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Mainsbridge SSP

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BCA Report R1.1

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Client: Hayball

Architect: Hayball

SWP Quality System

Job Number/Ref:	2016/2297	Revision Number:	1.1	Issue Date:	28 September 2017

Revision History

Rev No	Date	Revision Details	Author	Verifier
1.0	11/9/17	Initial Report for Discussion	Michael Lokic	Jason Kruz
1.1	28/9/17	Final report for concept	Michael Lokic	

Disclaimer:
This report is based on a desktop audit of preliminary documentation only.
Details contained in the report address issues of significance to broad BCA compliance relevant to this stage of design resolution.
This report is based on a review of the design documentation only. It represents a compliance report for "documentation to this point in time" and will be subject to amendment and expansion as project documentation develops

Introduction

This report presents the findings of an assessment undertaken of the proposed design against the Deemed-to-Satisfy (DtS) provisions of Building Code of Australia (BCA) 2016.

Purpose

The assessment is undertaken for the purpose of, and to the extent necessary for, advising Hayball Architects of key BCA matters, which could impact on the design of the proposed school.

Description of proposed development

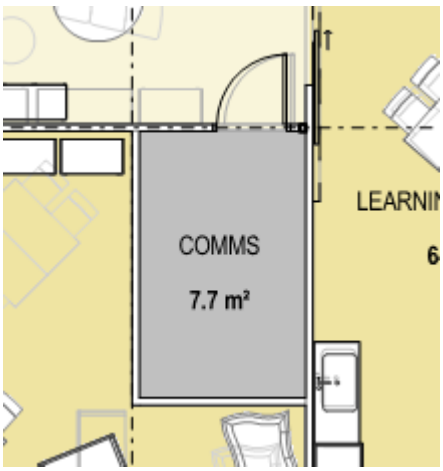
The proposal involves the construction a new Mainsbridge SSP. The school is proposed to consist of single storey and two storey learning buildings, a library, a multipurpose hall and an indoor hydrotherapy pool.

Assessment

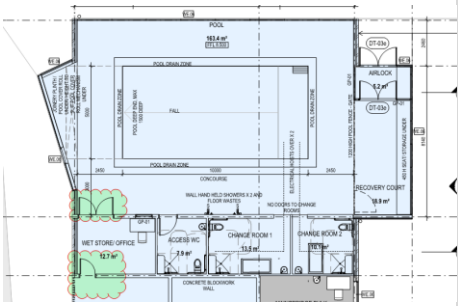
Classification	Class 9b
Number of storeys contained	2
Rise in storeys	2
Type of construction required	Type B
Effective height	less than 25m

A preliminary review of the proposed design has been undertaken. We confirm the design as shown on the drawings referenced below are capable of achieving compliance with the BCA. Some aspects of the design need to be addressed so to avoid the potential for a Fire Engineered Alternative Solution to meet the relevant Performance Requirements of the BCA. These aspects include but are not limited to the following, which will need to be confirmed during the design development and construction certificate stage;

Item	DTS Clause	Description	Requirement to Satisfy BCA
1.	C1.1	Fire Rating; • Type B	A Structural Engineer will be required to certify that the proposed buildings comply with the required FRLs for a type B building. (see appendix B) The floor separating storeys are required to comply with one of the following; (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. Additionally, there a number of requirements and dispensations for type B buildings detailed under Spec C1.1 of the BCA. Including the allowance for a class 9 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; A detailed review of FRLs will be undertaken at the detailed design stage.
2.	C1.1	External walls of the building are required to be non-combustible	The buildings are required to have external walls, which are non-combustible. Details (including test reports and code mark certificates) will be required to be provided at the detailed design stage to confirm that all parts of the external wall are non-combustible (external cladding, insulation, sarking)
3.	C2.2	Floor area and volume limitations	• BO1 -769m^2 • A01a- 1058m^2 • B01b – 1370m^2 • Pool/stores building – 408m^2 Total floor area 3605m^2 It is proposed to classify the new school as one building as it fits within the floor area limitations for type B construction.

Item	DTS Clause	Description	Requirement to Satisfy BCA
4.	C2.12	Confirm comms room equipment 	If a battery or batteries installed in the comms room have a voltage exceeding 24 volts and a capacity exceeding 10 ampere hours the room will be required to be fire separated by construction having - (A) an FRL as required by Specification C1.1, but not less than 120/120/120; and (B) any doorway protected with a self-closing fire door having an FRL of not less than –/120/30; or
5.	D1.6	Dimensions of exits	At the detailed design stage, the internal fit out plan are to detail a minimum 1m clear path of travel through all proposed buildings.
6.	D1.10	Discharge of exits 	A required exit which leads to an open space, must have a delineated path of travel to the road which has an unobstructed width throughout of not less than— (i) the minimum width of the required exit; or (ii) 1 m, whichever is the greater. Details will be required to be provided at the detailed design stage.
7.	Part D3	Access for people with a disability	It is noted that a qualified Access Consultant will be providing a compliance review at the detailed review stage.
8.	E1.3	Hydrants	The proposed new buildings are required to be served by a hydrant system which complies with AS2419.1-2005.
9.	E1.4	Hose reels	Hose reels which comply with AS2441-2005 are required to serve the hall, library and staff portion of the building. Hose reels are not required to serve classrooms.
10.	E1.6	Portable fire extinguishers	The proposed new buildings are required to be provided with Portable fire extinguishers.

Item	DTS Clause	Description	Requirement to Satisfy BCA
11.	Table E2.2b (NSW variation)	Automatic shutdown – It is noted that mechanical ventilation is not being provided to any of the schools. Accordingly, this clause is not applicable.	If the school was being provided with mechanical ventilation, it must be provided with automatic shutdown (unless the system is non-ducted individual room units with a capacity not more than 1000 L/s and miscellaneous exhaust air systems installed in accordance with Sections 5 and 6 of AS/NZS 1668.1) which does not form part of the smoke hazard management system, on the activation of— (i) smoke detectors installed complying with Clause 5 of Specification E2.2a; and (ii) any other installed fire detection and alarm system, including a sprinkler system complying with Specification E1.5. It is noted that if the above mechanical ventilation is installed, then clause 5 smoke detectors are also required.
12.	E4.2	Emergency Lighting requirements	Emergency lighting is to be provided throughout the building in accordance with E4.2 and AS2293.1.
13.	E4.5	Exit Signs	Exit signs are to be provided throughout the building in accordance with Clause E4.5 & AS2293.1.
14.	F2.3	Sanitary facilities. (Students)	As advised by Hayball, due to the occupant characteristics of the students, only accessible sanitary facilities are being provided for the students. The proposed 18 accessible facilities are capable of serving the proposed student population of 180 students.

Item	DTS Clause	Description	Requirement to Satisfy BCA
15.	F2.3	Sanitary facilities. (Staff)	As advise by Hayball, the sanitary facility strategy to service the proposed 46 staff involves; • Unisex staff sanitary facilities only provided in admin / staff areas • Accessible toilets are staff managed with keys, with staff permitted to use the accessible toilets if required. Based on the 6 proposed uni sex staff sanitary facilities and the surplus student facilities, there are sufficient facilities to service the proposed staff population. However, the above strategy will be required to be quantified via a BCA performance solution, as the BCA does not allow staff and students to share sanitary facilities and requires male and female staff to be provided with separate sanity facilities. Plans will be required to be modified or a performance-based solution will be required to address the non-compliances.
16.	F4.1	Provisions of Natural Light	Natural light is to be provided to all general-purpose classrooms in primary schools. Window size and location are to be reviewed at the detailed design stage to confirm compliance.
17.	F4.5	Ventilation of Sanitary facilities	Sanitary facilities are to either achieve compliance with the natural ventilation requirements of clause F4.6 or be provided mechanical ventilation to comply with AS1668.2. Window size and location are to be reviewed at the detailed design stage to confirm compliance.
18.	G1.1	Pool fencing. 	Although clause G1.1 does not apply to class 9b buildings, we recommend that access to the indoor hydrotherapy pool should be restricted in accordance with AS1926.1. This includes; • Entry doors to the indoor pool to swing outwards; • Door latches located no less than 1500mm above ground; • Non-climbed zone located within and around the doors which give access to the pool.
19.	Section J	Assessment of energy efficiency requirements	Assessment of the requirements of Section J to be undertaken by Energy Efficiency Consultant and a report provided for review. A design certificate is to be provided for CDC.

If you have any queries, please do not hesitate to contact me.

Kind regards,

Michael Lokic
Senior Building Regulations Consultant
Steve Watson & Partners Pty Ltd

Appendix A – Referenced Documentation

The following documentation was used in the preparation of this report:

Drawing No.	Drawing Title	Revision	Date	Drawn By
A00.A01.01	Site Plan – Existing	5	21/09/17	Hayball
A00.A01.02	Site Plan – Ground	5	21/09/17	Hayball
A01.A03.01	Floor Plan – Ground	5	21/09/17	Hayball
A01.A03.02	Floor Plan – Level 1	5	21/09/17	Hayball
A01.A03.03	Floor Plan – Roof	5	21/09/17	Hayball
A01.A04.01	Reflected Ceiling Plan – Ground	5	21/09/17	Hayball
A01.A04.02	Reflected Ceiling Plan – Level 1	5	21/09/17	Hayball
A01.A06.01	Elevations	5	21/09/17	Hayball
A01.A06.03	Sections	5	21/09/17	Hayball
B01a.A03.01	Floor Plan – Ground	5	21/09/17	Hayball
B01.A03.03	Roof Plan	5	21/09/17	Hayball
B01a.A04.01	Reflected Ceiling Plan	5	21/09/17	Hayball
B01a.A06.01	Elevations	5	21/09/17	Hayball
B01a.A06.03	Sections	5	21/09/17	Hayball
B01b.A03.01	Floor Plan – Ground	5	21/09/17	Hayball
B01b.A03.02	Floor Plan – Level 1	5	21/09/17	Hayball
B01b.A03.03	Floor Plan – Roof	5	21/09/17	Hayball
B01b.A04.01	Reflected Ceiling Plan – Ground	5	21/09/17	Hayball
B01b.A04.02	Reflected Ceiling Plan – Level 1	5	21/09/17	Hayball
B01b.A06.01	Elevations	5	21/09/17	Hayball
B01b.A06.03	Sections	5	21/09/17	Hayball
B01b.A06.04	Sections 2	5	21/09/17	Hayball
P01.A02.01	Floor Plan Ground	3	21/09/17	Hayball
P01.A02.02	Floor Plan – Roof	3	21/09/17	Hayball
P01.A04.01	Reflected Ceiling Plan	3	21/09/17	Hayball
P01.A06.01	Elevations	3	21/09/17	Hayball
P01.A06.03	Sections	3	21/09/17	Hayball
T01.A02.01	Plans/Elevations	2	21/09/17	Hayball
T01.A06.03	Sections	2	21/09/17	Hayball

Appendix B – Construction Details

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, 9 or 7a	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 1.5m	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, 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
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	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, INTERNAL BEAMS, TRUSSES and COLUMNS	60/ - / -	120/ - / -	180/ - / -	240/ - / -
ROOFS	- / - / -	- / - / -	- / - / -	- / - / -

Appendix C

Area	Occupant Numbers			WC *Required* / *Provided*		Urinal *Required* / *Provided*		Basin *Required* / *Provided*	
	Total								
		Male	90	3	--	3	-	3	-
		Female	90	5	-	N/A	N/A	3	-
		Disabled			19				19
		Male	23	2	2	2	2*	1	*
		Female	23	3	3	N/A	*	1	*
		Disabled						*	*

- As advised by Hayball;
  - The school is a special needs school where students will have moderate to serve metal and physical disabilities;
  - Each class has access to an accessible sanitary facility and shower. (19 accessible sanitary facilities in total);
  - No regular toilet blocks are provided, as these are not practical for a support school;
  - The proposed student population will be 180;
  - The school will have 46 permanent staff members with 6 uni-sex sanitary facilities for staff;
  - Unisex staff facilities only provided in admin / staff areas; and
  - Accessible facilities are staff managed with keys, with staff permitted to use the accessible toilets if required.