

22 March 2018

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Architectus Pty Ltd
Level 18 MLC Centre
19 Martin Place
Sydney NSW 2000

Attention: Jonathan Archibald

Concord Hospital Redevelopment Stage 1

Structural Statement for Multi-Story Carpark State Significant Development Application

Dear Jonathan,

In support of the State Significant Development Application (SSDA) for the Concord Hospital Redevelopment Stage 1 Multistory Carpark, Taylor Thomson Whitting provide the following structural statement.

This structural statement is based on the Architectural drawings and documentation by Jacobs provided in the SSDA.

Proposed Structural Systems

Description of Building

The proposed multi-story carpark building is located on the Northern side of Hospital Road on the site of the existing on grade car park. The proposed building is five stories high with a typical column grid of 8.4m x 10.3m. Vertical access is via stairs in each corner of the building and lifts located on the south side.

Foundations

Geotechnical investigations of the proposed carpark site have been undertaken by Coffey which describes the geological profile in their Geotechnical report as typically comprising Shale overlain by Silty Clay

The proposed foundation system aims to limit the extent of excavation with piled construction founded on shale rock. Under the stair and lift cores a reinforced concrete base will be founded on a group of piles socketed into rock as required to resist tension forces that may develop under wind or earthquake loading.

Vertical Structure

The vertical load bearing structure comprises the walls around lifts and stairs as well as the columns throughout the building. The proposed lateral stability system for the building utilizes these reinforced concrete or precast walls which are distributed across the building floor plate.

The proposed reinforced concrete columns will be sized for the design loads with the shape of the columns coordinated with the proposed parking layout. At this stage the columns are proposed to be typically rectangular with some round columns in visually important locations outside of the vehicle circulation areas.

Floor Structure

The proposed floor design for the car park is a post-tensioned banded structure which has been proven to be the most efficient solution for a car park in Sydney. This floor system minimizes the overall floor depth to improve services reticulation and potentially reduce the overall height of the building. The lowest level of the building is proposed to be jointed slab cast on ground construction.

Design Loading

All loads applied will be determined in accordance with the following standards:

- 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

Design Standards

The structural design of the car park will be prepared in accordance with the following Australian Standards:

- AS 3600 Concrete Structures
- AS 4100 Steel Structures

Should you require anything further please contact the undersigned.

Yours faithfully

TAYLOR THOMSON WHITTING (NSW) PTY LTD

A handwritten signature in blue ink, appearing to read 'Glen Fowlie', is located below the company name.

GLEN FOWLIE
Technical Director

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