



VIC LILLI
&PARTNERS

BCA CAPABILITY & FIRE SAFETY REPORT

FOR

Hassall

PREMISES

Penrith Health Campus Redevelopment

East Block

Date: 24 August 2009

Ref. No. J090142-EB-2

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1.0 Executive Summary

1.1 – Report purpose

This report has been prepared to identify the extent of compliance achieved by the architectural documentation depicting the proposed construction of a new three storey hospital building attached to the existing Nepean Hospital against the relevant provisions of the Building Code of Australia (BCA) 2009.

The subject works are required to comply with the technical provisions of the State's building laws under Section 116G of the Environmental Planning and Assessment Act 1979.

This report provides guidance as to the necessary provisions that must be adhered to as part of the approval process.

1.2 – Report methodology

This report has been prepared on the basis of architectural documentation prepared by Hassall reflecting the proposed works as detailed in Part 6.0 of this report and as updated in the meeting held at the offices of Hassall on 11 August 2009.

The matters addressed in the meeting in question must be incorporated on the relevant plans and compliance verified prior to their approval.

1.3 – Recommendations

To achieve compliance with the relevant provisions of the Building Code of Australia it is recommended that the following matters be addressed.

- (i) The design solutions discussed in the meeting held at the offices of Hassall on 11 August 2009 are to be incorporated into the design plans.
- (ii) Alternative solutions must be evaluated by a fire safety engineer with regard to the following aspects of the design
 - a. The omission of vertical fire separation to various window openings in the eastern façade. To be evaluated against BCA Performance Requirement CP2
 - b. The design of the non-required, non-fire-isolated stairway to the provisions of BCA Performance Requirement CP2
 - c. The design of the egress system to the Level 1 carpark to the provisions of BCA Performance Requirements DP4 & EP2.2
 - d. The design of the fire hose reel system to pass through fire doors at the western interface with North Block to the provisions of BCA Performance Requirement EP1.1.

- (iii) The stairways located in the north eastern and south eastern areas of the building are to be designed to discharge directly to open space with 120/120/120 separation to the carpark to be considered as non-fire-isolated stairways. This construction will omit the requirement for stair pressurisation to those stairways.
- (iv) A path of egress must be provided from the consulting rooms area of Level 2, through Consulting room 6 to the main entry lobby in order to achieve compliant exit travel distances
- (v) All exit doorways and horizontal exits must swing in the direction of egress
- (vi) Statutory fire safety measures must be provided to the building as detailed in Section 4 of this report
- (vii) The Ward area has not been provided with a island style plunge bath as required by BCA Clause F2.3 (f) (iv). It will be necessary to review the proposed ward area facilities as an alternative solution against the provisions of BCA Performance Requirement FP2.1.
- (viii) All proposed building elements must achieve compliance with the requirements of BCA Section J, including
 - a. Insulation of building elements
 - b. Glazing performance
 - c. Sealing of the building structure
 - d. Performance of mechanical ventilation and air-conditioning systems
 - e. Lighting power load

2.0 Property Description

2.1 – Location

The proposed building, known as East Block, is proposed to be attached to the existing North Block of Nepean Hospital, the hospital being situated at Derby Street, Kingswood.

2.2 –Description of works

The proposed works comprise the construction of a new three storey building containing operating theatres, recovery areas, ward areas, consulting rooms and ground floor carparking.

2.3 – Building Description

Use/Classification	<p>The building area the subject of this report has been assessed as being classified as follows</p> <ul style="list-style-type: none"> • Class 5 – Consulting rooms & administration areas • Class 7a – Carparking • Class 9a – Health care building <p>Note: the design of the building provides for the use of the Level 1 carpark as a class 5 or 9a structure in the future. This report provides commentary on both the current and possible future use as appropriate.</p>
Rise in Storeys	The building has a rise of three (3) storeys.
Type of Construction	Type A construction required
Floor Area	<p>The maximum permissible floor area of a fire compartment 5,000m²</p> <p>Additional compartmentation requirements are contained in BCA Clause C2.5.</p>
Effective Height	The building has an effective height of less than 25m.

3.0 Building Code of Australia Assessment

3.1 – Fire Resistance (BCA Section C)

Item	Comment
<i>Fire Resistance</i>	<p>The new structural walls and columns must achieve a fire resistance level to comply with the requirements of Clause C1.1 and Specification C1.1, for a Type B building.</p> <p>Generally this will require a fire rating of 2 hours to all structural elements and fire walls.</p> <p>The lightweight roof need not achieve an FRL under the concession contained in Clause 3.5 of BCA Specification C1.1.</p> <p>With the exception of the 120/120/120 fire walls, the internal structure of the building situated immediately below the lightweight roof of the building need not achieve an FRL under the concession contained in Clause 3.7 of BCA Specification C1.1.</p> <p>With the exception of structure separating the sprinklered and non-sprinklered portions, the carpark structure need only achieve an FRL of 60/-/-.</p> <p>The proposed future use of the Level 1 area as a Class 5 or 9a area will necessitate an FRL not less than 120/120/120 to Level 1.</p>
<i>Compartmentation and Separation</i>	<p>The building must be separated from the existing hospital buildings by fire walls having an FRL not less than 120/120/120 that are continuous through the full height of the building and through to the roof level of the adjacent North Block.</p> <p>The patient care areas are separated into fire compartments of less than 2,000m² by walls having an FRL not less than 120/120/120.</p> <p>The proposed treatment area compartmentation provides separation into areas of less than 1,000m² by smoke walls as required</p> <p>The proposed ward are compartmentation achieves the following as required</p> <ul style="list-style-type: none"> (i) separation into areas of less than 1,000m² by walls having an FRL not less than 60/60/60 (ii) separation into areas of less than 500m² by smoke walls <p>The proposed consulting room and administration areas (Class 5) are separated from the Class 9a areas by fire walls having an FRL not less than 120/120/120.</p>

	<p>All fire walls must be constructed to the requirements of BCA Clause C2.7.</p> <p>Smoke proof walls and any associated openings must be constructed to the requirements of BCA Specification C2.5.</p> <p>Smoke doors and fire doors must be installed to comply with BCA Specification C3.4 and AS 1905.1-2005.</p> <p>Lift shafts are to achieve an FRL not less than 120/120/120.</p> <p>All door and window openings that are adjacent to an adjoining fire compartment must be protected by fire doors or drenchers as appropriate. This protection is required regardless of whether or not the adjacent wall achieves an FRL. This protection may be omitted as an alternative solution where the adjacent wall achieves an FRL that is sufficient to ensure that the transfer of fire will not occur via the opening in question.</p>
<i>Vertical separation of window openings</i>	<p>The building contains a number of window openings in the eastern façade that have not been provided with vertical separation from the opening below by way of 900mm spandrel or 1.1m horizontal projection.</p> <p>The window openings in question are</p> <ul style="list-style-type: none"> (i) The window to the EDO on Level 2 (ii) The windows surrounding the void area and adjacent walkway on Level 2 (iii) The windows surround the void area on Level 3 (iv) The east facing windows to the bedrooms on Level 3 <p>It is proposed that the current design be assessed as an alternative solution against the provisions of Performance Requirement CP2 by demonstration of equivalence against the deemed-to-satisfy requirements of the BCA in relation to the proposed compartmentation of the building compared to that which could be permissible in an equivalent DTS compliant building.</p>
<i>Openings in fire rated elements for service penetrations</i>	<p>Services penetrating fire rated elements of the building must be protected to the requirements of BCA Clause C3.15 and Specification C3.15.</p> <p>The construction of lightweight fire rated walls containing service penetrations for medical gases and other equipment are to be provided with protection as appropriate to maintain the fire resisting performance of the wall.</p>
<i>Separation of equipment</i>	<p>The central smoke control plant required to serve East Block is to be separated from the remainder of the building by construction having an FRL not less than 120/120/120.</p>

	<p>Ductwork penetrations through this fire resistant separation must be treated to the requirements of AS/NZS 1668.1-1998.</p> <p>The main switchboard that sustains the smoke control plant, stair pressurisation and EWIS, along with all relevant conductors, must be protected by 120/120/120 construction.</p>
<i>Openings in fire rated walls</i>	<p>All fire doors located within fire walls are to achieve an FRL not less than -/120/30.</p> <p>All fire doors located in fire rated walls other than fire walls must achieve an FRL for the integrity criterion (middle number) not less than the fire rating required for the wall.</p> <p>Where fire doors are to be provided as automatic closing doors, that automatic closing operation must be activated by a smoke detector located within 1.5m of each side of the door as well as the detection system in either of the fire compartments located on each side of the door.</p> <p>Doors provided to fire isolated exits must achieve an FRL not less than -/60/30.</p> <p>Lift landing doors must achieve an FRL not less than -/60/-</p>
<i>Fire hazard properties</i>	<p>The fire hazard properties of wall and floor linings are to comply with Specification C1.10 and C1.10a.</p>

3.2 – Access & Egress (BCA Section D)

Item	Comment
<i>Number of exits required, exit travel distance and distance between alternative exits</i>	<p>The following exit travel distance requirements are applicable to the building:</p> <p><u>Carpark areas</u> Maximum of 20m to a point where a choice of travel in different directions to alternative exits is available – Complies</p> <p>Maximum distance of travel of 40m to the nearest exit – Areas of the carpark and plant area are more than 40m to the nearest exit – Does not comply</p> <p>Maximum distance of 60m between alternative exits – Complies</p> <p>It is recommended that where the carpark cannot be redesigned to achieve compliant exit travel distances, the compliance of the carpark design should be reviewed by a fire safety engineer against BCA Performance Requirements DP4 & EP2.2.</p> <p><u>Consulting and administration areas</u> Maximum of 20m to a point where a choice of travel in different directions to alternative exits is available – The distance of travel from the eastern areas of the O/P consulting rooms to a point of choice exceeds 20m – Does not comply</p> <p>Maximum distance of travel of 40m to the nearest exit – The distance of travel from the eastern areas of the O/P consulting rooms to the nearest exit exceeds 40m – Does not comply</p> <p>Maximum distance of 60m between alternative exits – Complies</p> <p>The compliance of this design will be achieved on provision of an alternative egress route in the vicinity of Consulting room 6. This alternative route may incorporate a path of travel through consulting room 6 with a passage doorway through to the entry lobby.</p> <p><u>Patient care areas</u> Maximum of 12m to a point where a choice of travel in different directions to alternative exits is available – Complies</p> <p>Maximum distance of travel of 30m to the nearest exit – Complies</p> <p>Maximum distance of 45m between alternative exits – Complies</p> <p><u>Plant room areas</u> Maximum of 20m to a point where a choice of travel in different directions to alternative exits is available – Complies</p>

	<p>Maximum distance of travel of 40m to the nearest exit – Complies</p> <p>Maximum distance of 60m between alternative exits – Complies</p> <p>Egress from the plant room areas incorporates a discharge to open space at the roof level over Level 2.</p> <p>The proposed exit system utilises a number of horizontal exits formed through the construction of fire walls that compartment the patient care areas. The horizontal exits require the following</p> <ul style="list-style-type: none"> (i) The fire walls in which the horizontal exits are situated must be constructed to the requirements of BCA Clause C2.7. (ii) The exit doorways must swing in the direction of egress
<i>Fire isolation of exits</i>	<p>All exit stairways passing through more than 2 storeys must be fire isolated. The proposed exits to the north eastern and south eastern corners of the building must be fire isolated as required.</p> <p>The stairways in question need not be fire-isolated where they provide no connection to the Level 1 carpark. To that end, the construction surrounding the stairways at Level 1 must achieve an FRL not less than 120/120/120 and the discharge doorways must provide egress direct to open space.</p>
<i>Dimensions of exits</i>	<p>The dimensions of the proposed exits generally comply with the requirements of BCA Clause D1.6.</p> <p>The proposed horizontal exit doorway adjacent to the workstations must have a clear width not less than 1250mm.</p> <p>Because the plantrooms are greater than 200m² in area, the concession allowing reduced width stairways or ladders is not applicable. Whilst the stairways may be constructed to AS1657 with regard to goings and risers, landings, balustrades and handrails there is no concession in the BCA that permits a reduction in width to less than 1m.</p>
<i>Horizontal exits</i>	<p>BCA Clause D1.11 permits the use of horizontal exits within a Class 9a building where the adjacent fire compartment is provided with at least one exit that is not a horizontal exit, being either an egress stairway or an exit direct to open space.</p> <p>Generally the compartmentation proposed complies with this requirement however, those horizontal exits providing egress INTO either of the operating theatre compartments or the Stage 1 recovery compartment will not comply as horizontal exits because those fire compartments.</p>

	<p>The guide to the BCA produced by the Australian Building Codes Board indicates that the reason for this requirement is to ensure that occupants that egress from a fire affected compartment do not need to re-enter that fire affected compartment in order to escape the building.</p> <p>Notwithstanding this technical aspect of non-compliance, egress is available to a compliant exit other than a horizontal exit without having to re-enter the compartment from which the occupant is seeking to egress.</p> <p>As such, whilst a technical non-compliance exists the intent of the clause is achieved and the design is assessed as being compliant.</p>
<i>Non require, non-fire-isolated stairway</i>	<p>The central stairway connecting 3 levels has not been designed to the requirements of BCA Specification D1.12.</p> <p>The stairway in question is the central stairway that is contained wholly within the Class 5 areas of Levels 2 & 3, connecting these levels to the Level 1 carpark. These areas are separated from the patient care areas of the building by fire walls having an FRL not less than 120/120/120.</p> <p>The stairway is separated from the Level 1 carpark by way of a 120/120/120 fire wall surrounding the lift & stair lobby area.</p> <p>It is not necessary for the stairway to form a part of the egress system serving the building as sufficient egress provisions are available to these areas to the extent required by the deemed-to-satisfy requirements of the Building Code of Australia without reliance on the stairway in question.</p> <p>In addition to the horizontal exits and fire isolated stairways proposed for Levels 2 & 3, direct egress is available to open space from each of the three levels of the building as follows</p> <ul style="list-style-type: none"> ▪ Level 1 – direct to the ground on the eastern and northern sides of the carpark ▪ Level 2 – direct to the ground via the building entry lobby ▪ Level 3 – to the roof area above the operating theatres, being assessed as a roof as open space under BCA Clause D2.12 <p>It is proposed that the current design be assessed as an alternative solution against the provisions of Performance Requirement CP2 by demonstration of equivalence against the deemed-to-satisfy requirements of the BCA, which permit the connection of two levels with a combined compartment size well in excess of that proposed.</p>

<i>Stairway design</i>	<p>The non-fire-isolated stairways within the building must be constructed of concrete or steel no less than 6mm thick.</p> <p>The stairway must have goings and risers designed to the requirements of BCA Clause D2.13.</p> <p>The landings within the stairways serving the patient care areas must have a clear width not less than 1.6m and a clear length of not less than 2.7m.</p> <p>The stairways serving the plantrooms may be designed to the requirements of AS1657-1992 with regard to the goings and risers, landings, balustrades and handrails.</p>
<i>Roof as open space</i>	<p>Egress from the building incorporates exits to the roof over the operating theatres from Level 3 of the building with a path of travel traversing the roof to a nearby open stairway.</p> <p>The structure supporting that path of egress must achieve an FRL not less than 120/120/120 and not have any rooflights or other openings within 3m of the path of travel taken by occupants traversing from the exit to the open stairway.</p>
<i>Egress Doors</i>	<p>All exit doorways and doorways in the path of travel to an exit are swinging doors as specified by BCA Clause NSW D2.19.</p> <p>The doorways discharging from the exit stairways serving the patient care areas must have a difference in levels at the threshold of no more than 25mm.</p> <p>All doorways serving as direct exits, discharge from enclosed stairways or as horizontal exits must swing in the direction of egress. As such, it will be necessary for a good number of the horizontal exit doors to be installed as dual-swing doors.</p>
<i>Balustrades and handrails</i>	<p>Balustrades complying with BCA Clause D2.16 must be provided to all stairways and other areas where occupants may fall more than 1m.</p> <p>Handrails must be provided to all stairways and at least one side of all corridors used by patients.</p>
<i>Latches</i>	<p>Latches to exit doors and doors in the path of travel to an exit are to be operable without a key with a single handed downward or pushing action on a single device in accordance with BCA Clause D2.21.</p> <p>For double-leaf doors this requirement is only applicable for one of those leafs provided that the other leaf is not held closed by a locking mechanism and is readily openable.</p>

	<p>Where special arrangements are made for security within the building the doors may be unlocked by the operation of a fail-safe control switch, not within a protective enclosure or by hand by a person specifically nominated for the task.</p> <p>Doors may also be automatically unlocked by a fail-safe device on activation of a detection system installed within the building.</p>
<i>Access for people with disabilities</i>	<p>Access must be provided for people with disabilities throughout the building in accordance with AS1428.1-2001 except to plantrooms and areas such cleaner's rooms, operating theatres and the like where the concessions provided under BCA Clause D3.4 may be applied.</p> <p>Tactile indicators must be provided to all publicly accessible areas to the requirements of BCA Clause C3.8 and AS 1428.4-1992</p>

3.3 – Services and Equipment (BCA Section E)

Item	Comment
<i>Hydrant system</i>	<p>A fire hydrant service complying with AS2419.1-2005 must be provided to the building.</p> <p>This service may require booster pumps and valves, which must be designed and located to the requirements of AS 2419.1-2005.</p>
<i>Fire hose reels</i>	<p>Fire hose reels must be provided throughout the building to the requirements of BCA Clause E1.4 & AS 2441-2005.</p> <p>Fire hose reels must be provided to serve all areas of the building without passing through fire doors. The current building contains several rooms adjacent to the interface with the existing north block building that have not been provided with a FHR that need not pass through a fire door.</p> <p>In each case the fire door is provided as a means of separating the proposed building from the existing north block building by fire wall construction.</p> <p>The rooms in question are small in individual and aggregate terms, having floor areas no greater than 35m².</p> <p>It is recommended that this aspect of the design be evaluated by a fire safety engineer as an alternative solution under BCA Performance Requirement EP1.1.</p>
<i>Sprinklers</i>	<p>Not applicable to Levels 2 & 3</p> <p>Required to the Level 1 carpark as it contains parking spaces for more than 40 cars.</p>
<i>Portable Fire Extinguishers</i>	<p>Portable fire extinguishers are to be provided as appropriate to the fire risk in accordance with the requirements of AS2444-2001.</p>
<i>Smoke Hazard Management</i>	<p>Where the exit stairways are constructed as fire-isolated exits they must be provided with stair pressurisation to the requirements of AS/NZS1668.1-1998. Where the exits are constructed as non-fire-isolated exits as recommended above no pressurisation will be required.</p> <p>The building must be provided with a smoke detection and alarm system complying with BCA Specification E2.2a and AS 1670.1-2004.</p>

	<p>The mechanical system serving the area must be automatically shut-down on activation of the smoke detection system.</p> <p>The building must be provided with either:</p> <ul style="list-style-type: none"> (i) A sprinkler system complying with BCA Specification E1.5 and AS 2118.1-1999 (ii) A zone smoke control system complying with AS/NZS1668.1-1998 <p>The carpark ventilation system must be designed to the requirements of Clause 5.5 of AS/NZS 1668.1-1998 except that fans with metal blades suitable for operation at normal temperature may be used and the electrical power & controls need not be fire rated.</p>
<i>Lifts</i>	<p>The lifts proposed need not be emergency lifts because each level of the building containing a patient care area has direct egress to open space. Notwithstanding that, because the egress from Level 3 does not permit compliant egress for patients in beds it is appropriate for emergency lifts to be provided to the requirements of BCA Clause E3.4.</p> <p>Emergency warning signage must be installed.</p> <p>The lift must be designed to provide access for people with disabilities in accordance with AS1735.12-1999.</p> <p>The lifts must be provided with fire service controls</p>
<i>Emergency Lighting</i>	<p>Emergency lighting must be provided to all areas in accordance with BCA Clause E4.4 and AS2293.1-2005.</p>
<i>Exit Signs</i>	<p>Exit signs must be provided within the building to suit the proposed layout in accordance with BCA Clause NSW E4.6 and AS 2293.1-2005.</p>
<i>Sound Systems and Intercom Systems for Emergency Purposes (formally EWIS)</i>	<p>The building must be provided with a 'Sound system and intercom system for emergency purposes' to the requirements of AS 1670.4-2004.</p>

3.5 – Health & Amenity (BCA Section F)

Item	Comment
<i>Damp proofing</i>	All wet areas must be provided with waterproofing to the requirements of AS 3740-2004.
<i>Kitchen & laundry facilities</i>	The proposed building must be provided with adequate kitchen and laundry facilities. These facilities are provided in the adjacent north block building.
<i>Sanitary facilities</i>	<p>Patient showers have been provided as required by BCA Clause F2.3 (f) (iii).</p> <p>The Ward area has not been provided with a island style plunge bath as required by BCA Clause F2.3 (f) (iv). It will be necessary to review the proposed ward area facilities against the provisions of BCA Performance Requirement FP2.1.</p> <p>Staff & patient sanitary facilities have been provided to the requirements of BCA Table F2.3.</p>
<i>Ventilation</i>	Ventilation must be provided to the building to the requirements of AS 1668.2-1991.
<i>Provision of natural light and ventilation</i>	Natural lighting has been provided to patient sleeping areas as necessary. Lighting must be provided to all other areas to the requirements of AS/NZS 1680.0-1998.

3.6 – Energy Efficiency (BCA Section J)

Item	Comment
Section J Energy efficiency	<p>All proposed building must achieve compliance with the requirements of BCA Section J.</p> <p>In that regard the following requirements will be applicable</p> <ul style="list-style-type: none"> ▪ The roof/ceiling structure must achieve an R rating not less than 3.2 ▪ Ceilings that are situated below a non-conditioned space such as a plant room or the like must achieve an R rating not less than 1.6 ▪ External walls must achieve an R rating not less than R1.8 ▪ All glazing must be selected using the Australian Building Codes Board glazing calculator http://www.abcb.gov.au/index.cfm?objectid=F8CA7C6C-91EA-77BE-D49C7FBD3306C1B3 ▪ The building must be sealed to the requirements of BCA Part J3 ▪ Any mechanical ventilation or air-conditioning system must comply with the requirements of BCA Part J5. ▪ The lighting power load achieved must be within the limitations of BCA Part J6

4.0 Fire safety and other measures

4.0 – Fire Safety Measures

The following schedule represents the likely fire safety measures that will be required for the building

Fire Safety Measure	Standard of performance
Access panels, doors and hoppers to fire-resisting shafts	BCA Clause C3.13
Automatic doors	BCA Clause C3.4
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
Emergency warning and intercommunication system	BCA Clause E4.9 AS 1670.4-2004
Exit signs	BCA Clause E4.5 & E4.8, AS 2293.1-2005
Fire dampers	AS/NZS 1668.1-1998, AS1682.1&2 -1990
Fire doors	BCA Spec C3.4, AS 1905.1-2005
Fire hose reel system	BCA Clause E1.4, AS 2441-2005 & alternative solution report
Fire hydrant systems	BCA Clause E1.3, AS 2419.1-2005
Fire safety engineering	Alternative solution report relating to the following issues (i) Provision of vertical separation of window openings that complies with BCA Performance Requirement CP2 (ii) Design of the non-required, non-fire-isolated stairway to comply with BCA Performance Requirements CP2 (iii) Design of the carpark level to comply with BCA Performance Requirements DP4 & EP2.2 (iv) Design of the Fire Hose Reel system to comply with BCA Performance Requirement EP1.1
Fire seals (protecting openings in fire resisting components of the building)	BCA Clause C3.15
Lightweight construction	BCA Clause C1.8, BCA Spec C1.8
Mechanical air handling systems Automatic shutdown & carpark exhaust only	AS/NZS 1668.1-1998
Portable fire extinguishers	BCA Clause E1.6, AS 2444-2001
Smoke control system	AS/NZS 1668.1-1998
Smoke dampers	AS/NZS 1668.1-1998, AS1682.1&2 -1990
Smoke doors	BCA Spec E3.4, AS 1905.1-2005
Wall wetting sprinkler and drencher systems	BCA Clause C3.4, AS 2118.2-1995
Warning and operational signage (eg stairway notices)	BCA Clause D2.23 & E3.3, EP&A Act Form 15B

5.0 Recommendations & Conclusion

5.1 – Recommendations

Subsequent to the above assessment, it is recommended that the following matters be addressed in the design of the proposed east block building

- (i) The design solutions discussed in the meeting held at the offices of Hassall on 11 August 2009 are to be incorporated into the design plans.
- (ii) Alternative solutions must be evaluated by a fire safety engineer with regard to the following aspects of the design
 - a. The omission of vertical fire separation to various window openings in the eastern façade. To be evaluated against BCA Performance Requirement CP2
 - b. The design of the non-required, non-fire-isolated stairway to the provisions of BCA Performance Requirement CP2
 - c. The design of the egress system to the Level 1 carpark to the provisions of BCA Performance Requirements DP4 & EP2.2
 - d. The design of the fire hose reel system to pass through fire doors at the western interface with North Block to the provisions of BCA Performance Requirement EP1.1.
- (iii) The stairways located in the north eastern and south eastern areas of the building are to be designed to discharge directly to open space with 120/120/120 separation to the carpark to be considered as non-fire-isolated stairways. This construction will omit the requirement for stair pressurisation to those stairways.
- (iv) A path of egress must be provided from the consulting rooms area of Level 2, through Consulting room 6 to the main entry lobby in order to achieve compliant exit travel distances
- (v) All exit doorways and horizontal exits must swing in the direction of egress
- (vi) Statutory fire safety measures must be provided to the building as detailed in Section 4 of this report
- (vii) The Ward area has not been provided with a island style plunge bath as required by BCA Clause F2.3 (f) (iv). It will be necessary to review the proposed ward area facilities as an alternative solution against the provisions of BCA Performance Requirement FP2.1.
- (viii) All proposed building elements must achieve compliance with the requirements of BCA Section J

5.0 – Conclusion

Following an assessment of the proposed building works it is the opinion of this office that on the completion of design works in accordance with the recommendations of this report the building design will comply with the relevant requirements of the Building Code of Australia.

Author,



Mark Brentnall
for **Vic Lilli & Partners**

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 Hassall

Drawing No.	Title	Revision
EB-SK100	Level 1 plan	5
EB-SK101	Level 2 plan	5
EB-SK102	Level 3 plan	5
EB-SK103	Level 4 plan	3
EB-SK104	Roof plan	1
EB-SK150	Elevations	1
EB-SK200	Sections	1

- (ii) Design meeting held between Hassall & Vic Lilli & Partners on 11 August 2009.
- (iii) Building Code of Australia (BCA) 2009;
- (iv) Environmental Planning and Assessment Act, 1979, and Regulations;