

Our Ref: J120538

14 February 2013

EG Funds Management
Level 14, 345 George Street
SYDNEY NSW 2000



Attention: Mark Syke

Dear Mark,

**Re: Summer Hill Flour Mill Stage 1
Residential Apartment 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

A handwritten signature in dark ink, appearing to be 'DM', with a long horizontal stroke extending to the right.

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

Encl.

BCA CAPABILITY REPORT

FOR

EG FUNDS MANAGEMENT

PREMISES

SUMMER HILL FLOUR MILL STAGE 1

Date: 14 FEBRUARY 2013

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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) 2012 and adopted standards.

The building, the subject of this report, is the redevelopment of an existing site being a disused flour mill and associated building complex, the proposed redevelopment comprising an apartment building development containing seven (7) levels in total with one dedicated basement car parking level and six levels of residential apartments.

The stage 1 works are also to include the construction of a commercial building which is two storey's

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

2.0 – Property Description

2.1 - Location

The subject building is to be located at the existing flour mill site in Summer Hill and bounded to the west by Edward Street and Smith Street to the north, the future light rail line is located to the east of the site. The site is within the jurisdiction of Ashfield Council for the purposes of development approvals.

2.2 - Building Description

<i>Use/Classification</i>	<ul style="list-style-type: none"> • Class 2 – Residential (ground to level 5) • Class 7a – Car parking (basement) • Class 6 - Commercial building (site 2) - retail tenancy within apartment building
<i>Rise in Storeys</i>	The residential apartment building will have a rise of seven (7) storeys, the commercial building (site 2) having a rise in storeys of 2
<i>Floor Area</i>	<ul style="list-style-type: none"> • Floor area limitations are not applicable to Class 2 portion. • Floor area limitations do not apply to Class 7a car parking areas provided with a sprinkler system • The class 6 building will not exceed the maximum 2000m² permitted for Type C construction (site 2), or 5000m² permitted for Type A construction
<i>Volume</i>	<ul style="list-style-type: none"> • Volume limitations are not applicable to Class 2 portion. • Volume limitations do not apply to Class 7a car parking areas provided with a sprinkler system • The volume of the 6 building will not exceed the maximum prescribed volume of 12,000m³ Type C construction (site 2) or 30,000m³ Type A construction
<i>Effective Height</i>	The building will have an effective height of 17.20m (RL28.00 - RL10.80)
<i>Type of Construction (BCA)</i>	The residential apartment building is to adopt Type A construction throughout, the commercial building (site 2) to adopt Type C construction
<i>Climate zone</i>	For the purpose of the class 7a and 6 parts the building is within climate zone 5

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 for the apartment building</p> <p>In general the class 7a part is to achieve FRL's of 120 minutes and class 2 parts 90 minutes, further advice from a structural engineer is required however it is expected compliance can be readily achieved. where a sprinkler system compliant with Specification E1.5 of the BCA is provided to the car park the FRL's can reduce in general to 60 minutes throughout. The inclusion of the class 6 portion to the north side of the apartment building will require the separating construction to the first floor of minimum 180 minutes FRL</p> <p>In general no elements of the commercial building (site 2) will be required to achieve a fire resistance level applicable to Type C construction</p>
<i>Compartmentation</i>	<p>Each sole occupancy unit to the residential levels it to be separated from another SOU with walls achieving a FRL of 90/90/90 for load bearing walls and -/60/60 for non load bearing walls</p>
<i>Protection of Openings</i>	<p>There are no openings located in external walls considered to be exposed to a fire source feature that will require protection (refer to separate comments in relation to the construction of exit stairs)</p>

<i>Vertical separation of openings</i>	<p>Spandrel protection is required to a non sprinkler protected building and can otherwise readily achieve compliance</p> <p>Where balconies are intended to be used for separation there is to be a minimum length of 1100mm and achieve a FRL of 60/60/60 and extend 450mm either side of the opening being protected</p> <p>Within the three storey town house style units no spandrels are required as the floor are not required to be fire rated within each sole occupancy unit</p>
<i>Fire hazard properties</i>	<p>The wall and floor linings must achieve the fire hazard properties stipulated in BCA Specifications C1.10 & Specification C1.10.</p>
<i>Protection of equipment.</i>	<p>There is no equipment indicated to be provided to the building that requires separation within the building, such equipment can comprise substations, smoke control equipment and lift motor rooms</p>
<i>Fire sealing of penetrations</i>	<p>All service penetrations must be sealed to the requirements of BCA Clause and Specification C3.15.</p>
<i>Smoke separation of corridors</i>	<p>Enclosed common corridors are not proposed</p>

3.2 – Access & Egress (Section D, BCA)

Item	Comment
<i>Number of exits required</i>	The location and extent of exits generally compliant in that a minimum of one exit is provided to each floor for residential levels and two exits provided to the basement level
<i>Exit travel distances.</i>	Exits to the residential levels are compliant as do not exceed 6m to the single exit or 6m to a point in choice in travel to two exits. Within the basement travel distances are generally compliant.
<i>Distance between alternative exits</i>	<p>The distance between alternate exits is generally compliant and not exceeding 60m.</p> <p>Within the basement the distance between alternate exits is approximately 65m, the applicant has advised this will be addressed via an alternate solution at the construction certificate stage</p>
<i>Travel via fire isolated exits</i>	<p>The stairs serving apartment building are proposed as open external stairs in lieu of fire isolated stairs, in this regard no openings may be formed within 3m of the exit and any opening between 3-6m will be protected in accordance with Clause C3.4. The path of travel from the point of discharge of the stairs on the south side to the road requires travel within 6m of the building</p> <p>The omission of any separating element between the stair and the internal foyer/lobby space to the south stair does not strictly comply with the BCA.</p> <p>The applicant has advised the design will be subject to a fire engineered solution at the construction certificate stage</p>
<i>Dimensions of exits.</i>	A minimum clear width of 1m must be maintained to all exit stairways. The overall width of the stairways must be such that the clear width can be achieved between handrails.
<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.
<i>Electrical distribution boards</i>	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.
<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 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>Openable windows located where a fall exceeds 4m from internal floor level to the ground below are to have a sill height at minimum 865mm and have no climbable elements below the window located between 150-760mm above floor level</p>
<i>Handrails</i>	Handrails are to be provided to stairways as required by Clause D2.17 of the BCA, including internal stairs within a residential SOU. As stairs are designed as non fire isolated they are to comply with clause 11 of AS 1428.1-2009 for disabled use
<i>Signage</i>	Signage must be provided to all fire safety doors (except those doorways providing access to sole occupancy units) and to doors leading from enclosed stairways as required by BCA Clause D2.23.

<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 2012, however the following item will require further consideration:</p> <ul style="list-style-type: none"> • The proposed external stairs in lieu of fire isolated stairs are to comply with clause 11 of AS 1428.1-2009 (including tactile indicators) • The stairs to the first floor of the commercial building is to comply with clause 11 of AS 1428.1-2009 (including tactile indicators) • Access to the commercial building and retail tenancy is to be via a continuous accessible pathway from the allotment boundary and the apartment building compliant with AS 1428.1-2009 <p>At the construction stage further confirmation with regards to the requirements of AS1428-2009 will be considered.</p>
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3.3 – Services and Equipment (Section E, BCA)

Item	Comment
Hydrant Systems.	<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 however it is expected compliance can be achieved</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 to the main switch board only.</p>
<i>Smoke Hazard Management.</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 & E4.4 of the BCA and AS 2293.1.</p> <p>The design of the service will be subject to review by a fire services consultant.</p>

<i>Exit Signs.</i>	<p>Exit signs will be provided throughout the building in accordance with Clauses E4.5, E4.6 & E4.8 of the BCA and AS 2293.1.</p> <p>The design of the service will be subject to review by a fire services consultant.</p>
<i>Sprinklers</i>	<p>The development will require a sprinkler system throughout the basement level of the building complying with Specification E1.5 of the BCA and AS2118.1-1999</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>
<i>Lifts</i>	<p>For lifts that are serving a storey greater than 12m in effective height they are to include a stretcher facility and otherwise comply with clause E3.6 for disabled access and usability. In this regard the south lift is to have a stretcher facility</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 Clause/Table F2.3 of the BCA.</p> <p>A toilet facility for maintenance staff is to be provided at or near ground level as required to the apartment building.</p> <p>The commercial building is to be provided with a unisex accessible sanitary facility for staff use.</p>

<i>Ceiling height</i>	<p>The following minimum building ceiling heights must be maintained.</p> <ul style="list-style-type: none"> • Common kitchen, laundry or the like – 2.1m • Corridor, passageway or the like – 2.1m • Bathroom, shower, sanitary compartment or the like – 2.1m • Habitable rooms including common areas – 2.4m • Stairways – 2.0m • Car parking areas – 2.2m • Disabled car parks – 2.5m • Commercial building - 2.4m
<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.</p> <p>The residential areas of the building must be provided with natural or mechanical ventilation as required by Part F4 of the BCA.</p>
<i>Lighting.</i>	<p>Artificial lighting will be provided throughout the building in accordance with the provisions of Clause F4.4 of the BCA and AS1680.1.</p> <p>Natural light has been provided as required to the habitable rooms of the apartments</p>
<i>Sound insulation</i>	<p>The floor separating the residential units and separating the sole occupancy units from public areas must achieve a sound insulation rating of R_w+C_{tr} (airborne) of not less than 50 and an $L_n,w+C_i$ (impact) not more than 62.</p> <p>Walls separating units must achieve a sound insulation rating of R_w+C_{tr} (airborne) of not less than 50.</p> <p>Walls separating units from plant rooms, lift shafts, stairways corridors or other public areas must have an insulation rating of R_w (airborne) not less than 50.</p> <p>Walls separating a bathroom, sanitary compartment, laundry or kitchen in one sole occupancy unit from a habitable room in another or separating a unit from a lift shaft must be of discontinuous construction.</p>

	<p>The doorway separating to sole occupancy unit from the public area must have an Rw not less than 30</p> <p>Soil, waste & stormwater services must be separated by construction having an Rw+Ctr (airborne) not less than</p> <ul style="list-style-type: none"> ▪ 40 if the room is a habitable room ▪ 25 if the room is a non-habitable room
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3.5 – Energy Efficiency Construction (Section J, BCA)

- **Note 1: The residential Class 2 part of the building is to be designed to comply with the requirements of two MANDATORY points for energy efficiency. They are:** A, BASIX assessment and a BASIX certificate will be required to be lodged with the development application. In addition to the BASIX certificate compliance with NSW J (A) is required for the Class 2 part. The relevant/applicable sections of NSW J (A) are to be complied with. The clauses within Section J (A) are listed below.
NSW J(A)1.0 – Building Fabric,
- NSW J(A) 2.0 – Building Sealing
- NSW J(A) 3.0 – Air Conditioning and ventilating systems
- NSW J(A) 4.0 – Hot Water Supply
- NSW J(A) 5.0 – Access For Maintenance

NB: The following BCA Section J National provisions will be applicable to the car parking levels and retail tenancy and commercial building (site 2).

Item	Comment
Building Fabric	<p>The external fabric of the development with a conditioned space to the swimming pool part only 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.</p> <p>Note that the remainder of the building will be subject to BASIX compliance</p>
Glazing	The external glazing of the development with a conditioned space will have the appropriate U value and solar heat gain coefficient in accordance with Part J2 of the BCA to the commercial building
Building Sealing	The external fabric of the development with a conditioned space will be appropriately sealed in accordance with Part J3 of the BCA to the commercial building
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 to the car parking level and commercial building. The design of lighting systems must comply with BCA Part J6.</p> <p>The following maximum lighting power loads (W/m²) are applicable to the building</p> <ul style="list-style-type: none"> • Car park - 6 • Car park entry zone (20m) - 25 • Plant room - 5 • Service areas & store rooms – 5 • retail - 22 • restaurant/cafe - 18 <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 to the basement car parking</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 fire detection and alarm system	BCA Spec E2.2a, AS 1670.1-2004, AS 3786-1993
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	TBA
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
Mechanical air handling systems (car park exhaust)	Clause 5.5 of AS/NZS 1668.1-1998 and AS1668.2-1991
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) 2012 and relevant adopted standards without undue modification to the design or appearance of the building.



Dean Morton
Director
Vic Lilli and Partners Consulting Pty Ltd

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 Hassell Architects (all dated 11/02/2013)

Drawing No.	Title
DA-011	Location plan
DA-099	Basement level floor plan site 1
DA-100	Ground floor plan site 1
DA-101	Level 1 floor plan site 1
DA-102	Level 2 floor plan site 1
DA-103	Level 3 floor plan site 1
DA-104	Level 4 floor plan site 1
DA-105	Level 5 floor plan site 1
DA-106	Roof Plan site 1
DA-200	Ground- site 2
DA-201	Level 1- site 2
DA-300	Elevation 1 site 1
DA-301	Elevation 2 site 1
DA-302	Elevation 3 site 1
DA-500	Section 1 site 1
DA-501	Section 2 site 1
DA-600	Elevations and sections site 2

- (ii) Building Code of Australia (BCA) 2012;

- (iii) Environmental Planning and Assessment Act, 1979, and Regulations.