REF: 077516-02BCA

mckenzie group

A Bureau Veritas Group Company

BUILDING CODE OF AUSTRALIA REPORT

Revision: 2018

Proposed Warehouse and Office for Steelforce, located at Bringelly Road Business Hub, NSW.

Prepared for: CIP and Charter Hall

Document Disclaimer

This document has been prepared solely for the use of our client in accordance with our current professional standards and as per our agreement for providing compliance consulting services. Although all due care has been taken in the preparation of this document, no warranty is given, nor liability accepted (except that required by law) in relation to the information contained within this document.

This document represents the opinions of McKenzie Group Consulting based on the facts and matters known at the time of preparation of this document. Opinions, judgments and recommendations detailed in this document, which are based on our understanding and interpretation of current statutory and regulatory obligations and standards, should not be construed as legal opinions.

Table of Contents

Date	Rev No	No. of Pages	Issue or Description of Amendment	Assessed By	Approved By	Date Approved
15/11/18	A	27	Draft BCA Report for Comment	Sam Kassir		
21/11/18	B	26	BCA Report for DA	Alex Ciecko		
5/12/18	C	26	Updated BCA Report for DA Based on Updated Design	Alex Ciecko		

Executive Summary

Development Overview

The proposed development comprises of a warehouse and a 2 storey office building.

The site location will be at Lot 8, Bringelly Road Business Hub.

This report is based upon the review of the design documentation listed in Appendix A of this Report

The report is intended as an overview of the relevant provisions of the Building Code of Australia for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

Compliance Summary

As Accredited Certifiers, we have reviewed architectural design documents prepared by CIP (refer appendix A) for compliance with the Building Code of Australia 2016 Amendment 1.

In this regard the following areas in particular require further review as the project develops:

No.	Items for review	Responsibility
1.	Please advise if there are any proposed alternative building solutions with regard to design of the building services for the project.	Services Consultants
2.	Staff numbers are to be confirmed in writing from the tenant/client	Client
3.	Client to confirm areas that will deemed exempt under D3.4 for accessibility	Client
4.	Fire hydrant locations are currently not indicated on the plans, please provide hydrant locations to enable further assessment, it is understood this will be shown at design stage	Client

The assessment of the design documentation has revealed that the following areas are required to be assessed against the relevant performance requirements of the BCA. The submission for Construction certificate will need to include verification from a suitably accredited fire engineer: -

No.	Alternative Solution Description	DTS Clause	Performance Requirement
Fire Safety Items			
1.	**Perimeter Vehicular Access** A Performance Solution will be proposed to address the perimeter access provided to the site as: ▪ The unobstructed width reduces to less than 6m in certain sections ▪ The path around the site will be greater than 18m from the building	C2.4	CP9
2.	**Exit Travel Distances** The travel distance from office on level 1 measures 21m in lieu of 20m	D1.4	DP4 & EP2.2
3.	**Distance Between Alternative Exits** Distance between the alternative exits in the warehouse measure up to 63m in lieu of 60m	D1.5	DP4 & EP2.2
4.	**Hydrant System** Any hydrants located under an awning, (and used as an external hydrant for the purposed of coverage) will be required to be included within the fire engineered solution prepared by an Accredited Fire Engineer and verified against the Performance Requirements of the BCA.	E1.3	EP1.3
5.	**Hose Reel System** Currently the plans indicate a single hose reel within the office area serving both storeys	E1.4	EP1.1
6.	**Smoke Hazard Management** It is anticipated the smoke exhaust system within the building will be rationalised through a performance based solution.	E2.2	EP2.2
7.	**Exit Sign** It is anticipated that Illuminated exit signs within the warehouse will be mounted greater than 2.7m from the FFL	E4.5	EP4.2
Accessibility Items			
8.	**Parts of Building to be Accessible** The level 1 kitchen area has circulation space that does not conform to AS1428.1-2009.	D3.3	DP1

The fire engineered solution relating to CP9, EP1.3 & EP2.2 will be subject to consultation with the NSW Fire Brigade as part of the Construction Certificate process under Clause 144 of the Environmental Planning & Assessment Regulation 2000.

The assessment of the design documentation has also revealed that the following additional information is required in order to assess BCA compliance within the development.

The application for Construction Certificate shall be assessed under the relevant provisions of the Environmental Planning & Assessment Act 1979 (As Amended) and the Environmental Planning & Assessment Regulation 2000.

1.0 Introduction

The proposed development comprises of a large warehouse that will incorporate a 2 storey office building.

The site location will be at Lot 8, Bringelly Road Business Hub.

This report is based upon the review of the design documentation listed in Appendix A of this Report

The report is intended as an overview of the relevant provisions of the Building Code of Australia for assistance only. Detailed drawings and associated review will still be required as the final design is developed.

1.1 Current Legislation

The applicable legislation governing the design of buildings is the Environmental Planning and Assessment Act 1979. This Act requires that all new building works must be designed to comply with the BCA.

The version of the BCA applicable to the development, is version that in place at the time of the application to the Certifying authority for the Construction Certificate. For the purposes of this Report, BCA 2016 Amendment 1 has been utilised as the version of the BCA applicable at the time of preparation this Report.

2.0 PRELIMINARIES

2.1 Building Assessment Data

Summary of Construction Determination: -

Part of Project	Warehouse	Office
Classification	7b	5
Number of Storeys	2	2
Rise In Storeys	2	2
Type of Construction	C	C
Effective Height (m)	<12m	<12m

Summary of the floor areas and relevant populations where applicable: -

Part of Project	BCA Classification	Approx. Floor Area (m^2)	Approximate Volume (m^3)	Assumed Population
Warehouse	7b	10,000m^2	147,339 m^3	23
Office	5	600m^2	4,680m^3	15

Notes:

1. The above populations have been based on the floor areas and calculations in accordance with Table D1.13 of the BCA.

2.2 Structural Provisions (BCA B1)

Any new structural works are to comply with the applicable requirements of AS/NZS 1170.1.

Glazing is to comply with AS1288, and AS2047.

Prior to the issue of the Construction Certificate structural certification is required to be provided, including determination of the importance level of the development.

2.3 Development Approval

A Development Approval will be required from the Local Authority for the development. A copy of the Development Permit conditions and approved drawings will be required prior to the issuing of the Building Approval for that component of works.

The proposed development must not be inconsistent with the endorsed drawings and all relevant conditions will need to be satisfied and accurately reflect the construction issue drawings.

3.0 FIRE PROTECTION

3.1 Fire Compartmentation (BCA C1.1)

The BCA stipulates three levels of fire resistant construction, which is based upon the rise in storeys and classification of the building. Each of these types of construction has maximum floor area and volume limitations as per BCA Table C2.2.

Based upon the rise in storeys and use of the Building, the building is required to be Type C Construction in accordance with Table 5 of Specification C1.1 of the Building Code of Australia 2016 Amendment 1.

The maximum floor area and volume limitations of a fire compartment as nominated in the deemed to satisfy provisions are as follows:

Classification		Type of Construction		
		A	B	C
5, 9b or 9c aged care building	max floor area—	8 000 m^2	5 500 m^2	3 000 m^2
	max volume—	48 000 m^3	33 000 m^3	18 000 m^3
6, 7, 8 or 9a (except for patient care areas)	max floor area—	5 000 m^2	3 500 m^2	2 000 m^2
	max volume—	30 000 m^3	21 000 m^3	12 000 m^3

The building exceeds the area / volume limitations of the BCA provisions, the building is therefore considered to be a large isolated building and the following provisions will apply:

- Automatic sprinkler protection to AS2118.1 and BCA specifications E1.5 throughout the development / smoke detection and alarm system in accordance with AS1670,
- Perimeter emergency vehicular access 6m wide located within 18m of the entire building perimeter,
- Smoke exhaust or smoke and heat vents required throughout the development

The plans provided indicate vehicle pathway on east section of warehouse where the 3m awnings are located all have pinch points regarding vehicle path width of 5m, further, continuous permitter access is not provided throughout the front of the building where carparking is available, maximum distance from vehicle path to nearest point of building exceeds 18m.

Performance solution required in order to address this departure.

3.2 Fire Resistance (BCA C1.1)

The building should be constructed generally in accordance with the relevant provisions of Specification C1.1 of the BCA applicable to Type C Construction (Large isolated building), Please refer to Appendix B which outlines the required fire rating to be achieved by the development.

Other passive fire protection issues that will need to be addressed in detailed documentation phase include:

- Lift Motor Rooms,
- Emergency Power Supply,
- Electricity Supply,
- Boilers or Batteries,
- Hydrant Pump Rooms,
- Sprinkler Pump Rooms,

The above areas are to be separated from the remainder of the building by construction achieving a minimum fire resistance level of 120 minutes.

3.3 Fire Hazard Properties (BCA C1.10)

The fire hazard properties of fixed surface linings and mechanical ductwork will also need to be addressed within the detailed documentation phase pursuant to specification C1.10 Building Code of Australia. The following requirements apply:

Sprinkler Protected Areas

a) Floor Coverings – Critical radiant Flux not less than (1.2) kW/m2
b) Wall and Ceiling Linings – Material Group No. (1, 2, 3)
c) Other Materials – Spread of Flame Index not exceeding (9) and Smoke Developed Index not exceeding (8 if the spread-of-index is more than 5)

Rigid and flexible air handling ductwork must comply with AS4254 parts 1 & 2 2012.

Floor linings and floor coverings used in lift cars must have a critical radiant flux not less than 2.2, and wall and ceiling linings must be a Material Group No. 1 or 2.

4.0 EGRESS PROVISIONS

4.1 Provisions for Escape (BCA D1)

The egress provisions from the proposed building are provided by:

- External perimeter doorways
- Required non-fire isolated stairways

Other detailing issues that will need to be addressed include:

- Door Hardware
- Exit door operation
- Stair construction
- Handrail and balustrade construction

4.2 Exit Travel Distances (BCA D1.4)

The locations of the proposed exits would appear to indicate that the deemed to satisfy requirements in terms of travel distances, distances between alternative exits and egress widths would be satisfied.

The travel distances to exits should not exceed:

Class 5 & 7b

- 20m to a single exit or point of choice and where two exits are provided, a maximum of 40m to one of those exits; and
- exits shall be located to not be more than 60m apart and not closer than 9m

The locations of the proposed exits indicate that the deemed to satisfy requirements in terms of travel distances would be satisfied, with the exception of the following:

- The travel distance from office 2 measures 21m in lieu of 20m
- Distance between the alternative exits in the warehouse measure up to 63m in lieu of 60m

4.3 Dimensions of Exits (BCA D1.6)

Minimum dimensions of 1000mm and 2000mm height to be provided within exits, with the paths of travel should provide a minimum width of 1000mm (note that all maintenance access, cat walks, etc may comply with AS1657 in which case a 600mm clear width is required).

Doorways are permitted to contain a clear opening width of the required width of the exit minus 250mm, with a height of 1980mm as part of egress requirements. Access for persons with disabilities however requires a clear doorway opening width of 850mm (i.e minimum 920 mm doors).

4.4 Balustrading and Handrails (BCA D2.16 and BCA D2.17)

Generally

Balustrading to a height of 1000mm with a maximum opening of 125mm in any direction should be provided adjacent to balconies, landings, corridors etc where located adjacent to a change in level exceeding 1000mm.

Where it is possible to fall more than 4m to the surface below, the balustrade shall not contain any horizontal or near horizontal members that facilitate climbing between 150 – 760mm above the floor.

Handrails should generally be provided at a minimum height of 865mm alongside of all ramps and stairs.

The public stairs and ramps located along an accessible path of travel should be designed in accordance with the requirements of AS1428.1 for persons with disabilities. This requires a handrail on each side of the stair and ramp and for the handrail to extend approximately 550mm – 600mm past the last tread / end of ramp.

Further review will be undertaken to ensure compliance as the design develops.

4.5 Slip Resistance

The adoption of BCA 2016 Amendment 1 introduced a requirement for slip resistance of stairway treads and ramp surfaces. The requirements are as follows:

Table D2.14 SLIP-RESISTANCE CLASSIFICATION

Application	***Surface conditions***	
	Dry	***Wet***
Ramp steeper than 1:14	*P4 or R11*	*P5 or R12*
Ramp not steeper than 1:14	*P3 or R10*	*P4 or R11*
Tread or landing surface	*P3 or R10*	*P4 or R11*
Nosing or landing edge strip	*P3*	*P4*

5.0 ACCESS FOR PEOPLE WITH DISABILITIES

5.1 General Building Access Requirements (BCA D3.1)

Access for people with disabilities shall be provided to and within the building in accordance with the requirements of Clause D3.2, D3.3 and D3.4 of the BCA 2016 Amendment 1. Parts of the building required to be accessible shall comply with the requirements of:-

- AS1428.1-2009 General Requirements for Access – New Building Work;
- AS1428.4-2009 Tactile Ground Surface Indicators
- AS2890.6-2009 Car Parking for People with Disabilities

Access for persons with a disability is to be provided as follows:-

Office (Class 5 buildings)

To and within all areas normally used by the occupants

Warehouse (Class 7b buildings)

To and within all areas normally used by the occupants, but as the uses of these areas could be deemed inappropriate, confirmation is required as the appropriateness of the areas in question by the owners or tenant.

5.2 Provision for Access to Buildings

The BCA prescribes access to be provided to and within the building as follows:

- Via the principle public entry and at least 50% of all other entrances
- From designated car parking spaces for the use of occupants with a disability.
- From another accessible building connected by a pedestrian link.
- All areas used by the public.

And where a pedestrian entry contains multiple doors, the following is required;

- Entrance containing not more than 3 doors, at least one of the door leaves must be accessible.

A door is considered to be accessible if it is automatic (open and closing) or is more than 850mm in clear opening width and contains the required door circulation space.

5.3 Provisions for Access within Buildings (BCA D3.3)

A building required to be accessible is required to be equipped with either a 1428.1 compliant lift or 1428.1 compliant ramp, (but the maximum vertical rise of a ramp must not exceed 3.6m).

Within the building the following are required;

- Door circulation space as per AS1428.1 Clause 13.3 and as attached in appendix 1;
- Doorways must have a clear opening of 850mm;
- Passing spaces (1.8m wide passages) must be provided at maximum of 20m intervals
- Within 2.0m of end access ways/corridors, turning areas spaces are required to be provided.
- Carpet pile height of not more than 11mm to an adjacent surface
- Any glazed capable of being mistaken for a doorway or opening must be clearly marked (or contain chair rail, hand rail or transom as per AS 1288 requirements)

The design would generally comply with the prescriptive provisions of the BCA with additional ongoing review being undertaken as to door widths, circulation, etc. Further details are to be provided or access to these areas is to be assessed by an access consultant.

The following departures have been identified regarding door circulation space:

- The level 1 kitchen area has circulation space length of 1370mm in lieu of 1600mm

5.4 Car parking (BCA D3.5)

Accessible car parking spaces are required to comply with AS 2890.6-2009 at the rate of 1 per 100

The development is proposed to contain 48 car parking spaces which requires a minimum of 1 accessible spaces which the plans currently indicate.

A 'shared zone' of minimum 5400mm x 2400mm is required adjacent to accessible car parking spaces, protected with a bollard.

5.5 Tactile Indicators (BCA D3.8)

Tactile indicators are required to be provided to warn occupants of all stairs and ramps regardless of public nature or private environment and where an overhead obstruction occurs less than 2.0m above the finished floor level.

5.6 Stairs (BCA D3.3 inter Alia AS1428.1)

Stairs shall be constructed as follows:

a) Where the intersection is at the property boundary, the stair shall be set back by a minimum of 900mm so that the handrail TGSIs do not protrude into the transverse path of travel.
b) Where the intersection is at an internal corridor, the stair shall be set back in 300mm, so the handrails do not protrude into transverse path of travel.
c) Stairs shall have opaque risers.
d) Stair nosing shall not project beyond the face of the riser and the riser may be vertical or have a splay backwards up to a maximum 25mm.
e) Stair nosing profiles shall-
    - Have a sharp intersection;
    - Be rounded up to 5mm radius; or
    - Be chamfered up to 5mm x 5mm
f) All stairs, including fire isolated stairs shall, at the nosing of each tread have a strip not less than 50mm and not more than 75mm deep across the full width of the path of travel. The strip may be set back a maximum of 15mm from the front of the nosing. The strip shall have a minimum luminance contrast of 30% to the background. Where the luminous contrasting strip is affixed to the surface of the tread, any change in level shall not exceed a difference of 5mm.

5.7 Provisions for Accessible Sanitary Facilities (BCA F2.4)

Unisex Accessible Sanitary Facilities

An accessible unisex sanitary facility must be located so that it can be entered without crossing an area reserved for one sex only and provided in accordance with AS 1428.1-2009 and must contain a closet pan, washbasin, shelf or bench top and adequate means of disposal of sanitary towels and as per following.

Building Type	Minimum accessible unisex sanitary compartments to be provided
Office & industrial	a) 1 on every storey containing sanitary compartments; and b) Where a storey has more than 1 bank of sanitary compartments containing male and female sanitary compartments, at not less than 50% of those banks.

Ambulant Facilities

At each bank of toilets where there is one or more toilets in addition to an accessible unisex sanitary compartment, a sanitary compartment suitable for a person with an ambulant disability in accordance with AS 1428.1-2009 must be provided for use by males and females.

Where male sanitary facilities are provided at a separate location to female sanitary facilities, accessible unisex sanitary facilities are only required at one of those locations.

An accessible unisex sanitary compartment or an accessible unisex shower need not be provided on a storey or level that is not provided with a passenger lift or ramp complying with AS1428.1-2009

5.8 Signage (BCA D3.6)

As part of the detailed design package, specifications will need to be developed indicating:

- Sanitary Facility Identification Signs (note that they are to comply with BCA Specification D3.6 and include the use of Braille, Tactile, etc and be placed on the wall on the latch side of the facility);
- Directional / Way Finding signs to the Lifts, Sanitary Facilities, etc;
- Hearing Augmentation System;
- Identify each door required by BCA Clause E4.5 to be provided with an exit sign, stating 'EXIT' and 'Level" number

5.9 Lifts (BCA E3.6)

Lifts compliant to BCA E3.6 and BCA E3.7 must be provided, where required to be provided, with a minimum size of 1100mm x 1400mm in size – with appropriate handrails and auditory commands.

6.0 FIRE SERVICES AND EQUIPMENT

6.1 Fire Hydrants (BCA E1.3)

A system of Fire Hydrants is required to be provided in accordance with BCA Clause E1.3 and AS2419.1-2005.

The building is required to be provided with a booster assembly as part of the fire hydrant requirements. The booster is required to be located attached to the building at the main entry. If remote from the building, the booster is to be located at the main vehicle entry and within sight of the main entry of the building within 20m of a hardstand area.

A fire ring main is required.

The fire pump locations have not been provided, updated plans required displaying hydrant locations for further assessment.

6.2 Fire Hose Reels (BCA E1.4)

A Fire Hose Reel System is required to BCA Clause E1.4 and AS2441-2005

Fire hose reels are to be located within 4m of exits and provide coverage within the building based on a 36m hose length. Where required, additional fire hose reels shall be located internally as required to provide coverage.

The hose reels are currently not indicated within the warehouse portion, further assessment will need to be carried out once this has been provided.

The office portion of the building indicates a single hose reel in lieu of a hose reel on each storey, this is to either be addressed through design or through a performance based solution.

6.3 Fire Extinguishers (BCA E1.6)

The provision of portable fire extinguishers is required to BCA Clause E1.6 and AS2444-2001 to provide coverage to all zones.

Table E1.6 details when portable fire extinguishers are required:

Occupancy Class	Risk Class (as defined in AS 2444)
General provisions – Class 2 to 9 buildings (except within sole-occupancy units of a Class 9c building)	(a) To cover Class AE or E fire risks associated with emergency services switchboards. (Note 1) (b) To cover Class F fire risks involving cooking oils and fats in kitchens. (c) To cover Class B fire risks in locations where flammable liquids in excess of 50 litres are stored or used (not excluding that held in fuel tanks of vehicles). (d) To cover Class A fire risks in normally occupied fire compartments less than 500m^2 not provided with fire hose reels (excluding open deck carparks).

Fire extinguishers are to be located in accordance with AS 2444, often collocated with fire hydrants and/or fire hose reels.

6.4 Automatic Sprinkler Protection (BCA E1.5)

Automatic sprinkler protection is required to Specification E1.5 and AS2118.1-1999 to the following areas:

- Throughout the entire building if it is classified as large isolated under BCA Clause C2.3;
- Throughout any fire compartment that exceeds 2,000m2 in floor area or 12,000m3 in volume where occupancies of excessive hazard are proposed

Location of pumps, tanks, FIP, control valves and booster assemblies will be subject to review.

6.5 Exit Signs and Emergency Lighting (BCA E4.2 and BCA E4.5)

Emergency Lighting and Exit Signs indicating exit location paths of travel to exits to be provided in accordance with AS2293.1-2005

Details are required to be provided for review.

6.6 Smoke Hazard Management (BCA E2.2)

Smoke hazard management shall be provided throughout the building by means of the following systems through a fire engineered performance solution:

- Automatic Shutdown of Mechanical Systems in accordance with the requirements of AS/NZS 1668.1-2015;

A fire indicator panel is required as part of the detection system. This panel is to be located within 4m of the main entry and should be incorporated within the fire control room. Any variation to the prescriptive provisions will require the consent of the fire brigade and should form part of the fire safety engineering report to verify the performance requirements of the BCA.

6.7 Lift Services (BCA E3.4 and BCA E3.6)

The passenger lifts to be installed are to be: -

- Be provided with the following: -
    - A handrail in accordance with AS 1735.12;
    - Minimum internal floor dimensions as specified in Table E3.6b of the BCA i.e. 1,400mm x 1,600mm;
    - Minimum clear door opening complying with AS 1735.12;
    - Passenger protection system complying with AS 1735.12;
    - Have a set of buttons for operating the lift located at heights above level complying with AS 1735.12;
    - Lighting in accordance with AS 1735.12;
    - Automatic audible information within the lift car to identify the level each time the car stops; and
    - Audible and visual indication at each lift landing to indicate the arrival of the lift car.

7.0 HEALTH AND AMENITY

7.1 Sanitary Facilities (BCA F2.2 and BCA F2.3)

Offices/Warehouse

The sanitary & other facilities within the development would generally consist of: -

Sanitary Facilities Provided			
Warehouse/Office	**WC**	**Urinals**	**Basins**
Male	5	3	5
Female	3	-	3
Accessible	2	-	2
The Above Facilities are adequate for 100 males & 45 females			

Note:
1. The Unisex facilities provided for people with disabilities may be counted once for each sex. These facilities are to be provided in accordance with AS1428.1-2009.

Bathroom Construction

Where bathrooms or rooms containing water closets have the WC within 1200mm of the doorway, the door shall be either sliding, open outwards, or be provided with removable hinges.

7.2 Floor Wastes (BCA F1.11)

Floor wastes are required to be provided where wall hung urinals are provided and the floor shall be sloped towards these wastes.

Floor wastes are not indicated.

7.3 Light and Ventilation (BCA Part F4)

Class 5 & 7b

Natural Ventilation is required to be provided to rooms at a rate of 5% of the floor area in openings. Alternatively, mechanical ventilation is required in accordance with AS1668.2-2012. The architect is to provide calculations to verify compliance is achieved.

Artificial lighting complying with AS/NZS1680.0-2009 is to be incorporated with the final detailed design to be developed to confirm this.

8.0 ENERGY EFFICIENCY

The deemed-to-satisfy provisions of the BCA only apply to thermal insulation in a class 2 building where development consent or a Complying Development certificate specifies that the insulation is to be provided as part of the development.

1. The building can comply with the deemed-to-satisfy provisions of the BCA, relating to the following areas:

    - Building Fabric
    - Glazing
    - Building Sealing
    - Air Conditioning & Ventilation Systems
    - Artificial Lighting & Power
    - Hot Water Supply

2. The building can be verified against a reference building as per Verification Method JV3. This requires that the proposed building and its services be shown to have an annual energy consumption of equal or less than the reference building which has been modelled as per the requirements of Part J of the BCA.

Certification from an appropriately qualified engineer should be provided for either option with a report / computations outlining how compliance is achieved.

Access for maintenance is to be provided to the building in accordance with the requirements of BCA Part J8.

The proposed site will be located in a climate zone 6.

Due to special nature of the building some energy provisions may not be appropriate.

10.8 Access for Maintenance

Access if to be provided to all plant, equipment and components associated with the provision of the above energy requirements i.e.

- Adjustable or monitored shading devices
- Time switches and motion detectors
- Room temperature thermostats
- Plant thermostats such as boilers or refrigeration units
- Motorised air dampers and central valves
- Reflectors, Lenses and Diffusers of light fittings
- Heat transfer equipment

Appendix A - Design Documentation

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

Drawing No.	Title	Date	Drawn By	Rev
2-349-277062-DA- 002	Site Plan	20/11/2018	CIP	D
2-349-277062-DA- 110	Office Floor Plans	20/11/2018	CIP	D
2-349-277062-DA- 150	Roof Plans	20/11/2018	CIP	C
2-349-277062-DA- 200	Elevations – Overall	20/11/2018	CIP	C
2-349-277062-DA- 201	Elevations – Office	20/11/2018	CIP	C
2-349-277062-DA- 300	Cross Section	20/11/2018	CIP	B

Appendix B - Fire Resistance Levels
Table 5 TYPE C 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 within it) or other external building element, where the distance from any fire-source feature to which it is exposed is—				
Less than 1.5 m	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
1.5 to less than 3 m	–/–/–	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
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 1.5 m	90/–/–	90/–/–	90/–/–	90/–/–
1.5 to less than 3 m	–/–/–	60/–/–	60/–/–	60/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90	90/ 90/ 90
INTERNAL WALLS-				
Bounding *public corridors*, public lobbies and the like—	60 / 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—	60/ 60/ 60	–/–/–	–/–/–	–/–/–
Bounding a stair if *required* to be rated—	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60	60/ 60/ 60
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–