

17th June 2015

Crone Partners
SENT VIA EMAIL

Dear Mr Bob Smale

BUILDING CODE OF AUSTRALIA ASSESSMENT
AUSTRALIA SYDNEY 1 PROJECT

1.0 INTRODUCTION

1.1 General

The project consists of 3 lots with a total land size of approximately 4,040 m². It is bounded by Herald Square and Alfred Street on the northern side and Crane Lane, Rugby Lane on the south, which is a private lane. On the western side is George Street and to the east is Pitt Street.

The project is proposed to consist of a residential tower consisting of 59 storeys know as building A and a 5 star luxury hotel (Wanda Vista) consisting of 27 storeys knows as Building B. Both towers are located above a 5 storey basement comprising back of house areas for the hotel, carparking and residential storage for residents.

This advice within this report relates to the Basement and Building B. Building A is subject to a separate report, however there may be some overlap.

The subject property is located within the local government area of the City of Sydney Council.

1.2 Description

Building B (Wanda Vista) will contain 27 storeys and consists of:

Ground Floor – Retail and Hotel Lobby
Level 1 – Registered Club
Level 2 – Grand Ball Room (Assembly Building)
Level 2 Mezzanine – Office and Plant
Level 3 – Plant
Level 4 - Pool and Gym (Assembly Building)

Level 4 Mezzanine – Day Spa (assembly Building)
Level 5 – Restaurant & Bar (Retail)
Level 6 – 22 – Hotel
Level 23 – Retail
Level 24 – Retail

The building is located above a 5 storey carpark comprising the following;

Basement Level 6 – Carparking
Basement Level 5 – Carparking residential storage
Basement Level 4 – Carparking and Residential Storage
Basement Level 3 – Carparking, Residential storage and hotel back of house (BOH)
Basement Level 2 – Carparking, Residential storage and plant
Basement Level 1 – Loading dock, garbage store and network substation.
Lower Ground floor – Retail, plant and network substation.

Building A will contain 59 storeys and consists of:

Lower Ground floor – Network Substation & Retail
Ground Floor – Retail and Residential Lobby
Level 1 – Retail
Level 2 – Residential common area
Level 3 -56 – Residential
Level 57 - Plant

1.3 Purpose of the Report

This report has been prepared, on behalf of Crone Partners, to establish compliance to the Building Code of Australia and relevant Acts and Regulations of the development application documentation for the proposed works.

1.4 Report Basis

This report is based on:

- i. Architectural plans as identified in the attached appendix 3.
- ii. The Building Code of Australia 2015, inclusive of NSW variations (See Note 1).
- iii. Environmental Planning and Assessment Act 1979.
- iv. Environmental Planning and Assessment Regulation 2000.

Notes (1) Building Code of Australia (BCA) 2015 was adopted in NSW on 1 May 2015. The amendment of the BCA in force at the date of lodgement 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.

1.5 Exclusions

This report does not consider the following except where specifically mentioned;

- i. Building A.
- ii. Structural design.
- iii. 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)
- iv. Disability (Access to Premises – Building) Standards 2010.

2.0 BUILDING DESCRIPTION

2.1 The building classification relevant to the proposed use is Class 3, 6, 7a, 7b, 8 & 9a. The classification relevant to the Building B (Wanda Vista) and basement are as follows;

- a. Basement Level 6 – Class 7a
- b. Basement Level 5 – Class 7a & 7b
- c. Basement Level 4 – Class 7a & 7b
- d. Basement Level 3 – Class 6, 7a & 7b
- e. Basement Level 2 – Class 7a & 7b
- f. Basement Level 1 – Class 7a, 7b & 8
- g. Lower Ground Floor – Class 6 & 8
- h. Ground Floor – Class 6
- i. Level 1 – Class 9b
- j. Level 2 – Class 9b
- k. Level 2 Mezzanine – Class 5
- l. Level 3 – Plant – Class 3
- m. Level 4 – Class 9b
- n. Level 4 Mezzanine – Class 9b
- o. Level 5 – Class 6
- p. Level 6 – 22 – Class 3
- q. Level 23 – Class 6
- r. Level 24 – Class 6

2.2 The Building (both Towers A & B) will have an effective height of more than 50m.

2.3 The required type of construction under C1.1 of the BCA is Type A. This is the most resistant type of construction required by the BCA.

2.4 The building (both Towers A & B) has a rise in storeys of 59.
Note: The rise in storeys is defined by the height of Tower A as both towers form the one building due to being located above a common carpark.

3 FIRE SAFETY

3.1 The building should generally achieve the following Fire Resistant Level's as outlined in Specification C1.1 of the BCA;

- Residential - 90 minute construction
- Carpark / Commercial - 120 minute construction
- Retail – 180 minute construction
- Residential Storage and substation – 240 minute construction

3.2 Separation of classification

3.2.1 180 minute fire separation is required between the retail BOH on basement level 3 and the remainder of the basement and separation of the retail on the ground floor of building A from the residential lobby as required under C2.8 of the BCA. Compliance can be achieved by the installation of 180/180/180 fire walls or the whole storey would need to achieve the higher FRL of 180 minutes or fire engineering is a common methodology to reduce the fire resistance level for the whole storey.

3.2.2 180 minute fire separation is required between the basement entry and the remainder of the ground floor of building B as required under C2.8 of the BCA.

3.2.3 The residential storage areas on B5, B4, B3 & B2 is required to be separate from the remainder of the carpark. A 240/240/240 fire wall under the requirements of C2.8 of the BCA would be required. Compliance can be achieved by the installation of the required 240/240/240 fire wall and fire rated doors and roller shutters. Alternatively whole storey would need to achieve the higher FRL of 240 minutes or fire engineering is a common methodology to reduce the fire resistance level for the whole storey.

3.2.4 Lift motor rooms, emergency generators used to sustain emergency equipment, central smoke plant, boilers and battery rooms are required to be separated from the remainder of the building with 120/120/120 construction and doorways protected with self-closing -/120/30 fire doors as per C2.12 of the BCA.

3.2.5 The electricity substation is required to be fire separated from the remainder of the building. The BCA requires 2 hour (120/120/120) separation however the electricity authority generally requires 3 hour separation.

3.2.6 Main switchboard located in the building which sustains emergency equipment operating in emergency mode, are required to be fire separated from the remainder of the building by 2 hour fire resisting construction. Construction should achieve an FRL of 120/120/120, doorways are required to achieve an FRL of -/120/30 and be self-closing and all penetrations in the enclosures are required to be appropriately fire stopped as required by C2.13 of the BCA.

- 3.3 The external wall finish may not meeting the non-combustibility criteria outlined in C1.12 of the BCA or may not be tested under AS1530.1-1994 and may need an alternative solution. (refer to Melbourne Fire Brigade Doccentral#675445-v1)
- 3.4 The lift doors are required to achieve an FRL of -/60/- in accordance with AS 1735.11.
- 3.5 All entry doors of residential units are required to be protected with self-closing -/60/30 fire doors as required by C3.11 of the BCA.
- 3.6 The storage rooms and linen rooms on the residential levels are required to be separated from the public corridors with -/60/60 construction and a -/60/30 self-closing fire door as required by C3.11 of the BCA.
- 3.7 Service penetrations are required to be protected in accordance with C3.12 and C3.15 of the BCA. As such, all service penetrations are required to be installed in accordance to an identical tested prototype or a variation approved by a registered testing authority (CSIRO, BRANZ or Warrington Fire etc). It's becoming more frequent that the particular site constraints requires a fire engineered solution to address to fire stopping methodology adopted on-site to ensure the system achieves and meets the performance requirements of the BCA. This is more of a construction issue but it is worth mentioning as the issue seems to occur on most jobs and is often within the fire engineer's scope.
- 3.8 The public corridors in the hotels levels are required to be divided into 40m lengths with smoke proof walls and doors. The combined corridors lengths on levels 6-22 exceed 40m (66m) and do not comply with C2.14 of the BCA. Doors are required to swing in the direction of egress (or both ways where alternative exits are required, as with this building) and consideration of the fire stair pressurisation relief is required if smoke doors are installed to ensure compliance with AS/NZS 1668.1-1998 is maintained and the smoke doors do not affect the compliance status.

4 ACCESS AND EGRESS

- 4.1 Each area of the building is required to have access to two exits as per D1.2 of the BCA as the building has an effective height of more than 25m. The following areas were identified which only have access to a single exit and would require a Fire engineered alternative solution to address the performance requirements of the BCA;
 - 4.1.1 The retail tenancies on the ground floor with only the single doorway leading to outside.
- 4.2 Each area of the building (excluding residential) is required have access to alternative exits within 20m as per D1.4(c) of the BCA. The following areas exceed the limits permitted in the BCA and will require fire engineered performance justification;
 - 4.2.1 B6 to B1 – The final design is to achieve a maximum travel distances of 30m to a point of choice and be addressed under the alternative solution.
 - 4.2.2 The all-day dining + bar on Level 5 (29m).
 - 4.2.3 Level 4 – North of the pool deck (29m).

- 4.3 The maximum travel distance to one (where a choice of two is proposed) must not exceed 40m as outlined in D1.4(c) of the BCA. The following areas exceed the limits permitted in the BCA and will require fire engineered performance justification;
- 4.3.1 B6 - Plant - 50m
 - 4.3.2 B1 – Grease arrestor (52m).
 - 4.3.3 B2, B3 & B4 – Bicycle store – 50m.
 - 4.3.4 B3 – Hotel Back of house – The egress will exceed 40m once the fitout is incorporated into the design.
- 4.4 The entrance doorway of any sole-occupancy unit must be located not more than 6m from an exit or from a point from which travel in different directions is available as per D1.4(a) of the BCA. The egress from some hotel sole occupancy unit's exceeds 6m to a point of choice (8.5m at worst case) and does not comply. Fire engineered justification will be required.
- 4.5 Exits that are required to serve as alternative means of egress must not be more than 45m apart in the residential portion of the building and not more than 60m in all other parts of the building. The following areas exceed the limits permitted in D1.5(c) of BCA and will require fire engineered performance justification;
- 4.5.1 B2, B3 & B4 – 65m between alternative exits (relying on 30 to POC).
 - 4.5.2 B3 – Hotel Back of house – The egress will exceed 60m once the fitout is incorporated into the design.
 - 4.5.3 B4, B5 & B6 – 64m between the two most eastern fire stairs.
- 4.6 Population numbers on each storey is defined in appendix 1. The required aggregate egress widths on the restaurants / bars on level 5, 23 and 24 do not comply with D1.6 of the BCA and requires a fire engineered alternative solution to justify the proposed population numbers.
- 4.7 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 3m above the level of the path of travel. There are currently 3 fire stairs that discharge via Ruby Place and 3 stairs which discharge between the towers which have the option of leading to Ruby Place or Alfred Street. In all 6 scenarios, the egress necessitates passing within 6m of the external wall of the same building and would not comply with D1.7 of the BCA as the wall is not fire rated and the windows and doors do not achieve the required FRL's. The proposed design requires a fire engineered alternative solution to justify compliance with the performance requirements of the BCA.
- 4.8 The doorways leading to fire stair in the basement or discharging doorways of fire stairs leading to the street are required to be protected with bollards or other suitable barrier to prevent to the exits from being blocked by vehicles and ensuring an minimum egress width of 1m is maintained in front or at the discharge of the exit as per D1.10 of the BCA. Some consideration will be required for the current fire stair entry and exit door configuration.

- 4.9 Access to lift pits is to comply with D1.17 of the BCA. Construction documentation is to demonstrate compliance.
- 4.10 D2.4 of the BCA is very specific in the need to separate and ensure there is no direct connection between a stair flights rising from a storey below the lowest level of access to a road or open space and a flight descending from a storey above that level. Any construction that separates or is common to the rising and descending flights must be non-combustible and smoke proof in accordance with Clause 2 of Specification C2.5. There are number of stairs that share the same passageway on the ground floor, in particular building A. Attention is required at the construction certificate stage to ensure that there is adequate smoke separation and ensuring the smoke separation will not hinder the stair pressurisation design requirements under AS/NZS1668.1-1998. Generally a separate system serving the basement and the tower is required. These requirements will need to be addressed at the construction certificate stage.
- 4.11 D2.7 of the BCA does not permit access to services or service shafts from within a fire isolated exit. The only exemption is access directly relating to firefighting operations required under Section E of the BCA, for example stair pressurisation fans and shafts. The current scissor stair configuration of building A has service doors or access hatches on each level within the fire stair that provides access a service risers or cupboard. This configuration / layout does not comply with D2.7 of the BCA and also obstructs the access to the fire hydrants and would create an additional non-compliance under E1.3 of the BCA and requires design modification or input from the fire engineer to determine if the proposed not compliance can be justified against the performance requirements of the BCA . The current design does not comply.
- 4.12 Balustrades are to be provided where it is possible to fall more than 1m. Balustrades are required to achieve a height of 1m from the finished floor level and installed in accordance with D2.16 of the BCA.
- 4.13 Handrails are required along one side of every stair including within Sole Occupancy Units in accordance with D2.17 of the BCA. Please refer to D3 of the report for additional access requirements.
- 4.14 The doorway serving as a required exit is required to swing in the direction of egress in accordance with D2.20. A number of doorways on the ground floor and basement swing in the opposite direction and require design modifications.
- 4.15 Door hardware D2.21 BCA - All the doors in the required exits, or doors forming part of the required exits, must be readily openable without a key from the side that faces a person seeking egress, by a single hand downward action on a single device which is located between 900mm and 1.1m from the floor. The handle must be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch and has a clearance between the handle and the back plate or door face at the centre of the grip section of not less than 35mm and not more than 45mm. Doorways in the assembly (Class 9b) component and the doors within the exit (below) which serves these areas down to the discharge doors are required to be fitted with panic bars in accordance with D2.21 of the BCA. Construction documentation is to demonstrate compliance.
- 4.16 Doors of a fire-isolated exit must not be locked from inside a fire-isolated exit serving any storey above an effective height of 25m and throughout the exit.

4.16.1 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 on at least every fourth storey, the doors are not locked and a sign is fixed on such doors stating that re-entry is available. Alternatively an intercommunication system, or an audible or visual alarm system, operated from within the enclosure can be provided near the doors and a sign is fixed adjacent to such doors explaining its purpose and method of operation.

4.17 Window opening must be provided with protection, if the floor below the window is 2m or more above the surface beneath in a bedroom the residential component of the development.

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 a device to restrict the window opening or a screen with secure fittings in accordance with D2.24 of the BCA. Construction documentation is to demonstrate compliance.

5 DISABLED ACCESS

5.1 Access is not included within the scope of this report. A separate report from a suitable qualified consultant would be required to demonstrate compliance with D3 of the BCA and the applicable Council DCP's. Notwithstanding the following general advice is provided;

5.2 Generally, disabled access is required to and within all areas of the building used by occupants which will including the pool and a minimum of 9 accessible units based on a unit break up of between 175 and 200 units under the BCA. Access is required to the entrance floor and the doorway of each unit but not through the doorway. Only the circulation spaces in the common corridor, the 9 accessible units and common areas including the pool is required to comply with AS1428.1-2009.

Note: City of Sydney has their own Access DCP which may impose additional access requirements that are over and above the minimum requirements of the BCA.

5.3 Disabled carparking is to be calculated in accordance with Table D3.5.

5.4 Uni-sex disabled toilets in addition to ambulant toilets are required to be provided in accordance with F2.4 of the BCA, The accessible sanitary facilities are required to be designed in accordance with AS1428.1-2009 and construction documentation is to demonstrate compliance.

6 SERVICES AND EQUIPMENT

6.1 The following services are required to be installed to service the building.

6.2 An internal fire hydrant system installed in accordance with E1.3 and AS2419.1-2005. The current design does not detail the location of the hydrant booster and the hydrant pump room is not located with direct access to a fire stair as required by AS2419.1-2005. The booster location will form part of the fire engineered solution due to the location not being within sight of the main entry and for method of achieving the 2m fire rating either side and 3m above the booster. The pump room

is connected directly to a fire isolated stairway. Details need to be included into the construction documentation and within the fire engineering solution as applicable.

- 6.3 Fire hose reels are required to be provided throughout the building in accordance with E1.4 and AS 2441-2005 with the exception of the residential section of the building. Details need to be provided at the construction certificate stage.
- 6.4 The building is required to be provided with a sprinkler system throughout the building in accordance with E1.5 and AS2118.1-1999 or AS2118.6-2012 where a combined system is used. The location of the booster and valve room will be subject to a fire engineered solutions due to their location/s. Details will need to be included into the construction documentation and within the fire engineering solution as applicable.
- 6.5 The building is required to be provided with a fire control room complying with E1.8 and Spec E1.8 of the BCA. Some areas of concern which may require fire engineered justification are outlined below:
 - 6.5.1 The room must open to a road or open space. Comment – Complies.
 - 6.5.2 The room must not be located more than 300mm below the road or open space it is accessed through. Comment – Likely to comply.
 - 6.5.3 The room must be fire separated with 120/20/120 construction.
 - 6.5.4 The door to the room must open into the room. Comment – Complies.
 - 6.5.5 The control room must be accessible from two paths of travel, one from within the front entrance of the building and the other from a public space or fire isolated passageway. – Alternative solution and design change will be required at the construction design phase.
 - 6.5.6 The control room is required to have its own pressurisation system that only controls the control room. This is typically combined with other systems and addressed via a fire engineered solution.

It is unlikely that the fire control room will satisfy all the technical requirement of E1.8 and Spec E1.8 and comment from the Fire and Rescue NSW would be required as part of the fire engineered alternative solution.

- 6.5.7 Fire extinguishers are required to be provided in accordance with E1.6 and AS2444.
- 6.5.8 Smoke Hazard Management
 - 6.5.8.1 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—be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with Clause 4.10 of AS/NZS 1668.1; and for the purposes of this provision, each SOU in the Class 3 part is treated as a separate fire compartment.
 - 6.5.8.2 Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1 serving more than one fire compartment (other than a car park ventilation

system) and not forming part of a smoke hazard management system must comply with that Section of the Standard.

- 6.5.8.3 A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to operate AS/NZS 1668.1 systems that are provided for zone smoke control and automatic air pressurisation for fire-isolated exits.
- 6.5.8.4 Fire-isolated stairways, passageways and ramps are required to be provided with an automatic air pressurisation system for fire-isolated exits in accordance with AS/NZS1668.1. The automatic air pressurisation system must be applied to the whole exit and therefore, all required fire-isolated stairways are to be pressurised.
- 6.5.8.5 The building must be provided with an automatic smoke detection and alarm system complying with Specification E2.2a & AS1670.2004. The detection system is required to activate a building occupant warning system installed in accordance with Spec E2.2a (Clause 6) & of AS1670.1-2004 (Clause 3.22).
- 6.5.8.6 The Class 5, 6 & 9a parts of the building (retail and commercial) must be provided with a zone smoke control system in accordance with AS/NZS 1668.1. It is common for the level of zone smoke control is rationalised in a building of this nature via a fire engineered alternative solutions.
- 6.5.8.7 The mechanical ventilation system in the Class 7a carpark must comply with Clause 5.5 of AS/NZS 1668.1 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated.
- 6.5.8.8 The non-essential components of the mechanical ventilation system to the assembly building portion of the building (Level 1 retail, The Grand Ball room, pool, gyms & spa is required to fully shut down on the activation of the smoke detection system, except the zone smoke control system required for the building. The zone smoke control may be rationalised by the fire engineered alternative solution.
- 6.5.9 At least two emergency lifts complying with E3.4 and Spec E3.1 are required to be installed within the building to serve every level.
- 6.5.10 The lifts are required to accommodate stretcher facilities. The lift must be able to accommodate a raised stretcher with a patient lying on it horizontally by providing clear space not less than 600mm wide x 2000mm long x 1400mm high above the floor level.
- 6.5.11 The building is required to be provided with a sound systems and intercom systems for emergency purposes as well as a number of other essential services. Refer to the recommended fire safety schedule under Appendix 2 for the recommended / required fire safety measures required to be installed within the building.

7 AMENITY

- 7.1 It is now common for the external façades and glazing on a building to be imported which has not been tested in accordance with the Australian Standards (AS2047-2012 or 1288-2006). Should this be the case, an alternative solution prepared in accordance with the Verification methodologies available in the BCA is required to be submitted to demonstrate that the building façade is weatherproof and complies with the BCA.

- 7.2 The sanitary facilities have not been calculated as part of this assessment. Once the final occupant number and proposed toilet numbers are provided this will be assessed as part of the construction certification stage.
- 7.3 The following sound insulation requirements apply to the residential portion of the building. Should any variance be proposed details should be approved by an acoustic engineer.
- 7.3.1 The floors of residential sole occupancy units are required to be constructed to achieve an $R_w + C_{tr}$ not less than 50 and an $L_{n,w} + C_1$ not more than 62.
 - 7.3.2 The walls bounding sole occupancy units are required to have an $R_w + C_{tr}$ not less than 50.
 - 7.3.3 Where a wall separates a bathroom, sanitary compartment, laundry or kitchen of one sole occupancy unit from a habitable area of another sole occupancy unit or a wall of residential sole occupancy unit from a lift shaft or plant room, the walls are required to achieve an $R_w + C_{tr}$ not less than 50 and be of discontinuous construction. (Discontinuous construction means a wall having a minimum 20mm cavity between separate leaves).
 - 7.3.4 The doorways of the residential units are required to have an R_w not less than 30.

8 ENERGY EFFICIENCY

- 8.1 A detailed report demonstrating compliance with Section J of the BCA is required to be submitted. Reports normally include an alternative solution which requires assessments and approval.

9 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 modify the design or demonstrate compliance with the Performance Requirements of the BCA via fire engineered solutions. Whilst the performance based solutions are to be design developed, it is my view that the solutions will not impact on the current design.

Should you wish to discuss and matter further please do not hesitate to contact me on 8270 3500.

Yours faithfully



Adam DeLooze
Associate Director
A1 Accredited Certifier
On behalf of City Plan Services

APPENDIX 1

POPULATION TABLE

(As calculated under D1.13 or as defined by client).

Location	Area (m2)	m2/person	Population
Ground			
Retail (187m2)	187	3 (shop, ground)	63
Retail (45m2)	45	3 (shop, ground)	15
Retail (53m2)	53	3 (shop, ground)	18
Retail (114m2)	114	3 (shop, ground)	38
Retail (130m2)	130	3 (shop, ground)	44
Retail (110m2)	110	3 (shop, ground)	37
Retail (108m2)	108	3 (shop, ground)	36
Retail (58m2)	58	3 (shop, ground)	20
Rugby club - foyer	77	Nil (circulation)	Nil
Hotel front office	34	10 (office)	4
Hotel foyer	210	Nil	Nil
Residential lobby	178	Nil	Nil
Subtotal (retail)			271
Subtotal (rest)			4
Total (Tower A)			96
Total (Tower B)			179
Level one			
Retail (115m2)	100	5 (shop, other level)	20
Retail (150m2)	150	5 (shop, other level)	30
Registered Club Indoor Retail+ outdoor terrace (340 + 260)	600 main	Client defined occupant density	730
	Staff	Staff	20
Subtotal			800
Required aggregate egress	Required	Provided	Shortfall
	7m	7m	-
Level two			
Maximum population		Client defined occupant density	620
Subtotal			620
Required aggregate egress	Required	Provided	Shortfall
	5.5m	5.5m	-
Level two mezzanine			
Executive office	370	10 (office)	37
Mep/plant	390	30 (plant, service units)	13
Subtotal			50
Level 3			

Plant	1700 approx	30 (plant, service units)	60
Subtotal			60
Level four			
Pool area	144	1.5 (swimming pool)	96
Gym	200	3 (gymnasium)	67
Yoga	43	3 (gymnasium)	15
Store	13	30 (storage)	1
Reception	-	Nil	Nil
Rooftop garden	-	-	(100 people - assume)
Locker room	74	Nil	Nil
Subtotal			279
Required aggregate egress	Required	Provided	Shortfall
	3m	3m	-
Level four mezzanine			
Spa 1	35	5 (shop, other level)	7
Spa 2	35	5 (shop, other level)	7
Spa 3	35	5 (shop, other level)	7
Spa 4	35	5 (shop, other level)	7
Spa 5	35	5 (shop, other level)	7
Spa 6	62	5 (shop, other level)	13
Storage	27	30 (storage)	1
Beauty salon	60	5 (shop, other level)	12
Sales	92	5 (showroom)	19
Subtotal			80
Level five			
All day dining and bar & terrace	370	Client defined occupant density	300
Kitchen	168	10 (kitchen / Staff)	20
Subtotal			320
Required aggregate egress	Required	Provided	Shortfall
	2m	2m	1m
Level 23			
Maximum population		Client defined occupant density	300
Kitchen	155	10 (kitchen / Staff)	20
Subtotal			320
Required aggregate egress	Required	Provided	Shortfall
	3m	2m	1m
Level 24			
Maximum population (Patrons)		Client defined occupant density	300
Staff		Staff	20

Subtotal		320	
Required aggregate egress	Required	Provided	Shortfall
	3m	2m	1m

APPENDIX 2

Recommended Fire Safety Schedule

FIRE SAFETY MEASURES	PROPOSED STANDARD OF PERFORMANCE
Access panels, doors and hoppers to fire resisting shaft	BCA2015 C3.13 & AS1905.1-2005, AS1905.2-2005
Automatic fail safe devices	BCA2013 D2.21
Automatic fire detection and alarm system	BCA2015 E2.2, Spec E2.2a & AS1670.1-2004
Automatic fire suppression system	BCA2015 E1.5, Spec E1.5 & AS2118.1-1999
Building occupant warning system	BCA2015 Spec E2.2a (Clause 6) & of AS1670.1-2004 (Clause 3.22)
Emergency lighting	BCA2015 E4.2, E4.4 & AS2293.1-2005
Emergency Lifts	BCA2015 E3.4 & Spec E3.1
Sound systems & intercom systems for emergency purposes	BCA2015 E4.9 & AS1670.4-2004
Exit signs	BCA2015 E4.5, E4.6, E4.8 & AS2293.1-2005
Fire blankets	AS2444-2001
Fire control centres and rooms	BCA2015 E1.8 & Spec E1.8
Fire dampers	BCA2015 C3.12, C3.15 & AS/NZS1668.1-1998, AS1668.2-1991, AS1682.1-1990, AS1682.2-1990
Fire doors	BCA2015 Spec C3.4 & AS1905.1-2005
Fire rated lift landing doors	BCA2015 C3.10 & AS1735.11-1986
Fire hydrant systems	BCA2015 E1.3 & AS2419.1-2005
Fire seals protecting openings in fire resisting components of the building	BCA2015 C3.12, C3.15 & Spec C3.15
Hose reel system	BCA2015 E1.4 & AS2441-2005
Lightweight construction	BCA2015 C1.8 & Spec C1.8
Mechanical air handling system	BCA2015 E2.2, Spec E2.2a & AS/NZS1668.1-1998
Portable fire extinguishers	BCA2015 E1.6 & AS2444-2001
Power Operated Sliding Exit Doors	BCA2015 D2.19 (iv)
Pressurising system	BCA2015 Clause E2.2 & AS/NZS1668.1-1998
Required automatic exit doors	BCA2015 C3.4, C3.7 & C3.8
Smoke doors	BCA2015 Spec C3.4
Warning and operational signs	EPA Regulation (reg 183), BCA2015 E3.3 (lifts), BCA2015 C3.6 sliding doors, BCA2015D2.23 Signs on exit doors
Zone smoke control system	BCA2015 E2.2 & AS/NZS1668.1-1998
Alternative Solution	TBA

APPENDIX 3

Assessed plans prepared by Crone Partners

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Plan Title	Drawing No	Revision	Date
Indicative Drawing Basement 6	SK - 00	B	16/06/15
Indicative Drawing Basement 5	SK - 01	C	16/06/15
Indicative Drawing Basement 4	SK - 02	C	16/06/15
Indicative Drawing Basement 3	SK - 03	C	16/06/15
Indicative Drawing Basement 2	SK - 04	C	16/06/15
Indicative Drawing Basement 1	SK - 05	C	16/06/15
Indicative Drawing Lower Ground Level	SK - 06	C	16/06/15
Indicative Drawing Hotel Ground – Lobby	SK-07	C	16/06/15
Indicative Drawing Hotel Level 1 – Registered Club	SK-08	C	16/06/15
Indicative Drawing Hotel Level 2 – Ballroom	SK-09	C	16/06/15
Indicative Drawing Hotel Level 2 Mezzanine	SK-10	C	16/06/15
Indicative Drawing Hotel Level 3 – Plant Area	SK-11	D	16/06/15
Indicative Drawing Hotel Level 4 – Pool	SK-12	C	16/06/15
Indicative Drawing Hotel Level 4 Mezzanine – SPA	SK-13	C	16/06/15
Indicative Drawing Hotel Level 5 – A.D.D	SK-14	C	16/06/15
Indicative Drawing Hotel Level 6-15 – Standard	SK-15	C	16/06/15
Indicative Drawing Hotel Level 16-20 – Rugby Club	SK-16	C	16/06/15
Indicative Drawing Hotel Level 21 – Premiere Suite	SK-17	C	16/06/15
Indicative Drawing Hotel Level 22 – Presidential Suite	SK-18	C	16/06/15
Indicative Drawing Hotel Level 23 – Restaurant	SK-19	C	16/06/15
Indicative Drawing Hotel Level 24 – Bar	SK-20	C	16/06/15
Indicative Drawing	SK-21	A	16/06/15

Hotel plant			
Section 01	SK-22	A	16/06/15
Section 02	SK-23	A	16/06/15