H&H Consulting Engineers Pty Ltd *(trading as Henry & Hymas)*

ABN 77 091 243 355
ACN 091 243 355

Address
Level 5
79 Victoria Avenue
Chatswood
New South Wales 2067

Telephone
+61 2 9417 8400

Facsimile
+61 2 9417 8337

Email
email@hhconsult.com.au

Web
www.henryandhymas.com.au

henry&hymas

14 March 2017

Our Ref: 16652-S3/gn

Loreto Kirribilli
c/- Artazan Property Group
Level 8, 210 George Street
SYDNEY NSW 2000

Attention: Ms Alexis Bell

Dear Madam,

Re: Proposed Alterations & Additions To Loreto Kirribilli
85 Carabella Street, Kirribilli
Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements nominates a structural report for the development.

1. Site Topography and other site considerations

The site slopes from South to North over about 120 metres in length with a fall of about 16 metres at approximately 8^{O} to 10^{O}. The site is bound to the South by Carabella Street and to the North by Elamang Avenue. The school site is stepped down from the street level towards the North-East.

The West side of the development area of the site has a 3 and 4 storey apartment building at 111 Carabella Street and a 3-storey apartment building at 22 Elamang Avenue. The adjacent properties typically maintain similar site levels as the school site except towards the Carabella Street frontage, where the neighbouring property is roughly 2m below the site.

2. Proposed Development

The development issues affecting the structural consideration of the development are as follows:

henry&hymas

- The Learning Hub lower ground level is 13.5m below the ground level of existing Marian Centre. This will require excavation of sandstone up to 13m depth.

- The alteration of existing Gymnasium included removal of 3 existing concrete columns to the perimeter and constructing new columns and transfer beam to support existing multi-purpose court.

- Proposed PDHPE mezzanine, landscape court extension & access stairs adjacent to existing Gymnasium Hall.

- The Southern precinct connector between the existing Chapel and J Block will be designed as independent reinforced concrete frame as independent structures.

3. Geotechnical Considerations

A geotechnical investigation and report was carried out by JK Geotechnics in January 2017 (Report 30067SRPT).

The existing site consists of:

- Existing concrete pavement & sub base layer directly overlying the sandstone bedrock.

- The upper layer of the sandstone was an extremely weathered sandstone with max. 1.4m depth.

- Below the upper layer sandstone was uniformly high strength sandstone up to 17.7m depth of borehole.

- Minor groundwater seepage was observed along the existing sandstone cut face adjacent to the Gymnasium Building.

The Geotechnical Conditions will require:

- The proposed excavation will encounter high strength sandstone, and monitoring vibration during construction shall be carried out by the Geotechnical Engineer.

- Excavation adjacent to existing structures must consider both vibration and stability to be assessed by the Geotechnical Engineer.

henry&hymas

- Proposed footings are at the base of proposed excavations.

- Ground water seepage from the excavated rock face is likely quite low. The conventional drainage system shall be designed by Civil and Hydraulic Engineers.

The upper layer of weathered sandstone is shallow and can be temporary batter by construction of concrete retaining wall. Where the excavation is adjacent to existing structure, proposed soldier pile walls will be used to retain the upper layer of weathered rock or soil. At the vertical face of medium to high strength sandstone shall be inspected by Geotechnical Engineer.

4. Structural Considerations

The structural elements of the Learning Hub, Southern & Northern precinct connectors shall be designed as reinforced concrete frame & shear wall structures for the above project, that shall conform to the relevant SAA Codes, in particular the following:

AS 1170	Structural Design Actions
	Part 1 Permanent, Imposed and other Actions
	Part 2 Wind Actions
	Part 4 Earthquake Loads
AS 1720	Timber Structures
AS 2159	Piling Code
AS 2870	Residential Slabs and Footings
AS 3600	Concrete Structures
AS 3700	Masonry Structures
AS 4100	Steel Structures

Building Code of Australia – Section B – Structure

The building structure will have the Fire Resistance Level as noted in the Building Code of Australia.

henry&hymas

The geotechnical considerations require all footings to be founded in the underlying high strength sandstone with minimum allowable bracing pressure of 3500kPa. This will be accommodated by either pad footings on rock or piers drilled to rock, particularly around the existing developments where excavation is not required.

Yours faithfully,

LIN MA
For, and on behalf of,
H & H Consulting Engineers Pty Ltd