RAMBOLL

ENVIRONMENT
& HEALTH

26 June 2023

DPT Operator Pty Ltd and DPPT Operator Pty Ltd c/- TSA Management Pty Ltd
Attn: Dawn Carroll
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By email: dawn.carroll@tsamgt.com

Dear Dawn

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Ref: 318001774

Audit Number: TO-111

RE: INTERIM AUDIT ADVICE LETTER NO. 1 - REVIEW OF COCKLE BAY PARK DEVELOPMENT PRELIMINARY REMEDIATION ACTION PLAN

1. INTRODUCTION

As a NSW Environment Protection Authority (EPA) accredited Contaminated Sites Auditor, on behalf of DPT Operator Pty Ltd and DPPT Operator Pty Ltd, I am conducting an Audit (TO-111) under the NSW *Contaminated Land Management Act 1997* (CLM Act) in relation to the Cockle Bay Park Development.

The site layout is shown on Attachment 1 and the site details are as follows:

- Site address: 241-249 Wheat Road (also given as 241-249 Sussex Street by SIX), Sydney NSW 2000
- Identifier: Lot 12 and 17 Deposited Plan (DP) 801770, Lot 60 and 65 DP1009964 and Part Lot 42 DP864696
- Site area: Approximately 21,000 m^2

The site is described as 241-249 Wheat Road, Sydney and currently comprises two buildings utilised for commercial purposes (cafés, restaurants and entertainment venues), air space above the Western Distributor and open space. Pedestrian footbridges provide connection with Darling Harbour and the Sydney Central Business District (CBD).

Existing structures are proposed to be demolished to allow construction of a new 43 storey commercial building on Cockle Bay Wharf and a landbridge over the Western Distributor freeway. The development will include landscaping and publicly accessible parks. Detailed excavations are required for the construction of lift pits, diesel tanks, pump room and fire water tank.

The audit was requested by City of Sydney Council (Council) in response to submissions regarding State Significant Development (SSD) 7684 Mod 1 and

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SSD 9978934. The letter from Council (dated 3 February 2023) requested that a NSW EPA Accredited Site Auditor review the preliminary Remedial Action Plan (RAP) prepared by Douglas Partners Pty Ltd (Douglas) (dated 27 May 2022) and prepare a Section B Site Audit Statement (SAS) or letter of interim audit advice (IAA) certifying that the RAP is practical and the site will be suitable after remediation for the proposed use.

This interim audit advice letter (IAA1) has been prepared to summarise an independent review of the suitability and appropriateness of the RAP in response to the request from Council.

1.1 Scope of Work

The scope of IAA1 included review of the following reports:

- 'Cockle Bay Marine Structures, Geotechnical and Geophysical Report', 27 March 2015, Coffey Geotechnics Pty Ltd (Coffey)
- 'Preliminary Site Investigation Report, Proposed Development at Cockle Bay Park, Preliminary Site Investigation', 25 August 2017, Coffey Services Australia Pty Ltd (Coffey) (*the PSI*)
- 'Report of Geotechnical Desktop Study, Proposed Cockle Bay Park, Darling Harbour, NSW', 25 August 2017, Coffey
- 'Cockle Bay Park, Historical Archaeological Assessment', August 2017, GML Heritage Pty Ltd (GML)
- 'Report on Contamination Investigation, State Significant Development, Development Application (SSD DA), Cockle Bay Park Redevelopment, 241-249 Wheat Road, Sydney', 15 October 2021, Douglas (*the CI*)
- 'Preliminary Remediation Action Plan, Cockle Bay Park Redevelopment, 241-249 Wheat Road, Sydney', 27 May 2022, Douglas (*the RAP*)
- 'Report on Geotechnical Investigation, Cockle Bay Park Redevelopment, 241-249 Wheat Road, Sydney', June 2022, Douglas
- 'Memorandum, Groundwater Monitoring, Cockle Bay Park Redevelopment, 241-249 Wheat Road, Sydney', 25 November 2022, Douglas

I have reviewed the key documents against the requirements of guidelines made or approved under Section 105 of the CLM Act, including the following:

- Chapter 4 Remediation of Land in the Resilience and Hazards State Environment Planning Policy (SEPP) 2021 (formerly known as SEPP 55) and NSW Department of Urban Affairs and Planning and NSW EPA (1998) '*Managing Land Contamination, Planning Guidelines SEPP 55 - Remediation of Land*'
- NSW EPA (2017) '*Guidelines for the NSW Site Auditor Scheme (3rd Edition)'*
- NSW EPA (2020) '*Contaminated Land Guidelines, Consultants Reporting on Contaminated Land'*
- National Environment Protection Council (NEPC) '*National Environment Protection (Assessment of Site Contamination) Measure 1999',* as Amended 2013 (NEPM, 2013).
- Australia and New Zealand Heads of EPAs (HEPA 2020) *'PFAS National Environmental Management Plan, Version 2.0'* (NEMP)

2. PREVIOUS INVESTIGATIONS

The Auditor has summarised relevant information from the previous investigations in the following sub-sections.

2.1 Site History

The PSI included a review of the site history and the earliest historical records indicate that the site was used for heavy industrial uses and a working dock from the late 1880s to the 1960s, including shipyard, timber yard, warehouse, engineering workshop and garage. Heavy industrial activities ceased in the 1960s when most of the buildings were demolished. Shipping dock uses were reported between the 1960s to the early 1980s. The western portion of the site was progressively reclaimed between the late 1880s to the 1980s. The Western Distributor was constructed in the 1970s. The site was redeveloped for primarily office, restaurant and retail use in the 1980s and 1990s.

The surrounding area was predominately used for heavy industrial purposes to support the working dock until around the early 1980s. The area to the east of the site was developed for office and retail uses in the 1980s.

The site surface is generally paved and has been occupied by cafés, restaurants and entertainment venues since the early 1990s. Based on information provided, and site observations, the PSI noted that the amount of chemicals that are currently stored on-site are restricted to general cleaning products and cooking oils. An automotive garage was also identified in the northern portion of the site.

2.2 Previous Results

The CI was the only previous investigation that included sampling of media (soil, groundwater and soil gas) for contamination. The CI scope of work included soil sampling from nineteen boreholes (W1 to W5, CW1 to CW7, SS1 to SS2, CP1 to CP2 and WD1 to WD3). Six boreholes (CW2, CW3, CW5, CW6, CP2 and SS2) were converted into groundwater monitoring wells and groundwater sampling and hazardous ground gas (HGG) screening was performed on the six monitoring wells. Sampling locations are shown on Attachment 1 and a summary of the results for the various media types (soil, groundwater and gas) are summarised below.

Due to the proposed development including commercial and public open space land uses, Douglas compared the results to criteria for both an open space and commercial/industrial land use.

Soil

Elevated concentrations of metals (copper, lead and zinc), polycyclic aromatic hydrocarbons (PAHs) and total recoverable hydrocarbons (TRH) were identified above the adopted human health and/or ecological criteria. Concentrations of BTEX (benzene, toluene, ethylbenzene and xylenes), organochlorine pesticides (OCP), organophosphate pesticides (OPP), polychlorinated biphenyls (PCB), volatile organic compounds (VOC) and phenols were below the laboratory limits of reporting in the samples analysed. No asbestos was observed or reported in the laboratory analysis. Given the presence of building demolition materials in the fill, such as concrete and bricks, Douglas considered there to be a high risk of asbestos being present in fill material.

Douglas reported that Tributyl tin (TBT) was detected in boreholes drilled over the harbour and it is likely that TBT is present sporadically within alluvial and fill materials along the shoreline.

Given the preliminary nature of the investigation and limited number of boreholes, Douglas recommended that further investigations be undertaken to characterise soils.

Groundwater

Elevated concentrations of metals (copper, lead, nickel, zinc and iron) were identified in groundwater, which Douglas considered were likely to be attributed to background concentrations associated with uncontrolled fill within the harbour foreshore area and urban runoff. Douglas noted that remediation of heavy metals in groundwater was not considered to be warranted, however will require consideration for dewatering and discharge purposes. Concentrations of TRH, chloroform and dieldrin were also detected above the laboratory limits of reporting in some groundwater samples, however, were generally below

the adopted assessment criteria for the commercial and public open space land use, except for dieldrin in groundwater collected from monitoring well SS2. Douglas noted that monitoring well SS2 was located in the north-eastern corner of the site, below the proposed land bridge and, given its location on the upgradient site boundary, the dieldrin contamination detected in this well may be derived from an up-gradient source. The Auditor notes that the dieldrin criteria adopted are of low reliability and for a freshwater receiving environment, and therefore may not be relevant to site conditions and receptors.

Douglas noted that detections of TRH in groundwater were not likely to be related to petroleum hydrocarbons and did not warrant remediation, however, may require consideration for dewatering and groundwater disposal.

Concentrations of VOC, BTEX, PAH, OPP, OCP, speciated phenols (including cresols) and TBT were below the laboratory limits of reporting and adopted criteria for groundwater.

Gas Screening

Gas screening was performed using a photoionisation detector (PID) and GA5000 gas meter. No methane was detected during the gas screening and Douglas considered that further assessment of bulk gases (landfill gases) was not warranted.

PID results were generally less than 2 parts per million (ppm) which indicated a low risk of volatile contamination. Slightly elevated PID readings were detected at CW6 (43.7 ppm) and CP2 (5.3 ppm). Douglas reported that these results indicated a potential source of volatile contaminants such as petroleum hydrocarbons in these two locations. It is also noted that CP2 is located on the eastern site boundary and CW6 is located in the northern portion of the site adjacent to the Western Distributor and both were drilled primarily for the purpose of designing the proposed land bridge. The proposed development does not include any new building structures in these locations. As the land bridge will be suspended over the Western Distributor, vapour intrusion risks to this element of the project are not considered to be relevant. If new buildings are proposed in the vicinity of these boreholes, then further vapour assessment may be warranted.

Douglas considered that further detailed soil gas investigations were not warranted, however, it was considered prudent to collect a Summa canister sample from CW6 to be tested for VOC and TRH.

2.3 CI Recommendations

Based on the results of the CI, Douglas considered that the site could be made suitable for the proposed commercial and open space development, subject to implementation of the recommendations below:

- Further detailed investigations should be undertaken within the proposed commercial tower and fire tank footprints following demolition of the overlying structures to confirm the contamination status
- Further waste classification assessment, particularly in the vicinity of W1, W5 and/or CP1 if materials are disturbed and excavated
- Additional high resolution acid sulfate soil investigations within the proposed excavation zones following demolition of the overlying structures. Alternatively further testing can be undertaken ex situ as materials are excavated
- Outside of the proposed excavation zones, an asbestos clearance and further contamination assessment (soil and groundwater) should be undertaken following the demolition of any structures by a licenced asbestos assessor.
- A destructive hazardous building material (hazmat) assessment should be undertaken prior to demolition on all structures

- Preparation of a soil management plan including an unexpected finds protocol to provide procedures to limit the impacts of disturbing soils around the harbour foreshore and manage unexpected contaminant finds such as asbestos
- Preparation of an environmental management plan to manage lead impacted soils below the concrete pavement in the vicinity of borehole CP1
- Preparation of an acid sulfate soil management plan (ASSMP)
- Preparation of a dewatering management plan to manage groundwater encountered during excavation works
- Further soil vapour assessment in the vicinity of CW6 and CP2 if building structures are proposed in this area.

2.4 Auditor's Opinion

Previous investigations have identified historical land uses with potential for contamination and the limited investigations identified contamination present in fill material and groundwater which requires remediation/management during development of the site. Investigations undertaken have been preliminary and data gaps have been identified which require further assessment.

Given the limited data available, a detailed RAP could not be prepared and as a result Douglas prepared a preliminary RAP outlining unexpected finds protocols and the recommended data gap assessment. The preliminary RAP has been reviewed by the Auditor in Section 3.

3. REVIEW OF THE PRELIMINARY RAP

The scope of the data gap assessment and the proposed remediation strategy documented in the preliminary RAP are discussed in the following subsections.

3.1 Data Gap Assessment

Section 4.3 of the RAP outlines the requirements for the proposed data gap assessment, which is summarised in Table 3.1.

Table 3.1: Summary of Data Gap Assessment Requirements in RAP

Site Location	Approximate Area (m^2)	Previous Locations	Proposed Number of Locations	Proposed Analysis
Tower	1,600	CW1, CW2P, CW3P	5 boreholes (2 converted to monitoring wells)	Analysis of soil for metals, PAH, TRH, BTEX, asbestos (500 mL samples for asbestos fines (AF) and fibrous asbestos (FA)), OCP, phenols Toxicity Characteristic Leaching Procedure (TCLP) as required Acid sulfate soil (ASS) screening and chromium reducible sulphur suite Groundwater sampling/analysis is included below
Fire Tank	700	CW5P	4 boreholes (2 converted to monitoring wells)	Analysis of soil for metals, PAH, TRH, BTEX, asbestos (500 mL AF/FA), OCP, phenols TCLP as required ASS screening and chromium reducible sulphur suite
Podium on Fill	3,500	CW4, CW6P, CW7	10 boreholes	Analysis of soil for metals, PAH, TRH, BTEX, phenols

Site Location	Approximate Area (m^2)	Previous Locations	Proposed Number of Locations	Proposed Analysis
Podium on Water	4,500	W1-W5, CW1	6 boreholes	Analysis of soil for metals, PAH, TRH, BTEX, asbestos (500 mL AF/FA), OCP, phenols, TBT TCLP as required ASS screening and chromium reducible sulphur suite
Land Bridge	10,000-11,000	CP1-CP2P WD1-WF2 SS1-SS2P	Determined based on the number and location of foundations/piles for the land bridge	Analysis of soil for metals, PAH, TRH, BTEX, asbestos (500 mL AF/FA), OCP, phenols TCLP as required ASS screening and chromium reducible sulphur suite
Existing and proposed new wells	-	-	-	Analysis of groundwater for metals, PAH, TRH, phenols and VOC, OCP, OPP, PCB, TBT, iron (total, ferric and ferrous), total suspended solids, and oil and grease

It is proposed that the data gap assessment is undertaken post-demolition. The boreholes will be extended to the top of bedrock or 1.0 m below the maximum depth of the proposed excavation/disturbance, whichever is least. The proposed sampling methodology was described in Appendix C of the RAP.

A minimum of three soil samples must be analysed from each soil test location. All ASS samples will be subject to field screening for field pH and pHfox (oxidized pH).

Based on the elevated PID readings detected during the gas screening in the CI, a soil vapour sample is proposed at CW6. This will include field screening for general gases and VOC using a GA5000 and PID and collection of a Summa canister sample (and replicate) for laboratory analysis of VOC and total petroleum hydrocarbons (TPH).

Douglas have noted that a data gap assessment report may be prepared in stages. If considered necessary based on the findings of the data gap assessment, a revised RAP will be prepared. This may include requirements to remediate specific sources of contamination, groundwater remediation requirements and/or capping strategies.

Auditor's Opinion: The scope of work outlined for the data gap assessment generally appears adequate to provide an assessment of contamination and address the data gaps/recommendations identified by Douglas and summarised in Section 2.3 of this IAA. It is noted that assessment for asbestos does not include 10 L samples and it is recommended that soil samples are assessed in accordance with NEPM (2013).

It also noted that assessment is proposed by boreholes. Inclusion of some test pits should be considered to allow better identification of asbestos and other indicators of contamination within fill material.

It is recommended that a sampling, analysis and quality plan (SAQP) is prepared for the data gap assessment, which is reviewed and endorsed by the Auditor prior to the data gap assessment works commencing. A report presenting the results of the data gap assessment should be prepared and reviewed by the Auditor prior to the preparation of an addendum or revision to the RAP.

3.2 Evaluation of RAP

The Auditor has assessed the RAP by comparison with the checklist included in NSW EPA (2020) *Contaminated Land Guidelines, Consultants Reporting on Contaminated Land*. The required extent of remediation (or management) of contamination at the site is currently uncertain, given the limitations in

access for appropriate intrusive investigations. The extent of remediation (or management) will be determined through a data gap assessment (discussed in Section 3.1). Soil (and groundwater if required) remediation would be undertaken following demolition of the existing structures and the data gap assessment. It is anticipated that a revised RAP will be prepared following completion of the data gap assessment.

Based on the existing data and proposed development, the remediation strategy will be to encapsulate fill material below a capping layer. Removal of potential sources of contamination via excavation and disposal may be required for construction purposes or where material presents an unacceptable risk to human health or the environment.

The requirement and/or nature of potential groundwater remediation will be determined based on the results of the data gap assessment.

Capping contamination onsite would require preparation and implementation of a long-term Environmental Management Plan (EMP) during occupation of the site. The RAP recommended that preparation of an EMP be made a condition of the development consent to make implementation legally enforceable. The EMP would be prepared following completion of remediation and development works.

Plans for contingency situations (e.g., encountering asbestos in fill), along with an unexpected finds protocol for dealing with unexpected finds during remediation work/earthworks, were included in Appendix E of the RAP.

A general site management plan (SMP) for the operational phase of site remediation was included in Appendix F of the RAP. The SMP included soil, noise, dust, work health safety (WHS), remediation schedule, hours of operation and incident response. The RAP notes that the remediation contractor is to implement the general SMP for the duration of remedial works by incorporating the plan into an over-arching construction environmental management plan (CEMP).

Auditor's Opinion: In the Auditors opinion, the preliminary RAP is generally adequate to inform additional assessment (data gap assessment) requirements and outline proposed remediation strategies for remedial planning purposes. Following completion of the data gap assessment, the RAP will require updating to include confirmed remedial extents, confirmation of the selected remedial strategy and detailed remediation aspects such as capping thickness. The Auditor notes that elevated concentrations of contaminants have been identified in the sediment of Cockle Bay below the podium and the CEMP will need to consider management measures for disturbance of sediments to minimise potential impact on receptors in Cockle Bay as a result of development works.

The SAQP, data gap assessment report and revised RAP will be reviewed by the Auditor prior to remediation and development of the site commencing.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

Previous investigations have identified historical land uses with potential for contamination and the limited investigations identified contamination present in fill material and groundwater which requires remediation/management during development of the site. Investigations undertaken have been preliminary and data gaps have been identified which require further assessment.

Given the limited data available, a detailed RAP could not be prepared and as a result Douglas prepared a preliminary RAP outlining unexpected finds protocols and the recommended data gap assessment. Based on the existing data and proposed development, the remediation strategy will be to encapsulate fill material below a capping layer. Removal of potential sources of contamination via excavation and disposal may be required for construction purposes or where material presents an unacceptable risk to human health or the environment. The preliminary RAP is generally adequate to inform additional

assessment (data gap assessment) requirements and outline proposed remediation strategies for remedial planning purposes. The remedial strategy outlined in the preliminary RAP is practical in the context of the proposed development and the data available, and it is considered that the site can be made suitable for the proposed site use if the recommendations below are addressed.

The data gap assessment will be undertaken following demolition of existing structures. The RAP will require updating to include confirmed remedial extents, confirmation of the selected remedial strategy and detailed remediation aspects such as capping thickness. At completion of the development, a validation report and long-term EMP will be prepared by the environmental consultant.

4.2 Recommendations

The Auditor makes the following recommendations:

- The environmental consultant should prepare a SAQP for the proposed data gap assessment works outlined in RAP. The SAQP should be reviewed and endorsed by the Auditor prior to the data gap assessment works commencing.
- Following completion of the data gap assessment, a report documenting the findings should be provided to the Auditor for review.
- An updated RAP should be prepared based on the findings of the data gap assessment and addressing comments in this IAA. The updated RAP should be provided to the Auditor for review prior to remediation commencing.
- After successful implementation of the revised RAP, a validation report should be prepared by the environmental consultant documenting the remediation and validation completed and concluding on the suitability of the site for the proposed use.
- If the remedial strategy includes capping/containment of contamination onsite, an EMP should be prepared documenting long-term management requirements.
- A SAS and SAR is to be prepared assessing the suitability of the site for the proposed use, as well as any long-term management requirements.
- To ensure remediation, validation and long-term management are completed satisfactorily, it is recommended that the following are made conditions of development consent:
    - Preparation of a SAS and SAR prior to occupation
    - Implementation of an EMP during occupation (if required)

5. LIMITATIONS

This interim audit advice was conducted on behalf of DPT Operator Pty Ltd and DPPT Operator Pty Ltd for the purpose of assessing the suitability and appropriateness of a preliminary remedial action plan (RAP). This summary report may not be suitable for other uses.

The Auditor has relied on the documents referenced in Section 1 in preparing the Auditor's opinion. The consultants included limitations in their reports. This interim audit advice must also be subject to those limitations. The Auditor has prepared this document in good faith but is unable to provide certification outside of areas over which the Auditor had some control or is reasonably able to check. If the Auditor is unable to rely on any of those documents, the conclusions of this interim audit advice could change.

It is not possible to present all data which could be of interest to all readers of this interim audit advice. Readers are referred to the referenced reports for further data. Users of this document should satisfy themselves concerning its application to, and where necessary seek expert advice in respect to, their situation.

* * *

Consistent with the NSW EPA requirement for staged 'signoff' of sites that are the subject of progressive assessment, remediation and validation, I advise that:

- This advice letter does not constitute a Site Audit Report or Site Audit Statement.
- At the completion of the remediation and validation I will provide a Site Audit Statement and supporting documentation.
- This interim advice will be documented in the Site Audit Report.

Yours faithfully
Ramboll Australia Pty Ltd

Tom Onus
EPA Accredited Site Auditor 1505

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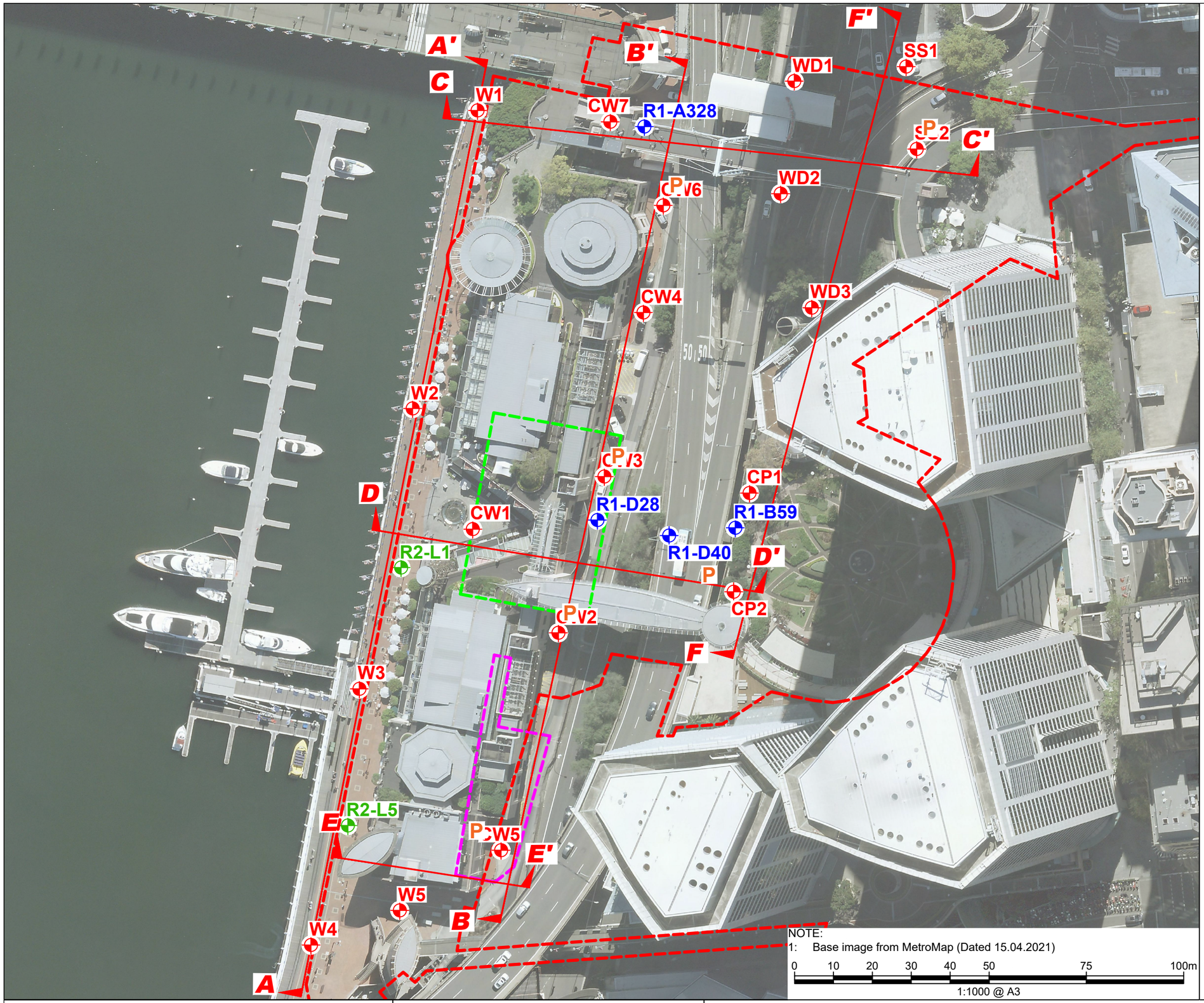
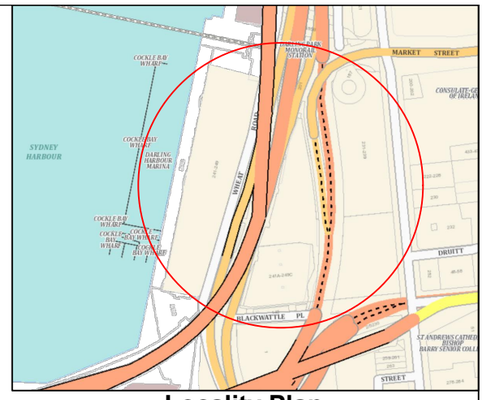
Attachments: 1 Site Layout, Site Location and CI Sample Location Plan

Attachment 1: Site Layout, Site Location and CI Sample Locations





Locality Plan

NOTE:
1: Base image from MetroMap (Dated 15.04.2021)

0 10 20 30 40 50 75 100m

1:1000 @ A3

LEGEND

- Approximate Proposed Development Outline
- Approximate Tower Outline
- Approximate Proposed Bulk Excavation Outline
- Borehole Location, Current Investigation
- Borehole Location, Coffey, 1971
- Borehole Location, Coffey, 1985
- P Standpipe Piezometer
- Geological Cross Section

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: DPT Operator Pty Ltd		TITLE: **Test Location Plan** **Cockle Bay Park Redevelopment** **241-249 Wheat Road, Sydney**
OFFICE: Sydney	DRAWN BY: MG	
SCALE: 1:1000 @ A3	DATE: 12.10.2021	

N

PROJECT No:	202546.00
DRAWING No:	1
REVISION:	2