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 SUBJECT: Structural Due Diligence on Proposed Greenwich Hospital Redevelopment

PROJECT: GREENWICH HOSPITAL REDEVELOPMENT
 PROJECT NUMBER: 42265 DATE: 4 SEPTEMBER 2019

Introduction

WGE is providing this structural engineering memo in the interest of proposing structural solutions to achieve the client's intent for the redevelopment of the Greenwich Hospital site.

Background

The current HammondCare Greenwich hospital site, located at 97-115 River Road, Greenwich consists of an existing hospital and a few existing/heritage buildings in the vicinity. The proposal is to develop the site, which is approximately 3ha in size into a mixed used village consisting of apartments for retirement living and a new hospital tower which includes one level of basement carparking. The proposed site plan is shown below:



The existing hospital is to be demolished via a staged approach, in order that operations can be sporadically maintained during the process.

Proposed Staged Construction

The intended one level basement to the health care building can be constructed using an open cut with batter slope option as the site is a safe distance away from the heritage Pallister building, as shown in the figure below:

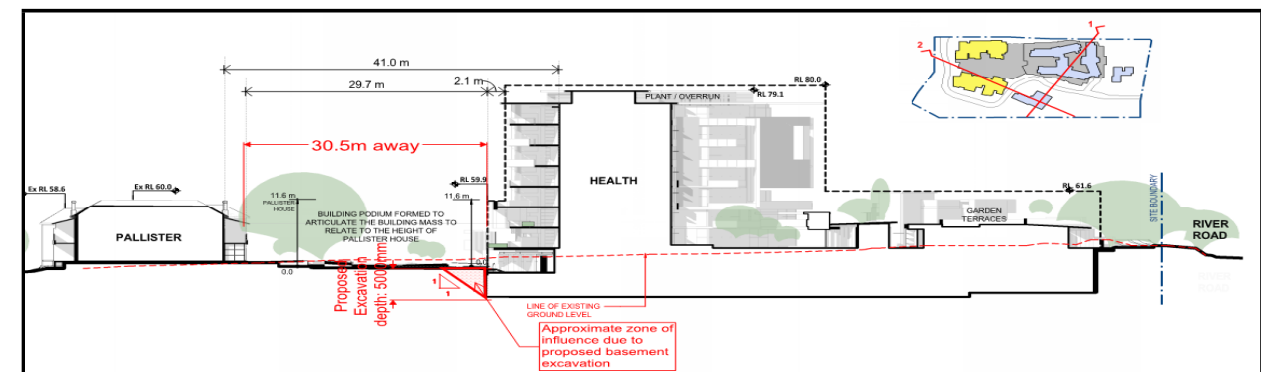


Figure 1: Cross Section 1 of Site Sections

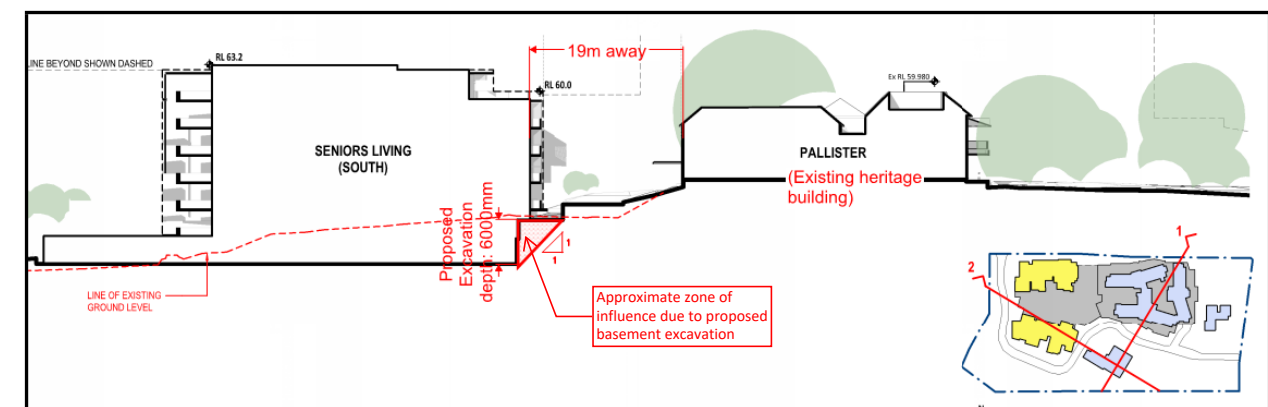


Figure 2: Cross Section 2 of Site Sections

To us, it's more than just work

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This assumes a 1:1 batter slope, which is to be confirmed with a future geotechnical investigation. The batter slope is to be backfilled once the upper levels are built, which will prop the future retaining wall.

The second option is shoring using soldier piles with shotcrete infill and temporary rock anchors. This option is to be pursued should there be a lack of clearance for the batter option.

Should a common basement and podium level be proposed throughout the development, at both the future hospital and seniors apartments, we would suggest a construction joint splitting the common podium between the hospital and apartments. This is to minimise the cracking on the exposed concrete due to temperature and shrinkage effects and also due to constructability restraints.

Proposed Structure

Based on buildings of a similar occupancy and size, we propose a concrete framed structure consisting of post-tensioned concrete slabs and columns with lateral bracing from stair and lift cores acting as shear walls. Based on NCAA guidelines for Class 9 of buildings, an FRP of 120 is to be expected.

Despite the absence of geotechnical data on the site, our experience of working with a nearby site at 33 Greenwich Road shows us that we can anticipate Hawkesbury Sandstone to underlay the site, with weathered shale at a depth of about 1.5-4m and sandstone at a depth of 6-7m. A 3-4 storey structure should be ably supported by oversized pads founded in shale, otherwise piling into sandstone is an option for larger loads.