

Eastwood Shopping Centre Re-Development

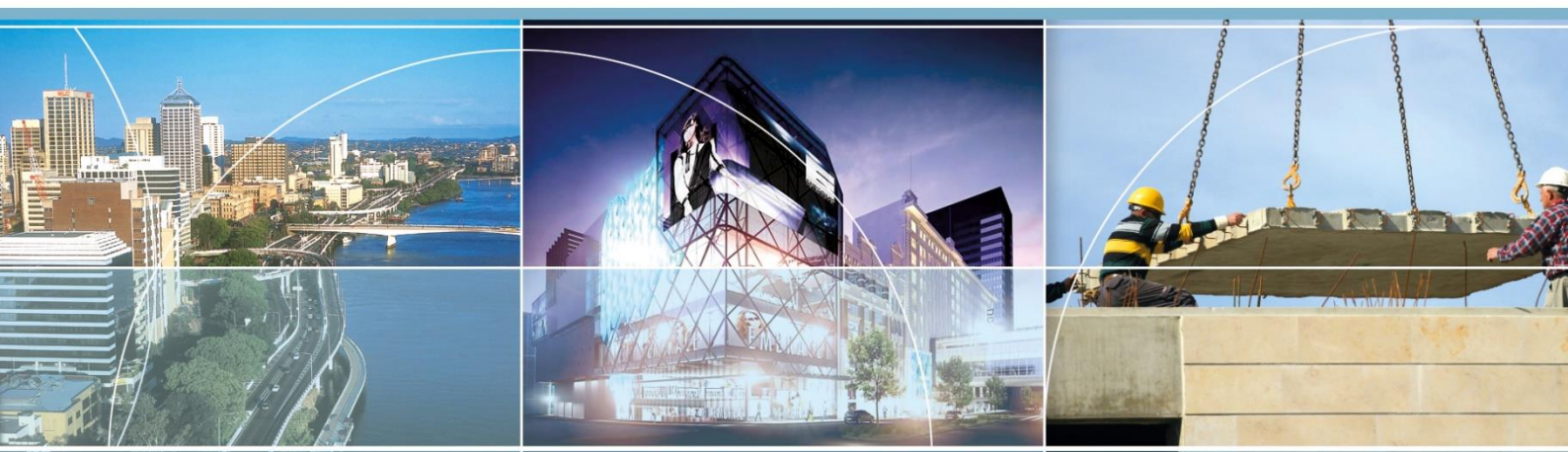
144-186 Rowe Street, Eastwood

BCA ASSESSMENT REPORT TO ACCOMPANY DA SUBMISSION

REPORT 2015/2279 R1.4

13th August 2016

Prepared for Yuhu Group (Australia) Pty Ltd



Introduction

This report presents the findings of an assessment undertaken of the proposed design against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia (BCA) 2016.

Purpose

The assessment is undertaken for the purpose of, and to the extent necessary for, submission with the Development Application to Council under Part 4 of the Environmental Planning and Assessment Act.

Description of proposed development

The proposed development involves the construction of a large mixed use building comprising 4 levels of basement carparking, 2 levels of retail / commercial and 13 levels of residential apartments. The site is bound by Rowe Street to the North, Rutledge Street to the South. The proposal also includes associated landscaped public podium and communal indoor swimming pool on Level 1. Vehicular access to the loading dock is provided via West Parade on the eastern side of the site.

Assessment

Classification	Class 2, 5, 6 and 7b
Number of storeys contained	19
Rise in storeys	15
Type of construction required	Type A
Effective height	49.1m (Lower Ground RL 63.2m – Level 13 RL 112.3m)

A preliminary review of the proposed design that will form part of the Development Application to Ryde City Council has been undertaken.

We confirm the design as shown on the drawings referenced below are capable of achieving compliance with the BCA.

Some aspects of the design are proposed to be addressed by way of a fire engineered Alternative Solution to meet the relevant Performance Requirements of the BCA.

These aspects include but are not limited to the following which will need to be addressed by an Accredited C10 Fire Engineer.

Table 1: Summary of BCA non-compliances to be addressed via Fire Engineered Alternative Solution

Item	Non-compliance	DtS Clause	Description	Performance Requirement
1.	Fire resistance construction	Clause C1.1 and Spec C1.1	The retail (incl. loading dock) portions of the development are proposed to achieve a 2 hour fire rating throughout in lieu of 3 and 4 hours respectively.	CP1 and CP2
2.	Fire Compartment size	C2.2 and Table C2.2	Fire compartments on lower ground will exceed the maximum 5000m ² and 30,000m ³ limitations of Table C2.2 for Class 6. Compartment size is approximately 6000m ² and 32,000m ³ per level. <i>Note:</i> Fire compartment comprises the supermarket (incl. BOH areas), liquor tenancy, mall leading towards open space (incl. 2 kiosks), fresh food tenancy and travelators).	CP2 and EP2.2
3.	Separation of fire walls	C2.7	The travelator on Basement 1 is proposed to be enclosed with drencher protected glass in lieu of 2 hour solid construction.	CP2
4.	Number of exits required	D1.2	The following areas are not provided with access to 2 exits: <u>Ground</u> <ul style="list-style-type: none"> Specialty retail tenancies facing Rowe Street without connection to mall <u>Level 1</u> <ul style="list-style-type: none"> Specialty mezzanines on gridline 1A and 14A Commercial tenancies at western end Central public park 'The secret garden' Residential lobby of Building CA Gas / water / NBN and Comms rooms adjacent main switch room Pump room, commercial tenancy, residential lift lobby and gym on eastern side 	DP4 and EP2.2

			<ul style="list-style-type: none"> Plant room located behind private open space areas of residential units long western boundary <p><u>Level 2</u></p> <ul style="list-style-type: none"> Outdoor communal residential space <p><u>Levels 6 and 7</u></p> <ul style="list-style-type: none"> Building BB <p>Occupants from Level 7 of Building BB egress down and discharge to Rowe Street. The 'true' effective height is 24.1m (Level 7 RL92.8 – Rowe St RL68.7m).</p>	
5.	Exit travel distances	D1.4	<p>Travel distances from the following areas exceed 6m / 20m to a point of choice or exit and/or 40m to the first exit:</p> <p><u>Basement Levels 1 to 4</u></p> <ul style="list-style-type: none"> Approx. 30m to point of choice Approx. 85m to first exit <p><u>Lower Ground and Ground</u></p> <ul style="list-style-type: none"> Approx. 30m to point of choice Approx. 80m to first exit <p><u>Level 1</u></p> <ul style="list-style-type: none"> Approx. 48m to open space from ground floor commercial suite of Building DB without point of choice Approx. 45m to first exit from Yum Cha tenancy Approx. 85m to open space from central public park 'The secret garden' without point of choice Approx. 30m to point of choice within Medical Centre Approx. 22m to open space from Building CA residential lobby 	DP4 and EP2.2

			<ul style="list-style-type: none"> • Approx. 30m to exit from Gym tenancy without point of choice • Approx. 90m to the road from plantroom behind private open space courtyards of residential Building BB • Approx. 27m to open space from gas meters room below Building CB <p><u>Level 2</u></p> <ul style="list-style-type: none"> • Commercial suites within Building DB approx. 30m to point of choice <p><u>Residential Buildings</u></p> <ul style="list-style-type: none"> • Approx. 12m to exit and/or point of choice throughout • Approx. 67m to open stair from most disadvantaged point on communal outdoor space (open to sky and assuming no access back into residential buildings) • Approx. 30m to single exit serving rooftop communal space on Level 6 of Building DB 	
6.	Distance between alternative exits	D1.5	<p>Travel distances from the following areas exceed 60m between alternative exits:</p> <p><u>Basement Levels 1 to 4</u></p> <ul style="list-style-type: none"> • Approx. 110m <p><u>Lower Ground and Ground</u></p> <ul style="list-style-type: none"> • Approx. 100m <p><u>Level 1</u></p> <ul style="list-style-type: none"> • Approx. 80m from Yum Cha tenancy • Approx. 100m from communal pool area via the public park to pedestrian entrance adjacent to Yum Cha tenancy <p><u>Residential Buildings</u></p> <ul style="list-style-type: none"> • Scissor stairs serving as required exits are less than 9m apart – approx. 3.8m worst case being in Building CB 	DP4 and EP2.2

7.	Travel via fire-isolated exits	D1.7	<p>The following tenancies which do not occupy the entire storey contain doorways which open directly into fire-isolated exits:</p> <p><u>Lower Ground</u></p> <ul style="list-style-type: none"> • Fire hydrant pump room • Supermarket – doorways open directly into the 2 x fire-isolated exits within the BOH area <p><u>Ground</u></p> <ul style="list-style-type: none"> • Plant room at gridline 1B • Mini Major – doorway opening directly into fire-isolated within BOH area 	DP5
8.			<p>The following fire-isolated stairways share a common discharging passageway to the road or open:</p> <ul style="list-style-type: none"> • Fire-isolated stairways at north eastern corner of basement levels and Building BB • Fire-isolated stairway at southern (central) part of basement levels and Building CA • Fire-isolated stairway at south eastern corner of basement levels and Building CB 	DP5
9.			<p>The following fire-isolated stairways discharge a point which necessitates passing by external openings of the building to reach the road or open space and/or within the confines of the building:</p> <ul style="list-style-type: none"> • Fire-isolated stairways serving Buildings BA and BB discharge to the central market hall on ground floor which necessitate passing by shopfronts to reach the road or open space • Fire-isolated stairways serving Building DB discharge into covered colonnade which is approximately 25m to open space and necessitates passing by 	DP5 and EP2.2

			<p>openings within the external wall of the building</p> <ul style="list-style-type: none"> • Fire-isolated stairways (2 off) serving Building DA discharge into covered colonnade and necessitate passing by openings within external wall of the building • Fire-isolated stairway serving southern (central) part of basement levels and Building CA discharge into covered vehicular access ramp area which is approximately 22m to open space 	
10.	Travel via non-fire isolated stairway	D1.9	The required non-fire isolated stairway providing egress from the level 2 residential communal space podium discharges to Level 1 and necessitates passing back underneath the building to reach Rutledge Street. The distance to Rutledge Street from the bottom riser is approximately 45m. Total travel distance to Rutledge Street from the abovementioned podium is approximately 110m in lieu of 80m.	DP4 and EP2.2
11.	Discharge from exits	D1.10	The fire-isolated stairways serving the commercial suites in Building DB discharge immediately adjacent to one another on Level 1 and share common pathway to open space.	DP4
12.	Operation of sliding doors and roller shutter	D2.19 and D2.21	<p><u>Basement 1 – Travelator Lobby</u></p> <p>The sliding doors located at the travelator lobby are required to automatically close upon fire to maintain separation between the carpark and retail fire compartments. The conflicts with occupants within the lobby being able to egress through the doors to reach an exit. The operation of the doors is proposed to be addressed on a performance basis.</p> <p><u>Lower Ground – Roller shutter to supermarket,</u></p>	DP2

			<u>fresh food and liquor tenancies</u>	
			The roller shutters at the main entry to each of the above mentioned tenancies will be closed after hours. Access to an exit via the roller shutter is proposed to be via a 'push-to-exit' button with battery backup in lieu of automatically opening upon fire alarm.	
13.	Fire Hydrant System	E1.3	Protection of the booster is proposed to be a combination of drenched glass and/or fire rated construction The pump room is proposed to be located at Lower Ground and accessed via an airlock from the fire-isolated stairway leading down from Rutledge Street.	EP1.3 and CP9
14.	Fire sprinkler valves	E1.5	The fire sprinkler valves are proposed to be located within the hydrant pump room at Lower Ground which is has no direct egress to a road or open space.	EP1.4 and CP9
15.	Smoke Hazard Management	Clause and Table E2.2	Performance based smoke exhaust system is proposed throughout the Lower Ground and Ground floor retail areas. This may include but not limited to omission of smoke exhaust to BOH areas, mark-up air quantities, air velocities, smoke exhaust rates and inlets, location of baffles etc.	EP2.2

Please also refer to report dated 22.07.16 prepared by Exova Warringtonfire Aus Pty Ltd which outlines process required to address compliance with the BCA on a performance basis.

Furthermore, a review of the building has also been undertaken against Part D3 of the BCA. Our review has indicated that the building is capable of complying with the relevant DtS provisions of the BCA and note the following:

- An accessible path of travel from the allotment boundary to each pedestrian entrance has been provided;
- Access to and within all areas required by Table D3.1 has been provided;
- A total of 44 adaptable apartments have been provided in accordance with ADG; and
- A total of 102 accessible car parking spaces have been provided.

A detailed assessment will need to be undertaken to verify compliance by Steve Watson and Partners prior to the issue of a Construction Certificate.

If you have any queries please do not hesitate to contact me.

Kind regards

A handwritten signature in black ink, appearing to be 'Nick Hontas', with a large, stylized 'A' at the end.

Nick Hontas
Senior Associate
Steve Watson & Partners Pty Ltd

Appendix A – Referenced Documentation

The following documentation was used in the preparation of this report:

Drawing No.	Title	Issue	Date	Drawn By
DA1100	Lower ground plan	00	15.07.16	Rice Daubney
DA1101	Basement 1	00	15.07.16	Rice Daubney
DA1102	Basement 2	00	15.07.16	Rice Daubney
DA1103	Basement 3	00	15.07.16	Rice Daubney
DA1104	Basement 4	00	15.07.16	Rice Daubney
DA1201	Ground plan – Rowe Street	00	15.07.16	Rice Daubney
DA1301	Level 1 – Rutledge Street	01	15.07.16	Rice Daubney
DA1302	Level 2	01	15.07.16	Rice Daubney
DA1303	Level 3	01	15.07.16	Rice Daubney
DA1304	Level 4	01	15.07.16	Rice Daubney
DA1305	Level 5	01	15.07.16	Rice Daubney
DA1306	Level 6	01	15.07.16	Rice Daubney
DA1307	Level 7	01	15.07.16	Rice Daubney
DA1308	Level 8	01	15.07.16	Rice Daubney
DA1309	Level 9	01	15.07.16	Rice Daubney
DA1310	Level 10	01	15.07.16	Rice Daubney
DA1311	Level 11	01	15.07.16	Rice Daubney
DA1312	Level 12	01	15.07.16	Rice Daubney
DA1313	Level 13	01	15.07.16	Rice Daubney
DA1401	Roof level	00	15.07.16	Rice Daubney
DA1501	Elevation Rowe Street	00	15.07.16	Rice Daubney
DA1502	Elevation Rutledge Street	00	15.07.16	Rice Daubney
DA1503	Elevation West Parade	00	15.07.16	Rice Daubney
DA1504	Elevation Trelawney Street	00	15.07.16	Rice Daubney
DA1601	Laneway section looking east	00	15.07.16	Rice Daubney
DA1602	Laneway section looking west	00	15.07.16	Rice Daubney
DA1603	East-west section looking south	00	15.07.16	Rice Daubney

Drawing No.	Title	Issue	Date	Drawn By
DA1604	East-west section looking north	00	15.07.16	Rice Daubney
DA1605	Internal street section looking west	00	15.07.16	Rice Daubney
DA1606	Internal street section looking east	00	15.07.16	Rice Daubney

Appendix B – Construction Details

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, 9 or 7a	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 1.5m	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 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 C – Schedule of existing statutory Fire Safety Measures

Measure	Standard of Performance
Access panels, doors and hoppers to fire resisting shafts	BCA2016 Clause C3.13 and tested prototypes (AS 1530.4 – 2014 and AS 4072.1-2005) <i>Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]</i>
Automatic fail safe devices	Scheduled devices release upon trip of smoke detection and/or sprinkler activation in accordance with BCA2016 Clauses D2.19 and D2.21.
Automatic fire detection and alarm system (<i>smoke detection system</i>)	BCA2016 Specification E2.2a, AS 1670.1 – 2015 and AS 3786 – 2014 or 1993 (<i>System monitoring in accordance with AS1670.3-2004</i>) <i>[Note: The 1993 edition has been retained for a transitional period ending on 30 April 2017]</i>
Automatic fire detection and alarm system (<i>smoke alarm system</i>)	BCA2016 Specification E2.2a and AS 3786 – 2015 or 1993 (<i>note may require AS 1670.1 spacings in public corridors and occupant warning system</i>)
Automatic fire detection and alarm system (<i>smoke detection system to operate zone smoke control and/or stair pressurisation system</i>)	BCA2016 Clause 5 of Specification E2.2a and AS/NZS 1668.1 – 2015 and AS 1670.1 - 2015
Automatic fire detection and alarm system (<i>smoke detection system to automatically shutdown air-handling system and/or smoke detection system to activate smoke exhaust system</i>)	BCA2016 Clause 5 and 7 of Specification E2.2a and AS/NZS 1668.1 – 2015 (<i>System monitoring in accordance with AS1670.3-2004</i>)
Automatic fire suppression systems (<i>Sprinklers</i>)	BCA2013 Specification E1.5 and AS 2118.1 – 1999
Emergency lifts	BCA2016 Clause E3.4
Emergency lighting	BCA2016 Clause E4.2, E4.4 and AS 2293.1 – 2005
Sound System and Intercommunication System for Emergency Purposes	BCA2016 Clause E4.9, Specification G3.8 and AS 1670.4 – 2015
Exit signs	BCA2016 Clause E4.5, NSW E4.6, E4.8 and AS 2293.1 – 2005
Fire control room / centre	BCA2016 Specification E1.8
Fire dampers	BCA2016 Clause C3.15 and AS/NZS 1668.1 – 2015 (AS 1682.1-1990 and AS 1682.2-1990)
Fire doors	BCA2016 Specification C3.4 and AS 1905.1 – 2015

Measure	Standard of Performance
Fire hydrants systems	BCA2016 Clause E1.3 and AS 2419.1 – 2005
Fire seals protecting opening in fire resisting components of the building	BCA2016 Clause C3.15, Specification C3.15 and AS 1530.4 – 2014 and AS 4072.1 – 2005 and installed in accordance with the tested prototype. <i>[Note: Systems tested to AS 1530.4 prior to 1 January 1995 need not be retested to comply with the provisions in AS 4072.1]</i>
Hose reel system	BCA2016 Clause E1.4 and AS 2441 – 2005
Mechanical air handling system <i>(automatic shutdown of air-handling system)</i>	BCA2016 Clause E2.2 and AS/NZ 1668.1-2015
Mechanical air handling system <i>(automatic air pressurisation system)</i>	BCA2016 Table E2.2a and Specification G3.8 and AS/NZ 1668.1-2015
Mechanical air handling system <i>(zone smoke control system)</i>	BCA2016 Table E2.2a and AS/NZ 1668.1-2015
Mechanical air handling system <i>(automatic smoke exhaust system)</i>	BCA2016 Table E2.2b, Specification E2.2b and G3.8, and AS/NZ 1668.1-2015
Mechanical air handling system <i>(carpark mechanical ventilation system)</i>	BCA2016 Table E2.2a and Clause 5.5 of AS/NZ 1668.1-2015 and fans with metal blades suitable for operation at normal temperature may be used and the electrical power and control cabling need not be fire rated
Portable fire extinguishers	BCA2016 Clause E1.6 and AS 2444 – 2001
Warning and operational signs	BCA2016 Clauses D2.23, D3.6, E3.3, Specifications E1.8 and E3.1

Note: Schedule may need to be amended subject to the inclusion of a fire engineered alternative solution prior to the issue of a Construction Certificate.