



Structural
Civil
Traffic
Facade

26 October 2017

151959

Design Inc
Level 12
77 Pacific Highway
North Sydney NSW 2060

Attention: Jacqueline Urford

New Ultimo Pymont Public School

Structural Design Statement

Dear Jacqueline,

1.0 Purpose of the Works

The purpose of these works is to build a new school that comprises the full site to provide teaching and learning facilities for approximately 800 students with an additional 40 place child care centre.

2.0 Compliance

The structural design of New Ultimo Pymont Public School will be in accordance with the following Australian Standards:

AS 3600 Concrete Structures

AS 4100 Steel Structures

And the structure shown would be sufficient to carry the relevant loads specified on our drawings and in

AS 1170.0 Structural design actions – General principles

AS 1170.1 Structural design actions – Permanent, imposed and other actions

AS 1170.2 Structural design actions – Wind actions

AS 1170.4 Structural design actions – Earthquake actions in Australia

3.0 Foundations

The foundations for the new building will be concrete grout-injected piles in accordance with the geotechnical report 30361SBrpt by JK Geotechnics dated 16th May 2017. The piled foundations will socket into the underlying sandstone which is found at varying depths across the sloping site.

4.0 Proposed Structure

The proposed structure is to generally be of reinforced and post-tensioned concrete construction. Due to the presence of uncontrolled fill across the site the

ground level slabs will be suspended and supported on piles. The upper floors will typically be post-tensioned banded slabs supported on concrete columns and walls. Due to architectural requirements there is the need for some columns to be transferred on Bands, but the extent of transfers is to be minimized as much as possible. There is to be a lightweight pitched steel roof over the level 4 Covered outdoor learning area (COLA) that will be supported by cantilevered concrete columns.

5.0 Retaining Structures

Due to the sloping nature of the site, there is a requirement for retaining structures at each of the proposed level step changes that run across the site. Namely Ground – L2, L2-L3 and L3- Jones St. Typically the existing Jones st brick retaining wall is to remain. A new secondary retaining wall will be built in front of the Jones St wall to prevent any undermining of the existing wall footings where the proposed levels are lower. Sections of the site will require retaining along Quarry st where the proposed levels are below that of the existing footpath and road level. Similarly retention may be required at certain locations along the property boundary to the south where proposed levels are lower than the neighboring property.

6.0 Flood Barriers

Concrete upstand is proposed along Wattle Street to act as a flood barriers and the concrete upstand will be designed to withstand flood pressure and impacts from debris carried in flood waters as recommended in the flood assessment report.

7.0 Structure Global Lateral Stability

Globally the structure will be braced by reinforced concrete shear walls that will help transfer any seismic or wind loads down to the piled footings and eventually back out of the structure and into the underlying rock. The pitched steel roof above the COLA will be supported by the cantilevered concrete columns which will transfer lateral loads down to the level 4 floor diaphragm. Below level 4 the floor diaphragm will redistribute loads into the shear walls and ultimately down into the rock as described above.

8.0 Construction Sequence

There are a number of existing school buildings across the site which will need to be demolished by the demolition contractor and debris removed from site. Once demolition has been carried out, required shoring/retention structures will be installed and excavation can commence. A qualified geotechnical engineer will need to sign off and certify that the footing bearing strata is suitable prior to any of the new footings being poured. All new footings, columns, slabs, walls etc; will be carried out as per the TTW Structural Drawings. Access to the site will need to be worked through with the appointed builder after the Tender process, but there is opportunity from Wattle, Quarry and Jones St.

Should you require anything further please contact the undersigned.

Yours faithfully

TAYLOR THOMSON WHITTING (NSW) PTY LTD



Hung Nguyen
Technical Director

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