

The background of the cover features a grayscale photograph of a city skyline, with a large, dark blue diagonal band across the middle. Overlaid on the image are numerous white, 3D wireframe outlines of buildings of various heights and shapes, creating a sense of depth and urban architecture.

# **Building Code of Australia**

## **Assessment Report**

**Project Address: 1 Alfred Street, Sydney**

Client: Yuhu - AHW

Report Number: 152779 – Tower B

Revision: 02

16 JANUARY 2019

## REPORT REVISION HISTORY

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		Senior Building Regulations Consultant	

### Certification

This report has been authorised by City Plan Services P/L, with input from a number of other expert consultants. To the best of our knowledge the accuracy of the information contained herein is neither false nor misleading. The comments have been based upon information and facts that were correct at the time of writing.

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## 1. EXECUTIVE SUMMARY

The development, the subject of this report, is for the construction of a new mixed use development located at 1 Alfred Street, Sydney. The development will comprise a sixty one storey residential tower known as Tower A and a twenty nine storey hotel tower known as Tower B. Both towers will sit above a common multi-storey basement which will contain carparking, storage facilities and BOH hotel uses. For the purposes of the BCA, the development forms a single building.

This report relates to Tower B and the basement. Tower A is the subject of a separate report.

This report has been prepared, on behalf of Yuhu – AHW to establish compliance to the Building Code of Australia 2016 (BCA).

The following non-compliance's with the deemed-to-satisfy provisions of the BCA, in relation to the proposed building work, have been identified and are proposed to be dealt by justification against the performance requirements of the BCA in accordance with BCA Clause A0.5 (b).

Fire-resisting construction (C1.1 & Specification C1.1)

The fire-resistance levels of the slabs and walls within the Ground Floor retail portion will be reduced to 90/90/90 in lieu of 180/180/180. Beams and columns will achieve a FRL of 180/-/-

Number of exits required (D1.2)

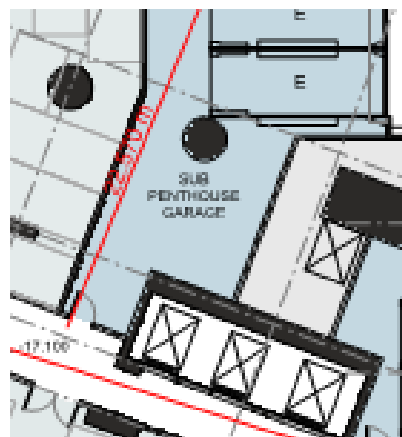
Retail tenancies on the Ground Floor do not have access to two exits

Exit travel distances (D1.4)

Travel distances exceed the limits imposed by D1.4 in the following locations:

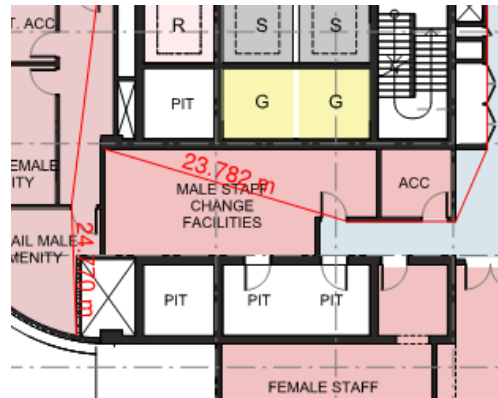
### **Basement 3, 4, 5 and 6**

Sub penthouse garage is more than 20m to a point of choice (23m, 28m in Basement 3).

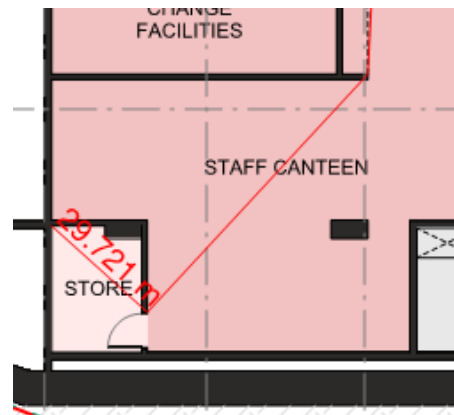


### Basement 1

- i. Distance to a point of choice from Retail Male Amenity and Male Change Facilities is more than 20m (24m).

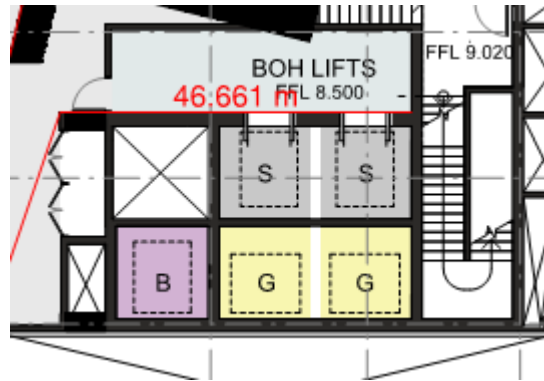


- ii. Distance to point of choice from Store in Staff Canteen exceeds 20m (29m).



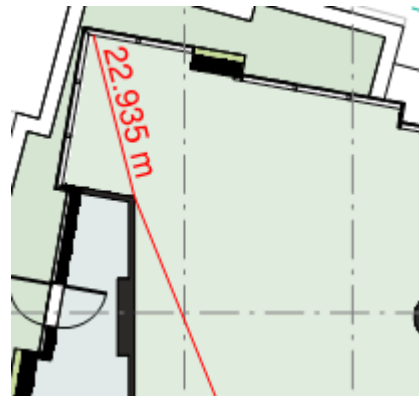
### Ground Mezzanine

Distance to the exit from BOH Lifts exceeds 40m (47m)



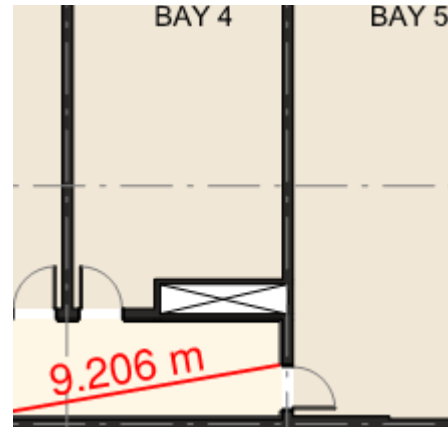
#### Level 2

Distance to a point of choice from the Ballroom exceeds 20m (23m).

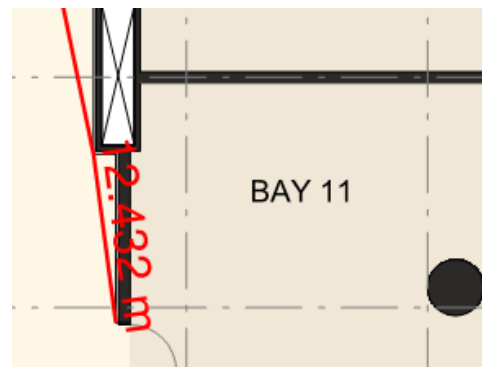


#### Level 4 to 19

Distance to a point of choice from Bays 1 and 5 exceeds 6m (9m).

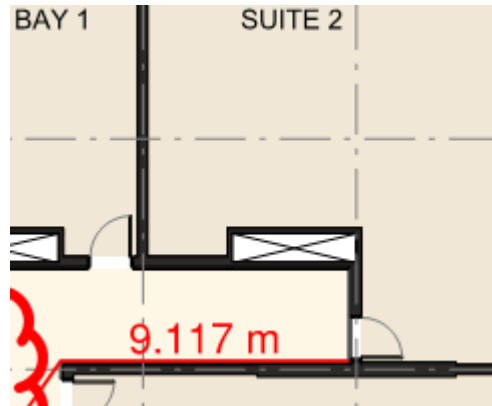


Distance to a point of choice from Bay 11 & 12 exceeds 6m (12m).

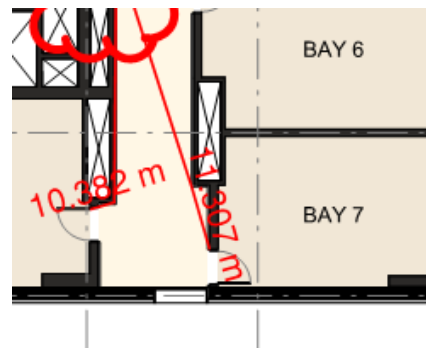


#### Level 20 & 21

Distance to a point of choice from Suites 1 & 2 exceeds 6m (9m).

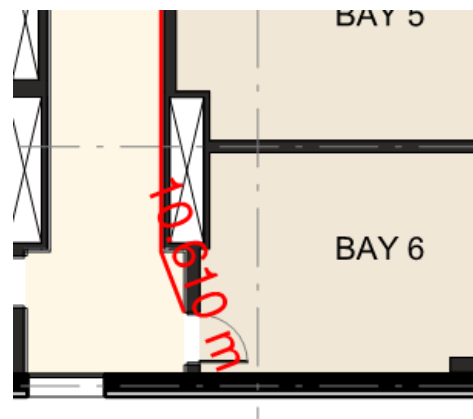


Distance to a point of choice from Bays 7 and 8 exceeds 6m (12m).



#### Level 22

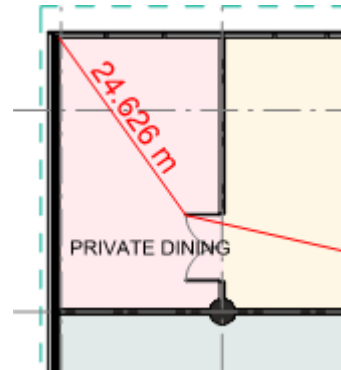
Distance to a point of choice from Bays 6 and 7 exceeds 6m (11m).





#### Level 24

Distance to a point of choice from Private Dining exceeds 20m (25m).



Distance between alternative exits (D1.5)

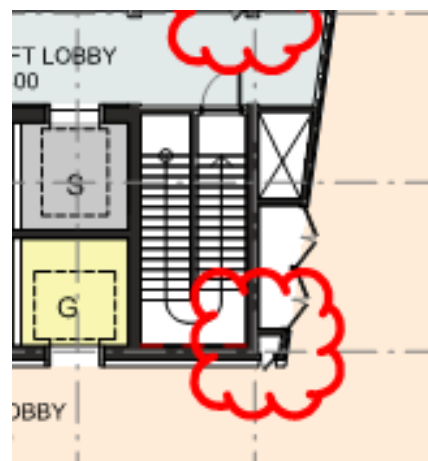
The distance between alternative exits exceeds the limits imposed by D1.5 in the following locations:

#### Ground Mezzanine

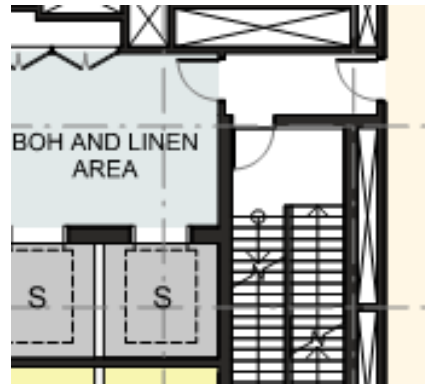
Distance between alternative exits exceeds 60m (78m)

Travel via fire-isolated exits (D1.7)

- i. Eastern fire stairs do not discharge directly to the outside of the road or open space.



- ii. Levels 4 to 23 BOH Linen Area opens directly to stair.



Handrails (D2.17)

Handrails within fire-isolated stairs will not be of a consistent height between flights.

Sprinklers (E1.5)

Sprinklers will not be provided under the awning over the main entry to the hotel

Smoke hazard management (E2.2)

- i. The retail tenancies, pool and gymnasium, Ballroom and restaurant and bars will not be provided with zone smoke control.
- ii. Impulse jet fans are to be utilised within the basement

Other matters to be considered/clarified:

Discharge from exits (D1.10)

Bollards may be required adjacent to the discharge point of the fire stairs exiting to the through site link.

Installations in exits and paths of travel (D2.7)

Comms and electrical cabinets in paths of travel to exits are to be enclosed in non-combustible and sealed to prevent smoke from spreading from the enclosure. Timber doors are to be provided with sheet metal backing and smoke seals.

## 2. INTRODUCTION

### 2.1. General

The development, the subject of this report, is for the construction of a new mixed use development located at 1 Alfred Street, Sydney. The development will comprise a sixty two storey residential tower known as Tower A and a twenty eight storey hotel tower known as Tower B. Both towers will sit above a common

multi-storey basement which will contain carparking, storage facilities and BOH hotel uses. For the purposes of the BCA, the development forms a single building.

This report relates to Tower B and the basement. Tower A is the subject of a separate report.

## **2.2. Purpose of Report**

This report has been prepared, on behalf of Yuhu – AHW to establish compliance to the Building Code of Australia 2016 (BCA).

## **2.3. Report Basis**

The following information has been directly referenced or relied upon in the preparation of this report:

- (a) Architectural plans prepared by Crone Architects and Kengo Kuma and Associates as identified in the attached Appendix 1.
- (b) The Building Code of Australia 2016 Amendment 1, inclusive of NSW variations (See Note 1).
- (c) Environmental Planning and Assessment Act 1979.
- (d) Environmental Planning and Assessment Regulation 2000.

Note1: Building Code of Australia (BCA) 2016 Amendment 1 was adopted in NSW on 12 March 2018. The amendment of the BCA in force at the date of lodgement of a Construction Certificate is the version called up by Clause 98 of the Environmental Planning & Assessment Regulation 2000 for the purpose of the building design. Therefore, comments may be subject to changes to comply with updated versions of the Building Code of Australia.

## **2.4. Exclusions and Limitations**

This report does not consider the following, except where specifically mentioned:

- Structural design.
- Part D3 of the BCA – Access for People with a Disability.
- The Disability Discrimination Act 1992 (access for people with disabilities has been assessed in accordance with Part D3 of the BCA, however additional measures may be required to be provided subject to the Disability Discrimination Act 1992)
- Disability (Access to Premises – Building) Standards 2010.

### **3. BUILDING CODE OF AUSTRALIA ASSESSMENT**

#### **3.1. Classification (A3.2)**

The proposed building consists of:

Class 3 – Hotel accommodation;

Class 5 – Office;

Class 6 – Restaurant and bar;

Class 7a – Carpark;

Class 7b – Storage;

Class 8 – Electrical Substation;

Class 9b – Ballroom, pool and gymnasium.

#### **3.2. Effective Height (A1.1)**

The proposed building will have an effective height of more than 25m (192.88m).

#### **3.3. Rise in Storeys (C1.2)**

The proposed building will consist of a rise in storeys of sixty one (61).

#### **3.4. Type of Construction (C1.1)**

Type A construction in accordance with Specification C1.1 of the BCA, is the applicable type of construction.

## 4. BUILDING CODE OF AUSTRALIA DESCRIPTION

### 4.1. Structure (BCA Section B)

BCA Clause	Title	Assessment and Comment	Status
B1.1	Resistance to actions	The resistance of the building must be greater than the most critical action effects resulting from different combinations of actions in accordance with this clause.	Capable of complying
B1.2	Determination of individual actions	A structural engineer is to provide design certification at the Construction Certificate stage that the building has been designed to the relevant structural standards.	Capable of complying
B1.4	Determination of structural resistance of materials & forms of construction	A structural engineer is to provide design certification at the Construction Certificate stage that the building has been designed to the relevant structural standards.	Capable of complying
B1.5	Structural Software	Not applicable	
B1.6	Construction of buildings in flood hazard areas	A Class 2 building is required to comply with the ABCB standards for Construction of Buildings in Flood Hazard Areas.	Capable of complying

### 4.2. Fire Resistance (BCA Section C)

BCA Clause	Title	Assessment and Comment	Status
C1.1	Type of construction required	The type of fire resisting construction applicable is Type A construction. The minimum FRL's are to be achieved.	Capable of complying
C1.2	Calculation in rise in storeys	The building contains a RIS of 61.	Note
C1.8	Lightweight construction	Any proposed lightweight construction is to comply with Specification C1.8.	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
C1.9	Non-combustible building elements	<ol style="list-style-type: none"> <li>1. In a building required to be Type A or B construction, the following building elements and their components must be non-combustible:               <ol style="list-style-type: none"> <li>(a) External walls and common walls, including all components incorporated in them including the façade covering, framing and insulation.</li> <li>(b) The flooring and floor framing of lift pits.</li> <li>(c) Non-loadbearing internal walls where they are required to be fire-resisting.</li> </ol> </li> <li>2. A shaft, being a lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, that is non-loadbearing, must be of non-combustible construction in –               <ol style="list-style-type: none"> <li>(a) A building required to be Type A construction; and</li> <li>(b) A building required to be Type B construction, subject to C2.10, in:                   <ol style="list-style-type: none"> <li>(i) a Class 2, 3 or 9 building; and</li> <li>(ii) a Class 5, 6 or 8 building if the shaft connects more than 2 storeys.</li> </ol> </li> </ol> </li> <li>3. A loadbearing internal wall and loadbearing fire wall, including those that are part of a loadbearing shaft, must comply with Specification C1.1.</li> <li>4. The requirements of (1) and (2) do not apply to gaskets, caulking, sealants and dampproof courses.</li> <li>5. The following materials may be used wherever a non-combustible material is required:               <ol style="list-style-type: none"> <li>(a) Plasterboard.</li> <li>(b) Perforated gypsum lath with a normal paper finish.</li> <li>(c) Fibrous-plaster sheet.</li> <li>(d) Fire-reinforced cement sheeting.</li> <li>(e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1mm thickness and where the Spread-of-</li> </ol> </li> </ol>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>Flame Index of the product is not greater than 0.</p> <p>(f) Bonded lamination materials where –</p> <p>(i) Each lamina, including any core, is non-combustible; and</p> <p>(ii) Each adhesive layer does not exceed 1mm in thickness and the total thickness of the adhesive layers does not exceed 2mm; and</p> <p>(iii) The Spread of Flame Index and the Smoke-Developed Index of the bonded laminated materials as a whole do not exceed 0 and 3 respectively.</p>	
C1.10	Fire hazard properties	Proposed internal linings, materials and assemblies are to be selected to comply with the required fire hazard properties of Specification C1.10. Evidence of compliance (test certificates) shall be obtained from the supplier or manufacturer.	Capable of complying
C1.11	Performance of external wall in fire	Not applicable	
C1.13	Fire protected timber: Concession	Not applicable	
C1.14	Ancillary Elements	<p>An ancillary element must not be fixed, installed or attached to the internal parts or external face of an external wall that is required to be non-combustible unless it is one of the following:</p> <ol style="list-style-type: none"> <li>1. An ancillary element that is non-combustible.</li> <li>2. A gutter, downpipe or other plumbing fixture or fitting.</li> <li>3. A flashing.</li> <li>4. A grate or grille not more than 2m<sup>2</sup> in area associated with a building service.</li> <li>5. An electrical switch, socket-outlet, cover plate or the like.</li> <li>6. A light fitting.</li> </ol>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>7. A required sign.</p> <p>8. A sign other than one provided under (1) or (7) that-</p> <ul style="list-style-type: none"> <li>(a) Achieves a ground number of 1 or 2; and</li> <li>(b) Does not extend beyond one storey; and</li> <li>(c) Does not extend beyond one fire compartment; and</li> <li>(d) Is separated vertically from other signs permitted under (8) by at least 2 storeys.</li> </ul> <p>9. An awning, sunshade, canopy, blind or shading hood other than one provided under (1) that –</p> <ul style="list-style-type: none"> <li>(a) Meets the requirements of Table 4 of Specification C1.10 as for an internal element; and</li> <li>(b) Serves a storey – <ul style="list-style-type: none"> <li>(i) At ground level; or</li> <li>(ii) Immediately above a storey at ground level; and</li> <li>(iii) Does not serve an exit, where it would render the exit unusable in a fire.</li> </ul> </li> </ul> <p>10. A part of a security, intercom or announcement system.</p> <p>11. Wiring.</p> <p>12. A paint, lacquer or a similar finish.</p> <p>13. A gasket, caulking, sealant or adhesive directly associated with (1) to (11).</p>	
C2.2	General floor area and volume limitations	Floor areas and volumes of compartments are within the limitations imposed by this clause.	Capable of complying
C2.3	Large Isolated buildings	Not applicable	
C2.4	Open space and vehicular access	Not applicable	
NSW C2.5	Class 9a and 9c buildings	Not applicable	



BCA Clause	Title	Assessment and Comment	Status
C2.6	Vertical separation of openings in external walls	Not applicable	
C2.7	Separation by fire walls	Fire walls are required to separate the uses and must be constructed in accordance with this clause.	Capable of complying
C2.8	Separation of classifications in the same storey	<p>If a building has parts of different classifications located alongside one another in the same storey,</p> <ul style="list-style-type: none"> <li>each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classifications concerned; or</li> <li>the parts must be separated in that storey by a fire wall.</li> </ul>	Capable of complying
C2.9	Separation of classifications in different stories	The floors between parts of different classifications must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey.	Capable of complying
C2.10	Separation of lift shafts	The lift shaft is required to be separated from the rest of the building with walls achieving the FRL prescribed by Specification C1.1.	Capable of complying
C2.11	Stairways and lifts in one shaft	The stairs and lift shaft are located in different shafts.	Capable of complying
C2.12	Separation of equipment	<p>The following rooms are required to be fire separated from the remainder of the building by 120/120/120 FRL construction:</p> <ul style="list-style-type: none"> <li>Lift motor rooms and lift control panels.</li> <li>Emergency Generators.</li> <li>Central smoke control plant.</li> <li>Hydrant pumps.</li> <li>Boilers.</li> <li>Battery rooms.</li> </ul>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		The building does not contain any of the above room and the requirements of this provision do not apply.	
C2.13	Electricity supply system	<p>The electricity substation is required to be fire separated from the remainder of the building. The BCA requires 2 hr separation however the electricity authority generally requires 3 hr separation.</p> <p>Any main switchboard located in the building which sustains emergency equipment operating in emergency mode, is required to be fire separated from the remainder of the building by 2 hr fire resisting construction.</p> <p>Construction should achieve an FRL of 120/120/120, doorways are required achieve an FRL of -/120/30 and to be self-closing and all penetrations in enclosures are to be appropriately fire stopped.</p> <p>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.</p> <p>Electrical conductors and switchboards are required to comply with this clause.</p>	Capable of complying
C2.14	Public corridors in Class 2 & 3 buildings	Not applicable	
C3.2	Protection of openings in external walls	Openings are located more than 3m from the allotment boundary.	Capable of complying
C3.3	Separation of external walls and associated openings in	Not applicable.	

BCA Clause	Title	Assessment and Comment	Status
	different fire compartments		
C3.4	Acceptable method of protection	<p>Windows requiring protection must be protected by one of the means:</p> <ul style="list-style-type: none"> <li>▪ External wall-wetting sprinklers with windows that are automatically or permanently fixed in the closed position.</li> <li>▪ -/60/- fire windows (Automatic or permanently fixed in the closed position)</li> <li>▪ -/60/- automatic fire shutters</li> <li>▪ Doorways which require protection can be protected externally with wall wetting sprinklers with doors that are self-closing or automatic closing, or</li> <li>▪ -/60/30 fire doors which are self-closing or automatic closing.</li> </ul> <p>Fire doors, fire windows and fire shutters are required to comply with Specification C3.4.</p> <p>Alternatively, protection of openings could be justified against the performance provisions of the BCA, via a fire engineered alternative solution.</p>	Note
C3.5	Doorways in fire walls	Doorways in fire walls are required to be protected with fire dorrs with a FRL as prescribed by this clause.	
C3.6	Sliding fire doors	Not applicable	
C3.7	Protection of doorways in horizontal exits	Not applicable	
C3.8	Openings in fire isolated exits	The fire-isolated exits are required to be protected by -/60/30 self-closing fire doors.	Capable of complying
C3.9	Service penetrations in fire isolated exits	Service are not to penetrate through fire isolated exits unless permitted by this clause.	Capable of complying
C3.10	Fire isolated lift shafts	The lift doors are required to be -/60/- fire doors and comply with this provision.	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		A lift call panel, indicator panel or other panel in the wall of a fire-isolated lift shaft must be backed by construction having an FRL of not less than - /60/60 if it exceeds 35 000 mm <sup>2</sup> in area.	
NSW C3.11	Bounding construction	Doors from sole occupancy units opening into enclosed public corridors are required to be protected by -/60/30 self-closing fire doors.  A doorway from any other room not within a SOU, must be protected by -/60/30 self-closing fire doors if it opens to a public corridor, public lobby or the like within the residential portion of the building. Doorways for garbage room enclosure within the public corridors would also be required to comply with the above requirements.	Capable of complying
C3.12	Openings in floors and ceilings for services.	Fire separation between floors is required to be maintained where services penetrate through floors unless the services are located in fire rated shafts.	Capable of complying
C3.15	Openings for service installations	Services that penetrate a building element that is required to have an FRL must be protected utilising one of the options listed under this clause.  Test certificates describing each individual service penetration and configuration will be required at the construction certificate stage.	Capable of complying
C3.16	Construction joints	Construction joints in building elements required to be fire resistant are required to be protected in accordance with this clause.	Capable of complying
C3.17	Columns protected with lightweight construction to achieve an FRL	Not applicable	

#### 4.3. Fire-Resisting Construction (Specification C1.1)

BCA Clause	Title	Assessment and Comment	Status
2.1	Exposure to fire source features	The requirements of this provision apply to the subject building.	Note
2.2	Fire protection for support of another part	When determining FRL's applicable to a particular building element, the requirements of this clause are required to be complied with.	Note
2.3	Lintels	Lintels are to be protected as required by the requirements of this clause.	Capable of complying
2.4	Method of attachment not to reduce the fire resistance of building elements	Any attachments such as louvers over windows, external wall cladding to the façade or any type of combustible material is required to comply with C1.10, Spec C1.10 of the BCA and the requirements of this clause.	Capable of complying
2.5	General concessions	Non-combustible structures on the roof may be exempt under the requirements of this provision. Further details are to be provided with the construction documentation.	Note
2.6	Mezzanine floors: concession	Not applicable	
2.7	Enclosure of shafts	Fire rated shafts are to be enclosed at the top and bottom in accordance with the requirements of this clause.	Capable of complying
2.9	Residential Age Care building: Concession	Not applicable	
3.1	Fire resistance of building elements	Generally building elements are required to achieve the following FRL's; Carpark: 2 hrs Storage 3 hrs Residential: 1½ hrs Retail: 3 hrs Pool, gym, ballroom 2 hrs	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>In addition, the following requirements apply:</p> <ul style="list-style-type: none"> <li>External walls must be non-combustible, and all elements used in the external wall must be tested and deemed non-combustible under AS1530.1-1994.</li> <li>Common walls and the flooring and floor framing of lift pits must be non-combustible</li> <li>a loadbearing internal wall and a loadbearing fire wall (including those that are part of a loadbearing shaft) must be of concrete or masonry; and</li> <li>a non-loadbearing internal wall required to be fire-resisting or lift, ventilating, pipe, garbage, or similar shaft that is not for the discharge of hot products of combustion, must be of non-combustible construction.</li> </ul>	
3.5	Roof: Concession	<p>The roof is not required to achieve an FRL as the building:</p> <ul style="list-style-type: none"> <li>has a sprinkler system complying with Specification E1.5 installed throughout; or</li> <li>has a rise in storeys of 3 or less; or</li> <li>is of Class 2 or 3; or</li> <li>has an effective height of not more than 25 m and the ceiling immediately below the roof has a resistance to the incipient spread of fire to the roof space of not less than 60 minutes</li> </ul>	Note
3.6	Roof lights	Not applicable	
3.7	Internal wall and column concession	Internal columns, internal walls (other than fire walls and shaft wall) immediately below the roof are permitted to achieve an FRL of 60/60. This concession does not apply to internal columns within 1.5m from the external windows.	Note
3.9	Carpark	Not applicable	

#### 4.4. Access and Egress (BCA Section D)

BCA Clause	Title	Assessment and Comment	Status
D1.2	Number of exits required	Retail tenancies will not be provided with two exits.	Performance solution
D1.3	When fire isolated exits are required	Every required exit serving a building must be fire isolated if the exit stair connects and/or pass through more than 3 consecutive storeys.	Capable of complying
D1.4	Exit travel distances	<p><b>Class 2 part</b> - The entrance doorway of any sole-occupancy unit must be not be more than 6m from an exit or from a point from which travel in different directions is available or 20m from a single exit serving the storey at the level of egress to a road or open space.</p> <p>No point on the floor of a room which is not in a sole-occupancy unit must be more than 20m from an exit or from a point at which travel in different directions to 2 exits is available.</p> <p><b>Class 5, 6, 7a and 9b parts</b> - No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40m.</p> <p>Travel distances exceed the limits imposed by D1.4 in the following locations:</p> <p><b>Basement 3, 4, 5 and 6</b> Sub penthouse garage is more than 20m to a point of choice (23m).</p> <p><b>Basement 2</b> Distance to the exit from EOT Male and Hotel &amp; Retail Bicycle Store is more than 40m (43m)</p> <p><b>Basement 1</b> Distance to a point of choice from Female Change Facilities is more than 40m (30m)</p> <p><b>Level 2</b></p>	Performance solution

BCA Clause	Title	Assessment and Comment	Status
		<p>Distance to a point of choice from the Ballroom exceeds 20m (23m).</p> <p><b>Level 4 to 19</b> Distance to a point of choice from Bays 1 and 5 exceeds 6m (9m).</p> <p><b>Level 20 to 22</b> Distance to a point of choice from Suites 1 &amp; 2 exceeds 6m (9m). Distance to a point of choice from Bays 7 and 8 exceeds 6m (12m).</p> <p><b>Level 24</b> Distance to a point of choice from Private Dining exceeds 20m (24m).</p>	
D1.5	Distance between alternative exits	<p>Exits that are required to serve as alternative means of egress must not be more than 45m apart in a residential building and not more than 60m in all other parts.</p> <p>Exits required as alternative means of egress must be located not less than 9m apart and located so that the alternative paths of travel do not converge such that they become less than 6m apart.</p> <p>The distance between alternative exits exceeds the limits imposed by D1.5 in the following locations: <b>Basement 3</b> Eastern Stair (BB) and Northern Stair (BB) 81m</p>	Performance solution
NSW D1.6	Dimensions of exits and paths of travel to exits	A required exit or path of travel to an exit are required to be a minimum unobstructed height of not less than 2m and minimum width of 1m.	Capable of complying



BCA Clause	Title	Assessment and Comment	Status
D1.7	Travel via fire isolated exits	<p>A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from:</p> <ul style="list-style-type: none"> <li>▪ a public corridor, public lobby or the like; or</li> <li>▪ a sole-occupancy unit occupying all of a storey; or</li> <li>▪ a sanitary compartment, airlock or the like.</li> </ul> <p>Each fire-isolated stairway or fire-isolated ramp 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;</p> <p>Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser.</p> <p>Eastern fire stairs do not discharge directly to the outside of the road or open space.</p>	Performance solution
D1.8	External Stairs or ramps in lieu of Fire-isolated exits	Not applicable	
D1.9	Travel via non-fire-isolated stairways or ramps	A non-fire-isolated stair serving as a required exit must provide a continuous means of travel by its own flights and landings to a level at which egress to a road or open space is available.	Capable of complying
D1.10	Discharge from exits	The discharge point of the fire isolated exits is required to be connected to the road by a minimum 1 m wide path and where there is a change of level, the path must contain a complying stair or ramp.	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>The BCA also specifies that exits must not be blocked at a point of discharge and where necessary suitable barriers must be provided to prevent vehicles from blocking the exit or access to it.</p> <p>Suitable bollards would be required adjacent to the doorways of fire-stairs within the basement carpark, where directly adjacent or exposed to the carpark.</p>	
D1.11	Horizontal exits	Not applicable	Capable of complying
D1.12	Non-required stairways, ramps or escalators	Non-required stairways, ramps or travelators are not proposed.	Capable of complying
D1.13	Number of persons accommodated	Populations have been assessed in accordance with Table D1.13.	Capable of complying
D1.16	Plant rooms and lift rooms: concession	<p>A ladder may be used in lieu of a stairway to provide egress from a plant room with a floor area less than 100m<sup>2</sup> or plant or lift machine rooms with a floor area of less than 200 m<sup>2</sup>, for all but one point of egress.</p> <p>Ladders are required to comply with AS1657 and the requirement of this clause.</p> <p>Details are to be provided with the construction documentation.</p>	Note
D1.17	Access to lift pits	Fire-isolated stairs and ramps are required to be constructed of non-combustible materials and not cause structural damage where subject to local failure.	Capable of complying
D2.2	Fire-isolated stairways and ramps	<p>Non-fire isolated stairs are required to be designed in accordance with the requirements of this provision.</p> <p>Details are to be provided with the construction documentation.</p>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
D2.3	Non-fire isolated stairs and ramps	Details are to be provided with the construction documentation.	Capable of complying
D2.4	Separation of rising and descending stair flights	Rising and descending fire-isolated stairs are required to be separated with non-combustible construction and smoke proof construction in accordance with Clause 2 of Specification C2.5.  Details are to be provided with the construction documentation.	Capable of complying
D2.7	Installation in exits and paths of travel	The telecommunication and electrical cupboards are required to be enclosed with non-combustible construction. Doorways are required to be backed with non-combustible construction with smoke seals installed to all door leaves.  All services which penetrate the cupboard are also required to be smoke sealed.  Details are to be provided with the construction documentation.	Capable of complying
D2.8	Enclosure of space under stairs and ramps	The space below the required fire-isolated stairways must not be enclosed to form a cupboard or similar enclosed space.	Capable of complying
D2.9	Width of stairways	The required width of a stairway must be measured clear of all obstructions (eg skirting).	Capable of complying
D2.10	Pedestrian ramps	The requirements of the clause do not apply to the current design.	Capable of complying
D2.11	Fire-isolated passageways	The fire rating of fire-isolated passageways is required to be achieved from the outside.	Capable of complying
D2.12	Roof as open space	Not applicable	
NSW D2.13	Goings & risers	Goings and risers are to be designed to comply with this clause including: <ul style="list-style-type: none"> <li>going and riser dimensions; and</li> <li>non-slip finish or non-skid nosings.</li> </ul>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		Construction documentation should demonstrate compliance	
D2.14	Landings	Landings are to be designed in accordance with this clause. The current documentation does not contain this level of detail.	Capable of complying
NSW D2.15	Thresholds	Thresholds are to comply with this clause.	Capable of complying
NSW D2.16	Barriers to prevent falls	Balustrades are to be designed to comply with this clause. The current documentation does not contain this level of detail.	Capable of complying
D2.17	Handrails	<p>Handrails are required along at least one side of all stairways or ramps, or on both sides of stairs or ramps with a total width of more than 2m.</p> <p>Handrails are required to be installed in accordance with AS1428.1-2009 except for fire-isolated stairs.</p> <p>Handrails within the fire-isolated stairs will not be of a consistent height between flights within the fire-isolated stairs as required by Clause 12(e) of AS1428.1 and will be subject to a performance solution.</p>	Performance solution
D2.18	Fixed platforms, walkways, stairways & ladders	Details are to be included within the construction certificate documentation were applicable.	Capable of complying
NSW D2.19	Doorways and doors	<p>The sliding doors leading directly to the road or open space must be capable of being opened manually under a force of not more than 110 N.</p> <p>Power-operated doorway serving as a required exit or forming part of a required exit are required, to be opened manually under a force of not more than 110 N,</p> <p>open automatically if it leads directly to a road or open space.</p>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		Construction documentation should also demonstrate compliance.	
D2.20	Swinging doors	<p>A swinging door must not encroach and impede the path of travel of people already in a required exit by more than 500mm or 100mm when fully open.</p> <p>Doors in or serving as a required exit must swing in the direction of egress unless it is fitted with a device for holding it in the open position.</p>	Capable of complying
NSW D2.21	Operation of latch	<p>Doors in required exits or forming part of a required exits must be readily openable without a key from the egress side, by a single hand downward action on a single device which is located between 900mm and 1.1m from the floor and comply with the requirements of this clause.</p> <p>Construction documentation should also demonstrate compliance.</p>	Capable of complying
D2.22	Re-entry from fire-isolated exits	<p>Doors of a fire-isolated exit must not be locked from the inside a fire-isolated exit serving any storey above an effective height of 25 m, throughout the exit.</p> <p>This requirement does not apply to a door fitted with a fail-safe device that automatically unlocks the door upon the activation of a fire alarm and:</p> <ul style="list-style-type: none"> <li>▪ on at least every fourth storey, the doors are not able to be locked and a sign is fixed on such doors stating that re-entry is available; or</li> <li>▪ an intercommunication system, or an audible or visual alarm system, operated from within the enclosure is provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.</li> </ul> <p>Construction documentation should also demonstrate compliance.</p>	Capable of complying
D2.23	Signs on doors	A sign, to alert persons that the operation of certain doors must not be impaired, must be	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>installed where it can readily be seen on, or adjacent to the following:</p> <ul style="list-style-type: none"> <li>▪ A required fire door providing direct access to a fire-isolated exit,</li> <li>▪ A required smoke door,</li> <li>▪ A fire door forming part of a horizontal exit;</li> <li>▪ A smoke door that swings in both directions;</li> <li>▪ door leading from a fire isolated exit to a road or open space,</li> </ul> <p>Signage is required to be in capital letters not less than 20 mm high in a colour contrasting with the background and state:</p> <p>1. for an automatic door held open by an automatic hold-open device:</p> <p><b>FIRE SAFETY DOOR- DO NOT OBSTRUCT</b></p> <p>or</p> <p>2. for a self-closing door:</p> <p><b>FIRE SAFETY DOOR DO NOT OBSTRUCT DO NOT KEEP OPEN</b></p> <p>or</p> <p>3. for a door discharging from a fire-isolated exit:</p> <p><b>FIRE SAFETY DOOR- DO NOT OBSTRUCT.</b></p>	
D2.24	Protection of openable windows	<p>A window opening must be provided with protection, if the floor below the window is 2 m or more above the surface beneath in a bedroom in a Class 3 building.</p> <p>Where the lowest level of the window opening is less than 1.7 m above the floor the openable portion of the window must be protected with;</p> <ul style="list-style-type: none"> <li>▪ a device to restrict the window opening; or</li> <li>▪ a screen with secure fittings.</li> </ul> <p>A device or screen must not permit a 125mm sphere to pass through the window opening or</p>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<p>screen and resist an outward horizontal action of 250 N against the following:</p> <ul style="list-style-type: none"> <li>▪ window restrained by a device; or</li> <li>▪ screen protecting the opening; and</li> <li>▪ have a child resistant release mechanism if the screen or device is able to be removed, unlocked or overridden.</li> </ul> <p>A barrier with a height not less than 865 mm above the floor is required to an openable window when a child resistant screen release mechanism provided and for openable windows 4m or more above the surface beneath</p> <p>A barrier covered must not permit a 125mm sphere to pass through it and have any horizontal or near horizontal elements between 150 mm and 760 mm above the floor that facilitate climbing.</p>	
D2.25	Timber stairways: Concession	Not applicable	

#### 4.5. Services and Equipment (BCA Section E)

BCA Clause	Title	Assessment & Comment	Status
E1.3	Fire hydrants	<p>A fire hydrant system must be provided in accordance with this clause to serve the whole building and must also be installed in accordance with AS2419.1. Where internal hydrants are provided, they must only serve the storey in which they are located.</p> <p>The locations of hydrant boosters and pumps have not been details and the construction documentation should demonstrate compliance.</p>	Capable of complying
E1.4	Fire hose reels	<p>A hose reel system must be provided to serve the whole building. The hose reel system must be installed in accordance with this clause and AS2441.</p>	Capable of complying

BCA Clause	Title	Assessment & Comment	Status
E1.5	Sprinklers	A sprinkler system must be installed throughout the whole building and must comply with Specification E1.5. Construction documentation is to demonstrate compliance, including identifying the location of the sprinkler valve room on revised drawings.	Capable of complying
E1.6	Portable fire extinguishers	Portable fire extinguishers are to comply with this provision and sections 1, 2, 3 and 4 of AS2444.	Capable of complying
E1.8	Fire control centres	Construction documentation is to demonstrate compliance.	Capable of complying
E1.9	Fire precautions during construction	<p>In a building under construction not less than one fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required exit or temporary stairway or exit.</p> <p>After the building has reached an effective height of 12 m the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storey's and any required booster connections must be installed.</p>	Capable of complying
E2.2	General requirements	<p>An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment must:</p> <ul style="list-style-type: none"> <li>▪ be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1-2015; or</li> <li>▪ incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and</li> <li>▪ be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke</li> </ul>	Capable of complying



BCA Clause	Title	Assessment & Comment	Status
		<p>detectors complying with Clause 4.10 of AS/NZS 1668.1-2015; and for the purposes of this provision, each SOU in the Class 2 part is treated as a separate fire compartment.</p> <p>Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1-2015 serving more than one fire compartment (other than a car park ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.</p> <p>A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS/NZS 1668.1-2015 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.</p> <p>Required fire-isolated stairways, passageways or ramps serving any storey above an effective height of 25m or more than 2 below ground storeys must be provided with an automatic air pressurisation system for fire-isolated exits in accordance with AS/NZS1668.1-2015. The automatic air pressurisation system must be applied to the whole exit and therefore, all required fire-isolated stairways are to be pressurised.</p> <p>The Class 3 part of the building must be provided with an automatic smoke detection and alarm system complying with Specification E2.2a &amp; AS1670.2004 and AS3786-1993. The detection system is required to activate a building occupant warning system installed in accordance with Spec E2.2a (Clause 6) &amp; of AS1670.1-2015 (Clause 3.22).</p> <p>The Class 6 and 9b parts of the building will not be provided with a zone smoke control system.</p> <p>The mechanical ventilation system in the Class 7a carpark must comply with Clause 5.5 of AS/NZS 1668.1-2015 except that fans with metal blades suitable for operation at normal temperature may</p>	

BCA Clause	Title	Assessment & Comment	Status
		be used and the electrical power and control cabling need not be fire rated.	
E3.1	Lift installations	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1.	Capable of complying
E3.2	Stretcher facility in lifts	A stretcher facility must be provided in accordance with the requirements of this clause and must be able to accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600 mm wide x 2000 mm long x 1400 mm high above the floor level.	Capable of complying
E3.3	Warning against use of lifts in fire	Warning signs must be displayed near every call button for a passenger lift or group of lifts except a small lift such as a dumb-waiter or the like that is for the transport of goods only.  Signage is to be in accordance with this clause and must comply with the details and dimensions of Figure E3.3.	Capable of complying
E3.4	Emergency lifts	At least one emergency lift complying with this clause and Spec E3.1 must be installed within the building.	Capable of complying
E3.5	Landings	Access and egress to and from lift well landings must comply with the DTS provision of Section D	Capable of complying
E3.6	Passenger lifts	The lifts are required to be accessible and a lift design statement certifying compliance with BCA 2016 Clause E3.6 and applicable clauses of AS1735.12-1999 is to be provided at the construction certificate stage.	Capable of complying
E3.7	Fire service controls	Fire service controls are required to every lift serving any storey above an effective height of 12m. Fire service controls are required to comply with the requirements of this provision.	Capable of complying

BCA Clause	Title	Assessment & Comment	Status
		Construction documentation is to demonstrate compliance.	
E3.8	Aged care buildings	Not applicable	
E3.9	Fire service recall operation switch	Each group of lifts must be provided with one fire service recall control switch where fire service controls are required by E3.7. Fire recall operation switches are to comply with the requirements of this provision.  Construction documentation should demonstrate compliance.	Capable of complying
E3.10	Lift car fire service drive control switch	Lift car fire service drive control switch required by E3.7 must be activated from within the car and the switch must comply with the requirements of this clause.  Construction documentation should demonstrate compliance.	Capable of complying
E4.2	Emergency lighting requirements	Emergency lighting must be provided in accordance with this clause. Emergency lighting is required to comply with AS2293.1-2005.  Construction documentation should demonstrate compliance.	Capable of complying
E4.5	Exit signs	An exit signage must be provided in accordance with this clause.  Exit signage is required to comply with AS2293.1-2005 and be clearly visible at all times.  Construction documentation should demonstrate compliance.	Capable of complying
NSW E4.6	Direction signs	If an exit is not readily apparent to persons occupying or visiting the building then exit signs must be installed in appropriate positions in corridors, hallways, lobbies, and the like, indicating the direction to a required exit.  Construction documentation should demonstrate compliance.	Capable of complying

BCA Clause	Title	Assessment & Comment	Status
E4.8	Design and operation of exit signs	Exit signs are to comply with AS2293.1-2005.	Capable of complying
E4.9	Sound systems and intercom systems for emergency purposes	A sound system and intercom system for emergency purposes complying where applicable with AS1670.4-2015 must be installed in the building.  Construction documentation should demonstrate compliance.	Capable of complying

#### 4.6. Health and Amenity (BCA Section F)

BCA Clause	Title	Assessment and Comment	Status
F1.0	Deem to satisfy provisions	Performance requirement FP1.4, for the prevention of the penetration of water through external walls, is required to be complied with.  Details are to be provided with construction documentation.	Note
F1.1	Stormwater drainage	Stormwater drainage is required to be designed to comply with AS/NZS3500.3-2015.  Construction documentation should demonstrate compliance	Capable of complying
F1.4	External above ground membranes	Waterproofing membranes for external above ground use must comply with AS4654.1-2012 & AS4654.2-2012.  Construction documentation should demonstrate compliance.	Capable of complying
F1.5	Roof coverings	Lightweight metal roof sheeting is to comply with AS1562.1.  Construction documentation should demonstrate compliance.	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
F1.6	Sarking	Sarking-type materials used for weatherproofing of roofs and walls are required to comply with AS/NZS 4200 Parts 1 and 2.  Construction documentation should demonstrate compliance.	Capable of complying
F1.7	Waterproofing of wet areas in buildings	Waterproofing of wet areas are required to comply with this clause.  Construction documentation should demonstrate compliance.	Capable of complying
F1.9	Damp-proofing	Damp proofing is required to be provided in accordance with this clause.	Capable of complying
F1.10	Damp-proofing of floor on ground	Damp proofing is required to be provided in accordance with this clause.	Capable of complying
F1.11	Provision of floor wastes	The floor of each bathroom and laundry in the residential sole occupancy units are to be provided with a floor waste.	Capable of complying
F1.12	Sub-floor ventilation	Not applicable	
F1.13	Glazed assemblies	Glazed assemblies to comply with AS 2047 as applicable.	Capable of complying
F2.1	Facilities in residential buildings	The residential portion of the building is to be provided with appropriate facilities in accordance with Table F2.1. Generally, provision of the following facilities within each unit will comply: <ul style="list-style-type: none"> <li>▪ A bath or shower; and</li> <li>▪ A closet pan &amp; wash basin; and</li> <li>▪ Kitchen; and</li> <li>▪ Wash tub and space for washing machine and drier</li> </ul> Sanitary facilities are provided as required.  A caretaker's facility comprising a closet pan and wash pan is required to be provided at or near the ground level.	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
F2.3	Facilities in Class 3 to 9 buildings	Sanitary facilities must be provided in accordance with this clause and Table F2.3.  Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females.	Capable of complying
F2.5	Construction of sanitary compartments	The construction of sanitary compartments is required to comply with this requirement.  Doorways located less than 1.2m from the closet pan are required to swing outwards, slide or be capable of being removed from the outside (lift off hinges).	Capable of complying
F2.6	Interpretation: Urinals and washbasins	A urinal may be - an individual stall or wall-hung urinal; or each 600mm length of a continuous urinal trough, or a closet pan used in place of a urinal.  A washbasin may be an individual basin or a part of a hand washing trough served by a single water tap.	Capable of complying
F3.1	Height of rooms and other spaces	The minimum ceiling height requirements are to comply with the requirements of this provision. Generally, the building compliance however full construction documentation is to demonstrate compliance.	Capable of complying
F4.1-4.3	Provision of natural light	Natural lighting must be provided in all habitable rooms of the residential units.	Capable of complying
F4.4	Artificial lighting	Artificial lighting is to be provided in accordance with AS/NZS1680.0 and in accordance with this clause to the common room.	Capable of complying
F4.5-4.7	Ventilation of rooms	Ventilation is to be provided by natural or mechanical means in accordance with this provision and Clause F4.6.  The building has adequate openings to achieve compliance with natural ventilation.	

BCA Clause	Title	Assessment and Comment	Status
F4.8	Restriction on the position of water closets and urinals	A room containing a closet pan or urinal must not open directly into a room used for public assembly or a workplace normally occupied by more than one person.	Capable of complying
F4.9	Airlocks	<p>If the room containing a closet pan or urinal must not open directly into rooms identified in F4.8 above then an airlock of not less than 1.1 m<sup>2</sup> and fitted with self-closing doors at all access doorways or the room containing the closet pan or urinal must be provided with mechanical ventilation and the doorway to the room adequately screened from view.</p> <p>Mechanical ventilation of the bathrooms is to be provided.</p>	Capable of complying
F4.11	Car park exhaust	Each storey of the carpark must have a system of ventilation complying with AS1668.2 or permanent natural ventilation in accordance with Section 4 of AS1668.4.	Capable of complying
F4.12	Kitchen local exhaust	No commercial kitchens are provided.	Capable of complying
F5.1	Application of part	The sound insulation requirements of F5.2, F5.3, F5.4, F5.5, F5.6 & F5.7 only apply to the Class 2, 3 and 9c component of the building.	Capable of complying
F5.2	Determination of airborne sound insulation ratings	<p>A form of construction required to have an airborne sound insulation rating must:</p> <ul style="list-style-type: none"> <li>have the required value for weighted sound reduction index (<math>R_w</math>) or weighted sound reduction index with spectrum adaptation term (<math>R_w + C_{tr}</math>) determined in accordance with AS/NZS 1276.1 or ISO 717.1 using results from laboratory measurements; or</li> <li>an acceptable form of construction under Spec F5.2.</li> </ul>	Capable of complying
F5.3	Determination of impact sound insulation ratings	A floor in a building required to have an impact sound insulation rating must:	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
		<ul style="list-style-type: none"> <li>have the required value for weighted normalised impact sound pressure level (<math>L_{n,w}</math>) determined in accordance with AS/ISO 717.2 using results from laboratory measurements; or</li> <li>comply with Specification F5.2.</li> </ul> <p>A wall in a building required to have an impact sound insulation rating in the Class 3 part must be of discontinuous construction</p> <p>For the purposes of this Part, discontinuous construction means a wall having a minimum 20 mm cavity between 2 separate leaves, and</p> <ul style="list-style-type: none"> <li>for masonry, where wall ties are required to connect leaves, the ties are of the resilient type; and</li> <li>for other than masonry, there is no mechanical linkage between leaves except at the periphery.</li> </ul>	
F5.4	Sound insulation rating of floor	<p>1. A floor in a Class 2 or 3 building must have an <math>R_w + C_{tr}</math> (airborne) not less than 50 and an <math>L_{n,w}</math> (impact) not more than 62 if it separates—</p> <ul style="list-style-type: none"> <li>(a) sole-occupancy units; or</li> <li>(b) a sole-occupancy unit from a plant room, lift shaft, stairway, public corridor, public lobby or the like, or parts of a different classification.</li> </ul> <p>A floor in a Class 9c building separating sole occupancy units must have an <math>R_w</math> not less than 45.</p>	Capable of complying
F5.5	Sound insulation of walls	<p>The walls in the Class 2 part of the building must:</p> <ul style="list-style-type: none"> <li>have an <math>R_w + C_{tr}</math> (airborne) not less than 50 if it separates SOU's; and</li> <li>have an <math>R_w + C_{tr}</math> (airborne) not less than 50 if it separates a SOU from a plant room, public corridor, public lobby or the like; and</li> <li>have complying discontinuous construction if it separates a bathroom, sanitary compartment, laundry or kitchen in one SOU</li> </ul>	Capable of complying



BCA Clause	Title	Assessment and Comment	Status
		<p>from a habitable room (other than a kitchen) in another, or a SOU from a plantroom.</p> <p>A door may be incorporated in a wall that separates a SOU from a stairway, public corridor, public lobby or the like, provided the door assembly has an Rw not less than 30. The doors opening to the external balconies are not required to have sound insulation rating.</p> <p>Where a wall required to have sound insulation has a floor above, the wall must continue to the underside of the floor above or a ceiling that provides the sound insulation required for the wall.</p> <p>Where a wall required to have sound insulation has a roof above, the wall must continue to the underside of the roof above or a ceiling that provides the sound insulation required for the wall.</p>	
F5.6	Sound insulation rating of services	Services that serves or pass through more than one SOU must achieve the required ratings specified by this clause.	Capable of complying
F5.7	Sound isolation of pumps	A flexible coupling must be installed at the point of connection between service pipes in a building and any circulating or other pump.	Capable of complying

#### 4.7. Ancillary Provisions (BCA Section G)

BCA Clause	Title	Assessment and comment	Status
G1.1	Swimming Pools	<p>Where required by the Swimming Pool Act 1992 and the Swimming Pools Regulation 2008, swimming pool fencing is required to be installed in accordance with AS1926.1-2007 &amp; AS1926.1-2007 except walls of above ground swimming pools are not considered to be an effective barrier.</p> <p>A child-resistant doorset must not be used as a barrier must not be used in a barrier for an outdoor swimming pool.</p>	Capable of complying

BCA Clause	Title	Assessment and comment	Status
		<p>A side-hung door forming part of the barrier for an indoor swimming pool must be hung so that, when opening, it only swings away from the pool area.</p> <p>A water recirculation system in a swimming pool with a depth of water more than 300 mm must comply with AS 1926.3-2010.</p> <p>Construction documentation should demonstrate compliance.</p>	
G1.2	Refrigerated chambers, strongrooms & vaults	<p>Refrigerated chambers, strongrooms &amp; vaults to comply with the requirements of this provision.</p> <p>Construction documentation should demonstrate compliance.</p>	Capable of complying
G1.3	Outdoor Play Spaces	Not applicable	
NSW G1.101	Provision for the cleaning of windows	<p>The method of provision for the cleaning of windows is required to be in accordance with this clause (windows 3 or more storeys above the ground).</p> <p>Details are to be provided with the construction documentation submitted with the construction certificate.</p>	Capable of complying
G2.2	Installation of appliances	Not applicable	
G2.3	Open fire places	Not applicable	
G2.4	Incinerator rooms	Not applicable	

#### 4.8. Energy Efficiency (BCA Section J – Class 3 and 5 to 9 Buildings)

The assessment is based on buildings located within Climate Zone 5.

#### 4.8.1. External Fabric (Part J1)

BCA Clause	Title	Assessment and Comment	Status
J1.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 3 and 5 to 9 building in accordance with this clause.	Note
J1.2	Thermal Construction - General	Required insulation, reflective insulation and bulk insulation is to be installed in accordance with this clause and AS/NZS 4859.1.	Capable of complying
J1.3	Roof and Ceiling Construction	<p>A roof or ceiling that is part of the envelope must achieve the Total R-Value specified in Table J1.3a for the direction of heat flow.</p> <p>Climate Zone 5 requires a minimum total R-Value of 3.2 measured downwards.</p> <p>A roof that:</p> <ul style="list-style-type: none"> <li>▪ is required to achieve a minimum Total R-Value; and</li> <li>▪ has metal sheet roofing fixed to metal purlins, metal rafters or metal battens; and</li> <li>▪ does not have a ceiling lining or has a ceiling lining fixed directly to those metal purlins, metal rafters or metal battens (see Specification J1.3 Figure 2(c) and (f)),</li> </ul> <p>must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the metal sheet roofing and its supporting member.</p> <p>Detail of the roof construction and Total R-Value is to be provided with the construction documentation to demonstrate compliance.</p>	Capable of complying
J1.4	Roof Lights	<p>The rooflights are required to comply with the requirements of this provision.</p> <p>Detail of the skylight SHGC and total U-Value are to be provided with the construction documentation to demonstrate compliance.</p>	Capable of complying

BCA Clause	Title	Assessment and Comment	Status
J1.5	Walls	<p>Each part of an external wall that is part of the envelope must satisfy one of the options in Table J1.5a.</p> <p>Any internal wall forming part of the envelope must achieve the total R-value in Table J1.5b.</p> <p>A wall that:</p> <ul style="list-style-type: none"> <li>▪ is required to achieve a minimum Total R-Value; and</li> <li>▪ has lightweight external cladding such as weatherboards, fibre cement or metal sheeting fixed to a metal frame; and</li> <li>▪ does not have a wall lining or has a wall lining that is fixed directly to the metal frame,</li> </ul> <p>must have a thermal break, consisting of a material with an R-Value of not less than R0.2, installed between the external cladding and the metal frame.</p> <p>Detail of the wall construction and Total R-Value is to be provided with the construction documentation to demonstrate compliance.</p>	Capable of complying
J1.6	Floors	<p>A floor that is part of the envelope of the building, including a floor above or below a car park or a plant room:</p> <ul style="list-style-type: none"> <li>▪ must achieve the Total R-Value specified in Table J1.6; and</li> <li>▪ with an in-slab heating or cooling system, must be insulated around the vertical edge of its perimeter with insulation having an R-Value of not less than 1.0.</li> </ul> <p>The minimum Total R-Value required in (i) may be reduced by R0.5 provided R0.75 is added to the Total R-Value required for the roof and ceiling construction.</p> <p>Some concrete slab on ground require insulation installed around the vertical edge of its perimeter as specified in this clause</p>	Capable of complying

#### 4.8.2. External Glazing (Part J2)

BCA Clause	Title	Assessment and Comment	Status
J2.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 3 & 5 to 9 building in accordance with this clause.	Capable of complying
J2.4	Glazing	Glazing must be designed in accordance with J2.4 to achieve the aggregate air-conditioning energy value.  A glazing calculator results are to be provided with the construction documentation to demonstrate compliance	Capable of complying
J2.5	Shading	Required shading must be designed in accordance with the requirements of this condition.  The construction documentation is to identify if shading is required and details to demonstrate compliance.	Capable of complying

#### 4.8.3. Building Sealing (Part J3)

BCA Clause	Status	Assessment and Comment	Status
J3.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to building elements forming the envelope of a Class 3 & 5 to 9 building in accordance with this clause.	Capable of complying
J3.2	Chimneys and flues	Solid fuel burning appliances are not proposed and the requirements of this provision do not apply.	Capable of complying
J3.3	Roof Light	Roof lights are not proposed.	Capable of complying
J3.4	Windows and doors	Windows and doors forming part of the envelope are required to be sealed to restrict air infiltration. The requirements of this provision do not apply to:	Capable of complying

BCA Clause	Status	Assessment and Comment	Status
		<ul style="list-style-type: none"> <li>Windows complying with AS2047,</li> <li>A fire or smoke door,</li> <li>Roller shutter doors.</li> </ul> <p>The bottom edge of a swing door required to be sealed must have a draft protection device and the other edges of doors or windows must have a foam or rubber compression strip, fibrous seal or the like.</p> <p>An entrance to a building, if leading to a conditioned space must have an airlock, self-closing door, revolving door or the like, other than where the conditioned space has a floor area of not more than 50 m<sup>2</sup>.</p> <p>The construction documents are to have details demonstrating compliance.</p>	
J3.5	Exhaust Fans	<p>A miscellaneous exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a:</p> <ul style="list-style-type: none"> <li>conditioned space; or</li> <li>a habitable room in climate zone 4, 6, 7 &amp; 8.</li> </ul>	Capable of complying
J3.6	Construction of roofs, walls and floors	Roofs, ceilings, walls, floors and any openings are required to be designed and constructed to minimise air leakage in accordance with this clause.	Capable of complying
J3.7	Evaporative Coolers	Not applicable	

#### 4.8.4. Air Conditioning and Ventilation Systems (Part J5)

BCA Clause	Status	Assessment and Comment	Status
J5.2	Air Conditioning System	<p>Any proposed air-conditioning systems and mechanical ventilation systems must:</p> <ul style="list-style-type: none"> <li>Be capable of being deactivated when the SOU or part of the building served is not occupied; and</li> <li>When serving a SOU of a Class 3 building, not operate when any external door including a</li> </ul>	

BCA Clause	Status	Assessment and Comment	Status
		<p>door opening to a balcony, patio, courtyard or the like is open for more than 1 minute; and</p> <ul style="list-style-type: none"> <li>In a Class 3 building, be capable of controlling the temperature of a SOU at a different temperature during sleeping periods than during other periods; and</li> <li>When the air flow rate is greater than 1000 L/s, be designed so that the total fan power of the fans in the system is in accordance with Table J5.2, except as permitted.</li> </ul> <p>The construction documents are to have details demonstrating compliance.</p>	
J5.3	Time Switch	<p>The mechanical ventilation system and air conditions system design is required to be provided with a time switch in accordance with Spec J6. The requirement does not apply to an air-conditioning system that serves only one SOU.</p> <p>The construction documents are to have details demonstrating compliance.</p>	Capable of complying
J5.4	Heating and chilling systems	<p>Heating a space other than via water, must be:</p> <ul style="list-style-type: none"> <li>A solar heater; or</li> <li>A gas heater; or</li> <li>An oil heater if reticulated gas is not available at the allotment boundary; and</li> <li>A heat pump heater; or</li> <li>A heater using reclaimed heat from another process such as reject heat from refrigeration plant; or</li> <li>A combination of 2 or more.</li> </ul> <p>Package air-conditioning equipment with a capacity of not less than 65 kW<sub>r</sub>, including a split unit and a heat pump, must have an energy efficiency ratio complying with Table J5.4c when tested in accordance with AS/NZS 3823.1.2 at test condition T1.</p>	Capable of complying
J5.4	Miscellaneous exhaust system	<p>A miscellaneous exhaust system with an air flow rate of more than 1000 L/s, that is associated with equipment having a variable demand such as a</p>	Capable of complying

BCA Clause	Status	Assessment and Comment	Status
		<p>stove in a commercial kitchen or a chemical bath in a factory is required to be designed to comply with this clause.</p> <p>The construction documents are to have details demonstrating compliance.</p>	

#### 4.8.5. Artificial Lighting and Power (Part J6)

BCA Clause	Status	Assessment and Comment	Status
J6.2	Artificial lighting	Artificial lighting is to be designed in accordance with this provision.	Capable of complying
J6.3	Interior artificial lighting and power control	Artificial lighting and power control are to be designed and provided in accordance with this provision.	Capable of complying
J6.4	Interior decorative and display lighting	Interior decorative and display lighting, such as for foyer mural or art display, must be controlled in accordance with this clause.	Capable of complying
J6.5	Artificial lighting around the perimeter of a building	Artificial lighting around the perimeter of a building must be designed to comply with this clause.	Capable of complying
J6.6	Boiling water and chilled water storage units	Power supply to a boiling water or chilled water storage unit is required to be controlled by a time switch in accordance with Spec J6.	Capable of complying

#### 4.8.6. Heated Water Supply and Swimming Pool and Spa Pool Plant (Part J7)

BCA Clause	Status	Assessment and Comment	Status
J7.2	Hot Water Supply	A hot water supply system for food preparation and sanitary purposes, other than a solar hot water supply system in climate zones 1, 2 and 3, must be designed and installed in accordance with Section 8 of AS/NZS 3500.4.	Capable of complying



BCA Clause	Status	Assessment and Comment	Status
J7.3	Swimming pool heating and pumping	Swimming pool heating and pumping must be designed to comply with this clause.	Capable of complying
J7.4	Spa pool heating and pumping	A spa pool is not proposed.	Capable of complying

#### 4.8.7. Facilities for Energy Monitoring (Part J8)

BCA Clause	Status	Assessment and Comment	Status
J8.3	Facilities for energy monitoring	<ol style="list-style-type: none"> <li>1. A building or sole-occupancy unit with a floor area of more than 500m<sup>2</sup> must have the facility to record the consumption of gas and electricity.</li> <li>2. A building with a floor area of more than 2,500m<sup>2</sup> must have the facility to record individually the energy consumption of: <ol style="list-style-type: none"> <li>(a) air-conditioning plant including, where appropriate, heating plant, cooling plant and air handling fans; and</li> <li>(b) artificial lighting; and</li> <li>(c) appliance power; and</li> <li>(d) central hot water supply; and</li> <li>(e) internal transport devices including lifts, escalators and travelators where there is more than one serving the building; and</li> <li>(f) other ancillary plant.</li> </ol> </li> <li>3. The provisions of (b) do not apply to a Class 2 building with a floor area of more than 2,500m<sup>2</sup> where the total area of the common areas is less than 500m<sup>2</sup>.</li> </ol>	Capable of complying

## 5. FIRE SAFETY SCHEDULE

The following table is a list of the required fire safety measures for this development. This list is to be treated as a guide as to what the buildings are considered to require.

No	Fire Safety Measures (as set out under Clause 166 of EP&A Regulations)	Standard of Performance	Existing	Proposed
1.	Access panels, doors & hoppers to fire resisting shaft	BCA 2016 C3.13 & AS 1905.1-2005, AS1905.2-2015	No	Yes
2.	Automatic fail safe devices	BCA 2016 Clause C3.6 sliding fire doors; Spec C3.4 automatic smoke doors, D2.21 (b)(iv) auto unlock of doors; D2.22 (re-entry from fire stairs)	No	Yes
3.	Automatic fire detection and alarm system	BCA 2016 E2.2, Spec E2.2a Clause 3 (smoke alarm system) or Clause 4 (smoke detection system) or combination of 3 & 4 & AS 1670.1-2015 or AS 3786-2014 <small>Amdt 1</small>	No	Yes
4.	Automatic fire suppression system	BCA 2016 E1.5, Spec E1.5 & AS 2118.1-1999 <small>Amdt 1</small> or AS 2118.1-2017 <small>Amdt 1</small> AS 2118.6-2012	No	Yes
5.	Building occupant warning system	BCA 2016 Spec E2.2a (Clause 6) & AS1670.1-2015 (Clause 3.22)	No	Yes
6.	Emergency Lifts	BCA 2016 E3.4 & Spec E3.1	No	Yes
7.	Emergency lighting	BCA 2016 Clause E4.2, E4.3, E4.4 & BCA 2016 Clause E1.8, Spec E1.8 Clause 12 (Emergency lighting for fire control room) & AS 2293.1 – 2005 <small>Amdt 1 &amp; 2</small>	No	Yes
8.	Exit signs	BCA 2016 E4.5, E4.6, E4.8 Spec E4.8 & AS 2293.1-2005 <small>Amdt 1 &amp; 2</small>	No	Yes
9.	Exit signs (non-illuminated)	BCA 2016 Clause E4.7	No	Yes
10.	Fire Alarm Monitoring System	BCA 2016 E2.2, Spec E2.2a (Clause 7) & AS 1670.3-2004	No	Yes
11.	Fire blankets	AS 2444-2001	No	Yes

No	Fire Safety Measures (as set out under Clause 166 of EP&A Regulations)	Standard of Performance	Existing	Proposed
12.	Fire control centres and rooms	BCA 2016 E1.8 & Spec E1.8	No	Yes
13.	Fire dampers	BCA 2016 C3.12, C3.15 & AS/NZS 1668.1-2015, AS 1668.2-2012 Amdt 1, AS 1682.1-2015, AS 1682.2-2015	No	Yes
14.	Fire doors	BCA 2016 C2.12 (separation of equipment); C2.13 (electricity supply systems); C3.4, Spec C3.4; C3.5 (doorways & fire walls); C3.8 (openings in fire isolated exits), C3.11 (bounding construction). & AS 1905.1 – 2015	No	Yes
15.	Fire rated lift landing doors	BCA 2016 C3.10 & AS 1735.11-1986	No	Yes
16.	Fire Hose reel systems	BCA 2016 E1.4 & AS 2441-2005 Amdt 1	No	Yes
17.	Fire hydrant systems	BCA 2016 E1.3 & AS 2419.1-2005 Amdt 1	No	Yes
18.	Fire seals protecting openings in fire resisting components of the building	BCA 2016 C3.12, C3.15 & Spec C3.15, AS 4072.1-2005 Amdt 1, AS 1530.4.-2014	No	Yes
19.	Lightweight construction	BCA 2016 C1.8 & Spec C1.8	No	Yes
20.	Mechanical air handling system	BCA 2016 E2.2, Table E2.2(a); NSW E2.2(b), Spec E2.2(a) & AS/NZS 1668.1-2015  Class 7a (carpark building mechanical ventilation systems) BCA 2016 E2.2, Table E2.2(a) and Clause 5.5 of AS/NZS 1668.1-2015 & AS 1668.2 Amdt 1  Class 9b (automatic shutdown) NSW Table E2.2(a)	No	Yes
21.	Portable fire extinguishers	BCA 2016 E1.6 & AS 2444-2001	No	Yes
22.	Pressurising system	BCA 2016 Clause E2.2 & AS/NZS 1668.1-2015	No	Yes
23.	Smoke detectors & heat detectors	BCA 2016 E2.2, Spec E2.2a & AS 1670.1-2015.	No	Yes

No	Fire Safety Measures (as set out under Clause 166 of EP&A Regulations)	Standard of Performance	Existing	Proposed
24.	Sound systems & intercom systems for emergency purposes	BCA 2016 E4.9 & AS 1670.4-2015	No	Yes
25.	Warning and operational signs	EPA Regulation 2000 (Clause 183), D2.23 (signs on exit doors) E3.3 (lifts), C3.6 sliding doors	No	Yes

## **6. CONCLUSION**

The design as proposed is capable of complying with the Building Code of Australia and will be subject to construction documentation that will provide appropriate details to demonstrate compliance. This report has identified areas of non-compliance with the deemed-to-satisfy provisions and indicates the design intent to demonstrate compliance with the Performance Requirements of the BCA. Whilst the performance-based solutions are to be design developed, it is my view that the solutions will not impact on the current design.

## ATTACHMENT 1

Assessed plans prepared by Crone Architects and Kengo Kuma and Associates

Plan Title	Drawing No	Revision	Date
COVER PAGE	0001	F	07.12.18
SITE PLAN	0101	E	07.12.18
BASEMENT 6	1000	G	
BASEMENT 5	1001	F	
BASEMENT 4	1002	G	
BASEMENT 3	1003	G	
BASEMENT 2	1004	H	
BASEMENT 1	1005	H	
GROUND – LOBBY HOTEL AND RETAIL	1007	J	
GROUND MEZZANINE - PLANT	1008	H	
LEVEL 01 – POOL & SPA	1009	H	
LEVEL 01 – MEZZANINE PLANT	1010	H	
LEVEL 02 – GRAND BALLROOM	1011	H	
LEVEL 02 – MEZZANINE - PLANT	1012	G	
LEVEL 03 - ALL DAY DINNING	1013	H	
LEVEL 04 - HOTEL STANDARD	1014	H	
LEVEL 05 – HOTEL STANDARD	1015	G	
LEVEL 06 – HOTEL STANDARD	1016	H	
LEVEL 07 – HOTEL STANDARD	1017	G	
LEVEL 08 – HOTEL STANDARD	1018	H	

LEVEL 09 – HOTEL STANDARD	1019	G	07.12.18
LEVEL 10 – HOTEL STANDARD	1020	G	07.12.18
LEVEL 11 – HOTEL STANDARD	1021	G	07.12.18
LEVEL 12 – HOTEL STANDARD	1022	G	07.12.18
LEVEL 13 – HOTEL STANDARD	1023	G	07.12.18
LEVEL 14 – HOTEL STANDARD	1024	G	07.12.18
LEVEL 15 – HOTEL STANDARD	1025	G	07.12.18
LEVEL 16 – HOTEL STANDARD	1026	G	07.12.18
LEVEL 17 – HOTEL STANDARD	1027	G	07.12.18
LEVEL 18 – HOTEL STANDARD	1028	G	07.12.18
LEVEL 19 – HOTEL STANDARD	1029	C	07.12.18
LEVEL 20 – HOTEL SUITES	1030	G	07.12.18
LEVEL 21 – HOTEL SUITES	1031	G	07.12.18
LEVEL 22 – HOTEL PRESIDENTIAL SUITE	1032	G	07.12.18
LEVEL 23 – PLANT	1033	G	07.12.18
LEVEL 24 – RESTAURANT	1034	G	07.12.18
LEVEL 25 –BAR	1035	H	07.12.18
ROOF LEVEL	1036	G	07.12.18
EAST ELEVATION	2000	G	07.12.18
NORTH ELEVATION	2001	G	07.12.18
WEST ELEVATION	2002	G	07.12.18
SOUTH ELEVATION	2003	G	07.12.18
CANOPY DETAILS	2011	E	07.12.18

SECTION A - A	3000	G	07.12.18
SECTION BB	3001	F	07.12.18