

**BUILDING CODE OF AUSTRALIA STATEMENT FOR  
LODGEMENT WITH A DEVELOPMENT APPLICATION**

**QUEST APARTMENTS - SITE 22, SYDNEY OLYMPIC PARK  
EDWIN FLACK AVENUE, HOMEBUSH BAY**

Report prepared for: QSA Business Pty Ltd  
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## 1.0 Introduction and Designation

At the request of Quest Apartments, this report contains details of compliance with respect to the Building Code of Australia 2008 in regard to the proposed eight storey serviced apartment building containing 136 suites to be located at Site 22, Edwin Flack Avenue, Sydney Olympic Park.

The work carried out on the project is an early BCA assessment of the design of the proposed building. The design is at a point where the inherent BCA philosophies have been checked and development consent can be sought. The finer details with respect to BCA2008 can be finalised prior to the issue of a Construction Certificate / building permit.

The drawings assessed are listed as follows: Architectural drawings/titled prepared by Cox Architects: SK – 021(A), SK-010(B), SK – 011(B), SK 012(B), SK – 013(B), SK – 014(B), SK – 015(B), SK – 016(B), SK – 017(B), SK – 018(B), SK – 019(-), SK – 020, East Elevation – Quest 22

Following compliance with this report, at this stage we are confident that the design will meet the requirements of the deemed to satisfy provisions of BCA2008 and that where necessary alternative solutions may be required to meet the performance requirements of BCA2008.

## 2.0 Use and Class of Buildings

Level by Level Usage and Building Code of Australia Classifications;

Level	Use	Building Code of Australia Class
Basement	Car parking	Class 7a
Ground Floor	Retail shops Conference Room and Gym	Class 6 Class 9b
Level 1 - 5	22 units per level = 110	Class 3
Levels 6 and 7	13 units per level = 26	Class 3

## 3.0 Construction

**Fire Resistance** - The following requirements must be incorporated into the design of the building:

- Entire building will require Type A construction. The effective height being less than 25m (Effective height is 23.45m);
- Pending confirmation of rear lane boundary status, external walls and incorporated structural members located more than 3m from the side or rear boundary will require an FRL of not less than 120/60/30 for the ground floor, 90/60/30 for apartment levels.
- A FRL of not less than 120/120/120 FRL applies for the basement Class 7a part and Class 9b Conference facilities parts - this will result in columns being not less than 300mm thick.
- The retail parts should be fire separated by 180/180/180 FRL construction at ground level, with any supporting columns and loadbearing walls 180 minutes FRL.
- A FRL of not less than 90/90/90 applies to the Class 3 apartment levels - this will result in columns being 250mm thick as per AS3600. Structural engineer to confirm dimensions at CC stage.
- All stair and lift shafts within the Class 9b & Class 7a compartments will require an FRL of not less than 120/120/120 and 90/90/90 respectively.
- Internal walls between sole occupancy units (apartments) must be 90/90/90 FRL or -/60/60 if non-loadbearing.
- Structural slabs and columns will require an FRL of not less than 90/90/90 for the apartment levels floor slabs, Ground floor slab requires 120/120/120 FRL and 180/180/180 FRL required to the slab floor above the retail shops.

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Where this cannot be achieved Fire Engineering will be carried out. Details will be provided at the Construction Certificate stage.

#### 4.0 Compartmentation

We envisaged the fire compartments being built as follows;

Level	Use	Fire Compartment Floor Area	Volume
Basement	Parking	1425m <sup>2</sup>	4560m <sup>3</sup>
Ground	Conference room, Gym and apartment entry	360m <sup>2</sup>	1800m <sup>3</sup>
	Retail	306m <sup>2</sup>	1590m <sup>3</sup>
Levels 1 - 7	Apartments	Individual suites	-

The proposed building does not exceed the floor area or volume limitations specified in Part C2 of the Building Code of Australia as demonstrated below:

- The carpark (Class 7a) will have a floor area of 1425m<sup>2</sup>, which does not exceed the floor area or volume limitations (5,000m<sup>2</sup> and 30,000m<sup>3</sup>).
- The ground level Conference room, gym area (Class 9b) will have a floor area of 360m<sup>2</sup>, which does not exceed floor area or volume limitations (8,000m<sup>2</sup> and 48,000m<sup>3</sup>).
- The ground level Retail (Class 6) will have a floor area of 306m<sup>2</sup>, which does not exceed floor area or volume limitations (5,000m<sup>2</sup> and 30,000m<sup>3</sup>).

***On levels 1 to 7 containing apartments there is a need to include a Horizontal Exit on or around grid F being a 90/90/90 FRL fire wall with 2 hour fire doors and smoke seals fitted.***

#### 5.0 Separation and Protection of Openings

All openings in an external wall, which are located within 3m of a side or rear boundary, or located within 6m from the far boundary of a road adjoining the allotment will require protection in accordance with C3.4 of BCA. The external walls of the buildings are set back more than 3m from the east and west site boundaries and more than 6m from the far boundary of road to the north and south. Confirmation of the location of south side boundary opposite the lane is required together with evidence that the lane is designated as a public road.

***Vertical separation of openings in the external walls in the form of vertical spandrel or horizontal slab will need to be provided in accordance with C2.6 of BCA. Note there are none shown on section drawing SK-020, and therefore amendments are required. Details must be submitted at Construction Certificate stage.***

The main switchroom and lift motor room will require 2 hour fire separation from the remainder of the building. Neither are shown at present of which details will be required. The substation kiosk will require a 3 hour fire separation from the remainder of the building due to Energy Australia network requirements.

All doorways opening into fire-isolated stairways or fire-isolated passageways and entry doorways to the apartments and linen rooms must have -/60/30 self closing fire doors as per Clause C3.11.

A smoke and fire wall will be required around grid F to satisfy BCA clause C2.14

#### 6.0 Access and Egress

##### BASEMENT CARPARK AND GROUND FLOOR

Travel distances must comply with 20m to a point of choice and 40m to the nearest exit and 60m between alternative exits (Clause D1.4).

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**Currently there is non-compliance with Clause D1.4 at:**

- **Basement level where there is 64m travel between alternative exits in lieu of 60 metres. Plans to be amended or a fire engineered alternative solution needed**
- **Ground floor – there is 30m travel to a point of choice in lieu of 20m. It is recommended an additional exit door is required near the gym. Details of door location required.**

**On the ground floor there is a need to separate rising and descending stair flights within Fire stairs 1 and 2 to achieve compliance with Clause D2.4. Plans to be amended.**

**On the ground floor there is an additional handrail required at stair 2 adjacent to the discharge point so as to comply with Clause D2.17.**

## RESIDENTIAL APPARTMENTS

In accordance with Clause D1.4, the distance of travel from a unit entry door to a point from which travel in different directions to 2 exits is available must not exceed 6m (complies).

**In accordance with Clause D1.5, the distance between alternative exits can not be not more than 45 metres (does not comply), hence a fire wall and horizontal exit doors within swinging in both direction are needed at around Grid F of levels 1 – 7 inclusive.**

## DISABLED ACCESS

**Ground Floor:** Disabled access must comply with Part D3 of BCA and AS 1428.1. **In this regard the doors at ground floor to the hallway accessing the laundry / disabled toilet and the door accessing the gym need to be amended to achieve disabled access circulation space of 470mm to latch side of doorway and sufficient corridor clearance.**

**Residential Apartments:** Under table D3.2, six accessible units will be required (6/136 = 4.4%). **Details of the six nominated accessible apartments to be provided. No details are shown at present.**

**Car Parking:** Pursuant to table D3.5 there needs to be 4.4% of car spaces accessible, hence 4.4% x 47 spaces = **3 accessible car spaces required. Currently there are only 2 accessible car spaces shown. Amended details required.**

## **7.0 Fire Systems**

### **Fire Hydrants & Hose Reels**

A complying fire hydrant system will be required to serve the new building. The Hydraulic engineer must provide details of the proposed service based on the capability of existing mains and the requirements of the local fire brigade. It is understood the buildings will be protected by internal hydrant coverage as per Clause E1.3 of the Building Code of Australia and AS 2419.1 - 2005. Hydrant Booster location details will be required.

Fire Hose Reels must be installed to meet E1.4 and AS 2441 requirements.

### **Sprinklers**

A sprinkler system complying with AS 2118.1 must be provided to the carpark at Basement Level as there are more that 40 (41 spaces provided).

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## Extinguishers

Fire extinguishers are to be provided to all locations which are deemed a potential risk to the occupants of the building. Areas such as switchboards and distribution boards must include extinguishers that will comply with AS2444.

## 8.0 Alarm and Control Systems

### Smoke Hazard Management - Smoke detection

The Class 3 and 9b parts of the building must be fitted with an automatic smoke detection and alarm system complying with Clause 4 of Specification E2.2a and AS 1670.1. The fire indicator panel must be located within sight of the main entry doors.

The Class 7a basement carpark part of the building will be provided with a switch on the fire fan control panel to enable fire personnel to manually control the carpark exhaust system. Smoke detectors will be required to the supply air system and all exhaust air systems will be capable of operation in the event of a fire. Where the system contains variable flow rates, the maximum flow rate must be activated in the case of fire detection.

### Exit and emergency lighting and warning systems

A system of emergency lights and exit signage will be installed in the buildings to E4.2, E4.5 and AS 2293.1-2005. An EWIS is not required;

## 9.0 Lifts

As the building exceeds 12 m in effective height a stretcher facility is required in at least one lift, therefore minimum 2m long lift car is required. The southern of the two lifts appears to comply. Lift consultant to confirm details.

All lift cars must be provided with fire service controls in accordance with AS 1735.2. Emergency lifts are not required at effective height is not more than 25 metres.

All lifts must be accessible for people with disabilities and provided with the following:

- Handrails complying with AS 1735.12.
- Internal floor dimensions not less than 1400mm x 1100mm.
- Clear opening of the doorway to be not less than 900mm.
- Fitted with door opening sensory devices.
- Fitted with car control buttons complying with AS 1735.12.

## 10.0 Sanitary Facilities

Combined sanitary facilities are provided for the public and employees at the ground floor. The number of facilities being provided, that is, 2 pans and 2 wash basins for each sex allows for 25 males and 45 females. Based on the estimated populations for the ground floor, the facilities shown should be sufficient.

A unisex accessible is to be provided and the design must be in accordance with AS 1428.1.

**Presently the accessible facility does not comply in that the door swings inwards, clearance from pan to wash basin is less than 1100mm.** Details for the proposed facility are to be provided prior to the issue of a Construction Certificate.

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## 11.0 Room Sizes

The ceiling height in the apartments must not less than 2.4m except for toilets and laundries where the height can be reduced to 2.1m. The ceiling height within storerooms receives a concession in that a minimum height of 2.1m is required. Compliance is readily achievable. Details are required prior to the issue of a Construction Certificate.

## 12.0 Light and Ventilation

Each apartment will have bedrooms provided with natural light and ventilation. Bathrooms will have mechanical ventilation systems complying with Part F4.5 of the Building Code of Australia and AS 1668.2.

***The ground floor kitchen exhaust will need to be taken to the roof within a fire rated riser if there is any cooking apparatus exceeding 8 kW electricity input (or 29MJ/h gas input), in order to comply with BCA Clause F4.12.***

## 13.0 Sound Insulation

Sound insulation ratings will only apply to the Class 3 parts of the building on Level 1 to 7.

- Sound insulation of floors require an  $R_w+C_{tr}$  (airborne) not less than 50 and an  $L_{nw}+C_i$  not less than 62 (impact) and apply to:
  - Floors separating sole occupancy units; and
  - Floors separating sole occupancy units and plant rooms, lift shaft, public corridors, stairways, or the like
- Sound insulation of walls require an  $R_w+C_{tr}$  or not less than 50 if separating sole occupancy units
- Sound insulation of walls require an  $R_w$  of not less than 50 separating an sou from a plant room, lift shaft, public corridor, stairway, or the like.
- Sound insulation of walls require a 20mm cavity between the 2 separate leaves with no mechanical linkage, apart from at the periphery (excepting resilient ties) for:
  - Sole occupancy unit's separating a plant room or lift shaft; and
  - Wall separating a bathroom, sanitary compartment, laundry, or kitchen in one sole occupancy unit from a habitable room in an adjoining unit
- A doorway separating a sole occupancy unit from a public corridor, stairway, public lobby, or the like must have an  $R_w$  of not less than 30. We note that there will be multiple doors between sole occupancy units. Details of acoustic compliance are required prior to the issue of a Construction Certificate.
- Where a wall requires a sound insulation rating, the connecting floor, or roof above must be constructed to the underside of the above roof or floor, or provide the equivalent sound insulation rating as per the wall.
- If a duct, soil, waste or water supply pipe passes through more than 1 sole occupancy unit, the service must have an  $R_w$  of not less than 40 if adjacent to a habitable room, or an  $R_w$  of not less than 25 if adjacent to a non-habitable room. A storm water pipe requires the same ratings; however, it only needs to pass through 1 sole occupancy unit to require a sound insulation rating.

Acoustic Consultant to provide the necessary details prior to the issue of a Construction Certificate

## 14.0 Energy Efficiency

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The building will need to be assessed for compliance with the BCA NSW Part J(B) and the national BCA Section J except as varied by [NSW J1.6](#) for Class 3 buildings [NSW J3.1](#) and [NSW J8.2](#) for Class 3.

A Section J Consultants report will be required prior to the issue of a Construction Certificate. The applicable climate zone is 6

## 15.0 Provision for Cleaning Windows

The windows will either be cleaned wholly from within the building or provision will be made for the cleaning of the windows by a method complying with the Construction Safety Act 1912.

Details of the provisions in place for the cleaning of windows will be required prior to the issue of a Construction Certificate.

## 16.0 Parking Facilities

***The columns in the basement will need to be set back 750mm from the end of the car spaces, as required by AS 2890.1. Amended details required***

## 17.0 Conclusion

We have assessed the building design to date and have reviewed the scheme with respect to the Building Code of Australia. The design is at a point where the inherent BCA philosophies have been checked and development consent can be sought.

The finer details with respect to BCA2008 can be finalised prior to the issue of a Construction Certificate / building permit.

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