

12 May 2016

141522

epm Projects Pty Ltd
Suite 2, Level 5
655 Pacific Highway
St Leonards NSW 2065

Attention: Nicholas D'Ambrosio

SHORE SCHOOL PHYSICAL EDUCATION CENTRE

Application Number SSD7507 Structural Report

Dear Nicholas,

In accordance with the Secretary's Environmental Assessment Requirements (SEARs) we have carried out a review of the proposed excavation and new structure over and within 25m of the rail easement. Our structural assessment has also been carried out in recognition of the requirements of the following transport and planning documents, TfNSW - External Developments Standard (T HR CI 12080 ST) and NSW Government Department of Planning - Development Near Rail Corridors and Busy Roads. Our summary of the proposed excavation and new structure is as follows:

Proposed Structure

The new structure will create a new physical education centre for Shore School consisting of a pool hall, basketball courts, gymnasium, classrooms, and general gathering and circulating spaces, spread across six levels. The northern end of the structure is proposed to be built over and adjacent to the rail easement which has a top level of RL57.41.

The suspended levels will involve a mix of post-tensioned banded slabs and composite steel beam and concrete construction. Each level will be supported by reinforced concrete columns and walls supported on pad or strip footings founded on medium to high strength sandstone bedrock. The lowest floor level will involve a slab on ground. The roofs will be predominantly conventionally steel framed.

Bulk Excavation

Bulk excavation profiles have been reviewed to ensure the new excavation does not encroach into the rail easement. A bulk excavation plan and typical sections have been developed to identify proposed levels and profiles relative to the rail easement. Refer to drawing no. SK01 and SK02, respectively, in Appendix A. The drawings clearly indicate no encroachment of the proposed excavation into the rail easement.

Retention Structures

Geotechnical data, ground profiles, and site boundary conditions have been reviewed (JK Geotechnics geotechnical investigation report, Ref: 27283Srpt). Proposed retention structures have been specified at each vertical excavation interface and communicated on drawing no. SK03 in Appendix B. Proposed retaining structures over and adjacent to the rail easement typically consist of permanent vertically cut rock. For the locations where there is soil above the rock, a temporary batter or cantilevered shoring structure is proposed. For the vertical cut along William Street and Hunter Crescent, a cantilevered shoring structure is specified. This shoring system will not have any ground penetrating anchors. The drawing clearly indicates no penetration into the rail easement of either retention structures or anchors.

Structure Foundation Loads & Geotechnical Analysis

Reaction loads from the proposed structure on or adjacent to the rail easement have been calculated and noted on drawing no. SK04 in Appendix C. This loading information is to be used by the geotechnical engineer to conduct a finite element analysis of the effects of the proposed structure loading on the geological formation bounding the rail easement.

In summary the proposed structure will not encroach into the rail easement. A geotechnical engineer can use the new reaction loads nominated in this report to perform a finite element analysis and comment on the effects of the proposed loads on the rail easement.

Should you require anything further please contact the undersigned or Geoff Bills on 02 9439 7288.

Yours faithfully

TAYLOR THOMSON WHITTING (NSW) PTY LTD



DAVID CAROLAN

Director

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Appendix A: Bulk Excavation Plan & Sections (Drawing No. SK01 & SK02)

Appendix B: Retention Structures Plan (Drawing No. SK03)

Appendix C: New Structure Foundation Loads (Drawing No. SK04)

Appendix A

Bulk Excavation Plan & Sections (Drawing No. SK01 & SK02)

Filename: SK01.dwg - User: paulh - Plot File Created: May 11, 2016 - 4:00pm

A1 0 1 2 3 4 5 6 7 8 9 10

BULK EXCAVATION PLAN
SCALE 1:200

PRELIMINARY

P1	PRELIMINARY	-	-	-
Rev	Description	Eng	Draft	Date

Project
SYDNEY CHURCH OF ENGLAND
GRAMMER SCHOOL
BH TRAVERS STAGE 2

Sheet Subject
BULK EXCAVATION PLAN
FOR SEARS REPORT

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Structural Engineer

TTW Taylor
Thomson
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Scale : A1 Drawn Authorised
1:200 P.S.H.

Job No Drawing No Revision
141522 SK01 P1

Plot File Created: May 11, 2016 - 4:00pm

Filename: SK02.dwg - User: paul - Plot File Created: May 11, 2016 - 3:58pm



P1	PRELIMINARY	-	-	-
Rev	Description	Eng	Draft	Date

Project
**SYDNEY CHURCH OF ENGLAND
GRAMMER SCHOOL
BH TRAVERS STAGE 2**

Sheet Subject
**BULK EXCAVATION
SECTIONS**

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Job No Drawing No Revision
141522 SK02 P1

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PRELIMINARY

Appendix B

Retention Structure Plan (Drawing No. SK03)

Filename: SK02.dwg - USPR: paulh - Plot File Created: May 11, 2016 - 4:00pm

A1 0 1 2 3 4 5 6 7 8 9 10

RETAINING STRUCTURES PLAN
SCALE 1:200

PRELIMINARY

- DENOTES EXTENT OF VERTICALLY CUT ROCK WITH ACCESSIBLE GAP TO NEW STRUCTURE.
- DENOTES EXTENT OF VERTICALLY CUT ROCK. TEMPORARY BATTER REQUIRED FOR DEPTH OF SOIL ABOVE ROCK.
- DENOTES EXTENT OF VERTICALLY CUT ROCK WITH ANCHORED SHORING WALL REQUIRED FOR DEPTH OF SOIL ABOVE ROCK.
- DENOTES EXTENT OF CANTILEVERED SHORING WALL. NO ANCHORS REQUIRED.

P1	PRELIMINARY	-	-	-
Rev	Description	Eng	Draft	Date
Project				

SYDNEY CHURCH OF ENGLAND
GRAMMER SCHOOL
BH TRAVERS STAGE 2

Sheet Subject
RETENTION STRUCTURE PLAN
FOR SEARS REPORT

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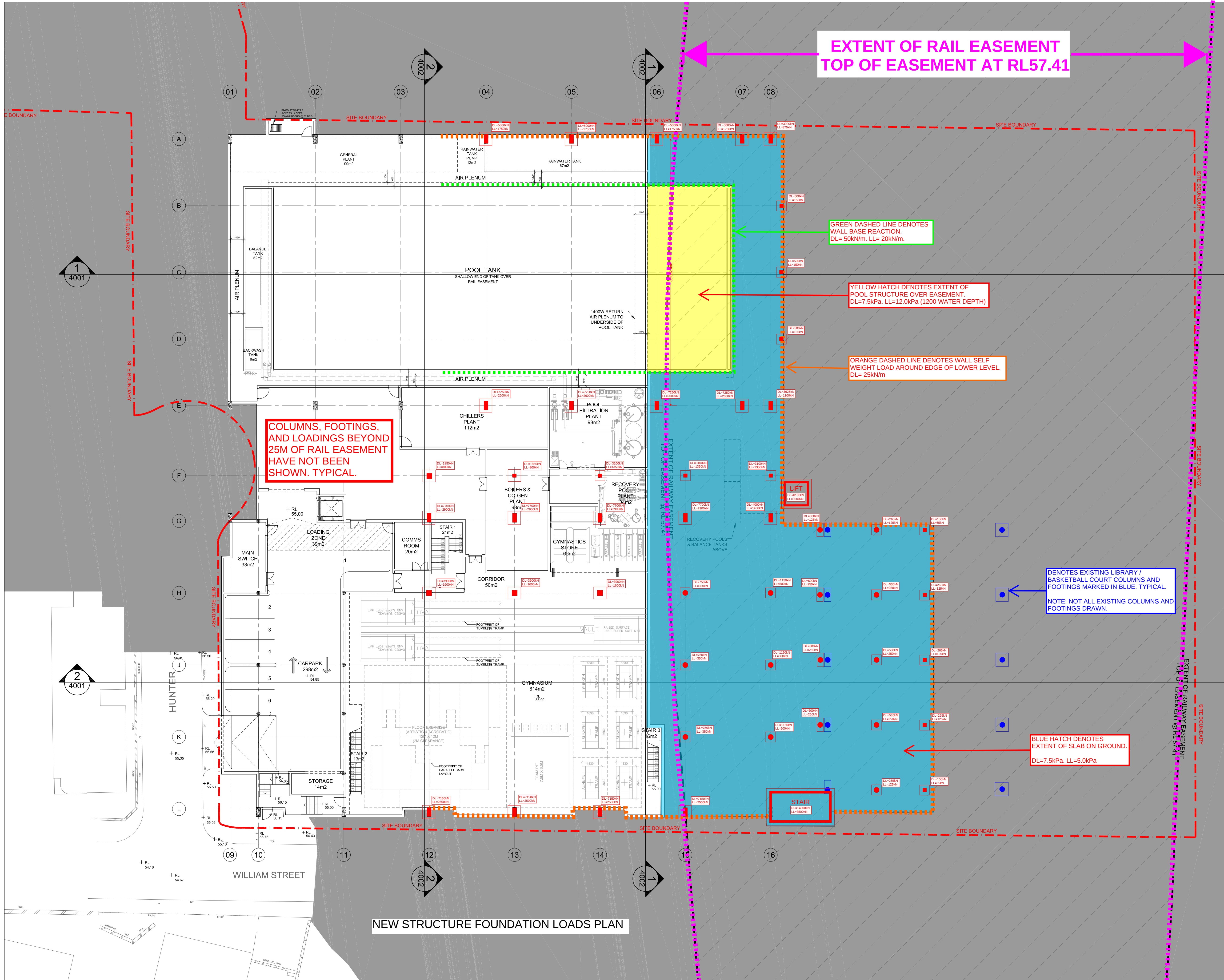
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1:200 P.S.H.

Job No Drawing No Revision
141522 SK03 P1

Plot File Created: May 11, 2016 - 4:00pm

Appendix C

New Structure Foundation Loads (Drawing No. SK04)



EXTENT OF RAIL EASEMENT
TOP OF EASEMENT AT RL57.41

GREEN DASHED LINE DENOTES
WALL BASE REACTION.
DL= 50kN/m. LL= 20kN/m.

YELLOW HATCH DENOTES EXTENT OF
POOL STRUCTURE OVER EASEMENT.
DL=7.5kPa. LL=12.0kPa (1200 WATER DEPTH)

ORANGE DASHED LINE DENOTES WALL SELF
WEIGHT LOAD AROUND EDGE OF LOWER LEVEL.
DL= 25kN/m

COLUMNS, FOOTINGS,
AND LOADINGS BEYOND
25M OF RAIL EASEMENT
HAVE NOT BEEN
SHOWN. TYPICAL.

DENOTES EXISTING LIBRARY /
BASKETBALL COURT COLUMNS AND
FOOTINGS MARKED IN BLUE. TYPICAL.
NOTE: NOT ALL EXISTING COLUMNS AND
FOOTINGS DRAWN.

BLUE HATCH DENOTES
EXTENT OF SLAB ON GROUND.
DL=7.5kPa. LL=5.0kPa

NEW STRUCTURE FOUNDATION LOADS PLAN

PRELIMINARY

PRELIMINARY		-	-	-
Rev	Description	Eng	Draft	Date
Project				
SYDNEY CHURCH OF ENGLAND GRAMMER SCHOOL BH TRAVERS STAGE 2				
Sheet Subject				
NEW STRUCTURE FOUNDATION LOADS FOR SEARS REPORT				
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Scale : A1		Drawn		Authorised
1:200		P.S.H.		
Job No		Drawing No		Revision
141522		SK04		P1
Plot File Created: May 11, 2016 - 4:00pm				