

Our Ref: J130430

11 December 2014

Lend Lease  
The Bond  
30 Hickson Road  
**MILLERS POINT NSW 2000**

**Attention: Johanna Nolan**

Dear Johanna,

**Re: Commercial Building Development  
Development Application Submission  
BCA Capability Statement**

Please find enclosed our Building Code of Australia Capability Report for inclusion with the Development Application submission.

Should you require any further information please do not hesitate to contact the undersigned.

Yours faithfully



Dean Morton  
Director  
for **Vic Lilli & Partners Consulting**

**Encl.**



**VIC LILLI & PARTNERS** - Accredited Building Certifiers

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A division of Mondan Management Pty Ltd ABN 60 119 432 094

**BCA CAPABILITY REPORT**

**FOR**

**LEND LEASE**

**PREMISES**

**4 MURRAY ROSE AVENUE  
SYDNEY OLYMPIC PARK**

**Date: 11 DECEMBER 2014**

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# TABLE OF CONTENTS

<b>CONTENTS</b>	<b>Page No.</b>
<b>1.0 – EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>2.0 – PROPERTY DESCRIPTION .....</b>	<b>5</b>
<b>2.1 - LOCATION.....</b>	<b>5</b>
<b>2.2 - BUILDING DESCRIPTION.....</b>	<b>5</b>
EFFECTIVE HEIGHT .....	5
<b>3.0 - BUILDING CODE OF AUSTRALIA ASSESSMENT.....</b>	<b>6</b>
3.1 – FIRE RESISTANCE AND STABILITY (SECTION C, BCA) .....	6
3.2 – ACCESS & EGRESS (SECTION D, BCA) .....	7
3.3 – SERVICES AND EQUIPMENT (SECTION E, BCA) .....	9
3.4 – HEALTH AND AMENITY (SECTION F, BCA).....	11
3.5 – ENERGY EFFICIENCY CONSTRUCTION (SECTION J, BCA) .....	12
<b>4.0 – FIRE SAFETY AND OTHER MEASURES .....</b>	<b>14</b>
<b>5.1 – CONCLUSIONS.....</b>	<b>15</b>
<b>6.0 - REFERENCES.....</b>	<b>16</b>

## **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) 2014 and adopted standards.

The building, the subject of this report, is the redevelopment of an existing site, comprising a commercial building containing nine (9) levels in total including a three storey basement car park section.

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



### 3.0 - Building Code of Australia Assessment

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

Item	Comment
<i>Fire Resistance</i>	<p>The proposed building works, including both the superstructure and the various shafts and cores, will comply with the required fire resistance levels as specified in Specification C1.1 for Type A construction.</p> <p>Within the car park the FRL's may reduce where utilizing clause 3.9 of Specification C1.1 with the exception of the slab separating the ground floor non sprinkler protected parts (refer below)</p>
<i>Compartmentation</i>	<p>Each floor will be fire separated from the next to form separate fire compartments (with the exception of the ground and first floors connection via the void), the floor and supporting structure are therefore to achieve a FRL of 120 minutes for car park and the office/commercial levels.</p> <p>It is proposed to sprinkler protect the basements up to the ground floor level therefore the fire separation between sprinkler and non sprinkler protected parts will be formed by the floor slab separating the upper floor level and achieving a FRL of 120/120/120 and including the walls bounding the entry ramp to the car park.</p>
<i>Protection of Openings</i>	<p>There are no openings to external walls exposed within 3m to an allotment boundary that requires any form of protection</p>
<i>Vertical separation of openings</i>	<p>Spandrel separation is required to the external facade of the building, including the separation of Ground and level 1 (irrespective of the connection of the floors through the void)</p>
<i>Fire hazard properties</i>	<p>The wall and floor linings must achieve the fire hazard properties stipulated in BCA Specifications C1.10 &amp; Specification C1.10.</p>
<i>Protection of equipment.</i>	<p>It is proposed to separate equipment as nominated in the provisions of Clause C2.12 of the BCA in construction achieving an FRL of not less than 120/120/120, such equipment can comprise substations, smoke control equipment and lift motor rooms</p>

### 3.2 – Access & Egress (Section D, BCA)

Item	Comment
<i>Number of exits required</i>	The location and of extent of exits generally compliant, a minimum of 2 is required from the basement levels and one from above ground levels. The proposed design in this regard is considered compliant.
<i>Exit travel distances.</i>	<p>The location and extent of exits is generally compliant with the following exceptions:</p> <ul style="list-style-type: none"> <li>• basement B03_A (northwest corner)- 30m to a point in choice in travel</li> <li>• basement B02_A (northwest corner)- 30m to a point in choice in travel</li> <li>• basement B01_A (northwest corner)- 30m to a point in choice in travel</li> <li>• ground floor tenancy 2- 27m to point in choice in travel to two exits</li> <li>• ground floor male staff toilets- 30m to a point in choice in travel</li> </ul>
<i>Distance between alternative exits</i>	The distance between alternate exits is generally compliant
<i>Travel via fire isolated exits</i>	Exits are formed by fire isolated exits that are rising and descending in the same shafts, the shafts will remain separated at ground floor and combine to discharge by a common fire isolated passageway for each scissor stair, the arrangement will be assessed at a future time as an alternate solution as advised by the client during the construction certificate stage.
<i>Dimensions of exits.</i>	Aggregate egress widths for the above ground commercial floors are to accommodate a population of 291 persons, in this regard the proposed width of 3m via the 3 exits will be satisfactory.
<i>Construction of Stairways.</i>	All stairways will comply with requirements for treads, risers, landings and thresholds in accordance with clauses D2.13, D2.14 & D2.15 of the BCA respectively.
<i>Egress Doors.</i>	All required doorways will 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>Electrical distribution boards</i></p>	<p>Electrical distribution boards located in the path of travel to an exit must be enclosed in a non-combustible enclosure and sealed to prevent the escape of smoke.</p>
<p><i>Balustrades</i></p>	<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 Clauses 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>
<p><i>Handrails</i></p>	<p>Handrails are to be provided to stairways as required by Clause D2.17 of the BCA, furthermore all internal stairs and ramps (excluding fire isolated stairs) are to have handrails that comply with clause 11 of AS 1428.1-2009, this is to include handrails both sides, closed back risers, contrasting nosing strips and tactile indicators, this will include stairs to the car parking levels also</p> <p>Fire isolated stairs are to be provided with a handrail to one side and have color contrasting nosing's (subject to compliance with SOPA access guidelines also)</p>
<p><i>Signage</i></p>	<p>Signage must be provided to all fire safety doors and to doors leading from enclosed stairways as required by BCA Clause D2.23. Signage is to include Braille and tactile signs at the entry to each fire isolated exit and the final discharge door nominating the word EXIT and level number as per clause D3.6</p>
<p><i>Access for people with disabilities.</i></p>	<p>Access throughout the development appears to comply with the requirements contained within Part D3 of the BCA, however the following item will require further consideration:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• fire isolated stairs are to have contrasting nosing's and solid back risers throughout the flight to AS 1428.1-2009</li> <li>• lifts are to comply with Clause E3.6 with an internal car size of 1600mm x 1400mm</li> </ul> <p>Disabled access will be subject to a separate report confirming compliance by a specialist access consultant</p>

### 3.3 – Services and Equipment (Section E, BCA)

Item	Comment
<i>Hydrant Systems.</i>	<p>The building will be provided with a hydrant system in accordance with the provisions of Clause E1.3 of the BCA and AS 2419.1.</p> <p>The design of the service will be subject to a detailed review by a hydraulic consultant at the Construction Certificate stage.</p>
<i>Hose Reel Systems.</i>	<p>The building will be provided with a fire hose reel system in accordance with the provisions of Clause E1.4 of the BCA and AS 2441.</p> <p>The design of the service will be subject to review by a hydraulic consultant.</p>
<i>Portable Fire Extinguishers.</i>	<p>Fire extinguishers will be provided in accordance the provisions of Clause E1.6 of the BCA and AS2444.</p>
<i>Smoke detection and alarm</i>	<p>The building will 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.</p> <p>The design of the service will be subject to review by a fire services consultant.</p>
<i>Emergency Lighting.</i>	<p>Emergency lighting will be provided throughout the building in accordance with Clauses E4.2 &amp; E4.4 of the BCA and AS 2293.1.</p> <p>The design of the service will be subject to review by an electrical services consultant.</p>
<i>Exit Signs.</i>	<p>Exit signs will be provided throughout the building in accordance with Clauses E4.5, E4.6 &amp; E4.8 of the BCA and AS 2293.1.</p> <p>The design of the service will be subject to review by an electrical services consultant.</p>

<p><i>Sprinklers</i></p>	<p>The development will require a sprinkler system throughout the car parking levels complying with Spec E1.5 of the BCA and AS 2118.1</p> <p>The design of the service will be subject to review by a fire services consultant at the Construction Certificate stage however it is expected compliance can be achieved</p>
<p><i>Lifts</i></p>	<p>At least one lift is to incorporate a stretcher facility where serving a storey greater than 12m in effective height and otherwise comply with clause E3.6 for disabled access and usability.</p>
<p><i>Building Occupancy Warning system</i></p>	<p>A BOWS system is to be provided throughout the building in compliance with BCA Clause E2.2 (specification E2.2a) and clause 3.22 of AS 1670.1-2004</p>
<p><i>Stair pressurization</i></p>	<p>The stairs serving the basement levels are to be provided with an automatic stair pressurization system complying with AS/NZS 1668.1-1998</p>

### 3.4 – Health and Amenity (Section F, BCA)

Item	Comment																																				
Damp & Weatherproofing.	Adequate measures will be employed to ensure compliance Part F1 of the BCA is achieved in terms of weatherproofing.																																				
Sanitary & Other Facilities.	<p>Facilities will be provided in accordance with the provisions of Table F2.3 of the BCA.</p> <p>Based on a population determined under table D1.13 of the BCA (based on open floor plan layout), the following facilities are required:</p> <p>Ground floor: (excludes facilities of the public to class 6 use)</p> <table data-bbox="566 869 1257 1010"> <thead> <tr> <th></th> <th>pans</th> <th>urinals</th> <th>basins</th> </tr> </thead> <tbody> <tr> <td>Males (60)</td> <td>3</td> <td>3</td> <td>2</td> </tr> <tr> <td>Females (60)</td> <td>4</td> <td></td> <td>2</td> </tr> </tbody> </table> <p>Level 1:</p> <table data-bbox="566 1077 1257 1218"> <thead> <tr> <th></th> <th>pans</th> <th>urinals</th> <th>basins</th> </tr> </thead> <tbody> <tr> <td>Males (102)</td> <td>6</td> <td>3</td> <td>4</td> </tr> <tr> <td>Females (102)</td> <td>7</td> <td></td> <td>4</td> </tr> </tbody> </table> <p>Levels 2-5:</p> <table data-bbox="566 1285 1257 1426"> <thead> <tr> <th></th> <th>pans</th> <th>urinals</th> <th>basins</th> </tr> </thead> <tbody> <tr> <td>Males (150)</td> <td>8</td> <td>4</td> <td>5</td> </tr> <tr> <td>Females (150)</td> <td>10</td> <td></td> <td>5</td> </tr> </tbody> </table> <p>There is a unisex accessible facility to each floor and can be counted once for each sex, in addition an ambulant accessible cubicle is provided to each bank of male and female toilets</p>		pans	urinals	basins	Males (60)	3	3	2	Females (60)	4		2		pans	urinals	basins	Males (102)	6	3	4	Females (102)	7		4		pans	urinals	basins	Males (150)	8	4	5	Females (150)	10		5
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Ceiling height	<p>The following minimum building ceiling heights must be maintained.</p> <ul style="list-style-type: none"> <li>• Corridor, passageway or the like – 2.1m</li> <li>• Bathroom, shower, sanitary compartment or the like – 2.1m</li> <li>• Habitable rooms including common areas – 2.4m</li> <li>• Stairways – 2.0m</li> <li>• Car parking areas – 2.2m</li> <li>• Disabled car parks – 2.5m</li> </ul>																																				

Sanitary Facilities for People with Disabilities.	Facilities will be provided in accordance with the provisions of AS1428.1 – 2009 for both accessible and ambulant facilities
Ventilation.	<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 1668.2-1991</p>
<i>Lighting.</i>	Artificial lighting will be provided throughout the building in accordance with the provisions of Clause F4.4 of the BCA and AS1680.0.

### **3.5 – Energy Efficiency Construction (Section J, BCA)**

<b>Item</b>	<b>Comment</b>
Building Fabric	The external fabric of the development with a conditioned space will be insulated in accordance with Part J1 of the BCA. In general R2.8 will be achieved to external walls and R3.2 to ceilings. Suspended floors at the car parking levels bounding conditioned space above are to have a minimum R1.0 to the underside of the slab (R2.0 where exhaust operates at more than 1.5 air changes per hour)
Glazing	The external glazing of the development with a conditioned space will have the appropriate U value and solar heat gain co efficiency in accordance with Part J2 of the BCA.
Building Sealing	The external fabric of the development with a conditioned space will be appropriately sealed in accordance with Part J3 of the BCA.
Air-Conditioning and Ventilation System	The air-conditioning and ventilation system of the development with a conditioned space will be designed to comply with Part J5 of the BCA.

<p>Artificial Lighting and Power</p>	<p>The building is to maintain maximum lighting power levels and control systems as applicable. The design of lighting systems must comply with BCA Part J6.</p> <p>The following maximum lighting power loads (W/m<sup>2</sup>) are applicable to the building</p> <ul style="list-style-type: none"> <li>• Car park - 6</li> <li>• Car park entry zone (20m) - 25</li> <li>• Common rooms, corridors - 8</li> <li>• Entry lobby from outside - 15</li> <li>• Control room, switch room - 9</li> <li>• Plant room - 5</li> <li>• Service areas &amp; store rooms – 5</li> <li>• General office - 9 (max)</li> </ul> <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 or in particularly small rooms.</p>
<p>Hot Water Supply</p>	<p>Hot water supply systems will be installed in accordance with Part J7 of the BCA and AS/NZS 3500.4.</p>
<p>Access for Maintenance</p>	<p>The building is to have facilities for maintenance and energy monitoring in compliance with BCA Part J8 and the NSW variations and include means of energy monitoring under clause J8.3</p>

## 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: -

Measure	Standard of Performance
Access panels, Doors and Hoppers to Fire-resisting shaft	BCA Clause C3.13
Automatic fail safe devices	BCA Clause C3.4, D2.21, AS 1670.1-2004
Automatic fire detection and alarm system	BCA Spec E2.2a, AS 1670.1-2004
Automatic fire suppression system (sprinkler) –	BCA Spec E1.5, AS 2118.1-1999
Emergency lighting	BCA Clause E4.2 & E4.4, AS 2293.1-2005
Exit signs	BCA Clause E4.5 & E4.8, AS 2293.1-2005
Fire dampers	AS/NZS 1668.1-1998
Fire doors	BCA Spec C3.4, AS 1905.1-2005
Fire hydrant systems	BCA Clause E1.3, AS 2419.1-2005
Fire Safety Engineering	<b>TBA</b>
Fire seals (protecting openings in fire resisting components of the building)	BCA Clause C3.15
Fire hose reel system	BCA Clause E1.4, AS 2441-2005
Lightweight construction	BCA Clause C1.8, BCA Spec C1.8
Pressurising system (stair)	BCA Clause E2.2, table E2.2a, AS/NZS 1668.1-1998
Portable fire extinguishers	BCA Clause E1.6, AS 2444-2001
Warning and operational signage (eg stairway notices)	BCA Clause D2.23 & E3.3, EP&A Act Form 15B

## 5.0 – CONCLUSION

### 5.1 – Conclusions

It is the opinion of this office that, on satisfaction of the above recommendation, the proposed building is capable of achieving compliance with the requirements of the Building Code of Australia (BCA) 2014 and relevant adopted standards without undue modification to the design or appearance of the building.



Dean Morton  
Director  
**Vic Lilli and Partners Consulting**

## 6.0 – REFERENCES

### 6.0 - References

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

- (i) Architectural Plans as prepared by Turner and Associates

<i>Drawing No</i>	<i>Rev</i>	<i>Date</i>	<i>Title</i>
EA101	R	27/11/14	Basement 3
EA102	R	27/11/14	Basement 2
EA103	R	27/11/14	Basement 1
EA103.1	E	27/11/14	Basement 1 plant mezzanine
EA104	W	27/11/14	Ground Level
EA105	E	13/11/13	Level 1
EA106	D	13/11/13	Level 2
EA107	D	13/11/13	Level 3
EA108	G	13/11/13	Level 4
EA109	C	13/11/13	Level 5
EA110	E	13/11/13	Plant level
EA111	C	13/11/13	Roof plan
EA300	c	13/11/13	North elevation
EA301	C	13/11/13	East elevation
EA302	C	13/11/13	South elevation
EA303	C	13/11/13	West elevation
EA400	C	13/11/13	Section A
EA401	B	13/11/13	Section B
EA403	B	13/11/13	Section D

- (ii) Building Code of Australia (BCA) 2014;
- (iii) Environmental Planning and Assessment Act, 1979, and Regulations.
- (iii) Disability (Access to Premises-Buildings) Standards 2010