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BUILDING CODE OF AUSTRALIA

COMPLIANCE ASSESSMENT REPORT

S.C.E.C.G.S. REDLANDS, CREMORNE

CONCEPT PROPOSAL & STAGE 1 DEVELOMENT APPLICATION

DATE ► 8.5.2015
REPORT NO. ► PROJECT 5419 - REV 03
PREPARED FOR ► SCEGGS REDLANDS
PREPARED BY ► AE&D

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REVISION STATUS				
REVISION	DATE	STATUS	WRITTEN	CHECKED
5419 - Rev 00	22.12.2014	DRAFT FOR COMMENT	AD	JS
5419 - Rev 01	10.2.2015	REVISED REPORT	AD	JS
5419 - Rev 02	24.4.2015	REVISED REPORT	AD	JS
5419 - Rev 03	8.5.2015	REVISED REPORT	AD	JS

1.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

SSD14_6454 SCECGS REDLANDS SCHOOL

This BCA Assessment Report has been prepared on behalf of SCECGS Redlands Ltd ("the Proponent"). It accompanies an environmental impact statement (EIS) prepared in support of State Significant Development Application SSD14_6454 for the staged development of the SCECGS Redlands Senior Campus ("Redlands").

This application seeks a staged development approval comprising a concept proposal for the school over five stages and consent for a detailed proposal for the first stage development referred to as "Stage 1". Details of the project are described below:

(1) Concept Proposal: A Concept Proposal has been prepared for the site to guide its future redevelopment and is intended to provide a statutory framework for the long term planning of the site.
The Concept Proposal will be delivered in five stages and will generally involve the following buildings and works:
Stage 1 – New Learning Hub:

- Demolition of existing buildings and structures
- Construction of a new multi-purpose education building with basement car park and associated vehicular entry off Gerard St
- Temporary fitout of a portion of the basement carpark shell for music and general education uses
- Construction of landscaped podium over new basement carpark and music facilities
- Creation of a new internal vehicular link between Waters Rd and Military Rd

Stage 2 - Sports and Performing Arts Centre:

- Demolition of existing buildings and structures
- Construction of a new sports and performing arts centre

Stage 3 - Redlands Hall, Roseby Building and Liggins Building Refurbishment:

- Internal alterations and additions of existing buildings

Stage 4 - Humphery Learning Hub and Resource Centre:

- Construction of a new multi-purpose education building with swimming pool and associated facilities at roof top level
- Decanting of temporary music facilities upon completion of the new Humphery Learning Hub providing additional carparking

Stage 5 - Adams Centre Extension:

- Alterations and additions to the Adams Centre at 219 Military Road

(2) Detailed Proposal for "Stage 1" development – New Learning Hub:

- Demolition of existing buildings and structures (Mowll Building, 1, 3, 7, 9 and 11 Gerard Street, 7 and 8 Monford Place, staff offices, multi-purpose building and Design and Technology buildings on the western boundary).
- Fit-out of 7 and 8 Monford Pl for temporary use as an educational facility

- Construction of a new purpose built education building generally comprising a four storey building with basement car park and outdoor learning area at roof level.
- Temporary fitout of a portion of the basement carpark shell for music and general education uses
- Construction of landscaped podium over new basement carpark and music facilities
- Creation of new vehicular access road off Gerard Street for the new basement car park.
- Creation of new internal vehicular access link facilitating ingress from Waters Rd and egress onto Military Rd
- Associated landscaping improvements.
- New services infrastructure.
- New servicing area including loading dock and waste enclosure
- Erection of temporary demountable classrooms.

The purpose of this BCA Assessment Report is to provide an assessment of the proposal as described above and detailed within the EIS.

Site Plan

Building Identification Plan

Ref	Building Details
1	Adams Centre
2	Staff offices
3	Main reception and administration (2 Monford Place)
4	Hattersley Sports Courts
5	Multi-purpose building accommodating medical room, meeting rooms, staff rooms and classroom
6	Liggins Building
7	Roseby Building (drama studio and science)
8	Residential flat building (8 Monford Place)
9	Residential flat building (7 Monford Place)
10	Residential flat building (5 Monford Place)
11	Dwelling house (6 Winnie Street)
12	Design and technology
13	Canteen & assembly hall
14	Mowll Building
15	Design and technology (21 Waters Road)
16	Humphery Building (Humanities / library)(23 Waters Road)
17	Lang Gymnasium (25-27 Waters Road)
18	Facilities / ICT (1 Gerard Street)
19	Music tuition (3 Gerard Street)
20	Performing arts (7 Gerard Street)

21	Music (9 Gerard Street)
22	Visual arts (11 Gerard Street)

Terms of Reference

Applicant	SCECGS Redlands Ltd (the applicant)
Site Address	SCECGS Redlands at 272 Military Road, Cremorne and adjoining land (Redlands)
Property Description	Refer to Site Plan above
Site Area	Approximately 15,500sqm
Application Format	Staged State Significant Development Application (SSDA) for (1) Concept Proposal and (2) detailed plans for Stage 1 development. A single application will be provided.
Approval Authority	The SSDA (concept proposal and detailed plans for Stage 1 development combined) will be lodged with and assessed by the NSW Department of Planning and Environment and determined by the Minister for Planning or her delegate, the Planning Assessment Commission (PAC).
Report Type	Environmental Impact Statement (EIS)
Application Reference	SSD 14_6454
Development Description	Staged redevelopment of the SCECGS Redlands Senior Campus
Overview of proposed works (refer to building identification plan)	
Stage 1 New Learning Hub	▪ Erection of temporary demountable classrooms. ▪ Demolition of existing buildings and structures (Mowll Building (14), 1, 3, 7, 9 and 11 Gerard Street (18-22), 7 and 8 Monford Place (9 and 8), staff offices (2), multi-purpose building (5) and Design and Technology buildings (12 and 15) on the western boundary). ▪ Construction of four storey multi-purpose education building with accessible roof top, basement car park, outdoor learning area at roof level ▪ Creation of new vehicular access road off Gerard Street for the new basement car park. ▪ Creation of new internal vehicular access link facilitating ingress from Waters Rd and egress onto Military Rd ▪ Associated landscaping improvements. ▪ New services infrastructure ▪ New servicing area including loading dock and waste enclosure
Stage 2 Sports and Performing Arts Centre	▪ Demolition of the main reception and administration building (2 Monford Place) (3). ▪ Construction of four storey sports and performing arts centre generally accommodating rooftop tennis courts, sports courts, fitness centre, studios and changing facilities, spectator seating, lecture theatre, teaching and learning spaces, meeting rooms. ▪ Associated landscaping ▪ Services upgrades
Stage 3 Roseby Building, Redlands Hall and Liggins Building Refurbishment	▪ Erection of demountable classrooms adjacent to the Adams Centre (1) (to be removed at completion of Stage 4) ▪ External alterations to Liggins Building (6) including the creation of a verandah (associated with student café) ▪ Internal alterations to Liggins Building (6) to create a new canteen and student café at ground floor level and relocated library and resources facility at first floor level ▪ Alterations and additions to Roseby building (7) including minor demolition works Associated landscaping ▪ Services upgrades
Stage 4 Humphery	▪ Internal refurbishment of Lang Gymnasium (17) to create

Learning Hub and Resource Centre	classrooms ▪ Demolition of existing buildings and structures including Humphery building (16) and existing canteen / assembly building (13). ▪ Construction of new four storey education building accommodating rooftop swimming pool and accessible rooftop, reception and administration offices, staff rooms, library, meeting rooms, classrooms and teaching spaces and amenities with roof top swimming pool and associated facilities. ▪ Covered outdoor learning area ▪ Associated landscaping ▪ Decant interim Music Faculty into new Humphery Learning Hub and create additional car spaces in basement ▪ Visitor parking area (up to 6 spaces) ▪ Services upgrades ▪ Removal of the Stage 3 temporary demountables adjacent to the Adams Centre (1)
Stage 5 Adams Centre Extension	▪ Alterations and additions to Adams Centre (1) including some minor demolition works and construction of a three storey extension to the western elevation to accommodate dance studios. ▪ Associated landscaping ▪ Services upgrades
Development Timeframe	20 years
Local Government Area	North Sydney
Local Planning Instruments	North Sydney Local Environmental Plan 2013 (NSLEP 2013) North Sydney Development Control Plan 2013 (NSDCP 2013)

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April 2015

This report provides a Building Code of Australia (BCA) 2014 assessment of the proposed Stage 1A-E, and Master Plan re-development of S.C.E.C.G.S. Redlands School, Senior Campus, located on Military Road, Cremorne, NSW.

For the purposes of this report the **Stage 1** development identified within the Master Plan has been subdivided into Stages 1A – E in recognition of the means required to maintain normal school activities during the early construction phases of the project. Sub-stages 1A to E are as follows:

- **Stage 1A, Phase 1** – Erection of 7 demountable classroom buildings for relocation of music and performing arts, and relocation of music, staff rooms to 7 and 8 Monford Place;
- **Stage 1A, Phase 2** – Upon relocation, demolition of Gerard Street cottages;
- **Stage 1B** – Construction of shell for carpark, for accommodation of temporary music / general classrooms;
- **Stage 1C, Phase 1** – Installation of 7 additional demountable classroom buildings on top of temporary music rooms, and demolition of 7 and 8 Monford Place;
- **Stage 1C, Phase 2** – Construction of forecourt and stormwater relocation , and construction of new Learning Hub;

- **Stage 1D, Phase 1** – Relocation of facilities into the new Learning Hub;
- **Stage 1D, Phase 2** – Completion of carpark and landscaping;
- **Stage 1E, Phase 1** – Relocation of Pastoral Care in the basement Music Hub, and demolition of redundant cottages;
- **Stage 1E, Phase 2** – Construction of new access road and bus parking.

Additionally this report provides commentary relevant to the overall **Master Plan development,** as consists of the following development stages:

- **Stage 2** Sports and Performing Art Centre;
- **Stage 3** Roseby Building, Redlands Hall and Liggins Building refurbishment;
- **Stage 4** Humphery Learning Hub and Resource Centre;
- **Stage 5** Carpark and Open Space.

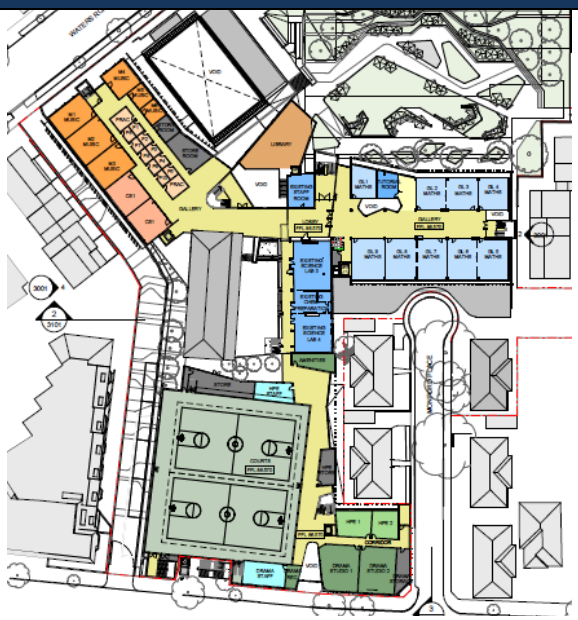
The primary purpose of this report is to identify the non-compliance matters contained in the proposed design against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

RECOMMENDATIONS:

The following is a list of Deemed-to-Satisfy Provisions that should be addressed either by design amendments, additional information **OR** by way of an Alternative Solution:

BCA Clause	Deemed-to-Satisfy Provision to be addressed
C1.1 Type of construction required	Refer to Spec C1.1 and Attachment B for Schedule of FRLs for Type A, B and C construction. These are to be certified by the architect and structural engineer as having been met, based on the proposed design. Compliance issues: 1. Accessible Roof Plan – This plan indicates (2) roof-lights. To ensure compliance with Specification C1.1, the total area of such roof-lights must not exceed 20% of the roof area; 2. Accessible Roof Plan – Ensure that the (2) roof-lights are located not less than 3 m clear of the parts of the building that project above the roof-lights, OR alternatively ensure that such wall parts achieve the FRL required for a fire wall and that any openings in these parts of the walls for 6 m vertically are protected in accordance with Clause C3.4; 3. Stage 1C - During Stage 1A the 7 demountable classroom buildings will be of Type C construction, with no concerns raised, however during Stage 1C the 14 demountable classroom building will be located above the basement construction (temporary music rooms) – such two storey construction attracts Type B construction, requiring loadbearing external walls to be fire rated (where less than 18 m from a fire source feature). As such demountable construction will be located upon the concrete roof slab of the carpark, a fire engineered solution may be used to treat the demountable buildings as a standalone building of Type C construction

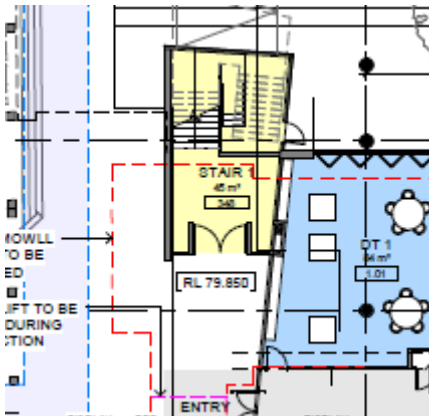
BCA Clause	Deemed-to-Satisfy Provision to be addressed
	only (in lieu of fire rating loadbearing external wall parts); 4. Stage 1C – During this stage the roof of the basement music area contains two skylights. Such skylights will be located directly beneath the temporary demountable classroom buildings to be positioned above. Such construction does not satisfy Specification C1.1, as an unprotected opening located within a separating floor. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
C2.2 General Floor Area & Volume Limitations	Fire compartment floor area and volume limitations shall not exceed the following limitations set by Table C2.2: ▪ Type A - Class 9b: 8,000 m² / 48,000 m³ ▪ Type B - Class 9b: 5,500 m² / 33,000 m³ Based upon the Master Plan drawings dated March 2015, the largest fire compartment affecting the development occurs on Level 3 (as combines the Learning Hub education building, Roseby building, Humphery building and the Sports and Arts Centre building). This fire compartment approximates 5,200 m² / 15,600 m³, hence not more than the maximum permitted 8,000 m² or 48,000 m³, for Type A construction. Compliance issue – 1. Notwithstanding the aforementioned the maximum permitted fire compartment size will be exceeded where Level 3 is linked to other levels via open stair shafts or via the two atrium wells located within the Learning Hub building. Hence fire wall construction must be introduced to reduce the size of fire compartments to comply with Table C2.2, OR fire engineered alternative solutions will be required relevant to the ability of the open stair shafts / atrium wells to provide adequate fire separation between storeys.

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	 **Combined buildings form a single fire compartment representative of the largest fire compartment proposed during all construction stages.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
C2.11 Stairways and lifts in one shaft	A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft. Compliance issue: 1. Stage 2 Sports and Performing Arts Centre – The internal egress stair serving the southern part of this building (required to be fire isolated) contains a passenger lift shaft. Such represents a non-compliance noting that the lift landing doors need only achieve a -/60/- FRL, as opposed to the -/60/30 fire doors required to a fire isolated stair shaft, hence the requirement to prohibit a stairway and lift from sharing the same shaft. ***Amended plans demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.2 Protection of openings in external walls	Openings in an external wall that is required to have an FRL must— (a) if the distance between the opening and the fire-source feature to which it is exposed is less than— (i) 3 m from a side or rear boundary of the allotment; or (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (iii) 6 m from another building on the allotment that is not Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and

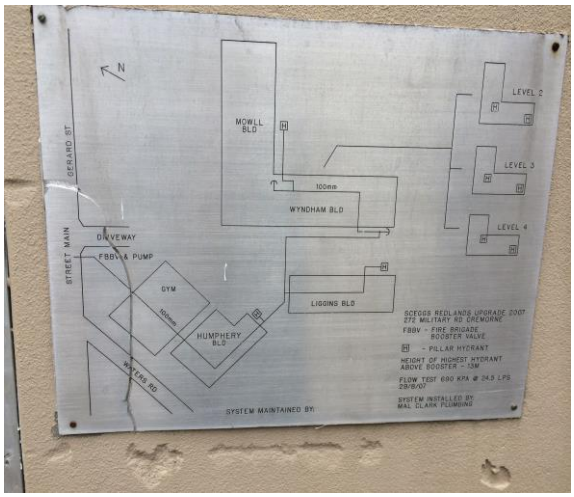
BCA Clause	Deemed-to-Satisfy Provision to be addressed
	(b) if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand. Compliance issues: 1. New Learning Hub education building – The door and window openings located within 3 m of the eastern side boundary require protection; 2. New Learning Hub education building – Any external wall openings located within 6 m of the adjacent Redlands Hall building (assumed to be a separate building for the Stage 1 development) require protection in accordance with this clause; 3. Facilities building - Any external wall openings located within 3 m of the allotment boundaries require protection in accordance with this clause; 4. Allotment boundaries – Clarification of the location of the allotment boundaries is required, particularly in relation to the southern elevation of the proposed Learning Hub building and the existing buildings located at 7 and 8 Monford Place (noting that external wall openings located within 3 m of an allotment boundary OR within 6 m of another building located on the same allotment must be fire protected. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D1.3 When fire isolated stairways and ramps are required	**Class 9 buildings** — Every stairway serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (A) the building has a sprinkler system complying with Specification E1.5 installed throughout; or (B) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (aa) an FRL of –/60/60, if non-loadbearing; and (bb) an FRL of 90/90/90 for Type A construction, or 60/60/60 for Type B construction, if loadbearing; and (cc) no opening that could permit the passage of fire or smoke. Compliance issue – 1. Sports & Performing Arts building - The open stair to the southern end of the building must be designed as a fire isolated stairway as connecting 5 consecutive storeys. Refer also comments at Clause D1.7. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification for the proposed New Learning Hub Education building.***
D1.4 Exit travel distances	**Class 7a and 9 buildings** — No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m.

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	Compliance issues: 1. Sports Hall - Travel from the western end of the northern store exceeds 20 m to a point of choice (approx. 25 m noted) and the overall travel to at least one exit exceeds 40 m (approx. 75 m noted); 2. Stage 1A – Egress from the eastern most classroom (refer 7 room demountable) exceeds 20 m to a single exit (56 m noted to western egress stair). It is understood that an alternate exit will be provided to the eastern end of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
D1.5 Distance Between Alternate Exits	Exits that are required as alternative means of egress must be— • distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and • be not less than 9 m apart; and not more than 60 m apart; and • be located so that alternative paths of travel do not converge such that they become less than 6 m apart. Compliance issue: 1. It is understood that an alternate exit will be provided to the eastern end of the Rehearsal Room / Performance Space, such that egress to the street can be achieved via the carpark. Based upon this configuration the distance between alternate exits serving the Rehearsal Room / Performance Space will exceed 60 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
D1.6 Dimensions of exits and paths of travel to exits	**Class 5 and 9 buildings** • In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and • the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1 m; and • if the storey or mezzanine accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons (as egress involves a change in floor level by a stairway); and • the unobstructed width of each doorway must be not less than the unobstructed width of each exit provided minus 250 mm; • those paths of travel; and such required width must be maintained for the paths of travel connecting the exits from the building to a public road. Details of the total number of students to occupy each floor level must be

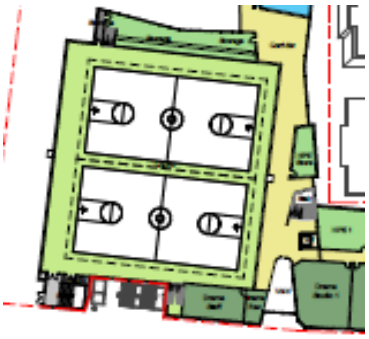
BCA Clause	Deemed-to-Satisfy Provision to be addressed
	attained from the school (based upon known class numbers) to ensure that the aggregate egress width is compliant with sub-clause D1.6 (d) (i). Notwithstanding this, and as an example, Level 2 of the new Learning Hub (inclusive of the interconnecting Roseby building) will be served by three egress stairways (two new and one existing stairway). Such stairways have an aggregate (combined) width of 4 m, and will cater for 440 persons. Based upon the number of seats indicatively indicated across the Level 2 Learning Hub rooms (199 seats counted), and estimating the total number of staff and students to accommodate the Level 2 Roseby classrooms to not exceed 160 persons, the aggregate egress width indicated for this Level 2 part of the development is compliant. Based upon feedback from Bloomfield and TKD, it is understood that Redlands Hall is served by independent stairways (as contained within the Hall), and that the Hall population will not be reliant upon the proposed stairway, or the existing stairway serving the Roseby Building. Notwithstanding the aforementioned the following compliance issues are raised: 1. Stage 1A – During this stage it appears that less than 1 m clearance will be provided between the covered deck (serving the 7 demountable classrooms and the adjacent external stairway serving the Mowll building), thereby obstructing the path of travel between buildings, as leads to Gerard Street. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D1.7 Travel via fire-isolated exits	(a) A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— (i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. (b) Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open space; or (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	or open space of not more than 6 m. (c) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. (d) If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey— (i) a smoke lobby in accordance with D2.6 must be provided; or (ii) the exit must be pressurised in accordance with AS/NZS 1668.1. Compliance issues - 1. New Learning Hub building - The western fire isolated stair must discharge directly to open space, or to a covered area that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii). Based upon the plan extract below and the roof plans, the stair does not discharge to an area that satisfies either of these requirements. Clarification is required to ensure that the perimeter of the stair discharge area is at least 1/3 open and that the unobstructed height of such area is at least 3 m;  2. New Learning Hub building - The paths of travel leading to the road from the fire isolated stair discharge points shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of the building; 3. Humphery Learning Hub building - The paths of travel leading to the road from the two fire isolated stair discharge points shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of the building; 4. Humphery Learning Hub building - The two fire isolated stairs must discharge directly to open space, or to covered areas that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii); 5. Roseby building – Based upon the Master Plan development, the external

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	stair to the eastern end of this building will discharge into a central courtyard area, hence the path of travel to the road from this point shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of this building (noting that the Roseby building will be united with the Sports & Performing Arts building, to form the one united building); 6. Sports & Performing Arts building - The open stair to the southern end of the building must discharge directly to open space, or to a covered area that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.4 Separation of rising and descending stair flights	Separation of the rising and descending stair flights must be provided as per clause 2 of Specification C2.5. **New Learning Hub education building** - The Level 1 construction separating Fire Stair 1 from the stairway ascending from the basement level must be smoke proofed in accordance with clause 2 of Specification C2.5, and contain no doorways that provide direct connection between the two stairways. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.12 Roof as open space	Egress from the **New Learning Hub education building** results in occupants discharging onto the roof of the basement car-park, requiring such roof to achieve an FRL of not less than 120/120/120, and the roof must not contain any roof-lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.20 Swinging doors	▪ A swinging door in a required exit or forming part of a required exit must not encroach at any part of its swing by more than 500 mm on the required width (including any landings) of a required: - stairway; or - ramp; or - passageway, if it is likely to impede the path of travel of the people already using the exit, and when fully open, by more than 100 mm on the required width of the required exit, and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; and ▪ must swing in the direction of egress unless, it serves a building or part with a floor area not more than 200 m2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or it serves a sanitary compartment or airlock (in which case it may swing in either direction); and

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	▪ must not otherwise impede the path or direction of egress. Compliance issues – Based upon the floor plans submitted the following features / services require amendment to satisfy the DTS requirements of this clause: 1. New Learning Hub building - The final exit door serving Fire Stair 1 at Level 1 does not swing in the direction of travel; 2. New Learning Hub building – The doors providing access to Fire Stair 2 on each level must be re-swung in the direction of travel; 3. Humphery Learning Hub & Resource Centre - The final exit doors serving the fire isolated stairways on Level 1 do not swing in the direction of travel. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.3 Fire hydrants	A hydrant system complying with AS 2419.1-2005 must be provided to serve all new buildings, as all such buildings have total floor areas that exceed 500 m². Based upon the Fire Hydrant Block Plan located adjacent the Gerard Street booster assembly (see below), a fire hydrant upgrade occurred in 2007. Based upon the Block Plan and the current Annual Fire Safety Statement (AFSS) by Advance Fire Service Pty Ltd, the existing hydrant system is installed in accordance with AS 2419.1 (the current standard).  The existing fire hydrant system must be modified and extended to cover each new stage (excluding the Facilities building) noting that all modified / new buildings (with the exception of the Facilities building) have total floor areas exceeding 500 m². Compliance issues – 1. The hydrant pump room located within The Basement Level does not satisfy AS 2419.1, as the room does not have a door opening to a road or open space, or a door opening to a fire isolated passageway or stair that opens to a road or open space; 2. The hydrant booster assembly does not satisfy the shield wall requirements

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	of AS 2419.1, due to the adjacent opening formed at the vehicular entry, being located within 2 m horizontal distance of the booster assembly; 3. Hydrant valve locations not indicated on plan to assess compliance. 4. Stage 1C – The 14 classroom demountable building must be served by a fire hydrant system. Note: The Stage 1A 7 classroom demountable building has a floor area less than 500 m² and does not require fire hydrant coverage (total floor area measured over the enclosing walls). ***Hydraulic Services Design Certification and amended plans must be incorporated into the construction certificate specification to evidence compliance.***
F2.3 Facilities in Class 3 to 9 buildings	Sanitary facilities must be provided for Class 9 buildings in accordance with Table F2.3. Employees and the public may share the same facilities in a Class 9b building provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females. An assessment of the number of sanitary facilities required has not been undertaken by AED at this stage, as the total number of school occupants (staff and students) is not currently known. It should be noted that the following Table F2.3 user groups must be considered in order to undertake an assessment: ▪ Class 9b – schools (male and female employees plus male and female students); & ▪ Class 9b - sports venues or the like (male and female participants plus male and female spectators or patrons) – applicable to Stage 2 Sports and Performing Arts Centre. ***TKD to provide details of the total number of school occupants, the total number of sanitary facilities (existing and proposed), and clarification of The facilities that are only accessible to staff or only accessible to students.***
F4.1 Provision of natural light	Natural light must be provided to all Class 9b general purpose classrooms. Compliance issues – 1. Stage 1B and 1C – The basement level general purpose classrooms are not provided with natural light. ***Amended plans demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
NSW H101.2 Fire Protection	If an entertainment venue forms part only of a building, then – (a) The whole of the entertainment venue; or

BCA Clause	Deemed-to-Satisfy Provision to be addressed
	(b) The part containing the stage, backstage area and auditorium, must be separated from other parts of the building by construction having an FRL of not less than 60/60/60. Note: The part of the building containing the basketball courts and stepped seating areas may be fire separated from the remainder of the building by 60/60/60 construction, such that only this part of the building is subject to the additional entertainment venue provisions.  ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***

2.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2014 assessment of the proposed Stage 1A-E, and Master Plan re-development of S.C.E.C.G.S. Redlands School, Senior Campus, located on Military Road, Cremorne, NSW.

For the purposes of this report the **Stage 1** development identified within the Master Plan has been subdivided into Stages 1A – E in recognition of the means required to maintain normal school activities during the early construction phases of the project. Sub-stages 1A to E are as follows:

- **Stage 1A, Phase 1** – Erection of 7 demountable classroom buildings for relocation of music and performing arts, and relocation of music, staff rooms to 7 and 8 Monford Place;
- **Stage 1A, Phase 2** – Upon relocation, demolition of Gerard Street cottages;
- **Stage 1B** – Construction of shell for carpark, for accommodation of temporary music / general classrooms;
- **Stage 1C, Phase 1** – Installation of 7 additional demountable classroom buildings on top of temporary music rooms, and demolition of 7 and 8 Monford Place;
- **Stage 1C, Phase 2** – Construction of forecourt and stormwater relocation , and construction of new Learning Hub;
- **Stage 1D, Phase 1** – Relocation of facilities into the new Learning Hub;
- **Stage 1D, Phase 2** – Completion of carpark and landscaping;
- **Stage 1E, Phase 1** – Relocation of Pastoral Care in the basement Music Hub, and demolition of redundant cottages;
- **Stage 1E, Phase 2** – Construction of new access road and bus parking.

Additionally this report provides commentary relevant to the overall **Master Plan development,** as consists of the following development stages:

- **Stage 2** Sports and Performing Art Centre;
- **Stage 3** Roseby Building, Redlands Hall and Liggins Building refurbishment;
- **Stage 4** Humphery Learning Hub and Resource Centre;
- **Stage 5** Carpark and Open Space.

Site Plan of Redlands Senior Campus Masterplan

2.1 Basis of Report

The key basis of this report is to address compliance with the Building Code of Australia (BCA) 2014. The scope of services is limited to Sections C – "Fire Resistance", Section D – "Access & Egress" (excluding the Access provsions as dealt with by AED Access) , Section E – "Services & Equipment", Section F "Health and Amenity", Section H "Special Use Buildings" and Section J "Energy Efficiency"

This report is based on a desktop assessment of the proposed plans, with specific reference to the following:

- Architectural plans prepared by TKD Architects – Job No. 141111 Drawing Numbers:

Drawing Number	Dated	Drawing Title
AR-MP-0000	24/4/2015	Cover Sheet & Drawing Schedule
AR-MP-1101	24/4/2015	Existing Location Plan
AR-MP-1102	24/4/2015	Existing Site Plan
AR-MP-1104	24/4/2015	Envelope Diagrams
AR-MP-1105	24/4/2015	Envelope Elevations
AR-MP-1106	24/4/2015	Envelope Sections
AR-MP-1107	24/4/2015	Proposed Location Plan
AR-MP-1108	24/4/2015	Proposed Site Plan
AR-MP-1109	24/4/2015	Staging Diagrams 1
AR-MP-1110	24/4/2015	Staging Diagrams 2
AR-MP-2001	24/4/2015	Proposed Masterplan – Basement and Level 1 Plans
AR-MP-2002	24/4/2015	Proposed Masterplan – Level 2 and Level 3 Plans
AR-MP-2003	24/4/2015	Proposed Masterplan – Level 4 and Level 5 Plans
AR-MP-2004	24/4/2015	Proposed Masterplan – Roof Level Plan
AR-MP-2005	24/4/2015	Existing Masterplan – Basement and Level 1 Plans
AR-MP-2006	24/4/2015	Existing Masterplan – Level 2 and Level 3 Plans
AR-MP-2007	24/4/2015	Existing Masterplan – Level 4 and Roof Plan
AR-MP-3001	24/4/2015	Elevations
AR-MP-3002	24/4/2015	Street Elevations
AR-MP-3101	24/4/2015	Sections
AR-DD-0000	24/4/2015	Cover Sheet & Site Plan
AR-DD-1001	24/4/2015	Level 1 Demolition Plan North
AR-DD-1002	24/4/2015	Level 1 Demolition Plan South
AR-DD-1003	24/4/2015	Level 2 Demolition Plan North
AR-DD-1004	24/4/2015	Level 2 Demolition Plan South
AR-DD-1005	24/4/2015	Roof Demolition Plan
AR-DD-2001	24/4/2015	Basement Level Plan
AR-DD-2002	24/4/2015	Level 1 Floor Plan North
AR-DD-2003	24/4/2015	Level 1 Floor Plan South
AR-DD-2004	24/4/2015	Level 2 Floor Plan
AR-DD-2005	24/4/2015	Level 3 Floor Plan
AR-DD-2006	24/4/2015	Level 4 Floor Plan
AR-DD-2007	24/4/2015	Accessible Roof Plan
AR-DD-2008	24/4/2015	Roof Level Plan
AR-DD-2009	24/4/2015	Existing and Demolition in the Monford Place Apartments
AR-DD-2010	24/4/2015	Interim Works in the Monford Place Apartments
AR-DD-3001	24/4/2015	Elevations Sheet 01
AR-DD-3002	24/4/2015	Elevations Sheet 02
AR-DD-3003	24/4/2015	Elevations Sheet 03
AR-DD-3102	24/4/2015	Sections Sheet 02

AR-DD-3101	24/4/2015	Sections Sheet 01
AR-DD-9004	24/4/2015	Basement Level Plan – Stage 1B
AR-DD-1101	24/4/2015	Stage 1 Sub Staging Diagrams 1
AR-DD-1102	24/4/2015	Stage 1 Sub Staging Diagrams 2
AR-DD-2001	24/4/2015	Basement Level Plan
AR-DD-2041	24/4/2015	Demountable Classrooms – Stage 1A to 1B
AR-DD-2042	24/4/2015	Demountable Classrooms – Stage 1C

- The Building Code of Australia 2014 prepared by the Australian Building Codes Board.
- The Guide to the BCA 2014, prepared by the Australian Building Codes Board.

2.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2014 and list any departures from the BCA 2014.
- Provide recommendations to address identified non-compliances, and/or identify potential alternative solutions

2.3 Limitations of the Report

- Compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- Reporting on hazardous materials, OH&S matters or site contamination
- Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire resistant levels of the building
- Consideration of any fire services operations (including hydraulic, electrical or other systems)
- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance
- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- Pest inspection or assessment building damage caused by pests (general/visual pest invasion or damage will be reported, however invasive or intrusive inspections have not be carried out)
- Section I of the BCA is not considered
- Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental Planning & Assessment Act 1979
- Glazing, shading, lighting calculations and the like required by Section J of the BCA have not been carried out
- This assessment excludes BCA clauses D3.0-3.12 (Inclusive), F2.4 and E3.6. ***Refer separate Access Appraisal Report No. A1986 prepared by AED Access Pty Ltd***

3.0 BCA ASSESSMENT DATA

This report provides a Building Code of Australia (BCA) 2014 assessment of the proposed Stage 1A-E, and Master Plan re-development of S.C.E.C.G.S. Redlands School, Senior Campus, located on Military Road, Cremorne, NSW.

BCA Building Classifications:	Class 5 (Facilities building) Class 7a carpark Class 9b assembly
Building rise in storeys:	New Learning Hub Education Building 5 (determined in accordance with C1.2 of the BCA) *Note: The Level 5 Plant areas are counted in the rise in storeys. The basement carpark may also need to be counted in the rise in stories depending upon the ceiling height relative to the natural ground level.* Temporary demountable classroom building's 1 - during Stage 1A for standalone 7 classroom building (determined in accordance with C1.2 of the BCA) 2 - during Stage 1C for 14 classroom building located over basement level (determined in accordance with C1.2 of the BCA) Facilities building (Winnie Street building) 2 (determined in accordance with C1.2 of the BCA)
Type of Construction:	Type A (New Learning Hub Education Building including carpark) Type B (Temporary demountable classroom building) Type C Facilities building (Winnie Street building)
General Floor area limitations:	Type A - Class 9b: 8,000 m² / 48,000 m³ Type B - Class 9b: 5,500 m² / 33,000 m³ Type C - Class 5: 3,000 m² / 18,000 m³ *Note: No floor area / volume limitations apply to the Class 7a sprinkler protected carpark.*
Effective Height (m):	Less than 25 m (all buildings) *Note: The effective height of the New Learning Hub Education Building is 15.25 m based upon the High Court decision whereby the lowest level providing direct egress from the building is the basement*

carpark.

3.1 Location of Fire Source features

The fire source features for the subject development are the allotment boundaries and the external walls of other buildings on the same allotment, which are not Class 10 buildings.

4.0 BCA ASSESSMENT SUMMARY

The following table details the BCA compliance of the assessed design.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SECTION B STRUCTURE					
Part B1 Structural Provisions				X	▪ Structural engineer to provide structural drawings/details and accompanying structural design certificate to demonstrate that all building elements will comply with Section B of the BCA. ▪ Glazing must comply with AS 1288-2006 and AS 2047-1999. ▪ Termite control must comply with AS 3660.1-2000 where any primary building elements are timber. ▪ If the building is in a flood hazard area it is required to comply with BCA clause B1.6. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
SECTION C FIRE RESISTANCE					
Part C1 Fire Resistance & Stability					
C1.1 Type of Construction Required		X			**Does not comply** Refer to Spec C1.1 and Attachment B for Schedule of FRLs for Type A, B and C construction. These are to be certified by the architect and structural engineer as having been met, based on the proposed design. Please note that specification C1.1 also requires design compliance with the following: 1. Where a part of a building required to have an FRL depends upon direct vertical or lateral support from another part to maintain its FRL,

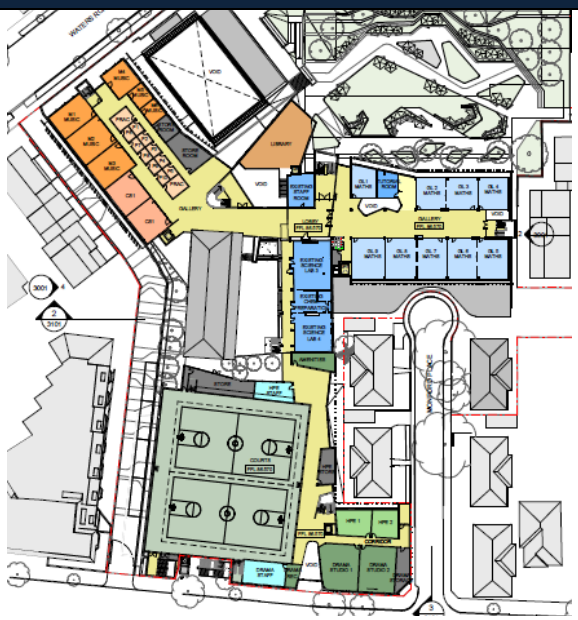
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					that supporting part, subject to (b), must— (i) have an FRL not less than that required by other provisions of this Specification; and (ii) if located within the same fire compartment as the part it supports have an FRL in respect of structural adequacy the greater of that required— (A) for the supporting part itself; and (B) for the part it supports; and (iii) be non-combustible— (A) if required by other provisions of this Specification; or (B) if the part it supports is required to be non-combustible. 2. Where a combustible material is used as a finish or lining to a wall or roof, or sunscreen, or awning, to a building element required to have an FRL the material must be exempted or comply with the fire hazard properties prescribed under C1.10 and must not otherwise constitute an undue risk of fire spread via the façade of the building or compromise egress from the building. This includes any aluminum panels which where containing plastic strengthening elements would not be non-combustible. 3. Fire isolated shafts are required to be enclosed at the top and bottom of the shaft with fire rated construction as per specification C1.1. The walls and roof of fire rated shafts must achieve the fire rating from both directions i.e. from inside and outside the shaft. 4. A non-combustible structure situated on a roof need not comply with the other provisions of this Specification if it only contains— (i) lift motor equipment; or (ii) one or more of the following: (A) Hot water or other water tanks. (B) Ventilating ductwork, ventilation fans and their motors. (C) Air-conditioner chillers. (D) Window cleaning equipment.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(E) Other service units that are non-combustible and do not contain flammable or combustible liquids or gases. ***Compliance issues:*** ***5. Accessible Roof Plan – This plan indicates (2) roof-lights. To ensure compliance with Specification C1.1, the total area of such roof-lights must not exceed 20%;*** ***6. Accessible Roof Plan – Ensure that the (2) roof-lights are located not less than 3 m clear of the parts of the building that project above the roof-lights, OR alternatively ensure that such wall parts achieve the FRL required for a fire wall and that any openings in these parts of the walls for 6 m vertically are protected in accordance with Clause C3.4;*** ***7. Stage 1C - During Stage 1A the 7 demountable classroom buildings will be of Type C construction, with no concerns raised, however during Stage 1C the 14 demountable classroom building will be located above the basement construction (temporary music rooms) – such two storey construction attracts Type B construction, requiring loadbearing external walls to be fire rated (where less than 18 m from a fire source feature). As such demountable construction will be located upon the concrete roof slab of the carpark, a fire engineered solution may be used to treat the demountable buildings as a standalone building of Type C construction only (in lieu of fire rating loadbearing external wall parts);*** ***8. Stage 1C – During this stage the roof of the basement music area contains two skylights. Such skylights will be located directly beneath the temporary demountable classroom buildings to be positioned above. Such construction does not satisfy Specification C1.1, as an unprotected opening located within a separating floor.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					must be attained.
C1.2 Calculation of Rise In Stories			X		Refer to Section 2.0 of this report for further details
C1.3 Buildings of Multiple Classifications			X		Informational clause only
C1.4 Mixed Types of Construction			X		Not applicable. It is the understanding of this office that each building will be of the one Type of construction.
C1.5 Two Storey Class 2, 3 or 9c buildings			X		Not applicable.
C1.6 Class 4 Parts			X		Not applicable.
C1.7 Open Spectator Stands			X		Not applicable.
C1.8 Lightweight Construction			X		Information clause, any lightweight fire rated construction should be compliant with clause.
C1.9 -			X		Clause deleted
C1.10 Fire Hazard Properties (including NSW C1.10)				X	Fire hazard properties of linings and materials must comply with this Clause & Specification C1.10 of the BCA for floor, wall and ceiling linings, air-handling ductwork, lift cars, sarking-type materials and attachments. <u>Floor linings and floor coverings</u> • a critical radiant flux not less than 2.2; and • a maximum smoke development rate of 750 percent-minutes; and <u>Wall & Ceiling linings</u> • a group number of 1 or 2 ; and • a smoke growth rate index not more than 100, or an average specific extinction area less than 250 m^2/kg. <u>Air-handling ductwork</u> Rigid and flexible ductwork must comply with the

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					fire hazard properties set out in AS 4254 Parts 1 and 2. <u>Sarking material</u> Such material must have a Flammability Index not more than 5. *Note: Paint or fire retardant coatings must not be used to make a material comply with a required fire hazard property.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C1.11 Performance of External Walls in Fire				X	Concrete external wall panels that could collapse as complete panels (e.g. tilt-up and pre-cast concrete), must comply with Specification C1.11. *Note: This clause is applicable to a building having a rise in storeys of not more than 2.*
C1.12 Combustible materials			X		The following materials, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required: (a) Plasterboard. (b) Perforated gypsum lath with a normal paper finish. (c) Fibrous-plaster sheet. (d) Fibre-reinforced cement sheeting. (e) Pre-finished metal sheeting having a combustible surface finish not exceeding 1 mm thickness and where the Spread-of-Flame Index of the product is not greater than 0. (f) Bonded laminated materials where— (i) each laminate is non-combustible; and (ii) each adhesive layer does not exceed 1 mm in thickness; and (iii) the total thickness of the adhesive layers does not exceed 2 mm; and (iv) the Spread-of-Flame Index and the Smoke-Developed Index of the laminated material as a whole does not exceed 0 and 3 respectively.
Part C2 **Compartmentation & Separation**					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C2.2 General Floor Area & Volume Limitations		X			**Does not comply** Fire compartment floor area and volume limitations shall not exceed the following limitations set by Table C2.2: ▪ Type A - Class 9b: 8,000 m² / 48,000 m³ ▪ Type B - Class 9b: 5,500 m² / 33,000 m³ Based upon the Master Plan drawings dated March 2015, the largest fire compartment affecting the development occurs on Level 3 (as combines the Learning Hub education building, Roseby building, Humphery building and the Sports and Arts Centre building). This fire compartment approximates 5,200 m² / 15,600 m³, hence not more than the maximum permitted 8,000 m² or 48,000 m³, for Type A construction. ***Compliance issue –*** ***2. Notwithstanding the aforementioned the maximum permitted fire compartment size will be exceeded where Level 3 is linked to other levels via open stair shafts or via the two atrium wells located within the Learning Hub building.*** ***Hence fire wall construction must be introduced to reduce the size of fire compartments to comply with Table C2.2, <u>OR</u> fire engineered alternative solutions will be required relevant to the ability of the open stair shafts / atrium wells to provide adequate fire separation between storeys.***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 **Combined buildings form a single fire compartment representative of the largest fire compartment proposed during all construction stages.** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
C2.3 Large Isolated Buildings			X		Not applicable.
C2.4 Requirements for Open Space			X		Not applicable.
C2.5 Class 9a & 9c Buildings			X		Not applicable.
C2.6 Vertical Separation of openings in external walls			X		It is understood that the Learning Hub building will be sprinkler protected, hence spandrel construction will not apply.
C2.7 Separation by Fire Walls			X		Not applicable Based upon discussions with TKD it is understood that the proposed New Learning Hub Education Building, the existing Roseby Building and the Stage 2 Sports Hall and Drama hub buildings will be connected such they form a single united

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					building, with no fire wall separation required.
C2.8 Separation of Classifications in the same storey			X		Not applicable. Class 9b throughout each storey.
C2.9 Separation of Classifications in different stories			X		Not applicable. Class 7a and 9b classifications attract same FRL's.
C2.10 Separation of lifts shafts				X	The proposed lifts connecting more than 2 storeys and must be separated from the remainder of the building by enclosure within fire rated shafts. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.11 Stairways and lifts in one shaft		X			**Does not comply** A stairway and lift must not be in the same shaft if either the stairway or the lift is required to be in a fire-resisting shaft. ***Compliance issue:*** ***1. Stage 2 Sports and Performing Arts Centre – The internal egress stair serving the southern part of this building (required to be fire isolated) contains a passenger lift shaft. Such represents a non-compliance noting that the lift landing doors need only achieve a -/60/- FRL, as opposed to the -/60/30 fire doors required to a fire isolated stair shaft, hence the requirement to prohibit a stairway and lift from sharing the same shaft.*** ***Amended plans demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.12 Separation of Equipment				X	Any lift motors, lift control panels, emergency generators used to sustain emergency equipment operating in the emergency mode, central smoke control plant, batteries installed in the building with a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours, boilers, and on-site fire pumps, must be separated from the remaining buildings by construction achieving a FRL of not less than 120/120/120 with the access doorway provided with a self-closing fire door achieving a

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					FRL of not less than -/120/30. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.13 Electrical Supply				X	A new main switch room housing emergency equipment which is required to operate in the emergency mode, must be fire separated from the remainder of the building in accordance with this Clause i.e. in construction achieving a FRL of not less than 120/120/120 with the access doorway provided with a self-closing fire door achieving a FRL of not less than -/120/30. In addition any sub-station must be 120/120/120 fire separated from the remainder of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C2.14 Public corridors in Class 2 & 3 Buildings			X		Not applicable.
Part C3 **Protection of Openings**					
C3.2 Protection of openings in external walls				X	Openings in an external wall that is required to have an FRL must— (a) if the distance between the opening and the fire-source feature to which it is exposed is less than— (i) 3 m from a side or rear boundary of the allotment; or (ii) 6 m from the far boundary of a road, river, lake or the like adjoining the allotment, if not located in a storey at or near ground level; or (iii) 6 m from another building on the allotment that is not Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and (b) if required to be protected under (a), not occupy more than 1/3 of the area of the external wall of the storey in which it is located unless they are in a Class 9b building used as an open spectator stand.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Compliance issues: ***1. New Learning Hub education building – The door and window openings located within 3 m of the eastern side boundary require protection;*** ***2. New Learning Hub education building – Any external wall openings located within 6 m of the adjacent Redlands Hall building (assumed to be a separate building for the Stage 1 development) require protection in accordance with this clause;*** ***3. Facilities building - Any external wall openings located within 3 m of the allotment boundaries require protection in accordance with this clause;*** ***4. Allotment boundaries – Clarification of the location of the allotment boundaries is required, particularly in relation to the southern elevation of the proposed Learning Hub building and the existing buildings located at 7 and 8 Monford Place (noting that external wall openings located within 3 m of an allotment boundary OR within 6 m of another building located on the same allotment must be fire protected.*** ***Note: Based upon sketch design drawings received 17/12/2014, the temporary demountable building will be constructed 3 m clear of the Roseby building. Accordingly any openings located within the northern elevation of the demountable building (facing Roseby) need not be fire protected, where located within non-loadbearing parts of the external wall.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.3 Separation of external walls and associated openings in different fire compartments				X	Refer comments at Clause E1.5 noting that fire wall separation will be required to separate sprinkler protected parts from non-sprinkler protected parts, in accordance with AS 2118.1. The distance between parts of external walls and any openings within them in different fire compartments separated by a fire wall must not be less than that set out in Table C3.3, unless – - those parts of each wall have an FRL not less than 60/60/60; and

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					- any opening protected in accordance with C3.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.4 Acceptable Methods of Protection				X	Where applicable, under Clause C3.2 or C3.3, refer to the fire protection options contained within this clause. (a) Where protection is required, doorways, windows and other openings must be protected as follows: (i) **Doorways** - (A) internal or external wall-wetting sprinklers as appropriate used with doors that are self-closing or automatic closing; or (B) –/60/30 fire doors that are self-closing. (iii) **Windows** - (A) internal or external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (B) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (C) –/60/– automatic closing fire shutters. (iii) **Other openings—** (A) excluding voids — internal or external wall-wetting sprinklers, as appropriate; or (B) construction having an FRL not less than –/60/– (b) Fire doors, fire windows and fire shutters must comply with Specification C3.4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.5 Doorways in Fire Walls			X		Not applicable.
C3.6 Sliding Fire Doors			X		Not applicable.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C3.7 Protection of Doorways in horizontal exits			X		Not applicable.
C3.8 Openings in fire isolated exits				X	Doors to fire stairs must be self or auto closing -/60/30 fire doors (unless also serving as doors within a fire wall, in which case such doors require a -/120/30 FRL). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.9 Service Penetrations in fire-isolated exits				X	The fire isolated exits are not to be penetrated by any services **other** than water supply pipes for fire services OR electrical wiring associated with: • a lighting, detection, or pressurization system serving the exit; or • a security, surveillance or management system serving the exit; or • an intercommunication system or an audible or visual alarm system in accordance with D2.22 (it is noted that re-entry from fire-isolated exits will not be required); or • the monitoring of hydrant or sprinkler isolating valves ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.10 Openings in Fire isolated lift shafts			X		If a lift shaft is required to be fire isolated: • Lifts landing doors are required to be fire doors with an FRL of -/60/- that comply with AS 1735.11-1986, and be set to remain closed except when discharging or receiving, passengers, goods or vehicles; and • Lift indicator panels must also be fire rated in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.11 Bounding Construction: Class 2 and 3 buildings and Class 4 parts			X		Not applicable.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C3.12 Openings in floors and ceilings for services				X	Where services pass through a floor which is required to achieve a FRL or a ceiling required to have a RISF, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.13 Openings in Shafts				X	In a building of Type A construction, an opening in a wall providing access to a ventilating, pipe, garbage or other service shaft must be fire protected in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.15 Openings for Service Installations				X	Where services pass through an element which is required to achieve a FRL (other than an external wall or roof), the service must be fire protected in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.16 Construction Joints				X	Construction joints, spaces and the like in and between building elements required to be fire-resisting with respect to integrity and insulation must be protected in a manner identical with a prototype tested in accordance with AS 1530.4 to achieve the required FRL. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
C3.17 Columns protected in lightweight construction to achieve an FRL			X		Any columns protected with lightweight construction (i.e. fire rated plasterboard) to be compliant with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SECTION D ACCESS & EGRESS					
Part D1 Provision for Escape					
D1.2 Number of Exits required	X				Complies (a) **All buildings** — Every building must have at least one exit from each storey. (b) **Class 9 buildings** — In addition to any horizontal exit, not less than 2 exits must be provided from any storey or mezzanine that accommodates more than 50 persons, and any storey in a primary or secondary school with a rise in storeys of 2 or more.
D1.3 When Fire Isolated exits are required		X			**Does not comply** **Class 9 buildings** — Every stairway serving as a required exit must be fire-isolated unless it connects, passes through or passes by not more than 2 consecutive storeys and one extra storey of any classification may be included if— (A) the building has a sprinkler system complying with Specification E1.5 installed throughout; or (B) the required exit does not provide access to or egress for, and is separated from, the extra storey by construction having— (aa) an FRL of –/60/60, if non-loadbearing; and (bb) an FRL of 90/90/90 for Type A construction, or 60/60/60 for Type B construction, if loadbearing; and (cc) no opening that could permit the passage of fire or smoke. ***Compliance issue –*** ***1. Sports & Performing Arts building - The open stair to the southern end of the building must be designed as a fire isolated stairway as connecting 5 consecutive storeys. Refer also comments at Clause D1.7.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification for the proposed New Learning Hub Education***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					building.
D1.4 Exit Travel Distances		X			**Does not comply** **Class 7a and 9 buildings** — No point on a floor must be more than 20 m from an exit, or a point from which travel in different directions to 2 exits is available, in which case the maximum distance to one of those exits must not exceed 40 m. Compliance issues: 1. Sports Hall - Travel from the western end of the northern store exceeds 20 m to a point of choice (approx. 25 m noted) and the overall travel to at least one exit exceeds 40 m (approx. 75 m noted); 2. Stage 1A – Egress from the eastern most classroom (refer 7 room demountable) exceeds 20 m to a single exit (56 m noted to western egress stair). It is understood that an alternate exit will be provided to the eastern end of the building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
D1.5 Distance Between Alternate Exits		X			**Does not comply** Exits that are required as alternative means of egress must be— distributed as uniformly as practicable within or around the storey served and in positions where unobstructed access to at least 2 exits is readily available from all points on the floor including lift lobby areas; and be not less than 9 m apart; and not more than 60 m apart; and be located so that alternative paths of travel do not converge such that they become less than 6 m apart. Compliance issue: 1. It is understood that an alternate exit will be provided to the eastern end of the Rehearsal Room / Performance Space, such that egress to the street can be achieved via the carpark.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Based upon this configuration the distance between alternate exits serving the Rehearsal Room / Performance Space will exceed 60 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or a fire engineered Alternative Building Solution must be attained.***
D1.6 Dimensions of Exits and paths of Travel to Exits (including NSW D1.6)		X			**Does not comply** **Class 5 and 9 buildings** • In a required exit or path of travel to an exit the unobstructed height throughout must be not less than 2 m, except the unobstructed height of any doorway may be reduced to not less than 1980 mm; and • the unobstructed width of each exit or path of travel to an exit, except for doorways, must be not less than 1 m; and • if the storey or mezzanine accommodates more than 200 persons, the aggregate unobstructed width, except for doorways, must be increased to 2 m plus 500 mm for every 60 persons (or part) in excess of 200 persons (as egress involves a change in floor level by a stairway); and • the unobstructed width of each doorway must be not less than the unobstructed width of each exit provided minus 250 mm; • those paths of travel; and such required width must be maintained for the paths of travel connecting the exits from the building to a public road. Details of the total number of students to occupy each floor level must be attained from the school (based upon known class numbers) to ensure that the aggregate egress width is compliant with sub-clause D1.6 (d) (i). Notwithstanding this, and as an example, Level 2 of the new Learning Hub (inclusive of the interconnecting Roseby building) will be served by three egress stairways (two new and one existing stairway). Such stairways have an aggregate (combined) width of 4 m, and will cater for 440 persons. Based upon the number of seats indicatively

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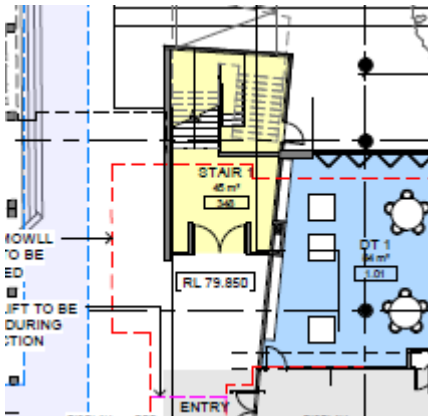
					indicated across the Level 2 Learning Hub rooms (199 seats counted), and estimating the total number of staff and students to accommodate the Level 2 Roseby classrooms to not exceed 160 persons, the aggregate egress width indicated for this Level 2 part of the development is compliant. Based upon feedback from Bloomfield and TKD, it is understood that Redlands Hall is served by independent stairways (as contained within the Hall), and that the Hall population will not be reliant upon the proposed stairway, or the existing stairway serving the Roseby Building. Notwithstanding the aforementioned the following compliance issues are raised: 1. Stage 1A – During this stage it appears that less than 1 m clearance will be provided between the covered deck (serving the 7 demountable classrooms and the adjacent external stairway serving the Mowll building), thereby obstructing the path of travel between buildings, as leads to Gerard Street. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D1.7 Travel via Fire Isolated Stairs		X			**Does not comply** (a) A doorway from a room must not open directly into a stairway, passageway or ramp that is required to be fire-isolated unless it is from— (i) a public corridor, public lobby or the like; or (ii) a sole-occupancy unit occupying all of a storey; or (iii) a sanitary compartment, airlock or the like. (b) Each fire-isolated stairway or fire-isolated ramp must provide independent egress from each storey served and discharge directly, or by way of its own fire-isolated passageway— (i) to a road or open space; or (ii) to a point— (A) in a storey or space, within the confines of the building, that is used only for pedestrian movement, car parking or the like and is open for at least 2/3 of its perimeter; and (B) from which an unimpeded path of travel, not further than 20 m, is available to a road or open

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					space; or (iii) into a covered area that— (A) adjoins a road or open space; (B) and is open for at least 1/3 of its perimeter; and (C) has an unobstructed clear height throughout, including the perimeter openings, of not less than 3 m; and (D) provides an unimpeded path of travel from the point of discharge to the road or open space of not more than 6 m. (c) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have— (i) an FRL of not less than 60/60/60; and (ii) any openings protected internally in accordance with C3.4, for a distance of 3 m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. (d) If more than 2 access doorways, not from a sanitary compartment or the like, open to a required fire-isolated exit in the same storey— (i) a smoke lobby in accordance with D2.6 must be provided; or (ii) the exit must be pressurised in accordance with AS/NZS 1668.1. Compliance issues - 1. New Learning Hub building - The western fire isolated stair must discharge directly to open space, or to a covered area that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii). Based upon the plan extract below and the roof plans, the stair does not discharge to an area that satisfies either of these requirements. Clarification is required to ensure that the perimeter of the stair discharge area is at least 1/3 open and that the unobstructed height of such area is at least 3 m;

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 2. New Learning Hub building - The paths of travel leading to the road from the fire isolated stair discharge points shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of the building; 3. Humphery Learning Hub building - The paths of travel leading to the road from the two fire isolated stair discharge points shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of the building; 4. Humphery Learning Hub building - The two fire isolated stairs must discharge directly to open space, or to covered areas that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii); 5. Roseby building – Based upon the Master Plan development, the external stair to the eastern end of this building will discharge into a central courtyard area, hence the path of travel to the road from this point shall be protected in accordance with sub-clause D1. 7 (c), where passing within 6 m of openings within the external wall of this building (noting that the Roseby building will be united with the Sports & Performing Arts building, to form the one united building); 6. Sports & Performing Arts building - The open stair to the southern end of the building must discharge directly to open space, or to a covered area that satisfies the requirements of sub-clause D1.7 (b) (ii) or (iii). ***Details demonstrating compliance with this clause must be incorporated into the***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					construction certificate plans / specification
D1.8 External Stairways or ramps in lieu of Fire Isolated Stairs			X		Not applicable Note: The external stair serving the Roseby Building is existing.
D1.9 Travel by non-fire-isolated stairs			X		Not applicable A non-fire isolated stairway serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway must not exceed 80m, and the such stair must discharge at a pint not more than 20m from a doorway providing egress to a road or open space, or 40m from one of 2 such doorways.
D1.10 Discharge from Exits (including NSW D1.10)				X	a) An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. (b) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i) the minimum width of the required exit; (ii) or 1 m, whichever is the greater. (c) If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be by— (i) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3; or (ii) except if the exit is from a Class 9a building, a stairway complying with the Deemed-to-Satisfy Provisions of the BCA. (d) The discharge point of alternative exits must be located as far apart as practical.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					The submitted plans do not illustrate the final gradients of the paths of travel that link the exits with the road, however such paths must comprise of compliant stairways, or inclines that do not have a gradient of more than 1:8.
D1.11 Horizontal Exits			X		Not applicable.
D1.12 Non-required stairways, ramps or escalators			X		Not applicable.
D1.13 Number of Persons Accommodated (including NSW D1.13)			X		Information The number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by – (a) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D1.13 according to the use of that part, excluding spaces set aside for lifts, stairways, ramps, sanitary compartments and the like; or (b) reference to the seating capacity in an assembly building or room; or (c) any other suitable means of assessing its capacity. Note: The following table identifies the total number of students enrolled within SCECGS REDLANDS.

Year	Existing as at 2015 Enrolment	Proposed No. Core Classes	Proposed Enrolment
7	182	6	150
8	156	6	150
9	156	6	150
10	150	6	150
11	150	7	175
12	125	7	175
Sub-totals	919	38	**950**

Additionally it has been advised that the total number of staff is 160 (inclusive of 100 fulltime staff, 50 support staff and 10 additional full time staff members.

Accordingly the total campus population is understood to be 1110 persons.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D1.14 Measurement of Distances			X		The nearest part of an exit means in the case of— (a) a fire-isolated stairway, fire-isolated passageway, or fire-isolated ramp, the nearest part of the doorway providing access to them; and (b) a non-fire-isolated stairway, the nearest part of the nearest riser; and (c) a non-fire-isolated ramp, the nearest part of the junction of the floor of the ramp and the floor of the storey; and (d) a doorway opening to a road or open space, the nearest part of the doorway; and (e) a horizontal exit, the nearest part of the doorway.
D1.15 Method of Measurement			X		Informational clause only
D1.16 Plant Rooms and lift Motor Rooms: Concession			X		a) A ladder may be used in lieu of a stairway to provide egress from— (i) a plant room with a floor area of not more than 100 m2; or (ii) all but one point of egress from a plant room, a lift machine room or a Class 8 electricity network substation with a floor area of not more than 200 m2. (b) A ladder permitted under (a)— (i) may form part of an exit provided that in the case of a fire-isolated stairway it is contained within the shaft; or (ii) may discharge within a storey in which case it must be considered as forming part of the path of travel; and (iii) for a plant room or a Class 8 electricity network substation, must comply with AS 1657; and (iv) for a lift machine room, where access is provided from within a machine room to a secondary floor, a fixed rung type ladder complying with AS 1657 may be used, provided that— (A) the height between the floors is not more than 2800 mm; and (B) the ladder is inclined at an angle to the horizontal not less than 65 degrees nor more than

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					75 degrees; and (C) the distance between the front face of the ladder and any adjacent obstruction is not less than— (aa) 960 mm, where the ladder is inclined 65 degrees to the horizontal; or (bb) 760 mm, where the ladder is inclined 75 degrees to the horizontal; or (cc) a distance that is determined by interpolating the values in (aa) and (bb), where the ladder is inclined at any angle between 65 degrees and 75 degrees to the horizontal; and (D) a clear space not less than 600 mm exists between the foot of the ladder and any equipment. ***Where applicable, details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part D2 **Construction of Exits**					
D2.1 Application of Part *Note NSW D2.1*			X		Informational clause only
D2.2 Fire-Isolated stairways and ramps				X	The fire isolated stairways must be constructed of non-combustible materials and constructed so that if there is local failure it will not cause structural damage to, or impair the fire-resistance of the shaft. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification (and structural details)***
D2.3 Non-fire Isolated stairways and ramps				X	Non-fire isolated stairways must be constructed according to D2.2, or only of- (a) reinforced or pre-stressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%;

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					and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue". ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.4 Separation of Rising and Descending Stairs				X	Separation of the rising and descending stair flights must be provided as per clause 2 of Specification C2.5. **New Learning Hub education building** - The Level 1 construction separating Fire Stair 1 from the stairway ascending from the basement level must be smoke proofed in accordance with clause 2 of Specification C2.5, and contain no doorways that provide direct connection between the two stairways. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.5 Open Access ramps and balconies			X		Not applicable.
D2.6 Smoke Lobbies			X		Not applicable.
D2.7 Installations in Exits and Paths of Travel				X	Any electricity meters, distribution boards; telecommunications distribution boards or equipment; electrical motors or other motors within corridors/hallways/lobbies or the like must be enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread. Electrical wiring may be installed with a fire isolated exit, but only where associated with a lighting, detection, pressurisation, security, surveillance, intercommunication, or hydraulic fire services monitoring valves. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.8 Enclosure of Space Under Stairs				X	If the space below a required fire-isolated stairway

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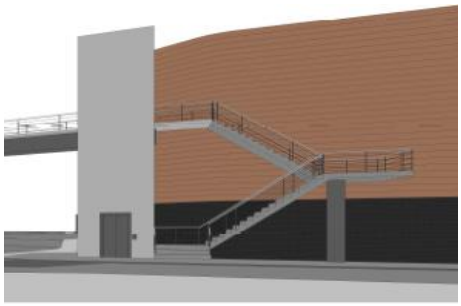
and ramps					is within the fire-isolated shaft, it must not be enclosed to form a cupboard or similar enclosed space. Any space under a non-fire-isolated stair may be enclosed to form a cupboard, but only where such space is enclosed by 60-minute fire rated construction. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.9 Width of Stairs			X		A required stairway or ramp that exceeds 2 m in width is counted as having a width of only 2 m unless it is divided by a handrail, balustrade or other barrier continuous between landings and each division has a width of not more than 2 m.
D2.10 Pedestrian Ramps				X	Where applicable, pedestrian ramps are to have a non-slip finish complying with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.11 Fire-Isolated Passageways			X		Not applicable.
D2.12 Roof as Open Space				X	Egress from the **New Learning Hub education building** results in occupants discharging onto the roof of the basement car-park, requiring such roof to achieve an FRL of not less than 120/120/120, and the roof must not contain any roof-lights or other openings within 3 m of the path of travel of persons using the exit to reach a road or open space. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.13 Goings & Risers (including NSW D2.13)				X	Stairways to achieve compliance with this clause relevant to going and riser dimensions in a public stairway. Treads must have a surface with a slip-resistant classification not less than that listed in Table D2.14

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					when tested in accordance with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.14 Landings				X	Landings must not be less than 750mm long and have a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.* ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.15 Thresholds (including NSW D2.15)				X	Generally the threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaves unless the doorway is in a building required to be accessible by Part D3, and in which case the doorway opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS 1428.1. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.16 Balustrades and other Barriers *Note NSW D2.16*		X			**Does not comply** Balustrades must be provided to stairs and balconies and to the accessible roof spaces, where there is a fall of more than 1m. Balustrades in fire-isolated stairways shall comply with D2.16 (g) and (h)(i) and all other balustrades shall comply with D2.16(g) and (h)(ii). For floors more than 4 m above the surface beneath, any horizontal or near horizontal elements between 150 mm and 760 mm above the floor must not facilitate climbing. ***Compliance issue –*** ***1. The balustrade illustrated for the stair and bridge-link to the Adams Building protects a fall that exceeds 4 m, yet contains horizontal or near horizontal elements between 150 mm and 760 mm above the***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					floor that may facilitate climbing.  ***It is understood that such balustrade is existing and was constructed by RMS (not under the control of SCECGS).***
D2.17 Handrails				X	All stairways and ramps must be provided with handrails as per this clause, fixed at a height of not less than 865 mm, measured above the nosings of stair treads. A required exit serving an area required to be accessible must be designed and constructed to comply with Clause 12 of AS 1428.1. All ramps with a gradient steeper than 1:20 or more must be provided with a handrail as per this clause, including any driveway ramps that form paths of travel to the street. See also clause D3.3 regarding handrail requirements to assist people with a disability. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.18 Fixed Platforms, walkways and ladders			X		Where applicable, plant areas may be accessed via stairs and ladders compliant with AS 1657-2013. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
D2.19 Doorways & Doors			X		Not applicable (on the understanding that sliding exit doors are not proposed).
D2.20 Swinging Doors		X			**Does not comply** ▪ A swinging door in a required exit or forming

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					part of a required exit must not encroach at any part of its swing by more than 500 mm on the required width (including any landings) of a required: - stairway; or - ramp; or - passageway, if it is likely to impede the path of travel of the people already using the exit, and when fully open, by more than 100 mm on the required width of the required exit, and the measurement of encroachment in each case is to include door handles or other furniture or attachments to the door; and ▪ must swing in the direction of egress unless, it serves a building or part with a floor area not more than 200 m2, it is the only required exit from the building or part and it is fitted with a device for holding it in the open position; or it serves a sanitary compartment or airlock (in which case it may swing in either direction); and ▪ must not otherwise impede the path or direction of egress. ***Compliance issues –*** ***Based upon the floor plans submitted the following features / services require amendment to satisfy the DTS requirements of this clause:*** ***1. New Learning Hub building - The final exit door serving Fire Stair 1 at Level 1 does not swing in the direction of travel;*** ***2. New Learning Hub building – The doors providing access to Fire Stair 2 on each level must be re-swung in the direction of travel;*** ***3. Humphery Learning Hub & Resource Centre - The final exit doors serving the fire isolated stairways on Level 1 do not swing in the direction of travel.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.21 and NSW D2.21 Operation of Latch				X	All doors in a required exit or forming part of a required exit AND doors in a path of travel to a

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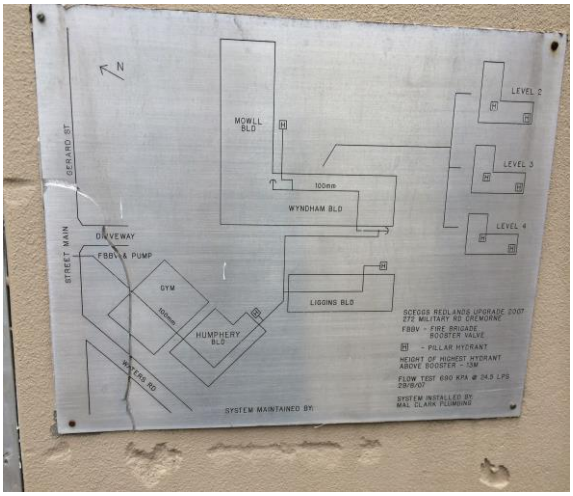
					required exit must be readily openable without a key from the side that faces a person seeking egress, by single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – A. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and B. have a clearance between the handle and the back plate or door face at the center grip section of the handle of not less than 35mm and not more than 45mm; or C. a single hand pushing action on a single device which is located between 900mm and 1.2m from the door. **NSW D2.21 variation:** The doors used by the public in an **entertainment venue** must satisfy this clause, requiring the provision of panic / push bar type door hardware in lieu of lever action devices. Such requirements will apply to the **Sports & Performing Arts Centre,** noting that an indoor sports stadium is deemed by the Environmental Planning and Assessment Regulation to form an 'entertainment venue'. As such the part of the building forming the entertainment venue is subject to additional BCA provisions within Part D and also NSW Part H101. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
D2.22 Re-entry from Fire isolated exits			X		Not applicable (as effective height of the building is less than 25 m).
D2.23 Signs on Doors				X	Information clause relevant to the provision of signs on required fire doors to alert persons that the operation of these doors is not to be impaired. Refer also to offence signage required by Clause 183 of the EP&A Regulation (EPAR) 2000. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D2.24 Protection of openable windows				X	A barrier with a height not less than 865 mm above the floor is required to an openable window where the floor below the window is 4 m or more above the surface beneath it. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part D3 **Access for People with Disabilities** ***Refer separate Access Appraisal Report No. A1986 prepared by AED Access Pty Ltd***					
SECTION E **SERVICES & EQUIPMENT**					
Part E1 **Fire Fighting Equipment**					
E1.3 Fire Hydrants		X			**Does not comply** A hydrant system complying with AS 2419.1-2005 must be provided to serve all new buildings, as all such buildings have total floor areas that exceed 500 m². Based upon the Fire Hydrant Block Plan located adjacent the Gerard Street booster assembly (see below), a fire hydrant upgrade occurred in 2007. Based upon the Block Plan and the current Annual Fire Safety Statement (AFSS) by Advance Fire Service Pty Ltd, the existing hydrant system is installed in accordance with AS 2419.1 (the current standard).

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 The existing fire hydrant system must be modified and extended to cover each new stage (excluding the Facilities building) noting that all modified / new buildings (with the exception of the Facilities building) have total floor areas exceeding 500 m². Compliance issues – 1. The hydrant pump room located within The Basement Level does not satisfy AS 2419.1, as the room does not have a door opening to a road or open space, or a door opening to a fire isolated passageway or stair that opens to a road or open space; 2. The hydrant booster assembly does not satisfy the shield wall requirements of AS 2419.1, due to the adjacent opening formed at the vehicular entry, being located within 2 m horizontal distance of the booster assembly; 3. Hydrant valve locations not indicated on plan to assess compliance. 4. Stage 1C – The 14 classroom demountable building must be served by a fire hydrant system. Note: The Stage 1A 7 classroom demountable building has a floor area less than 500 m² and does not require fire hydrant coverage (total floor area measured over the enclosing walls). ***Hydraulic Services Design Certification and amended plans must be incorporated into the construction certificate specification to evidence compliance.***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
E1.4 Fire Hose Reels				X	A fire hose reel system complying with AS 2441-2005 must be provided / adjusted to provide coverage to the following buildings or parts only, noting that fire hose reels are not required to classrooms and associated corridors: ▪ **Stage 1 Basement Carpark** ▪ **Stage 1 New Learning Hub building (to all non-class room parts)** such as the back of house areas including the Dark Room, Kiln and Store areas on Level 1, the Performance Space on Level 2, the break out areas on each level, the Store Rooms on each level, and the Level 5 Storage and Plant rooms; ▪ **Stage 2 Sports and Performing Arts Centre;** ▪ **Stage 3 – FHR adjustments may be required to ensure coverage post refurbishment;** ▪ **Stage 4 Humphery Learning Hub and Resource Centre (to all non-classroom parts) such as the Level 2 Staff Room, the Level 3 Staff Room and new Learning Hub space.** ***Hydraulic Services Design Certification and associated plans must be incorporated into the construction certificate specification***
E1.5 Sprinklers				X	Sprinkler protection must be provided to cover the **Basement carpark**, as more than 40 vehicles are accommodated. Such installation shall comply with AS 2118.1-1999 or AS 2118.6-2012 (for a combined hydrant and sprinkler system). Sprinkler alarm valves must be located within a secure room or enclosure which has direct egress to a road or open space. Note: It is understood that the Learning Hub building will also be sprinkler protected, hence fire wall construction will be required to separate sprinkler protected parts of the building from non-sprinkler protected parts, in accordance with AS 2118.1. Note: As a consequence the requirement of Clause C3.3, for protection of external wall openings between fire compartments may apply. ***Hydraulic Services Design Certification and associated plans must be incorporated into the***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					construction certificate specification
E1.6 Portable Fire Extinguishers				X	Portable fire extinguishers must be provided in accordance with Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001. Portable fire extinguishers must be provided to cover: - Class AE or E fires associated with emergency services switchboards; - Class F fires involving cooking oils and fats in kitchens; - Class A fires in normally occupied fire compartments less than 500m² not provided with fire hose reels; - Class A fires in classrooms and associated corridors in school buildings not provided with fire hose reels. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.8 Fire Control Centre				X	A Fire control centre facility in accordance with Specification E1.8 must be provided, as the total floor area of the united Class 9b building exceeds 18,000 m². ***Refer comments at Clause E2.2 regarding the provision of a single Fire Indicator Panel.*** ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.9 Fire Precautions during construction				X	During construction, not less than one portable fire extinguisher to suit Class A, B and C fires and electrical fires must be provided at all times on each storey adjacent to each required / temporary exit; and After the building has reached an effective height of 12 m, the required fire hydrants and fire hose reels must be operational in at least every storey that is covered by the roof or the floor structure above, except the 2 uppermost storeys; and Any required booster connections must be operational.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					It is noted that the New Learning Hub building to be built as part of Stage 1, has an effective height that exceeds 12 m. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E1.10 Provision for Special Hazards			X		Not applicable
Part E2 **Smoke Hazard Management**					
E2.2 General Requirements (inclusive of Table E2.2a / Table E2.2b & NSW amendments)				X	**<u>General smoke hazard management requirements</u>** An air-handling system which does not form part of a smoke hazard management system in accordance with Table E2.2a or Table E2.2b and which recycles air from one fire compartment to another fire compartment or operates in a manner that may unduly contribute to the spread of smoke from one fire compartment to another fire compartment (such as lobby air supply) must— (i) be designed and installed to operate as a smoke control system in accordance with AS/NZS 1668.1; or (ii) (A) incorporate smoke dampers where the air-handling ducts penetrate any elements separating the fire compartments served; and (B) be arranged such that the air-handling system is shut down and the smoke dampers are activated to close automatically by smoke detectors complying with clause 4.10 of AS/NZS 1668.1; and for the purposes of this provision, each sole-occupancy unit in a Class 2 or 3 building is treated as a separate fire compartment. Miscellaneous air-handling systems covered by Sections 5 and 11 of AS/NZS 1668.1 serving more than one fire compartment (other than a carpark ventilation system) and not forming part of a smoke hazard management system must comply with that Section of the Standard. A smoke detection system must be installed in accordance with Clause 5 of Specification E2.2a to

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					operate systems provided for zone smoke control / automatic air pressurization for fire-isolated exits. **<u>Buildings *not* more than 25m in effective height</u>** A Class 9b school building having a rise in storeys of more than 3, must be served by: - In each required fire-isolated stairway, including an associated fire-isolated passageway, an automatic air pressurization system in accordance with AS/NZS 1668.1; or - A zone smoke control system in accordance with AS/NZS 1668.1; or - An automatic smoke detection and alarm system complying with Specification E2.2a; or - a sprinkler system complying with Specification E1.5. **<u>NSW Table E2.2b – Specific Provisions</u>** Class 9b school assembly buildings must be provided with automatic shutdown of air handling systems (other than non-ducted individual room units with a capacity not more than 1,000 l/s and miscellaneous exhaust air systems in accordance with Sections 5 and 11 of AS/NZS 1668.1), which do not form part of a smoke hazard management system. The **<u>Class 7a carpark</u>** must be provided with a mechanical ventilation system in accordance with AS 1668.2 and must comply with clause 5.5 of AS/NZS 1668.1 except that fans with metal blades for operation at normal temperatures may be used, and the electrical power and control cabling need not be fire rated. ***Based upon AED site inspection and the Annual Fire Safety Statement prepared by Advanced Fire Service the existing Roseby, Humphery and and adjacent Redlands Hall buildings are served by an AS 1670.1 compliant automatic smoke detection and alarm system, with each building served by independent Fire Indicator panels.*** ***Based upon the proposed development, which will effectively link the New Learning Hub education building with the adjacent Roseby building to form a united building, and eventually to link the Stage 2, 3, and 4 development, the automatic smoke detection system must be extended to serve all parts.*** ***Additionally this newly formed united building***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					must be served by a single Fire Indicator Panel, to be located within the principal entry of the building. ***Notwithstanding the aforementioned, all Class 9b school buildings where served by a mechanical ventilation system, must be provided with automatic shutdown of air handling systems, which do not form part of a smoke hazard management system.*** ***The aforementioned must be completed during Stage 1 works.*** ***Appropriate Design Certification must be incorporated into the construction certificate specification***
E2.3 Provision for Special Hazards			X		Not applicable
Part E3 **Lift Installations**					
E3.1 Lift installations				X	An electric passenger lift installation and an electrohydraulic passenger lift installation must comply with Specification E3.1 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.2 Stretcher Facility in Lifts				X	Stretcher facilities must be provided within the passenger lifts, as serving storeys above an effective height of 12m. A stretcher lift must accommodate a raised stretcher with a patient lying on it horizontally by providing a clear space not less than 600mm wide x 2000mm long x 1400mm high above floor level. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.3 Warning Against the use of lifts in Fire				X	Warning signs indicating "**DO NOT USE LIFTS IF THERE IS A FIRE**" shall be displayed near every call button for a passenger lift or group of lifts throughout a building as per E3.3.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
E3.4 Emergency Lifts			X		Not applicable (as effective height of buildings is less than 25 m).
E3.5 Landings				X	Access and egress to and from lift-well landings must comply with the Deemed-to-Satisfy Provisions of Section D. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.7 Fire Service Controls				X	Each passenger lift must be provided with a: • fire service recall control switch complying with E3.9 (for a group of lifts or a single lift not in a group that serves the storey); and • a lift car fire drive control switch complying with E3.10 for every lift. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.8 Aged Care Buildings			X		Not applicable.
E3.9 Fire service recall operation switch				X	(a) Each group of lifts must be provided with one fire service recall control switch required by E3.7 that activates the fire service recall operation at (e). The switch must— (i) be located at the landing nominated by the appropriate authority; and (ii) be labelled "FIRE SERVICE" in indelible white lettering on a red background; and (iii) have two positions with an "OFF" and an "ON" position identified; and (iv) be operable only by the use of a key that is removable in either the "OFF" position or the "ON" position. (b) Adhesive labels must not be used for compliance with (a)(ii) and (a)(iii).

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(c) The key in (a)(iv) must be able to turn all fire service recall control switches in the building and must have a different key combination to other keys used for lifts in the building. (d) The fire service recall operation must be activated by— (i) switching the fire service recall control switch in (a) to "ON"; or (ii) a signal from a fire management system approved by the appropriate authority. (e) The activation of the fire service recall operation at (d) must— (i) cancel all registered car and landing calls; and (ii) inactivate all door reopening devices that may be affected by smoke; and (iii) ensure lift cars travelling away from the nominated floor stop at or before the next available floor without opening the doors (either automatically or by the door open button), reverse direction and travel without stopping to the nominated floor; and (v) for lifts stopped at a floor other than the nominated floor, close the doors and travel without stopping to the nominated floor; and (vi) ensure that lifts stay at the nominated floor with doors open; and (vii) permit all lifts to return to normal service if the fire service recall control switch at (a) is switched to the "OFF" position during or after the fire service recall operation. (f) The requirements of (e) do not apply to lifts on inspection service or when the lift car fire service control switch required by E3.10 is in the "ON" position. (g) Lifts having manual controls must signal an alert to the lift for the lift to return to the nominated floor containing the recall switch that activated the signal. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E3.10 Lift car fire service drive control switch				X	(a) The lift car fire service drive control switch required by E3.7 must be activated from within the lift car. The switch must— (i) be located between 600 mm and 1500 mm above the lift car floor; and

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(ii) be labelled "FIRE SERVICE" by indelible white lettering on a red background; and (iii) have two positions with an "OFF" and an "ON" position identified; and (iv) operate only by the use of a key that is removable in either the "OFF" position or the "ON" position. (b) Adhesive labels must not be used for compliance with (a)(ii) or (a)(iii). (c) When the lift car fire service drive control switch at (a) is turned to the "ON" position, the lift must— (i) not respond to the fire service recall control switch; and (ii) cancel all registered lift car and landing calls; and (iii) override all lift car call access control systems; and (iv) inactivate all door reopening devices that may be affected by smoke; and (v) allow the registration of lift car call by lift car call buttons, however the lift doors must not close in response to the registration of lift car calls; and (vi) activate door closing by constant pressure being applied on the "door close" button unless the button is released before the doors are fully closed, in which case the doors must reopen and any registered lift car calls must be cancelled; and (vii) when the doors are closed, move the lift in response to registered lift car calls while allowing additional lift car calls to also be registered; and (viii) travel to the first possible floor in response to registered lift car calls and cancel all registered lift car calls after the lift stops; and (ix) ensure doors do not open automatically, rather by constant pressure being applied on the "door open" button unless the button is released before the doors are fully open, in which case the doors must re-close; and the requirements of (c)(i) to (c)(ix) do not apply to a lift operating on inspection service. (d) A multi-deck lift installation must have systems in place that— (i) are able to communicate to the fire officer that the fire service drive control switch will not operate until all decks have been cleared of passengers; and (ii) ensure there is an appropriate method of clearing all deck landings of passengers; and (iii) maintain all doors to deck landings not containing the fire service control switch closed and

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					inoperative while the lift is on fire service drive control. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part E4 **Emergency Lighting, Exit Signs and Warning Systems**					
E4.2 Emergency Lighting Requirements				X	An emergency lighting system must be installed throughout all areas. ***Electrical Design Certification must be incorporated into the construction certificate specification***
E4.3 Measurement of Distance			X		Noted. Informational clause only.
E4.4 Design and Operation of Emergency Lighting			X		The emergency lighting system must comply with AS 2293.1-2005.
E4.5 Exit Signs				X	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each— (a) door providing direct egress from a storey to— (i) an enclosed stairway, passageway or ramp serving as a required exit; and (ii) an external stairway, passageway or ramp serving as a required exit; and (iii) an external access balcony leading to a required exit; and (b) door from an enclosed stairway, passageway or ramp at every level of discharge to a road or open space; and (c) horizontal exit; and (d) door serving as, or forming part of, a required exit in a storey required to be provided with emergency lighting in accordance with ***Electrical Design Certification must be incorporated into the construction certificate specification and exit sign locations must be illustrated on the architectural floor plans***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
E4.6 Direction Signs *(inclusive of NSW E4.6)*				X	If an exit is not readily apparent to persons occupying or visiting the building then directional exit signs must be installed in appropriate positions. ***Electrical Design Certification must be incorporated into the construction certificate specification and directional exit sign locations must be illustrated on the architectural floor plans***
E4.7 Class 2 & 3 Buildings & Class 4 Parts: Exemption			X		Not applicable
E4.8 Design & Operation of Exit Signs				X	Exit signs must comply with: • AS 2293.1-2005; or • For a photo-luminescent exit sign, Specification E4.8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
E4.9 Sound systems and intercom systems for emergency purposes				X	A SSISEP system complying with AS 1670.4-2004 must be provided within Class 9b school buildings having a rise in storeys of more than 3. ***Based upon the proposed development, which will effectively link the New Learning Hub education building with the adjacent Roseby building to form a united building, and eventually to link the Stage 2, 3, and 4 development, a SSISEP must be provided to serve all parts.*** ***The aforementioned must be completed during Stage 1 works.*** ***Electrical design certification must be incorporated into the construction certificate documentation.***
SECTION F **HEALTH & AMENITY**					
Part F1					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Damp & Weatherproofing					
F1.1 Stormwater Drainage				X	Stormwater drainage must comply with AS/NZS 3500.3-2003. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.4 External above ground membranes				X	Any external above ground membranes must be waterproofed as per AS 4654 Parts 1 and 2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.5 Roof coverings				X	Where used, a metal deck roof shall comply with AS 1562.1-1992 Design and installation of sheet roof and wall cladding. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.6 Sarking				X	Sarking-type materials used for weatherproofing must comply with AS/NZS 4200 Part 1 and 2-1994. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.7 Waterproofing of wet area				X	Wet areas must be waterproofed in accordance with AS 3740-2010 and F1.7 of the BCA. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.9 Damp-proofing				X	Where a damp-proof course is required, it must consist of a material that complies with AS/NZS 2904-1995; or impervious termite shields in accordance with AS 3660.1-2000 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.10 Damp-proofing of floors on the			X		If a floor of a room is laid directly on the ground or

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
ground					on fill, moisture from the ground must be prevented from reaching the upper surface of the floor and adjacent walls by the insertion of a vapour barrier in accordance with AS 2870, except damp-proofing need not be provided if: - Weatherproofing is not required; or - The floor is the base of a stair, lift or similar shaft which is adequately drained by gravitation or mechanical means. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F1.11 Provision of Floor Wastes			X		Not applicable
F1.12 Sub Floor Ventilation			X		Not applicable
F1.13 Glazed Assemblies				X	Glazed assemblies within external walls shall comply with AS 2047-1999. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F2 Sanitary & Other Facilities					
F2.1 Facilities in residential buildings			X		Not applicable
F2.2 Calculation of number of occupants and fixtures			X		Noted. Informational clause only.
F2.3 Facilities for Class 3 to 9 Buildings				X	Sanitary facilities must be provided for Class 9 buildings in accordance with Table F2.3. Employees and the public may share the same facilities in a Class 9b building provided the number of facilities provided is not less than the total number of facilities required for employees plus those required for the public. Adequate means of disposal of sanitary towels must be provided in sanitary facilities for use by females.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					An assessment of the number of sanitary facilities required has not been undertaken by AED at this stage, as the total number of school occupants (staff and students) is not currently known. ***It should be noted that the following Table F2.3 user groups must be considered in order to undertake an assessment:*** ▪ ***Class 9b – schools (male and female employees plus male and female students); &*** ▪ ***Class 9b - sports venues or the like (male and female participants plus male and female spectators or patrons) – applicable to Stage 2 Sports and Performing Arts Centre.*** ***TKD to provide details of the total number of school occupants, the total number of sanitary facilities (existing and proposed), and clarification of The facilities that are only accessible to staff or only accessible to students.***
F2.4 Facilities for People with Disabilities			X		Refer separate report by AED Access.
F2.5 Construction of Sanitary Compartments				X	Sanitary compartments must have: • Doors and partitions that separate adjacent compartments; and • the door to a fully enclosed sanitary compartment must open outwards, or slide, or be removable from outside of the compartment, unless there is a clear space of at least 1.2m between the closet pan within the compartment and the doorway. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F2.6 Interpretation: Urinals and washbasins			X		Informational clause relevant to urinal and washbasin design. ***Details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
F2.7 Microbial Control *Note NSW F2.7 (Clause Deleted)*			X		N/A Clause Deleted in NSW.
Part F3 **Room Sizes**					
F3.1 Height of Rooms and other spaces				X	The ceiling height must be not less than— <u>Class 9b:</u> - 2.4 m to parts that accommodate <u>not more</u> than 100 persons; and - 2.7 m to parts that accommodate more than 100 persons; and - 2.4 m in corridors that accommodate <u>not more</u> than 100 persons; and - 2.7 m in corridors that accommodate more than 100 persons. <u>In any building:</u> - 2.1 m in a bathroom, shower room, sanitary compartment, airlock, tea preparation room, pantry, store room, garage, car parking area, or the like; and - 2 m above a stairway, ramp, landing or the like, measured vertically above the nosing line of stairway treads or the floor surface of the ramp, landing or the like. <u>Basement carpark:</u> - in the Class 7a carpark – generally not less than 2.1 m. Note: A 2,500 mm ceiling height is also required over the accessible parking spaces to satisfy AS 1428.1 requirements, and the clear height to such spaces from the vehicular entry point must be not less than 2,300 mm. ***Details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
Part F4 **Light & Ventilation**					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
F4.1 Provision of natural light		X			**Does not comply** Natural light must be provided to all Class 9b general purpose classrooms. ***Compliance issues –*** ***2. Stage 1B and 1C – The basement level general purpose classrooms are not provided with natural light.*** ***Amended plans demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.2 Methods and extent of natural lighting				X	(a) Required natural lighting must be provided by— (i) windows, excluding roof lights, that— (A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 10% of the floor area of the room; and (B) are open to the sky or face a court or other space open to the sky or an open verandah, carport or the like; or (ii) roof lights, that— (A) have an aggregate light transmitting area measured exclusive of framing members, glazing bars or other obstructions of not less than 3% of the floor area of the room; and (B) are open to the sky; or (iii) a proportional combination of windows and roof lights required by (i) and (ii). (b) A window serving a Class 9b building that faces a boundary of an adjoining allotment or a wall of the same building or another building on the allotment must not be less than a horizontal distance from that boundary or wall that is the greater of— (i) generally — 1 m; and (ii) 50% of the square root of the exterior height of the wall in which the window is located, measured in metres from its sill. ***Details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.3			X		Not applicable

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Natural light borrowed from adjoining room					
F4.4 Artificial lighting				X	Artificial lighting complying with AS/NZS 1680.0-2009 shall be provided throughout all stairways, all rooms that are frequently occupied, all spaces required to be accessible, and all corridors and lobbies. ***Electrical Design Certification must be incorporated into the construction certificate specification***
F4.5 Ventilation of Rooms				X	All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification, or Mechanical Design Certification***
F4.6 Natural Ventilation			X		(a) Natural ventilation provided in accordance with F4.5(a) must consist of permanent openings, windows, doors or other devices which can be opened— (i) with an aggregate opening or openable size not less than 5% of the floor area of the room required to be ventilated; and (ii) open to— (A) a suitably sized court, or space open to the sky; or (B) an open verandah, carport, or the like; or (C) an adjoining room in accordance with F4.7. (b) The requirements of (a)(i) do not apply to a Class 8 electricity network substation. ***Where applicable details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.7 Ventilation borrowed from adjoining room			X		Natural ventilation to a room may come through a window, opening, ventilating door or other device from an adjoining room (including an enclosed verandah) if both rooms are within the same sole-

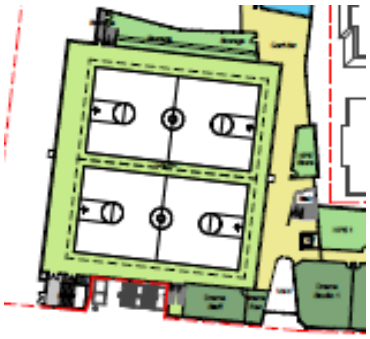
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					occupancy unit or the enclosed verandah is common property, and— (i) the room to be ventilated is not a sanitary compartment; and (ii) the window, opening, door or other device has a ventilating area of not less than 5% of the floor area of the room to be ventilated; and (iii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 5% of the combined floor areas of both rooms; and (b) in a Class 5 or 9 building— (i) the window, opening, door or other device has a ventilating area of not less than 10% of the floor area of the room to be ventilated, measured not more than 3.6 m above the floor; and (ii) the adjoining room has a window, opening, door or other device with a ventilating area of not less than 10% of the combined floor areas of both rooms; and (c) the ventilating areas specified in (a) and (b) may be reduced as appropriate if direct natural ventilation is provided from another source. ***Where applicable details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.8 Restriction of position of water closets and urinals				X	Rooms containing closet pans or urinals must not open directly into public assembly areas. ***Details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.9 Airlocks		X			Sanitary compartments prohibited from opening directly into public assembly areas under Clause F4.8, must be: - served by an airlock, hallway or the like with a floor area not less than 1.1 m², and be fitted with self-closing doors at all access doorways; or - the rooms must be provided with mechanical

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					exhaust ventilation and the doorway to the room adequately screened from view. ***Details identifying the methods of compliance with this clause must be incorporated into the construction certificate plans / specification***
F4.11 Carparks				X	The basement carpark, must have: - a system of mechanical ventilation complying with AS 1668.2; or - a system of natural ventilation complying with Section 4 of AS 1668.4. *Mechanical Design Certification must be incorporated into the construction certificate specification*
F4.12 Kitchen local exhaust			X		Not applicable
Part F5 Sound Transmission					
F5.1 Application of Part			X		Not applicable
SECTION G ANCILLIARY PROVISIONS					
Part G1 Minor Structures and Components					
NSW G1.101 Provision for cleaning windows				X	A safe manner for cleaning of windows located 3 or more storeys above ground level must be provided, and compliance is achieved where: • The windows can be cleaned wholly from within the building; or • Via a method complying with the Work Health and Safety Act 2011 and regulations made under that Act. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
G1.1 Swimming Pools NSW G1.1(a)			X		A water recirculation system in a swimming pool with a depth of water more than 300 mm must comply with AS 1926.3. Additionally the requirements of the Swimming Pools Act 1992 and the Swimming Pools Regulation 2008, are applicable to a swimming pool with a depth of water more than 300 mm. Division 2 of the Swimming Pools Regulation regulates pool fence barriers applicable to indoor swimming pools (the **Stage 4 swimming pool** is deemed to be an indoor pool, as access to such roof top pool is via the building). ***Note: Division 2 of the Regulation requires compliance with the BCA, however the BCA does not regulate swimming pool barriers for Class 9b buildings.*** ***Accordingly the provision of pool safety barriers is not mandatory for this Class 9b building.***
G1.2 Refrigeration chambers, strong-rooms and vaults			X		Not applicable
G1.3 Outdoor play areas			X		Not applicable
Part G2 **Heating Appliances, Fireplaces, Chimneys and Flues**					
G2.2 Installation of appliances			X		Not applicable
G2.3 Open fire places			X		Not applicable
G2.4 Incinerator rooms			X		Not applicable
Part G3 **Atrium Construction**					
G3.1 Application of Part			X		This part does not apply to an atrium which: - Connects only 2 storeys; or

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					- Connects only 3 storeys within a sprinkler protected building, where one of this storeys is situated at a level at which there is direct egress to a road or open space. ***It is understood that the Learning Hub Building will be provided with automatic sprinkler protection, hence the requirements of Part G3 will not apply to this design.***
G3.2 Dimensions of atrium well			X		Not applicable
G3.3 Separation of atrium by bounding walls			X		Not applicable
G3.4 Construction of bounding walls			X		Not applicable
G3.5 Construction of balconies			X		Not applicable
G3.6 Separation at roof			X		Not applicable
G3.7 Means of egress			X		Not applicable
G3.8 Fire and smoke control systems			X		Not applicable
Part G4 Construction in Alpine Areas					
G4.1 Application of Part			X		Not applicable
Part G5 Construction in Bushfire Prone Areas					
G5.1 Application of Part			X		Not applicable
SECTION H: SPECIAL USE BUILDINGS					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
H1.4 Seating area				X	The stepped seating within the Sport Hall must satisfy the specific requirements of this clause relevant to the step configuration not exceeding 30º to the horizontal, and maximum step heights. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
H1.7 Aisle lights in theatres				X	Where the general lighting within the auditorium may be dimmed or extinguished during public occupation, and the floor is steeped or is inclined at a slope steeper than 1 in 12, aisle lights must be provided to illuminate the full length of the aisle and tread of each step. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW Part H101 **Entertainment Venues other than Temporary Structures and Drive-in Theatres**					
The following NSW Part H101 clause requirements are applicable to the Sports & Performing Arts Centre (as contains an Indoor Sports Stadium), deemed by the Environmental Planning and Assessment Regulation definitions section to form an 'entertainment venue'.					
NSW H1.101.1 Application of Part			X		Information clause
NSW H101.2 Fire Protection				X	If an entertainment venue forms part only of a building, then – (c) The whole of the entertainment venue; or (d) The part containing the stage, backstage area and auditorium, must be separated from other parts of the building by construction having an FRL of not less than 60/60/60. ***Note: The part of the building containing the basketball courts and stepped seating areas may be fire separated from the remainder of the building by 60/60/60 construction, such that only this part of the building is subject to the additional entertainment venue provisions.***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required		COMMENTS
						 ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.3 Foyer space				X		Not applicable
NSW H101.4 Sprinkler systems in common foyers				X		Not applicable
NSW H101.5 Conventional stages				X		Not applicable
NSW H101.6 Non-conventional stages				X		Not applicable
NSW H101.7 Flying scenery				X		Not applicable
NSW H101.8 Load notice				X		Not applicable
NSW H101.9				X		Clause deliberately left blank
NSW H101.10 Safety curtains				X		Clause deliberately left blank
NSW H101.11 Seating in rows				X		This clause does not apply to continental seating, hence the following requirements will apply on the assumption that the proposed stepped seating will contain aisles.
NSW H101.11.1 Number of seats						Where seating is arranged in rows the

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS	
						maximum number of seats in each row must not exceed – • 8 where there is an aisle at one end only of the row; or • 16 where there are aisles on both ends of the row. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.11.2 Chairs used for seating				X	Refer to the specific chair dimensional requirements and lateral clearance requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.11.3 Chairs in auditoriums – Level floors				X	Not applicable
NSW H101.11.4 Chairs in auditoriums – Sloping floors				X	Chairs in the auditorium having a stepped floor (refer spectator seating area) must be securely fastened to the floor. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.11.5 Radiating aisles in seating areas				X	Not applicable
NSW H101.11.6 Aisles and cross-overs				X	• The aisles in the spectator seating area must have a width of at least 1000mm' and any cross-over must have a width of at least 1500 mm; and • The floor of each aisle must not have a grade of more than 1 in 8 at any part; and • If there is a step from a row to an aisle or from a landing to an aisle, the step must not project into the aisle.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS	
						Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.
NSW H101.11.7 Platforms and steps					X	Refer to the specific platform and step dimensional requirements of this clause, pertaining to the stepped aisles in the spectator seating area. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.11.8 Stepped platforms				X		Not applicable
NSW H101.12 Continental seating				X		Not applicable
NSW H101.13.1 Guardrails – Location					X	Refer to the specific requirements of this clause, noting that guardrails are required along the fascia of the spectator seating area. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.13.2 Fixed back seats					X	Refer to the specific requirements of this clause, noting that guardrails that extend the full width of the seating, must be provided at least 500 mm above the platform, unless, fixed seat backs at the next lower level extend at least 500 mm above the level of the stepped platform. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.13.3 Steps between platforms					X	Refer to the specific requirements of this clause, noting that guardrails shall be provided: • where there is more than one intervening step in an aisle; and

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					• at platform ends that do not incorporate a wall that extends at least 660 mm above the level of the platform. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.14.1 Guardrails - Continental seating			X		Not applicable
NSW H101.14.2 Guardrails – Balconies and boxes				X	Refer to the specific requirements of this clause, noting that 750 mm high guardrails shall be provided along the front of the seating area balcony (across the front of the lowest platform level). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.14.3 Cross-overs			X		Not applicable (it is assumed that such minor stepped seating will not contain cross-overs).
NSW H101.15 Dressing rooms			X		Not applicable
NSW H101.16 Storerooms				X	The two store rooms located within the basketball court area must be separated from other parts of the building by construction having an FRL of not less than 60/60/60. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.17 Projection suites			X		Not applicable
NSW H101.18 basement storeys			X		Not applicable
NSW H101.18.1 Basement storeys – More than two			X		Not applicable

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS	
NSW H101.19.1 Main switchboard				X	The switchboard containing the main isolation switch must: • be located in a position that is readily accessible to authorized persons, and to the Fire Brigade, in case of emergency; and • be enclose in construction having an FRL not less than 60/60/60. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.19.2 Circuit protection				X	Protection of a final sub-circuit originating at a switchboard or distribution board must be by means of circuit breakers. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.19.3 Separate sub-mains				X	Refer to the specific requirements of this clause, noting a separate and independent sub-main, originating from the switchboard, may be required, should the entertainment venue portion of the building be separated from the remainder of the building, or where the entertainment venue has its mains supply in common with that of another building. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.20.1 Lighting switches				X	• Any switch controlling the lighting system must not be accessible; and • where during normal use, the lighting may be dimmed or switched off, an override switch to switch on all general lighting instantaneously must be installed within the auditorium in a position accessible to management.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS	
						Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.
NSW H101.20.2 Lighting levels					X	Refer to the specific requirements of this clause relevant to the provision of sufficient emergency lighting or lighting time delay capabilities, to enable the general lighting lamps to restrike immediately upon the restoration of the primary electricity supply. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.20.3 Provision of aisle lighting					X	Refer to the specific requirements of this clause relevant to the provision of aisle lighting, where the general lighting may be dimmed or extinguished. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.20.4 Aisle lighting power supply					X	Where aisle lighting is installed in a seat frame, it must be supplied at a voltage of not more than 32 volts AC or 115 volts DC. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.20.5 Aisle lighting alternative power supply					X	Refer to the specific requirements of this clause, noting that aisle lighting must be provided with an alternative electricity supply. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification.***
NSW H101.21				X		This clause has been deliberately left blank.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SECTION J **ENERGY EFFICIENCY**					
NSW SECTION J **ENERGY EFFICIENCY**					
NSW SUBSECTION J(B) ENERGY EFFICIENCY - CLASS 3 AND CLASS 5-9 BUILDINGS					
NSW J(B) 1 **Compliance with BCA Provisions**				X	The Class 9 buildings must comply with all of the provisions of the National Section J, except as varied by NSW J3.1 (as referenced below).
NSW J3.1 **Application of Part**			X		This Part applies to the elements forming the envelope of the Class 9 buildings, other than: ▪ A building in climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; ▪ A building ventilation opening necessary for the safe operation of a gas appliance; ▪ A building or space where the mechanical ventilation required by Part F4 provides sufficient pressurization to prevent infiltration; ▪ Parts of the building that cannot be fully enclosed.
Part J1: Building Fabric					
J1.1 Application of Part			X		The DTS Provisions of this Part apply to building elements forming the *envelope* of the Class 9 buildings. ***Note: It has been assumed that the new buildings will be conditioned spaces, hence the provisions of Part J relevant to buildings incorporating envelope construction are applicable.***
J1.2 Thermal construction –general				X	Where required, insulation must be provided as per AS/NZS 4859.1-2002 and installed as per this clause.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification
J1.3 Roof and ceiling construction				X	A roof or ceiling that is part of the envelope, must achieve the Total R-Value specified in Table J1.3a for the direction of heat flow, and must satisfy all requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J1.4 Roof lights			X		Where applicable, roof lights including any shaft or diffuser forming part of the envelope, must comply with the thermal performance requirements of Table J1.4. Refer additional requirements relevant to satisfying Part F4. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J1.5 Walls				X	Each part of a wall that is part of the envelope must satisfy one of the thermal performance options in Table J1.5, noting the specific exceptions of this clause relevant to doors, vents, penetrations, shutters, glazing, and an earth retaining wall or earth berm, in other than climate zone 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J1.6 Floors				X	A floor that is part of the building's envelope must must achieve the Total R-Value specified in Table J1.6, and must satisfy all requirements of this clause.
Part J2: Glazing					
J2.1 Application of Part				X	The DTS Provisions of this Part apply to building elements forming the envelope of the Class 9 buildings.
J2.2			X		Blank clause.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J2.3			X		Blank clause.
J2.4 Glazing				X	The glazing in each storey, including any mezzanine, must be assessed separately in accordance with the requirements of this clause, for: ▪ Glazing in the external fabric facing each orientation; and ▪ Glazing in the internal fabric, to ensure that the aggregate air-conditioning energy value attributable to the glazing does not exceed the allowance obtained by multiplying the façade area that is exposed to the conditioned space for the orientation by the energy index in Table J2.4a. ***Glazing calculations demonstrating compliance with this clause must be incorporated into the specification***
J2.5 Shading				X	Where required to comply with J2.4, shading must5 be provided in accordance with this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part J3: Building Sealing					
J3.1 Application of Part *(including NSW J3.1)*				X	The requirements of this Part apply to elements forming the envelope of the Class 9 buildings, other than: ▪ A building in a climate zones 1, 2, 3 and 5 where the only means of air-conditioning is by using an evaporative cooler; ▪ A permanent building opening necessary for the safe operation of a gas appliance; ▪ A building or part where mechanical ventilation required by Part F4 provides sufficient pressurization to prevent infiltration; ▪ Parts of buildings that cannot be fully enclosed.
J3.2 Chimney and flues			X		Not applicable

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J3.3 Roof lights			X		Roof lights must be sealed, or capable of being sealed as per the requirements of this clause. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.4 Window and doors				X	Seals to restrict air infiltration to windows and doors must be provided as required (note exceptions listed in J3.4 (b), and requirements for sealing of main entrance in J3.4 (d). ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.5 Exhaust fans				X	Miscellaneous exhaust fans must be fitted with self-closing dampers, where serving a conditioned space or a habitable room in climate zones 4, 5, 6, 7 or 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.6 Construction of roofs, walls and floors				X	Roofs, ceilings, walls, floors and any openings such as a window frame, door frame, light frame or the like must be sealed in accordance with the requirements of this clause to minimise air leakage. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J3.7 Evaporative coolers			X		An evaporative cooler must be fitted with a self-closing damper of the like when serving a heated space, or a habitable room or a public area of a building in climate zones 4, 5, 6, 7 or 8. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
Part J4: Blank					
Part J5: Air-conditioning and ventilation systems					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
J5.1			X		Blank clause.
J5.2 Air-conditioning and ventilation systems				X	An air-conditioning unit or system or a mechanical ventilation system must comply with J5.2 (a), J5.2(b), J5.2(c) and J5.2(d). ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.3 Time switch				X	Time switches must be incorporated into the mechanical design in accordance with this Clause. ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.4 Heating and chilling systems				X	Systems providing heating or cooling for air-conditioning systems must have any piping, vessels, heat exchangers or tanks, insulated in accordance with Specification J5.4, and must satisfy all relevant requirements of this clause. ***Mechanical Design certification must be submitted in support of the construction certificate application***
J5.5 Miscellaneous exhaust systems				X	A miscellaneous exhaust system with an air flow rate of more than 1000 L/s that is associated with equipment having a variable demand such as a stove in a commercial kitchen or a chemical bath in a factory, must have the means for the operator to reduce the energy used (such as by a variable speed fan), and to stop the motor when it is not needed. Refer concessions contained in this clause. ***Mechanical Design certification must be submitted in support of the construction certificate application***
Part J6: Artificial lighting and power					
J6.1			X		J6.2. J6.3 and J6.5(a)(ii) do not apply to a Class 8

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Application of Part					electricity network substation.
J6.2 Artificial lighting				X	Artificial lighting must comply with J6.2(a), J6.2(b) and J6.2(c), relevant to maximum permitted illumination power loads. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.3 Interior artificial lighting and power control				X	Internal artificial lighting systems must be switched and zoned in accordance with the specific requirements of this clause. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.4 Interior decorative and display lighting				X	Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled separately from other artificial lighting, and be switched in accordance with the specific requirements of this clause. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.5 Artificial lighting around the perimeter of a building				X	Artificial lighting around the perimeter of a building must be controlled by sensors or time switches in accordance with the specific requirements of this clause. Refer exclusions relevant to emergency lighting and lighting around detention centres. ***Electrical Design certification must be submitted in support of the construction certificate application***
J6.6 Boiling water and chilled water storage units				X	Power supply to boiling or chilled water storage units must be time switch controlled in accordance with Specification J6. ***Electrical Design certification must be submitted in support of the construction certificate application***

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Part J7: Hot water supply and swimming pool and spa pool plant					
J7.2 Hot water supply				X	Any hot water supply for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia. ***Hydraulic Design certification must be submitted in support of the construction certificate application***
J7.3 Swimming pool heating and pumping				X	**Humphery Learning Hub and Resource Centre** – Where provided, heating for the swimming pool must be provided by one of the options listed within this clause, and where heating is via a gas heater or heat pump, the swimming pool must have: • A cover unless located within a conditioned space; or • A time switch in accordance with Specification J6 to control the operation of the heater. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J7.4 Spa pool heating and pumping			X		Not applicable.
Part J8: Access for maintenance and facilities for monitoring					
J8.1 Application of Part			X		The Deemed-to-Satisfy Provisions of this Part do not apply within a sole-occupancy unit of a Class 2 building or a Class 4 part of a building, or to a Class 8 electricity network substation.
J8.2 Access for maintenance				X	Access for maintenance must be provided to: (a) adjustable or motorised shading devices; and (b) time switches and motion detectors; and (c) room temperature thermostats; and (d) plant thermostats such as on boilers or refrigeration units; and

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					(e) motorised air dampers and control valves; and (f) reflectors, lenses and diffusers of light fittings; and (g) heat transfer equipment; and (h) plant that receives a concession under JV3(b) for the use of energy obtained from— (i) an on-site renewable energy source; or (ii) another process as reclaimed energy. ***Details demonstrating compliance with this clause must be incorporated into the construction certificate plans / specification***
J8.3 Facilities for energy monitoring				X	The new school buildings that exceed 500 m² must have a facility to record the consumption of gas and electricity. Additionally the buildings with a floor area of more than 2,500 m², must have a facility to record individually the consumption of: • Air-conditioning; • Artificial light; • Appliance power; • Central hot water supply; • Internal transport devices such as passenger lifts. ***Electrical Hydraulic Design and Mechanical design certification must be submitted in support of the construction certificate application***

5.0 CONCLUSION

This report provides a Building Code of Australia (BCA) 2014 assessment of the proposed Stage 1A-E, and Master Plan re-development of S.C.E.C.G.S. Redlands, Cremorne, NSW.

The primary purpose of this report was to identify the non-compliance matters contained in the proposed design philosophy against the current Deemed-to-Satisfy (DTS) Provisions of the BCA and to provide compliance recommendations to overcome the DTS non-compliances.

This report provided a BCA assessment table in Section 3.0 that summarises the identified non compliance matters and offers specific recommendations that are also outlined in the Executive Summary.

Further, if compliance with the deemed-to-satisfy provisions is not achievable or desirable, Alternative Solutions could be further developed and verified by an appropriately qualified BCA Consultant or Fire Safety Engineer.

 Report by: Anthony Doherty Senior Building Surveyor Member – AIBS / AAC A1 - Accredited Building Surveyor BPB No. BPB0093 for **AE&D**	 Report checked by: Jason Storer Director Grade A1 – BPB No. BPB0394 A1 - Accredited Building Surveyor for **AE&D**

6.0 ATTACHMENT A - INSPECTION & MAINTENANCE

Fire Safety Measures

The fire safety measures within the building must be maintained to ensure correct operation at all times the building is occupied. All fire fighting equipment should be tagged when tested/inspected and log books kept up-to-date for all smoke detection, warning systems and sprinkler systems (where installed).

An annual fire safety certificate must be submitted to the local consent authority and the NSW Fire Brigade each year indicating satisfactory performance of the fire safety measures contained within the building. The annual fire safety statement should be displayed in a prominent place within the building (ie. the main entry foyer)

The correct operation and maintenance of the buildings fire safety measures is critical in affording an adequate level of fire safety.

Good Housekeeping

The ongoing management of the building should ensure good housekeeping procedures. The following matters should be considered by building management:

- Ensure exits and paths of travel to exits remain unobstructed (in particular stairways)
- Avoid storage of materials in unoccupied areas
- Limit storage of flammable/combustible materials to designated and approved areas
- Prevent chocking open fire/smoke doors
- Prevent storage of materials that could hinder access to fire fighting equipment

7.0 ATTACHMENT B – REQUIREMENTS TYPE A CONSTRUCTION

3. TYPE A FIRE-RESISTING CONSTRUCTION

3.1 Fire-resistance of building elements

In a building *required* to be of Type A construction—

(a) each building element listed in **Table 3** and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and

(b) *external walls*, *common walls* and the flooring and floor framing of lift pits must be *non-combustible*; and

(c) any *internal wall required* to have an FRL with respect to *integrity* and *insulation* must extend to—

(i) the underside of the floor next above; or

(ii) the underside of a roof complying with **Table 3**; or

(iii) if under **Clause 3.5** the roof is not *required* to comply with **Table 3**, the underside of the *non-combustible* roof covering and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other *combustible* building elements; or

(iv) a ceiling that is immediately below the roof and has a *resistance to the incipient spread of fire* to the roof space between the ceiling and the roof of not less than 60 minutes; and

(d) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearing shaft*) must be of concrete or masonry; and

(e) a non-*loadbearing*—

(i) *internal wall required* to be *fire-resisting*; and

(ii) lift, ventilating, pipe, garbage, or similar *shaft* that is not for the discharge of hot products of combustion,

must be of *non-combustible* construction; and

(f) the FRLs specified in **Table 3** for an external column apply also to those parts of an internal column that face and are within 1.5 m of a *window* and are exposed through that *window* to a *fire-source feature*.

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	**Class of building — FRL: (in minutes)** *Structural adequacy*/*Integrity*/*Insulation*			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 60	120/ 90/ 90	180/180/120	240/240/180
3 m or more	90/ 60/ 30	120/ 60/ 30	180/120/ 90	240/180/ 90
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 60	–/ 90/ 90	–/180/120	–/240/180
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*, where the distance from any *fire-source feature* to which it is exposed is—				
less than 3 m	90/–/–	120/–/–	180/–/–	240/–/–
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90/ 90	120/120/120	180/180/180	240/240/240

Table 3 TYPE A CONSTRUCTION: FRL OF BUILDING ELEMENTS— continued

Building element	Class of building — FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	90/ 90/ 90	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Ventilating, pipe, garbage, and like *shafts* not used for the discharge of hot products of combustion—				
Loadbearing	90/ 90/ 90	120/ 90/ 90	180/120/120	240/120/120
Non-*loadbearing*	–/ 90/ 90	–/ 90/ 90	–/120/120	–/120/120
OTHER LOADBEARING INTERNAL WALLS, INTERNAL BEAMS, TRUSSES and COLUMNS—	90/–/–	120/–/–	180/–/–	240/–/–
FLOORS	90/ 90/ 90	120/120/120	180/180/180	240/240/240
ROOFS	90/ 60/ 30	120/ 60/ 30	180/ 60/ 30	240/ 90/ 60

3.2 Concessions for floors

A floor need not comply with **Table 3** if—

(a) it is laid directly on the ground; or

(b) in a Class 2, 3, 5 or 9 building, the space below is not a *storey*, does not accommodate motor vehicles, is not a storage or work area, and is not used for any other ancillary purpose; or

(c) it is a timber *stage* floor in a Class 9b building laid over a floor having the *required* FRL and the space below the *stage* is not used as a dressing room, store room, or the like; or

(d) it is within a *sole-occupancy unit* in a Class 2 or 3 building or Class 4 part; or

(e) it is an open-access floor (for the accommodation of electrical and electronic services and the like) above a floor with the *required* FRL.

3.3 Floor loading of Class 5 and 9b buildings: Concession

If a floor in a Class 5 or 9b building is designed for a live load not exceeding 3 kPa—

(a) the floor next above (including floor beams) may have an FRL of 90/90/90; or

(b) the roof, if that is next above (including roof beams) may have an FRL of 90/60/30.

3.4 Roof superimposed on concrete slab: Concession

A roof superimposed on a concrete slab roof need not comply with **Clause 3.1** as to *fire-resisting construction* if—

(a) the superimposed roof and any construction between it and the concrete slab roof are *non-combustible* throughout; and

(b) the concrete slab roof complies with **Table 3**.

3.5 Roof: Concession

A roof need not comply with **Table 3** if its covering is *non-combustible* and the building—

(a) has a sprinkler system complying with **Specification E1.5** installed throughout; or

(b) has a *rise in storeys* of 3 or less; or

(c) is of Class 2 or 3; or

(d) has an *effective height* of not more than 25 m and the ceiling immediately below the roof has a *resistance to the incipient spread of fire* to the roof space of not less than 60 minutes.

3.6 Rooflights

If a roof is *required* to have an FRL or its covering is *required* to be *non-combustible*, rooflights or the like installed in that roof must—

(a) have an aggregate area of not more than 20% of the roof surface; and

(b) be not less than 3 m from—

(i) any boundary of the allotment other than the boundary with a road or public place; and

(ii) any part of the building which projects above the roof unless that part has the FRL *required* of a *fire wall* and any openings in that part of the wall for 6 m vertically above the rooflight or the like are protected in accordance with **C3.4**; and

(iii) any rooflight or the like in an adjoining *sole-occupancy unit* if the walls bounding the unit are *required* to have an FRL; and

(iv) any rooflight or the like in an adjoining fire-separated section of the building; and

(c) if a ceiling with a *resistance to the incipient spread of fire* is *required*, be installed in a way that will maintain the level of protection provided by the ceiling to the roof space.

3.7 Internal columns and walls: Concession

For a building with an *effective height* of not more than 25 m and having a roof without an FRL in accordance with **Clause 3.5**, in the *storey* immediately below that roof, internal columns other than those referred to in **Clause 3.1(f)** and *internal walls* other than *fire walls* and *shaft* walls may have—

(a) in a Class 2 or 3 building: FRL 60/60/60; or

(b) in a Class 5, 6, 7, 8 or 9 building—

(i) with *rise in storeys* exceeding 3: FRL 60/60/60

(ii) with *rise in storeys* not exceeding 3: no FRL.

4. TYPE B FIRE-RESISTING CONSTRUCTION

4.1 Fire-resistance of building elements

In a building *required* to be of Type B construction—

(a) each building element listed in **Table 4**, and any beam or column incorporated in it, must have an FRL not less than that listed in the Table for the particular Class of building concerned; and

(b) the *external walls*, *common walls*, and the flooring and floor framing in any lift pit, must be *non-combustible*; and

(c) if a stair *shaft* supports any floor or a structural part of it—

(i) the floor or part must have an FRL of 60/–/– or more; or

(ii) the junction of the stair *shaft* must be constructed so that the floor or part will be free to sag or fall in a fire without causing structural damage to the *shaft*; and

(d) any *internal wall* which is *required* to have an FRL with respect to *integrity* and *insulation*, except a wall that bounds a *sole-occupancy unit* in the topmost (or only) *storey* and there is only one unit in that *storey*, must extend to—

(i) the underside of the floor next above if that floor has an FRL of at least 30/30/30; or

(ii) the underside of a ceiling having a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(iii) the underside of the roof covering if it is *non-combustible* and, except for roof battens with dimensions of 75 mm x 50 mm or less or *sarking-type material*, must not be crossed by timber or other *combustible* building elements; or

(iv) 450 mm above the roof covering if it is *combustible*; and

(e) a *loadbearing internal wall* and a *loadbearing fire wall* (including those that are part of a *loadbearingshaft*) must be of concrete or masonry; and

(f) a non-*loadbearing internal wall required* to be *fire-resisting* must be of *non-combustible* construction; and

(g) in a Class 5, 6, 7, 8 or 9 building, in the *storey* immediately below the roof, internal columns and *internal walls* other than *fire walls* and *shaft* walls, need not comply with **Table 4**; and

(h) lift, subject to **C2.10**, ventilating, pipe, garbage, and similar *shafts* which are not for the discharge of hot products of combustion and not *loadbearing*, must be of *non-combustible* construction in—

(i) a Class 2, 3 or 9 building; and

(ii) a Class 5, 6, 7 or 8 building if the *shaft* connects more than 2 *storeys*; and

(i) in a Class 2 or 3 building, except where within the one *sole-occupancy unit*, or a Class 9a *health-care building* or a Class 9b building, a floor separating *storeys* or above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, must—

(i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(ii) have an FRL of at least 30/30/30; or

(iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal; and

(j) in a Class 9c *aged care building* a floor above a space for the accommodation of motor vehicles or used for storage or any other ancillary purpose, and any column supporting the floor must—

(i) be constructed so that it is at least of the standard achieved by a floor/ceiling system incorporating a ceiling which has a *resistance to the incipient spread of fire* to the space above itself of not less than 60 minutes; or

(ii) have an FRL of at least 30/30/30; or

(iii) have a *fire-protective covering* on the underside of the floor, including beams incorporated in it, if the floor is *combustible* or of metal.

Table 4 TYPE B CONSTRUCTION: FRL OF BUILDING ELEMENTS

Building element	**Class of building—FRL: (in minutes)** ***Structural adequacy/Integrity/Insulation***			
	2, 3 or 4 part	**5, 7a or 9**	**6**	**7b or 8**
EXTERNAL WALL (including any column and other building element incorporated therein) or other external building element, where the distance from any *fire-source feature* to which it is exposed is—				
For *loadbearing* parts—				
less than 1.5 m	90/ 90/ 90	120/120/120	180/180/180	240/240/240
1.5 to less than 3 m	90/ 60/ 30	120/ 90/ 60	180/120/ 90	240/180/120
3 to less than 9 m	90/ 30/ 30	120/ 30/ 30	180/ 90/ 60	240/ 90/ 60
9 to less than 18 m	90/ 30/–	120/ 30/–	180/ 60/–	240/ 60/–
18 m or more	–/–/–	–/–/–	–/–/–	–/–/–
For non-*loadbearing* parts—				
less than 1.5 m	–/ 90/ 90	–/120/120	–/180/180	–/240/240
1.5 to less than 3 m	–/ 60/ 30	–/ 90/ 60	–/120/ 90	–/180/120
3 m or more	–/–/–	–/–/–	–/–/–	–/–/–
EXTERNAL COLUMN not incorporated in an *external wall*—				
For *loadbearing* columns—	90/–/–	120/–/–	180/–/–	240/–/–
For non-*loadbearing* columns—	–/–/–	–/–/–	–/–/–	–/–/–
COMMON WALLS and FIRE WALLS—	90/ 90 / 90	120/120/120	180/180/180	240/240/240

Building element	Class of building—FRL: (in minutes) *Structural adequacy/Integrity/Insulation*			
	2, 3 or 4 part	5, 7a or 9	6	7b or 8
INTERNAL WALLS—				
Fire-resisting lift and stair *shafts*—				
Loadbearing	90/ 90/ 90	120/120/120	180/120/120	240/120/120
Fire-resisting stair *shafts*—				
Non-*loadbearing*	–/ 90/ 90	–/120/120	–/120/120	–/120/120
Bounding *public corridors*, public lobbies and the like—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
Between or bounding *sole-occupancy units*—				
Loadbearing	60/ 60/ 60	120/–/–	180/–/–	240/–/–
Non-*loadbearing*	–/ 60/ 60	–/–/–	–/–/–	–/–/–
OTHER LOADBEARING INTERNAL WALLS and COLUMNS—	60/–/–	120/–/–	180/–/–	240/–/–
ROOFS	–/–/–	–/–/–	–/–/–	–/–/–

4.2 Carparks

(a) Notwithstanding **Clause 4.1**, a *carpark* may comply with **Table 4.2** if it is an *open-deck carpark* or is protected with a sprinkler system complying with **Specification E1.5** and is—

(i) a separate building; or

(ii) a part of a building, and if occupying only part of a *storey*, is separated from the remaining part by a *fire wall*.

(b) For the purposes of this Clause, a *carpark*—

(i) includes—

(A) an administration area associated with the functioning of the *carpark*; and

(B) where the *carpark* is sprinklered, is associated with a Class 2 or 3 building and provides carparking for separate *sole-occupancy units*, each carparking area with an area not greater than 10% of its *floor area* for purposes ancillary to the *sole-occupancy units*; but

(ii) excludes—

(A) except for **(b)(i)**, any area of another classification, or other part of a Class 7 building not used for carparking; and

Suit

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CHANGE OF USE BCA ASSESSMENT REPORT

7 & 8 MONFORD PLACE CREMORNE, NSW

S.C.E.C.G.S. REDLANDS, CREMORNE

CONCEPT PROPOSAL & STAGE 1 DEVELOPMENT APPLICATION

DATE ► 8.5.2015
REPORT NO. ► PROJECT 5419 (Monford Place) - REV 01
PREPARED FOR ► SKEGGS Redlands Ltd
PREPARED BY ► AE&D

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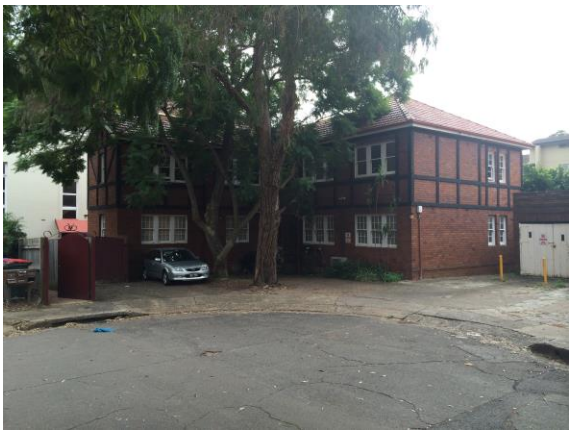
REVISION STATUS				
REVISION	DATE	STATUS	WRITTEN	CHECKED
5419 - Rev 00 (Monford Place)	13.4.2015	FINAL REPORT	AD	JS
5419 - Rev 01 (Monford Place)	8.5.2015	FINAL REPORT	AD	JS

9.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

This report provides a Building Code of Australia (BCA) 2014 assessment relevant to a proposed Change of Use development. It is understood that it is intended to utilize two existing Class 2 residential buildings for Class 9b educational purposes. The subject two buildings are located at 7 and 8 Monford Place, Cremorne, and form part of the S.C.E.C.G.S. Redlands, Cremorne.

The primary purpose of this report is to identify the BCA compliance issues that pertain to such Change of Use, and to provide guidance relevant to achieving compliance with the BCA Performance Requirements (by satisfying the Deemed-to-Satisfy (DTS) provisions, or via the provision of suitable alternative solutions).

8 Monford Place



7 Monford Place

10.0 INTRODUCTION

This report provides a Building Code of Australia (BCA) 2014 assessment relevant to a proposed Change of Use development. It is understood that it is intended to utilize two existing Class 2 residential buildings for Class 9b educational purposes. The subject two buildings are located at 7 and 8 Monford Place, Cremorne, and form part of the S.C.E.C.G.S. Redlands, Cremorne.

The primary purpose of this report is to identify the BCA compliance issues that pertain to such Change of Use, and to provide guidance relevant to achieving compliance with the BCA Performance Requirements (by satisfying the Deemed-to-Satisfy (DTS) provisions, or via the provision of suitable alternative solutions).

2.1 Basis of Report

The key basis of this report is to address compliance with the Building Code of Australia (BCA) 2014. The scope of services is limited to Sections C – "Fire Resistance", Section D – "Access & Egress" (excluding the Access provsions as dealt with by AED Access) , Section E – "Services & Equipment", and Section F "Health and Amenity", and Section J "Energy Efficiency"

This report is based upon the following:

- Site inspection of 7 and 8 Monford Road conducted on 9 April 2015.
- Schematic type floor plans submitted to AED by Sandrick Project Directions on 9 April 2015.
- The Building Code of Australia 2014 prepared by the Australian Building Codes Board.
- The Guide to the BCA 2014, prepared by the Australian Building Codes Board.

2.2 Purpose of the Report

The purpose of this report is to assess the following:

- Assessment under the current Building Code of Australia 2014 and list any departures from the BCA 2014.
- Provide recommendations to address identified non-compliances, and/or identify potential alternative solutions

2.3 Limitations of the Report

- Compliance with Disability Discrimination Act 1992 (DDA) is outside the scope of this report. It should be noted that BCA compliance does not necessarily meet the requirements of the Disability Discrimination Act (DDA).
- Reporting on hazardous materials, OH&S matters or site contamination
- Assessment of any structural elements or geotechnical matters relating to the building, including any structural or other assessment of the existing fire resistant levels of the building
- Consideration of any fire services operations (including hydraulic, electrical or other systems)
- Assessment of plumbing and drainage installations, including stormwater
- Assessment of mechanical plant operations, electrical systems or security systems
- Heritage significance

- Consideration of energy or water authority requirements
- Consideration of Council's local planning policies
- Environmental or planning issues
- Requirements of statutory authorities
- Pest inspection or assessment building damage caused by pests (general/visual pest invasion or damage will be reported, however invasive or intrusive inspections have not be carried out)
- Sections B and I of the BCA is not considered
- Provision of any construction approvals or certification under Part 4A or Part 5 of the Environmental Planning & Assessment Act 1979
- Glazing, shading, lighting calculations and the like required by Section J of the BCA have not been carried out
- This assessment excludes BCA clauses D3.0-3.12 (Inclusive), F2.4 and E3.6. Refer separate report prepared by AED Access.

11.0 BCA ASSESSMENT DATA

This report provides a Building Code of Australia (BCA) 2014 assessment relevant to a proposed Change of Use development. It is understood that it is intended to utilize two existing Class 2 residential buildings for Class 9b educational purposes. The following data relates to the proposed use.

7 Monford Place

BCA Building Classifications:	Class 5 office Class 7b archive storage Class 9b assembly
Building rise in storeys:	2 (determined in accordance with C1.2 of the BCA)
Type of Construction:	Type C *(based upon Class 5 use on first floor)*
Effective Height (m):	Less than 12 m

8 Monford Place

BCA Building Classifications:	Class 7b archive storage Class 9b assembly
Building rise in storeys:	2 (determined in accordance with C1.2 of the BCA)
Type of Construction:	Type B *(based upon Class 9b use on first floor)*
General Floor area limitations:	Class 9b: 5,5,000 m² / 33,000 m³ Class 7b: 3,5000 m² / 21,000 m³
Effective Height (m):	Less than 12 m

3.1 Location of Fire Source features

The fire source features have been taken to be the boundary fence lines (assumed to be constructed upon the allotment boundaries).

12.0 BCA ASSESSMENT SUMMARY

The following table details the BCA Clause requirements that are *applicable* to the proposed Change of Use.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
SECTION C FIRE RESISTANCE					
Part C1 - Fire Resistance & Stability					
C1.1 Type of Construction Required	X				Both buildings are comprised of cavity brick construction throughout, with separating concrete floor slabs. The specific fire resistance levels (FRL's) attained by the existing building elements was not determined on site. Notwithstanding this, the existing construction would appear to generally satisfy Type B and Type C construction requirements. Notwithstanding the aforementioned, the provision of Class 7b storage parts (that exceed 10% of the floor areas concerned), requires building elements within a building of Type B construction to achieve 240-minute FRL's. It is unlikely that the existing wall construction will achieve 240-minute FRL's. *Accordingly the storage areas should be limited to areas not exceeding 10% of the floor areas concerned, OR fire engineered solutions would be required to rationalize the FRL's required (based upon the relatively minor storage capacities).*
C1.2 Calculation of Rise In Stories			X		Refer to Section 2.0 of this report for further details
C1.10 Fire Hazard Properties (including NSW C1.10)			X		Any new linings and materials must comply with this Clause & Specification C1.10. <u>Floor linings and floor coverings</u> • a critical radiant flux not less than 2.2; and • a maximum smoke development rate of 750 percent-minutes. <u>Air-handling ductwork</u> Rigid and flexible ductwork must comply with the fire hazard properties set out in AS 4254 Parts 1

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					and 2.
Part C2 - Compartmentation & Separation					
C2.2 General Floor Area & Volume Limitations	X				Fire compartment floor area and volume limitations do not exceed the limitations referenced within Section 3 of this report.
C2.6 Vertical Separation of openings in external walls			X		Not applicable Spandrel construction is not applicable as neither building is required to be of Type A construction.
C2.7 Separation by Fire Walls				X	Where required to satisfy Clause C2.8, fire wall construction must satisfy this clause, re the protection of openings within the walls (door and service penetrations). *Note: This clause will apply where separation of classifications within the same storey in accordance with Clause C2.8 applies.*
C2.8 Separation of Classifications in the same storey			X		It is noted that both buildings contain Class 7b storage areas located adjacent Class 5/9b parts, and that the Class 7b parts attract 4-hour FRL's within a Type B Building. Based upon the Class 9b use to the first floor of 8 Monford, the Ground Floor elements must satisfy this clause, requiring: • each building element in that storey must have the higher FRL prescribed in Specification C1.1 for that element for the classification concerned; or • the Class 7b parts must be fire wall separated. *Accordingly the storage areas should be limited to areas not exceeding 10% of the floor areas concerned, OR fire engineered solutions would be required to rationalize the FRL's required (based upon the relatively minor storage capacities).*
Part C3 - Protection of Openings					

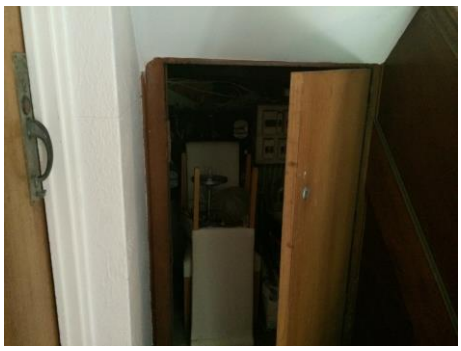
BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
C3.2 Protection of openings in external walls		X			Openings in an external wall that is required to have an FRL must— (a) if the distance between the opening and the fire-source feature to which it is exposed is less than— (i) 3 m from a side or rear boundary of the allotment; or (ii) 6 m from another building on the allotment that is not Class 10, be protected in accordance with C3.4 and if wall-wetting sprinklers are used, they are located externally; and Based upon the assumption that the allotment boundaries are located in line with the existing boundary fencing, both 7 and 8 Monford Place, contain numerous sliding sash type window openings that area located less than 3 m from side and rear boundaries. Accordingly the following external wall openings will require protection in accordance with the options provided by BCA Clause C3.4: 1. 7 Monford – window openings located 1.75 m from the adjacent structure / rear boundary. *Refer example image below.*  2. 7 Monford - window openings located 1.5 m from eastern side boundary. 3. 8 Monford - window openings located 1.55 m from the rear boundary. *Refer example image below.* 

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					4. 8 Monford - window openings located 2.5 m from the southern side boundary.
C3.4 Acceptable Methods of Protection				X	Where fire protection of external wall openings is required under Clause C3.2 the following fire protection options apply to the affected window openings: (B) external wall-wetting sprinklers as appropriate used with windows that are automatic closing or permanently fixed in the closed position; or (B) –/60/– fire windows that are automatic closing or permanently fixed in the closed position; or (C) –/60/– automatic closing fire shutters. *As discussed on site, some of the window openings could potentially be sealed with fire rated construction that achieves the FRL applicable to the external wall sections concerned. Where such option is taken, care should be taken to ensure that the light and ventilation requirements of Clause F4.1 and Clause F4.5 are not contravened.*
C3.5 Doorways in Fire Walls			X		Where applicable under Clause C2.8, doors in fire walls to have a fire rating equivalent to the fire wall in which they are located, e.g. a 240-minute fire wall would require a -/240/30 fire door.
C3.12 Openings in floors and ceilings for services				X	Where services pass through a floor which is required to achieve a FRL or a ceiling required to have a RISF, the service must be enclosed within a fire resisting shaft or fire protected in accordance with Clause C3.15. *This clause will apply to both buildings regardless of the Type of construction applicable, where service penetrations are made through the separating floors.*
C3.15 Openings for Service Installations				X	Where services pass through an element which is required to achieve a FRL (other than an external wall or roof), the service must be fire protected in accordance with this clause.
SECTION D ACCESS & EGRESS					

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
Part D1 - Provision for Escape					
D1.2 Number of Exits required				X	Inspection revealed that each building is served by two exit stairways (one central stair and one external stair). However as the external stairways serving both buildings contain numerous non-compliances relating to exit width, stair configuration, handrails and balustrades) it is recommended that such stairway be permanently blocked off to prevent access.  **External stairway example** However, based upon the provision of one exit stair only, the first floor areas could not be used for secondary school purposes, as would not satisfy sub-clause D1.2 (d) (v). Such areas could be utilized for administration purposes. Additionally (regardless of the use / classification of the first floor areas) the provision of a single exit only is suitable for use by not more than 50 persons
D1.4 Exit Travel Distances	X				Based upon the provision of one exit stair to serve the first floor areas (per the recommendation in Clause D1.2 above), and the maintenance of the existing two exit doors to the ground floor levels, both buildings satisfy the 20 / 40 m travel distance requirements applicable to the proposed Class 5, 7b and 9b uses.
D1.5 Distance Between Alternate Exits	X				Complies Alternate exits serving the ground floors are distributed uniformly around the storeys served, located not less than 9 m apart and not more than

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					60 m apart, and located so that alternative paths of travel do not converge to less than 6 m apart.
D1.6 Dimensions of Exits and paths of Travel to Exits (including NSW D1.6)		X			Inspection revealed the following path of travel has an unobstructed width of less than 1 m, and does not satisfy the deemed-to-satisfy (DTS) requirements: 1. 7 Monford – The corridor outside first floor bathroom has an unobstructed width of less than 1 m (900 mm noted). *A fire engineered alternative solution may be attained to address such non-compliance. Such solution should be prepared by a C10 Accredited Fire Safety Engineer to ensure that relevant BCA Performance Requirements are addressed.*
D1.9 Travel by non-fire-isolated stairs	X				Complies A non-fire isolated stairway serving as a required exit must provide a continuous means of travel by its own flights and landings from every storey served to the level at which egress to a road or open space is provided. The distance from any point on a floor to a point of egress to a road or open space by way of a required non-fire-isolated stairway must not exceed 80m, and the such stair must discharge at a point not more than 20 m from a doorway providing egress to a road or open space, or 40 m from one of 2 such doorways.
D1.10 Discharge from Exits (including NSW D1.10)	X				Complies a) An exit must not be blocked at the point of discharge and where necessary, suitable barriers must be provided to prevent vehicles from blocking the exit, or access to it. (b) If a required exit leads to an open space, the path of travel to the road must have an unobstructed width throughout of not less than— (i) the minimum width of the required exit; (ii) or 1 m, whichever is the greater. (c) If an exit discharges to open space that is at a different level than the public road to which it is connected, the path of travel to the road must be

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					by— (i) a ramp or other incline having a gradient not steeper than 1:8 at any part, or not steeper than 1:14 if required by the Deemed-to-Satisfy Provisions of Part D3; or (d) The discharge point of alternative exits must be located as far apart as practical.
D1.13 Number of Persons Accommodated (including NSW D1.13)			X		The number of persons accommodated in a storey, room or mezzanine must be determined with consideration to the purpose for which it is used and the layout of the floor area by – (d) calculating the sum of the numbers obtained by dividing the floor area of each part of the storey by the number of square metres per person listed in Table D1.13 according to the use of that part, excluding spaces set aside for lifts, stairways, ramps, sanitary compartments and the like; or (e) reference to the seating capacity in an assembly building or room; or (f) any other suitable means of assessing its capacity. *Based upon client advice it is understood that less than 50 occupants are likely to occupy either 7 Monford Place or 8 Monford Place.*
Part D2 - Construction of Exits					
D2.3 Non-fire Isolated stairways and ramps	X				Complies Non-fire isolated stairways must be constructed according to D2.2, or only of- (a) reinforced or pre-stressed concrete; or (b) steel in no part less than 6 mm thick; or (c) timber that— (i) has a finished thickness of not less than 44 mm; and (ii) has an average density of not less than 800 kg/m3 at a moisture content of 12%; and (iii) has not been joined by means of glue unless it has been laminated and glued with resorcinol formaldehyde or resorcinol phenol formaldehyde glue".

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
D2.7 Installations in Exits and Paths of Travel		X			Inspection revealed that electrical distribution boards are located beneath the internal stairways serving both buildings, and that such distribution boards have not been enclosed with non-combustible construction or a fire protective covering with doorways suitably sealed against smoke spread, as required to satisfy this clause.  **EDB's located beneath egress stairways** *It is recommended that the electrical boards be suitably enclosed within non-combustible and smoke sealed construction in accordance with DTS requirements.* *Refer also comments at Clause D2.8.*
D2.8 Enclosure of Space Under Stairs and ramps		X			Inspection revealed that the spaces beneath the internal stairways serving both buildings have been enclosed to form cupboards, however the doors to the cupboards are not fire rated, as required. *It is recommended that the existing timber cupboard doors be replaced with self-closing -/60/30 fire doors in accordance with DTS requirements.* *Refer also comments at Clause D2.7 above noting that the provision of smoke seals to the perimeter edges of the required fire doors will satisfy the requirements of both Clause C2.7 and Clause C2.8.*
D2.13 Goings & Risers (including NSW D2.13)		X			Stairways to achieve compliance with this clause relevant to going and riser dimensions in a public stairway. Treads must have a surface with a slip-resistant classification not less than that listed in Table D2.14 when tested in accordance with *AS 4586-2013 Slip resistance classification of new pedestrian surface materials.*

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					As the external stairways provided to both buildings contain numerous non-compliances (relating to exit width, stair configuration, handrails and balustrades) it is recommended that such stairway be permanently blocked off to prevent access. Based upon the exclusion of the aforementioned external stairways, the remaining internal stairways (as pictured below) will serve as the only egress stairs serving the first floor areas.  **8 Monford Place**  **7 Monford Place**  **Entry stair example** Inspection revealed that the egress stairs contain the following non-compliances:

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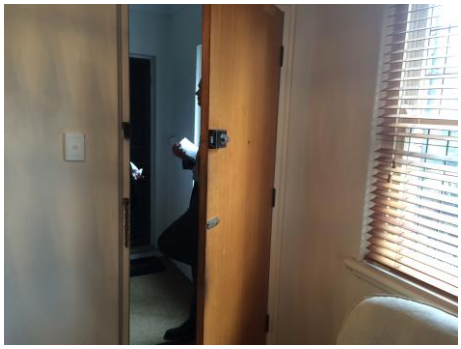
					1. Both internal egress stairs contain winders in lieu of landings. Such represents a non-compliance with sub-clause D2.13 (viii); 2. Both internal egress stairs contain goings of less than 250 mm in depth (230 mm noted); 3. The external entry stairs serving both buildings contain chipped tread, nosings, creating inconsistent tread depths; 4. Both internal egress stairs require treads that achieve a slip-resistant classification not less than that listed in Table D2.14 *It is recommended that alternative solutions be attained relevant to non-compliance items 1 and 2. While a formal assessment against the relative Performance Requirements has not been undertaken, it is unlikely that AED would support an alternative solution that permits students to occupy the first floor areas, particularly in relation to number of winders contained within the internal stair serving 7 Monford Place.* *It is further recommended that non-compliance items 3 and 4, be rectified in accordance with DTS provisions.*
D2.15 Thresholds (including NSW D2.15)		X			Generally the threshold of a doorway must not incorporate a step or ramp at any point closer to the doorway than the width of the door leaves unless the doorway is in a building required to be accessible by Part D3, and in which case the doorway opens to a road or open space and is provided with a threshold ramp or step ramp in accordance with AS 1428.1. Inspection revealed that both buildings contain the following non-compliances: 1. A stepped threshold occurs at the entry to each apartment (within both buildings). Refer photo below.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 **Example of stepped threshold at internal doorways** *It is recommended that alternative solutions be attained relevant to the aforementioned non-compliance items.*
D2.16 Balustrades and other Barriers *Note NSW D2.16*		X			Balustrades must be provided to stairs and balconies and to the accessible roof spaces, where there is a fall of more than 1m. Inspection revealed that both buildings contain the following balustrade non-compliances: 1. The balustrades do not measure 1 m (910 mm noted) in height above the level landing areas; 2. The balustrades do not measure 865 mm (850 mm noted) in height above the stair nosing line. *It is recommended that non-compliance items be rectified in accordance with DTS provisions.*
D2.17 Handrails				X	All stairways and ramps must be provided with handrails as per this clause, fixed at a height of not less than 865 mm, measured above the nosing's of stair treads. A required exit serving an area required to be accessible must be designed and constructed to comply with Clause 12 of AS 1428.1. *Refer separate report by AED Access.* Inspection revealed that both buildings contain the following handrail non-compliances: 1. Handrails not provided to at least one side of each internal egress stair at a height not less than 865 mm measured above the stair nosing line; 2. Handrails have not been provided to at least one side of each minor entry stair, at a height

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					not less than 865 mm measured above the stair nosing line; *It is recommended that the non-compliance items be rectified in accordance with DTS provisions.*
D2.20 Swinging Doors		X			A swinging door in a required exit must swing in the direction of egress unless, it serves a building or part with a floor area not more than 200 m2. Inspection revealed that both buildings contain the following handrail non-compliances: 1. The final exit doors do no swing in the direction of egress. *It is recommended that the non-compliance items be rectified in accordance with DTS provisions.*
D2.21 and NSW D2.21 Operation of Latch		X			All doors in a required exit or forming part of a required exit AND doors in a path of travel to a required exit must be readily openable without a key from the side that faces a person seeking egress, by single hand downward action or pushing action on a single device which is located between 900mm and 1.1 m from the floor and if serving an area required to be accessible by Part D3 – D. be such that the hand of a person who cannot grip will not slip from the handle during the operation of the latch; and E. have a clearance between the handle and the back plate or door face at the center grip section of the handle of not less than 35mm and not more than 45mm; or F. a single hand pushing action on a single device which is located between 900mm and 1.2m from the door. Inspection revealed that both buildings contain the following handrail non-compliances: 1. The exit doors and the doors in the path of travel do not contain single action lever handle devises located between 900 mm and 1.1 m from the floor.

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					 **Example - Dead-lock hardware on existing doors** *It is recommended that the non-compliance items be rectified in accordance with DTS provisions.*
Part D3 **Access for People with Disabilities - Refer separate report by AED Access.**					
SECTION E **SERVICES & EQUIPMENT**					
Part E1 **Fire Fighting Equipment**					
E1.3 Fire Hydrants			X		Not applicable A hydrant system complying with AS 2419.1-2005 is not required as each building has a total floor area not exceeding 500 m².
E1.4 Fire Hose Reels			X		Not applicable A fire hose reel system complying with AS 2441-2005 is not required as neither building contains a fire compartment that will exceed 500 m².
E1.6 Portable Fire Extinguishers		X			Portable fire extinguishers must be provided in accordance with Table E1.6 of the BCA and must be selected, located and distributed in accordance with Sections 1, 2, 3 and 4 of AS 2444-2001. Portable fire extinguishers must be provided to cover: - Class AE or E fires associated with emergency

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					services switchboards; - Class F fires involving cooking oils and fats in kitchens; - Class A fires in normally occupied fire compartments less than 500m² not provided with fire hose reels; - Class A fires in classrooms and associated corridors in school buildings not provided with fire hose reels. *Portable fire extinguishers will be required throughout both buildings to satisfy this clause.*
Part E2 **Smoke Hazard Management**					
E2.2 General Requirements (inclusive of Table E2.2a / Table E2.2b & NSW amendments)				X	**NSW Table E2.2b – Specific Provisions** Class 9b school assembly buildings must be provided with automatic shutdown of air handling systems (other than non-ducted individual room units with a capacity not more than 1,000 l/s and miscellaneous exhaust air systems in accordance with Sections 5 and 11 of AS/NZS 1668.1), which do not form part of a smoke hazard management system. *Where applicable, compliance with this clause will be required.*
Part E4 **Emergency Lighting, Exit Signs and Warning Systems**					
E4.2 Emergency Lighting Requirements				X	An emergency lighting system must be installed throughout all areas.
E4.4 Design and Operation of Emergency Lighting			X		The emergency lighting system must comply with AS 2293.1-2005.
E4.5 Exit Signs				X	An exit sign must be clearly visible to persons approaching the exit, and must be installed on, above or adjacent to each. Inspection revealed that an exit sign has been provided above each final exit door, however such

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					signs must be upgraded to contain the running man pictogram, per the requirements of AS 2293.1-2005.  *It is recommended that the non-compliance items be rectified in accordance with DTS provisions.*
E4.6 Direction Signs *(inclusive of NSW E4.6)*				X	If an exit is not readily apparent to persons occupying or visiting the building then directional exit signs must be installed in appropriate positions. Inspection revealed that no directional signage is currently provided, and that such signage would be required within corridor areas to improve the way finding capability of the buildings (noting the proposed public assembly building use). *It is recommended that additional directional signage be installed throughout both buildings to satisfy DTS provisions.*
SECTION F **HEALTH & AMENITY**					
Part F2 **Sanitary & Other Facilities**					
F2.3 Facilities for Class 3 to 9 Buildings				X	Sanitary facilities must be provided for Class 5 to 9 buildings in accordance with Table F2.3. Separate facilities will be required for staff (may be a single unisex facility where not more than 10 people are employed). Separate facilities must be provided for male and female students.

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					Inspection revealed that each building is currently provided with 4 closet pans and 4 washbasins, however the number of occupants expected to use each building is required in order to assess whether the existing facilities are sufficient. *Note: Consideration need be given as to whether additional facilities are required to serve 7 and 8 Monford, noting that the existing campus wide facilities may already provide a compliant number of sanitary facilities (based upon the total number of school staff and students).*
F2.4 Facilities for People with Disabilities			X		Refer separate report by AED Access.
Part F3 **Room Sizes**					
F3.1 Height of Rooms and other spaces	X				Complies. Inspection revealed that both existing buildings are generally served by 2.7 m ceiling heights.
Part F4 **Light & Ventilation**					
F4.1 Provision of natural light	X				Complies Natural light must be provided to all Class 9b general purpose classrooms. Inspection revealed that the existing rooms that would be utilized as teaching rooms are currently served by windows that provide sufficient natural light.
F4.4 Artificial lighting				X	Artificial lighting complying with AS/NZS 1680.0-2009 shall be provided throughout all stairways, all rooms that are frequently occupied, all spaces required to be accessible, and all corridors and lobbies. *It is recommended that the existing lux levels be measured to ensure that the existing lighting is fit for purpose, for the proposed administration and educational uses.*

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					Where deficient such lighting should be upgraded to satisfy DTS provisions.
F4.5 Ventilation of Rooms	X				Complies All rooms to be provided with Clause F4.6 compliant natural ventilation **OR** a mechanical ventilation or air-conditioning system complying with AS 1668.2-2012. *Inspection revealed that the existing rooms that would be utilized as teaching rooms are currently served by windows that provide sufficient natural ventilation.*
SECTION J **ENERGY EFFICIENCY**					
NSW SECTION J - ENERGY EFFICIENCY					
NSW SUBSECTION J(B) ENERGY EFFICIENCY - CLASS 3 AND CLASS 5-9 BUILDINGS					
NSW J(B) 1 **Compliance with BCA Provisions**				X	The buildings must comply with all of the provisions of the National Section J, except as varied by NSW J3.1 (as referenced below).
Part J5: Air-conditioning and ventilation systems					
J5.1			X		Blank clause.
J5.2 Air-conditioning and ventilation systems				X	An air-conditioning unit or system or a mechanical ventilation system must comply with J5.2 (a), J5.2(b), J5.2(c) and J5.2(d).
J5.3 Time switch				X	Time switches must be incorporated into the mechanical design in accordance with this Clause.
J5.4 Heating and chilling systems				X	Systems providing heating or cooling for air-conditioning systems must have any piping, vessels, heat exchangers or tanks, insulated in

BCA DEEMED-TO-SATISFY PROVISION	COMPLIES	DOES NOT COMPLY	NA or Informational	Compliance Required	COMMENTS
					accordance with Specification J5.4, and must satisfy all relevant requirements of this clause.
J5.5 Miscellaneous exhaust systems				X	A miscellaneous exhaust system with an air flow rate of more than 1000 L/s that is associated with equipment having a variable demand such as a stove in a commercial kitchen or a chemical bath in a factory, must have the means for the operator to reduce the energy used (such as by a variable speed fan), and to stop the motor when it is not needed. Refer concessions contained in this clause.
Part J6: Artificial lighting and power					
J6.1 Application of Part			X		J6.2. J6.3 and J6.5(a)(ii) do not apply to a Class 8 electricity network substation.
J6.2 Artificial lighting				X	Artificial lighting must comply with J6.2(a), J6.2(b) and J6.2(c), relevant to maximum permitted illumination power loads.
J6.3 Interior artificial lighting and power control				X	Internal artificial lighting systems must be switched and zoned in accordance with the specific requirements of this clause.
J6.4 Interior decorative and display lighting				X	Interior decorative and display lighting, such as for a foyer mural or art display, must be controlled separately from other artificial lighting, and be switched in accordance with the specific requirements of this clause.
J6.5 Artificial lighting around the perimeter of a building				X	Artificial lighting around the perimeter of a building must be controlled by sensors or time switches in accordance with the specific requirements of this clause. Refer exclusions relevant to emergency lighting and lighting around detention centres.
J6.6 Boiling water and chilled water storage units				X	Power supply to boiling or chilled water storage units must be time switch controlled in accordance with Specification J6.

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Part J7: Hot water supply and swimming pool and spa pool plant					
J7.2 Hot water supply				X	Any hot water supply for food preparation and sanitary purposes must be designed and installed in accordance with Part B2 of NCC Volume Three – Plumbing Code of Australia.
Part J8: Access for maintenance and facilities for monitoring					
J8.2 Access for maintenance				X	Where applicable access for maintenance must be provided to: (b) time switches and motion detectors; and (c) room temperature thermostats; and (d) plant thermostats such as on boilers or refrigeration units.

13.0 CONCLUSION

This report provides a Building Code of Australia (BCA) 2014 assessment relevant to a proposed Change of Use development. It is understood that it is intended to utilize two existing Class 2 residential buildings for Class 9b educational purposes. The subject two buildings are located at 7 and 8 Monford Place, Cremorne, and form part of the S.C.E.C.G.S. Redlands, Cremorne.

The primary purpose of this report is to identify the BCA compliance issues that pertain to such Change of Use, and to provide guidance relevant to achieving compliance with the BCA Performance Requirements (by satisfying the Deemed-to-Satisfy (DTS) provisions, or via the provision of suitable alternative solutions).

This report provided a BCA assessment table in Section 3.0 that summarises the identified non compliance matters and offers specific recommendations.

Further, if compliance with the deemed-to-satisfy provisions is not achievable or desirable, Alternative Solutions could be further developed and verified by an appropriately qualified BCA Consultant or Fire Safety Engineer.

 Report by: Anthony Doherty Senior Building Surveyor Member – AIBS / AAC A1 - Accredited Building Surveyor BPB No. BPB0093 for **AE&D**	 Report checked by: Jason Storer Director Grade A1 – BPB No. BPB0394 A1 - Accredited Building Surveyor for **AE&D**