

BCA Report

BUILDING CODE OF AUSTRALIA ASSESSMENT REPORT

Project: Sydney Water Corporate Headquarters
Parramatta
Client: Multiplex Constructions (NSW) Pty Ltd

EXECUTIVE SUMMARY

The development, the subject of this report, is for a new multistorey building accommodating the offices of Sydney Water, Corporate Headquarters. The premises are located at 1 Smith Street, Parramatta. The development consists of the construction of a new twenty three (23) storey building consisting of five 5 basement levels of carpark and plant; ground floor entry and retail; thirteen (13) levels of office and two levels of roof top plant. The building is generally constructed of concrete floors supported by concrete columns, and a glazed facade.

The purpose of the report is to establish compliance to the Building Code of Australia and relevant Acts and Regulations, of the Development Application documentation for the proposed works.

The following non-compliance's with the deemed-to-satisfy provisions of the BCA 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).

Spec. C1.1, C2.7, C2.8 & C2.9	The basement carpark contains storage and loading dock uses on the ground floor that are not fire separated from the remainder of the floor and therefore result in 4 hrs fire resistance applying to the whole of the basement levels. Reduced FRL's are proposed to be investigated for part of the basement levels. An alternative solution is to be developed to justify compliance with the Performance provisions of the BCA. The driveway to basement 1 is to be fire separated from the Ground floor by 4 hr fire resisting construction.
D1.2	Two exits are required from each storey. The goods lift motor room on Level 18 contains access to only one exit (stair 2). The B1 mezzanine level also only contains one complying exit (Stair 3).
D1.4	The following areas exceed 20 m to a point in which different directions to two exits is available. 1. Basement 5: 23 m to a point of choice from the eastern end. 2. Basement 1: 26 m from toilets, shower, change rooms and Plant room. 3. The chiller plant room on Level 16: 29 m on open floor plan The following areas exceed 40 m to the nearest exit: 1. Basement 2 to 4: 48.5 m from mid northern end. 2. Basement 1: 46 m from toilets, shower, change rooms. 3. Basement 1 Mezzanine: 61 m to single complying exit. On an open floor plan the office levels comply with the required travel distances. The fit out is likely to result in extended travel distances.
D1.5	The fit out is likely to result in extended travel distances between alternative exits.
E1.3	The hydrant booster pumps are not visible from the main entry of the building.
E1.5	The sprinkler valve room does not have direct egress to a road or open space. This is to be assessed by performance justification against the relevant performance requirements of the BCA.

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 that are intended to be addressed by Alternative Solution. Whilst these performance based solutions are to be design developed, it is our view that the solutions will not impact on the current design.

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1.0 INTRODUCTION

1.1 General

The development, the subject of this report, is for a new multistorey building accommodating the offices of Sydney Water, Corporate Headquarters. The premises are located at 1 Smith St, Parramatta, within the local government area of Parramatta City Council.

1.2 Description

The development consists of the construction of a new twenty three (23) storey building consisting of five 5 basement levels of carpark and plant; ground floor entry and retail; thirteen (13) levels of office and two levels of roof top plant.

The building is generally constructed of concrete floors supported by concrete columns, and a glazed facade.

1.3 Purpose of the Report

This report has been prepared, on behalf of Multiplex Constructions (NSW) Pty Ltd, 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 prepared by Denton Corker Marshall as identified in the attached Appendix 1.
- ii. The Building Code of Australia 2006, 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) 2006 was adopted in NSW on 1 May 2006 and the Energy efficiency provisions of BCA 2006 for Class 3 – 9 buildings was adopted on 1 November 2007. The amendment of the BCA in force at the date of invitation of tenders to carry out the crown building work is the version called up by Clause 116G of the Environmental Planning and Assessment Act 1979 for the purpose of building design. The invitation of tenders occurred prior to 1 November 2006 therefore Section J of the BCA has not been considered.

1.5 Exclusions

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

- i. Structural design.
- ii. The Disability Discrimination Act 1992.

2.0 BUILDING CODE OF AUSTRALIA DESCRIPTION

2.1 Classification (A3.2)

Classification per storey has been assessed as follows;

Basement 5 to 2	Class 7a	Carpark
Basement 1	Class 7a Class 7b	Carpark Loading dock and storage
Basement 1 mezzanine	Class 7a & 7b basement use)	Plant space (adopts classification of
Level 1	Class 5 Class 6	Office Retail
Level 2 – 15	Class 5	Office
Level 16	Class 5 Class 5	Office Plant
Level 17 -18	Class 5	Plant

2.2 Effective Height (A1.1)

The building has an effective height of 65 m.

2.3 Rise in Storeys (C1.2)

The rise in storeys is seventeen (17).

2.4 Type of Construction (C1.1)

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

3.0 BUILDING CODE OF AUSTRALIA ASSESSMENT

3.1 Structure (BCA Section B)

BCA Clause	Title	Assessment and Comment	Status
B1.0	Deemed-to-satisfy conditions	Where a Building Solution is proposed to comply with the Deemed-to-Satisfy Provisions, Performance Requirement BP1.1 to BP1.3 are satisfied by complying with either- (i) B1.1, B1.2 and B1.4; or (ii) B1.3 and B1.4.	Note
B 1.1, B1.2 & B1.3	Resistance to actions, Determination of individual actions, & Loads	The structure is to be designed by a structural engineer in accordance with the standards required by this part.	The building is capable of complying
B1.4	Determination of structural resistance of materials and forms of construction. Materials & forms of construction	The proposed materials and forms of construction are to be designed/selected to comply with the required Australian Standards. The structure is to be designed by a Structural Engineer in accordance with the standards required by this part. Glazed assemblies are required to be designed to comply with AS 2047 and AS1288 as relevant. The building does not contain timber primary building elements therefore Termite risk management measures are not required.	The building is capable of complying The building is capable of complying Note

3.2 Fire Resistance (BCA Section C)

3.2.1 Fire Resistance and Stability (Part C1)

BCA Clause	Title	Assessment and Comment	Status
C1.1	Type of construction required	The type of fire resisting construction applicable is Type A construction. Type A construction is the highest of the fire resistant types of construction. (Refer to Item 3.2.2 of this report – Specification C1.1 Fire-resisting Construction).	Note
C1.8	Lightweight construction	Any proposed lightweight fire resisting construction is required to be designed / selected to preserve its integrity from mechanical damage in accordance with this clause.	The building is capable of complying
C1.10	Fire hazard properties	Proposed materials are required to be selected to comply with the required fire hazard properties.	The building is capable of complying

3.2.2 Fire-Resisting Construction (Specification C1.1)

BCA Clause	Title	Assessment and Comment	Status
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. (Refer to Item 3.2.2 of this report – Specification C1.1 Fire-resisting Construction, Clause 3.1).	Note
2.3	Lintels	Certain lintels are required to have an FRL not less than that part of the building they are situated.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
2.4	Attachment not to impair fire resistance	The building does not contain combustible attachments to the facade.	The design complies
2.6	Mezzanine floors: concession	The building does not contain mezzanine's that are subject to this provision.	N/A
2.7	Enclosure of shafts	Any proposed services and stair shafts are to be designed to comply with this provision. The bottom of fire rated shaft are required to be enclosed by fire rated construction. The top of fire rated shaft is to be enclosed by fire rated construction, except for service shafts that pass beyond the roof covering.	The building is capable of complying
3.1	Fire resistance of building elements	The proposed new building work is required to be designed to comply with the required fire resistance levels applicable to Type A construction. The following fire resistance requirements generally apply: Carpark – 2 hrs Office – 2 hrs Retail – 3 hrs Storage & Loading – 4 hrs The basement carpark contains storage and loading dock uses on the ground floor that are not fire separated from the remainder of the floor and therefore result in 4 hrs fire resistance applying to the whole of the basement levels. Reduced FRL's are proposed to be investigated for part of the basement levels. An alternative solution is to be developed to justify compliance with the Performance provisions of the BCA. The driveway to basement 1 is to be fire separated from the Ground floor by 4 hr fire resisting construction. Level 1 (ground) is to be constructed to the higher FRL applying to the retail use.	Alternative solution The building is capable of complying
3.5	Roof: Concession	The metal roof over part of the foyer is permitted in sprinkler protected buildings. The other roof is of concrete construction.	The building is capable of complying
3.6	Roof lights	Roof lights are not proposed.	Note

3.2.3 Compartmentation and Separation (Part C2)

BCA Clause	Title	Assessment and Comment	Status
C2.2	General floor area & volume limitations	This clause restricts the floor area and volume of fire compartments to not more than 5,000 m ² and 30,000 m ³ for Class 6 & 7b buildings and not more than 8,000 m ² and 48,000 m ³ for Class 5 buildings. Sprinkler protected car parks are exempt.	The building is capable of complying
C2.6	Vertical separation of openings in external walls	Vertical separation does not apply to sprinkler protected buildings or open deck car parks. The proposed building is to be sprinkler protected. The existing building has been assessed as an open deck carpark.	N/A
C2.7	Separation by firewalls	A fire wall is proposed to separate Level 01 (Ground) from basement access ramp. The FRL of the fire wall is to be determined by Fire Engineering as mentioned in Clause 3.1 of Specification C1.1 above.	Alternative solution

BCA Clause	Title	Assessment and Comment	Status
C2.8	Separation of classifications in the same storey	A fire wall is proposed to separate Level 01 (Ground) from basement access ramp. The FRL of the fire wall is to be determined by Fire Engineering as mentioned in Clause 3.1 of Specification C1.1 above. A fire wall is not proposed to separate the loading dock and storage uses on Basement 1 from the remainder of the basement. The required FRL,s of the fire compartment are to be determined by Fire Engineering assessment. The retail on Level 01 ground floor is not proposed to be fire separated from the remainder of the storey. Level 1 (ground) is to be constructed to the higher FRL applying to the retail use.	Note Alternative solution The building is capable of complying
C2.9	Separation of classifications in different storeys	The reinforced concrete floors between the adjoining parts must have an FRL of not less than that prescribed in Specification C1.1 for the classification of the lower storey. The FRL of the Basement 1 floor slab is to be determined by Fire Engineering to justify compliance with the performance requirements of the BCA.	Alternative solution
C2.10	Separation of lift shafts	The passenger lifts are to be in a fire rated shaft as required by this clause.	The building is capable of complying
C2.11	Stairways and lifts in one shaft	The design does not involve stairs and lifts in the same shaft.	The building design complies
C2.12	Separation of equipment	The following equipment is to be fire separated from the remainder of the building by 120/120/120 FRL construction: • Lift motor rooms and lift control panels. • Central smoke control plant • Boilers	The building is capable of complying
C2.13	Electricity supply system	The main switchboard board, sustaining emergency equipment, is to be fire separated from the remainder of the building by 120/120/120 construction. The electrical conductors located within the building and supply the main switchboard are required be designed to comply with this clause. The 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.	The building is capable of complying

3.2.4 Protection of openings (Part C3)

BCA Clause	Title	Assessment and Comment	Status
NSW C3.2	Protection of openings in external walls	Openings in external walls are less not than 3 m from the side boundaries. Therefore protection is not required.	N/A
C3.3	Separation of external walls and associated openings in different fire compartments	Adequate separation of external walls and associated openings in different fire compartments is provided. Openings need not be protected	The building is capable of complying
C3.4	Acceptable method of protection	N/A	N/A
C3.5	Doorways in fire walls	The design does not provided for doors in fire walls.	N/A
C3.6	Sliding fire doors	Sliding fire doors are not proposed.	The building is capable of complying
C3.7	Protection of doorways in horizontal exits.	Horizontal exits are not proposed.	N/A
C3.8	Openings in fire isolated exits	Doorways in fire isolated exits are required to be protected by -/60/30 fire doors.	The building is capable of complying
C3.9	Service penetrations in fire isolated exits	Only services permitted by this clause are to penetrate through fire isolated exits. The existing stairs, required to be fire isolated, are to be upgraded to comply as necessary.	The building is capable of complying
C3.10	Fire isolated lift shafts	The entrance doorway to passenger lift shaft must be protected by – /60/– fire doors that— (i) comply with AS 1735.11; and (ii) are set to remain closed except when discharging or receiving passengers, goods or vehicles. The 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 ² in area.	The building is capable of complying
C3.11	Bounding construction	N/A	N/A
C3.12	Openings in floors and ceilings for services	Services passing though floors are to be fire stopped or located within complying fire rated shafts, in accordance with this clause.	The building is capable of complying
C3.13	Openings in shafts	Access panels, doors and hoppers to required fire rated shafts are to have a fire rating as required by this clause. The construction documentation is required to demonstrate compliance with this Clause.	The building is capable of complying
C3.15	Openings for service installations	Service penetrations through fire resisting construction are required to be protected. The construction documentation is required to demonstrate compliance with this Clause.	The building is capable of complying
C3.16	Construction joints	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
C3.17	Columns protected with lightweight construction to achieve an FRL	Any proposed and existing steel columns required to be fire rated are to be protected by lightweight fire resisting construction in accordance with this clause.	The building is capable of complying

3.3 Access & Egress (BCA Section D)

3.3.1 Provision for escape (Part D1)

BCA Clause	Title	Assessment and Comment	Status
D1.1	Application of part	The provisions of Part D1 apply subject to concessions within residential sole-occupancy units.	Note
NSW D1.2	Number of exits required	Two exits are required from each storey. The goods lift motor room on Level 18 contains access to only one exit (stair 2) . The B1 mezzanine level also only contains one complying exit (Stair 3). These are to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
D1.3	When fire isolated exits are required	This clause requires Stairs 1, 2 & 3 to be fire isolated. The electricity authority will require Stairs 8 & 9 serving the substation to be fire isolated.	The building is capable of complying
D1.4	Exit travel distances	The following areas exceed 20 m to a point in which different directions to two exits is available. 1. Basement 5: 23 m to a point of choice from the eastern end. 2. Basement 1: 26 m from toilets, shower, change rooms and Plant room. 3. The chiller plant room on Level 16: 29 m on open floor plan This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
		The following areas exceed 40 m to the nearest exit: 1. Basement 2 to 4: 48.5 m from mid northern end. 2. Basement 1: 46 m from toilets, shower, change rooms. 3. Basement 1 Mezzanine: 61 m to single complying exit. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
		On an open floor plan the office levels comply with the required travel distances. The fit out is likely to result in extended travel distances. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
		A 1 m wide pedestrian path of travel must be provided to connect the B1 loading dock level RL 8.20 with the lower level B 1 courier parking RL 7.25, along the ramp at grid 1. Access should be provided to stair 2 from the Basement Mezzanine level lift lobby.	The building is capable of complying
D1.5	Distance between alternative exits	The distance between alternative exits complies. The fit out is likely to result in extended travel distances. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution

BCA Clause	Title	Assessment and Comment	Status
NSW D1.6	Dimensions of exits and paths of travel to exits	Occupant numbers have been determined in accordance with D1.13. The exit widths provided are satisfactory.	The building design complies
D1.7	Travel via Fire-isolated exits	Access into fire isolated exits complies. The discharge of the fire isolated exits complies. The fire isolated stairs are pressurised.	The building design complies
D1.8	External Stairs or ramps in lieu of Fire-isolated exits	No external open stairs are proposed to replace fire isolated stairs.	N/A
D1.9	Travel via non-fire-isolated stairways or ramps	Stair 6 may be a non-fire isolated stair. Travel via this stair complies with this clause.	The building design complies
NSW D1.10	Discharge from exits	Exits are not blocked at the point of discharge. The discharge of the fire isolated stairs is connected to the road by a minimum 1 m wide path of travel. The discharge point of alternative exits is located as far apart as practical.	The building design complies
D1.11	Horizontal exits	No horizontal exits are proposed.	N/A
D1.12	Non required stairs	Stair 21 connecting Level 15 to 16 has been identified as a non-required stair. The stair complies as it only connects two levels.	The building design complies
D1.13	Number of persons accommodated	Populations have been assessed in accordance with this clause.	Note
D1.16	Plant rooms and lift motor rooms: concessions	Any access ladders to plant rooms are required to be designed to comply with AS1657.	The building is capable of complying
D1.17	Access to Lift Pits	Access to lift pits is required to be designed in accordance with this clause. Details of lift pit depths is to be provided.	Additional details required

3.3.2 Construction of exits

BCA Clause	Title	Assessment and Comment	Status
D2.2	Fire-isolated stairways and ramps	The required fire isolated stairs are to be of non-combustible construction and be designed so that local failure will not result in structural damage to, or impair the fire resistance of the shaft.	The building is capable of complying
D2.3	Non-fire isolated stairs and ramps	The non-fire isolated stair 21 will be constructed of non-combustible material.	The building is capable of complying
D2.4	Separation of rising and descending stair flights	The proposed works do not involve rising & descending stairs in fire isolated stairways.	Complies
D2.7	Installation in exits and paths of travel	Access to service shafts is not permitted from within the fire isolated stair or passageway. Gas or other fuel services are not permitted to be installed in a required exit. Electrical & comms cupboards are to be smoke sealed. This generally requires lining internally with non-combustible material and smoke sealed, including smoke seals to doors. The fire isolated stairways are not to be penetrated by any service not permitted by this clause.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
D2.8	Enclosure of space under stairs	No enclosures are permitted under the proposed fire isolated stairs. Any enclosures under non-fire isolated stairs are to be enclosed by 60/60/60 FRL construction.	The building is capable of complying
D2.9	Width of stairways	The required width of stairs is to be measured clear of obstructions.	Note
D2.10	Pedestrian ramps	The proposed pedestrian ramps are to be not steeper than 1:8 or 1: 14 if required for people with disabilities. The ramps connecting Basement 1 Lift lobby (RL 8.2) to basement parking B1.5 are required to be designed in accordance with AS1428.1. The ramp is required to be amended to comply.	The building is capable of complying
D2.11	Fire isolated passageways	Fire isolated passageways are not proposed.	N/A
D2.12	Roof as Open Space	The building does not contain any roof as open space.	N/A
NSW D2.13	Goings & risers	Goings and risers to the stairways are required to be designed to comply with this clause.	The building is capable of complying
D2.14	Landings	Stair landings are to be designed in accordance with this clause.	The building is capable of complying
NSW D2.15	Thresholds	Thresholds are to be designed to comply.	The building is capable of complying
NSW D2.16	Balustrades and other barriers	Balustrades are to be designed to comply with this clause.	The building is capable of complying
D2.17	Handrails	Handrails are to be provided to stairs and ramps and designed to comply with this clause.	The building is capable of complying
D2.18	Fixed platforms, walkways, stairways & ladders	Within plant rooms, any fixed platforms, walkways, stairways, ladders and any going and riser, landing, handrail, balustrade or other barrier attached thereto may comply with AS 1657.	The building is capable of complying
NSW D2.19	Doorways and doors	Exit doors are proposed to be swinging doors	The design complies
D2.20	Swinging doors	The exit doors are required to swing in the direction of egress as required. The final exit door from stair 6 is to swing in the direction of egress.	The building is capable of complying
NSW D2.21	Operation of latch	Door hardware is required to comply with this clause.	The building is capable of complying
D2.22	Re-entry from fire isolated exits	Re-entry provisions are to be provided to the fire isolated stairs in accordance with this provision.	The building is capable of complying
D2.23	Signs on doors	Signage is required to be provided to fire isolated exit doors in accordance with this clause.	The building is capable of complying

3.3.3 Access for people with disabilities

BCA Clause	Title	Assessment and Comment	Status
D3.2	General building access requirements	Access for people with disabilities is required throughout the building. Access is required from the main points of entry into the site and to the principle public entrance.	The building is capable of complying
D3.3	Parts of building to be accessible	The proposed building is required to comply with AS1428.1.	The building is capable of complying
D3.4	Concessions	It is not necessary to provided access for people with disabilities to more than 30% of the public space in a cafe, bar or restaurant.	Note
D3.5	Car parking	For carpark uses, accessible car parking is to be provided at the rate of 1 per 100 spaces or part thereof. The carpark spaces for people with disabilities is to comply with AS 2890.1.	The building is capable of complying
D3.6	Identification of accessible facilities, services, and features.	In every building required to be accessible , clear and legible Braille and tactile signage complying with Specification D3.6 and incorporating the international symbol of access, in accordance with AS 1428.1 must identify— (a) each— (i) sanitary facility; and (ii) accessible space with a hearing augmentation system; and (b) where an entrance is not accessible, identify each accessible entrance.	The building is capable of complying
D3.7	Hearing augmentation	Where an inbuilt amplification system, other than one used for emergency warning purposes only, is not proposed.	The building is capable of complying
D3.8	Tactile indicators	No public stairs or ramps are proposed therefore tactile ground surface indicators are not required.	The building is capable of complying

3.4 Services & Equipment (BCA Section E)

3.4.1 Fire fighting equipment (Part E1)

BCA Clause	Title	Assessment and Comment	Status
E1.3	Fire hydrants	The building is required to be served by a hydrant system complying with this clause. Thee hydrant booster pumps, in the southern elevation, are not visible from the main entry of the building. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative Solution
E1.4	Fire hose reels	The building is required to be served by a hose reel system complying with this clause. The position of Fire hose reels are to be shown on the plans.	The building is capable of complying
E1.5	Sprinklers	The building is required to be provided with a sprinkler system in accordance with this clause. The sprinkler valve room does not have direct egress to a road or open	Alternative

BCA Clause	Title	Assessment and Comment	Status
		space. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	solution
E1.6	Portable fire extinguishers	The building is to be provided with portable fire extinguishers in accordance with this clause.	The building is capable of complying
E1.8	Fire control centres	A fire control room is provided on Level 1 (Ground). The location and access of the fire control room complies. The construction; protection of openings; size and contents; ventilation and power supply; signage; lighting; and acoustics are to comply with Specification E1.8.	The building is capable of complying
E1.9	Fire precautions during construction	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.	The building is capable of complying
E1.10	Provision for special hazards	There are no special hazards.	N/A

3.4.2 Smoke hazard management (Part E2)

BCA Clause	Title	Assessment and Comment	Status
E2.2	General Requirements	The following smoke hazard management is required. • Zone smoke control. • Carpark – Mechanical system to comply with E2.2 for carparks. • Pressurisation of exits	The building is capable of complying
E2.3	Provision for special hazards	N/A	N/A

3.4.3 Lift installations (Part E3)

BCA Clause	Title	Assessment and Comment	Status
E3.2	Stretcher facility in lifts	At least one lift is to be of a size that can accommodate a stretcher.	The building is capable of complying
E3.3	Warning against use of lifts in fire	Warning signage for the passenger lifts is to be provided in accordance with this clause.	The building is capable of complying
E3.4	Emergency Lifts	Emergency lifts are required to be provided in accordance with this clause.	The building is capable of complying
E3.5	Landings	Access and egress from the lift well landing complies with this provision.	Complies
E3.6	Facilities for people with disabilities	The proposed lifts are required to be designed to comply with this provision.	The building is capable of complying
E3.7	Fire service controls	All lifts are to be provided with fire services controls in accordance with this provision.	The building is capable of complying

3.4.4 Emergency lighting, exit signs and warning systems (Part E4)

BCA Clause	Title	Assessment and Comment	Status
E4.2	Emergency lighting requirements	Emergency lighting is to be provided in accordance with this clause.	The building is capable of complying
E4.5	Exit signs	Exit signs are to be provided in accordance with this clause.	The building is capable of complying
NSW E4.6	Directional exit signs	Directional exit signage system is to be provided in accordance with this clause.	The building is capable of complying
E4.8	Design and operation of exit signs	Exit signs are to be designed in accordance with AS/NZS 2293.1.	The building is capable of complying
E4.9	Emergency warning & intercommunication systems	An EWIS is required to be provided.	The building is capable of complying

3.5 Health & Amenity (BCA Section F)

3.5.1 Damp and weather proofing (Part F1)

BCA Clause	Title	Assessment and Comment	Status
F1.0	Deem to satisfy provisions	A roof and external walls (including openings around windows and doors) must prevent the penetration of water that could cause- (a) unhealthy or dangerous conditions, or loss of amenity for occupants; and (b) undue dampness or deterioration of building elements. The construction documentation is required to demonstrate compliance with this Clause.	The building is capable of complying
F1.1	Stormwater drainage	Proposed stormwater drainage must comply with AS/NZS 3500.3.2.	The building is capable of complying
F1.5	Roof coverings	The proposed roof coverings are to provide weatherproofing in accordance with this provision and comply with the appropriate Australian Standard.	The building is capable of complying
F1.6	Sarking	Any sarking is to comply with AS/NZS 4200 Parts 1 & 2.	The building is capable of complying
F1.7	Waterproofing of wet areas in buildings	Proposed wet areas are to be constructed in accordance with this provision.	The building is capable of complying
F1.9	Damp-proofing	Damp proof course is to proposed building work as required by this provision.	The building is capable of complying
F1.10	Damp-proofing of floor on ground	For a floor of a room laid on the ground or on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870.	The building is capable of complying
F1.11	Provision of floor wastes	N/A	N/A
F1.12	Sub floor ventilation	N/A	N/A

BCA Clause	Title	Assessment and Comment	Status
F1.13	Glazed Assemblies	Glazed assemblies are to be designed/selected to comply with this clause. The construction documentation is required to demonstrate compliance with this Clause.	The building is capable of complying

3.5.2 Sanitary and other facilities (Part F2)

BCA Clause	Title	Assessment and Comment	Status
F2.3	Facilities in Class 3 to 9 buildings	Adequate facilities have been provided for the expected population. The ground floor retail space will be provided with sanitary facilities for employees and patrons as part of the fitout of the retail space.	The building is capable of complying
F2.4	Facilities for people with disabilities	Access sanitary facilities are provided in accordance with this clause. The facilities are to be designed in accordance with AS1428.1. Doors swinging in must be capable of swinging out or being removable from the outside.	The building is capable of complying
F2.5	Construction of sanitary compartments	Sanitary compartments are to comply with this provision. Particular attention is required to bathrooms that have less than 1.2 m clearance from the pan to the door opening.	The building is capable of complying

3.5.3 Room sizes (Part F3)

BCA Clause	Title	Assessment and Comment	Status
F3.1	Height of rooms and other spaces	The following minimum floor to ceiling heights apply: 2.1 m in corridors & Carpark 2.4 m in retail & office.	The building is capable of complying

3.5.4 Light & Ventilation (Part F4)

BCA Clause	Title	Assessment and Comment	Status
F4.4	Artificial lighting	Artificial lighting is required to be provided in accordance with the requirements of this clause.	The building is capable of complying
F4.5	Ventilation of rooms	A habitable room, office, workroom, sanitary compartment, bathroom, shower room, laundry and any other room occupied by a person for any purpose must have natural ventilation or mechanical ventilation complying with AS1668.2.	The building is capable of complying
F4.6	Natural Ventilation	Mechanical ventilation is proposed.	N/A
F4.8	Restriction on the position of water closets and urinals	The position of the sanitary compartments complies.	The design complies
F4.9	Airlocks	Airlocks are not required.	N/A
F4.11	Car park	Every storey of a carpark, except an open-deck carpark, must have— (a) a system of ventilation complying with AS 1668.2; or (b) an adequate system of permanent natural ventilation.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
F4.12	Kitchen local exhaust	A commercial kitchen must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where- (a) any cooking apparatus has- (i) a total maximum electrical power input exceeding 8 kW; or (ii) a total gas power input exceeding 29 MJ/h; or (b) the total maximum power input to more than one apparatus exceeds- (i) 0.5 kW electrical power; or (ii) 1.8 MJ gas, per m2 of floor area of the room or enclosure.	The building is capable of complying

3.6 Ancillary Provisions (Section G)

3.6.1 Minor Structure and Components (Part G1)

BCA Clause	Title	Assessment and Comment	Status
G1.2	Refrigerated chambers, strongrooms & vaults	No refrigerated chambers, strong rooms or vaults have been identified on the plans.	Note
NSW G1.101	Provision for the cleaning of windows	The provision of cleaning of windows is to be provided in accordance with this clause.	The building is capable of complying

4.0 FIRE SAFETY SCHEDULE

The following table is a list of the required fire safety measures for this development. Additional fire safety measures will be identified as part of the Fire Engineering Alternative Solution process.

FIRE SAFETY MEASURES	STANDARD OF PERFORMANCE
Access Panels, doors and hoppers to fire resisting shaft	BCA C3.13 & AS1905.1-2005, AS1905.2-2005
Automatic fail safe devices	BCA Part C3 & D2.21
Automatic fire detection and alarm system	BCA E2.2, Spec E2.2a & AS1668.1-1998
Automatic fire suppression system (sprinkler)	BCA E1.5, Spec E1.5 & AS2118.1-1999,
Emergency lighting	BCA E4.2, E4.4 & AS/NZS2293.1-2005
Emergency Lifts	BCA E3.4 & AS1735.2-2001
Emergency warning and intercommunication system	BCA E4.9 & AS1670.4-2004, AS4428.4-2004
Exit signs	BCA E4.5, E4.6, E4.8 & AS/NZS2293.1-2005
Fire Control room	BCA E1.8 & Spec E1.8
Fire dampers	BCA C3.12, C3.15 & AS/NZS1668.1-1998, AS1668.2-1991, AS1668.1-1998, AS1668.2-1991
Fire doors	BCA Spec C3.4 & AS1905.1-2005
Fire hydrant systems	BCA E1.3 & AS2419.1-2005
Fire seals protecting openings in fire resisting components of the building	BCA C3.12, C3.15 & Spec C3.15
Hose reel system	BCA E1.4 & AS2441-2005
Lightweight construction	BCA C1.8 & Spec C1.8
Mechanical air handling system	BCA E2.2 & AS/NZS1668.1-1998
Portable fire extinguishers	BCA E1.6 & AS2444-2001
Required automatic exit doors	BCA C3.4, C3.7 & C3.8
Smoke detectors and heat detectors	BCA E2.2 & Spec E2.2a
Stair Pressurisation	BCA E2.2, Spec E2.2a & AS1668.1-1998
Zone Smoke Control System	BCA E2.2, Spec E2.2a & AS1668.1-1998
Warning and operational signs	EPA Regulation (reg 183), BCA E3.3 (lifts), D2.23 Signs on exit doors

5.0 SUMMARY OF NON-COMPLIANCE ISSUES

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

SUMMARY OF PROPOSED ALTERNATIVE SOLUTIONS

BCA CLAUSE	Performance Requirements	ISSUE	JUSTIFICATION
Spec. C1.1, C2.7, C2.8 & C2.9	CP1 & CP2	Reduced fire resistance levels in basements	PR
D1.2	DP4	Reduced number of exits from Basement 1 mezzanine and L18 Plant room	PR
D1.4 & DP1.5	DP4 & EP2.2	Extended travel distances and distance between alternative exits	PR & Clause 144
E1.3	EP1.3	The hydrant booster pumps are not visible from the main entry of the building.	PR & Clause 144
E1.5	EP1.4	The sprinkler valve room does not have direct egress to a road or open space. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	PR & Clause 144

JUSTIFICATION LEGEND

PR PERFORMANCE REQUIREMENTS

An Alternative Building Solution Report prepared under Part A0.8 of the BCA demonstrating compliance with the 'performance requirements'. These reports are assessed by an Accredited Certifier during the Construction Certificate determination process.

Clause 188 NSW FIRE BRIGADE DISCRETION

Clause 188 of the Environment Planning & Assessment Regulation 2000 - NSW Fire Brigade may set aside BCA requirements in relation to Category 3 Fire Safety Provisions where compliance cannot be achieved.

Clause 144 CONCURRENCE OF NSW FIRE BRIGADE

Clause 144 of the Environment Planning & Assessment Regulation 2000 - NSW Fire Brigades is to review any Alternative Building Solution Report prepared in relation to a Category 2 Fire Safety Provision and provide concurrence prior to the issue of a Construction Certificate.

6.0 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 that are intended to be addressed by Alternative Solution. Whilst these performance based solutions are to be design developed, it is our view that the solutions will not impact on the current design.

Chris Michaels
For and on behalf of City Plan Services Pty Ltd

APPENDIX 1 – Assessed plans prepared by Denton Croker Marshall

Plan Title	Drawing No	Revision	Date
Basement B1 Mezzanine Plan	A1001	-	Dec 06
Basement B1 Plan	A1002	-	Dec 06
Basement B2 Plan	A1003	-	Dec 06
Basement B3 & B4 Plan	A1004	-	Dec 06
Basement B5 Floor Plan	A1005	-	Dec 06
Level 01 (Ground) Floor Plan	A1101	-	Dec 06
Level 02 Floor Plan	A1102	-	Dec 06
Level 03 Floor Plan	A1103	-	Dec 06
Level 04 Floor Plan	A1104	-	Dec 06
Level 05 to 15 Floor Plan	A1105	-	Dec 06
Level 16 (Plant) Plan	A1116	P1	Jan 07
Level 17 Plan	A1117	P1	Jan 07
Level 18 Plan	A1118	P1	Jan 07
Roof Plan	A1119	P1	Jan 07
North Elevation	A1201	-	Dec 06
South Elevation	A1202	-	Dec 06
East Elevation	A1203	-	Dec 06
West Elevation	A1204	-	Dec 06
Section AA	A1301	-	Dec 06
Section BB	A1302	-	Dec 06
Basement B1 Mezzanine Concrete Profile Plan	A2001	-	Dec 06
Basement B1 Concrete Profile Plan	A2002	-	Dec 06
Basement B2 Concrete Profile Plan	A2003	-	Dec 06
Basement B3 & B4 Concrete Profile Plan	A2004	-	Dec 06
Basement B5 Setout Plan	A2005	-	Dec 06
Core Plan – Tower Level 05 to 15	A2216	-	Dec 06
Level 01 (Ground) Floor Plan – Reflected Ceiling Plan	A4101	-	Jan 07
Level 05 to 15 Tower Floor Plan – Reflected Ceiling Plan	A4105	P1	Jan 07
Podium Façade Detail	A5006	-	Dec 06
Curtain Wall Detail Sheet 1	A5026	-	Dec 06
Curtain Wall Detail Sheet 2	A5027	-	Dec 06
Ceiling Details	A6116	-	29.01.07