From:	Pamela Santos
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Subject:	2 Lower Hobson St - redevelopment proposal
Date:	Monday, 8 July 2024 12:44:00 pm
Attachments:	Downtown carpark redevelopment - Iwi consultation letter 08072024.pdf Earthworks and Groundwater summary.pdf

Tēnā koutou

Please see attached letter briefly outlining the proposal for the redevelopment of the Downtown Carpark site located at 2 Lower Hobson Street, as well as preliminary earthworks and groundwater effects assessment.

We would be happy to meet with you and/or provide further information.

Ngā mihi | Kind regards,

PAMELA SANTOS
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8 July 2024

Tēnā koutou

Consultation on Groundwater Take and Diversion and Earthworks under the Auckland Unitary Plan

Downtown Carpark Redevelopment – 2 Lower Hobson Street, Auckland Central

Precinct Properties New Zealand Limited (Precinct), has been selected as the preferred development partner for the Downtown Carpark Redevelopment. Precinct will be supporting Eke Panuku Development Auckland (Eke Panuku) to deliver a mixed-use development to unlock the potential of the City Centre Masterplan (CCMP). The CCMP envisages redevelopment of the Downtown Carpark Site and public space enhancement opportunities within the Lower Hobson Street and Custom Street West as well as removal of the Hobson Street flyover. We note that the realisation of these opportunities relating to the public space enhancement and removal of the flyover are to be led by Auckland Council and Auckland Transport and not Precinct.

The proposed development includes the demolition of the existing downtown carpark building (together with the Lower Hobson Street pedestrian bridge and Customs Street vehicle ramp) and redevelopment of the site to provide for a mixed-use precinct providing for commercial, residential, retail, food and beverage and civic uses. The redevelopment involves three podium buildings, two towers and six levels of shared basement, including new public spaces and a new laneway network to provide connectivity within the city centre.

Given the development is in partnership with Eke Panuku, consultation in relation to the wider project including design outcomes is primarily being undertaken through Eke Panuku Mana Whenua Forum. A first session was held on the 12th June 2023 with a second session held on the 27th May 2024 and we understand that engagement will continue in subsequent forums.

From a resource consent perspective, we are writing to you as the proposal will require several resource consents that could be of interest to mana whenua. These are as follows:

- The proposal involves earthworks within the Sediment Control Protection Area as part of the site is within 100m of the Coastal Marine Area.
- The proposal involves a basement cut depth of generally 16.3m with local excavations up to 21m below existing ground level and therefore will intercept natural groundwater level (an elevated groundwater level has been adopted at RL 2.5 m) and is unable to comply with the permitted activity standards.

A memo from Tonkin + Taylor is attached providing a summary of the earthworks and groundwater activities and their assessment in relation to the above consent matters.

We are now working through the resource consent application and are looking to understand whether you are interested in the above aspects of the proposal. Please let us know if you would like to be further involved, as we can look to coordinate the provisions of further information, site visits and hui as required.

Yours sincerely | Nā māua noa, nā

Barker & Associates Limited

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08 July2024
Job No: 1016043.1001

Precinct Properties Holdings Limited
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Auckland 1010

Attention: Bianca Hurrell

Dear Hannah

Groundwater Take and Diversion and Earthworks – High Level Summary
Downtown carpark redevelopment

1 Introduction

This letter report outlines the summary approach and findings from Tonkin and Taylor's deliverables for the redevelopment of the downtown carpark, with a specific focus on the earthworks and groundwater activities and assessment of effects.

2 Summary of Approach

2.1 Ground and groundwater model

The ground conditions beneath the Downtown Carpark site generally consists of reclamation fill, marine sediments and Tauranga Group sediments overlying East Coast Bays Formation (ECBF) rock. The elevation of the rock typically varies between RL -2 m on the south-east corner to RL -7 m over north-west portion of the site. The reclamation works were undertaken in several stages between 1850 to 1920 and includes a backfilled graving dock.

Groundwater levels range from 2-3.5m below ground level, approximately RL 1.4m. These are based on groundwater monitoring from the Quay Street Seawall strengthening project to the north, Commercial Bay and CRL tunnel projects to the west. The groundwater regime for the site is governed by the presence of the Waitemata Harbour located 50 to 150 m north of the site, and in particular tidal recharge through service conduits. For concept design, an elevated groundwater level has been adopted at RL 2.5 m.

A 5-level basement is proposed involving excavation to about RL -16.3 m which will extend at least 9 m below the rock level, i.e., all the fill and sediments above rock level will be removed. Locally excavations will extend up to Rl -21 m for sumps, lift pits and water storage tanks but these are located away from the perimeter walls. Building piles will also be embedded below these levels. The groundwater within the site will be progressively dewatered as the excavation progresses with a temporary pump sump. To limit the effects of drawdown on the surrounding area, a perimeter groundwater cut-off wall will be installed before commencing excavation. This wall will extend below the final excavation depth and ensure the settlement effects on the compressible fill, marine

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sediments and Tauranga Group sediments, are small and remain within accepted tolerances for structures and infrastructure.

2.2 Retaining wall type for basement excavation

A combination of diaphragm and sheetpile walls have been detailed for the purposes of concept design to retain the proposed basement excavation for concept design. Key requirements for the concept design include:

- An 800 mm wide diaphragm wall, that is either tied back using anchors or internally propped, is proposed for the west, north and northern half of the east sides of the excavation where rock is deeper. The diaphragm wall is proposed to be taken a minimum 4 m below the base of the excavation to achieve groundwater cut-off (i.e., at least to RL -20.3 m) to limit groundwater effects outside the site.
- Anchored sheet piles are proposed along the southern and south-eastern sides of the site where rock is relatively shallow (typically between RL -2 to -3 m). To achieve effective groundwater cut-off below the more permeable fill and sediments, the sheet piles are proposed to be embedded a minimum 1 m into the ECBF rock
- Top-down construction at the northern end of the site will utilise permanent floor slabs and temporary diagonal props to limit deformations and protect foundations of existing structures. The alternate permanent floor slabs will be constructed prior to excavation below these levels and be used to prop the northern side. They will extend part way along the north-eastern and north-western boundaries to distribute shear loading from the floor slabs
- Bottom-down construction will be used for the remaining portion of the site where the rock level is shallower. This will provide access to the excavation from the southern end.

The proposed retention system provides a high level of stability for the surrounding buildings and critical infrastructure. There remains an option to use diaphragm walls for the full perimeter instead of the proposed sheet piles on the southern and eastern side, or consider other retention options, as the design for the overall development develops. The retaining wall options will be developed further in subsequent design phases.

2.3 Assessment of deformation and settlement effects

The potential for surface deformation of the surrounding ground due to the cumulative effects of retaining wall deformations and groundwater drawdown induced settlements from the development has been assessed, with the key findings as follows:

- The estimated ground settlement below neighbouring structures is estimated to be less than 12 mm, with differential gradients less than 1V:1,000H. This corresponds to Risk Category 1 (slight) in accordance with CIRIA PR30, with negligible damage due to surrounding building expected due to the proposed development
- Total settlement of less than 20 mm is estimated for surrounding pavement and underground services. The differential gradient due to this settlement where services are oriented perpendicular to the excavation are likely to be less than 1V:1,000H which is within the allowable tolerance for the various types of underground services surrounding the site.

2.4 Earthworks and construction considerations

The site materials can be excavated using conventional civil construction equipment. Approximately 130,000m^3 of soil will be excavated over a 6440m^2 site footprint with the majority of the fill and sediments disposed to managed landfill while the deeper ECBF rock, which forms over 50% of the excavated materials, may be separated and disposed to clean fill. Site management plans have been prepared in draft to address contaminants (CSMP). A perimeter bund will be installed to ensure that all water on the site is contained within the footprint and collected for primary and secondary

treatment prior to discharge to either sewer or stormwater, in accordance with the erosion and sediment control principles outlined in GD05.

Due to the historical land-use of the site, in-ground obstructions may be present in the form of cobbles, boulders, and construction waste in the reclamation fill, as well as remnants of the graving dock, old seawalls, and associated structures, reinforced concrete piles for the existing carpark building, and remnant foundations of historical commercial and workshop buildings that occupied the north-western and south-eastern portions of the site.

Noise and vibration, due to driving of sheet pile walls, piling and other construction activities, will be considered as part of the construction noise and vibration monitoring plan.

3 Applicability

This report has been prepared for the exclusive use of our client Precinct Properties Holdings Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement. The document is a summary of the assessments undertaken to support the Resource Consent Application and these should be referenced for any detailed review of findings.

Tonkin & Taylor Ltd

Report prepared by:	Authorised for Tonkin & Taylor Ltd by:
	
.....	.....
Ananth Balachandra Geotechnical Engineer	Peter Millar Project Director

8-Jul-24
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