

BCA CAPABILITY REPORT

FOR

TRUMEN NORMAN FORESTVILLE PTY LTD

PREMISES

9 -13 COOK STREET, FORESTVILLE

Date: 7 February 2019

Our Re: J180584

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1.0 – Executive Summary

This report has been prepared so as to assess the architectural documentation as detailed in Part 6 in accordance with the Building Code of Australia (BCA) 2016 and adopted standards.

The proposed works are for a three (3) storey storage facility containing a ground floor retail space and commercial office area with on-grade car parking.

This report will provide the consent authority with a BCA analysis to assist in the determination of the application.

2.0 – Report Summary

2.1 – Location

The subject building is located at 9 – 13 Cook Street, Forestville with access to Cook Street to the west, industrial developments and a Catholic Primary School to north and east and residential developments to the south.

The site is within the jurisdiction of Northern Beaches Council for the purposes of development approvals.

2.2 – Description of works

The proposed works are for a three (3) storey storage facility containing a retail space to the ground floor level and commercial office area to Level 02 and on-grade car parking.

2.3 – Report purpose

This report has been prepared to identify aspects of the proposed design that require further consideration and to identify aspects of the design that may be altered subsequent to the issue of a Development Consent.

This report has been prepared on the basis of an assessment of compliance only and should not be construed as being design advice.

2.4 – Building Description

Use/Classification	<ul style="list-style-type: none"> Class 7b – Storage warehouses <p>NB: The Class 5 & 6 portions are less than 10% of the floor area of the storey and therefore classified as Class 7b in accordance with Clause A3.3 of the BCA</p>
Rise in Storeys	<ul style="list-style-type: none"> The building will have a rise of three (3) storeys.
Floor Area	<ul style="list-style-type: none"> Class 7b – Max floor area – 3,500m²
Volume	<ul style="list-style-type: none"> Class 7b – Max floor area – 23,000m³
Effective Height	The development has an effective height of less than 12m (RL129.000 – RL 123.000 = 6m).
Type of Construction	The building requires Type B construction throughout
Climate Zone	Climate Zone 5
Population	<p>Ground Level – 102 persons</p> <p>Level 1 – 83 persons</p> <p>Level 2 – 106 persons</p>

3.0 – Building Code of Australia Assessment

3.1 – Fire Resistance and Stability (Section C, BCA)

Item	Comment				
<i>Fire Resistance</i>	<p>High-Tech Industrial Unit and Storage Units are to comply with Clause C1.1 and Clause 2 & 4 of Specification C1.1, for a building required to have Type b construction. Refer to Table 4 of Specification C1.1 for the specific Fire Resistance Levels [FRL's].</p> <p>The structural steel system is to be the subject of an alternate solution to justify the reduction of the FRL to 120/120/120.</p> <p>Structural: the ability to maintain stability and adequate load-bearing capacity as determined by AS 1530.4.</p> <p>Integrity: the ability to resist the passage of flames and hot gases specified in AS 1530.4.</p> <p>Insulation: The ability to maintain a temperature on the surface not exposed to the furnace below the limits specified in AS 1530.4.</p> <table border="1"> <thead> <tr> <th>Class</th><th>FRL</th></tr> </thead> <tbody> <tr> <td>Class 7b – Storage units</td><td>240/240/240</td></tr> </tbody> </table> <p>Where lightweight fire rated construction is proposed for walls, the system must comply with Specification C1.8 of the BCA and the manufactures tested specification.</p> <p>Columns protected with lightweight fire rated construction that are subject to mechanical damage must be protected and/or internally filled in accordance with Clause C1.8(b) of the BCA.</p> <p>The fire hazard properties of floor, wall and ceiling linings are to comply with Part C1.10 and Specification C1.10 of the BCA.</p>	Class	FRL	Class 7b – Storage units	240/240/240
Class	FRL				
Class 7b – Storage units	240/240/240				
Protection of Openings	<p>The design does not propose any openings within 3m to a fire source feature which will require protection in accordance with the provisions of Clause C3.4 of the BCA.</p>				

Item	Comment
<i>Attachments not to impair fire-resistance</i>	In accordance with Clause C1.9 of the BCA all components of the external walls are required to be of non-combustible construction. With respect to the above requirements, the proposed development can achieve the required prescriptive requirements which will be confirmed at the construction certificate phase.
<i>Fire hazard properties</i>	The wall and floor linings must achieve the fire hazard properties stipulated in Specification C1.10 of the BCA.
<i>Fire sealing of penetrations</i>	All service penetrations passing through elements which achieve are require to achieve a FRL must be sealed to the requirements of Clauses C3.12 and C3.15 of the BCA.
<i>Protection of equipment.</i>	The following equipment is to be fire separated with construction complying with Clause C2.12(d) of the BCA. (i) lift motors and lift control panels; or (ii) on-site fire pumps must comply with the requirements of AS 2419.1-2005.
<i>Electricity supply</i>	Electrical equipment is to be separated from the building in accordance with Clause C2.13 of the BCA. Any substation and/or main switchboard is to be constructed to achieve a fire resistance level of 120/120/120 with the door being –/120/30 fire rated, unless higher FRL's required by electrical providers.

3.2 – Access & Egress (Section D, BCA)

Item	Comment
<i>Number of exits required</i>	The number exits in the building complies with the provisions of Clause D1.2 of the BCA and also with respect to the egress width provisions as contained in Clause D1.6 of the BCA.
<i>Exit travel distances.</i>	Exit travel distances to a required exit complies with the requirements of Clause D1.4 of the BCA Exit travel distances to a point of choice to alternative exist exceed the maximum of 20m as required by Clause D1.4 of the BCA. The client has advised an alternate solution is to be undertaken in respect to addressing the extended distance of travel to a point of choice considering the Performance Requirements of the BCA.

Item	Comment
<i>Distance between alternative exits</i>	<p>The distance between alternative exits exceeds the maximum of 60m as required by Clause D1.5 of the BCA.</p> <p>The client has advised an alternate solution is to be undertaken in respect to addressing the extended distance between alternate exits considering the Performance Requirements of the BCA.</p>
<i>Dimensions of exits.</i>	<p>Exits and paths of travel to exits are to comply with D1.6 of the BCA. Generally, exits widths are 1m in width clear of any obstruction including hand rails or other fixtures. Reductions in width are available at doorways to not less than 750mm clear.</p> <p>The unobstructed width of a required exit must not diminish in the direction of travel to a road or open space.</p>
<i>Travel via fire-isolated exits</i>	<p>The discharge from the fire-isolated stairways achieves compliance with Clause D1.7 of the BCA as the stairways provide direct discharge to a road or open space.</p>
<u>Construction of Stairways.</u> <i>Goings and Risers</i> <i>Landings</i> <i>Thresholds</i>	<p>Goings and risers are to be designed to comply with the provisions of Clause D2.13 of the BCA.</p> <p>Landings are to be designed to comply with the provisions of Clause D2.14 of the BCA.</p> <p>Thresholds are to be designed to comply with the provisions of Clause D2.15 of the BCA. Please note D2.15(c) which requires a threshold ramp complying with AS 1428.1-2009.</p>
<i>Egress Doors.</i>	<p>All swinging doors in a required exit or forming a part of a required exit is required to swing in the direction of egress and will be provided with the appropriate hardware in accordance with Clauses D2.20 & D2.21 of the BCA.</p>
<i>Balustrades</i>	<p>Balustrades must be provided for all areas where it is possible to fall more than 1m. Balustrades are to be designed in accordance with Clause D2.16 of the BCA.</p> <p>Balustrades protecting a difference in levels of over 4m must not have horizontal elements between 150mm and 760mm of the floor that facilitate climbing.</p>
<i>Handrails</i>	<p>Handrails are to be provided to stairways as required by Clause D2.17 of the BCA and AS1428.1-2009.</p>

Item	Comment
<p><i>Access for people with disabilities.</i></p>	<p>The proposed building is required to comply with the following:</p> <ul style="list-style-type: none"> • The <i>Disability Discrimination Act 1992</i> (Commonwealth); • The Disability (Access to Premises) Standards 2010; • Part D3 of the BCA • Australian Standard AS 1428.1-2009. <p>Buildings and parts of buildings must be accessible as required by Table D3.1 of the BCA, unless exempted by D3.4 of the BCA, which requires access as follows:</p> <p>Class 7a - To and within any level containing accessible carparking spaces.</p> <p>Class 7b To and within all areas normally used by the occupants.</p> <p>Following item will require further consideration:</p> <ul style="list-style-type: none"> • All stairs that are not fire isolated are required to comply with the requirements contained within AS1428.1-2009. As such, hand rails each side, turndowns, tactile indicators and 1m clear width must be provided on each stair. • Non-fire isolated stairs are to have contrasting nosing's and solid back risers throughout the flight to AS 1428.1-2009 • Access via principal entry of each warehouse is required, including ground floor warehouses. • Having regard to the storage units the proposed provision of a roller shutter as the entry to the storage space will not meet the DTS requirements of Clause D3.2 of the BCA. It is understood the client will commission an alternate solution to be undertaken to address Performance Requirement DP1 of the BCA. <p>Note: An alternate solution is required to address the following:</p> <ol style="list-style-type: none"> 1. Access to the storage units is via roller shutter and does meet the DTS provisions of Part D3 of the BCA;

3.3 – Services and Equipment (Section E, BCA)

Item	Comment
Hydrant Systems.	<p>The building is required to be provided with a hydrant system in accordance with the provisions of Clause E1.3 of the BCA and AS 2419.1-2005.</p> <p>The design of the service will be subject to a detailed review by a hydraulic consultant at the Construction Certificate stage.</p>
Hose Reel Systems.	<p>The building is required to be with a fire hose reel system in accordance with the provisions of Clause E1.4 of the BCA and AS 2441-2005. This system must cover the entire development.</p> <p>The design of the service will be subject to review by a hydraulic consultant.</p>
Portable Fire Extinguishers.	<p>Fire extinguishers will be provided in accordance the provisions of Clause E1.6 of the BCA and AS2444-2001.</p>
Smoke Hazard Management.	<p>The development is required to be provided with an automatic smoke detection and alarm system in accordance with the provisions of Table E2.2a and Specification E2.2a of the BCA and AS1670.1-2015.</p> <p>The design of the service will be subject to review by a fire services consultant.</p>
Emergency Lighting.	<p>Emergency lighting will be provided throughout the building in accordance with Clauses E4.2 & E4.4 of the BCA and AS2293.1-2005.</p> <p>The design of the service will be subject to review by an electrical services consultant.</p>
Exit Signs.	<p>Exit signs will be provided throughout the building in accordance with Clauses E4.5, E4.6 & E4.8 of the BCA and AS2293.1-2005</p> <p>The design of the service will be subject to review by an electrical services consultant.</p>

3.4 – Health and Amenity (Section F, BCA)

Item	Comment
<i>Sanitary & Other Facilities.</i>	<p>The development will be provided with sanitary facilities in accordance with Table F2.3 of the BCA</p> <p>The development will be provided with accessible sanitary facilities in accordance with AS1428.1-2009.</p>
<i>Construction of sanitary compartments</i>	<p>Sanitary compartments are required to comply with F2.5 (a) and (b) of the BCA.</p> <p>All detail drawings and specifications are to ensure compliance with this part.</p>
<i>Ceiling height</i>	<p>The following minimum building ceiling heights must be maintained.</p> <ul style="list-style-type: none"> • Corridor, passageway or the like – 2.1m • Sanitary compartment or the like – 2.1m • Habitable rooms including common areas – 2.4m • Stairways – 2.0m
<i>Ventilation.</i>	<p>The building is required to be provided with ventilation in accordance with the provisions of Clause F4.5 of the BCA.</p> <p>Ventilation may be provided by natural means or a mechanical system complying with AS 1668.2-2012.</p> <p>The design of the service will be subject to review by a mechanical services consultant.</p>
<i>Lighting.</i>	<p>Natural or artificial lighting may be provided throughout the building in accordance with the provisions of Clause F4.4 of the BCA and AS1680.1.</p> <p>All detail drawings and specifications are to ensure compliance in this regard.</p> <p>The design of the service will be subject to review by an electrical services consultant.</p>

3.5 – Energy Efficiency Construction (Section J, BCA)

Item	Comment
<i>Building Fabric</i>	The envelope to a conditioned space within the development is to be designed to achieve the minimum construction requirements of Part J1 of the BCA.
<i>Glazing</i>	The energy efficiency of the selected glazing must comply with Part J2 of the BCA as appropriate to Climate Zone 6 and the orientation, exposure and shading of the window.
<i>Building Sealing</i>	<p>Openings in the building such as doors, windows, exhaust fans and ventilation systems must be sealed to the requirements of Part J3 of the BCA as appropriate to Climate Zone 6.</p> <p>In that regard, all external doorways must be fitted with a draft seal. This requirement does not apply to fire doors fitted between the fire-isolated stairways and the conditioned areas of the building.</p>
<i>Air-Conditioning and Ventilation System</i>	The design of all mechanical air-conditioning and ventilation systems must achieve compliance with Part J5 of the BCA with regard to input power and efficiency features.
<i>Artificial Lighting and Power</i>	<p>The building is to maintain maximum lighting power levels and control systems as applicable. The design of lighting systems must comply with Part J6 of the BCA.</p> <p>These rates are able to be adjusted as detailed in BCA Clause Table J6.2 where daylight or motion sensors or dimming systems are provided.</p>
<i>Hot Water Supply</i>	Hot water supply systems will be installed in accordance with Part J7 of the BCA and AS/NZS 3500.4.
<i>Energy Monitoring</i>	The building is to have facilities for energy monitoring in compliance with Part J8 of the BCA.

4.0 – Fire safety and other measures

4.1 – Proposed Fire Safety Measures

In terms of the proposed works the following fire safety measures are proposed to be installed: -

Fire Safety Measure	Status*			Minimum Standard of Performance
	N	E	M	
Automatic fire detection and alarm system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E2.2, Spec. E2.2a AS 1670.1-2015
Emergency lighting	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E4.2 & E4.4 AS 2293.1-2005
Exit and directional signage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E4.5, (NSW E4.6) & E4.8, AS 2293.1-2005
Fire doorsets	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause C2.12, C2.13, C3.11, Spec C3.4 AS 1905.1-2015
Fire hydrant systems	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause C2.12, E1.3, AS 2419.1-2005
Fire hose reel systems	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E1.4, AS 2441-2005
Fire safety engineering report	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire Engineering Guidelines
Fire seals (protecting openings and service penetrations in fire resisting components of the building)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause C3.15, Spec C3.15 Manufacturer's specifications
Lightweight construction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause C1.8, Spec A2.3, Spec C1.8 Manufacturer's specifications
Openings in fire-isolated lift shafts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause C3.10, AS 1735.11-1986
Occupant warning system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E2.2, Spec E2.2a (clause 6) AS 1670.1-2015
Portable fire extinguishers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause E1.6, AS 2444-2001
Warning and operational signs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	BCA 2016 Clause D2.23, D3.6, E3.3 Clause 183 of the Environmental Planning and Assessment Regulation 2000

5.0 – Conclusion

5.1 – Conclusions

It is the opinion of this office the proposed building is capable of achieving compliance with the requirements of the Building Code of Australia (BCA) 2016 and relevant adopted standards without undue modification to the design or appearance of the building.

Whilst the above recommendations have been made as a means of achieving compliance with the various provisions of BCA Performance Requirements their acceptability has not been verified at this time. It will be necessary for the design to be reviewed by an appropriately qualified person prior to the issue of a Construction Certificate for the works.

This report does not imply, nor make reference to structural design or operating capability or design of any electrical, fire, hydraulic or mechanical services.

Except as mentioned in the report, the following matters were not addressed-

- (1) Design basis or operating capability of the installed electrical, fire, hydraulic or mechanical services;
- (2) Compliance with the *Disability Discrimination Act 1992*;

Prepared by:



Vic Lilli
Vic Lilli and Partners Consulting Pty Ltd

Date: 7 February 2019

6.0 – References

This BCA Capability report has been prepared on the basis of the following:-

1. Architectural Plans as prepared SBA Architects
2. Building Code of Australia (BCA) 2016;
3. Environmental Planning and Assessment Act, 1979, and Regulation 2000.

Drawing No.	Title	Revision	Date
DA000	Cover Page	E	31.01.19
DA001	Demolition Plan	C	11.01.19
DA002	Perspectives – Sheet 1	C	30.01.19
DA003	Perspectives – Sheet 2	C	30.01.19
DA004	Overall Site Plan	C	31.01.19
DA200	Site & Roof Plan	E	31.01.19
DA201	Ground Floor Plan	E	31.01.19
DA202	Level 01 Floor Plan	C	11.01.19
DA203	Level 02 Floor Plan	D	30.01.19
DA301	Building Elevations	C	11.01.19
DA305	Building Sections	C	11.01.19
DA401	Shadow Diagram	B	11.01.19