

Our Reference: NS230761  
Your Reference:

17/05/2024

The Forum  
Level 1, Suite 1  
240-244 Pacific Highway  
Charlestown NSW 2290

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T 02 4926 4811

Hansen Yuncken Pty Ltd  
Sydney Corporate Park  
Building 1, L3, 75-85 O'Riordan Street  
Alexandria NSW 2015

Attention: Robert Petersen

Dear Robert,

**Re: Newcastle Education Campus  
Structural Design Certification for Crown Certificate 2**

Subject to the Certificate Conditions set out below, This Certificate is given in respect to the structural engineering services provided by us for the Newcastle High School Redevelopment at 160/200 Parkway Avenue Hamilton South.

This Certificate is given pursuant to the provisions of the relevant clauses of Section B, Volume 1 of the NCC 2019 Amendment 1 for Class 2 to Class 9 buildings.

We Certify that the structural elements of the project described below comply with the following Australian Standards

Number	Title
AS 1170.0:2002	Structural design actions – Part 0: General principles
AS 1170.1:2002	Structural design actions – Part 1: Permanent, imposed, and other actions
AS 1170.2:2021	Structural design actions – Part 2: Wind actions
AS 1170.4:2007	Structural design actions – Part 4: Earthquake Actions in Australia
AS 3600:2018	Concrete structures
AS4100:2020	Steel Structures
AS4678:2002	Earth Retaining Structures

and that the design was undertaken by us in accordance with relevant accepted engineering practices and principles.

We also certify that:

- The existing building structure is capable of withstanding the new loads to be imposed as a result of the new building works, and
- The design contains no non-compliances with will result in a performance solution.
- Primary structures have been designed with flood compatible materials and components that withstand the hydrodynamic forces from moving flow and the hydrostatic forces applied by still-water during any period of flood inundation and/or submerging events

- The habitable floor level of any new building is above the 1% annual exceedance probability (AEP) level and that the development achieves the required flood planning levels and design ground floor levels outlined in Flood Impact Assessment, prepared by BMT and dated 3 May 2023.
- Any part of new buildings below the probable maximum flood (PMF) level are constructed from flood compatible building components.
- New buildings have been designed to ensure shelter in place of vulnerable persons is safe and in locations above the PMF level as outlined in the Flood Emergency Response Plan, prepared by BMT and dated 19 October 2023.
- Any new building has been designed, so that the part of the building that will be used for egress after a flood event will be safe to be used for this purpose after the flood waters recede from the 1% AEP through to PMF flood events described in the Flood Impact Assessment, prepared by BMT and dated 3 May 2023.

The design is based on the following assumptions:

- Importance Level 3 in accordance with BCA cl B1D3
- Type A fire resisting construction in the New Learning Hub, and Type B fire resisting construction in the Multipurpose Facility.
- The earthquake design category is EDC II

All material elements of the design are contained in the drawings below (current revision as at date of this certificate):

Document No	Revision	Title
S-0000	1	COVER SHEET
S-0001	4	SPECIFICATION NOTES SHEET 1
S-0002	3	SPECIFICATION NOTES SHEET 2
S-0003	3	SPECIFICATION NOTES SHEET 3
S-0005	1	TYPICAL RETAINING WALL DETAILS
S-0010	1	TYPICAL FOUNDATION DETAILS
S-0020	1	TYPICAL SUSPENDED SLAB DETAILS
S-0050	1	TYPICAL CONCRETE COLUMN DETAILS
S-0060	1	TYPICAL REINFORCED CONCRETE WALL DETAILS
S-0070	1	TYPICAL STEEL DETAILS SHEET 1
S-0071	1	TYPICAL STEEL DETAILS SHEET 2
S-0072	1	TYPICAL STEEL DETAILS SHEET 3
S-0073	1	TYPICAL STEEL DETAILS SHEET 4
S-0090	1	TYPICAL CONCRETE STAIR DETAILS
S-0100	1	OVERALL SITE PLAN
S-1000	1	NEW LEARNING HUB - FOUNDATION OVERALL PLAN
S-1001	1	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE A
S-1002	1	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE B
S-1003	1	NEW LEARNING HUB - FOUNDATION - GA PLAN - ZONE C
S-1100	1	NEW LEARNING HUB - GROUND OVERALL PLAN
S-1101	1	NEW LEARNING HUB - GROUND - GA PLAN - ZONE A
S-1102	1	NEW LEARNING HUB - GROUND - GA PLAN - ZONE B
S-1103	1	NEW LEARNING HUB - GROUND - GA PLAN - ZONE C
S-1110	1	NEW LEARNING HUB - GROUND - SECTIONS SHEET 1

S-1111	1	NEW LEARNING HUB - GROUND - SECTIONS SHEET 2
S-1112	1	NEW LEARNING HUB - GROUND - SECTIONS SHEET 3
S-1113	1	NEW LEARNING HUB - GROUND - SECTIONS SHEET 4
S-1200	1	NEW LEARNING HUB - LEVEL 1 OVERALL PLAN
S-1201	1	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE A
S-1202	1	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE B
S-1203	1	NEW LEARNING HUB - LEVEL 1 - GA PLAN - ZONE C
S-1210	1	NEW LEARNING HUB - LEVEL 1 - SECTIONS
S-1211	1	NEW LEARNING HUB - LEVEL 1 - SECTIONS SHEET 2
S-1300	1	NEW LEARNING HUB - LEVEL 2 OVERALL PLAN
S-1301	1	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE A
S-1302	1	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE B
S-1303	1	NEW LEARNING HUB - LEVEL 2 - GA PLAN - ZONE C
S-1310	1	NEW LEARNING HUB - LEVEL 2 - SECTIONS
S-1400	1	NEW LEARNING HUB - ROOF OVERALL PLAN
S-1401	1	NEW LEARNING HUB - ROOF - GA PLAN - ZONE A
S-1402	1	NEW LEARNING HUB - ROOF - GA PLAN - ZONE B
S-1403	1	NEW LEARNING HUB - ROOF - GA PLAN - ZONE C
S-1404	1	NEW LEARNING HUB - ROOF - GA PLAN - PLANT PLATFORM
S-1410	1	NEW LEARNING HUB - ROOF - SECTIONS
S-1500	1	NEW LEARNING HUB - SECTION SHEET 1
S-1501	1	NEW LEARNING HUB - SECTION SHEET 2
S-1502	1	NEW LEARNING HUB - SECTION SHEET 3
S-1503	1	NEW LEARNING HUB - SECTION SHEET 4
S-1504	1	NEW LEARNING HUB - SECTION SHEET 5
S-1505	1	NEW LEARNING HUB - SECTION SHEET 6
S-1506	1	NEW LEARNING HUB - SECTION SHEET 7
S-1507	1	NEW LEARNING HUB - SECTION SHEET 8
S-1508	1	NEW LEARNING HUB - SECTION SHEET 9
S-1600	1	NEW LEARNING HUB - WALL ELEVATIONS SHEET 1
S-1601	1	NEW LEARNING HUB - WALL ELEVATIONS SHEET 2
S-1602	1	NEW LEARNING HUB - WALL ELEVATIONS SHEET 3
S-1999	1	NEW LEARNING HUB - SCHEDULES
S-2000	1	MULTIPURPOSE FACILITY - FOUNDATION OVERALL PLAN
S-2001	1	MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE A
S-2002	1	MULTIPURPOSE FACILITY - FOUNDATION - GA PLAN - ZONE B
S-2100	1	MULTIPURPOSE FACILITY - GROUND OVERALL PLAN
S-2101	1	MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE A
S-2102	1	MULTIPURPOSE FACILITY - GROUND - GA PLAN - ZONE B
S-2103	1	MULTIPURPOSE FACILITY - GROUND - GA PLAN - UPPER STAGE
S-2110	1	MULTIPURPOSE FACILITY - GROUND - SECTIONS
S-2111	1	MULTIPURPOSE FACILITY - GROUND - SECTIONS SHEET 2
S-2200	1	MULTIPURPOSE FACILITY - LEVEL 1 OVERALL PLAN
S-2201	1	MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE A
S-2202	1	MULTIPURPOSE FACILITY - LEVEL 1 - GA PLAN - ZONE B
S-2210	1	MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 1

S-2211	1	MULTIPURPOSE FACILITY - LEVEL 1 - SECTIONS SHEET 2
S-2300	1	MULTIPURPOSE FACILITY - ROOF OVERALL PLAN
S-2301	1	MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE A
S-2302	1	MULTIPURPOSE FACILITY - ROOF - GA PLAN - ZONE B
S-2310	1	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 1
S-2311	1	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 2
S-2312	1	MULTIPURPOSE FACILITY - ROOF - SECTIONS SHEET 3
S-2500	1	MULTIPURPOSE FACILITY - SECTION SHEET 1
S-2501	1	MULTIPURPOSE FACILITY - SECTION SHEET 2
S-2502	1	MULTIPURPOSE FACILITY - SECTION SHEET 3
S-2503	1	MULTIPURPOSE FACILITY - SECTION SHEET 4
S-2504	1	MULTIPURPOSE FACILITY - SECTION SHEET 5
S-2505	1	MULTIPURPOSE FACILITY - SECTION SHEET 1
S-2600	1	MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 1
S-2601	1	MULTI PURPOSE FACILITY - WALL ELEVATIONS SHEET 2
S-2999	1	MULTI PURPOSE FACILITY - SCHEDULES

Those parts of the design described below are not included in this Certificate for the following reasons:

Element	Reason
Temporary Shoring	D and C by Builder
Balustrades and handrails	D and C by Builder
Steel screw piles	D and C by Builder
Post-tensioned floor slabs	D and C by Builder

In preparing the drawings to which this Certificate is given the following Reference Material was relied upon:

#### REFERENCE MATERIALS

- Architectural Drawings prepared by EJE Architecture
- Geotechnical report prepared by Douglas Partners. Report reference 213618.01

#### CERTIFICATE CONDITIONS

1. This Certificate may only be relied upon by the person or company to which it is addressed.
2. In preparing this Certificate we have assumed that the Reference Material is accurate and complete.

Yours faithfully,

**ACOR CONSULTANTS PTY LTD**



Angus Bruce MIEAust CPEng NER  
Structural Team Leader | Senior Engineer