

Our Ref: CSD-2006-03

24 September 2007

Belmorgan Property Development Pty Ltd.
P.O. Box 498
WARRAWONG NSW 2502

Attention: Nick Kordas

Dear Nick,

**Re: Dwyer's & Oxford Site Development
Corner Burelli, Crown and Corrimal Streets, Wollongong
Development Application Submission
BCA Capability Statement**

Please find enclosed our BCA Capability Stage 2 Concept Report for inclusion with the Development Application submission.

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

Yours faithfully

**Simon Dwyer
for CSD Management Services Pty Ltd**

Encl.

**8 Emerton Crescent
Robina QLD 4226
PO Box 4306
Robina Town Centre 4230
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BCA CAPABILITY REPORT

FOR

BELMORGAN PROPERTY DEVELOPMENT

PREMISES

DWYER'S & OXFORD SITE OVERALL CONCEPT

CORNER BURELLI STREET & CORRIMAL STREETS

WOLLONGONG

Date: 24 September 2007

8 Emerton Crescent
Robina QLD 4226
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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) 2007 and adopted standards.

The building development, the subject of this report, comprises the overall concept plan being-

1. Stage 1-the existing building encompassing four (4) storeys of basement parking, three (3) storeys of retail and cinemas and one (1) storey of offices and cinema plant;
2. Stage 2-one (1) storey of hotel conference, kitchen and business facilities, ten (10) storeys of hotel suites and one (1) storey of rooftop restaurant and plant equipment;
3. Stage 3-four (4) storeys of basement parking, one (1) storey of ground level retail, two (2) storeys of offices, two towers with one comprising eight (8) storeys of offices and the other comprising eleven (11) storeys of residential units.

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

2.0 – Property Description

2.1 - Location

The subject building is to be located at the corner of Burelli, Crown and Corrimal streets, Wollongong which is within the jurisdiction of Wollongong City Council for the purposes of development approvals.

The subject building development being all of Stages 1-3, known as Dwyer's & Oxford Site Development, will have frontage to Burelli Street to the south, Corrimal Street to the west, Crown Street to the north and will abut properties to the east.

2.2 - Building Description

<i>Use/Classification</i>	Proposed: Mixed classification being- • Class 2-residential units • Class 3-hotel suites • Class 5-offices • Class 6-retail • Class 7a-parking • Class 9b-cinemas & conference rooms
<i>Rise in Storeys</i>	Rise of fourteen (14) storeys
<i>Floor Area</i>	Class 2 & 3-residential units & hotel suites-not applicable Class 5 & 9b part – maximum floor area of 8,000m ² . Class 6 part – maximum floor area of 5,000m ² .
<i>Volume</i>	Class 2 & 3-residential units & hotel suites-not applicable Class 5 & 9b Part – maximum volume of 48,000m ³ . Class 6 Part – maximum volume of 30,000m ³ .
<i>Effective Height</i>	The building will have an effective height of more than 25 metres.
<i>Type of Construction (BCA)</i>	Type A Construction required.

3.0 - Building Code of Australia Assessment

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

Item	Comment
<i>Fire Resistance</i>	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 whole of both podium and tower structures.
<i>Compartmentation</i>	The building will be compartmented storey by storey with fire-resisting construction incorporating fire-resisting floors so as to comply with Table C2.2 of the BCA. However, the fire compartment floor area limits nominated in Table C2.2 applicable to Type A Construction cannot be achieved where applicable on Basement Level 1 up to Level 3 for the Class 6 and 9b areas of Stage 1 of the proposed development. This will necessitate an alternative building solution approach to the design compliance. Level 4 fire compartmentation and separation of cinemas and offices will be achievable by a bounding fire wall. In addition, voids in the concrete floors from Levels 6-11 of Stage 2 will necessitate an alternative building solution approach also to be carried out by an accredited fire engineer.
<i>Protection of Openings</i>	Doorways to the fire- isolated stairways and lift shafts will be protected in accordance with the provisions of Clauses C3.8 & C3.10 of the BCA. All doorways to the residential unit and hotel suites will be protected by fire doorsets achieving an FRL of -/60/30 in accordance with the provisions Clause C3.11 of the BCA. All doorways and penetrations to services shafts and risers will be protected in accordance with the provisions of Clauses C3.12, C3.13, C3.14 and C3.15 of the BCA.
<i>Protection of equipment.</i>	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.

3.2 – Access & Egress (Section D, BCA)

Item	Comment
<i>Number of exits required</i>	The number of exits in the building will achieve compliance with the provisions of Clause D1.2 of the BCA being at least two (2) exits in the basement carpark, retail storeys, cinema storeys and residential unit and hotel tower floors.
<i>Exit travel distances.</i>	Exit travel distances in the building will achieve compliance with the provisions of Clause D1.4 of the BCA. Where this is not possible, an alternative building solution will be prepared by an accredited fire engineer to substantiate the extended travel to an exit in the retail areas and compliance with the BCA.
<i>Distance between alternative exits</i>	Distances between alternative exits in the building will achieve compliance with the provisions of Clause D1.5 of the BCA. Hotel levels 6-12 in Stage 2 will have more than 45 metres between exits and necessitate an alternative solution justifying DP4 of the BCA.
<i>Fire-isolation of stairways.</i>	The stairways serving the building will be fire-isolated in accordance with the provisions of Clause D1.3 of the BCA.
<i>Dimensions of exits.</i>	Aggregate egress widths for all storeys in the building have been designed to ensure compliance with the provisions of Clause D1.6 of the BCA-21 metres of aggregate exit width at the retail level and 2 metres in the towers above.
<i>Discharge of exits.</i>	Generally, the discharge of fire-isolated exits from the building has been designed to ensure compliance with the provisions of Clauses D1.7 and D1.10 of the BCA. However, in several cases in Stages 1 and 3, the exits discharge adjacent to glazed doors or within the building envelope. As such, an accredited fire engineer will prepare an alternative building solution to substantiate compliance with the BCA.
<i>Non-required stairways and escalators.</i>	The non-required escalators and travelators serving the building will connect more than three (3) storeys and, as such, will not comply with the provisions of Clause D1.12 of the BCA. In this case, an alternative building solution will be prepared by an accredited fire engineer to justify this design approach for BCA compliance.
<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 door hardware in accordance with Clauses D2.20 & D2.21 of the BCA.
<i>Balustrades.</i>	Balustrades are to be provided to all stairways in accordance with Clauses D2.16 of the BCA.
<i>Handrails</i>	Handrails will be provided in stairways as required by the provisions of Clause D2.17 of the BCA.
<i>Access for people with disabilities.</i>	Access for people with disabilities to and within the building will comply with the requirements of Part D3 of the BCA.
<i>Carparking</i>	Carparking for people with disabilities will be provided in accordance with Clause D3.5 of the BCA.

3.3 – Services and Equipment (Section E, BCA)

Item	Comment
<i>Hydrant Systems.</i>	Hydrants will be provided in accordance with the provisions of Clause E1. 3 of the BCA and AS 2419.1.
<i>Hose Reel Systems.</i>	Hose reels will be provided in accordance with the provisions of Clause E1. 4 of the BCA and AS 2441.
<i>Portable Fire Extinguishers.</i>	Fire extinguishers will be provided throughout the building in accordance the provisions of Clause E1.6 of the BCA and AS 2444.
<i>Sprinkler System</i>	The buildings will be sprinkler protected in accordance with the provisions of Clause and Specification E1.5 of the BCA and AS 2118.1.
<i>Fire Control Centre</i>	The buildings will be provided with fire control centres in accordance with the provisions of Clause and Specification E1.8 of the BCA.
<i>Smoke Hazard Management.</i>	The buildings will be provided with a smoke detection and alarm system in accordance with Clause/Table E2.2a of the BCA, a smoke control system in accordance with Clause table E2.2 (b) of the BCA and stair pressurization in accordance with Clause E2.2 and AS1668.1.
<i>Lift Services.</i>	The lifts within the buildings will be installed in accordance with the provisions of Clauses E3.3, E3.6 & E3.7 of the BCA and AS 1735.
<i>Emergency Lighting.</i>	Emergency lighting will be provided throughout the buildings in accordance with Clauses E4.2 & E4.4 of the BCA and AS/NZS 2293.1.
<i>Exit Signs.</i>	Exit signs will be provided throughout the buildings in accordance with Clauses E4.5, E4.6 & E4.8 of the BCA and AS/NZS 2293.1.
<i>Emergency Warning & Intercommunication System</i>	EWIS will be provided throughout the buildings in accordance with Clause E4.9 of the BCA and AS1670.4and AS4428.4.

3.4 – Health and Amenity (Section F, BCA)

Item	Comment
<i>Damp & Weatherproofing.</i>	Adequate measures will be employed to ensure compliance Part F1 of the BCA is achieved in terms of weatherproofing.
<i>Sanitary & Other Facilities.</i>	Facilities will be provided throughout the buildings in accordance with the provisions of- • Clause F2.1 (residential units & hotel suites only); - and • Clause/Table F2.3 of the BCA (commercial offices, retail spaces and cinemas).
<i>Sanitary Facilities for People with Disabilities.</i>	Facilities will be provided in accordance with the provisions of Clause F2.4 and AS 1428.1.
<i>Ventilation.</i>	The buildings will be provided with ventilation in accordance with the provisions of Clause F4.5 of the BCA.
<i>Lighting.</i>	Artificial lighting will be provided throughout the buildings in accordance with the provisions of Clause F4.4 of the BCA.

3.5 – Energy Provisions – (Section J, BCA)

Item	Comment
<i>Building Fabric</i>	The building to be assessed in terms of thermal construction generally for compliance with respect to- • Roof & ceiling • Roof lights • Walls • Floors.
<i>External Glazing</i>	Applicable glazing provisions methods and shading issues will be assessed for required thermal considerations.
<i>Building Sealing</i>	The sealing of the building to be reviewed in terms of- • Roof lights • External windows & doors • Exhaust fans • Roofs, walls & floors.
<i>Air Movement</i>	Review to be undertaken of air movement, ventilation openings and any fans.
<i>Air-Conditioning and ventilation</i>	Review of mechanical services system design for time switching energy consumption will be undertaken for the applicable climate pattern.
<i>Artificial Lighting and Power</i>	Review of electrical services system design will be undertaken in terms of type of light fittings and energy consumption requirements as per the standard.
<i>Hot Water Supply</i>	Applicable hot water and other heating systems will be reviewed for Section J compliance purposes.
<i>Other Energy Requirements</i>	A full energy assessment will be carried out on each building design so as to ascertain the necessary energy savings and changes, if any, required by Section J of the BCA and the climatic conditions for the Wollongong region.

4.0 – Fire Safety and Other Measures

4.1 – Proposed Fire Safety Measures

The following fire safety measures are proposed to be installed for Stages 1-3: -

FIRE SAFETY MEASURE	PERFORMANCE STANDARD
Access panels, doors, and hoppers	C3.13
Automatic fire detection and alarm system	Spec E2.2a
Automatic fire suppression system	Spec. E1.5, AS 2118.1
Emergency lighting	E4.4, E4.2, AS/NZS2293.1
Exit signs	E4.5, E4.8, AS/NZS2293.1
Emergency warning & intercommunication system	E4.9, AS1670.4 and AS4428.4
Fire Control Centre	Clause/Specification E1.8
Fire dampers	AS1668.1
Fire doors	AS1905.1, Spec. C3.4
Fire hydrants	E1.3 of the BCA and AS2419.1
Fire seals	C3.15
Hose reels	E1.4 of the BCA and AS2441
Mechanical air handling systems	AS1668.1 and 2
Paths of travel	Part D1 of the BCA
Portable fire extinguishers	E1.6, AS2444
Pressurizing systems	E2.2, AS668.1
Smoke and heat detectors	AS1670, E2.2
Smoke control systems	AS1668.1, E2.2
Warning and operational signs	D2.23, E3.3, Form 15B
Fire Engineering Analysis	Fire Engineering Guidelines

4.2 – Fire Safety Engineering Approach

The following fire safety engineering approach is intended for the Stage 1 works-

1. CP2-Alternative solution for fire compartments given the presence of the sprinkler system and bounding construction between the major supermarket and minor retail spaces and cinemas on the upper levels;
2. CP2-Alternative solution to justify the non-required escalator connection between Retail/Cinema Levels 1 and 4 and voids from Hotel levels 6-12 given the presence of sprinklers and glazed enclosing construction;
3. DP4-Alternative solution to substantiate the extended travel to and distance between exits in retail and hotel levels 6-12 for Stages 1 and 2;
4. CP2/DP5-Alternative solution to justify the discharge of exits adjacent to glazed doors or within the building envelope for Stages 1 and 3.

5.0 - Conclusion

Assessment of the proposed buildings (Stages 1, 2 and 3) (podium and towers) with associated carparking, will, in our opinion, comply with the Building Code of Australia (BCA) 2007 and relevant adopted standards.

Signed,



Simon Dwyer
CSD Management Services Pty Ltd.

6.0 - References

6.1 – Basis of Report

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

- (i) Architectural Plans as prepared by DBI Design Pty Ltd.-

Drawing No.	Title	Date
A-CD-2.201/A	Basement Level 4 Floor Plan	Sept 07
A-CD-2.202/A	Basement Level 3 Floor Plan	Sept 07
A-CD-2.203/A	Basement Level 2 Floor Plan	Sept 07
A-CD-2.204/A	Basement Level 1 Floor Plan	Sept 07
A-CD-2.205/A	Level 1 Floor Plan	Sept 07
A-CD-2.206/A	Level 2 Floor Plan	Sept 07
A-CD-2.207/A	Level 3 Floor Plan	Sept 07
A-CD-2.208/A	Level 4 Floor Plan	Sept 07
A-CD-2.208m/A	Level 4 Mezz. Floor Plan	Sept 07
A-CD-2.209/A	Level 5 Floor Plan	Sept 07
A-CD-2.210/A	Levels 6-11 Floor Plan	Sept 07
A-CD-2.211/A	Level 12 Floor Plan	Sept 07
A-CD-2.212/A	Level 13 Floor Plan	Sept 07
A-CD-2.213/B	Level 14 Floor Plan	Sept 07
A-CD-4.201/A	Section 1	Sept 07
A-CD-4.202/A	Section 2	Sept 07
A-CD-4.203/A	Section 3	Sept 07

- (ii) Building Code of Australia (BCA) 2007, including NSW Appendix;
- (iii) Environmental Planning and Assessment Act, 1979, and Regulations;
- (iv) Concept Reports prepared by DBI Design Pty Ltd. and Urbis-Parts 1, 2 & 3.