PLANNING
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CITY PLAN SERVICES

BCA Report

BUILDING CODE OF AUSTRALIA ASSESSMENT REPORT

Project: Block 2, 20-102 Broadway, Sydney

Client: Frasers Broadway

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	NAME	SIGNATURE	DATE
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EXECUTIVE SUMMARY

The development, the subject of this report, is for the construction of a new thirty-four (34) storey building located on 20-102 Broadway, Sydney. The building is commonly known as 'Block 2'. The site is within the local government area of the City of Sydney Council however a Planning Application is to be submitted to the Department of Planning for approval.

The building will consist of residential towers above retail podium levels.

The building forms part of a development comprising of an extensive mixed-use development to be constructed in a number of stages forming part of a master concept plan for the Frasers Broadway Development.

Development consists of the construction of two residential towers over a retail podium level located above a common basement. The underground basement connects block 2 and block 5 as part of the Frasers Broadway master plan. Block 2, Block 5 and the basement under blocks 2, 5 & 9 are currently subject to proposed separate Planning Applications with the Department of Planning.

Block 2 consists of two towers above a podium comprised of:-

Podium -	five (5) storeys consisting of retail & commercial areas, commercial gym with swimming pools, including an atrium connecting all levels, in addition to one (1) storey lower ground floor supermarket and retail shops.
Residential Apartment West Tower -	Twelve (12) storeys consisting of residential apartments.
Residential Apartment East Tower -	Twenty nine (29) storeys consisting of residential apartments plus one (1) plant room.

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

This report has been prepared, on behalf of Frasers Broadway, to establish compliance to the Building Code of Australia and relevant Acts and Regulations, of the Planning 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).

C2.2	Fire compartment size of Lower ground to level 4 exceeds maximum permitted by Clause C2.2.
C2.14	Public corridors greater than 40m not to be divided with smoke-proof construction on low rise tower levels 5 to 16 and high rise tower levels 5 to 32.
Spec C1.1,	External walls and windows of level 4 – 6 exposed to atrium roof light

Clause 3.6

C3.11	Glazed entry doors to SOU's not protected on level 29 and 30.
D1.2	Only single exit available from ground floor and lower ground floor retail tenancies opening to road/open space.
	Only single exit available from platform B & C.
D1.4	Extended travel distances
D1.5	Extended distance between alternative exits on level 4.
D1.6	Reduced required exit widths on Levels 1 & 3.
D1.7	Access to fire isolated exits on Level 3 & 4 is direct from SOU not occupying the whole floor.
D1.10	Reduced exit widths via path through open space to a public road (level 2 via external platforms).
D2.12	External platforms contain openings with 3m of the path of travel.
E1.3	Location of fire hydrant booster assembly to within sight of the main entrance(s) to the building (ground floor).
E1.8	Location and access to fire control room.
E2.2	Zone smoke control and smoke exhaust.
G3.2	Atrium well cross sectional dimension.
G3.3	Atrium not proposed to be DTS fire separated from the remainder of the building

The following minor Deemed-to-Satisfy non-compliance's can be addressed by minor design amendments:

1. The connection of the east tower fire stairs to the podium fire stairs on Level 4 is required to be by fire isolated passageway. Access to service risers or rooms from within the fire isolated passageway is not permitted. (Item 3.3.4 Clause 3.9, Item 3.4.1 Clause D1.3)

2. On Level 3, access to all fire isolated exits is required from common areas in order to comply with this clause and the egress width provisions. (Item 3.4.1 Clause D1.7)

3. Additional sanitary facilities are required. (Item 3.6.2 Clause F2.3).

4. Separate faculties are required for each sex. The common facilities in the ground floor residential foyer are not permitted. (Item 3.6.2 Clause F2.3)

5. The sanitary facilities for people with disabilities are required to be designed to As1428.1 (Item 3.6.2 Clause F2.4)

6. The level 2 food court sanitary facilities (Grid K,L/20,21) are not permitted to open directly into a public dining area unless the doorway is screened from view

   The level 4 gymnasium staff sanitary facilities are not permitted to open directly into a room used for public assembly unless the doorway is screened from view. (Item 3.6.4 Clause F4.8 & F4.9).

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.

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 General

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The building will consist of residential towers above retail podium levels.

The building forms part of a development comprising an extensive mixed-use development to be constructed in a number of stages forming part of a master concept plan for the Frasers Broadway Development.

1.2 Description

Development consists of the construction of two residential towers over a retail podium level located above a common basement. The underground basement connects block 2 and block 5 as part of the Frasers Broadway master plan. Block 2, Block 5 and the basement under blocks 2, 5 & 9 are currently subject to proposed separate Planning Applications with the Department of Planning.

Podium -	five (5) storeys consisting of retail & commercial areas, commercial gym with swimming pools, including an atrium connecting all levels, in addition to one (1) storey lower ground floor supermarket and retail shops.
Residential Apartment West Tower -	Twelve (12) storeys consisting of residential apartments.
Residential Apartment East Tower -	Twenty nine (29) storeys consisting of residential apartments plus one (1) plant room.

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

1.3 Purpose of the Report

This report has been prepared, on behalf of Frasers Broadway, to establish compliance to the Building Code of Australia and relevant Acts and Regulations, of the Planning Application documentation for the proposed works.

1.4 Report Basis

This report is based on:

i. Architectural plans prepared by AtellersJeanNouvel as identified in the attached Appendix 1.

ii. The Building Code of Australia 2009, inclusive of NSW variations (See Note 1).
iii. Environmental Planning and Assessment Act 1979.
iv. Environmental Planning and Assessment Regulation 2000.

Note (1) Building Code of Australia (BCA) 2009 was adopted in NSW on 1 May 2009. The amendment of the BCA in force at the date of lodgement of a Construction Certificate application 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. Structural design.
ii. The Disability Discrimination Act 1992.
iii. The BCA assessment of block 5 and basement under block 2, 5 & 9 connecting block 5 through a common basement forming a united building. These are subject to separate BCA reports.

2.0 BUILDING CODE OF AUSTRALIA DESCRIPTION

2.1 Classification (A3.2)

Classification per storey has been assessed as follows;

Area	Level	Classification
Podium	Lower Ground	6 (Retail)
	Ground	2 (East tower residential unit lobby and West tower residential unit lobby) & 6 (Retail)
	Level 1	6 (Retail)
	Level 2	6 (Retail)
	Level 3	6 (Retail)
	Level 4	5 or 6 Commercial and Class 9b gym
West tower	Level 5 to Level 16	2 (Residential units)
East tower	Level 5 to Level 33	2 (Residential units)
	Level 34	2 (Ancillary plant and terrace)

2.2 United Building (A4.1)

Block 2 along with block 5, basement under block 2, 5 & 9 form one united building as they are connected through horizontal construction. As a united building, block 2, block 5, basement under blocks 2, 5 & 9 are considered one single building under the BCA. Together they are required to comply with all the requirements of the BCA as though they are a single building.

2.3 Effective Height (A1.1)

The effective height of the building is 116.67 m (Lower ground floor +9.50 AHD – Level 33 +126.17 AHD).

2.4 Rise in Storeys (C1.2)

Block 2 has a rise in storeys of thirty-five (35).

2.5 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 United Buildings (Part A4)

BCA Clause	Title	Assessment and Comment	Status
A4.1	When buildings are united	Block 2 forms part of a united building with block 5 and the basement under block 2, 5 & 9. As a connected single building the requirements relevant to all blocks apply through the united building including being over 25 m in effective height and containing an atrium.	Note

3.2 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) For the earthquake resistance component of the Performance Requirement B1.3 and B1.4.	Note
B1.1, 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

BCA Clause	Title	Assessment and Comment	Status
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. Termite risk management is to be provided in accordance with this clause.	The building is capable of complying

3.3 Fire Resistance (BCA Section C)

3.3.1 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 comply 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

3.3.2 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
2.4	Attachment not to impair fire resistance	Any proposed combustible materials to be used as a finish or lining to an external wall is to comply with the requirements of this clause.	The building is capable of complying
2.5	General concessions	The plant rooms need not have an FRL if it only contains (i) lift motor equipment; or (ii) one or more of the following: (a) Hot water or other water tanks. (b) Ventilating ductwork, ventilating fans and their motors. (c) Air-conditioning chillers. (d) *Window* cleaning equipment. (e) Other service units that are *non-combustible* and do not contain *combustible* liquids or gases.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
		If it contains equipment other than the above, the plant rooms are to comply with Type A construction.	
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 shafts 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: Residential – 1.5 hrs Retail – 3 hrs Office – 3 hrs* Assembly (Gymnasium & Pools) – 3 hrs* *The assembly areas and office areas are located within the same fire compartment of the retail and therefore attract the higher FRL of the retail. External walls, common walls, and the flooring and floor framing of lift pits must be non-combustible. A loadbearing internal wall and a loardbearing fire wall must be of concrete or masonry. A non-loadbearing – (a) Internal wall required to be fire resisting; and : (b) Lift, ventilating, pipe , garbage, or similar shaft must be of non-combustible construction.	The building is capable of complying
3.2	Concessions for floors	An open access floor (for the accommodation of electrical and electronic services and the like) need not have an FRL if it is above a floor with the required FRL.	Note
3.5	Roof: Concession	The roof is not required to have an FRL if its covering is non-combustible.	The building is capable of complying
3.6	Roof lights	The roof lights (glass roof) on level 4 (and a 6m vertical projection of the roof light) is less than 3 m from the following external walls: (a) External glazed wall of the Level 4 East tower residence swimming pool area; (b) External glazed wall of the level 4 West tower swimming pool area; (c) External walls and windows of Level 5 & 6 West tower. The DTS requirements would require the affected: (i) glazing to be externally sprinkler protected in accordance with C3.4 and be fixed closed or automatic/self closing; and (ii) The affected walls are to have a fire rating of 180/180/180 for Level 4 & 90/90/90 for level 5 & 6. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution

3.3.3 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 m² and 30,000 m³ for Class 6 retail buildings and not more than 8,000 m² and 48,000 m³ for Class 9b (gym/breakfast dining/swimming pool) buildings. Lower ground floor to level 4 form a fire compartment greater than 5,000m^2 and 8,000m² (approx. 20,500m^2).This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
C2.6	Vertical separation of openings in external walls	Vertical separation does not apply to sprinkler protected buildings. The proposed building is to be sprinkler protected.	The building is capable of complying
C2.7	Separation by firewalls	The lower ground retail potion is proposed to be fire separated from the remainder of the carpark storey by a fire wall to form separate fire compartments. The fire wall is to have an FRL of 180/180/180 except that a higher FRL may be required around the loading dock subject to the fire engineering report for the basements. Openings in the fire wall are to be protected in accordance BCA Part C3.	The building is capable of complying
C2.8	Separation of classifications in the same storey	A storey containing more than one classification is required to be: (i) constructed to the higher FRL throughout; or (ii) the different classifications are separated by a fire wall having the higher FRL and each classification is constructed to the applicable FRL's. Fire walls are proposed to separate the lower ground retail from the basement carpark as described above.	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 building is capable of complying
C2.10	Separation of lift shafts	Proposed lifts 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12 and 13 require a fire rated shaft in accordance with this clause. Lift 8 has been assessed connecting only 3 storeys in a sprinkler protected building. Platform C has not been assessed as a storey as it is a small area only contains the lift shaft.	The building is capable of complying Note
C2.11	Stairways and lifts in one shaft	The design does not involve stairs and lifts in the same shaft.	The building design complies

BCA Clause	Title	Assessment and Comment	Status
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. • Emergency generators. • Boilers. • batteries	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. Electrical conductors located within a building that supply- (i) a substation located within a building which supplies a main switchboard covered by C2.13(b); or (ii) a main switchboard covered by C2.13(b), must have classifications required by this clause and enclosed or otherwise protected by 120/120/120 FRL construction. Electrical conductors located within the building and supply the main switchboard are required be designed to comply with this clause. 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
C2.14	Public corridors in Class 2 and 3 buildings	Low rise tower levels 5 to 16 and high rise tower levels 5 to 32 contain public corridors greater than 40m in length (up to 46m and 53m respectively).The public corridors are not proposed to be divided with smoke-proof construction at an interval less than 40m in accordance with Clause 2 of Specification C2.5. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution

3.3.4 Protection of openings (Part C3)

BCA Clause	Title	Assessment and Comment	Status
NSW C3.2	Protection of openings in external walls	The building does not contain any openings exposed to a fire-source feature required to be protected.	N/A
C3.3	Separation of external walls and associated openings in different fire compartments	The lower ground retail potion is proposed to be fire separated from the remainder of the carpark storey by a fire wall to form separate fire compartments. Separation of external walls and associated openings in different fire compartments are to be designed in accordance with this clause. This will require certain external walls to have a fire rating and glazing protected by internal sprinklers in accordance with this clause.	The building is capable of complying
C3.4	Acceptable method of protection	Not applicable.	N/A
C3.5	Doorways in fire walls	Proposed doorways within firewalls are required to be protected in accordance with clause. Doors are to be self closing fire doors as required by this clause.	The building is capable of complying
C3.6	Sliding fire	If a sliding fire door is proposed in the fire wall it is required to	The building

BCA Clause	Title	Assessment and Comment	Status
	doors	comply with the requirements of this clause.	is capable of complying
C3.7	Protection of doorways in horizontal exits.	No horizontal exits are proposed.	N/A
C3.8	Openings in fire isolated exits	Doorways in fire-isolated exits are required to be protected in accordance with the requirements of this clause.	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 connection of the east tower fire stairs to the podium fire stairs on Level 4 is required to be by fire isolated passageway. Access to service risers or rooms from within the fire isolated passageway is not permitted.	The building is capable of complying - Minor design change proposed
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
NSW C3.11	Bounding construction	The following doors are required to be -/60/30 self closing fire doors: (i) Entry doors to residential units opening onto public corridors. (ii) A door from a non-unit/apartment room opening onto a residential public corridor. Other openings in internal walls required to have an FRL are required to be protected so that they do not reduce the fire resistance of the wall. Levels 29 and 30 special penthouse units contain proposed glazed entry doors that do not comply with the requirements of this clause. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	The building is capable of complying Alternative solution
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 building is capable of complying
C3.15	Openings for service installations	Service penetrations through fire-resisting construction are required to be protected.	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 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

3.4 Access & Egress (BCA Section D)

3.4.1 Provision for escape (Part D1)

BCA Clause	Title	Assessment and Comment	Status
D1.1	Application of part	The provisions of Part D1 apply.	Note
NSW D1.2	Number of exits required	Two complying exits are required from each storey. Ground floor and Lower Ground retail tenancies have been assessed as having only one exit. Justification of single exit is to be assessed by performance justification against the relevant performance requirements of the BCA. The storeys created by the platform floors being platform C under platform D; and platform B under Platform C, are storeys that contain only one exit each. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	 Alternative solution Alternative solution
D1.3	When fire-isolated exits are required	The following stairs are required to be fire-isolated: Stairs in low rise tower/podium - Grid C/14 level 16 - Grid C/17 level 16 - Grid C'/13 levels 15 to 5 - Grid C'/18 levels 15 to 5 - Grid C''/14 levels 4 to ground - Grid C''/20 levels 4 to ground Stairs in high rise tower/podium - Grid K/11 levels 34 to 5 - Grid K/20 levels 34 to 5 - Grid K/11 levels 4 to ground – (2 stairs, each stair) - Grid K/20 levels 4 to ground – (2 stairs, each stair) The connection of the east tower fire stairs to the podium fire stairs on Level 4 is required to be by fire isolated passageway. Access to service risers or rooms from within the fire isolated passageway is not permitted.	The building is capable of complying The building is capable of complying - Minor design change

BCA Clause	Title	Assessment and Comment	Status
D1.4	Exit travel distances	The east tower levels 5 to 28 contains units entry doors (Grid K'/11) that are 7 m from a point from which travel in different directions is available. This is to be assessed by performance justification against the relevant performance requirements of the BCA. The following areas exceed 20m from a point from which travel in different directions to 2 exits is available. (i) East tower residence garden level 5 – 31m (ii) West tower residence garden level 5 – 32.5m (iii) Two retail tenancies on level 1(Grid K/21 & Grid K/11) – 22 – 20 m on an open floor plan (iv) Level 4 west tower apartment pool area and adjoining rooms – 50 m Items (i) and (ii) are to be assessed by performance justification against the relevant performance requirements of the BCA. Items (iii) & (iv) are to be addressed by minor design change. The following areas exceed 40m to an available exit. (i) East tower residence garden level 5 – 54m (ii) West tower residence level 5 – 60m (iii) Level 4 West tower pool area and adjoining rooms – 50 m (iv) Fitness commercial level 3 (Grid D/10) – 44m Items (i), (ii) & (iii) are to be assessed by performance justification against the relevant performance requirements of the BCA. Items (iv) are proposed to be addressed by minor design change.	Alternative solution Alternative solution & minor design change Alternative solution & minor design change
D1.5	Distance between alternative exits	The distance between alternative exits in the East tower residence gym Level 4 is 72 m measured around the eastern side of the core. This is to be assessed by performance justification against the relevant performance requirements of the BCA. The distance between alternative exits from the West tower pool area will be in the order of 95 m when the design change is made to address the distance to a point of choice identified in D1.4 above. The adjoining fire isolated exits on Level 4 have been assessed as one exit for the purpose of application of this clause.	Alternative solution Alternative solution Note
NSW D1.6	Dimensions of exits and paths of travel to exits	Occupant numbers have been determined in accordance with D1.13 and with the assumptions as provided in the Appendix 3. The exit widths provided are as follows: (i) Lower ground floor (supermarket) – Aggregate egress width required 5m, available egress complies. (ii) Ground floor – Aggregate egress width required 3.5m, available egress width 17.5m. (iii) Level 1 – Aggregate egress width required 7.5m, available egress width 7.2m. (iv) Level 2 – Aggregate egress width required 12.5m, available egress width 18m (refer to D1.10). (v) Level 3 – Aggregate egress width required 6m, available egress width 7.2m. (vi) Level 4 – Aggregate egress width required 6m, available	Alternative solution

BCA Clause	Title	Assessment and Comment	Status
		egress width 7.2m. Non-compliances to be assessed by performance justification against the relevant performance requirements of the BCA.	
D1.7	Travel via fire-isolated exits	Level 4 has direct connection into a fire-isolated exit and the storey contains more than one sole occupancy unit. This to be assessed by performance justification against the relevant performance requirements of the BCA. On Level 3, access to all fire isolated exits is required from common areas in order to comply with this clause and the egress width provisions. Discharge of exits complies.	Alternative solution Minor design change required
D1.8	External stairs or ramps in lieu of fire-isolated exits	No external open stairs complying with this clause are proposed to replace fire-isolated stairs.	N/A
D1.9	Travel via non-fire-isolated stairways or ramps	The stair connecting lower ground supermarket area and ground may be a non-fire-isolated stairway. Travel via this stair complies with the requirements of this clause.	The building design complies
NSW D1.10	Discharge from exits	Exits are not to be blocked at the point of discharge. The discharge of the fire-isolated stairs is to be 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. Required exits leading to open space must have a path of travel to the road of the minimum unobstructed width of the required exit. Level 2 contains a required exit providing 10.8m egress width leading to external landscaped platforms. The path narrows to 1.2m on Platform B. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	The building is capable of complying Alternative solution
D1.11	Horizontal exits	No horizontal exits are proposed.	N/A
D1.12	Non-required stairways ramps and escalators	The non-required stair in connecting the level 3 fitness commercial area to the level 4 swimming pool area complies with the requirements of this clause. The escalator is contained within the atrium connecting lower ground level to level 3 and therefore permitted to connect any number of storeys.	The building design complies
D1.13	Number of persons accommodated	Populations have been assessed in accordance with this clause and with the assumptions as provided in the Appendix 3.	Note
D1.16	Plant rooms and lift motor	Ladders may be used in lieu of stairways in some circumstances from plant rooms and lift motor rooms subject to compliance with	The building is capable of

BCA Clause	Title	Assessment and Comment	Status
	rooms: concessions	AS1657 & 1735.2 as relevant.	complying
D1.17	Access to lift pits	Access to lift pits is required to be designed in accordance with this clause.	The building is capable of complying

3.4.2 Construction of exits (Part D2)

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 stair connection between lower ground supermarket area and ground is required to comply with the requirements of this clause.	The building is capable of complying
D2.4	Separation of rising and descending stair flights	Separation of any construction common to rising & descending stairs in fire-isolated stairways is to be in accordance with the requirements of this clause.	The building is capable of complying
D2.5	Open access ramps and balconies	Not applicable.	N/A
D2.6	Smoke lobbies	Not applicable.	N/A
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 & communications 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 be penetrated by any service not permitted by this clause.	The building is capable of complying
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	No pedestrian ramps or fire-isolated ramps are proposed.	N/A
D2.11	Fire isolated passageways	No fire-isolated passageways are proposed.	N/A

BCA Clause	Title	Assessment and Comment	Status
D2.12	Roof as open space	The external platforms D , C & B are defined as roof as open space and are required to be comply with the requirements of this clause. The platforms contain openings within 3m of the path of travel of persons using the exit which does not comply. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
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 with this clause.	The building is capable of complying
NSW D2.16	Balustrades and other barriers	Balustrades are to be designed to comply with this clause. Note: Openable windows require a balustrade or barrier 865mm above the floor beneath the window.	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. Any sliding or power-operated doors are required to comply with requirements of this clause.	The building is capable of complying
D2.20	Swinging doors	The exit doors are required to swing in the direction of egress as required. Exit doors to Ground floor retail tenancies less than 200m^2 and containing only one exit, as performance justified under BCA Clause D1.2, may swing inwards provided it is fitted with hold open device.	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
D2.101	Doors in paths of travel in POPES	Not applicable	N/A

3.4.3 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 to the following: - (i) Class 5 & 6 retail, to and within- (a) the entrance floor; and (b) any other floor to which vertical access by way of a passenger lift is provided. (ii) Class 9b gymnasium and conference rooms, to and within all areas normally used by the occupants. Access is required from: (i) the allotment boundary at the main points of entry; and (ii) any accessible carparking space on the allotment; and (iii) any adjacent and associated accessible building on the allotment; and (iv) through the principal public entrance.	The building is capable of complying
D3.3	Parts of building to be accessible	Where parts of the building are required to be accessible in D3.2, access must be provided to: (i) accessible sanitary compartment; and (ii) area normally used by occupants, excluding any plant room, commercial kitchen, cleaners store room, maintenance access way, rigging loft or the like. Access is required to comply with AS1428.1.	The building is capable of complying
D3.4	Concessions	It is not necessary to provide access for people with disabilities to more than 30% of the public space in a cafe, bar or restaurant.	Note
D3.5	Car parking	Carparking spaces for people with disabilities is required to be provided in accordance with the requirements of this clause. The carpark spaces for people with disabilities are 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— (i) each— (a) sanitary facility; and (b) accessible space with a hearing augmentation system; and (ii) where an entrance is not accessible, identify each accessible entrance.	The building is capable of complying
D3.7	Hearing augmentation	An inbuilt amplification system, other than one used for emergency warning purposes only, is not proposed.	N/A
D3.8	Tactile indicators	Tactile indicators are required for public stairs and ramps. In the absence of a suitable barrier, tactile indicators are also required: (i) to identify an overhead obstruction less than 2 m above floor level, other than a doorway; and (ii) a path of travel meeting a vehicular way adjacent to a principle public entrance to a building, if there is no kerb or kerb ramp at that point. Tactile ground surface indicators must be Type B indicators in accordance with AS1428.4.	The building is capable of complying

3.5 Services & Equipment (BCA Section E)

3.5.1 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. The location of the booster assembly within sight of the main entrance is to be performance justified as the building contains multiple entrances located throughout building. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	The building is capable of complying Alternative Solution
E1.4	Fire hose reels	The building is required to be served by a hose reel system complying with this clause.	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 building is capable of complying
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 required to be provided. A fire control room is located on the ground floor adjoining the east tower entry lobby. The fire control room is required to be accessible from the front entrance of the building. Since the building contains multiple entrances on the ground floor, and access from the front entrance of the east tower lobby is via a mail room, the location of the fire control room is to be performance justified. The fire control room is not accessible via a fire isolated passageway leading to a public place. The corridor connecting the fire control room to the outside of the building is to be redesigned as a fire isolated passageway. The construction, protection of openings, size and contents, ventilation and power supply, signage, lighting, and acoustics are to comply with Specification E1.8.	 Alternative solution The building is capable of complying - minor design change 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. In a building under construction, after the building has reached an effective height of 12 m— (i) the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
		roof or the floor structure above, except the 2 uppermost storeys; and (ii) any required booster connections must be installed.	
E1.10	Provision for special hazards	There are no special hazards.	N/A

3.5.2 Smoke hazard management (Part E2)

BCA Clause	Title	Assessment and Comment	Status
NSW E2.2	General Requirements	The following smoke hazard management is required. (i) Pressurisation of fire-isolated exits in accordance with AS/NZS 1668.1; and (ii) Automatic smoke detection and alarm system complying with Specification E2.2a for the Class 2 residential units. (iii) Zone smoke control system in accordance with AS/NZS 1668.1 for the Class 5 / 6 commercial & 9b pool & gym. (iv) The Class 6 retail part and Class 9b pool & gym a are contained within a fire compartment more than 2000m^2, requiring the fire compartment to be provided with an automatic smoke exhaust system complying with Specification E2.2b.	
		Stair pressurisation and smoke detection and alarm systems are to be provided to comply with the BCA.	The building is capable of complying
		Zone smoke control and smoke exhaust is to be performance justified.	Alternative solution
		The Class 9b parts must be provided with automatic shutdown of any air-handling system (other than non-ducted individual room units with a capacity not more than 1000l/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 11 of AS/NZS 1668.1) which does not form part of the smoke hazard management system, on activation of- (i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5.	The building is capable of complying
		An air handing system which does not form part of a smoke hazard management system and which recycles air from one fire compartment to another fire compartment or operates in a manner that unduly contributes to the spread of smoke from one fire compartment to another fire compartment must be designed in accordance with clause E2.2(b).	The building is capable of complying
		Miscellaneous air-handling systems covered by sections 5 & 11 AS/NZS 1668.1 serving more than one fire compartment (other	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
		than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Spec E2.2a to operate AS/NZS 1668.1 systems that are provided for automatic air pressurisation for fire isolated exits.	The building is capable of complying
E2.3	Provision for special hazards	Not applicable.	N/A

3.5.3 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.	The building design 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
E3.8	Aged care buildings	Not applicable.	N/A

3.5.4 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 is to be provided in accordance with this clause.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
E4.8	Design and operation of exit signs	Exit signs are to be designed in accordance with AS/NZS 2293.1 and in accordance with this clause.	The building is capable of complying
E4.9	Sound systems and intercom systems for emergency purposes	A sound system and intercom system for emergency purposes complying with AS1670.4 is required to be installed in the building.	The building is capable of complying

3.6 Health & Amenity (BCA Section F)

3.6.1 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- (i) unhealthy or dangerous conditions, or loss of amenity for occupants; and (ii) undue dampness or deterioration of building elements.	The building is capable of complying
F1.1	Stormwater drainage	Stormwater drainage is required to comply with AS/NZS 3500.3.	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 proofing is required in accordance with 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	The floor of each bathroom and laundry in a Class 2 residential unit and Class 3 serviced apartment located at any level above another residential unit or public space must be graded to permit drainage to a floor space.	The building is capable of complying
F1.12	Sub floor ventilation	Subfloor space is not proposed.	N/A
F1.13	Glazed Assemblies	Glazed assemblies are to be designed/selected to comply with this clause.	The building is capable of complying

3.6.2 Sanitary and other facilities (Part F2)

BCA Clause	Title	Assessment and Comment	Status
F2.1	Facilities in residential buildings	Each Class 2 residential unit (sole-occupancy unit) requires: (i) A kitchen sink and facilities for the preparation and cooking of food; and (ii) A bath or shower; and (iii) Laundry facilities, provided either- (a) in each sole-occupancy unit- • clothes washing facilities, comprising at least one washtub and space for a washing machine; and • clothes drying facilities comprising clothes line or hoist with not less than 7.5m of line or space for one heat-operated drying cabinet or appliance in the same room as the clothes washing facility; or (b) a separate laundry for each 4 sole-occupancy units, or part thereof- • clothes washing facilities comprising at least one washtub and one washing machine; and • clothes drying facilities comprising clothes line or hoist with not less than 7.5m per sole-occupancy unit or one heat-operated drying cabinet or appliance for each 4 sole-occupancy units. A closet pan and washbasin in a compartment or room at or near ground level and accessible to employees is required without entering a sole-occupancy unit. Sanitary facilities are available on the ground floor.	The building is capable of complying Complies
F2.3	Facilities in Class 3 to 9 buildings	Sanitary facilities are required to be provided for the determined staff and patron numbers. The following comments are provided in this regard: • The supermarket male patron facilities are deficient by 1 urinal • The L1 restaurants and Lower Ground floor restaurants will require their own facilities if additional common facilities are not provided. • The level 2 food court patron facilities are deficient. • Additional staff facilities are required for level 3 & 4 commercial/retail. • The gym requires female patron facilities • The number of showers provided in the gym is to be justified. Accessible showers are also required. Separate faculties are required for each sex. The common facilities in the ground floor residential foyer are not permitted. Shower facilities are required the Level 3 Gym.	The building is capable of complying - minor design changes required
F2.4	Facilities for people with disabilities	Access to sanitary facilities are to be 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 current accessible facility designs do not comply with AS1428.1. A accessible facility is required fro the supermarket.	The building is capable of complying – minor design change required
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
F2.8	Waste	Not applicable.	N/A

BCA Clause	Title	Assessment and Comment	Status
	management		

3.6.3 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: (i) Class 2 residential unit – kitchen, laundry, or the like – 2.1m. (ii) Class 2 residential unit – corridor, passageway or the like – 2.1m. (iii) Class 2 residential unit – habitable room excluding kitchen – 2.4m. (iv) Class 5 & 6 retail – 2.4m generally and 2.1m in corridors and passageways. (v) Class 9b gymnasium – 2.7m. (vi) Bathroom, sanitary compartment & store rooms – 2.1m (vii) Above a stairway, ramp, landing or the like – 2m measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like.	The building is capable of complying

3.6.4 Light & Ventilation (Part F4)

BCA Clause	Title	Assessment and Comment	Status
F4.1	Provision of natural light	Natural lighting is required to all habitable rooms in the Class 2 residential units.	The building is capable of complying
F4.2	Method and extent of natural lighting	Natural lighting must be provided in accordance with this clause.	The building is capable of complying
F4.3	Natural lighting borrowed from an adjoining room	Natural lighting borrowed from an adjoining room must comply with this clause.	The building is capable of complying
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	Where natural ventilation is proposed, it is to comply with this provision.	The building is capable of complying
F4.7	Ventilation borrowed from an adjoining room	Natural ventilation borrowed from an adjoining room must comply with this clause.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
F4.8	Restriction on the position of water closets and urinals	The level 2 food court sanitary facilities (Grid K,L/20,21) are not permitted to open directly into a public dining area unless the doorway is screened from view (refer to F4.9 below). The level 4 gymnasium staff sanitary facilities are not permitted to open directly into a room used for public assembly unless the doorway is screened from view (refer to F4.9 below).	The building is capable of complying - minor design change required
F4.9	Airlocks	A room containing a closet pan or urinal as prohibited under F4.8 from opening directly to another room- (i) in the residential units, the room containing the closet plan must be provided with mechanical exhaust ventilation; and (ii) in the food court, kitchen and gymnasium facilities- (a) access must be by an airlock, hallway or other room with a floor area of not less than 1.1m^2 and fitted with self-closing doors at all access doorways; or (b) the room containing the closet plan or urinal must be provided with mechanical exhaust ventilation and the doorway to the room adequately screened from view.	Note
F4.11	Car park	Not applicable.	N/A
F4.12	Kitchen local exhaust	Any proposed retail commercial kitchens must be provided with a kitchen exhaust hood complying with AS/NZS 1668.1 and AS 1668.2 where- (i) any cooking apparatus has- (a) total maximum electrical power input exceeding 8 kW; or (b) a total gas power input exceeding 29 MJ/h; or (ii) the total maximum power input to more than one apparatus exceeds- (a) 0.5 kW electrical power; or (b) 1.8 MJ gas, per m² of floor area of the room or enclosure.	The building is capable of complying

3.6.5 Sound Transmission & Insulation (Part F5)

BCA Clause	Title	Assessment and Comment	Status
F5.1	Application of Part	The following provisions apply to the Class 2 residential units an.	Note.
F5.2	Determination of airborne sound insulation ratings	The determination of airborne sound insulation ratings is required to be in accordance with this clause.	The building is capable of complying
F5.3	Determination of impact sound insulation ratings	A floor in a building required to have an impact sound insulation rating must comply with this provision. A wall in a building required to have an impact sound insulation rating must be of discontinuous construction.	The building is capable of complying
F5.4	Sound insulation rating of floors	A floor must have sound insulation & impact rating in accordance with this clause.	The building is capable of complying
F5.5	Sound insulation rating of walls	Walls & doors are required to have sound insulation ratings and be constructed in accordance with this provision.	The building is capable of

BCA Clause	Title	Assessment and Comment	Status
			complying
F5.6	Sound insulation rating of services	Services passing through sole-occupancy units are required to comply with this provision.	The building is capable of complying
F5.7	Sound isolation of pumps	A flexible coupling must be used at the point of connection between the service pipes in a building and any circulating or other pump.	The building is capable of complying

3.7 Ancillary Provisions (Section G)

3.7.1 Minor Structure and Components (Part G1)

BCA Clause	Title	Assessment and Comment	Status
G1.2	Refrigerated chambers, strongrooms & vaults	Any refrigerated chambers, strong rooms or vaults which are of sufficient size for a person to enter is required to comply with the requirements of this clause.	The building is capable of complying
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

3.7.2 Heating appliances, fire places, chimneys and flues (Part G2)

BCA Clause	Title	Assessment and Comment	Status
G2.2	Installation of appliances	The installation of the following equipment is required to comply with the relevant Australian Standard: (i) Domestic Solid fuel burning appliances – AS/NZS 2918 (ii) Pressure equipment – AS/NZS 1200	The building is capable of complying
G2.3	Open Fire places	No open fire places are proposed.	N/A
G2.4	Incinerator rooms	No incinerator rooms are proposed.	N/A

3.7.3 Atrium construction (Part G3)

BCA Clause	Title	Assessment and Comment	Status
G3.1	Atriums affected by this part	An atrium is contained throughout the podium levels connecting five storeys. Part G3 is applicable.	Note
G3.2	Dimensions of atrium well	The atrium well on ground floor level does not contain width throughout the well that is able to contain a cylinder having a horizontal diameter of not less than 6m. 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
G3.3	Separation of atrium by bounding walls	The atrium is not proposed to be separated from the remainder of the building at each storey by bounding walls set back more than 3.5m from the perimeter of the well. This is to be assessed by performance justification against the relevant performance requirements of the BCA.	Alternative solution
G3.6	Separation of roof	The atrium roof is required to be protected by a sprinkler system complying with Specification E1.5.	The building is capable of complying
G3.7	Means of egress	All areas within the atrium must have access to at least 2 exits.	Complies
G3.8	Fire and smoke control systems	Sprinkler systems, smoke control, fire detection and alarm systems, and sound systems and intercom system for emergency purposes must be installed in compliance with Specification G3.8.	Refer below

3.7.4 Fire and smoke control systems in buildings containing an atrium (Specification G3.8)

BCA Clause	Title	Assessment and Comment	Status
2.1	Automatic fire sprinkler system – general requirement	A sprinkler system complying with Specification E1.5 must be installed in the building containing the atrium.	The building is capable of complying
2.2	Automatic fire sprinkler system – roof protection	The roof of the atrium is to be protected in accordance with the requirements of this clause.	The building is capable of complying
2.3	Automatic fire sprinkler system – Atrium floor protection	The floor of the atrium is to be protected in accordance with the requirements of this clause.	The building is capable of complying
2.4	Automatic fire sprinkler system – Sprinkler systems to glazed walls	The separation of the atrium from the remainder of the building is to be performance justified against the performance requirements of the BCA.	N/A
3.1	Smoke control system – general requirements	Mechanical air-handling systems in a building containing an atrium must comply with AS/NZS 1668.1.	The building is capable of complying
3.2	Smoke control system – Operation of atrium mechanical air-handling systems	Mechanical air-handling systems serving an atrium must be designed to operate during a fire in accordance with the requirements of this clause.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
3.3	Smoke control system – Activation of smoke control system	The activation of and all controls for a smoke control system are to be in accordance with the requirements of this clause.	The building is capable of complying
3.4	Smoke control system – Smoke exhaust system	A smoke exhaust system serving an atrium is to be designed in accordance with the requirements of this clause.	The building is capable of complying
4.1	Fire detection and alarm system – general requirements	Automatic fire detection and alarm systems in a building containing an atrium must comply with AS 1670.1.	The building is capable of complying
4.2	Fire detection and alarm system – smoke detection system	Smoke detection within the atrium is to be provided in accordance with the requirements of this clause.	The building is capable of complying
4.3	Fire detection and alarm system – smoke detection in spaces separated from the atrium by bounding walls	Smoke detection systems must be located at all return and relief openings associated with the building air-handling system in accordance with the requirements of this clause.	The building is capable of complying
4.4	Fire detection and alarm system – alarm systems	Alarms systems in accordance with the provisions of this clause are to be provided where required.	The building is capable of complying
5	Sound systems and Intercom systems for emergency purposes	The building containing an atrium must be provided with a sound system and intercom system for emergency purposes in accordance with the requirements of this clause.	The building is capable of complying
6	Standby power system	A standby power system is required in accordance with provisions of this clause.	The building is capable of complying
7	System for excluding smoke from fire-isolated exits	Required fire-isolated exits in a building containing an atrium are to be provide with stair pressursation.	The building is capable of complying

3.8 Energy Efficiency – NSW Variation (Section J(A) – Class 2 & 4 buildings)

The provisions of this Section J(A) are designed to complement the requirements of BASIX which are implemented via the planning approval as applicable. BASIX is a web-based planning tool design to assess the potential performance of certain residential buildings against a range of sustainability indices.

3.8.1 Building Fabric (NSW Part J(A)1)

BCA Clause	Title	Assessment and Comment	Status
NSW J(A)1.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to thermal insulation in a Class 2 building where a development consent or environmental planning instrument requires it.	Note.
NSW J(A)1.2	Thermal construction	Thermal insulation is required to be installed in accordance with AS/NZS 4859.1 and the general requirements the J1.2 (national provisions) where a development consent or environmental planning instrument requires it. In addition, a thermal break is required to be provided between external cladding and framing in accordance with J1.3(d) and J1.5(e) as appropriate (national provision).	The proposed building is capable of complying

3.8.2 Building Sealing (NSW Part J(A)2)

BCA Clause	Title	Assessment and Comment	Status
NSW J(A)2.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to a Class 2 building but exclude the following: (i) building in climate zones 2 and 5 where the only means of air-conditioning is by using an evaporative cooler; and (ii) a building ventilation opening that is necessary for the safe (iii) operation of a gas appliance. (iv) parts of those buildings that cannot be fully enclosed	Note.
NSW J(A)2.2	Compliance with BCA provisions	The following national provisions apply this clause; (i) J3.2 Chimneys and flues; and (ii) J3.3 Roof Lights; and (iii) J3.4 External Doors and windows; and (iv) J3.5 Exhaust fans; and (v) J3.6 Construction of roofs, walls and floors; and (vi) J3.7 Evaporative coolers.	The proposed building is capable of complying

3.8.3 Air-Conditioning and Ventilating Systems (NSW Part J(A)3)

BCA Clause	Title	Assessment and Comment	Status
NSW J(A)3.1	Air-Conditioning and Ventilating systems - Application of Part	The Deemed-to-Satisfy Provisions of this Part apply to a Class 2 building .	Note.
NSW J(A)3.2	Compliance with BCA provisions	The following national provisions apply: (i) J5.2 Air conditioning and ventilating systems; and (ii) J5.3 Time switch; and (iii) J5.4 Heating and cooling systems; and (iv) J5.5 Ancillary exhaust systems.	The proposed building is capable of complying

3.8.4 Hot Water Supply (NSW Part J(A)4)

BCA Clause	Title	Assessment and Comment	Status
NSW J(A)4.1	Hot water supply – Application of part	The Deemed-to-Satisfy Provisions of this Part apply to a Class 2 building .	Note
NSW J(A)4.2	Compliance with BCA provisions	The following national provisions apply to the requirements of this clause; (i) J7.2 Hot water supply	The proposed building is capable of complying

3.8.5 Access for Maintenance (NSW Part J(A)5)

BCA Clause	Title	Assessment and Comment	Status
NSW J(A)5.1	Access for Maintenance – Application of Part	The Deemed-to-Satisfy provisions of this Part apply to a Class 2 building except within a sole-occupancy unit.	Note
NSW J(A)5.2	Access for maintenance	Access for maintenance must be provided to— (i) all services and their components, including— (a) time switches and motion detectors; and (b) room temperature thermostats; and (c) plant thermostats such as on boilers or refrigeration units; and (d) outside air dampers; and (e) reflectors, lenses and diffusers of light fittings; and (f) heat transfer equipment; and (ii) adjustable or motorised shading devices.	The proposed building is capable of complying

3.9 Energy Efficiency – NSW Variation (Section J(B) – Class 3 and 5 to 9 buildings)

The building will be located within the Climate Zone 5.

3.9.1 Building Fabric (Part J1)

BCA Clause	Title	Assessment and Comment	Status
J1.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to a building elements forming the envelope of a class 3 – 9 building other than- (i) a class 7, 8 & 9b building that does not have a conditioned space; or (ii) an atrium or solarium that is not a conditioned space and is separated from the remainder of the building by an envelope.	Note

BCA Clause	Title	Assessment and Comment	Status
J1.2	Thermal Construction General	Insulation must comply with AS/NZS 4859.1 and the requirements of this condition. Roof, ceiling, wall and floor materials and associated surfaces are deemed to have the thermal properties as listed in Specification J1.2.	The building is capable of complying
J1.3	Roof and Ceiling Construction	The roof or ceiling forming part of the envelope must achieve a Total R-Value as specified in Tabled J1.3 for the direction of heat flow. Note: An envelope is defined a part of the building's fabric that separates a *conditioned space* or a habitable room from the exterior of the building, or a non-conditioned space including rooftop plant, lift machines, carparking or the like, other that spaces where conditioned air is being exhausted or relieved such as a internal corridor, cleaners room, store or exhaust riser.	The building is capable of complying
J1.4	Roof Lights	The atrium roof contain a roof light. The rooflight is to be designed to comply with this clause	The building is capable of complying
J1.5	Walls	The external wall which is part of the envelope is required to satisfy one of the options in Table J1.5a or J1.5b. The requirements of this provision do not apply to opaque non-glazed openings; glazing; or a storey complying with J1.5(b). J1.5 (b), (c) & (d) do not apply. J1.5 (e) – Thermal breaks in accordance with this clause are required to be provided to certain metal frame walls mentioned in this clause.	The building is capable of complying
NSW J1.6	Floors	Suspended floors for Class 5 to 9 buildings forming part of an envelope with an enclosed perimeter are required to achieve a Total R-Value specified in Table J1.6. Where in-slab heating is installed additional details must be provided as outlined in this clause.	The building is capable of complying

3.9.2 External Glazing (Part J2)

BCA Clause	Title	Assessment and Comment	Status
J2.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to a building elements forming the *envelope* of a class 3 – 9 building other than- (i) a class 7, 8 & 9b building that does not have a conditioned space; or (ii) an atrium or solarium that is not a conditioned space and is separated from the remainder of the building by an *envelope.*	Note

BCA Clause	Title	Assessment and Comment	Status
J2.2	Application of glazing provisions	Glazing must be design in accordance with: (i) J2.3 or J2.4 for a Class 6 portion of the building with a total floor area of not more than 500m²; and (ii) J2.4 for the Class 6 portion of the buildings with a total floor area more than 500m², and any Class 5, 7, 8, 9a and 9b portion of the building.	The building is capable of complying
J2.3	Glazing – Method 1	A detailed glazing calculator or other method as appropriate demonstrating compliance is required by a suitably qualified person.	The building is capable of complying
J2.4	Glazing – Method 2	A detailed glazing calculator or other method as appropriate demonstrating compliance is required by a suitably qualified person.	The building is capable of complying
J2.5	Shading	Required shading is required to be designed in accordance with the requirements of this condition.	Note

3.9.3 Building Sealing (Part J3)

BCA Clause	Title	Assessment and Comment	Status
J3.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the Class 3, and 5 to 9 components of the development except a: (i) a building in climate zones 1,2, 3 & 5 where the only means of air-conditioning is by using an evaporative cooler; or (ii) permanent building ventilation opening, in a space where a gas appliance is located, that is necessary for the safe operation of the gas appliance; and (iii) Class 6, 7, 8 and 9b building that does not have a conditioned space; or (iv) a building or space where the mechanical ventilation system required by Part F4 provides sufficient pressurization to prevent infiltration; or (v) an atrium or solarium that is not a conditioning space and is separated from the remainder of the building by an envelope. (vi) parts of the building that cannot be fully enclosed.	Note
J3.2	Chimneys and flues	Where provided, must be provided with a damper or flap to seal the chimney of flue.	The building is capable of complying
J3.3	Roof Light	Roof lights are required to comply with the requirements of this clause.	The building is capable of complying
J3.4	External Windows and doors	External windows and doors are required to be sealed to restrict air infiltration. The requirements of this provision do not apply where external windows and doors are designed in accordance with AS2047, to fire doors, louvered windows or doors.	The building is capable of complying
J3.5	Exhaust Fans	A miscellaneous exhaust fan must be fitted with a sealing device such as a self-closing damper or the like when serving a; (i) conditioned space; or (ii) a habitable room in climate zone 4, 6, 7 & 8.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
J3.6	Construction of roofs, walls and floors	Roofs, external walls, external floors and any openings are required to be designed and constructed to minimise air leakage.	The building is capable of complying
J3.7	Evaporative Coolers	Evaporative coolers are required to be fitted with a self-closing dampers or the like when serving heated space; or habitable room or other public area in climate zones 4, 6, 7 and 8.	The building is capable of complying

3.9.4 Air Conditioning and Ventilation Systems (Part J5)

BCA Clause	Title	Assessment and Comment	Status
J5.2	Air Conditioning and Ventilating system	The mechanical design is required to be designed in accordance with the requirements of this provision.	The building is capable of complying
J5.3	Time Switch	The mechanical design is required to be designed in accordance with the requirements of this provision.	The building is capable of complying
J5.4	Heating and chilling systems	The mechanical design is required to be designed in accordance with the requirements of this provision.	The building is capable of complying
J5.5	Miscellaneous exhaust system	The mechanical design is required to be designed in accordance with the requirements of this provision.	The building is capable of complying

3.9.5 Artificial Lighting and Power (Part J6)

BCA Clause	Title	Assessment and Comment	Status
J6.1	Application of part	The Deemed-to-Satisfy Provisions of this Part apply to the Class 3, and 5 to 9 components of the development.	Note
J6.2	Internal Artificial lighting	The requirements of this provision relate to the illumination load and power of artificial lighting. Artificial lighting is to be designed in accordance with this provision	The building is capable of complying
J6.3	Interior artificial lighting power control	Artificial lighting switches are to be designed and provided in accordance with this provision. Artificial lighting must be controlled in accordance with this provision. Artificial lighting adjacent to windows in a storey greater than 250m² (Class 5, 6 or 8) are required to be switched separately from artificial lighting not adjacent to windows. Some concessions are available under Subclause (f) & (g).	The building is capable of complying
J6.4	Interior decorative and display lighting	Interior decorative and display lighting, such as for foyer mural or art display, must be controlled in accordance with this clause.	The building is capable of complying
J6.5	Artificial lighting around the perimeter of a building	Artificial lighting around the perimeter of a building must be designed to comply with this clause.	The building is capable of complying

BCA Clause	Title	Assessment and Comment	Status
J6.6	Boiling water and chilled water storage units	Power supply to a boiling water or chilled water storage unit is required to be controlled by a time switch in accordance with Spec J6.	The building is capable of complying

3.9.6 Hot Water Supply (Part J7)

BCA Clause	Title	Assessment and Comment	Status
J7.2	Hot Water Supply	A hot water system for preparation of food and sanitary purposes (excluding solar systems in climate areas 1, 2 & 3) are required to be designed and installed in accordance with Section 8 of AS/NZS 3500.4.	The building is capable of complying

3.9.7 Access for Maintenance (NSW Part J8.2)

BCA Clause	Title	Assessment and Comment	Status
NSW J8.2	Access for maintenance	Access for maintenance must be provided to— (i) all *services* and their components, including— (a) time switches and motion detectors; and (b) room temperature thermostats; and (c) plant thermostats such as on boilers or refrigeration units; and (d) outside air dampers; and (e) reflectors, lenses and diffusers of light fittings; and (f) heat transfer equipment; and (ii) adjustable or motorised shading devices.	The building is capable of complying

4.0 FIRE SAFETY SCHEDULE

The following table is a list of the likely 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 D2.21
Automatic fire detection and alarm system	BCA E2.2, Spec E2.2, BCA G3.8 & AS1670.1-2004, AS3786-1993
Automatic fire suppression system (sprinkler)	BCA E1.5, Spec E1.5 & AS2118.1-1999, AS2118.4-1995, AS2118.6-1995
Emergency lighting	BCA E4.2, E4.4 & AS/NZS2293.1-2005
Emergency lifts	BCA E3.4 & AS1735.2-2001
Sound systems and intercom systems for emergency purposes	BCA E4.9, BCA G3.8 & AS1670.4-2004,
Exit signs	BCA E4.5, E4.6, E4.8 & AS/NZS2293.1-2005
Fire control centres and rooms	BCA E1.8, Spec E1.8 & Alternative Solution TBA
Fire dampers	BCA C3.12, C3.15 & AS/NZS1668.1-1998, AS1668.2-1991, AS1682.1-1990, As1682.2-1990
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 & Alternative Solution TBA
Portable fire extinguishers	BCA E1.6 & AS2444-2001
Pressurising system	BCA E2.2, AS/NZS1668.1-1998 & Alternative Solution TBA
Smoke detectors and heat detectors	BCA E2.2, Spec 2.2a, BCA G3.8 & AS3786-1993
Smoke exhaust system	BCA E2.2, Spec E2.2b, BCA G3.8, AS/NZS1668.1-1998 & Alternative Solution TBA
Standby power systems	BCA Spec G3.8
Warning and operational signs	EPA Regulation (reg 183), BCA E3.3 (lifts), D2.23 Signs on exit doors
Zone smoke control system	BCA E2.2, AS/NZS1668.1-1998 & Alternative Solution TBA
Alternative Solution	TBA

5.0 SUMMARY OF NON-COMPLIANCE ISSUES – PROPOSED BUILDING

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
C2.2	CP1 & CP2	Fire compartment size of Lower ground to Level 4 exceeds maximum permitted by Clause C2.2	PR
C2.14	CP2 & EP2.2	Public corridors greater than 40m not to be divide with smoke-proof construction on low rise tower levels 5 to 16 and high rise tower levels 5 to 32.	PR & Clause 144
Spec C1.1 Clause 3.6	CP2	External walls and windows of level 4 – 6 exposed to atrium roof light.	PR
C3.11	CP8	Glazed entry doors to SOU's not protected on level 29 and 30.	PR
D1.2	DP4	Only single exit available from ground floor and lower ground floor retail tenancies opening to road/open space. Only single exit available from platform B & C.	PR
D1.4	DP4 & EP2.2	Extended travel distances.	PR & Clause 144
D1.5	DP4	Extended distance between alternative exits on level 4.	
D1.6	DP4 & EP2.2	Reduced required exit widths on Levels 1 & 3	PR & Clause 144
D1.7	DP5	Access to fire isolated exits on Level 3 & 4 is direct from SOU not occupying the whole floor	PR
D1.10	DP4 & EP2.2	Reduced exit widths via path through open space to a public road (level 2 via external platforms)	PR & Clause 144
D2.12	DP4	External platforms contain openings with 3m of the path of travel	PR
E1.3	EP1.3	Location of fire hydrant booster assembly to within sight of the main entrance(s) to the building (ground floor)	PR & Clause 144
E1.8	EP1.6	Location and access to fire control room	PR & Clause 144
E2.2	EP2.2	Zone smoke control and smoke exhaust	PR & Clause 144
G3.2	CP2 & EP2.2	Atrium well cross sectional dimension	PR & Clause 144
G3.3	CP2 & EP2.2	Atrium not proposed to be DTS fire separated from the remainder of the building	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 144 CONCURRENCE 0F 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.

The following minor Deemed-to-Satisfy non-compliance's can be addressed by minor design amendments:

7. The connection of the east tower fire stairs to the podium fire stairs on Level 4 is required to be by fire isolated passageway. Access to service risers or rooms from within the fire isolated passageway is not permitted. (Item 3.3.4 Clause 3.9, Item 3.4.1 Clause D1.3)

8. On Level 3, access to all fire isolated exits is required from common areas in order to comply with this clause and the egress width provisions. (Item 3.4.1 Clause D1.7)

9. Additional sanitary facilities are required. (Item 3.6.2 Clause F2.3).

10. Separate faculties are required for each sex. The common facilities in the ground floor residential foyer are not permitted. (Item 3.6.2 Clause F2.3)

11. The sanitary facilities for people with disabilities are required to be designed to As1428.1 (Item 3.6.2 Clause F2.4)

12. The level 2 food court sanitary facilities (Grid K,L/20,21) are not permitted to open directly into a public dining area unless the doorway is screened from view

    The level 4 gymnasium staff sanitary facilities are not permitted to open directly into a room used for public assembly unless the doorway is screened from view. (Item 3.6.4 Clause F4.8 & F4.9).

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 AtellersJeanNouvel

Plan Title	Drawing No	Revision	Date
Lower Ground Floor Plan	PA-A-2001	12	09/09/2009
Ground Floor Plan	PA-A-2002	12	09/09/2009
Level 1 Floor Plan	PA-A-2003	11	30/07/2009
Level 2 Floor Plan	PA-A-2004	11	30/07/2009
Level 3 Floor Plan	PA-A-2005	12	09/09/2009
Level 4 Floor Plan	PA-A-2006	12	09/09/2009
East & West Towers Level 5 Floor Plan	PA-A-2007	12	09/09/2009
East & West Towers Level 6 Floor Plan	PA-A-2008	12	09/09/2009
East & West Towers Level 7 Floor Plan	PA-A-2009	12	09/09/2009
East & West Towers Level 8 Floor Plan	PA-A-2010	12	09/09/2009
East & West Towers Level 9 Floor Plan	PA-A-2011	12	09/09/2009
East & West Towers Level 10 Floor Plan	PA-A-2012	12	09/09/2009
East & West Towers Level 11 Floor Plan	PA-A-2013	12	09/09/2009
East & West Towers Level 12 Floor Plan	PA-A-2014	12	09/09/2009
East & West Towers Level 13 Floor Plan	PA-A-2015	12	09/09/2009
East & West Towers Level 14 Floor Plan	PA-A-2016	11	30/07/2009
East & West Towers Level 15 Floor Plan	PA-A-2017	11	30/07/2009
East & West Towers Level 16 Floor Plan	PA-A-2018	11	30/07/2009
East & West Towers Level 17 Floor Plan	PA-A-2019	11	30/07/2009
East & West Towers Level 18 Floor Plan	PA-A-2020	11	30/07/2009
East & West Towers Level 19 Floor Plan	PA-A-2021	11	30/07/2009
East Tower Level 20 Floor Plan	PA-A-2022	11	30/07/2009
East Tower Level 21 Floor Plan	PA-A-2023	11	30/07/2009
East Tower Level 22 Floor Plan	PA-A-2024	11	30/07/2009
East Tower Level 23 Floor Plan	PA-A-2025	11	30/07/2009
East Tower Level 24 Floor Plan	PA-A-2026	11	30/07/2009
East Tower Level 25 Floor Plan	PA-A-2027	11	30/07/2009
East Tower Level 26 Floor Plan	PA-A-2028	11	30/07/2009

Plan Title	Drawing No	Revision	Date
East Tower Level 27 Floor Plan	PA-A-2029	11	30/07/2009
East Tower Level 28 Floor Plan	PA-A-2030	11	30/07/2009
East Tower Level 29 Floor Plan	PA-A-2031	11	30/07/2009
East Tower Level 30 Floor Plan	PA-A-2032	11	30/07/2009
East Tower Level 31 Floor Plan	PA-A-2033	11	30/07/2009
East Tower Level 32 Floor Plan	PA-A-2034	11	30/07/2009
East Tower Level 33 Floor Plan	PA-A-2035	11	30/07/2009
East Tower Level 34 Floor Plan	PA-A-2036	11	30/07/2009
Roof level (RT)	PA-A-2037	11	30/07/2009
Longitudinal Section AA	PA-A-3001	12	09/09/2009
Transversal Section BB	PA-A-3002	12	09/09/2009
Longitudinal Section FF	PA-A-3003	12	09/09/2009
Unfolded Slot Elevation 1,2,3	PA-A-3004	12	09/09/2009
Unfolded Slot Elevation 4 & 5	PA-A-3005	11	30/07/2009
North Elevation	PA-A-4001	11	30/07/2009
East Elevation	PA-A-4002	11	30/07/2009
East Facade West Tower Section CC	PA-A-4003	12	09/09/2009
South Elevation	PA-A-4004	12	09/09/2009
West Facade East Tower Section DD	PA-A-4005	12	09/09/2009
West Elevation	PA-A-4006	12	09/09/2009
North Elevation	PA-A-4007	11	30/07/2009
East Elevation	PA-A-4008	11	30/07/2009
East Facade West Tower Section CC	PA-A-4009	12	09/09/2009
South Elevation	PA-A-4010	12	09/09/2009
West Facade Residential Tower T Section DD	PA-A-4011	11	30/07/2009
West Elevation	PA-A-4012	12	09/09/2009

APPENDIX 2 – Building Code of Australia - Specification C1.1 Table 3 – Fire-resisting levels of building elements

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS Building element	**Class of building — FRL: (in minutes)**			
	Structural adequacy*/*Integrity*/*Insulation			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-*loadbearing* parts—				
less than 1.5 m	- / 90/ 90	- /120/120	- /180/180	- /240/240
1.5 to less than 3 m	- / 60/ 60	- / 90/ 90	- /180/120	- /240/180
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
less than 3 m	90/ - / -	120/ - / -	180/ - / -	240/ - / -
3 m or more	- / - / -	- / - / -	- / - / -	- / - / -
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120

Non-*loadbearing*	- / 90/ 90	- /120/120	- /120/120	- /120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
Between or bounding *sole-occupancy units*—				
Loadbearing	90/ 90/ 90	120/ - / -	180/ - / -	240/ - / -
Non-*loadbearing*	- / 60/ 60	- / - / -	- / - / -	- / - / -
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-*loadbearing*	- / 90/ 90	- / 90/ 90	- /120/120	- /120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES				
and COLUMNS —	90/ - / -	120/ - / -	180/ - / -	240/ - / -
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

APPENDIX 3 – Podium BCA population details for egress width

Description	**Floor area**	**BCA (m^2/p)**	**Assumptions**	**Pop**
Lower Ground				
Supermarket	1428m^2	3m^2 public	Supermarket TFA 2855m^2. Assume 30% Storage and 30% BOH/Racking	476
	857m^2	30m^2 storage		29
				505
Ground				
Retail	1242m^2	3m^2	Retail tenancies not having direct access to the mall have been excluded from this calculation. Mall areas have been excluded from calculation	414
				414
Level 1				
Retail	1589m^2	5m^2	Mall areas have been excluded from calculation	318
Restaurant	444m^2	1m^2/p public area	TFA 555m^2 – assumption 20% BOH of which, 15% assumed kitchen area	444
	28m^2	10m^2/p kitchen		3
Residential library	100m^2	2m^2/p	TFA 145m^2 - assumption 100m^2 reading area	50
				815
Level 2				
Restaurant/Food court	1415m^2 Dining area	1m^2	Floor area has been calculated assuming reasonable potential for dining/seating areas.	1415
	Kiosk areas - staff		Population assumed at 5 persons per kiosk (9 kiosks)	45
				1460
Level 3				

Retail	3,257m^2	5m^2	Mall areas have been excluded from calculation	651
				651
Level 4				
South pool	125m^2	1.5m^2	Pool calculation inclusive for surrounding area	84
West tower Commercial	960m^2	5m^2	Floor area has been calculated assuming area of defined seating.	192
Pool north	200m^2	1.5m^2	Pool calculation inclusive for surrounding area	134
East tower Gym	341m^2	3m^2	Floor area has been calculated assuming reasonable potential for gym area.	114
East tower Bar	13.5m^2	0.5m^2	BCA Bar standing D1.13	27
Garden area	L4 – 320m^2 L5 – 520m^2	-	Based on floor area minus 40% assumption non-accessible area (landscaping, planter beds). Assumption 8m^2 per person.	63
				639