Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Environmental, Construction and Management Plan

Proposed PLC Hotel Development
1 Eels Place, Parramatta

Prepared for
APP Corporation Pty Ltd

Project 94523.00
December 2018

Douglas Partners
Geotechnics / Environment / Groundwater

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

	Signature	Date
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Report on Environmental, Construction and Site Management Plan
Proposed PLC Hotel Development
1 Eels Place, Parramatta

1. Introduction

1.1 General

This Environmental, Construction and Site Management Plan (ECSMP) outlines the methods and procedures that will be used to manage the soil and groundwater aspects of the construction of the proposed Parramatta Leagues Club (PLC) hotel development at 1 Eels Place, Parramatta (the site).

Douglas Partners Pty Ltd (DP) has been commissioned by APP Corporation Pty Ltd (APP) on behalf of the Parramatta Leagues Club to prepare this ECSMP which is required to support a development application for the site.

DP understands that NSW Department for Planning and Environment have issued a Secretary's Environmental Assessment of Requirements (SEARS) for the preparation of an Environmental Impact Statement (Application Number SSD8800 dated 6 November 2017). Section 19 of the SEARS includes the following:

"19. An Environmental and Construction Management Plan for the proposed works, and include

- *Community consultation, notification and complaints handling;*
- *Impacts of construction on adjoining development and proposed measures to mitigate construction impacts;*
- *Noise and vibration impacts on and off site;*
- *Water quality management for the site;*
- *Construction waste classification, transportation and management methods in accordance with DECCWs Know Your Responsibilities; Managing Waste for Construction Sites Guideline."*

The ECSMP has been developed based on the results of previous assessments undertaken by Douglas Partners Pty Ltd (DP) and Environmental Investigation Services (EIS), and has been prepared with reference to the NSW EPA 'Guidelines for Consultants Reporting on Contaminated Sites' (NSW OEH 2011).

It is expected that the contractor will necessarily have to carry out a ECSMP once specific construction logistics are known. Once these details are known and resolved by the contractor a separate ECSMP will need to be developed. Therefore, this ECSMP details are preliminary only providing broad details required by the SEARS with a specific focus on the soils management.

A Geotechnical Report, an Asbestos Management Plan (AMP) and Remediation Action Plan (RAP) were being prepared concurrently with this ECSMP. References to these reports are provided

throughout this report. For detailed comment about the relevant aspects these reports should be reviewed.

1.2 Objectives

The objectives of this ECSMP are as follows:

- Provide a methodology for fill placement/reshaping;
- Provide a methodology for fill construction;
- Provide recommendations on site preparation and earthworks; and
- Provide recommendations on excavations and groundwater;

One of the project objectives is to manage the waste soils and potential groundwater within the site in an acceptable manner, with minimal environmental impact, to a condition suitable for the proposed commercial land use. This ECSMP provides a strategy for site management which:

- Minimises impacts from the remediation works on the environment and on public health and safety;
- Maximises the protection of workers involved with site management;
- Renders the site suitable for the land use and addresses identified potential exposure pathways to contaminants; and
- Minimises impacts on the local environment during the works.

This document also provides an outline working plan for the excavation, stockpiling, remediation and management of soil, water and sediment.

2. Site Description

The site is identified as part Land Crown Plan 80-3000. The street address is 1 Eels Place, Parramatta. The site is shown on the “Site Plan” developed by Hassel provided on Drawing 1 (Appendix B).

The site is irregular in shape, covers an area of approximately 0.3 hectares, and is located on reasonably level ground with surface levels on the site typically around12 m relative to Australia Height Datum (AHD).

At the time of previous investigations, the site comprised a car park constructed of asphaltic concrete pavement and was bounded by Parramatta Leagues Club (PLC) to the northeast, PLC multi-story carpark to the northwest, Ross Street Gatehouse to the south east, Western Sydney Stadium to the south and open space to the south-west.

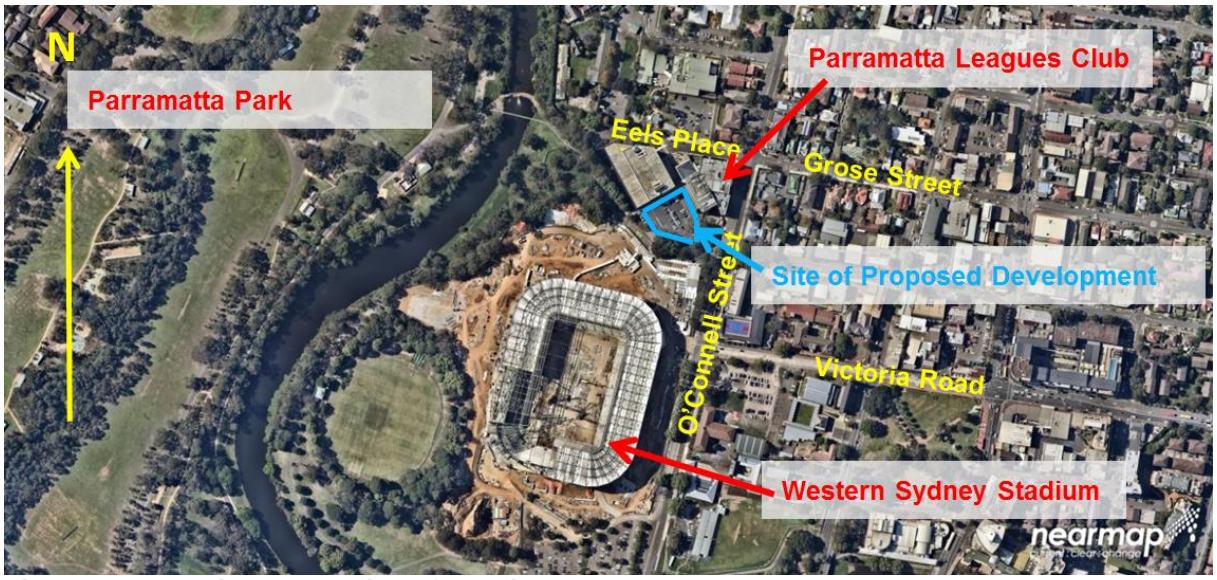


Figure 1: Approximate Location of Development

3. Proposed Development

Following a review of the client supplied return brief for the proposed development, the proposed development will involve the construction of a 17 storey hotel building with a single level basement. The building footprint extends beyond the basement footprint on its western side. Additional fill material will be required on the western side to build up existing ground surface levels to the underside of the floor slab.

From information provided, the basement floor level is at RL 10.0 m AHD, lower ground floor is at RL 12.35 m AHD and upper ground floor at RL 13.8 m AHD. Based on these levels bulk excavation to depths in the order of 3.5 m is proposed. The basement footprint is not expected to extend to the site boundaries. The basement will include storage, locker rooms and laundry facilities.

The layout of the proposed development is shown on Drawing 1 (Appendix A).

The development is proposed to include the upgrade of existing areas surrounding the proposed hotel building to integrate with existing infrastructure.

4. Reference Documents

4.1 Geotechnical Investigation

The following provides a list of previous relevant geotechnical reports undertaken at the site by JK Group and DP (discussed in Section 5):

- JK Geotechnics - Report to Parramatta Leagues Club on Stage 2 Geotechnical Investigation for Proposed Multi-storey Car Park at Parramatta Leagues Club, Grose St, Parramatta NSW REF: 28152SBrpt2, 8 July 2015.

- JK Geotechnics – Report to Parramatta Leagues Club on Geotechnical Investigation for Proposed Extensions to Leagues Club at Parramatta Leagues Club, Grose Street, Parramatta, NSW, REF: 28152SBrpt3, 27 July 2015.
- DP - Report on *Geotechnical Investigation Proposed PLC Hotel Development, 1 Eels Place, Parramatta*, DP Ref: 94523.00,R.001.Rev1, dated 6 December 2018 (DP, 2018a);

A summary of the ground conditions is included in Section 5.1.

4.2 Contamination Assessments

The following provides a list of previous relevant environmental reports undertaken at the site by Environmental Investigation Services (EIS) and DP:

- EIS - Report to Parramatta Leagues Club, Preliminary Environmental Site Assessment for a Proposed Multistorey Car Park at Parramatta Leagues Club, O'Connell Street, Parramatta NSW, REF: E28152KHrpt, 18 March 2015 (EIS, 2015a);
- EIS - *Report to Parramatta Leagues Club, Stage 2 Environmental Site Assessment for a Proposed Multistorey Car Park at Parramatta Leagues Club, O'Connell Street, Parramatta NSW*, REF: E28152KHrpt2, 9 July 2015 (EIS, 2015b);
- DP - Report on *Detailed Site Investigation Proposed PLC Hotel Development, 1 Eels Place, Parramatta*, DP Ref: 94523.00.R.002.Rev1, dated 6 December 2018 (DP, 2018b).
- DP – Report on *Remediation Action Plan,* Proposed PLC Hotel Development *1 Eels Place, Parramatta*, DP Ref: 94523.00.R.003.Rev0, dated 7 December 2018 (DP, 2018c).
- DP – Report on *Asbestos Management Plan,* Proposed PLC Hotel Development *1 Eels Place, Parramatta*, DP Ref: 94523.00.R.004.Rev0, dated 7 December 2018 (DP, 2018d).

A summary of the findings are included in 5.2.

4.3 Civil and Archaeological Assessments

The following other consultant reports have also been prepared and discussed within this report:

- Taylor Thomson Whitting (NSW) Pty Ltd (TTW) Report on Civil Stormwater and Flooding for Parramatta Leagues Club Hotel dated 4 December 2018, REF 171558 (TTW, 2018a).
- TTW Report on Flooding and Stormwater Drainage for Parramatta Leagues Club Hotel dated 4 December 2018, REF 171558 (TTW, 2018b).
- Austral Archaeology Pty Ltd (Austral) on Aboriginal Due Diligence and Historical Archaeological Assessment for Parramatta Leagues Club Hotel Development dated 18 November 2018 REF 1812 (AA, 2018a).
- The Transport Planning Partnership (TTPP) Transport and Accessibility Impact Assessment for Parramatta Leagues Club Hotel dated 29 November 2018.

5. Background

5.1 Geology and Groundwater

The investigations indicated that the site is underlain by filling to depths of up to 0.6 m overlying natural soils to depths of 3.0 m to 4.8 m and then bedrock (Mittagong Formation the Hawkesbury Sandstone) which progressively increases in strength with depth.

The groundwater level was not able to be measured in the current investigations, however, groundwater levels but have previously been measured at RLs 8.3 to 8.5 m AHD. DP's measurements on-site and experience in the area indicate that the groundwater levels are generally below RL 8.5 m AHD. JK measured recorded one groundwater reading at RL 10.2 m but indicated in their report that this reading was considered anomalous. It is expected that the groundwater during the current investigation was locally deeper due to generally dry climate conditions. It is expected that groundwater seepage will occur at, or near, the soil/rock interface and along bedding planes and joints within the rock. Groundwater levels could change with variations in climatic conditions. Based on the local topography, groundwater is anticipated to flow downslope to the west or south-west towards the Parramatta River.

The site is located close to an area mapped as Acid Sulfate Soils (ASS). Testing of site soils did not indicate that ASS is present on-site but that the site soils are acidic and require appropriate management strategies.

5.2 Contamination

The site history review identified that the site has a history of open space recreation since prior to 1943 to prior to 1965 when the site was used as a car park. The surrounds have a history of commercial, recreational and residential land use activities since prior to 1943 up to present day. Previous investigation by EIS has also identified friable asbestos on-site.

Based on the site history and previous information a preliminary conceptual site model was prepared which identified potential contamination sources such as hazardous building materials, car park related activities, imported fill, off-site petrol station and dry cleaners.

The chemical and asbestos analysis indicated the following:

- Samples analysed for Benzene, Toluene, Ethylbenzene and Xylene (BTEX), Organochlorine (OCP), Organophosphorus (OPP), phenols, Polychlorinated biphenyl (PCB) and polycyclic aromatic hydrocarbon (PAH) were below the site assessment criteria (SAC). All samples recorded metals concentrations below the SAC except for some exceedances of the ecological investigation limits for copper and nickel.
- Trace asbestos was reported at one location in the fill.
- Soils were tested for Acid Sulfate Soils (ASS). The soils were not ASS but were acidic.

The investigation has identified asbestos and elevated copper and nickel in the fill. These potential areas of environmental concern will need to be managed during the development of the site.

The fill at the site classifies as Special (Asbestos) Waste – General Solid Waste (non-putrescible) and the natural soils, which are acidic, have been preliminarily classified as General Solid Waste.

Further investigation of groundwater at the site is not required unless plans for development change to extend beyond the proposed 3.5 m depth below current ground level.

DP (2018b) recommended that a remediation action plan (RAP) is prepared with reference to NSW OEH, *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites* (OEH, 2011).

The RAP DP (2018c) included the following:

- Assessment and management of the extent of asbestos impacted filling;
- Assessment and management of filling to remain on site;
- Assessment and management of acidic soils; and
- An unexpected finds protocol to manage contamination encountered during the works.

The Asbestos Management Plan includes comments on the management of asbestos finds on-site.

5.3 Flooding

The TTW reports indicate that the site carpark is 4.2 m above the 100 year flood level. The TTW report recommended that construction works comply with the "Blue Book" erosion and sediment control measures.

5.4 Archaeology

The Austral report made the following conclusions:

"On the basis of the GML Heritage testing programme, the study area is not considered to contain any Aboriginal cultural material.

It is concluded that there are varying degrees of historical archaeological potential and sensitivity within the study area relating to the location of the Mud Lodge. The archaeological remains of this structure and any associated deposits, should they be present, are considered to be of State significance. The proposed development will have a major impact across the majority of the study area, and as such, archaeological testing is required to militate against the proposed harm.

In terms of Aboriginal cultural material, the assessment has determined that the study area is unlikely to contain Aboriginal cultural material. As the SEARs only requires consultation with Aboriginal stakeholders "where Aboriginal cultural values are identified, the absence of potential has meant that no consultation has been undertaken."

The report then provided the following recommendations:

1) *Given that parts of the study area have been assessed as having archaeological potential and relics of State significance may be impacted during the proposed construction works, the*

proponent is required to undertake archaeological testing and, if required, salvage excavations prior to development commencing. A suitably accredited archaeologist who is approved by the Heritage Division to oversee the excavation of sites of State significance will need to be appointed as Excavation Director.

2) *Archaeological excavations should be undertaken in accordance with the methodology outlined in Section 11 of this assessment.*

3) *In the event that historical archaeological relics not assessed or anticipated by this report are found during the works, all works in the immediate vicinity are to cease immediately and the Heritage Division be notified in accordance with Section 146 of the NSW Heritage Act 1977. A qualified archaeologist be contacted to assess the situation and consult with the Heritage Division regarding the most appropriate course of action.*

4) *In the event that Aboriginal archaeological material or deposits are encountered during earthworks, all works affecting the material or deposits must cease immediately to allow an archaeologist to make an assessment of the find. The archaeologist may need to consult with the Office of Environment and Heritage and the relevant Aboriginal stakeholders regarding the fined.*

5) *Should the proposed development be altered significant from the proposed design considered in this assessment, then a reassessment of the heritage/archaeological impacts may be considered. This includes impacts not explicitly stated in Section 9 and includes the installation of any subsurface services."*

Reference to the Austral report should be made for detailed comment. Particular care will need to be made with respect to integration the requirements of DP's RAP and AMP with archaeological considerations.

5.5 Transport and Accessibility

The TTPP report provides an assessment of the transport and accessibility impacts of the proposed development.

6. Sequence of Work

The likely sequence of works, in broad terms, is provided below. These works may occur concurrently or in a different order in accordance with the construction program of the contractor. These works include:

- Site establishment;
- Archaeological assessment;
- Decommissioning and removal of service lines;
- Removal of asbestos contaminated fill as per the RAP;
- Installation of retaining systems;
- Bulk excavation to achieve the bulk excavation levels;
- Installation of services;

- Placement and compaction of fill;
- Installation of drainage systems;
- Construction of footings and finished floor slabs;
- Construction of the building structure, services; and
- Construction of pavements, landscaping areas and other external works.

DP notes that the likely sequence of the early works, and the corresponding management and validation protocols are listed in the following sub-sections.

DP notes that inspection of all services and trenches (including archaeological digs, service trenches etc.) should be undertaken to identify whether they contain hazardous building materials. Until fill material can be validated to confirm that it does not contain hazardous materials or is removed then all fill material must be considered to be contaminated with hazardous materials and the protocols listed in the RAP and AMP to be followed.

It is understood that the preliminary site layout is as outlined in Figure 1. The site layout is to be determined by the contractor. Accordingly, the site layout could change and is an example of the type of structure the proposed development will have during construction.

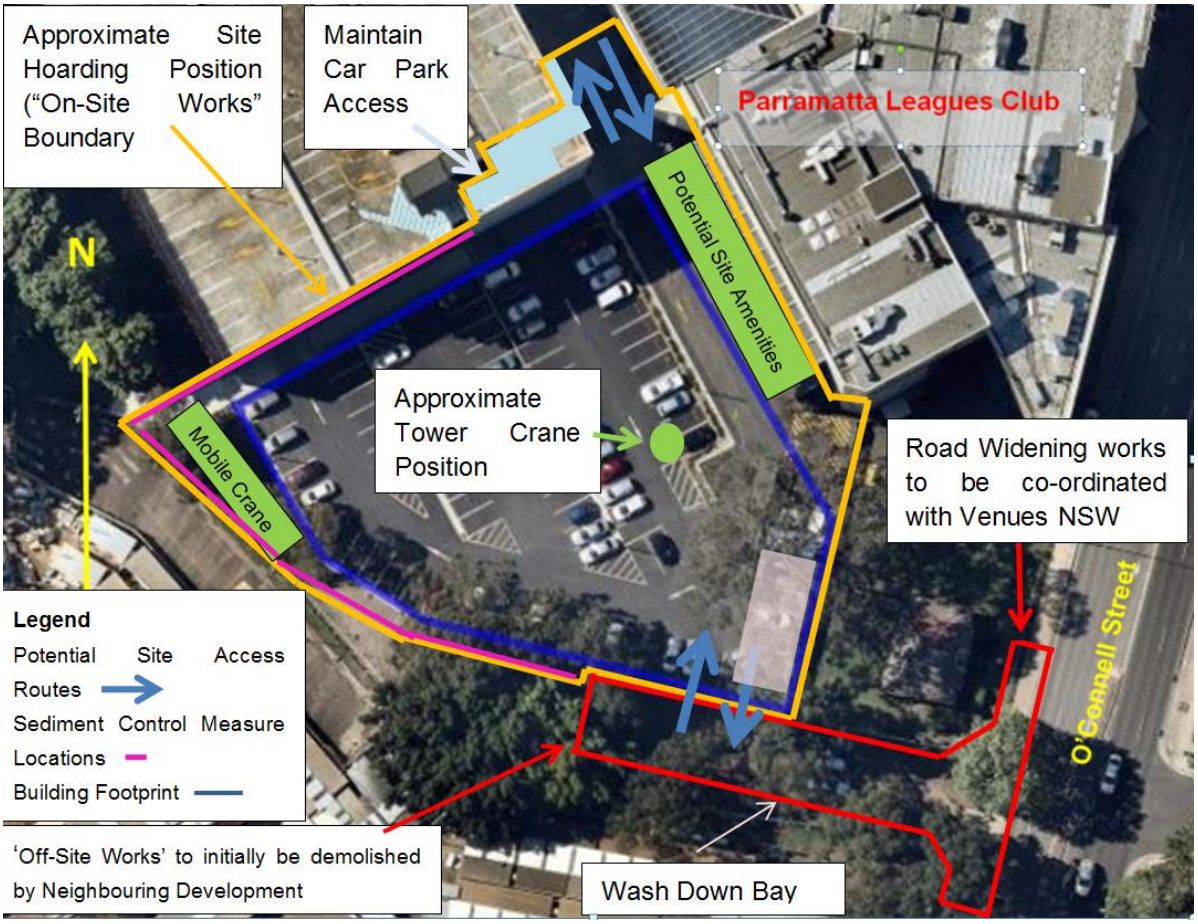


Figure 2: Example of Approximate Site Layout (Note: Subject to change).

6.1 Archaeological Investigations

Archaeological investigations must be undertaken across the site for the purpose of identifying significant historical and Aboriginal archaeological finds in accordance with the Austral report. Reference to the Austral report must be carried out for detailed comment.

The following sub-sections provide details on the recommended contamination and geotechnical safety measures to be adopted during the archaeological digs.

6.1.1 Personal Protective Equipment (PPE)

Reference to Section 9 should be made with respect to PPE for excavations associated with archaeological works and in particular Section 9.5 regarding excavations in asbestos impacted materials.

6.1.2 General Site Initiation Works

Prior to test trenching works, the following will be conducted

- The area is to be cleared of services first as per the required legislation and DBYD requirements. DP notes that there will be live services onsite at the time of the excavations;
- Mark out proposed test pit area with star pickets and confirm with DP whether the proposed area is within a remediation area;
- Careful segregation of material is required to ensure no cross contamination of material with difference waste classifications;
- The works will be undertaken under the environmental management, worker health and safety protocols and unexpected finds protocol (UFP) outlined in Section 12 of this report; and
- If there are surplus soils, or soils determined under the UFP to require off-site disposal, DP will conduct a waste classification to inform the off-site disposal requirements.

DP will conduct regular inspections during the works to observe the composition of the soils being disturbed through the digs, and to document compliance with the environmental management, worker health and safety protocols and UFP.

6.1.3 Stockpiling and Reinstating Archaeological/ Remediation Areas

The following process is required to be undertaken in identified remediation areas so that the remediation works to be undertaken at a later date are not adversely hindered:

- Preparation of adjacent surfaces for stockpiling, preferably on impermeable materials, away from any areas used by visitors or workers;
- Where turf or hardstand is removed from remediation areas, these will need to be replaced with an equivalent barrier such as turf, gravel, concrete or bitumen;
- Material will be removed and segregated in stockpiles of similar material including fill and natural substrate. The DP representative will assist in delineation;

- All stockpiles of soil shall be appropriately covered and weighted to minimise the potential for wind or rain erosion; and
- If the excavated soils are to be used for backfilling the trenches, the materials will be replaced in the reverse order of excavation. Once backfilled, appropriate surface cover, as stated above, will be applied.

Other management of stockpiles should be undertaken according to the requirements outlined in Section 9.1.

6.2 Remediation

The RAP outlines the remediation works for soil remediation on-site for both asbestos impacted soils and acidic soils. The remediation contractor must reference the RAP for specific remediation and validation requirements.

The EC will validate the completion of remediation in accordance with the RAP.

6.3 Working Platforms

Working platforms are required for all site equipment applying a load or pressure to existing soils. Site equipment, includes cranes, piling rigs, boom-pumps, scissor lifts or any scaffolding. The suitability of the working platform to support the load needs to be carried out on a case-by-case basis and verified by a suitably qualified geotechnical engineer.

6.4 Excavation Works

All excavation works on-site, including remediation works, excavation for the installation of services, drilling activities, bulk and detailed excavation should be appropriately battered or supported by retaining walls, confirmed by a structural engineer to be suitable to support the applied loads as outlined in DP's geotechnical report (DP, 2018a).

DP's geotechnical report suggested maximum temporary and permanent batter slopes for unsupported internal excavations up to a maximum height of 3 m are shown in Table 1 below. These values assume that no surcharge loads are placed near the top of the batters.

Table 1: Recommended Safe Batter Slopes for Exposed Material

Exposed Material	Maximum Temporary Batter Slope (H : V)	Maximum Permanent Batter Slope (H : V)
Filling and natural clay	1.5 : 1	2 : 1
Extremely low to very low strength rock	1 : 1	2 : 1

Any soil or rock batter slopes that are exposed will require protection from erosion. Protection may include a mesh-reinforced shotcrete pinned to the excavation face with dowels. Drainage will need to be installed behind the shotcrete to intercept any seepage.

6.5 Pavement Reconstruction after Laying of the Services

The works will be undertaken under the environmental management, worker health and safety protocols.

7. Roles and Responsibilities

7.1 Regulations

All works must be also undertaken in accordance with the relevant regulatory criteria, including *inter alia*:

- NSW *Work Health and Safety Act* 2011 (WHS Act);
- NSW *Work Health and Safety Regulation* 2011 (WHS Regulation);
- NSW *Contaminated Land Management Act* 1997;
- *National Environment Protection Measures 2013 (NEPM)*;
- *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (WA DoH 2009);
- SafeWork NSW: *Code of Practice How to Manage and Control Asbestos in the Workplace September 2016*; and
- SafeWork NSW: *Code of Practice How to Safely Remove Asbestos September 2016.*
- *POEO Act,*
- *Dangerous Goods Act* 2008;
- *Work Health and Safety Act* 2011;
- *Work Health and Safety Regulation* 2011;
- *Water Management Act* 2000 and any related requirements specified by EPA; and
- DUAP EPA (1998) *State Environmental Planning Policy No. 55* (SEPP 55).

In addition, reference to DECCWs *Know Your Responsibilities: Managing Waste from Construction Sites Guidelines* must be made by the contractor during the works.

7.2 General

A summary of the roles and responsibilities under this ECSMP is outlined below in Table 2.

Table 2: Roles and Responsibilities

Role	Responsibility
Principal and Principal's Representative (PR)	• Ensuring this ECSMP is appropriately implemented; • Nominate a representative (the Principal's Representative - PR), who is responsible for overseeing the implementation of this ECSMP; • Ensuring the ECSMP is accepted by the consent authority; • Engages persons or companies as required to implement this ECSMP; • To obtain specific related approvals as necessary to implement the earthworks, including for example, permits for removal of asbestos-containing materials, SafeWork NSW notification, etc.; • Notification to Council of planned commencement of remediation works, if required under the development consent.
Principal Contractor (PC) and Site Manager	• Responsible for the day-to-day implementation of this ECSMP during early works program. It is noted that the PC may appoint appropriately qualified sub-contractors or sub-consultants to assist in fulfilling the requirements of the procedures; • The PC will nominate a Site Manager who will be responsible for day to day site management and first response to any unexpected finds encountered during works; • Notify the Archaeologist when surface scraping is scheduled to ensure they are present on-site to inspect uncovered areas; • Notify the Environmental Consultant if materials are proposed to be imported to the site; • Notify the Principal and Environmental Consultant in the event of an unexpected find.
Archaeological Consultant (Historical and Aboriginal)	• *A* suitably accredited archaeologist to oversee excavation works as outlined in the Austral report; • Archaeologist to determine strategy for finds, for example – record and maintain (protection layer), expose photograph and remove items to keep, or expose, photograph/document and demolish; • Surplus Archaeologist returns to be stockpiled for waste classification/disposal to an appropriate receiving facility/site.
Environmental Consultant (EC)	• Inspect and document early works to assess compliance with the ECSMP, RAP and AMP; • Oversee and validate remediation of areas identified in the RAP; • Waste classification of surplus soils, if required;

Role	Responsibility
	• Validate imported materials in accordance with the RAP; • Provision of a validation report detailing the works undertaken to render the site suitable for the proposed development. • Provision of a validation report detailing the works undertaken to render the site suitable for the proposed development. • Attend to unexpected finds when required;
Occupational Hygienist (OH)	An Occupational Hygienist may be engaged, for example to assist with WHS issues related to the odorous soils and asbestos related works. The Occupational Hygienist, depending on the nature of the engaged works, may also be responsible for: • Where appropriate updating site management plans, WHS plans and advice on request by the Contractor; • Undertaking inspection post demolition works; • Undertaking inspections of odorous soils and associated pile holes and excavations; • Undertaking air monitoring of the work area (pile holes, excavation etc.) for odours and air quality; • Undertaking odour monitoring on the site boundary (if requested); • Undertaking airborne asbestos monitoring and asbestos clearance inspections (if required); • Providing advice and recommendations arising from monitoring and/or inspections; and • Notifying their client with the results of any assessments and any observed non-conformances in a timely manner. Note: The Environmental Consultant and Occupational Hygienist can be the same entity.
Geotechnical Consultant	• Geotechnical Inspections of retaining walls, site preparation works and footings as required
Asbestos Contractor	• Handling of fill materials (contaminated or otherwise) including excavations, stockpiles, segregation, placement, compaction, and disposal of excess fill materials. Considering the presence of FA/AF, all remediation works involving fill at the site must be undertaken by a licensed SafeWork NSW Class A – Asbestos Removalist. • The Asbestos Contractor can be the same as the Principal Contractor.
Site Workers	All workers on site are responsible for observing the requirements of this and other management plans. These responsibilities

Role	Responsibility
	include the following: • Being inducted on site and advised of the general nature of the remediation/environmental issues at the site; • Being aware of the requirements of this plan; • Wearing appropriate PPE; • Only entering restricted areas when permitted; and • Requesting clarification when unclear of requirements of this or any other plans (e.g. SWMS).

Prior to the commencement of remediation, a site meeting between the main contractor, PR, geotechnical and environmental consultant, and the archaeologist be carried out to confirm responsibilities and procedures in accordance with the agreed management plan.

7.3 Legally Required Notifications

All works relating to asbestos remediation shall be undertaken by an appropriately licensed asbestos contractor (Class A). All works must comply with all NSW legislative requirements including (but not limited to) all SafeWork NSW requirements, notification of works to SafeWork NSW five days prior to work commencing, preparation and implementation of an appropriate Work Method Statement, wearing of appropriate PPE and air monitoring for asbestos fibres.

The PC and/or the Site Manager, is to notify workers, health and safety representatives, Contractors, providing details of the date, time and location of the removal works before they start as well as ensuring the Safe Work Method Statement (SWMS) is adequate for the works to be undertaken.

7.4 Community Notifications

Community consultation is to be handled by the Principal Contractor (PC). The PC will nominate an on-site contact to act as the liaison for any enquiries or complaints (refer Section 7.5 below).

Notifications of residents and businesses in the area nominated under the development conditions must be taken out in advance of site works. The notification must include the following

1) Summary of site works.
2) Contact information including emergency site contacts.
3) Proposed hours of work.
4) A contact procedure for any enquiries or complaints.

7.5 Complaints Handling

Complaints handling and enquiries are to be handled by the PC. The PC will nominate an on-site contact to act as the liaison for any complaints. In the event that a member of the public approaches works crews to make an enquiry or complaint the person will be directed to the nominated site contact.

A register of complaints must be developed by the contractor. The register must include the following information:

- Date and time of complaint;
- Name and contact details of complainant;
- Details of complaint; and
- Supporting documentation (where provided).

Where a breach of NSW law or a statutory provision the PC must notify the relevant authority as soon as possible. The Project Manager must also be notified as soon as possible.
Where necessary, the PC or PR will respond to the complainant.

7.6 Emergency Contact List

An emergency contact list is to be developed by the contractor prior to construction commencing. An example list is provided in Table 3 below.

Table 3: Example Emergency Contact List

Name	Contact Details
Emergency Services: Fire Brigade, Ambulance and Police	000
Nearest Medical Centre	Parramatta Medical Centre on corner of Church Street and Victoria Road, Parramatta (02) 9762 1041
Nearest Hospital	Westmead (02) 8890 5555
EPA	(02) 9995 5000
Parramatta Council	1300 617 058
Water Authority	13 20 90
Energy Australia	13 34 66
AGL	13 12 45
Waste Disposal and spill clean up services	To be advised
Neighbours	To be advised
Site Contact (PR)	To be advised
Environmental Consultant (EC)	To be advised

Name	Contact Details
Historical Archaeologist – GML Heritage	
Aboriginal Archaeologist – Mary Dallas Consulting Archaeology	
Occupational Hygienist	To be advised

8. Work Health and Safety Plan - Soil

8.1 Introduction

All site work must be undertaken in a controlled and safe manner with due regard to potential hazards, training and safe work practices. The work should comply with WH&S policies specified by the relevant Authorities. It is recommended that the contractor prepares a project-specific environmental management and WH&S plan to supplement the measures presented in this ECSMP.

8.2 Personnel and Responsibilities

Before undertaking works on site, all personnel will be advised of the officer responsible for implementing health and safety procedures. All personnel should read and understand the Work Health and Safety Plan prior to commencing site works. Contractors employed at the site will be responsible for ensuring that their employees are aware of, and comply with the requirements of the safety plan.

The PC is responsible for all on-site activities including handling of fill materials – excavation, stockpiling, segregation, placement of fill, disposal etc.

8.3 Hazards at the Site

8.3.1 Chemical Hazards

Chemical compounds or substances that may be present on site include asbestos and petroleum hydrocarbons.

The possible risks to site personnel associated with the above analytes include:

- Ingestion of contaminated soil or water;
- Dermal contact with contaminated soil or water; and
- Inhalation of dusts or aerosols containing contaminants.

8.3.2 Physical Hazards

Potential hazards associated with the works may include but not limited to the following:

- Heat exposure;
- Excavations;
- Buried services;
- Noise;
- Dust;
- Electrical equipment; and
- Heavy equipment and truck operation.

8.4 Safe Work Practices

Personnel will endeavour, wherever possible, to avoid direct contact with potentially contaminated material. Surface or groundwater should not be ingested or swallowed, and direct skin contact with soil and water should be avoided.

Subject to the site controller's requirements, all personnel on site will be required to wear the following protection at all times:

- Steel-capped boots and high visibility clothing;
- Safety glasses or safety goggles with side shields meeting AS 1337-1992 requirements (as necessary);
- Hard hat meeting AS 1801-1997 requirements; and
- Hearing protection meeting AS 1270-2002 requirements when working around machinery or plant equipment if noise levels exceed exposure standards.

8.5 Asbestos

When working within asbestos impacted fill materials, in addition to standard construction PPE, the following PPE should be worn during works involving the handling and/or removal of soils:

- Half-face P1/P2 respirator, rated for asbestos fines; and
- Nitrile gloves.
- Tyvek suits; and
- Boot covers.

In addition to works in identified remediation areas, it is possible that other forms of potential contamination are uncovered during excavation. An occupational hygienist will observe conditions as excavation proceeds (including screening with a PID in the breathing zone) and will advise if specific PPE, and/or other precautionary measures are needed. In this regard, all PPE stated in this section must be retained on site for use when needed.

Action levels for the PID screening in the breathing zone have been established to minimise the potential for exposure to airborne gases and vapours, as follows:

- If PID levels exceed 5ppm, personnel will evacuate to the upwind side of the excavation;
- Workers in the excavations will be required to fit the half-face P1/P2 respirator, rated for volatile organic compounds;
- DP will continue to monitor using the PID to determine if there are increases with depth;
- If sustained PID readings exceed 50 ppm, work will stop and DP will assess the need for increased PPE and/or mechanical ventilation methods.

Excavation, handling, stockpiling, transport etc. of materials containing asbestos should be undertaken by a licensed contractor in accordance with relevant regulatory requirements.

8.6 Emergency Response Plan

An essential component of the WHS Plan will involve development of an Emergency Response Plan for all aspects of site works. This will include provisions for the safety of personnel working on site in the event of an emergency situation. Any emergency will be reported immediately to the site office and/or the Site Safety Officer, and the appropriate emergency assistance should be sought by telephoning 000.

The works contractor will be responsible for ensuring that site personnel are aware of the emergency services available and appropriate contact details. A Site Safety Officer must be available on-site during remediation and construction works.

The Emergency Response Plan should be confirmed with the Parramatta Leagues Club prior to commencement of construction.

9. Management / Remediation Strategy

9.1 Introduction

Remediation of asbestos-impacted soils and management of acidic natural soils is required at the site. Management of acidic soils should be undertaken following the removal and validation of the overlying asbestos-impacted fill. Following the removal of fill and prior to management of acidic soils, geotechnical preparation measures provided in DP (2018a) are also required to provide subgrade and stable batters on slopes.

Light poles are located in the car park and a number are located on the southern nature strip bordering the carpark. Decommissioning and removal of the light poles is required prior to excavations due to underground services. Stormwater pipes are located on site and generally expected to be at depths of 0.5 m to 1.0 m below existing levels. The presence of the stormwater is not expected to impact on the proposed development except where stormwater lines are to be diverted, relocated or decommissioned.

A summary of the remediation/management strategy is provided in the sections below. Reference to the RAP and AMP should be made for detailed comment and methodologies.

9.2 Asbestos Remediation

Considering the presence of loose fibre bundles and AF/FA, remediation at the site must be undertaken by licensed SafeWork Class A, Asbestos Removalist.

Air quality monitoring for airborne asbestos fibres is to be conducted on a daily basis when works involving the excavation, transport or placement of asbestos impacted and potentially impacted soils/materials are being conducted within the site. A licensed asbestos assessor is required to conduct the air quality monitoring.

9.3 Acidic Soils

Acidic soils on-site will need to neutralised. The RAP includes an acidic soils management plan and reference should be made to this document for comments and methodologies.

9.4 Site Preparation

Site preparation for the asbestos remediation is as follows:

- The construction of permanent fences around the subject area meeting appropriate SafeWork NSW specifications to prevent unauthorized entry;
- Installation of a protection zone surrounding any flora or fauna to be retained on-site. Reference should be made to a qualified ecologist for further comments on flaura and fauna;
- All appropriate demarcation, signage and precautions in accordance with NSW legislative requirements including (but not limited to) all SafeWork requirements, must be implemented; and
- Setting up an enclosed decontamination unit.

9.5 Removal of Asphaltic Concrete

Asphaltic concrete up to 0.1 m in thickness was reported across the site. It is possible that the asphalt may be impacted with asbestos from underlying soils, therefore asphalt at the site must be assumed to be impacted with asbestos. The following further investigation is required if asphalt is considered for re-use or disposal;

- Cleaning the asphalt of all soil and visual validation by DP; and
- Assessment in accordance with a NSW EPA Resource Recovery Order 2014.

9.6 Excavation of Fill Materials

The following steps should be undertaken during the progression of excavation of asbestos-impacted filling:

- Delineate the extent of asbestos impacted fill soils through further investigation (refer to RAP).
- Stormwater, and electricity services associated with the light poles, are present in the site. Decommissioning of the light poles is to be completed prior to the excavation of fill. Should additional services be encountered during excavations, decommissioning or relocation may be required;
- Excavate filling (contaminated or otherwise) to the full depth of fill encountered (i.e. expected to range between 0.2 m to 0.5 m bgl) under the full time supervision of DP. DP considers that direct load of filling on to awaiting trucks is required. Should overnight stockpiling be required, necessary controls, such as covering of stockpiles to prevent the release of free asbestos fibres is required;
- Loading and off-site disposal of material;
- At the completion of excavation of filling, the site is to be validated as per the RAP prior to further excavation/backfilling/grading.

10. Environmental Management Plan

10.1 Introduction

The contractor should undertake the work with due regard to the minimisation of environmental effects and to meet regulatory and statutory requirements.

The contractor should have in place a Contractors Environmental Management Plan so that work on the site complies with, but not limited to, the following:

- Protection of the Environment Operations Act;
- Contaminated Land Management Act;
- Dangerous Goods Act;
- Construction Safety Act;
- Work Health and Safety Act (WorkCover);

The contractor should also be responsible for the site works complying with the following conditions:

- Wastes generated at the site are disposed in an appropriate manner;
- Fugitive dust leaving the confines of the site is minimised;
- No water containing any suspended matter or contaminants leaves the site in a manner which could pollute the environment;
- Vehicles should be cleaned and secured so that no mud, soil or water are deposited on any public roadways or adjacent areas; and

- Noise and vibration levels at the site boundaries comply with the legislative requirements.

In order to achieve a minimisation of environmental effects, the following measures are recommended, and should be adopted by the appointed contractor.

10.2 Traffic Management

All vehicular traffic should use only routes approved by the PR, to and from the work site. If materials are to be disposed off the site, vehicular traffic should use only routes approved by the Council between the site and the selected landfill where off-site disposal is undertaken. All loads should be tarpaulin covered and lightly wetted to minimise the potential for materials or dust to be dropped or deposited outside or within the site.

Each vehicle exiting the site should be inspected for cleanliness before being logged out as clean (wheels and chassis), or hosed down into a wheel wash or wash down bay until designated as clean.

Wheel wash silt residues should be collected periodically, appropriately classified and disposed of off-site returned to the fill area. Such material will be treated as contaminated unless analysis proves otherwise.

10.3 Excavations/Stripping

Records of all excavations and stockpile locations should be maintained by the contractor. A site diary should also be maintained to record daily progress, abnormal occurrences, incidents, and truck movements.

No person should be permitted to enter an unsupported excavation where it is more than 1.5 m deep or where it is considered to be unstable, irrespective of depth.

10.4 Stormwater Management and Control

Appropriate measures should be taken to minimise the potential for potentially contaminated water to leave the site. Such measures could include:

- Appropriate construction of the stockpile areas (if required), with regular checks for integrity and repairs if/when required;
- Construction of diversion bunds to divert stormwater from stripped areas and stockpiles;
- Provision of sediment traps including geotextiles or hay bales.

Discharge of any waters should meet the consent conditions from the appropriate authority.

Reference should be made to the Landcom publication “Soils and Construction: Volume 1” dated March 2004 (known colloquially as the “Blue Book”) for soil and erosion protection measures

10.5 Control of Dust and Odour

Control of dust and odour during the course of the construction works should be maintained by the contractor and may include, but not necessarily be limited to, the following:

- The use of a water cart, as and when appropriate, to eliminate wind-blown dust;
- Use of sprays/sprinklers to prevent dust blow from stockpiles;
- Covering of stockpiles with plastic sheeting or geotextile membranes;
- Restriction of stockpile heights to 2 m above surrounding site level;
- Stockpiles must be located outside the zone of influence of retaining walls, which in the absence of a statement from the design engineer, must be considered to be a horizontal distance set-back from the crest of the wall at least twice the height of the retaining wall:
- Ceasing works during periods of inclement weather such as high winds or heavy rain; and
- Regular checking of the fugitive dust and odour issues. Undertake immediate remediation measures to rectify any cases of excessive dust or odour.

10.6 Noise Control

Noise should be restricted to reasonable levels. All plant and machinery used on site should not breach statutory noise levels. Working hours will be restricted to those specified by the consent authority.

10.7 Vibration Control

Vibrations are not expected to be excessive during bulk excavation as the depth to bedrock materials that would require excavation methods requiring significant equipment is below the bulk excavation level. Nonetheless, during excavation it will be necessary to use appropriate methods and equipment to keep ground vibration within acceptable limits. The standards listed below are considered appropriate documents on which to base the management of ground vibration:

- German Standard DIN4150-3-1999 “Structural vibration – effects of vibration on structures”; and
- Australian Standard AS2670.2-1990 “Evaluation of human exposure to whole-body vibrations – continuous and shock induced vibrations in buildings (1-80 Hz)”.

From current information it is considered that the structures adjacent to the site can withstand vibration levels which are higher than those required to maintain the comfort of their occupants. A human comfort criterion is therefore indicated and the vector sum peak particle velocity (VSPPV) is proposed as the control parameter. It is recommended that a Provisional Allowed Vibration Limit of 8.0 mm/sec (VSPPV) be set during normal working hours, at foundation level of the potentially affected building/s.

Vibration monitoring should be carried out where vibrations levels are required to be measured.

10.8 Hazard Identification and Control

Hazard identification and control, in relation to in ground works, will be managed according to the Unexpected Finds Protocol in the RAP and referenced in Section 12.

11. Soil and Water Management Plan

11.1 Introduction

The following procedures are recommended during the handling of soils. Contingency measures for the management of soils potentially impacted with contaminants (other than asbestos) are also provided.

Given the presence of acidic soils at the site, excavated natural soils will require management either in the form of on-site or off-site treatment following excavation and validation of the asbestos-impacted fill. DP recommends that the natural acidic soils are managed following removal of the asbestos-impacted fill.

11.2 Asbestos-Impacted Soil Excavation

Considering the presence of asbestos-impacted soils, the recommendation for the site is to minimise soil disturbance where possible.

The following general procedure is suggested during excavation of soils at the site:

- DP to carry out further investigation to delineate the extent of asbestos impacted fill materials.
- DP to undertake periodic inspections during excavation to assess the soils for potential contamination;
- The depth and lateral extent of soil excavation should be minimised to reduce the volume of soil disturbance at the site;
- Due to the potential for contamination in soil and the potential for cross-contamination, it is recommended that excavated soils are not transferred within the site and used as filling within other areas during construction; and
- Excess soils should be stockpiled for further assessment prior to waste classification for possible off-site disposal.

11.3 Contingency - Potentially Contaminated Soils

With the exception of asbestos impact fill materials, the results of previous assessments at the site suggest the general absence of gross contamination at the locations tested. Considering fill is expected to be confined to the top 0.6 m of materials at the site and is to be removed and disposed offsite, the potential for contamination to underlying natural soils is considered to be low. However, there is potential for contamination within site soils due to potential variability of fill materials.

Contingency procedures are required should potentially contaminated soils be identified at the site following removal of asbestos-impacted fill during earthworks and/or construction.

The following general procedures (for detailed comment refer to the RAP) are suggested for the assessment and management of potentially impacted soils during earthworks:

- Excavation, handling loading and transport of contaminated materials should be undertaken by a licensed contractor in accordance with the appropriate regulatory approvals and legislative requirements;
- The progress of site excavations during construction should be inspected by the contractor during earthworks, and periodically by the EC (i.e. DP). Potential soil contamination may include stained soils, odorous soils, soils containing fibro fragments, soils containing building rubble (i.e. bricks, tiles, concrete, timber etc.) and slag/ash products;
- If potentially contaminated soils are encountered (i.e. visual or olfactory indication of contamination), excavation of filling should cease, and the extent of the affected filling should be assessed by DP;
- The affected filling should be segregated based on visual/olfactory observations, and stockpiled for further assessment;
- The affected area should be stripped and validated by DP;
- Excavation in the affected area cannot recommence until the validation testing indicates the absence of gross impact and no visual or olfactory indicators of contamination);
- If the assessment of impacted materials indicates that the materials are not suitable to remain on site, the materials should be classified for disposal to an appropriately licensed landfill with reference to the NSW EPA waste classification guidelines; and
- Licensed contractors are to load classified materials directly into appropriate trucks for transport and disposal to a licensed facility as outlined in the RAP.

11.4 Acidic Soils

Given the presence of acidic soils at the site, excavated natural soils will require management either in the form of on-site or off-site treatment following remediation and validation of the asbestos-impacted fill. Refer to the RAP for treatment and management of acidic soils.

11.5 Temporary Stockpiling of Contaminated Soils

The following procedure is recommended for temporary stockpiling of segregated impacted soils or excess soils for off-site disposal (if required):

- DP to nominate designated stockpile area in consultation with the PC;
- The proposed stockpile area should be inspected and tested to confirm the absence of deleterious or potentially contaminated materials at the surface prior to the placement of materials;

- An impermeable membrane such as plastic sheeting should be provided at the surface prior to stockpiling. If this is not carried out then validation of the footprint of the stockpile will be required once removed;
- Stockpile areas should be demarcated (i.e. fence/pickets and hazard tape) to prevent access, and clearly delineate the stockpiles;
- Stockpiles that are observed to contain or potentially contain contaminated materials should be lightly conditioned by sprinkler and covered by plastic or similar to prevent dust blow (refer to Section 10.5);
- Measures should be taken to prevent the migration of stockpile materials (i.e. perimeter bunds, hay bales, silt fences, etc.);
- A record of stockpile locations, dimensions, descriptions, environmental controls, etc. should be maintained by the contractor; and
- The stockpiles may be required to remain in place for at least one to two weeks to allow sampling and laboratory testing; to confirm classification and disposal/re-use options.

Excavation, handling, transport etc. of contaminated materials should be undertaken by the licensed contractor with reference to the appropriate regulatory guidelines.

11.6 Temporary Stockpiling of Acidic Natural Soils

Stockpiling of natural acidic soils is required to be carried out in accordance with the acidic soils management plan. Stockpiling will include preparation of lime pads and neutralisation of stockpile materials with lime to limit the potential for acid leaching from the soils. Reference should be made to the RAP for further comment.

11.7 Fill/Stockpile Classification and Disposal/Re-use Options

Segregated impacted stockpiles containing potentially contaminated materials (or excess materials following excavation) must be assessed for reuse on site and / or classified with reference to the NSW EPA Waste Classification Guidelines for possible re-use or disposal purposes.

Representative samples will be collected from the segregated fill stockpiles, and analysed for a suite of potential chemical contaminants. The frequency of samples will depend on the size and composition/characteristics of the stockpile (refer to the RAP).

11.8 Loading and Transport of Contaminated Materials

During the course of earthworks and subsequent classification, filling will require off-site disposal.

Transport of contaminated material off the site should be via a clearly demarcated haul route and this route exclusively should be used for entry and egress of vehicles used to haul identified contaminated materials within and away from the site.

Removal of waste materials from the site should only be carried out by a licensed contractor holding appropriate licences, consents and approvals from NSW EPA and/or other Authorities to transport and dispose the waste materials according to the classification guidelines.

Details of all contaminated materials removed from the site should be documented by the contractor with copies of weighbridge slips, trip tickets and consignment disposal confirmation (where appropriate). In addition, written confirmation from the receiving landfill that it is able to accept the waste must be provided. Such information should be provided to DP for reporting purposes. A site log/tracking sheets should be maintained by the PC and the asbestos contractor for stockpiles (numbered locations), to enable the tracking of disposed loads against on-site origin and location of the materials and corresponding (validation) sample numbers.

Measures should be implemented to minimise the potential for contaminated material to be spilled onto public roadways or tracked off-site on vehicle wheels. Such measures could include the deployment of a vehicle washing/cleaning facility (if required), which could be placed at a location before the egress point of the site. The facility should be able to handle all vehicles and plant operating on site (if required). Residue from the cleaning facility will be deemed contaminated unless shown by validation to be within the adopted landuse criteria. If the residue is to be re-used as fill on-site it should be assessed by a geotechnical engineer.

The proposed waste transport route should be notified to the local Council and truck dispatch should be logged and recorded by the contractor for each load leaving the site. The contractor's waste tracking procedure should be confirmed by DP prior to remediation works.

11.9 Imported / Exported Fill

Materials which are imported onto the site for grading or exported from the site for use on another site, should be classified as Virgin Excavated Natural Materials (VENM) or Excavated Natural Material (ENM), and an appropriate report must be made available to the DP prior to the importation of the material.

If an appropriate VENM or ENM assessment report cannot be provided by the supplier, the VENM or the ENM should be assessed with reference to the NSW EPA Waste Classification Guidelines and the Excavated Natural Material Order and analysed for the following:

- Total recoverable hydrocarbons (TRH);
- Benzene, toluene, ethylbenzene and xylene (BTEX);
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides (OCP);
- Polychlorinated biphenyls (PCB);
- Heavy Metals (arsenic, cadmium, chromium, copper, lead, nickel, mercury, and zinc);
- pH, electrical conductivity;
- Asbestos; and
- Percentage foreign material (NSW RTA Test Method T276).

11.10 Validation of Excavations / Stripped Surface

If materials encountered during earthworks are not suitable to remain on site, the affected areas will need to be validated following removal of the contamination (refer to the RAP)

11.11 Basement Excavation

Basement excavation should proceed as part of the general bulk earthworks with all excavated fill disposed off-site to a licensed facility under an assigned waste classification.

Based on the depth of the proposed excavation (3.5 m bgl), and the minimum depth of groundwater (ie. minimum of 5 m bgl) reported in EIS (2015b) dewatering is not expected. Notwithstanding these levels, seepage may occur during excavation, therefore dewatering may need to be undertaken as part of the excavation works (refer Section 11.12).

11.12 Groundwater Management

Water entering the site, particularly the basement excavation is expected to enter via rainfall, site activities and possibly groundwater seepage if elevated groundwater occurs following prolonged wet weather conditions.

Monitoring of the water inflows during the initial phases of excavation should be carried out to confirm the source of water and discharge quantities. The following dewatering risk management methods are recommended for the project:

- Timing soil excavation to follow periods of no rain to minimise the amount of dewatering at any one time;
- Monitoring any groundwater inflow rates into excavations and groundwater levels around the excavations to assess the likely impact on groundwater level; and
- Monitoring groundwater and water quality within the excavation and treating groundwater prior to discharge from the site (see below).

All water collected on-site should be either treated on site through holding tanks and filtration processes and tested before it is disposed of to the stormwater or sewer (after obtaining appropriate licences / approvals) or removed from site by a licensed contractor. Approval from the relevant authority (either Council or Sydney Water) will be required prior to off-site disposal into their system (stormwater or sewer). In order to assess the acceptability of the water for disposal, the analytical data should be compared against Groundwater Investigation Levels (GILs) sourced from the National Environment Protection Council (NEPC) *National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended in 2013*) (NEPC, 2013) which is in turn based on:

- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality; and
- NHMRC (2011), *National water quality management strategy, Australian drinking water guidelines*, National Health and Medical Research Council and National Resource Management Ministerial Council, Australia.

Water cannot be reinjected into the ground without specific approval from the relevant government authority.

12. Unexpected Finds Protocol

Given the history of the site it is possible that localised areas of contaminated soil could exist, and these may not be identified until the site is opened up during excavation works. An unexpected finds protocol has been outlined in the RAP. Reference to the RAP should be made for comments and appropriate methodologies.

13. Reporting

Reporting requirements in relation to the implementation and validation of the remediation detailed in the RAP are identified within the RAP. The following documentation should be maintained according to the requirements of this ECSMP.

13.1 Documentation Requirements

The following documents are to be kept on record by the relevant parties and provided to PR and DP on request.

- Transportation Record: comprising a record of all truck-loads of soil entering or leaving the site, including truck identification (e.g. registration number), date, time, load characteristics (i.e. classification, on-site source, destination);
- Written confirmation from the receiving landfill that they can legally receive the waste.
- Disposal dockets: for any soil materials disposed off-site. The contractor to hold records of: transportation records, spoil source, spoil disposal location and receipt provided by the receiving waste facility;
- Imported materials records: records for any soil imported onto the site, including source site, classification reports, inspection records of soil upon receipt at site and transportation records;
- Records relating to any unexpected finds and contingency plans implemented;
- Incident Reports: any WHS or Environmental Incidents which occur during the works will be documented and PR and the appropriate regulatory authority will be informed in accordance with regulatory requirements;
- Laboratory certificates and chain-of-custody documentation for all relevant samples;
- Letters/ memos as required to provide instruction or information to PR and the PC;
- Water monitoring and disposal records (if applicable);
- Odour monitoring records (if applicable);
- Airborne asbestos monitoring records;

- Asbestos clearance records comprising visual inspection and validation sampling and analysis documentation (if applicable); and
- Inspections records from the Environmental Consultant and Hygienist.

14. Conclusion

This ECSMP provides the objectives, methods and procedures by which the soil and groundwater aspects of the development will being an acceptable manner, with minimal environmental impact, to a condition suitable for the proposed development and commercial land use.

Prior to commencement of remediation and construction works, it is recommended that a site inception meeting is held between the main contractor, PR, geotechnical and environmental consultant, and the archaeologist to discuss the remediation and validation process and to identify the tasks and responsibilities for the remediation and management of the site.

15. Limitations

Douglas Partners (DP) has prepared this plan for this project at 1 Eels Place, Parramatta in accordance with DP's proposal NWS180079 dated 11 October 2018 and acceptance received from Mr Thomas Gould of APP Corporation Ltd on behalf of the Parramatta Leagues Club. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of the Parramatta Leagues Club for this project only and for the purposes as described in the report. It should not be used by or relied upon for other projects or purposes on the same or other site or by a third party. Any party so relying upon this report beyond its exclusive use and purpose as stated above, and without the express written consent of DP, does so entirely at its own risk and without recourse to DP for any loss or damage. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

DP's advice is based upon the conditions encountered during previous investigations. The accuracy of the advice provided by DP in this report may be affected by undetected variations in ground conditions across the site between and beyond the sampling and/or testing locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached notes and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion stated in this report.

This report, or sections from this report, should not be used as part of a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

The contents of this report do not constitute formal design components such as are required, by the Health and Safety Legislation and Regulations, to be included in a Safety Report specifying the hazards likely to be encountered during construction and the controls required to mitigate risk. This

design process requires risk assessment to be undertaken, with such assessment being dependent upon factors relating to likelihood of occurrence and consequences of damage to property and to life. This, in turn, requires project data and analysis presently beyond the knowledge and project role respectively of DP. DP may be able, however, to assist the client in carrying out a risk assessment of potential hazards contained in the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the geotechnical, environmental or groundwater components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

About This Report

About this Report

Douglas Partners

Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;
- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

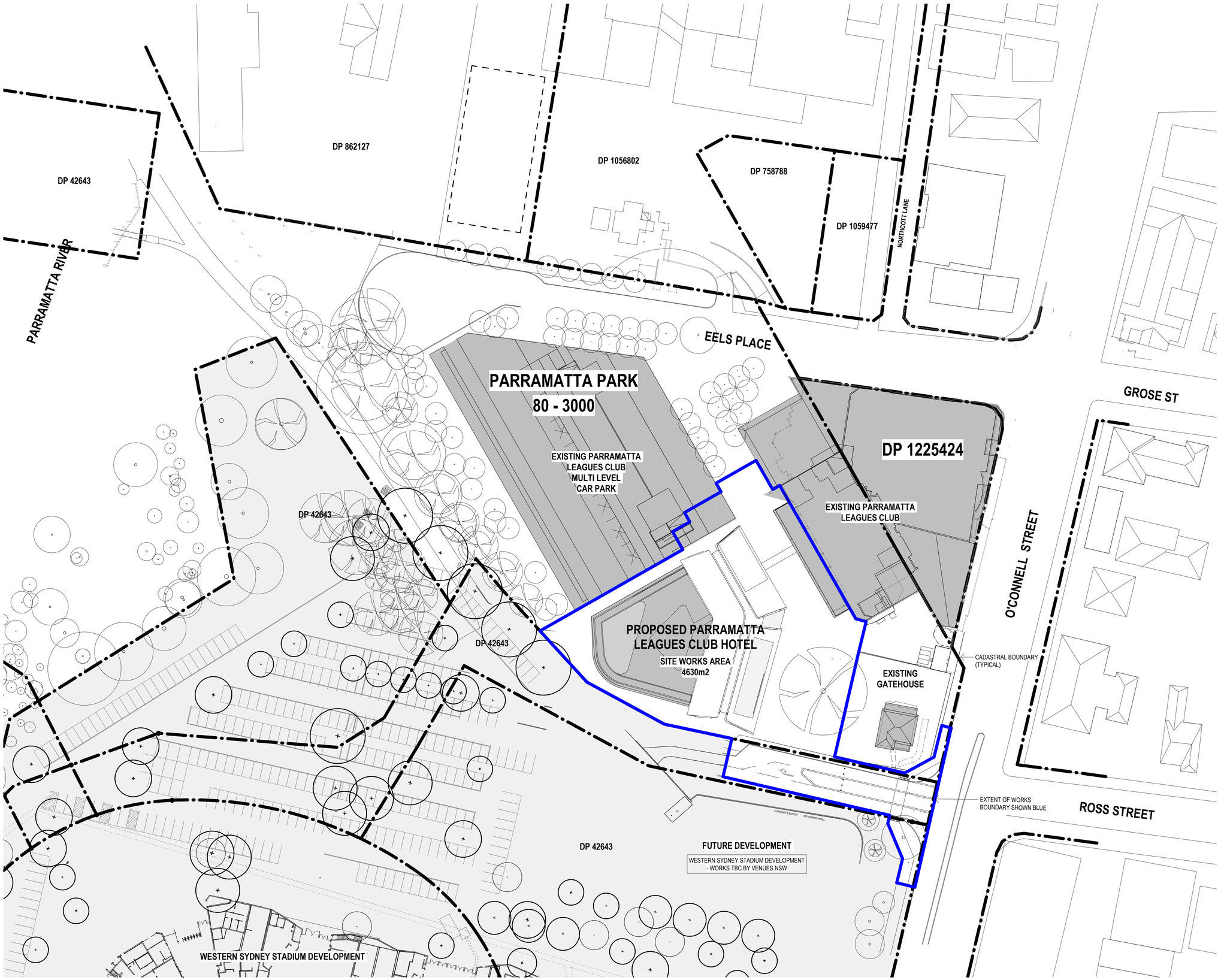
Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

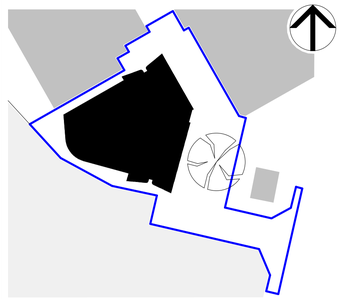
Appendix B

Site Plan



1 SITE PLAN
1 : 500

REFERENCE MAP (NTS) TRUE NORTH



SCALE BAR
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REV	DESCRIPTION	DATE
J	SSD ISSUE DRAFT	23.11.2018
H	FOR INFORMATION	19.11.2018
G	FOR INFORMATION	08.11.2018
F	SSD ISSUE DRAFT	02.11.2018
E	FOR COORDINATION	31.10.2018
D	SSD ISSUE DRAFT	26.10.2018
C	ISSUED FOR INFORMATION	19.10.2018
B	ISSUE FOR INFORMATION	28.09.2018
A	ISSUE FOR INFORMATION	18.09.2018

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HASSELL

CLIENT
PARRAMATTA LEAGUES CLUB

PROJECT
PROPOSED PARRAMATTA LEAGUES CLUB HOTEL DEVELOPMENT
1 EELS PLACE, PARRAMATTA, NSW 2150

DRAWING TITLE
SITE PLAN - PROPOSED

STATUS
DEVELOPMENT APPLICATION

SCALE @ A1	DRAWN	REVIEWED	APPROVED
1 : 500	HASSELL	LV	GS
PROJECT NUMBER	DRAWING NUMBER	REV	
012981	DA_0102	J	

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Original Sheet Size A1 - 841 x 594mm