and inaccessible entrances must not exceed 50m.

Where a door required to be accessible has more than one door leaf, one of the leaves must have a clear opening of 850mm.

*There are two principal pedestrian entrances on the ground floor each consisting of an automatic dual slide opening doorway. There is one auto sliding doorway for the entry into the northern library wing and the second auto slider for entry into the southern museum/gallery wing of the building. Both auto sliding doorways appear to be capable of compliance.*

*The use of this type of doorway is encouraged as it maximises accessibility and is in keeping with Universal Design principles.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details*



## 5. ACCESSIBILITY PROVISIONS – INTERNALS AREAS

This report is for the base building component of building works only. Fit-out of the ground floor retail tenancy (i.e. café) will be subject to a separate development application and as such do not form a part of this access report.

### 5.1 Internal Paths of Travel Generally (BCA Part D3.3)

BCA Part D3.3 requires that accessways complying with AS 1428.1 (2009) must be provided to and throughout areas of buildings required to be made accessible, including:

- Minimum corridor widths of not less than 1000mm;
- Passing spaces with a minimum width of 1800mm and minimum length of 2000mm to be provided in corridors at maximum 20m intervals where a direct line of sight is not available; and
- Turning spaces of minimum 1540mm width and minimum 2070mm length to be provided within 2m of the end of corridors and at maximum 20m intervals.

Note: a passing space may serve as a turning space.

Increased landings are required at changes of direction, including 1500mm x 1500mm turning spaces to facilitate a 60-90 degree turn.

*Generally drawings indicate that sufficient circulation spaces for wheel chair turning and passing can be readily provided for compliance with AS1428.1-2009.*

*However, further details regarding kerb ramps on the basement level are required as this can affect the circulation spaces at top and bottom landings. Refer to ramp section of this report.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### 5.2 Floor Finishes / Surfaces (BCA Part D3.3)

The following applies to interior finished and surface materials, in keeping with AS1428.1 (2009):

- Where carpet or any soft flexible materials are used as flooring material, the pile height or pile thickness is to be no greater than 11mm and the carpet backing to be not more than 4mm thick.
- Matting recessed within a continuous accessible path of travel to have a surface level difference to surrounding materials not more than 3mm for vertical and 5mm for rounded or bevelled edges.
- Grates are to have openings no greater than 13mm in diameter and any slotted openings to be no more than 13mm wide and orientated perpendicular to the dominant direction of travel.

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### 5.3 Internal Doors – Circulation Areas

Doors and doorways to be provided with the following circulation clearances as per AS 1428.1 (2009):



**Table 5.3(a) – Hinged Door Requirements**

Door Approach	Door opening direction	Clearances (mm)		
		Latch side	Hinge side	Depth in front of door
Front	Towards occupant	530	110	1450
	Away from occupant	510	-	1450
Latch Side	Towards occupant	900	110	1670
	Away from occupant	660	240	1240
Hinge Side	Towards occupant	900	660	1670
	Away from occupant	340	560	1220
Either Side	Towards occupant	900	660	1670
	Away from occupant	660	560	1240

**Table 5.3(b) – Sliding Door Requirements**

Door Approach	Clearances (mm)		
	Latch side	Slide side	Depth in front of door
Front	530	-	1450
Slide Side	395	660	1280
Latch Side	660	185	1230
Either Side	660	660	1280

Note: the above clearances are based upon an unobstructed door opening of 850mm, which is the minimum required clearance. Unobstructed door openings greater than 850mm will have different requirements. This will be reviewed upon provision of a door schedule and detailed architectural drawings.

Where a door required to be accessible has more than one door leaf, one of the leaves must have a clear opening of 850mm.

The distance between successive doors within airlocks, vestibules and the like require a minimum 1450mm depth between swing doors, 900mm for the path of travel to ambulant toilet cubicles.

*There are multiple doorways with insufficient door circulation spaces that are non-compliant with AS1428.1-2009, which can be addressed and coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for locations of non-compliances and detailed comments and Appendix B for compliance details.*

## **5.4 Internal Doors – Operational Forces**

Door operating forces to manual doors to meet the requirements of AS 1428.1 (2009), Clause 13.5.2 (e).

Ensure any door closers selected (and when installed) will meet the requirements for operating forces, that is:

- 20N to initially open the door;
- 20N to swing the door; and
- 20N to hold the door open between 60 and 90°.



*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

## **5.5 Exemptions (BCA Part D3.4)**

Where full access is unachievable due to the functions of the space, there may be opportunity to access the area under the permitted exemptions of the BCA D3.4 which states:

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).

*Refer to Appendix A – Marked Plans for a list of highlighted areas that can be exempt from access under Part D3.4 and also areas where confirmation regarding the exact use and contents of the rooms are required to determine additional Part D3.4 exemption.*

## **5.6 Signage (BCA Part D3.6)**

Braille and tactile signage is required to be provided throughout any building required to be made accessible in accordance with BCA specification D3.6 and AS1428.1 (2009) and must identify:

- Each sanitary facility
- Any space with a hearing augmentation system
- Accessible unisex facilities and indicate whether the facility is suitable for left or right handed use
- Ambulant accessible sanitary facilities on the door of the cubicle
- Where an entrance is not accessible, directional signage to identify nearest accessible entrance
- Where a bank of sanitary facilities is not provided with an accessible sanitary facility, directional signage to identify nearest accessible sanitary facility.
- Each door required by Part E4.5 to be provided with an exit sign and state “Exit” and “Level” followed by either the floor level number, the floor descriptor or combination of these.

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

## **5.7 Hearing augmentation (BCA Part D3.7)**

A hearing augmentation system must be provided where an inbuilt amplification system is provided, other than one used for emergency purposes only as required by BCA Part D3.7.

Further, for buildings that are required to be accessible, the BCA (Part D3.7) requires hearing augmentation systems at service counters **where the user is screened from the service provider.**

Note: Consideration to the design specifications of AS 1428.5 (2010) is recommended, however is not mandatory to meet the Premises Standards.



*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

## 5.8 Tactile indicators (BCA Part D3.8)

Where a building is required to be made accessible, BCA Part D3.8 requires that tactile indicators must be provided, in accordance with AS1428.4.1 (2009)) to:

- A stairway
- A ramp, other than kerb ramp
- Any overhead obstruction less than 2m above the FFL, other than a doorway, where a suitable barrier has not been provided
- Where an accessway meets a vehicular way in the absence of a kerb or kerb ramp

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

## 5.9 Wheelchair seating spaces in Class 9b assembly buildings (BCA Part D3.9)

Wheelchair seating areas are required to be provided within Class 9b assembly buildings as per BCA Part D3.9 and in accordance with AS1428.1 (2009).

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



*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

#### **5.10 Glazing on an accessway (BCA Part D3.12)**

BCA Part D3.12 requires that where full height glazing that can be mistaken for an unobstructed opening is provided along an accessway, the glazing must be provided with visual identification as per AS 1428.1 (2009).

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

#### **5.11 Slip Resistance (BCA Part D2.14)**

Landings in a stairway must have;

- (a) a surface with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586; or
- (b) a strip at the edge of the landing with a slip-resistance classification not less than that listed in Table D2.14 when tested in accordance with AS 4586, where the edge leads to a *flight* below;

Application	Surface Conditions	
	Dry	Wet
Ramp steeper than 1:14	P4 or R11	P5 or R12
Ramp steeper than 1:20 but not steeper than 1:14	P3 or R10	P4 or R11
Tread or landing surface	P3 or R10	P4 or R11
Nosing or landing edge strip	P3	P4

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

#### **5.12 Thresholds (BCA Part D2.15)**

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—

- (c) in a building required to be accessible by Part D3, the doorway
  - (i) opens to a road or open space; and
  - (ii) is provided with a threshold ramp or step ramp in accordance with AS 1428.1 (2009); or

NSW D2.15 (d) and (e):





- (d) in a Class 9b building used as an entertainment venue, the door sill of a doorway opening to a road, open space, external stair landing or external balcony is not more than 50mm above the finished floor level to which the doorway opens; or
- (e) 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.

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

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## 6. VERTICAL CIRCULATION

There is a total of 4 passenger lifts proposed for the building. There are 2 passenger lifts proposed on the northern wing both of which provide vertical circulation from basement level up to level 3 of the building. There are 2 passenger lifts proposed on the southern wing of the building. One passenger lift in the southern wing provides continuous vertical circulation from the basement level up to level 6. The remaining southern wing passenger lift provides vertical circulation between levels 03 to 05. In addition to lifts there appears to be multiple emergency egress stairways and general communication stairways throughout the building.

### 6.1 Passenger Lifts (BCA Part E3)

Every passenger lift in an accessible building must be suitable for use by people with a disability and offer compliance with AS1725.12. Typically, the following is required to be provided:

#### Lift dimensions

- Lift floor dimensions of not less than 1100mm X 1400mm for lifts which travel not more than 12m.
- Lift floor dimensions of not less than 1400mm X 1600mm for lifts which travel more than 12m.
- Provision for a stretcher facility within at least one emergency lift required by E3.4, or where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12m, in at least one of those lifts to serve every floor served by lifts.

#### Lift Features

- Handrail complying with the provisions for a mandatory handrail in AS1735.12.
- Minimum clear door opening complying with AS1735.12.
- Passenger protection system complying with AS1735.12.
- Lift landing doors at the upper landing.
- Lift car and landing control buttons complying with AS1735.12.
- Lighting in accordance with AS1735.12.
- Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received.

All passenger lifts serving more than 2 levels must possess:

- Automatic audible information within the lift car to identify the level each time the car stops.
- Audible and visual indications at each lift landing to indicate the arrival of the lift car.
- Audible information and audible indication must be provided in a range between 20-80dB(A) at a maximum frequency of 1500Hz.

*At current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### 6.2 Accessible Ramps (BCA Part D3.3 & D3.11)

All accessible ramps (incl. step ramps and kerb ramps) must be designed and constructed in accordance with AS 1428.1 (2009) Clause 10.

For step ramps to comply with AS 1428.1(2009), Clause 10.6 include the following:

- Maximum rise of 190mm;
- Maximum length of 1900mm;



- Maximum gradient of 1:10;
- Minimum 1000mm unobstructed width;
- Where the step ramp does not abut a wall, the edges of the step ramp are to be provided with a 45 degree splay where pedestrian cross traffic is likely. Otherwise, the sides shall be protected by a 450mm low height wall, or where a balustrade is provided, a kerb or kerb rail;
- Top and bottom landing length of 1200mm, or 1500mm where there is a change in direction; and
- Ramp surface to have a slip resistance rating of W;R11 when dry, and V;R12 when wet.

For accessible ramps exceeding 1900mm in length, the maximum allowable gradient (i.e. no steeper than) of the ramp is 1:14, minimum clear width to be 1000mm and maximum length between landings to be 9m (for 1:14 gradient) to comply with AS1428.1-2009.

For kerb ramps, the maximum allowable gradient (i.e. no steeper than) is 1:8 with maximum 190mm in height, maximum 1520mm in length with clear landing depths of 1200mm or 1500mm where there is a change in direction.

On and accessway –

- (a) A series of connected ramps must not have a combined vertical rise of more than 3.6m; and
- (b) A landing for a step ramp must not overlap a landing for another step ramp or ramp.

*There are multiple kerb ramps proposed on the basement level, however at current schematic stage, there are insufficient details provided. However, details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### **6.3 Stairs (BCA Part D3.3)**

All stairways, excluding fire-isolated stairs, must be designed and constructed in accordance with AS 1428.1 (2009) Clause 11 and include the provision of handrails, handrail extensions, opaque risers, contrasting nosing strips and tactile indicators.

Further to this is recommended that fire-isolated stairways proposed to be used as a means of general communication between floors should meet these enhanced requirements for the safety of all occupants.

*There are multiple general communication stairs provided to allow vertical circulation from the ground floor up to level 05. AS1428.1 has access requirements for all public access stairs and is applicable in this instance. There are also multiple instances where there are no offset tread widths at landings (incl. intermediate landings to ensure consistent height handrails on both sides (especially the inner rail) to prevent vertical or diagonal drop sections.*

*However, stair offset and handrail details can be readily coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*

### **6.4 Fire Isolated Stairs (BCA Part D3.3)**

All fire-isolated stairways must possess luminance contrast to the stair nosing as per AS 1428.1 (2009) Clause 11.1(f) and (g).

As per BCA Clause D2.17 (vi), handrails within the fire isolated stairways are required to comply with Clause 12 of AS 1428.1 (2009). The height of handrails is to be between 865-1000mm and be



consistent along the length of the stair. Strongly recommend design of a staggered stair (e.g. offset tread width at landings) to avoid handrail extensions intruding into stairway landings, particularly in the down flight.

*There appears to be multiple fire-isolated stairs provided to allow vertical emergency egress from basement level and levels 1 to 6 floor, which all discharge out of the building on the ground floor.*

*There appears to be multiple instances where there are no offset tread widths at landings (incl. intermediate landings to ensure at least one hand rail to achieve consistent height (especially the inner rail) and to prevent vertical or diagonal drop sections.*

*However, stair offset and handrail details can be readily coordinated to comply during subsequent detailed design development stages.*

*Please confirm which stairs are classified as being fire-isolated and used for emergency egress only (i.e. not used as both general communication and emergency egress) to assess the extent of this requirement.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*



## 7. SANITARY AND OTHER FACILITIES

### 7.1 Unisex Accessible Toilets (BCA Part F2)

Accessible unisex sanitary compartments must be provided in accessible parts of the building in accordance with Table F2.4(a). That is:

Class of building	Minimum accessible unisex sanitary compartments to be provided
Class 5, 6, 7, 8 and 9 — except for within a ward area of a Class 9a health-care building	Where Part F2.3 of the <i>BCA</i> requires closet pans: (a) 1 on every storey containing <i>sanitary compartments</i> ; and (b) where a storey has more than 1 bank of <i>sanitary compartments</i> containing male and female <i>sanitary compartments</i> at not less than 50% of those banks

#### Design

- An accessible unisex sanitary compartment must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels.
- The circulation spaces, fixtures and fittings of all accessible sanitary facilities must comply with the requirements of AS1428.1.
- 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.
- The door to a fully enclosed sanitary compartment 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 1.2m measured in accordance with Figure F2.5, between the closet pan with the sanitary compartment and the doorway.

#### Location

- An accessible sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only.
- Where male sanitary facilities are provided in a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of these locations.

*With exception to levels 02 and 06 where there are no sanitary compartments proposed there is at least one unisex accessible sanitary compartment provided on each level of the building between basement level to level 01 and between levels 03 and 05 where there are sanitary compartments proposed to meet BCA Part F2.4 requirements.*

*The public unisex accessible sanitary compartment within the northern library wing and on the ground floor was measured to achieve an overall room dimension of approximately 1990mm in width by 2400mm in length will need to be increased in dimension (e.g. 2630mm depth) to accommodate min. 430mm depth basin which can encroach into 1.9m x 2.3m circulation space by max. 100mm when facing opposite to the pan. This can be coordinated and addressed to comply during subsequent detailed design development stages.*

*Also the public unisex accessible sanitary compartment nearest to the multi-purpose hall on level 03 was measured to achieve an overall room dimension of approximately 2100mm in width by 2460mm in length will need to be increased in dimension (e.g. 2630mm depth) to accommodate min. 430mm depth basin which can encroach into 1.9m x 2.3m circulation space by max. 100mm*



*when facing opposite to the pan. This can be coordinated and addressed to comply during subsequent detailed design development stages.*

*Detailed set outs and arrangements of all the required sanitary ware, fixtures and fittings (e.g. achieving an even balance of left hand and right hand transfer unisex accessible toilets) can be coordinated and detailed to comply during subsequent detailed design development stages.*

## **7.2 Unisex Accessible Showers (BCA Part F2)**

Accessible unisex showers must be provided in accordance with Table F2.4(b). That is:

<b>Class of building</b>	<b>Minimum accessible unisex showers to be provided</b>
Class 5, 6, 7, 8 and 9 — except for within a ward area of a Class 9a <i>health-care building</i>	Where Part F2.3 of the <i>BCA</i> requires 1 or more showers, not less than 1 for every 10 showers or part thereof.

*A unisex accessible shower is proposed as a combined sanitary compartment with a unisex accessible toilet at the end of trip facilities on basement level. Overall room dimension of approximately 2600mm x 3020mm can accommodate all the required circulation spaces around the shower, basin and pan for compliance with AS1428.1-2009 subject to further coordination and detailed set outs and arrangements of all the required sanitary ware, fixtures and fittings during subsequent detailed design development stages.*

## **7.3 Sanitary compartments for people with an ambulant disability (BCA Part F2)**

At each bank of toilets where there are one or more toilets are provided in addition to an accessible unisex sanitary compartment at that bank of toilets, a sanitary compartment suitable for people with an ambulant disability (PAD) must be provided for use by males and females.

Design of the cubicles is to include the following:

- PAD cubicles within male and female toilets to be in compliance with AS1428.1 (2009).
- Width of PAD cubicles is to be 900–920mm.
- Provide grabrails to PAD cubicles.
- Provide 900 x 900mm circulation space in front of pan and each side of doors on path to the toilet. Doors are not to swing into circulation spaces.

*Insufficient ambulant toilet nomination and detail is provided at this stage of the schematic design process to ascertain compliance. Please provide further information (e.g. nomination of which toilet cubicles/compartments are for ambulant use) for review.*

*This can be coordinated, addressed and detailed and to comply during subsequent detailed development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*





#### 7.4 Unisex Adult Change Facility (BCA 2019 Part F2.9)

One unisex adult change facility must be provided in an accessible part of a –

- Museum, art gallery or the like having a design occupancy of not less than 1,500 patrons; and
- Theatre or the like having a design occupancy of not less than 1,500 patrons

*Please confirm the design occupancy of the external event space, museum, gallery and the amphitheatre in the library separately.*

*If confirmed to be 1500 patrons or more, the room proposed for the separate 'Changing Places' facility can be used as a unisex adult change facility as the overall room dimension of approximately 3350mm x 3860mm can readily accommodate circulation spaces for a unisex adult change facility.*

*However, if both Changing Places (best practice) and Unisex Adult Change Facility/ies (mandatory if design occupancy is 1500 or more) are required separately then additional room/s (depending on design occupancy of each library external event space, library amphitheatre, museum, gallery) for Unisex Adult Change Facility/ies.*

*This can be coordinated, addressed and detailed and to comply during subsequent detailed development stages.*

*Refer to Appendix A marked plans for further detailed comments and Appendix B for compliance details.*



## 8. ADDITIONAL ACCESSIBILITY CONSIDERATIONS

As detailed above, it is acknowledged that the Premises Standards are limited in scope, covering aspects of building compliance applicable under the BCA only.

Philip Chun Access provides the following as a summary of additional accessibility issues that can be addressed in order to reduce Client risk of attracting a discrimination complaint. Refer to Appendix C for specific requirements

- Fire Egress for People with Disabilities
- Accessible Reception Counters
- Seating in Public Areas
- Signage and Wayfinding
- Access controlled entries to carparks
- Depth of Door Recess
- Workstations
- Kitchen / kitchenette facilities
- Luminance Contrast
- Changing Places (this has been considered and provided on the ground floor library and will need to be coordinated and detailed to comply with changing places technical requirements and specifications)
- Lockers
- Furniture Hardware
- Lighting and Glare



## 9. CONCLUSION

We have assessed the architectural documentation available to date and have reviewed the proposed building works with respect to the Building Code of Australia 2019 and Premises Standards.

The proposed development is capable of achieving access for people with disabilities on coordinating, addressing and detailing the following issues identified throughout this report during subsequent detailed design development stages:

- *There are multiple doorways with insufficient door circulation spaces that are non-compliant with AS1428.1-2009, which can be addressed and coordinated to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for locations of non-compliances and detailed comments and Appendix B for compliance details.*

- *There are multiple stairways with insufficient offset tread width layouts that need to be addressed, coordinated and detailed to comply during subsequent detailed design development stages.*

*Refer to Appendix A marked plans for locations of non-compliances and detailed comments and Appendix B for compliance details.*

- *The public unisex accessible sanitary compartment within the northern library wing and on the ground floor was measured to achieve an overall room dimension of approximately 1990mm in width by 2400mm in length will need to be increased in dimension (e.g. 2630mm depth) to accommodate min. 430mm depth basin which can encroach into 1.9m x 2.3m circulation space by max. 100mm when facing opposite to the pan.*

*This can be coordinated and addressed to comply during subsequent detailed design development stages.*

- *The public unisex accessible sanitary compartment nearest to the multi-purpose hall on level 03 was measured to achieve an overall room dimension of approximately 2100mm in width by 2460mm in length will need to be increased in dimension (e.g. 2630mm depth) to accommodate min. 430mm depth basin which can encroach into 1.9m x 2.3m circulation space by max. 100mm when facing opposite to the pan.*

*This can be coordinated and addressed to comply during subsequent detailed design development stages.*

- *Please confirm the design occupancy of the external event space, museum, gallery and the amphitheater in the library separately.*

*If confirmed to be 1500 patrons or more, the room proposed for the separate 'Changing Places' facility can be used as a unisex adult change facility as the overall room dimension of approximately 3350mm x 3860mm can readily accommodate circulation spaces for a unisex adult change facility.*

*However, if both Changing Places (best practice) and Unisex Adult Change Facility/ies (mandatory if design occupancy is 1500 or more) are required separately then additional room/s (depending on design occupancy of each library external event space, library amphitheater, museum, gallery) for Unisex Adult Change Facility/ies.*



# APPENDIX A

## MARKED PLANS

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Provide an offset tread width at landings (incl. intermediate landings) to ensure the inner rail does not have a vertical or diagonal drop section (i.e. consistent height handrail).

Please confirm which stairs are classified as being fire-isolated and used for emergency egress only (i.e. not used as both general communication and emergency egress) to assess the extent of BCA D3.3 requirement.

Confirm if there will be bulky/heavy objects and equipments stored in the storage rooms to determine whether it can be exempt from access under Part D3.4 of BCA.

Please provide further information such as proposed RLS, gradients and cross falls along proposed through link/internal street from respective site boundaries along Riding Lane and Gordon Street is required for a comprehensive assessment.

- Café
- Circulation
- Internal Street
- Library
- LMG Shared
- MG Shared
- Regional Gallery
- Services
- Shared
- Vertical Circulation

PHILIP CHUN  
Consulting

Access  
Compliance

Ref: AN19-212471, Cultural & Civic Space, Coffs Harbour  
Reviewed by: David Choe  
Date: 28/05/2019

Notes on design:  
The document mark up is for information only and is based on the documentation provided to Philip Chun. Philip Chun takes no responsibility for the correctness of the provided documentation.

**GENERAL BCA ACCESS REQUIREMENTS AT PRELIMINARY SCHEMATIC DESIGN STAGE**

**BCA PART D3.2 ACCESS TO BUILDINGS**

1) Ensure a continuous accessible path of travel (CAPT) compliant with AS1428.1-2009 is provided to any new buildings from the following:

- main points of pedestrian entry at the allotment boundary; and
- any accessible car parking spaces on the allotment; and
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(BCA Clause D3.4.)

**DOOR CIRCULATION SPACES**

Areas highlighted with a circular red fill do not achieve sufficient door circulation spaces and are non-compliant with AS1428.1-2009.

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18120033000  
DRAWING KEY

TRUE NORTH PROJECT NORTH

GRAPHIC SCALE

0 2000 5000  
SCALE

1:100@B1 DO NOT SCALE  
STATUS

PRELIMINARY SCHEMATIC DESIGN  
DRAWING

GROUND LEVEL FLOOR  
PLAN

ISSUE

AR-B10-00-00 4

Vertical Circulation  
S07.2B  
4.9 m<sup>2</sup>

Vertical Circulation  
S07.3  
7.8 m<sup>2</sup>

Carpark Exhaust  
UMG5B  
1.2 m<sup>2</sup>

Cleaner  
[C53]  
9.9 m<sup>2</sup>

Comms  
[H01]  
4.7 m<sup>2</sup>

Collection Storage  
[G01]  
34.3 m<sup>2</sup>

Preparation & Registration  
MG01  
28.8 m<sup>2</sup>

WHEEL STOP

SAFETY ZONE  
FIXED LADDER  
FROM ABOVE

Loading Dock  
[S19]  
60.8 m<sup>2</sup>

MG Double (1)  
MG2  
204.6 m<sup>2</sup>

MG Double (2)  
MG3  
196.2 m<sup>2</sup>

MG Small  
MG4  
81.4 m<sup>2</sup>

Circulation  
MG50  
42.0 m<sup>2</sup>

Bin Store  
[S19.1]  
32.0 m<sup>2</sup>

Substation  
[S21]  
34.3 m<sup>2</sup>

TEA POINT  
OPERABLE WALL

MG Open  
MG5  
6.2 m<sup>2</sup>

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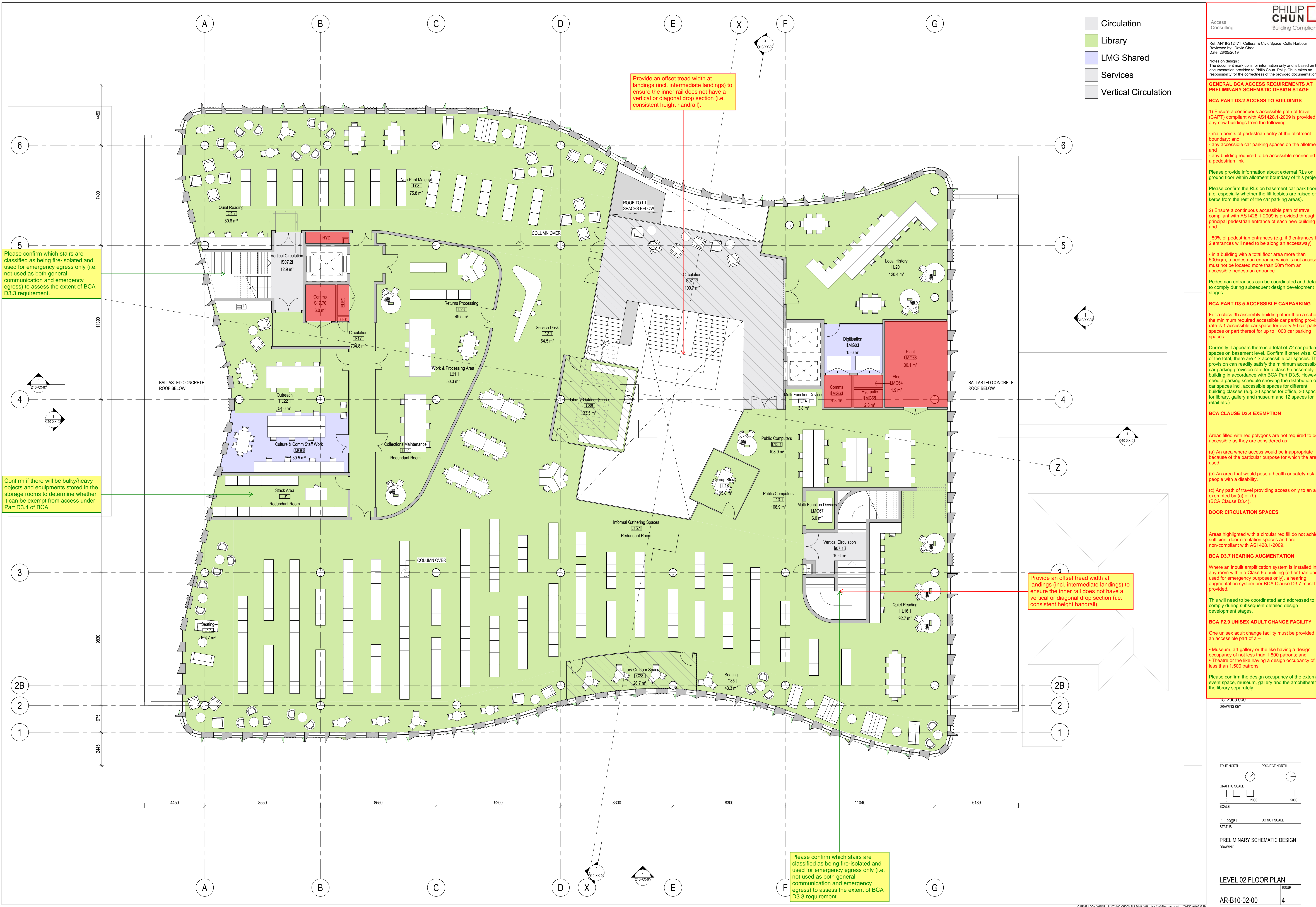
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- Circulation
- Council Admin. Office
- Exec
- Multi-Purpose/ Chamber
- Outdoor
- Services
- Shared
- Vertical Circulation

PHILIP CHUN  
Consulting

Access  
Compliance

Ref: AN19-212471, Cultural & Civic Space, Coffs Harbour  
Reviewed by: David Choe  
Date: 28/05/2019

Notes on design:  
The document mark up is for information only and is based on the documentation provided to Philip Chun. Philip Chun takes no responsibility for the correctness of the provided documentation.

**GENERAL BCA ACCESS REQUIREMENTS AT PRELIMINARY SCHEMATIC DESIGN STAGE**  
**BCA PART D3.2 ACCESS TO BUILDINGS**  
1) Ensure a continuous accessible path of travel (CAPT) compliant with AS1428.1-2009 is provided to any new buildings from the following:  
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- any accessible car parking spaces on the allotment; and  
- any building required to be accessible connected by a pedestrian link  
Please provide information about external RLs on ground floor within allotment boundary of this project.  
Please confirm the RLs on basement car park floor (i.e. especially whether the lift lobbies are raised on kerbs from the rest of the car parking areas).  
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18120033000  
DRAWING KEY

TRUE NORTH PROJECT NORTH

GRAPHIC SCALE

0 2000 5000  
SCALE

1:100@B1 DO NOT SCALE  
STATUS

PRELIMINARY SCHEMATIC DESIGN  
DRAWING

LEVEL 03 FLOOR PLAN

ISSUE

AR-B10-03-00 4

C:\PROJECT\_1\LOCAL\B10-03-00\AR-B10-03-00\BUILDING\_2019\_Liam\_Choi\B10-03-00.dwg 17/05/2019 15:28:20

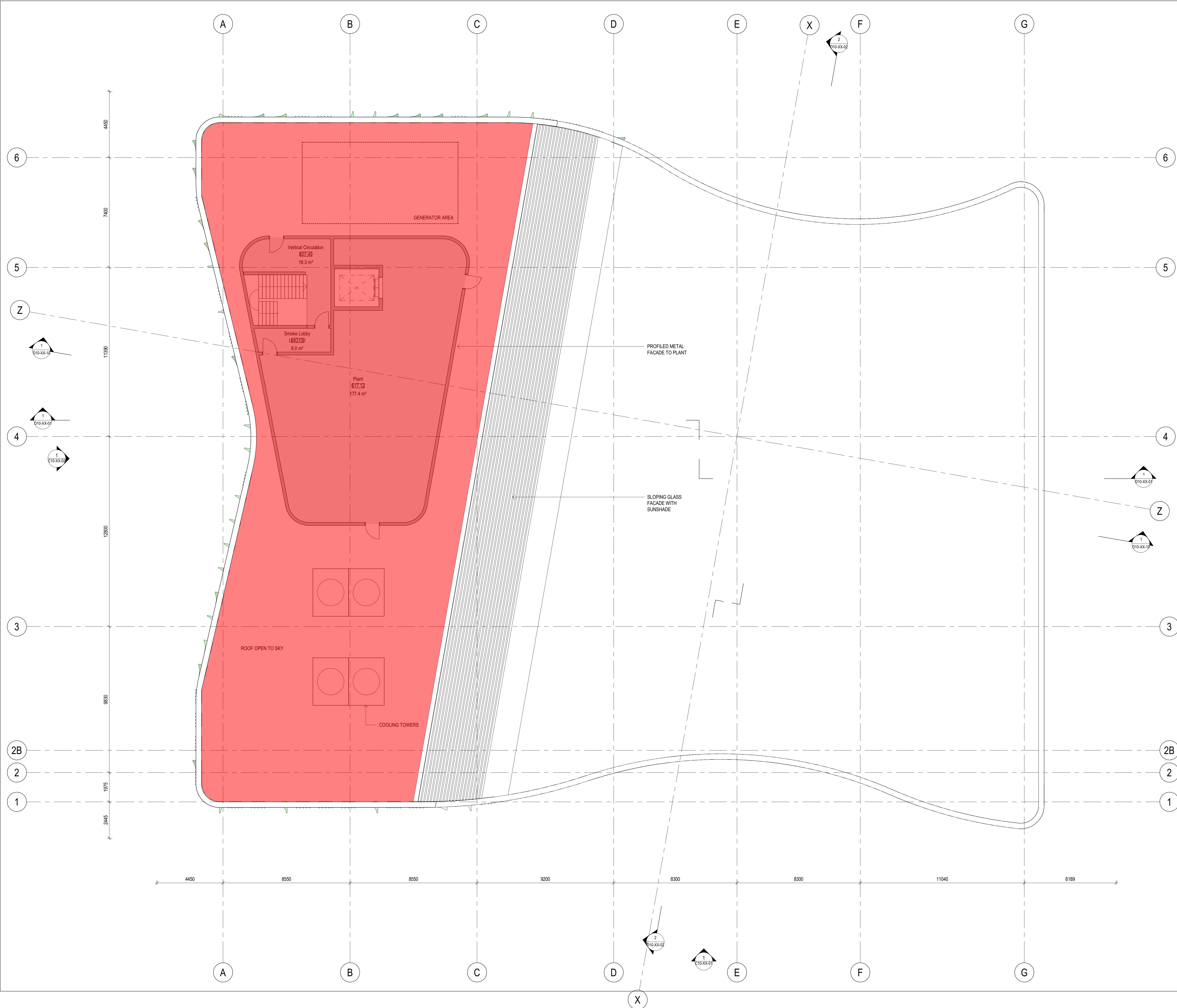












Services

Vertical Circulation

Ref: AN19-212471, Cultural & Civic Space, Coffs Harbour

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TRUE NORTH

PROJECT NORTH

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PRELIMINARY SCHEMATIC DESIGN

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LEVEL 06 FLOOR PLAN

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Access Consulting

PHILIP CHUN

Building Compliance

Ref: AN19-212471, Cultural & Civic Space, Coffs Harbour

Reviewed by: David Choe

Date: 28/05/2019

Notes on design :  
The document mark up is for information only and is based on the documentation provided to Philip Chun. Philip Chun takes no responsibility for the correctness of the provided documentation.

GENERAL BCA ACCESS REQUIREMENTS AT PRELIMINARY SCHEMATIC DESIGN STAGE

BCA PART D3.2 ACCESS TO BUILDINGS

1) Ensure a continuous accessible path of travel (CAPT) compliant with AS1428.1-2009 is provided to any new buildings from the following:  
  
- main points of pedestrian entry at the allotment boundary; and  
- any accessible car parking spaces on the allotment; and  
- any building required to be accessible connected by a pedestrian link  
  
Please provide information about external RLs on ground floor within allotment boundary of this project.  
  
Please confirm the RLs on basement car park floor (i.e. especially whether the lift lobbies are raised on kerbs from the rest of the car parking areas).  
  
2) Ensure a continuous accessible path of travel compliant with AS1428.1-2009 is provided through the principal pedestrian entrance of each new building and:  
  
- 50% of pedestrian entrances (e.g. if 3 entrances then 2 entrances will need to be along an accessway)  
  
- in a building with a total floor area more than 500sqm, a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance  
  
Pedestrian entrances can be coordinated and detailed to comply during subsequent design development stages.

BCA PART D3.5 ACCESSIBLE CARPARKING

For a class 9b assembly building other than a school, the minimum required accessible car parking provision rate is 1 accessible car space for every 50 car parking spaces or part thereof for up to 1000 car parking spaces.  
  
Currently it appears there is a total of 72 car parking spaces on basement level. Confirm if other wise. Out of the total, there are 4 x accessible car spaces. This provision can readily satisfy the minimum accessible car parking provision rate for a class 9b assembly building in accordance with BCA Part D3.5. However, need a parking schedule showing the distribution of car spaces incl. accessible spaces for different building classes (e.g. 30 spaces for office, 30 spaces for library, gallery and museum and 12 spaces for retail etc.)

BCA CLAUSE D3.4 EXEMPTION

Areas filled with red polygons are not required to be accessible as they are considered as:  
  
(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).  
(BCA Clause D3.4).

DOOR CIRCULATION SPACES

Areas highlighted with a circular red fill do not achieve sufficient door circulation spaces and are non-compliant with AS1428.1-2009.

BCA D3.7 HEARING AUGMENTATION

Where an inbuilt amplification system is installed in any room within a Class 9b building (other than one used for emergency purposes only), a hearing augmentation system per BCA Clause D3.7 must be provided.  
  
This will need to be coordinated and addressed to comply during subsequent detailed design development stages.

BCA F2.9 UNISEX ADULT CHANGE FACILITY

One unisex adult change facility must be provided in an accessible part of a –  
  
• Museum, art gallery or the like having a design occupancy of not less than 1,500 patrons; and  
• Theatre or the like having a design occupancy of not less than 1,500 patrons  
  
Please confirm the design occupancy of the external event space, museum, gallery and the amphitheatre in the library separately.

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DRAWING KEY

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GRAPHIC SCALE

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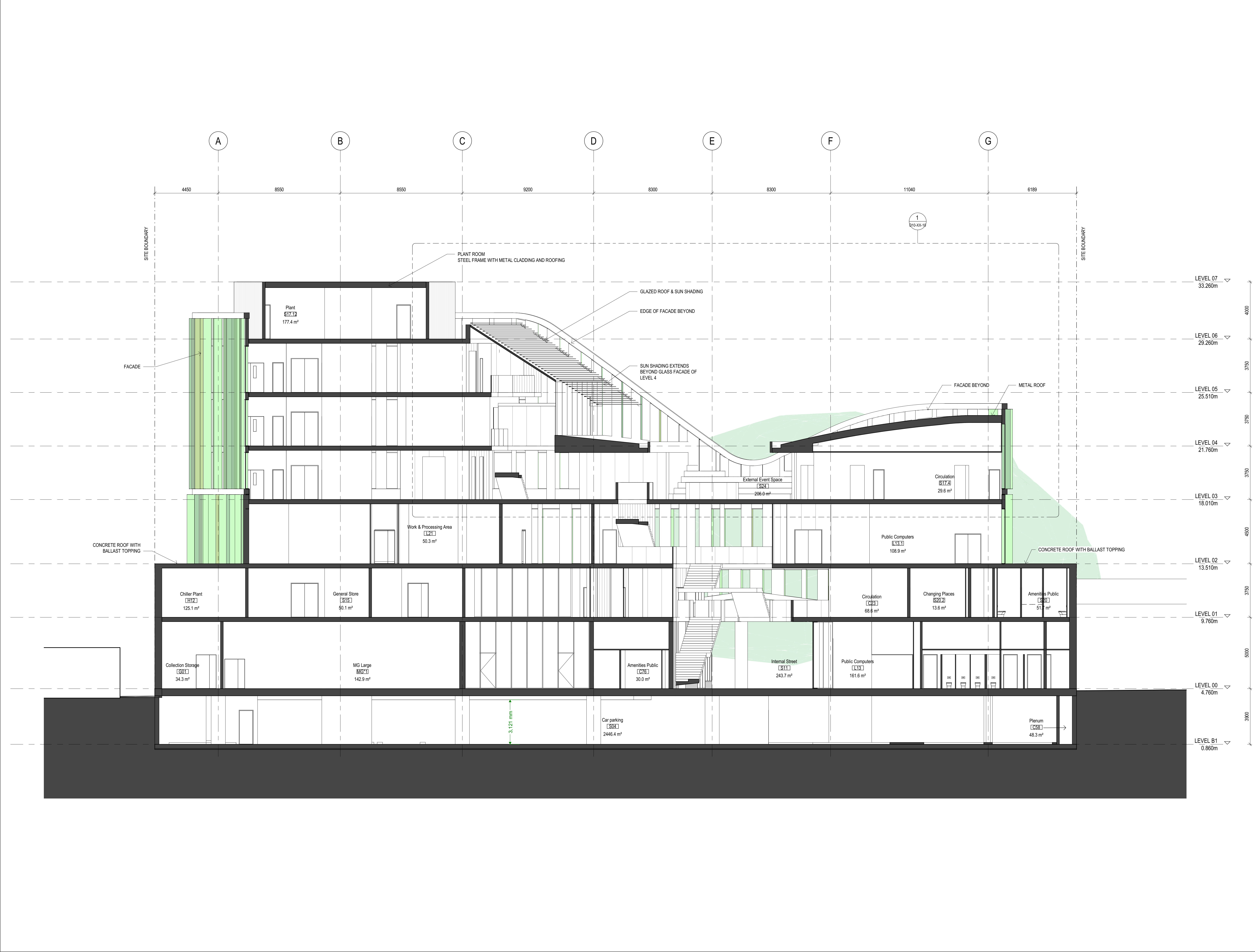
PRELIMINARY SCHEMATIC DESIGN  
DRAWING

SECTION N-S

AR-D10-XX-01

ISSUE

5



Access Consulting

PHILIP CHUN

Building Compliance

Ref: AN19-212471, Cultural & Civic Space, Coffs Harbour

Reviewed by: David Choe

Date: 28/05/2019

Notes on design:

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- any accessible car parking spaces on the allotment; and

- any building required to be accessible connected by a pedestrian link

Please provide information about external RLs on ground floor within allotment boundary of this project.

Please confirm the RLs on basement car park floor (i.e. especially whether the lift lobbies are raised on kerbs from the rest of the car parking areas).

2) Ensure a continuous accessible path of travel compliant with AS1428.1-2009 is provided through the principal pedestrian entrances of each new building and:

- 50% of pedestrian entrances (e.g. if 3 entrances then 2 entrances will need to be along an accessway)

- in a building with a total floor area more than 500sqm, a pedestrian entrance which is not accessible must not be located more than 50m from an accessible pedestrian entrance

Pedestrian entrances can be coordinated and detailed to comply during subsequent design development stages.

BCA PART D3.5 ACCESSIBLE CARPARKING

For a class 9b assembly building other than a school, the minimum required accessible car parking provision rate is 1 accessible car space for every 50 car parking spaces or part thereof for up to 1000 car parking spaces.

Currently it appears there is a total of 72 car parking spaces on basement level. Confirm if other wise. Out of the total, there are 4 x accessible car spaces. This provision can readily satisfy the minimum accessible car parking provision rate for a class 9b assembly building in accordance with BCA Part D3.5. However, need a parking schedule showing the distribution of car spaces incl. accessible spaces for different building classes (e.g. 30 spaces for office, 30 spaces for library, gallery and museum and 12 spaces for retail etc.)

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Areas filled with red polygons are not required to be accessible as they are considered as:

(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).

(BCA Clause D3.4).

DOOR CIRCULATION SPACES

Areas highlighted with a circular red fill do not achieve sufficient door circulation spaces and are non-compliant with AS1428.1-2009.

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Please confirm the design occupancy of the external event space, museum, gallery and the amphitheatre in the library separately.

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DRAWING KEY

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PRELIMINARY SCHEMATIC DESIGN

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SECTION E-W

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## **APPENDIX B**

### **MANDATORY ACCESS COMPLIANCE REQUIREMENTS**

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## **B1 ACCESSIBLE CARPARKING**

Accessible carparking to be a minimum of 2400mm wide with a shared area to one side of the space 2400mm wide. Circulation space can be shared between adjacent accessible carparks. For a single space, a total width of 4800mm is required. The car space and the shared zone should be a minimum of 5400mm long.

Provide a bollard to the shared circulation space as illustrated in AS2890.6, Figure 2.2. The maximum allowable crossfall of an accessible carparking area is to be 1:40, (1:33 for outdoor spaces). This crossfall applies both parallel and perpendicular to the angle of parking.

For covered carparking, the clear height of the accessible carparking space to be 2500mm as illustrated in AS2890.6, Figure 2.7 and approach path is to have a minimum of 2200mm.

Designated accessible carparking is to be identified using the International Symbol for Access (ISA) and line marked as specified in AS2890.6.

## **B2 EXTERNAL PATHWAYS AND WALKWAYS**

The minimum unobstructed width of all pathways and walkways is to be 1000mm (AS1428.1 (2009), Clause 6.3). A width of 1200mm is preferred for compliance with AS1428.2 (1992).

All pathways and walkways are to be constructed with no lip or step at joints between abutting surfaces. A construction tolerance of 3mm is allowable, 5mm for bevelled edges -refer to Figure 6 of AS1428.1(2009).

The maximum allowable crossfall of pathways and walkways is to be 1:40. The surfaces of an accessible path of travel are to be slip-resistant.

The ground abutting the sides of the pathways and walkways should follow the grade of the pathway and extend horizontally for 600mm. This is not required where there is a kerb or handrail provided to the side of the pathway (refer to AS1428.1 (2009) Clause 10.2).

Maximum allowable gradient of the walkway is 1:20 and maximum length between landings to be 15m (for 1:20 gradient). Landings to be a minimum 1200mm in length (where there is no change in direction). For changes in direction of 180°, landings to be 1540mm in length – refer to AS1428.1 (2009), Clause 10.8.

## **B3 KERB RAMPS**

Kerb ramps to comply with AS1428 (2009) Amendment 1, Clause 10.7.

Maximum gradient of the kerb ramps to be 1:8 and maximum length to be 1520mm (providing a maximum height of 190mm).

Kerb ramps to have a non-slip surface as required by AS1428.

A tooled joint should be provided between parts of the kerb ramp to assist persons with a vision impairment with orientation.

## **B4 STEP RAMPS**

The configuration of the step ramps to comply with the requirements of AS1428.1, Clause 10.6. Maximum gradient of the step ramp is to be 1:10 and maximum length to be 1900mm (providing a maximum height of 190mm).

Provide landings at the top and bottom of the step ramp to comply with AS1428.1, Clause 10.8.2.



Step ramp to be enclosed on both sides (minimum height 450mm) or a kerb and handrail needs to be installed. Where a kerb is to be installed, the height of kerb rails is to be less than 65mm or greater than 150mm above the finished surface level of the ramp. This is to ensure that the foot plate of a wheelchair cannot become lodged on the kerb rail.

## **B5 ACCESSIBLE RAMPS**

Ramps are to comply with AS1428.1 (2009) Clause 10.3. Maximum allowable gradient of the ramp is 1:14, minimum clear width to be 1000mm and maximum length between landings to be 9m (for 1:14 gradient).

Accessible ramp are to have a maximum rise of 3.6m (BCA Part 3.11).

Externally, ramps are required to be set back a minimum 900mm from the property boundary (AS1428.1 (2009), Clause 10.3 (f)). This allows tactile indicators and handrail extensions to occur within the boundary and not protrude into the footpath area.

Internally, ramps are required to be set back a minimum 600mm from an internal corridor (AS1428.1 (2009), Clause 10.3 (f)). This allows tactile indicators and handrail extensions to be provided and not protrude into the corridor area.

Provide handrails, with extensions, to both sides of the ramp to comply with AS1428.1 (2009), Clause 12. Handrails are to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails are required on both sides of the ramp to cater for left and right handed disabilities.

Where a ramp is not enclosed, provide kerb rails in accordance with AS1428.1 (2009). The height of kerb rails is to be less than 65mm or greater than 150mm above the finished surface level. This is to ensure that the foot plate of a wheelchair cannot become lodged on the kerb rail.

Provide tactile indicators at the top and bottom of the ramps to comply with BCA Part D3.8 and AS1428.4.1 (2009). Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour. Tactile indicators at the top and bottom of the ramps to be 600-800mm deep across the width of the ramp and set back 300mm from the edge of the ramp (refer AS1428.4 (2009), Figure A1).

Tactile indicators will be required at a mid-landing where the ramp is not continuous. Where the handrail is continuous along both sides of the mid-landing, tactile indicators are not required.

## **B6 PEDESTRIAN CROSSINGS**

Where kerb ramps are to be provided at pedestrian crossings to provide an accessible path of travel for persons with a disability they are to comply with AS1428.1 (2009), Clause 10.7.

Where a pedestrian crossing is at the same level as the roadway, provide tactile indicators to both sides of the roadway to alert persons with a vision impairment of the hazard. Tactile indicators are to be 600-800mm deep across the width pedestrian crossing. Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

## **B7 THRESHOLD RAMPS**

Threshold ramps are to comply with AS1428.1 (2009), Clause 10.5.

Threshold ramps are to have a maximum rise of 35mm, maximum length of 280mm and maximum gradient of 1:8.

Threshold ramps to be located within 20mm of the door leaf that it services.



## **B8 BUILDING ENTRANCES**

Entrances are to comply with AS1428.1 (2009), Clause 13 as part of the accessible path of travel.

Doors are to have a minimum clear opening width of 850mm to comply AS1428.1 (2009), Clause 13.2.

Door thresholds are to be level to provide seamless entry to the building. The maximum allowable construction tolerance is 3mm for compliance with AS1428.1 (2009), 5mm where bevelled edges are provided between surfaces – refer to Figure 6.

Door to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1 (2009), Clause 13.5)

For glass doors, provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid pattern to AS1428.1 (2009) Clause 6.6.

## **B9 TACTILE INDICATORS AT THE BUILDING ENTRANCE**

BCA Clause 3.8 (a) (v) states that for a building that is 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 – in the absence of a suitable barrier – an accessway meeting a vehicular way adjacent to any pedestrian entrance to a building...if there is no kerb or kerb ramp at that point, except for areas exempted by D3.4.

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

Tactile indicators are to be 600-800mm deep across the width of the path of travel.

## **B10 DOORWAYS**

Doorways within the accessible path of travel are to have a minimum clear opening width of 850mm (AS1428.1 (2009), Clause 13.2). We recommend the use of a 920 leaf door as a minimum to achieve adequate clear width.

All doorways within the accessible path of travel to have complying circulation areas as illustrated in AS1428.1 (2009), Figure 31. Circulation areas are to have a maximum crossfall of 1:40.

Doorways to have minimum 30% luminance contrast as described in AS1428.1 (2009), Clause 13.1.

Doors to have hardware within the accessible height range of 900-1100mm above the finished floor level (AS1428.1 (2009), Clause 13.5) and allows for single handed operation.

## **B11 TACTILE INDICATORS**

Installation of tactile indicators is to be in accordance with AS1428.4.1 (2009).

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

Tactile indicators are to be 600-800mm deep across the width of the path of travel.





## B12 VISUAL INDICATION TO GLAZING

Provide decals to assist persons with a vision impairment. Decals to be solid and have a minimum 30% luminance contrast to the background colour and be not less than 75mm high located within the height range of 900-1100mm above the finished floor level. Decals are to be solid pattern to AS1428.1 Clause 6.6.

## B13 SIGNAGE

The BCA has requirements for Braille and tactile signage within Specification D3.6. This provides information for the provision of statutory signage

Braille and tactile signage is required to be provided throughout any building required to be made accessible in accordance with BCA specification D3.6 and AS1428.1 (2009) and must identify:

- Each sanitary facility
- Any space with a hearing augmentation system
- Accessible unisex facilities and indicate whether the facility is suitable for left or right handed use
- Ambulant accessible sanitary facilities on the door of the cubicle
- Where an entrance is not accessible, directional signage to identify nearest accessible entrance
- Where a bank of sanitary facilities is not provided with an accessible sanitary facility, directional signage to identify nearest accessible sanitary facility.
- Each door required by Part E4.5 to be provided with an exit sign and state "Exit" and "Level" followed by either the floor level number, the floor descriptor or combination of these.

In addition, AS1428.2 (1992) contains additional information as to the form of signage.

Signage should be easily comprehended by all building users. In this regard, the use of pictograms is highly recommended. The message that the sign conveys should be unambiguous.

Placement of signage should be considered at the following locations:

- Where it is clearly visible to people in both a standing and seated position.
- At changes in direction.
- At locations where directional decisions are made.
- As required to amenities and exits

## B14 HEARING AUGMENTATION

A hearing augmentation system must be provided where an inbuilt amplification system is provided, other than one used for emergency purposes only as required by BCA Part D3.7.

Further, for buildings that are required to be accessible, the BCA (Part D3.7) requires hearing augmentation systems at service counters **where the user is screened from the service provider.**

While it is not referenced by the BCA, AS1428.5 (2010): Communication for people who are deaf or hearing impaired contains information regarding assisted listening systems and can be used to ensure equitable facilities are provided for this user group.

The standard provides information relating to design solutions and equipment for the following:

- Assisted listening systems.
- Early warning systems
- Visual display systems for intercommunication, public announcements and the like
- Telephone services and telecommunications available to the public.



## **B15 WHEELCHAIR SEATING**

Where fixed seating is provided in an assembly building, the required wheelchair seating spaces (number per BCA) are required to be:

- Accessed via an accessible path of travel.
- Located adjacent to, and at the same level as, other seating in a row.
- Located to allow lines of sight comparable to those for general viewing areas.

The special requirement for the footprint of a single wheelchair seating space is 800x1250mm.

## **B16 PASSENGER LIFTS**

Every passenger lift in an accessible building must be suitable for use by people with a disability and offer compliance with AS1725.12. Typically, the following is required to be provided:

### **Lift dimensions**

- Lift floor dimensions of not less than 1100mm X 1400mm for lifts which travel not more than 12m.
- Lift floor dimensions of not less than 1400mm X 1600mm for lifts which travel more than 12m.
- Provision for a stretcher facility within at least one emergency lift required by E3.4, or where an emergency lift is not required, if passenger lifts are installed to serve any storey above an effective height of 12m, in at least one of those lifts to serve every floor served by lifts.

### **Lift Features**

- Handrail complying with the provisions for a mandatory handrail in AS1735.12.
- Minimum clear door opening complying with AS1735.12.
- Passenger protection system complying with AS1735.12.
- Lift landing doors at the upper landing.
- Lift car and landing control buttons complying with AS173.5.12.
- Lighting in accordance with AS1735.12.
- Emergency hands-free communication, including a button that alerts a call centre of a problem and a light to signal that the call has been received.

All passenger lifts serving more than 2 levels must possess:

- Automatic audible information within the lift car to identify the level each time the car stops.
- Audible and visual indications at each lift landing to indicate the arrival of the lift car.
- Audible information and audible indication must be provided in a range between 20-80dB(A) at a maximum frequency of 1500Hz.

## **B17 STAIRS**

Stair construction is to comply with AS1428.1 (2009) Clause 11.1.

Stairs are to have closed or opaque risers. Open risers cause confusion for persons with a vision impairment and may trigger conditions such as epilepsy due to light penetrating through the open risers.

Where the stair intersects with an internal corridor, the stair shall be set back in accordance with AS1429.1 (2009) Figure 26C/D to allow adequate space for handrail extensions and tactile indicators.

Provide handrails, with extensions, to both sides of the stair (AS1428.1 (2009), Clause 11.2). Handrails are to have an external diameter between 30-50mm to assist persons with a manual disability such as arthritis. Handrails should be continuous around the landings where possible. Handrails are required on both sides of the stair to cater for left and right handed disabilities. A central handrail is also an acceptable solution where adequate width is available.



Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser.

Stair nosings shall not project beyond the face of the riser.

Provide tactile indicators at the top and bottom of the stair to comply with BCA Part D3.8 and AS1428.4.1 (2009).

Tactile indicators are to be detectable, durable, non-slip and have a minimum 30% luminance contrast to the background colour.

Tactile indicators at the top and bottom of the stair to be 600-800mm deep across the width of the stair set back 300mm from the edge of the stair.

## **B18 FIRE ISOLATED STAIRS**

Stair nosings to have minimum 30% luminance contrast strip 50-75mm wide to the top of the stair tread to assist persons with a vision impairment. The strip can be set back 15mm from the edge of the riser. Stair nosings shall not project beyond the face of the riser.

## **B19 UNISEX ACCESSIBLE SANITARY FACILITIES**

Set-out of fixtures and fittings within the accessible sanitary facilities to offer compliance with AS 1428.1 (2009) Clause 15 as follows.

Crucial dimensions for the toilet are 450mm from centreline of pan to side wall, 800mm from front of pan to rear wall and a seat height of 470mm.

A minimum clear dimension of 1400mm is required from the toilet pan to any other fixture (see figure 43).

For the basin, a minimum dimension of 425mm is required from the centreline of the basin to the side wall and height of basin to be between 800 and 830mm.

Grabrails are to be provided at the side and rear of the toilet in compliance with AS1428.1 at a height of 800mm.

Taps are to have lever handles, sensor plates or similar controls. For lever taps a minimum of 50mm clearance to be provided to adjacent surfaces.

Toilet seat shall be of the full round type, be securely fixed in position when in use and have fixings that create lateral stability. They should be load rated to 150kg, have a minimum 30% luminance contrast to the background colour (e.g. pan, wall or floor) and remain in the upright position when fully raised.

Provide a backrest to accessible toilets to comply with AS1428.1, Clause 15.2.4.

Accessible toilet to be identified using the International Symbol for Access. Pictograms / lettering to have a minimum 30% luminance contrast to the background colour. Signage is to comply with AS1428.1, Clause 8 and include information in tactile and Braille formats (as required by the BCA).

Doorways are to have a minimum clear opening width of 850mm to comply AS1428.1 (2009), Clause 13.2 as part of the accessible path of travel. Adequate circulation area at the latch side of the doorway is required to allow independent access to the facility – for details refer to AS1428.1, Figure 31.



Door hardware are to be located within the accessible height range of 900-1100mm above the finished floor level. The use of lever handles is encouraged to assist persons with a manual disability such as arthritis.

Controls within the accessible toilet facilities, such as light switches, are to be in the accessible height range of 900-1100mm above the finished floor level to comply with AS1428.1 (2009), Clause 14. Controls should be located not less than 500mm to a corner.

## **B20 UNISEX ACCESSIBLE SHOWERS**

Showers are to comply with AS 1428.1, Clause 15.5 and include accessible features such as grabrails, adjustable height shower rose and fixtures within an accessible height range. The minimum dimensions of an accessible shower are to be 1160 x 1000mm. A folding seat, at a height of 470mm is to be provided. All taps to be located within the height range of 900-1100mm above the finished floor level.

Circulation space in front of the shower is to be provided as illustrated in AS1428.1, Figure 47.

## **B21 PEOPLE WITH AMBULANT DISABILITIES CUBICLES (PAD)**

PAD cubicles within male and female toilets to be in compliance with AS1428.1, Clause 16.

Width of PAD cubicles is to be 900-920mm.

Provide grabrails to PAD cubicles to comply with AS1428.1, Clause 17 and Figure 53A.

Doors are to have a minimum opening width of 700mm and comply with AS1428.1 Figure 53B.

Provide signage to the PAD cubicles to comply with AS1428.1, Clause 16.4.

Provide 900x900 circulation space in front of pan and each side of doors on path to the toilet. Door are not to swing into circulation spaces.



## **APPENDIX C**

### **BEST PRACTICE RECOMMENDATIONS**

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## **C1 FIRE EGRESS FOR PEOPLE WITH DISABILITIES**

HREOC Advisory notes on access to premises, Item 5.21 states that, in an emergency, all users should be provided with a means of egress from a premises to a place of comparative safety. This ensures people with disabilities to be provided with the same level of protection as other premises users or building occupants.

Consider providing a refuge area within fire isolated stairs by incorporating a 800mm x 1300mm area at stair landings of every accessible floor. A 1000mm unobstructed egress width to the area should be provided.

We recommend that signage displaying the International Symbol of Access (ISA) be provided to identify any places of comparative safety provided. Signage should state that the area is safe in the event of an emergency. Evacuation procedures for the building should address the provision of places of comparative safety for people with limited mobility. Signage should comply with BCA D3.6 and BCA Specification 3.6 and have braille and tactile components.

We also recommend that as a part of the emergency evacuation plan for the building, egress for persons requiring assistance be addressed. The provision of places of comparative safety within fire isolated passages would be advantageous to persons with a disability. This consists of a waiting area large enough to accommodate a wheelchair where persons can wait for assistance from emergency services. The waiting area should be identified with appropriate signage that incorporates the International Symbol for Access.

## **C2 RECEPTION COUNTERS**

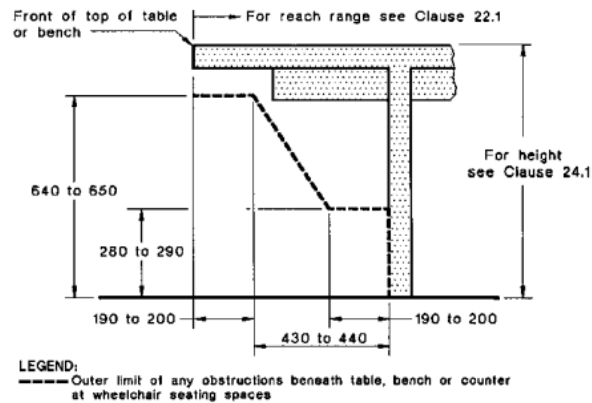
We recommend the provision of accessible reception counters designed in accordance with AS1428.2 (1992), Part 24.1.

- Provide a lower section of counter at a height between 830mm and 870mm above finished floor level.
- A counter required to be accessible must comprise a clear length of no less than 900mm.
- Where the counter requires a high level of interaction or worktop function: provide knee clearance of no less than 800mm in height for a minimum depth of 350mm; and foot clearance of not less than 300mm in height for a depth of 650mm.
- Where the counter requires brief or minimal interaction: provide knee clearance of no less than 750mm in height for a minimum depth of 350mm; and foot clearance of not less than 300mm in height for a depth of 400mm.
- Unobstructed circulation space must be provided in front of the lower height counter of 1540mm by 2070mm, with maximum grade of 1:40.
- Finished surfaces, including counter face and top, and the background to which each is viewed to be selected to ensure adequate definition for people with varying degrees of vision impairment, such as minimum 30% luminance contrast between counter top and counter face.
- Way-finding principles to be considered in the identification of the reception area, including provisions to aid detection of the accessible counter.





- Under the BCA an assistive listening is to be provided where the client is screened from the service provider. In order to satisfy the requirements of the DDA it is recommended that an assistive listening system, including Braille and tactile signage, be provided at any place where a service provider deals with a client or customer (reception desk) (AS 1428.2:1992 Clause 21.1).



NOTE: For width of seating spaces see Clause 24.1.3.

DIMENSIONS IN MILLIMETRES

FIGURE 25 KNEE AND FOOT CLEARANCE BENEATH A TABLE, BENCH OR COUNTER

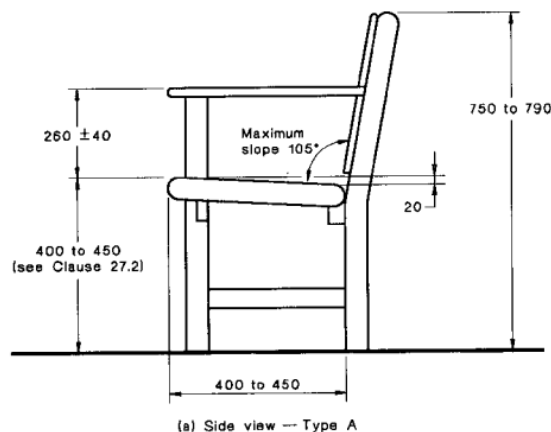
### C3 SEATING TO PUBLIC AREAS

Where seating is located within public areas (for example to waiting area at Level 16), a proportion of accessible seating should be provided offering compliance with AS1428.2:1992 Clause 27.

Provide a seat height of 450mm; with side arms that extend a further 260mm +/- 40mm in height. Seating to have a back height of 750mm-790mm (AS 1428.2:1992 Clause 27.2). Armrests must not extend beyond the perimeter of the base or legs of the seat to ensure stability of the chair when rising with use of only one armrest. Heel space of at least 150mm with a minimum width of 350mm should be provided under seats to assist in rearward adjustments of feet when rising.

Seats located adjacent to pathways to set back at least 600mm to allow leg room without obstructing the adjacent path (AS 1428.2:1992 Clause 27.1(a)).

At casual seating spaces, waiting areas and the like, provide a minimum of 900mm space between seats or at either end to accommodate wheelchair users.



In addition, the provision wheelchair seating places within waiting areas is highly recommended. These spaces to allow a floor space of 800x1300mm.



## C4 SIGNAGE AND WAYFINDING

Signs and symbols should be provided to inform all users. Provide a signage system which informs all users (HREOC Advisory notes on access to premises, Item 5.15). The use of pictograms is recommended as is the use of luminance contrast to ensure the message is clear and legible.

The height of letters in signs shall be not less than that show in the table below – AS1428.2(1992), Table 2.

HEIGHT OF LETTERS FOR VARYING VIEWING DISTANCES	
Required viewing distance m	Minimum height of letters* mm
2	6
4	12
6	20
8	25
12	40
15	50
25	80
35	100
40	130
50	150

\* For further information on the heights of letters for different situations, reference should be made to [AS 1744](#).

NOTE: Helvetica Medium typeface is preferred.

The development of a way-finding strategy with consideration to landmarks and visual features of the development is recommended. This would include the use of varied finished surfaces to differentiate areas of each building.

Signs including symbols, numbering and lettering shall be located where they are clearly visible to people in both a seated and standing position. That is, they should be placed within a zone at a height not less than 1400 mm and not more than 1600 mm above the plane of the finished floor. Where space in this zone is used up, the zone for placement of signs may be extended downward to not less than 1000 mm from the plane of the finished floor. This height assists people to read from either a seated or a standing position, and also assists people with low vision to read the information on the sign. Letters and symbols in relief assist people with severe visual disabilities.

Where a sign can be temporarily obscured, e.g. in a crowd, the sign should be placed at a height of not less than 2000 mm above the plane of the finished floor.

Signs to assist way-finding should be provided at changes of direction and at sites where directional decisions are made, to enable the appropriate decisions to be made before a change of direction occurs.

Where the surface of the wall surrounding the sign provides insufficient contrast (e.g. patterned wallpapers), the background area to the sign may need to be increased in size.

The message that the sign carries should be unambiguous.

Tactile floor plans or maps and prerecorded auditory instructions at the main entrance and at other useful locations can be of assistance to people with visual impairment.



## C5 STAFF WORKSTATIONS

Consideration should be given to the provision of accessible staff workstations within the building. Height adjustable workstations which can be adjusted by the user are highly recommended, with an adjustment capability between 610 and 760mm from the floor (AS 4442:1997 Clause 2.2.2 (b)).

Where provided, fixed height workstations to be provided at a height between 700 and 720mm (AS 4442:1997 Clause 2.2.4).

It is recommended that adjustable tables have a height adjustment capacity accommodating standing and seated users per AS4442 (1997).

Power and data outlets to be provided at desk top height at a distance not greater than 550mm from the front edge of the desktop (AS 1428.2:1992 Clause 22.; Figure 20 (b)).

The provision of a clear floor space of not less than 1370mm between the table edge and the opposing wall or fixtures will allow access by a person in a wheelchair to or past the table.

Ensure the layout of furniture and fittings allows for the provision of accessways in accordance with AS 1428.1 (2009), including:

- Minimum widths of paths of travel to be not less than 1000mm;
- Passing spaces with a minimum width of 1800mm and minimum length of 2000mm to be provided along paths of travel at maximum 20m intervals where a direct line of sight is not available; and
- Turning spaces of minimum 1540mm width and minimum 2070mm length to be provided within 2m of the end of paths of travel and at maximum 20m intervals.  
Note: a passing space may serve as a turning space.
- Increased landings are required at changes of direction, including 1500mm X 1500mm turning spaces to facilitate a 60°-90° turn.

This may form part of a client management plan and associated operational procedures relating to individual facilitation of employees with temporary or permanent disabilities

## C6 KITCHEN / KITCHENETTE FACILITIES

Consideration should be given to the provision of accessible kitchen /kitchenette facilities which are designed and constructed in accordance with AS 4299:1995 Clause 4 and AS 1428.2:1992 Clause 24.

This includes consideration to a bench height of 870mm in lieu of 900mm, appropriate knee and foot clearance to the underside of utility benches and appropriate circulation space within the room.

To provide access for people using wheelchairs, the sink should be located at a height between 850mm-870mm above the finished floor. The design of the sink must allow knee and foot clearance to the underside of the bowl for a clear width of no less than 900mm, in accordance with the following:

- Provision of knee clearance of no less than 680mm in height for a minimum depth of 300mm.
- Provision of foot clearance of not less than 290mm in height for a depth of 200mm (AS 1428.2:1992 Figure A2).
- Provide a section of clear bench space of no less than 900mm in length adjacent to the sink
- Provide a maximum depth to the sink of 150mm. This applies to the main bowl where a double sink is installed.



## C7 LUMINANCE CONTRAST

Luminance contrast is the light reflected from one surface or component, compared to the light reflected from another surface or component. A luminance contrast of 30% between two surfaces is generally accepted as a minimum when considering it as a navigational / way-finding tool for people with Vision impairment.

In this regard, we recommend that the provision of a minimum 30% luminance contrast between surfaces be adopted in the following instances to assist people with Vision impairment negotiate the built environment:

- Provide luminance contrast between walls and doors.
- Generally, contrasting wall and floor surfaces should be provided. At a minimum, skirting boards which provide suitable contrast to the floor surface assist people with low vision in identifying perimeters of corridors and accessible spaces.
- For joinery, Counters or benches to achieve a minimum 30% luminance contrast with the counter / bench face to which it is viewed. Additionally, Counter / bench surfaces to have a matte or low sheen finish;
- For handrails and grabrails, provide a luminance contrast between the rail and the wall colour;
- For signage, provide luminance contrast so that message can be conveyed – luminance contrast required between the information in the sign and base sign colour.

*Note: Statutory requirements for luminance contrast include tactile indicators, stair nosing strips, toilet seats and door / wall identification.*

## C8 CHANGING PLACES

Changing Places Australia is an initiative of the Association for Children with a Disability to provide safe and clean accessible toilets for use by people with severe disabilities. The goal is to have “changing places” incorporated within high use public buildings such as sporting venues, shopping centres and transport interchanges. A standard unisex accessible toilet offers a facility for independent use. Often being designed to minimum dimensions, they generally do not allow for assistance from a carer which is required by many people with severe disabilities. The lack of suitable changing places presents a barrier to inclusion within the community for many Australians.

Philip Chun Access is taking a pro-active role in ensuring that the provision of a changing place is at least considered within the design / redevelopment of major public buildings. The key design principles to be incorporated include a ceiling hoist, adequate circulation areas to allow for up to two assistants, and an adult change table which is fully adjustable.

Over 200,000 Australians are in need of facilities like this to be able to participate in their communities. The provision of changing places promotes inclusion and is expected to be adopted by many Councils’ planning policies in the near future.

## C9 LOCKERS

The provision of lockers at a suitable height for people using a wheelchair is recommended. The height range for accessible lockers to be 230mm-1350mm AFFL based on the reach ranges prescribed in AS1428.2 (1992).



## **C10 FURNITURE HARDWARE**

Generally, drawer and cupboard fronts that have recessed finger pull handles do not comply with AS 1428.1 (2009) Clause 13.5.2(b) and therefore are not recommended.

We recommend the use of D-type pull handles to furniture generally which provide a minimum 35mm clearance between the rear face of the handle and the face of the drawer.

## **C11 LIGHTING AND GLARE**

Minimum interior lighting levels of maintenance illumination are to be in accordance with AS1680.1 (1990) and with consideration to AS1428.2 (1992) Clause 19. Consistent lighting levels should be provided throughout, without pools of light or dark areas.

Glare and excessively reflective surfaces should be avoided. This includes glare from windows.

AS1428.2 (1992) recommends the following minimum illumination levels:

- Entrances 150lx
- Passages and walkways 150lx
- Stairs 150lx
- Toilets and Locker rooms 200lx
- Counter tops 250lx
- Generally displays 200-300lx

At reception counters, appropriate lighting levels at the counter areas must be provided in accordance with AS 1680.2.2 (1994).

Generally, a task lighting of no less than 320lx must be provided with environmental lighting of no less than 160lx. That is:

- (i) Where general lighting only is provided to provide both task and environmental lighting, the illuminance throughout the area shall be no less than 320lx; or
- (ii) Where a system of local lighting is provided for tasks in combination with reduced environmental lighting, this may be provided as noted above (AS 1680.2.2:1994 Appendix F (b); AS1680.2.2:1994 Table F1).





PRELIMINARY FIRE SAFETY STRATEGY

23 May 2019



## Cultural and Civic Space, Coffs Harbour

### Coffs Harbour City Council c/- Turner & Townsend Thinc

Revision A

#### Sydney

L4 73 Walker Street  
North Sydney, NSW 2060  
P (02) 9157 0570

#### Melbourne

L2 616 St Kilda Road  
Melbourne, VIC 3004  
P (03) 9230 5600

#### Brisbane

L10/490 Upper Edward Street  
Spring Hill, QLD 4000  
P (07) 3831 3300



## Revision Information

Project	Cultural and Civic Space, Coffs Harbour
Title	Preliminary Fire Safety Strategy
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Report No.	18265-SB-FSS01
Original Issue Date	23 May 2019
Prepared By	LCI Consultants Sydney Office 73 Walker Street, North Sydney NSW 2060 T 02 9157 0570
Author	Aman Ahtisham
Checked By	Nabeel Darwish

## Revision Schedule

Revision	Date	Issue Name	Author	Reviewer
A	23/05/2019	Stakeholder Review	Aman Ahtisham	Nabeel Darwish

*This document contains commercial information that has been prepared for the attention of the Client on this project. It is confidential and no information contained in this document shall be released in part or whole to any third party without the prior approval of LCI Consultants.*

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## Executive Summary

This preliminary Fire Safety Strategy (FSS) has been prepared by LCI Consultants (LCI) to outline fundamental fire safety design concepts for the proposed Cultural and Civic Space development located at 23-31 Gordon Street, Coffs Harbour.

The proposal comprises a mixed-use development incorporating the following functional areas:

- > Basement Carparking
- > Library, gallery and museum
- > Café
- > Staff offices and amenities
- > End of trip facilities
- > Multi-purpose spaces

LCI has been appointed by Coffs Harbour City Council c/- Turner & Townsend Thinc (TTT) to develop this FSS for the benefit of the design team and other relevant stakeholders through the early stages of the design process. This strategy has not been ratified through a stakeholder consultation process, and therefore is preliminary only and will be further developed through the project design stages as necessary.

Subsequent to this FSS, a Fire Engineering Brief (FEB) and Fire Engineering Report (FER) will be prepared to incorporate any detailed fire engineering analyses and verification of any Performance Solutions for compliance with the Building Code of Australia (BCA) to facilitate building approval. The concepts of the preliminary fire safety strategy presented here are expected to be transferred, evaluated and detailed in those documents and will be subject to changes.

This FSS considers the proposed building design and presents a number of options for design team consideration relating to potential fire engineering solutions that may be implemented in future stages.

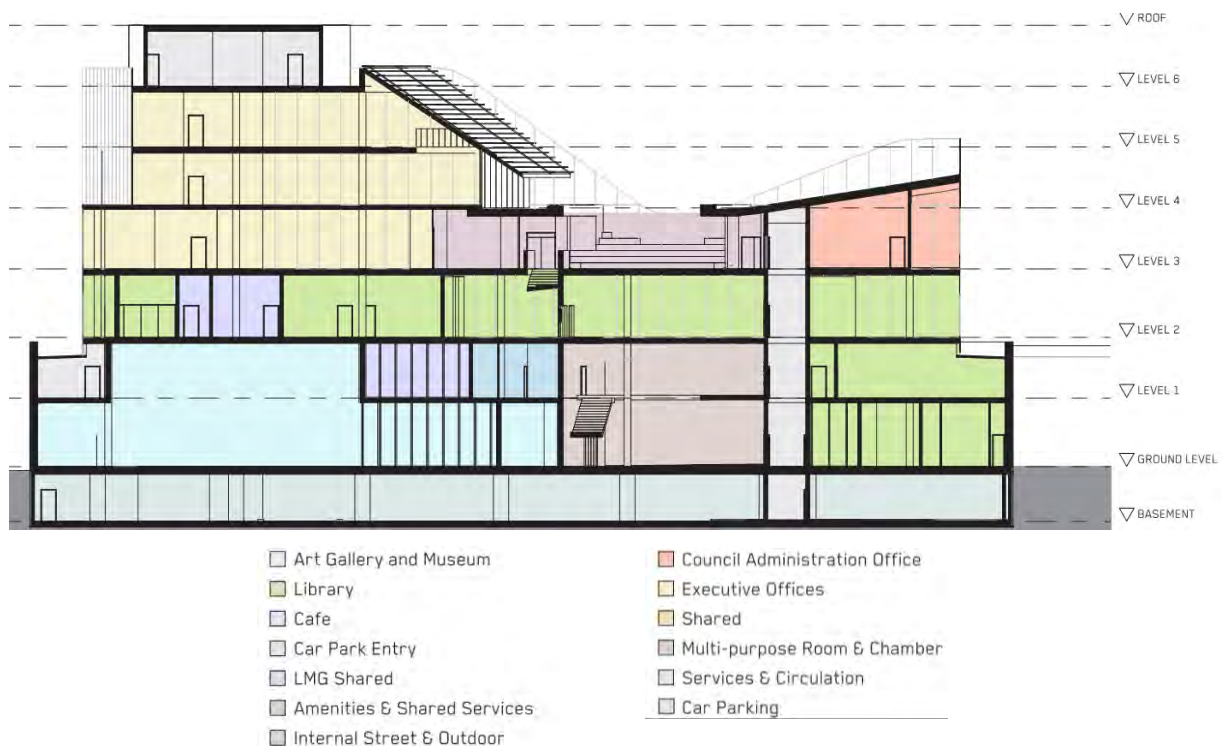
# 1. Scope

## 1.1. Project

The subject project relates to the proposed Cultural & Civic Space development, located at 23-31 Gordon Street, Coffs Harbour.

The proposal comprises a mixed-use development incorporating the following functional areas:

- > Basement Carparking
- > Library, gallery and museum
- > Café
- > Staff offices and amenities
- > End of trip facilities
- > Multi-purpose spaces



**Figure 1 Overview of Development**

## 1.2. Preliminary Fire Safety Strategy (FSS)

This report presents a preliminary FSS for the proposed Cultural and Civic Space development. The FSS has been prepared to establish the concept fire safety considerations in accordance with the fire safety objectives of the client, and to address regulatory compliance; and for the benefit of the design team and other relevant stakeholders through the early stages of the design process.

The fire safety design principles described in this document are intended to outline fire engineering concepts that may form the basis of the trial design solution to be evaluated at later stages of the design process, and have not been ratified through a stakeholder consultation process. As such the trial designs presented here are not final and are only intended to inform the design at the concept stage, and will be further developed and refined in the subsequent FEB and FER.

The fire safety strategy is intended to minimise risk to life safety and does not consider property protection except for mitigating fire spread to adjacent properties.

### **1.3. Fire Engineering Brief (FEB)**

In the next stage, an FEB will be prepared based on input and agreement from project stakeholders to arrive at an acceptable framework for subsequent fire engineering analyses and preparation of the FER.

The FER will be prepared in the detailed design stage of this project subsequent to the FEB being agreed to by the project stakeholders.

### **1.4. Fire Engineering Report (FER)**

The FER will be prepared once the FEB has been agreed to by all project stakeholders. The FER will include the analyses and evaluation of a performance-based fire safety design to support the proposed Performance Solutions. The Performance Solutions will be evaluated against the relevant Building Code of Australia (BCA) Performance Requirements based on the variations from the BCA Deemed-to-Satisfy (DtS) Provisions identified by the Building Certifier.

The fire engineering design (FEB & FER) will generally follow the outline and procedure contained in the International Fire Engineering Guidelines, Australian Building Code Board, 2005 (IFEG).

## 2. Reference Information

### 2.1. Regulatory Framework

The nominated building certifier (Principal Certifying Authority) for this project is Philip Chun & Associates Pty Ltd. The Certifier will be the relevant authority for the purposes of assessing an application for Construction and Occupation Certificates for this project. The following New South Wales Legislation is applicable to this development:

- NSW Environmental Planning and Assessment Act, 1979 and subsequent amendments.
- NSW Environmental Planning and Assessment Regulation, 2000 and subsequent amendments.

### 2.2. Reference Codes & Guidelines

This report is based on the following reference codes and guidelines:

- Building Code of Australia Volume One Australian Building Codes Board 2019 edition (BCA)
- Guide to the BCA, Australian Building Codes Board, 2019
- International Fire Engineering Guidelines, Australian Building Codes Board, 2005 (IFEG)

### 2.3. Information Considered

The following project information has been reviewed in preparation of this report:

- Building Code of Australia 2019 Capability Statement prepared by Philip Chun, Ref. 19-212472\_Cap\_Stat\_Report\_R01, dated 30 April 2019
- BCA mark-up plans '190507\_BCA Markup\_Plans' prepared by Philip Chun.
- Architectural drawings prepared by BVN Architects:

Drawing No.	Title	Rev	Date
AR-B10-B1-00	Basement Level Floor Plan	4	17/05/2019
AR-B10-00-00	Ground Level Floor Plan	4	17/05/2019
AR-B10-01-00	Level 01 Floor Plan	4	17/05/2019
AR-B10-02-00	Level 02 Floor Plan	4	17/05/2019
AR-B10-03-00	Level 03 Floor Plan	4	17/05/2019
AR-B10-04-00	Level 04 Floor Plan	4	17/05/2019
AR-B10-05-00	Level 05 Floor Plan	4	17/05/2019
AR-B10-06-00	Level 06 Floor Plan	4	17/05/2019
AR-B10-XX-01	Section N-S	5	17/05/2019



## 2.4. BCA DtS Reference Criteria

The preliminary building criteria developed by the BCA Consultant are listed below:

BCA Criterion		Building Characteristics
Building Classifications (BCA A3.2)	Basement	Class 7a (Carpark) Class 9b (End of Trip Facilities, Bike Store)
	Ground Floor	Class 9b (Library, Gallery, Museum) Class 6 (Café)
	Level 1	Class 5 (Customer Service Offices) Class 9b (Library)
	Level 2	Class 5 (Offices for Library Staff) Class 9b (Library, Public Meeting Rooms)
	Level 3	Class 5 (Offices for Mayor and Admin Staff) Class 9b (Public Meeting Rooms, Multipurpose Spaces and External Event Space)
	Level 4	Class 5 (Offices for Admin Staff) Class 9b (Roof Garden)
	Level 5	Class 5 (Offices for Admin Staff)
	Level 6	Class 5 (Plant, Roof)
Rise in Storeys (BCA C1.2)		7
Type of Construction (BCA C1.1)		Type A
Effective Height (BCA A1.1)		21 m

## 3. Design Objectives

### 3.1. Fire Safety Objectives

The regulatory framework is outlined in Section 2.1. The Building Regulations specify compliance with the BCA, and the fire safety related provisions are generally specified in Sections C, D and E of the BCA. The Certifier has advised that the BCA 2019 is the relevant edition for this project.

The design objectives of the BCA are:

- Occupant Life Safety – to safeguard people from illness or injury due to a fire in a building and whilst evacuating a building during a fire.
- Protection of Adjacent Property – to avoid the spread of fire between buildings and protect other property from physical damage caused by structural failure of a building as a result of fire.
- Fire Brigade Intervention – to facilitate the activities of emergency services personnel.

These fire safety objectives are based on acceptable levels of occupant life safety, as absolute fire safety within buildings is not attainable. Accordingly, the BCA is utilised as a benchmark for establishing the minimum acceptable level of fire safety. The process used to define the acceptance criteria for this project will include community representation via the Building Certifier and Referral Authorities such as Fire & Rescue NSW (FRNSW) and input from relevant project stakeholders.

### 3.2. BCA Compliance

The fire safety provisions of the BCA are satisfied by meeting the Performance Requirements specified within each relevant section of the BCA.

Performance Solutions for the project will be developed via the fire engineering process (FEB & FER) to demonstrate compliance with the Performance Requirements. The objective of this report is to identify the potentially supportable Performance Solutions that may be developed to meet the relevant BCA Performance Requirements. With the exception of these concepts, all other fire safety aspects of the building are expected to comply with the applicable regulatory requirements.

### 3.3. Fire Brigade Objectives

The Fire Brigades have their own charter for the protection of life, property and environment. The fire strategy for this development will consider fire brigade objectives with respect to building design and fire brigade intervention in accordance with the BCA Performance Requirements.

FRNSW will be further consulted as a project stakeholder at the next stage in the design process and their input will be incorporated into the FEB and FER.

### 3.4. Non-Regulatory Objectives

The client has not advised of any specific non-regulatory fire safety design objectives. Therefore, issues such as business continuity, property and asset protection (other than BCA requirements to protect adjoining properties), impact on the community, insurance risks, etc, will not be specifically considered in the fire engineering design.

## 4. Fire Engineering Process

### 4.1. IFEG

The fire engineering process is outlined in the International Fire Engineering Guidelines (IFEG) 2005, which is endorsed by the Australian Building Codes Board as the national fire engineering guidance document. The IFEG identifies that the process is to undergo the following stages:

#### 1. Feasibility Study

- Meeting with the client, building certifier and remainder of the design team to discuss the high-level fire engineering concepts and limitations
- Review of the BCA report following certifier review of the proposed design
- Identification of fire engineering solutions to be undertaken as part of IFEG process and development of DA Fire Engineering letter of support

#### 2. Fire Engineering Brief (FEB)

- Development of trial designs associated with fire engineering solutions identified in the previous stage and associated limitations
- Meeting with fire authorities (Fire & Rescue NSW) to determine emergency response requirements associated with proposed design
- Preparation of FEB to document the proposed approach to detailed fire engineering analysis to be undertaken as agreed with project stakeholders

#### 3. Fire Engineering Report (FER)

- Completion of detailed fire engineering analysis to assess proposed trial designs against acceptance criteria
- Development of trial design requirements for inclusion in proposed building design and discussion with project stakeholders
- Preparation of FER to document the analyses, results and trial design requirements for the building

#### 4. Fire Engineering Inspection Report (FEIR)

- Completion of fire engineering inspection to ensure that trial design requirements have been implemented in the building
- Completion of inspection with fire authorities (Fire & Rescue NSW) to ensure that emergency response requirements have been implemented in the building
- Preparation of FEIR to document that the building is consistent with the FER

## 4.2. Timelines

The expected timelines for each stage described above are outlined in the table below.

**Table 1 Expected Timeline of Project Staging**

Stage	Timeline for Fire Engineering	Timeline for Brigade Response
Feasibility	DA Fire Engineering Letter of support can be prepared within 2 weeks of receipt of finalised BCA report detailing list of variations to the BCA DtS provisions and architectural layouts reflecting BCA advice.	N/A
FEB	Draft FEB can be prepared within 3 weeks following receipt of finalised BCA report, architectural layouts and once the final list of BCA DtS variations has been agreed with the Certifier.	Allow 6 weeks for FRNSW response to FEB, and subsequent time for revision of the FEB to incorporate these comments
FER	Draft FER can be prepared within 3 weeks following receipt of stakeholder comments (including FRNSW) and endorsement / acceptance of the FEB.	FRNSW referral under the NSW EP&A Reg. Clause 144 requirements: After the certifier submits the FER to FRNSW, the brigade will have up to 10 days to confirm that an Initial Fire Safety Report (IFSR) will be provided. If FRNSW confirm that an IFSR will be provided they will have up to 28 days (inclusive of the initial 10 days) to produce the IFSR. If FRNSW provide no confirmation during the initial 10 days, or if the 28 days lapses without receipt of the IFSR, then the certifier does not require FRNSW approval to issue a Construction Certificate.
FEIR	Fire Engineering Inspections will be completed following construction but prior to occupation. FEIR can be prepared within 2 weeks of completed inspection.	The certifier can issue a 152 FRNSW Inspection request; the brigade have 7 days to confirm attendance. If no confirmation is provided within 7 days, the certifier does not require FRNSW approval to issue an Occupation Certificate.

## 4.3. Current 144 Process

As outlined in the table above, the current Environmental Planning & Assessment Regulations outline that the Clause 144 process requires FRNSW referral within certain guidelines.

If any new BCA departures are identified after the initial 144 application is submitted, a new application will be required to be submitted under current legislation.

## 5. Fire Safety Strategy

### 5.1. Egress

#### 5.1.1. Population

The number of occupants within each functional area is expected to be calculated based on the population densities outlined in BCA Clause D1.13 or as advised by the Client, except that the population density within Level 3 event space is proposed to be 2 m<sup>2</sup>/person. Any other variations to population densities shall be advised to LCI for review and incorporation in the fire engineering analysis as necessary.

#### 5.1.2. Number of Exits Required

Each storey is prescribed to be provided with at least two exits in accordance with BCA Clause D1.2, with any stair serving as a required exit for greater than 3 storeys required to be fire-isolated.

Egress provisions from the building are proposed to be as follows:

- The basement level is proposed to be served by two fire-isolated stairs (Stairs 1 & 2) discharging on ground floor.
- Ground floor is to be served by exits discharging directly to the outside.
- The upper levels are proposed to be served by two fire-isolated stairs (Stairs 3 & 4), however Levels 3 to 6 will be served by a single fire-isolated exit (Stair 3). This may be supportable by fire engineering analysis, subject to the provision of at least two separate entry points into the fire-isolated stair on these levels.

The central atrium stair which will serve Ground Floor and Levels 1 to 3 may be considered as a required exit as part of the fire safety strategy to increase aggregate egress width and reduce travel distances. The stair would not be fire-isolated as prescribed by BCA Clause D1.3, however this is proposed to be addressed by fire engineering analysis, subject to the stair and associated circulation spaces being smoke separated from the remainder of the building on each level. Additional variations relating to the central stair serving as a required exit such as discontinuity and extended travel distances may also be supportable by a Performance Solution.

#### 5.1.3. Egress Widths

Minimum clear egress widths serving this building are prescribed to be in accordance with BCA Clause D1.6. Reduced available egress widths may be addressed under a Performance Solution subject to detailed fire engineering analyses. Current BCA advice indicates that reduced egress widths occur on Levels 2 and Level 3 North.

Double-leaf doors shall be provided to the fire-isolated stairs serving the upper levels as feasible within the architectural design.

#### 5.1.4. Travel Distances and Evacuation

Extended travel distances within areas of the building may be supported within the fire safety strategy, subject to detailed fire engineering analysis in the later design stages on a case-by-case basis. The following preliminary variations have been identified:

- Up to 30 m to a point of choice from which two exits are available within the basement carpark and up to 25 m to a point of choice within the remaining areas of the building, in lieu of 20 m;
- Up to 60 m to an exit when two exits are available in the basement carpark and up to 55 m to an exit within the remaining areas of the building, in lieu of 40 m; and
- Up to 90 m between alternative exits in the basement carpark and up to 80 m within the remaining areas of the building, in lieu of 60 m.

### 5.1.5. Exit Discharge

Fire-isolated exits are prescribed to discharge to a road or open space under the DtS provisions of the BCA. The fire-isolated exits serving the basement are currently documented to discharge directly to the outside. The fire-isolated exits serving the upper levels are currently documented to discharge into an alcove / undercroft area on ground floor. This may be addressed as a Performance Solution in the fire engineering design.

## 5.2. Fire Compartmentation & Resistance

### 5.2.1. Type of Construction

Type A construction as defined in the BCA is applicable to the building. Table 3 of the BCA Specification C1.1 is applicable for the fire resistance level (FRL) of the building structure. The FRL for retail areas may be reviewed / consolidated to achieve a consistent FRL throughout the building (i.e. 120/120/120), subject to the specific risk and detailed fire engineering analysis on a case-by-case basis.

### 5.2.2. Compartmentation and Separation

- The building forms a single fire compartment due to the connection by open circulation stairs, which exceeds the BCA prescribed maximum fire compartment floor area and varies from BCA Section G3 atrium provisions. This will be addressed as a Performance Solution in the fire engineering design, and may require additional mitigating measures subject to detailed fire engineering analyses.
- To utilise the central stair as a required exit as part of the fire safety strategy, it is proposed to smoke separate the stair and associated circulation space from the remainder of the building from Ground Floor to Level 03. In addition to protecting the central stair, this separation provides smoke separation between the terrace and office areas on Level 3.
- Separation of equipment and electrical supply systems shall be in accordance with the BCA DtS Provisions.
- Additional fire separation requirements will be developed through the detailed fire engineering design to account for an open flame fire scenario within the burner proposed to be used in the event space on Level 3.

### 5.2.3. Linings and Cladding

Internal linings within the building are to comply with the requirements of BCA Specification C1.10.

External walls, including any external cladding proposed for the building, are required to be of non-combustible construction in accordance with AS 1530.1.



## **5.3. Fire Safety Systems**

### **5.3.1. Automatic Sprinkler System**

An automatic sprinkler system is required to be provided throughout the building in accordance with BCA Clause E1.5 and AS 2118.1 with quick response type heads throughout.

Each storey of the building shall be served by separate sprinkler control valves.

The following variations may be supported by Performance Solutions, subject to detailed fire engineering analysis:

- No / limited sprinkler coverage to the terrace on Level 3 as there is no ceiling/ roof above.
- The provision of other types of suppression systems for the gallery and art areas in lieu of sprinklers for asset protection reasons i.e. gas suppression, subject to design team coordination.

### **5.3.2. Smoke Detection and Alarm System**

- A smoke detection is to be provided throughout the building in accordance with AS 1670.1.  
To provide an added fire safety benefit in view of proposed Performance Solutions relating to extended travel distances and rationalisation of smoke hazard management provisions, spacing of the smoke detection system is to be on a 10 m grid consistent with Clause 5 of AS 1670.1.
- An Emergency Warning and Intercom System (EWIS) in accordance with AS 1670.4 is required to be provided for this building. Zoning of the EWIS may be specified as part of the fire safety strategy, subject to detailed fire engineering analysis.
- Fire alarm monitoring in accordance with AS 1670.3 is required to be provided for this building.

### **5.3.3. Hydrant and Sprinkler Boosters**

Hydrants and water supply arrangements are required to be provided throughout the building in accordance with AS 2419.1. Attack hydrants are to be located within the fire-isolated stairs at the level at which they are serving.

Fire brigade facilities and equipment which vary from the prescribed requirements could be reviewed on a case by case basis for support as part of a fire engineering solution, subject to Fire & Rescue NSW consultation and approval. Preliminary design advice indicates the booster arrangement/ location may require fire engineering input through formulation of Performance Solutions for identified variations.

### **5.3.4. Fire Hose Reels**

Fire hose reels are to be provided throughout the building in accordance with BCA Clause E1.4 and AS 2441.

Omission of fire hose reels to specific areas of the building may be supported within the fire safety strategy, subject to detailed fire engineering analysis in the later design stages on a case-by-case basis.

### **5.3.5. Portable Fire Extinguishers**

Portable fire extinguishers are to be provided to cover specific fire hazards in accordance with BCA Clause E1.6 and installed as required by AS 2444.

### **5.3.6. Emergency Lighting & Exit Signage**

Emergency lighting and illuminated exit signage is to be provided throughout the building in accordance with AS 2293.1 and BCA Clauses E4.2, E4.5 and E4.6.

### **5.3.7. Smoke Hazard Management**

The DtS smoke hazard management provisions for the building are prescribed to be in accordance with Part E of the BCA.

The proposed smoke hazard management strategy as part of the fire safety strategy for the building incorporates the following:

➤ Ground to Level 3:

- No smoke exhaust is proposed to these to levels. This variation to BCA NSW Part E2.2b (smoke exhaust prescribed due to due to the compartment size and contained library/gallery parts) will be addressed as a Performance Solution in the fire engineering design based on ASET / RSET analysis.
- Any air-handling systems serving these levels are to automatically shut down upon activation of the fire alarm.
- The north and south zones of ground floor and Levels 1 & 3 are to be smoke separated by virtue of the smoke-separated central circulation stair.

➤ Office areas on Levels 3 to 5:

These areas are proposed to be served by a performance-based smoke exhaust system. The system will be developed via an ASET / RSET analysis for the smoke zone based on detailed fire and evacuation modelling. System details will be confirmed pending detailed fire and evacuation modelling; however it will incorporate the following measures / principles:

- Smoke exhaust from the top of the smoke compartment via the Level 6 plant room.
- Mechanical make-up air is to be provided via supply air continuing to run on non-fire affected levels; alternative / in combination, doors at low level are to automatically open upon activation of the fire alarm.
- Any air-handling system serving the fire-affected levels is to automatically shut down upon activation of the fire alarm.

### **Stair Pressurisation**

Stair pressurisation is to be provided to fire-isolated stairs, except that omission of stair pressurisation to Stair 4 may be supportable by a fire engineering Performance Solution, subject to detailed fire engineering analyses in later design stages.

### **Carpark Exhaust**

Carpark exhaust should satisfy AS 1668.1 for fire mode operation, including manual override switches on the FIP, i.e. revert to full exhaust capacity upon carpark sprinkler activation.

## 6. Conclusion

This preliminary Fire Safety Strategy outlines the fundamental fire safety design concepts for the proposed Cultural and Civic Space development located at 23-31 Gordon Street, Coffs Harbour. The concepts will be further developed at the later stages of the project subject to discussion with project stakeholders.