



# **Douglas Partners**

*Geotechnics | Environment | Groundwater*

Hazardous Building Materials (HBM) Survey

Kogarah War Memorial Pool  
78 Carwar Avenue  
Carss Park NSW

Prepared for  
SJB Architects  
C/- SJB Planning

Project 99751.02  
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**Integrated Practical Solutions**





# Douglas Partners

Geotechnics | Environment | Groundwater

## Document History

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## Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by SJB Architects, C/- SJB Planning, to conduct a Hazardous Building Materials (HBM) Survey at Kogarah War Memorial Pool, 78 Carwar Avenue, Carss Park NSW 2221 (the Site). The Survey, which was undertaken to assess the general location, extent and condition of HBM prior to demolition, comprised a visual inspection supplemented by a limited program of sample collection and laboratory analysis.

HBM were identified or assumed present during the survey as indicated in Table 1 below.

**Table 1: Hazardous Building Materials (HBM) Risk Profile**

Building / Area	Non-Friable Asbestos	Friable Asbestos	SMF	Lead Paint	Lead Dust	PCB
Main Building	✓	✗	✓	✓	✓	✓
Pump House	✗	✓	✓	✗	✗	✗
General Grounds	✓	✗	✓	✗	✗	✓

SMF = synthetic mineral fibre, PCB = polychlorinated biphenyls, ✓ = identified or suspected present, ✗ = not identified and / or not suspected present. Refer to the Register in Appendix A for details / clarification.

Limited or no access was available to certain areas of the buildings and / or the Site. Inaccessible areas should be assumed to potentially contain HBM unless assessment of these areas by a Competent Person confirms otherwise.

HBM should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2017 (WHS Regulation) and relevant Codes of Practice, Australian Standards and guidelines.

HBM should be removed prior to any significant disturbance including from maintenance, refurbishment and demolition work.

Limitations apply to this HBM survey and report as outlined in Section 10.

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## **Hazardous Building Materials (HBM) Survey Kogarah War Memorial Pool 78 Carwar Avenue, Carss Park NSW**

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### **1. Introduction**

Douglas Partners Pty Ltd (DP) was engaged by SJB Architects, C/- SJB Planning, to conduct a Hazardous Building Materials (HBM) Survey at Kogarah War Memorial Pool, 78 Carwar Avenue, Carss Park NSW (the Site). The Survey was undertaken to assess the general location, extent and condition of the following HBM prior to demolition:

- Asbestos containing materials (ACM);
- Synthetic mineral fibre (SMF) insulation;
- Polychlorinated biphenyls (PCBs) in fluorescent light fittings;
- Lead paint systems; and
- Lead dust in ceiling cavities.

The Survey, which comprised a visual inspection plus a program of sample collection and laboratory analysis, was undertaken using a limited range of destructive/intrusive inspection techniques.

Notes About This Report and a Site Plan are contained in Appendix A.

The results of the Survey, including details of the HBM identified, the results of ACM risk assessments, are provided in the HBM Register (the Register) in Appendix B.

Photographs are provided in Appendix C.

Laboratory certificate(s) of analysis are provided in Appendix D.

Limited or no access was available to certain areas as outlined in the Register and Section 6 of this report (including Table 4).

### **2. Site Description**

The Site is a public pool complex located at the southern end of Carwar Avenue in Carss Park NSW. The buildings / structures at the Site comprise:

- Main Building - single storey structure containing a reception area, gymnasium areas, canteen, change rooms and toilets;
- Pump House - single storey structure containing plant located at the southern end of the Site; and
- General grounds - comprising Olympic pool, kids pool, associated awnings and covered ways, storage tanks (northern end of Site) and car park (western side of Site).

It is understood that the car park will not be demolished.

A Site Plan is provided in Appendix A.

### 3. Method

The HBM survey comprised a visual inspection of safely accessible areas supplemented by a limited program of sampling and analysis. The visual inspection was undertaken using a limited range of destructive / intrusive inspection techniques.

Samples of suspected ACM were collected by DP using hand tools (e.g., knife or pliers) and analysed for asbestos by a National Association of Testing Authorities (NATA) accredited laboratory. Sample size is typically limited to minimise disturbance of the material and potential structural or aesthetic impacts. The samples were analysed by Polarised Light Microscopy (PLM) with dispersion staining in accordance with AS4964-2004 *Method for the qualitative identification of asbestos in bulk samples*.

Spot testing for lead paints was conducted in selected locations using 3M LeadCheck™ swabs which, according to the manufacturer's instructions, reliably detected lead in paints at 0.5% (5,000 ppm) and may indicate lead in some lead paint films as low as 0.06% (600 ppm).

Paint samples were collected by DP in selected locations and analysed for lead by a NATA accredited laboratory. Analysis was by Inductively Coupled Plasma - Atomic Emission Spectrometry / Mass Spectrometry (ICP-AES / MS). Paint samples contained approximately equal portions of all layers of paint at the locations sampled, to the extent reasonably practicable, and therefore typically reflect the average lead content of the overall paint system at the location sampled.

The lead paint spot testing and sample analysis conducted was a screening assessment only designed to assess the general presence / absence of lead in paints as opposed to identifying and / or delineating all occurrence of lead paint.

SMF insulation was identified primarily by visual inspection or incidentally as a result of laboratory analysis for asbestos.

Light fittings were visually inspected to assess their general age and type. Where deemed safe to do so, the details of relevant internal components (e.g., capacitors and ballasts) were accessed, recorded and compared to the list of PCB-containing and PCB-free equipment listed in *Identification of PCB containing capacitors: An information booklet for electricians and electrical contractors*, Australian and New Zealand Environment and Conservation Council (ANZECC, 1997).

Lead dust samples were collected from readily accessible ceiling cavities. Samples were collected from a surface area of 100 cm<sup>2</sup> and analysed for lead by a NATA accredited laboratory using ICP-AES / MS. The sampling area and laboratory analysis results (total lead in µg) were then used to calculate the lead dust loading in milligrams of lead per square metre (mg/m<sup>2</sup>).

Surveys typically proceed on a 'risk management' basis whereby priority is given to addressing material(s) of higher quantity and / or risk and as they are encountered. Further, material sampling and analysis programs are necessarily limited and, in the case of similar or repetitive buildings, building elements and / or rooms / areas, it is often necessary to assume consistent use of construction materials including HBM.

#### **4. Asbestos Risk Assessment Method**

ACM poses a health risk if asbestos fibres are released to the atmosphere and inhaled. There is also a risk of environmental contamination whenever asbestos is disturbed. The degree of risk associated with any given ACM depends on a range of factors such as the friability, extent, condition, and location / accessibility of the material, the asbestos mineral type(s) present, the nature of site activities and ventilation.

The asbestos risk assessment method employed by DP considers several key factors that influence risk and a numerical score is assigned to each (refer Table 2 below). These scores are then added together to determine an overall risk rating for the ACM (refer Table 3 below). A degree of professional judgement may be applied when determining the final risk rating since, for example, it is not practicable to include in Table 2 all risk factors or descriptions that may be relevant to a given situation.

Risk assessments for ACM should be reviewed on a regular basis including when:

- The Asbestos Management Plan is reviewed;
- Further asbestos or ACM is identified at the workplace;
- Asbestos is removed, disturbed, sealed, enclosed or undergoes any other change in condition;
- There is evidence that the risk assessment is no longer valid;
- There is evidence that control methods are not effective; or
- A significant change is proposed for the workplace or for work practices or procedures relevant to the risk assessment.

An asbestos risk assessment review is to be conducted at least every 5 years. The review is to be performed by a Competent Person.

**Table 2: Key Risk Factors**

<b>Risk Factor</b>	<b>Score</b>	<b>Description</b>
<b>Friability</b>	0	Non-friable (fibre reinforced vinyls, bituminous materials, adhesives)
	1	Non-Friable (fibre reinforced cement products such as wall and roof sheeting)
	2	Semi-Friable (low density insulation board, millboard, ropes, paper, textiles, gaskets or highly weathered asbestos cement)
	3	Friable (thermal insulation to pipes/boilers, sprayed insulation, loose fill insulation)
<b>Condition</b>	0	Very Good. Very little or no visible indication of damage. Structurally sound. No significant repairs required. Material performs as intended.
	1	Good - Minor damage in small, localised areas. Structurally sound. Minor preventative action may be required as a precaution and / or to prolong material life. Material generally performs as intended.
	2	Fair. Localised damage in various areas. Material is generally structurally sound however local removal and replacement of damaged sections may be required. Material performance may be somewhat impaired in areas.
	3	Poor. Material exhibits significant damage throughout. Overall structural stability may be compromised. Material performance is significantly impaired.
<b>Treatment</b>	0	Fully enclosed, encapsulated or sealed. ACM is entirely contained, and the enclosure/encapsulation/sealing material is in good condition.
	1	Generally enclosed, encapsulated or sealed. ACM is generally contained however enclosure/encapsulation/sealing material may not be completely continuous or exhibits minor damage/penetrations.
	2	Partially enclosed, encapsulated or sealed. ACM is contained in area(s) however enclosure/encapsulation/sealing material is not present, significantly damaged or ineffective in area(s).
	3	Enclosure/encapsulation/sealing material is significantly damaged and / or generally ineffective or there is no treatment.
<b>Accessibility</b>	0	The ACM is not directly accessible to occupants. Contact is highly unlikely unless a significant, dedicated effort is made. Substantial demolition, dismantling and / or special access equipment would be required.
	1	The ACM is generally not accessible to occupants. Contact is unlikely but could be made with special tools or equipment (e.g. elevating work platform) or minor demolition/dismantling.
	2	Some portion(s) of ACM are accessible to occupants. Direct contact may occur periodically but often requires basic tools/equipment (e.g. step ladder).
	3	The majority of the ACM is accessible to occupants. Direct contact is a common occurrence and may be made with minimal or unintentionally.
<b>Activity</b>	0	Area generally not occupied. Normally very little or no activity. Activities may be highly restricted, or the area secured. Examples may include subfloor voids, ceiling cavities, confined spaces and other inaccessible areas.
	1	Low level occupancy. Some activity in parts or area only occupied periodically. Examples may include plant rooms and store rooms.
	2	Moderate level occupancy. Activity normally present throughout area. May include offices, laboratories, classrooms, workshops, and warehouses.
	3	High level occupancy. Generally high levels of activity. Activities may be wide-ranging and / or largely unrestricted. Examples may include production/manufacturing areas, construction sites and public areas/thoroughfares.
<b>Ventilation</b>	0	Exterior area where natural ventilation and associated dilution is largely unlimited. Significant retention and / or build-up of airborne contaminants is unlikely.
	1	Interior area. Natural ventilation and dilution are limited but area is not particularly confined. Limited retention and / or build-up of airborne contaminants is possible.
	2	Confined areas where ventilation and associated dilution is significantly limited. Significant retention and / or build-up of airborne contaminants is possible or likely.
	3	Asbestos material subject to direct ventilation (e.g. inside an AC system or near a fan or air exhaust) which may result in disturbance and / or elevated fibre concentrations in air.

**Table 3: Risk Rating**

Overall Score	Risk Rating	Description
15-18	High (H)	The ACM poses an elevated and typically unacceptable risk of exposure and / or environmental contamination. Controls should generally be implemented as soon as possible to address the risk. Removal of the whole or part of the ACM is typically required. Other controls such as enclosure, encapsulation and / or sealing may also be necessary if portion(s) of ACM are to remain in place. As an interim measure, access to the area should be appropriately restricted. Air monitoring is often recommended to confirm airborne asbestos concentrations and provide a written record for future reference.
10-14	Moderate (M)	The ACM poses a moderate risk of exposure and / or environmental contamination. Often there has been minor damage or there is potential for disturbance / degradation in the foreseeable future. Consideration should be given to implementing appropriate controls in the short to medium term to address the risk(s) and / or prolong the lifespan of the material. Relevant controls typically include enclosure, encapsulation and / or sealing. Extensive removal is generally not required, and the material can generally be managed on site if desired and serving a useful purpose.
0-9	Low (L)	The risk of exposure and environmental contamination is generally low while the material remains undisturbed and in its present condition. The material may generally remain in place without the requirement for significant, material-specific control measures such as removal, enclosure, encapsulation or sealing.

**Note:** If the ACM is likely to be disturbed (e.g. by maintenance, refurbishment or demolition work) and / or is no longer serving a useful purpose then the ACM should generally be removed. All ACM should be clearly identified with a label / signage where reasonably practicable.

## 5. Results

The overall results of the survey are summarised in Table 1 in the Executive Summary of this report.

Further details of the HBM identified at the Site, including the results of asbestos risk assessments, are provided in the Register in Appendix B.

Limited or no access was available to certain areas as outlined below (including Table 4) and in the Registers.

**Table 4: Access Limitations\***

Location / Area	Access Type	Reason(s)
Areas / materials at height (e.g. upper exteriors of buildings in general and unprotected roofs)	Limited	Access limited to safely accessible areas and use of 1.8 m step ladder. Work at height and use of specialised access equipment not included in survey scope.
Confined spaces (e.g. interior of tanks, pits and underground areas)	Nil	Not included in survey scope.
Ceiling cavities	Limited	Access in areas of the Main Building limited by asbestos cement ceiling sheeting and limited number of designated access hatches. Accessible portions of the ceiling cavity were very limited in size due to surrounding walls.
Subfloor voids	Nil	A substantial void appears to be present below area(s) of the Main Building as observed through core holes in the concrete slab floor. No designated access points were identified however.
Below floor covering materials (e.g., carpet, vinyl sheeting etc.) and ceramic tiled surfaces	Limited	Destructive/intrusive inspection was conducted at selected locations. It is generally not practicable to completely remove floor coverings for inspection.
Enclosed building cavities and voids (e.g., within masonry walls).	Nil	Destructive/intrusive inspection is generally not practicable through potential asbestos-cement sheeting or masonry, concrete and the like.
Energised plant, equipment and services (e.g., electrical / gas appliances).	Limited	Full access requires certified isolation and de-energisation by a qualified / licensed technician or similar. Not included in survey scope.
Subsurface areas including building footings and contamination in soil / fill	Nil	Not included in survey scope.
Building exteriors	Limited	Access limited by vegetation in various areas.

\* Refer also to the Register in Appendices B.

## 6. Recommendations

Relevant notes and / or a summary recommendation for each HBM identified or assumed present at the Site are provided in the Register (Appendix B).

The general recommendations in Section 6.1 onwards are provided for informative purposes and should be considered where the relevant HBM has been identified or assumed present by DP or is subsequently suspected to be present based on reasonable grounds.

The presence of identified and assumed HBM at the Site, and the potential presence of any as-yet undetected HBM, should be considered during the risk assessment for any proposed work at the Site or Site use.

### 6.1 General

HBM should be managed in accordance with the requirements of the WHS Act, WHS Regulation and subordinate Codes of Practice, Australian Standards and guidelines.

HBM should be visually inspected on a regular basis. Any change to the condition of the material or relevant site conditions should be reported.

HBM should be removed prior to any significant disturbance such as maintenance, refurbishment and demolition work.

A HBM management plan, and scope of work specification for any planned abatement, should be developed to aid compliance with the requirements of the WHS Act and Regulation including those that relate to the identification of hazards and control of associated risks.

HBM abatement work should be appropriately monitored and/or audited to help ensure quality and compliance.

An appropriate level of stakeholder consultation and communication should be undertaken at all times to help ensure that all relevant operational and project risks are adequately controlled.

The scope, fees and terms/conditions applicable to any HBM work, including abatement, should be carefully assessed by a suitably qualified, experienced and competent person to help ensure that associated costs remain within reasonable limits. Such assessment should include consideration of the fees that may apply to the management and control of any additional finds.

Prior to any work involving HBM a risk assessment should be conducted and Safe Work Method Statement (SWMS) developed. The SWMS should outline the controls necessary to ensure that the risks of exposure and environmental contamination are adequately controlled.

HBM remediation and removal work should be undertaken in controlled conditions.

Waste should be assessed and classified for disposal in accordance with EPA (2014).

At the completion of HBM abatement and/or removal work a clearance inspection should be conducted by a Competent Person, or in the case of friable asbestos, by a Licensed Asbestos Assessor.

## 6.2 Asbestos-Containing Material (ACM)

Asbestos and ACM must be managed in accordance the WHS Regulation, the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and the SafeWork NSW *Code of Practice: How to Safely Remove Asbestos*.

Exposure to airborne asbestos in the workplace must be eliminated to the extent that is reasonably practicable. If it is not reasonably practicable to eliminate exposure it must be minimised to the extent that is reasonably practicable.

An Asbestos Management Plan must be developed to enable compliance with the WHS Regulation (Clause 429).

The presence and location of asbestos or ACM identified at a workplace must be clearly indicated by a label if it is reasonably practicable to do so.

Warning labels and signs should be consistent with the examples provided in the SafeWork NSW *Code of Practice: How to Manage and Control Asbestos in the Workplace* and comply with AS1319 *Safety Signs for the Occupational Environment*.

Non-friable ACM that are structurally intact and in good to fair condition may typically remain in place provided that they are not significantly disturbed.

Tools and equipment that generate dust must generally not be used on asbestos or ACM. These include high-speed abrasive power and pneumatic tools (e.g., angle grinders, sanders, saws and high-speed drills, brooms and brushes).

Tools and equipment that cause the release of asbestos, including power tools and brooms, may only be used on asbestos if the equipment is enclosed and / or designed to capture or suppress asbestos fibres and / or the equipment is used in a way that is designed to capture or suppress asbestos fibres safely. In such a case, other controls including PPE may also be required based upon the results of a pre-work risk assessment and the SWMS adopted.

The use of high-pressure water spray and compressed air on asbestos or ACM is specifically prohibited under the WHS Regulation.

If ACM become damaged they should be repaired or removed and replaced with an alternative, non-asbestos building product as soon as possible.

The scope of asbestos removal work should be outlined in a technical specification (i.e., Scope of Work Report) developed by a Competent Person (in the case of non-friable asbestos) or a Licensed Asbestos Assessor (in the case of friable asbestos).

Removal of friable asbestos must only be undertaken by a Class A licensed asbestos removalist. Removal of 10 m<sup>2</sup> or more of non-friable asbestos must only be undertaken by a Class A or Class B licensed asbestos removalist.

Air monitoring, including background, control and clearance monitoring, is a mandatory requirement during removal of friable asbestos. Air monitoring should also be considered during removal of non-friable asbestos particularly where sensitive receptors exist such as at schools, hospitals, in public areas and at similar sites.

Air monitoring must be undertaken in accordance with the National Occupational Health and Safety Commission (NOHSC) *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition* [NOHSC:3003(2005)].

All air monitoring samples must be analysed by a NATA accredited laboratory that holds accreditation for the required analysis.

At the completion of licensed asbestos removal work, a clearance inspection must be conducted by a Competent Person (for non-friable asbestos removal) or a Licensed Asbestos Assessor (for friable asbestos removal).

Air monitoring and clearance inspections must be performed by person/s independent of the licensed asbestos removalist.

All waste should be classified for disposal in accordance with EPA (2014). Asbestos waste is preclassified as Special Waste under these guidelines.

Asbestos transporters and facilities receiving asbestos waste must report the movement of asbestos waste to the EPA. Entities involved with the transport or disposal of asbestos waste in NSW, or arranging the transport of asbestos waste in NSW, must use the EPA's online tool, WasteLocate.

All asbestos waste must be disposed at a waste collection facility licensed to receive asbestos waste. All disposal receipts should be retained.

A person who relinquishes management or control of the workplace must ensure that the Asbestos Register is given to the person, if any, assuming management or control of the workplace.

### **6.3 Synthetic Mineral Fibre (SMF)**

SMF insulation materials may generally remain in place providing that they are in good condition and unlikely to be disturbed.

To reduce the potential for disturbance, exposure and environmental contamination SMF insulation materials may be encapsulated or enclosed. Higher risk materials, such as loose fill insulation, may also be removed and replaced if necessary.

SMF work is to be undertaken in accordance with the requirements of the WHS Regulation and subordinate Codes of Practice, Guidance Notes and other documents. These include:

- WorkCover NSW *Safe management of synthetic mineral fibres (SMF) - glasswool and rockwool*;
- Safe Work Australia *Guide to Handling Refractory Ceramic Fibres, December 2013*; and
- Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres [NOHSC:3006(1989)].

Reference should also be made to the Australian Institute of Occupational Hygienists (AIOH) *Synthetic Mineral Fibres (SMF) And Occupational Health Issues, Position Paper, October 2011 (reformatted January 2018)* for guidance and information.

Where reasonable concern exists over possible respirable fibre concentrations in any application, the first step is often to confirm that the work practices, as recommended for the particular product, are being followed. Air monitoring may not be required when it has been clearly established that appropriate work practices are being carried out.

Notwithstanding the above, exposures to airborne SMF should not exceed the relevant Safe Work Australia (SWA) exposure standards outlined in Table 5 below.

**Table 5: SWA Exposure Standards for SMF**

Standard Name	Time Weighted Average (TWA) Exposure Standard
Glass wool, rock (stone) wool, slag wool and continuous glass filament and low biopersistence Man Made Vitreous Fibres (MMVF)	2 mg/m <sup>3</sup> (inhalable dust)
Refractory ceramic fibres (RCF), special purpose glass fibres and high biopersistence MMVF	0.5 f/mL (respirable) 2 mg/m <sup>3</sup> (inhalable dust)

SMF waste should be disposed at a licensed waste collection facility. Note that synthetic fibre waste (from materials such as fibreglass, polyesters and other plastics) packaged securely to prevent dust emissions is pre-classified as General Solid Waste (non-putrescible) under EPA (2014).

All disposal receipts should be retained.

## 6.4 Polychlorinated Biphenyls (PCBs)

Prior to any significant disturbance, such as demolition, refurbishment or maintenance works, fluorescent light fittings should be electrically isolated and inspected in detail for components (e.g., metal canister-type capacitors and ballasts etc.) that may contain PCB's. Any components containing, or suspected to contain, PCB should be removed by a Competent Person.

PCB-containing components should be managed in accordance with the general requirements of the WHS Regulation and relevant environmental laws and guidelines including:

- Environmentally Hazardous Chemicals (EHC) Act 2008 and subordinate *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997*; and
- *Polychlorinated Biphenyls Management Plan, Revised Edition, April 2003*, issued by the Environment Protection and Heritage Council (EPHC).

Any PCB-containing components that exhibit leakage should be removed and replaced by a Competent Person as soon as possible. Access to areas containing leaking components should be suitably restricted.

The conveyance and disposal of PCB material and PCB waste must be undertaken in accordance with the requirements outlined in the *Polychlorinated Biphenyl (PCB) Chemical Control Order 1997*.

All disposal receipts should be retained.

## 6.5 Lead Paint

The potential presence of lead paint(s) at the Site should be considered during the risk assessment for any proposed works. Additional, targeted sampling and analysis for lead paints should be considered prior to any work that may result in significant disturbance of paint system(s).

Lead paints should be managed in accordance with the WHS Regulation (including Chapter 7, Part 7.2 Lead) and:

- AS4361.1 - 2017, *Guide to hazardous paint management - Lead and other hazardous metallic pigments in industrial applications*; and
- AS4361.2 - 2017, *Guide to hazardous paint management - Lead paint in residential, public and commercial buildings*.

Generally, when one or more tests from a building or portion of a building indicate that lead is present, the paint should be treated as lead paint. Further, a project should not be classified as free of lead unless all samples within the area are proven to be free of lead and the sampling is comprehensive.

Lead paint that is in sound condition, not directly accessible (e.g., over-painted with lead-free paint) and unlikely to be disturbed may not require any immediate action.

Area(s) of lead paint that are in poor condition (e.g., flaking, delaminating) should generally be removed along with any lead paint debris and associated dust.

Exposed area(s) of lead paint that are intact may be stabilised by over-painting with a lead-free paint, or by covering with a suitable encapsulant. Stabilisation can provide an interim to long-term solution to a lead paint hazard.

The lead paint removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use / activities.

Exposure to airborne lead must be maintained below the relevant SWA exposure standards pertaining to lead. The SWA 8-hour Time Weighted Average (TWA) exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m<sup>3</sup>. Other exposure standards apply for substances such as lead chromate.

Air monitoring for lead may be required during lead paint remediation works based on risk assessment and the requirements to maintain airborne lead levels below the abovementioned exposure standards.

At the completion of lead paint removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead paint waste should be assessed and classified for disposal in accordance with EPA (2014).

Under EPA (2014) the following wastes (other than special waste, liquid waste, hazardous waste, restricted solid waste or general solid waste (putrescible)) are pre-classified as 'general solid waste (non-putrescible)':

- Waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions.

Under EPA (2014) the following waste types (other than special waste or liquid waste) have been pre-classified by the EPA as 'hazardous waste':

- Lead paint waste arising otherwise than from residential premises or educational or child care institutions.

Based on previous correspondence with the NSW EPA DP understands that EPA (2014) does not consider AS4361.1 - 2017 or AS4361.2 - 2017, including the definition of lead paint therein, for waste classification assessment. As such:

- These standards, including the definition of 'lead paint' therein, have no bearing on how waste is classified in NSW; and
- Waste classification should be very carefully considered and an appropriate degree of liaison with the NSW EPA may be required to help ensure correct waste classification.

All disposal receipts should be retained.

## 6.6 Lead Dust

Laboratory analysis results for lead dust should be taken as an approximate indication of actual conditions only since sampling is limited and the concentration of lead in dust may vary considerably between locations within the same general area.

No recognised Australian guidelines have been identified for the direct assessment of lead concentrations in ceiling cavity dust. Notwithstanding this, AS4361.2-1998 *Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings* (superseded) outlined acceptance limits for lead in surface dust after lead paint management activities. These limits were:

- Interior floors: 1 mg/m<sup>2</sup> (as lead).

- Interior window sills: 5 mg/m<sup>2</sup> (as lead); and
- Exterior surfaces: 8 mg/m<sup>2</sup> (as lead).

The United States Environmental Protection Authority (US EPA) 40 CFR Part 745 *Lead; Identification of Dangerous Levels of Lead; Final Rule* identifies the following clearance standards following abatement:

- Floors - 40 µg/ft<sup>2</sup> (~0.43 mg/m<sup>2</sup>) lead;
- Interior Window sills - 250 µg/ft<sup>2</sup> (~2.7 mg/m<sup>2</sup>) lead; and
- Window troughs - 400 µg/ft<sup>2</sup> (~4.3 mg/m<sup>2</sup>) lead.

The above acceptance limits may be used as a guide to assessing lead concentrations in settled dust. As a precaution, and due to the nature of the Site, a lead concentration of 0.5 mg/m<sup>2</sup> has been used to identify potentially hazardous conditions in this assessment.

Where the concentration of lead in dust exceeds 0.5 mg/m<sup>2</sup> appropriate control and / or remedial measures may need to be identified via risk assessment and with a detailed knowledge of the workplace and proposed use / activities.

Where ceiling spaces and similar cavities are effectively enclosed and provide very limited or no opportunity for lead containing dust to enter occupied areas, the dust may typically remain in place. In such a case, access to the cavities should be suitably restricted and all entrances signposted with appropriate warning signs.

Any personnel required to enter building cavities or other areas containing elevated concentrations of lead in dust should undertake an appropriate risk assessment and develop a SWMS for the work. The SWMS must identify controls that ensure the risk of exposure to lead and environmental contamination remains at an acceptable level for the personnel entering the area and for occupants of the building and surrounds.

Consideration should be given to removal of lead containing dust including when:

- There is a significant risk of the lead entering occupied areas;
- Significant disturbance of lead dust is likely due to maintenance, refurbishment, demolition or other reason(s); or
- Removal is a reasonably practical means of eliminating the hazard.

Removal of lead dust should be undertaken by a suitably qualified and experienced removalist.

The lead dust removal method and control measures adopted should be determined by risk assessment and a detailed knowledge of the workplace and proposed use/activities.

Exposure to airborne lead must be maintained below the relevant SWA exposure standards pertaining to lead. The SWA 8-hour TWA exposure standard for lead (inorganic dusts and fumes) is 0.05 mg/m<sup>3</sup>.

Air monitoring for lead may be required based on the results of risk assessment and the requirement to maintain airborne lead concentrations below the abovementioned exposure standard(s).

At the completion of lead dust removal, a clearance inspection should be conducted by a Competent Person. The Competent Person should determine the requirements for clearance including any air monitoring or sample analysis that may be required.

Lead waste should be assessed and classified for disposal in accordance with EPA (2014).

All disposal receipts should be retained.

## 7. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at Kogarah War Memorial Pool, 78 Carwar Avenue, Carss Park NSW 2221 in accordance with DP's proposal SYD200681.P.001.Rev0 of 1 July 2020.

This report is provided for the exclusive use of SJB Architects, C/- SJB Planning, 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.

The results provided in the report are indicative of the conditions on the Site only at the specific inspection, sampling and / or testing locations, and then only to the extent practicable and safely accessible at the time the work was carried out. Site conditions may change after DP's field inspection, sampling and testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be affected by undetected variations in site conditions across the Site between and beyond the inspection, 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 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.

Although the sampling plan adopted for this investigation is considered appropriate to achieve the stated project objectives, there are necessarily parts of the Site that have not been inspected, sampled and / or tested. This is either due to undetected variations in conditions or to budget constraints (as discussed above), or to parts of the Site being inaccessible or unavailable, or to occupants, furnishings or stored items preventing access. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the Site, between and beyond the inspection, sampling and testing locations, and hence no warranty can be given that all HBM have been identified.

Inspections are limited to areas that are safely accessible at the time of the inspection without undue damage to building finishes or disturbance of occupants. Inspections exclude hidden and inaccessible locations such as within building cavities, voids and enclosed sections of risers/shafts as well as materials encased within the building structure or located below the exposed ground surface (e.g., pipes, drains and formwork). In addition, residual asbestos materials (e.g., asbestos lagging to pipes and vessels) may remain undiscovered below newer, asbestos-free materials (e.g., preformed SMF insulation). Such residual asbestos materials may not be identified without extensive intrusive investigation and / or dismantling / demolition work if at all.

Any disturbance of building materials, such as during renovation, maintenance or demolition work, may reveal additional HBM.

Limitations apply to the laboratory analytical methods used. For example, it can be very difficult or impossible to detect the presence of asbestos in some bulk materials (e.g., vinyl tiles) using the polarised light microscopy analytical method, even after ashing or disintegration of samples. This is due to the small length or diameter of asbestos fibres present in the material or attributed to the fact that very fine fibres have been dispersed individually throughout the material.

While work is undertaken in a professional manner the nature of HBM and the limitations of the method(s) used mean that we cannot guarantee that all HBM or issues of concern have been identified. This report should therefore not be considered a definitive account of all HBM that may be present at the Site.

DP personnel are not licenced or accredited quantity surveyors. Any quantities quoted in this report are provided for general guidance only and should not be relied upon. The services of a licenced quantity surveyor should be engaged in order to determine reliable quantities.

The recommendations and conclusions contained in this report shall not abrogate a person of their responsibility to work in accordance with statutory requirements, codes of practice, standards, guidelines, safety data sheets, work instructions or industry best practice.

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 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 environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

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**Douglas Partners Pty Ltd**

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## Appendix A

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About This Report

Site Plan

# 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

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

## 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**

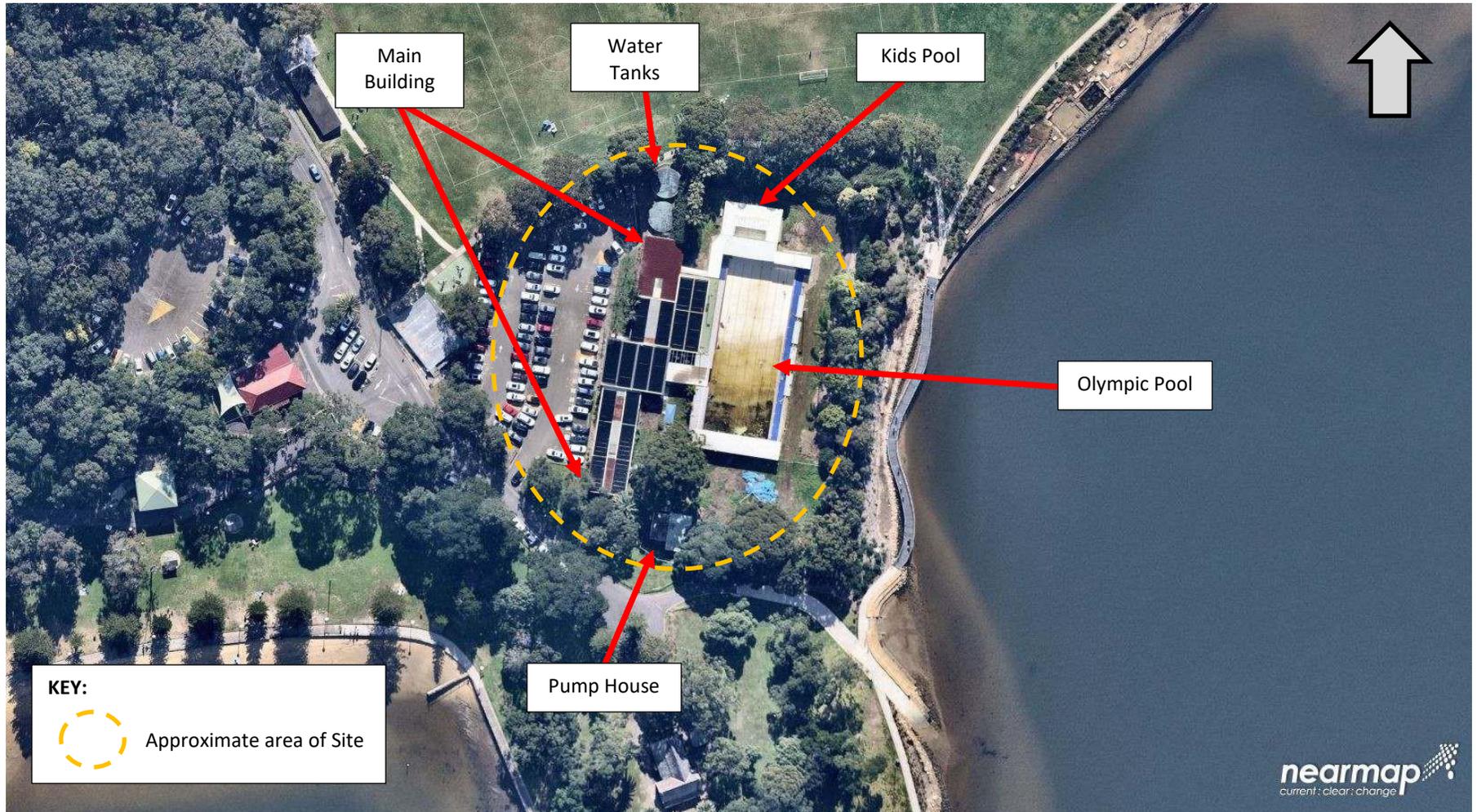
Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate 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.

# SITE PLAN – KOGARAH WAR MEMORIAL POOL, CARSS PARK NSW

Date: Sun, 02 Aug 2020



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## **Appendix B**

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### Hazardous Building Materials (HBM) Register

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
Main Building	exterior, roof	southern section, skylight, typical fascia lining	fibre cement sheeting	KP-R-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Main Building	exterior, roof	northern section, skylight, typical fascia lining	fibre cement sheeting	KP-R-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Main Building	exterior, roof	northern section, adjacent skylight	800074	refer KP-R-A02	suspected non-asbestos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Main Building	exterior	southern façade, lower eave lining	fibre cement sheeting	KP-E-A01	<b>asbestos detected by analysis</b>	1	1	1	1	2	0	6	Low	1	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	exterior	eastern façade, upper eave lining above canteen	fibre cement sheeting	KP-E-A05	no asbestos detected by analysis ( <b>caution advised</b> )	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	<b>Caution advised</b> as access for inspection limited due to height, material labelled as asbestos and potential for local replacement. Remove as asbestos or undertake confirmatory sampling and analysis as a precaution prior to any disturbance.
Main Building	exterior generally	eave linings (upper and lower sections) generally	fibre cement sheeting	refer KP-E-A01	<b>suspected asbestos</b>	1	1	1	1	2	0	6	Low	refer 1 & 2	Consider confirmatory sampling and analysis of upper eave as a precaution prior to any disturbance. Remove asbestos material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	exterior	western façade, south end, Telstra pit	fibre cement product	N/A	<b>suspected asbestos</b>	1	1	3	2	2	0	9	Low	3	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	exterior	western façade, centre section of building, portion of walls	fibre cement sheeting	KP-E-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4	no asbestos identified
Main Building	exterior	western façade, centre section of building	render to fibre cement sheeting	KP-E-A04	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	refer 4	no asbestos identified
Main Building	exterior	eastern façade, canteen, walls, typical infill panel	fibre cement sheeting	KP-E-A06	<b>asbestos detected by analysis</b>	1	1	1	2	2	0	7	Low	refer 5	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	exterior	eastern façade, canteen, walls, infill panels generally	fibre cement sheeting	refer KP-E-A06	<b>suspected asbestos</b>	1	1	1	2	2	0	7	Low	5	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	exterior	eastern façade, centre section, service pit	cement product	KP-E-A07	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	no asbestos identified
Main Building	interior, northern section	male toilets, urinal(s)	lining to rear of urinal (if present)	N/A	<b>may contain asbestos</b>	0	1	2	0	2	1	6	Low	7	Inaccessible area/material (requires demolition). Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Main Building	interior, northern section	male toilets, cisterns (x2) above urinal	fibre cement product	KP-I-A01	no asbestos detected by analysis. <b>SMF detected.</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation	
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority			
Main Building	interior, northern section	male toilets and change room, fluorescent light fittings generally	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, northern section	male toilets, southwest corner, wall lining and associated dust/debris	fibre cement sheeting	KP-I-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	no asbestos identified	
Main Building	interior, northern section	male change room, hot water unit (circa 2017)	bulk insulation	N/A	SMF of foam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.	
Main Building	interior, northern section	male change room, portion south wall lining	fibre cement sheeting	KP-I-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified.	
Main Building	interior, northern section	male change room, below skylight, infill panels generally	fibre cement sheeting	refer KP-I-A04	suspected asbestos	1	1	1	1	2	1	7	Low	9	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, northern section	male change room, below skylight, linings to timber beams	fibre cement sheeting	KP-I-A04	asbestos detected by analysis	1	1	1	1	2	1	7	Low	10	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, northern section	main gymnasium, fluorescent light fittings in general	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, northern section	main gymnasium, lining to centre section of roof structure	fibre cement sheeting	refer KP-I-A04	suspected asbestos	1	1	1	1	2	1	7	Low	11	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, northern section	gymnasium (semi-enclosed section), fluorescent light fittings in general	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment									Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority			
Main Building	interior, centre section	reception area, western wall, infill panels to roller door	fibre cement sheeting	KP-I-A05	asbestos detected by analysis	1	1	1	2	2	1	8	Low	12	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	reception area, ceiling	fibre cement sheeting	KP-I-A06	asbestos detected by analysis	1	1	1	1	2	1	7	Low	13	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	reception area, fluorescent light fittings	internal components (e.g. capacitors/ballasts)	N/A	may contain PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	Inaccessible area/material (due height and electrical hazard). Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	massage room, ceiling	fibre cement sheeting	KP-I-A07	asbestos detected by analysis	1	1	1	1	2	1	7	Low	15	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	massage room, fluorescent light fitting(s)	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	canteen, floor	white vinyl tile and adhesive	KP-I-A08	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified	
Main Building	interior, centre section	canteen, floor	black vinyl tile and adhesive	KP-I-A09	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified	
Main Building	interior, centre section	canteen, ceiling	fibre cement sheeting	refer KP-I-A06 and A07	suspected asbestos	1	1	1	1	2	1	7	Low	16	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	canteen, hot water unit (circa 2015)	bulk insulation	N/A	SMF of foam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.	

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment									Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority			
Main Building	interior, centre section	canteen, fluorescent light fittings	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, centre section	kitchenette, floor	black and white vinyl flooring	KP-I-A10	no asbestos detected by analysis. <b>SMF detected.</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.
Main Building	interior, centre section	kitchenette, floor (below black and white vinyl)	cream/brown vinyl flooring	KP-I-A11	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Main Building	interior, centre section	kitchenette, ceiling	fibre cement sheeting	refer KP-I-A06 and A07	<b>suspected asbestos</b>	1	1	1	1	2	1	7	Low	N/A	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	kitchenette, fluorescent light fitting(s)	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, centre section	southwestern store room, ceiling	fibre cement sheeting	refer KP-I-A06 and A07	<b>suspected asbestos</b>	1	1	1	1	2	1	7	Low	N/A	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	southwestern store room, fluorescent light fittings	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, centre section	southwestern store room, ceiling cavity, packing materials	fibre cement sheeting	KP-I-A12	<b>asbestos detected by analysis</b>	1	3	1	1	1	2	9	Low	17	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	electrical room, ceiling	fibre cement sheeting	refer KP-I-A06 and A07	<b>suspected asbestos</b>	1	1	3	1	2	1	9	Low	18	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Main Building	interior, centre section	electrical room, subfloor, electrical cable	bituminous wrapping	N/A	<b>suspected asbestos</b>	1	1	2	1	1	2	8	Low	19	Inaccessible due to electrical hazard. Undertake confirmatory sampling and analysis and determine extent of any asbestos material when safe access is available and prior to disturbance. Remove asbestos material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
Main Building	interior, centre section	electrical room, electrical cabinet	internal components	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	Inaccessible area/material (isolation required). Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Main Building	interior, centre section	vestibule to southern gymnasium, ceiling	fibre cement sheeting	refer KP-I-A06 and A07	<b>suspected asbestos</b>	1	1	1	1	2	1	7	Low	N/A	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, southern section	gymnasium and change room, centre of ceiling, lining to timber beams	fibre cement sheeting	KP-I-A13	<b>asbestos detected by analysis</b>	1	1	1	1	2	1	7	Low	21	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, southern section	gymnasium	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, southern section	ladies change room, centre of ceiling, lining to timber beams	fibre cement sheeting	refer KP-I-A13	<b>suspected asbestos</b>	1	1	1	1	2	1	7	Low	similar 21	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, southern section	ladies toilets, fluorescent light fittings	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, southern section	ladies toilets, Rheem hot water unit (circa 2009)	bulk insulation	N/A	<b>SMF</b> of foam	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.
Main Building	building in general	below concrete slab, subfloor void	materials in general	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	Inaccessible area/material (due no designated access point). Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Main Building	building in general	roof structure throughout, suspected packing materials	fibre cement sheeting (assumed)	refer KP-I-A12	<b>asbestos detected by analysis</b>	1	3	1	1	1	2	9	Low	refer X	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Main Building	interior, centre section	ceiling cavities	settled dust/debris	N/A	<b>elevated lead assumed</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Remove bulk dust/debris along with asbestos ceiling lining. Implement appropriate controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition work).

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation	
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority			
Main Building and water tanks	rooms and areas in general	locations in general	paints	refer KP-I-LP01, LP02, LP04, LP06, LP08, LP09	may comprise lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Consider further confirmatory sampling and analysis prior to any substantive paint disturbance. Implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Pump House	exterior	weatherboard wall linings in general	fibre cement board	PH-E-A01	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Pump House	exterior	eave linings in general	fibre cement sheeting	PH-E-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Pump House	exterior	typical window frame	glazing putty	PH-E-A03	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Pump House	exterior	southeast corner, flat wall lining	fibre cement sheeting	PH-E-A04	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Pump House	exterior	adjacent northwest, service pit	fibre reinforced pit	PH-E-A05	no asbestos detected by analysis. <b>SMF detected.</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.	
Pump House	exterior	adjacent east, service pit	fibre reinforced pit	PH-E-A06	no asbestos detected by analysis. <b>SMF detected.</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.	
Pump House	interior	boiler	accessible bulk insulation	N/A	<b>SMF identified visually</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.	
Pump House	interior	boiler	internal materials/ insulation layers (if present)	refer PH-I-A01	inaccessible (caution advised)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inaccessible area/material (requires isolation and detailed dismantling). Confirm status of hazardous material(s) when safe access available and prior to any disturbance. Caution advised due asbestos detected in sample PH-I-A01.	
Pump House	interior	boiler	external woven gasket	refer PH-I-A01	<b>suspected asbestos</b>	3	1	2	1	1	1	9	N/A	25	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Pump House	interior	boiler	internal gasket	PH-I-A01	<b>asbestos detected by analysis</b>	3	1	2	1	1	1	9	Low	26	Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).	
Pump House	interior	centre of eastern side or accessible room, pipe in floor	fibre cement pipe	PH-I-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Pump House	accessible areas in general	fluorescent light fittings	internal components (e.g. capacitors/ballasts)	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Inspect fluorescent light fittings in detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Pump House	western section of building	throughout	materials in general	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	Inaccessible area/material (due no designated access point). Confirm status of hazardous material(s) when safe access available and prior to any disturbance.	

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
General Grounds	between Pump House and Olympic pool	service trench, pipes (x2)	fibre cement pipes and associated components	PH-E-A07	asbestos detected by analysis	1	1	2	1	1	0	6	Low	28, 29, 30	Confirm extent of reticulation system prior to disturbance and conduct further confirmatory inspection, sampling and analysis for asbestos as required. Remove asbestos materials prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area and surrounds	in-ground reticulation system	fibre cement pipes and associated components	PO-A01	asbestos detected by analysis	1	1	2	1	1	0	6	Low	31, 32	Confirm extent of reticulation system prior to disturbance and conduct further confirmatory inspection, sampling and analysis for asbestos as required. Remove asbestos materials prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area	in-ground reticulation system In general	fibre cement pipes and associated components	refer PH-E-A07 and PO-A01	suspected asbestos	1	1	2	1	1	0	6	Low	refer 28-32	Confirm extent of reticulation system prior to disturbance and conduct further confirmatory inspection, sampling and analysis for asbestos as required. Remove asbestos materials prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area	in-ground pits, service/plant areas and other voids	materials in general	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33, 34	Inaccessible for various reasons including lack of designated access points, available clearance, presence of water and potentially confined space. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
General Grounds	Olympic pool	inside pool, eastern wall, expansion gap	mastic/putty	PO-A03	no asbestos detected by analysis. <b>SMF detected.</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.
General Grounds	Olympic pool	inside pool, periodically along gutters	fibre reinforced bricks	N/A	suspected SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Consider confirmatory sampling and analysis prior to any disturbance. Classify SMF material for disposal in accordance with the NSW EPA Waste Classification Guidelines. Implement appropriate controls to prevent exposure and dispersal during removal and disposal.
General Grounds	pool area	walkway between Olympic pool and Main Building, pavement expansion gap	bitumastic	PO-A02	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
General Grounds	water tank area	irrigation pump controls	interval components	N/A	inaccessible	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35	Not accessible at time of inspection (padlocked). Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
General Grounds	pool area	flood lights, internal components	Vossloh Schwabe capacitors VS5, Type B 45 µf +/-10%	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	36	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area	flood lights, internal components	plastic capacitors	N/A	nil-PCB identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment									Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority			
General Grounds	pool area	flood lights, internal components	Tridonic ballast OGH 1000A	N/A	may contain PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37	Item not identified in ANZECC (1997), does not carry date stamp and may therefore contain PCB. Consider further destructive inspection, sampling and analysis when safe access is available and prior to disturbance. Remove any components containing PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area	flood lights	internal components (e.g. capacitors and/or ballasts)	N/A	may contain PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38	Access limited due to electrical hazard, height and designated access points. Confirm status of hazardous material(s) when safe access available and prior to any disturbance. Remove any components containing PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	pool area	covered areas generally	fluorescent light fittings	N/A	suspected nil-PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Fittings generally carry 'CE' logo introduced around 1985 and therefore unlikely to contain PCB. Inspect fluorescent light fittings in further detail when safe access is available and prior to any disturbance. Remove any components containing, or assumed to contain, PCB prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
General Grounds	water tanks	joint in tank wall	jointing material	KP-E-A08	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	no asbestos identified
Main Building	interior, northern section	male toilets, timber roof supports	white paint system	KP-I-LP01	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	40	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, northern section	main gymnasium, metal poles	white paint system	KP-I-LP02	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, northern section	main gymnasium, masonry wall	white and underlying blue paint system	KP-I-LP03	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Main Building	interior, northern section	main gymnasium, fascia	cream paint system	KP-I-LP04	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, northern section	gymnasium (semi-enclosed section), masonry wall	undercoat yellow paint	KP-I-LP05	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Main Building	interior, centre section	massage room, window sill	underlying cream paint	KP-I-LP06	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, centre section	canteen store room, wall	white paint system	KP-I-LP07	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

DP Project No: 99751.02  
 Hazardous Building Materials (HBM) Register  
 Kogarah War Memorial Pool

Building	Room / Area	Material Location	Material Type	Sample No.	Material Status	Asbestos Risk Assessment								Photo No.	Summary Comment/Recommendation
						Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
Main Building	interior, centre section	canteen, window security grille	white paint system	KP-I-LP08	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, southern section	gymnasium, metal posts	dark red paint system	KP-I-LP09	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Avoid disturbance and implement controls to prevent exposure and dispersal during building work (e.g. maintenance, refurbishment and demolition). Classify lead containing waste for disposal in accordance with the NSW EPA Waste Classification Guidelines.
Main Building	interior, southern section	ladies change room, floor (below carpet)	green and cream paint	KP-I-LP10	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Pump House	interior	western wall	cream paint system	PH-I-LP01	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

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## Appendix C

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Plates



Photograph 1: Main Building, exterior, lower eave lining, fibre cement sheeting, asbestos detected by analysis.



Photograph 2: Main Building, exterior, eastern façade, upper eave lining above canteen, fibre cement sheeting, no asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 1
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 3: Main Building, exterior, western façade, south end, Telstra pit, fibre cement product, suspected asbestos.



Photograph 4: Main Building, exterior, western façade, centre section of building, portion of walls, fibre cement sheeting, no asbestos detected by analysis.

	<b>Site Photographs</b>	PROJECT: 99751.02
	<b>Hazardous Building Materials (HBM) Register</b>	PLATE No: 2
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 5: Main Building, exterior, eastern façade, canteen, walls, infill panels generally, fibre cement sheeting, suspected asbestos.



Photograph 6: Main Building, exterior, eastern façade, centre section, service pit, cement product, no asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 3
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 7: Main Building, interior, northern section, male toilets, urinal(s), lining to rear of urinal (if present), may contain asbestos.



Photograph 8: Main Building, interior, northern section, male toilets, southwest corner, wall lining and associated dust/debris, fibre cement sheeting, no asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 4
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 9: Main Building, interior, northern section, male change room, below skylight, infill panels generally, fibre cement sheeting, suspected asbestos.



Photograph 10: Main Building, interior, northern section, male change room, below skylight, linings to timber beams, fibre cement sheeting, asbestos detected by analysis.

	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 5
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 11: Main Building, interior, northern section, main gymnasium, lining to centre section of roof structure, fibre cement sheeting, suspected asbestos.



Photograph 12: Main Building, interior, centre section, reception area, western wall, infill panels to roller door, fibre cement sheeting, asbestos detected by analysis.



**Site Photographs**

**Hazardous Building Materials (HBM) Register**

**Kogarah War Memorial Pool**

CLIENT: SJB Architects C/- SJB Planning

PROJECT: 99751.02

PLATE No: 6

REV: A

DATE: Jul-20



Photograph 13: Main Building, interior, centre section, reception area, ceiling, fibre cement sheeting, asbestos detected by analysis.



Photograph 14: Main Building, interior, centre section, reception area, fluorescent light fittings, internal components (e.g. capacitors/ballasts), may contain PCB.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 7
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 15: Main Building, interior, centre section, massage room, ceiling, fibre cement sheeting, asbestos detected by analysis.



Photograph 16: Main Building, interior, centre section, canteen, ceiling, fibre cement sheeting, suspected asbestos.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 8
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 17: Main Building, interior, centre section, southwestern store room, ceiling cavity, packing materials, fibre cement sheeting, asbestos detected by analysis.



Photograph 18: Main Building, interior, centre section, electrical room, ceiling, fibre cement sheeting, suspected asbestos.



Photograph 19: Main Building, interior, centre section, electrical room, subfloor, electrical cable, bituminous wrapping, suspected asbestos.



Photograph 20: Main Building, interior, centre section, electrical room, electrical cabinet, internal components, inaccessible.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	<b>Hazardous Building Materials (HBM) Register</b>	PLATE No: 10
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 21: Main Building, interior, southern section, gymnasium and change room, centre of ceiling, lining to timber beams, fibre cement sheeting, asbestos detected by analysis.



Photograph 22: Main Building, building in general, below concrete slab, subfloor void, materials in general, inaccessible.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 11
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 23: Pump House, exterior, adjacent northwest, service pit, fibre reinforced pit, no asbestos detected by analysis. SMF detected.



Photograph 24: Pump House, exterior, adjacent east, service pit, fibre reinforced pit, no asbestos detected by analysis. SMF detected.

	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 12
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 25: Pump House, interior, boiler, external woven gasket, suspected asbestos.



Photograph 26: Pump House, interior, boiler, internal gasket, asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 13
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 27: Pump House, western section of building, throughout, materials in general, inaccessible.



Photograph 28: General grounds, between Pump House and Olympic pool, service trench, pipes (x2), fibre cement pipes and associated components, asbestos detected by analysis.



Photograph 29: General grounds, between Pump House and Olympic pool, service trench, pipes (x2), fibre cement pipes and associated components, asbestos detected by analysis.



Photograph 30: General grounds, between Pump House and Olympic pool, service trench, pipes (x2), fibre cement pipes and associated components, asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 15
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 31: General grounds, pool area, in-ground reticulation system, fibre cement pipes and associated components, asbestos detected by analysis.



Photograph 32: General grounds, pool area, in-ground reticulation system, fibre cement pipes and associated components, asbestos detected by analysis.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 16
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 33: General grounds, pool area, in-ground pits, service/plant areas and other voids, materials in general, inaccessible.



Photograph 34: General grounds, pool area, in-ground pits, service/plant areas and other voids, materials in general, inaccessible.

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 17
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 35: General grounds, water tank area, irrigation pump controls, internal components, inaccessible.



Photograph 36: General grounds, pool area, flood lights, internal components, Vossloh Schwabe capacitors (VS5, Type B, 45 µf +/-10%), suspected nil-PCB.

	<b>Site Photographs</b>	PROJECT: 99751.02
	<b>Hazardous Building Materials (HBM) Register</b>	PLATE No: 18
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 37: General grounds, pool area, flood lights, internal components, Tridonic ballast OGH 1000A, may contain PCB.



Photograph 38: General Grounds, pool area, flood lights, internal components (e.g. capacitors and/or ballasts), may contain PCB.

	<b>Site Photographs</b>	PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register	PLATE No: 19
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20



Photograph 39: Pump House, interior, boiler, accessible bulk insulation, SMF identified visually.



Photograph 40: Main Building, interior, northern section, male toilets, timber roof support, white paint system, lead paint (>0.1% lead w/w).

	<b>Site Photographs</b>		PROJECT: 99751.02
	Hazardous Building Materials (HBM) Register		PLATE No: 20
	<b>Kogarah War Memorial Pool</b>		REV: A
	CLIENT: SJB Architects C/- SJB Planning		DATE: Jul-20



Photograph 41: Main Building, interior, northern section, main gymnasium, metal poles, white paint system, lead paint (>0.1% lead w/w).



Photograph 42: Main Building, interior, centre section, massage room, window sill, underlying cream paint, lead paint (>0.1% lead w/w).

 <b>Douglas Partners</b> Geotechnics   Environment   Groundwater	<b>Site Photographs</b>	PROJECT: 99751.02
	<b>Hazardous Building Materials (HBM) Register</b>	PLATE No: 21
	<b>Kogarah War Memorial Pool</b>	REV: A
	CLIENT: SJB Architects C/- SJB Planning	DATE: Jul-20

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## Appendix D

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Laboratory Certificate(s) of Analysis



## CERTIFICATE OF ANALYSIS 248030

### Client Details

Client	Douglas Partners Pty Ltd
Attention	Tim Kulmar
Address	96 Hermitage Rd, West Ryde, NSW, 2114

### Sample Details

Your Reference	<b>99751.02 - Kogarah</b>
Number of Samples	34 Material, 11 Paint
Date samples received	30/07/2020
Date completed instructions received	30/07/2020

### Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.  
Samples were analysed as received from the client. Results relate specifically to the samples as received.  
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

### Report Details

Date results requested by	04/08/2020
Date of Issue	03/08/2020

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#### Asbestos Approved By

Analysed by Asbestos Approved Identifier: Lucy Zhu  
Authorised by Asbestos Approved Signatory: Lucy Zhu

#### Results Approved By

Loren Bardwell, Senior Chemist  
Lucy Zhu, Asbestos Supervisor

#### Authorised By

Nancy Zhang, Laboratory Manager

Client Reference: 99751.02 - Kogarah

Lead in Paint						
Our Reference		248030-30	248030-31	248030-32	248030-33	248030-34
Your Reference	UNITS	KP-I-LP01	KP-I-LP02	KP-I-LP03	KP-I-LP04	KP-I-LP05
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Lead in paint	%w/w	0.32	0.56	0.005	0.29	<0.005

Lead in Paint						
Our Reference		248030-35	248030-36	248030-37	248030-38	248030-39
Your Reference	UNITS	KP-I-LP06	KP-I-LP07	KP-I-LP08	KP-I-LP09	KP-I-LP10
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Lead in paint	%w/w	0.32	<0.005	0.11	0.88	<0.005

Lead in Paint		
Our Reference		248030-40
Your Reference	UNITS	PH-I-LP01
Type of sample		Paint
Date prepared	-	31/07/2020
Date analysed	-	31/07/2020
Lead in paint	%w/w	0.01

Asbestos ID - materials						
Our Reference		248030-1	248030-2	248030-3	248030-4	248030-5
Your Reference	UNITS	KP-R-A01	KP-R-A02	KP-E-A01	KP-E-A03	KP-E-A04
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	65x23x4mm	55x28x3mm	25x7x2mm	70x25x6mm	65x20x1mm
Sample Description	-	Brown fibre cement material	Brown fibre cement material	Grey fibre cement material	Beige fibre cement material	Beige cement like material
Asbestos ID in materials	-	No asbestos detected  Organic fibres detected	No asbestos detected  Organic fibres detected	Chrysotile asbestos detected  Amosite asbestos detected  Crocidolite asbestos detected	No asbestos detected  Organic fibres detected	No asbestos detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	No asbestos detected	No asbestos detected

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Asbestos ID - materials						
Our Reference		248030-6	248030-7	248030-8	248030-9	248030-10
Your Reference	UNITS	KP-E-A05	KP-E-A06	KP-E-A07	KP-E-A08	KP-I-A01
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	24x9x1mm	25x7x2mm	43x19x3mm	35x12x6mm	29x11x3mm
Sample Description	-	Beige fibre cement material	Grey fibre cement material	Brown cement like material	Grey cement like material	White cement like material
Asbestos ID in materials	-	No asbestos detected  Organic fibres detected	Chrysotile asbestos detected  Amosite asbestos detected  Crocidolite asbestos detected	No asbestos detected  Organic fibres detected	No asbestos detected	No asbestos detected  Synthetic mineral fibres detected
Trace Analysis	-	No asbestos detected	[NT]	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		248030-11	248030-12	248030-13	248030-14	248030-15
Your Reference	UNITS	KP-I-A02	KP-I-A03	KP-I-A04	KP-I-A05	KP-I-A06
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	50x20x4mm	36x30x2mm	18x7x2mm	35x17x3mm	10x5x1mm
Sample Description	-	Beige fibre cement material	Beige fibre cement material, paint	Grey fibre cement material	Grey fibre cement material	Grey fibre cement material
Asbestos ID in materials	-	No asbestos detected  Organic fibres detected	No asbestos detected  Organic fibres detected	Chrysotile asbestos detected  Amosite asbestos detected  Crocidolite asbestos detected	Chrysotile asbestos detected  Amosite asbestos detected	Chrysotile asbestos detected  Amosite asbestos detected  Crocidolite asbestos detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	[NT]	[NT]

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Asbestos ID - materials						
Our Reference		248030-16	248030-17	248030-18	248030-19	248030-20
Your Reference	UNITS	KP-I-A07	KP-I-A08	KP-I-A09	KP-I-A10	KP-I-A11
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	18x10x1mm	110x35x2mm	80x70x2mm	100x70x2mm	65x55x2mm
Sample Description	-	Grey fibre cement material	Beige vinyl tile & adhesive	Black vinyl tile & adhesive	White vinyl sheet & adhesive	Brown vinyl tile & adhesive
Asbestos ID in materials	-	Chrysotile asbestos detected  Amosite asbestos detected  Crocidolite asbestos detected	No asbestos detected  Organic fibres detected	No asbestos detected  Organic fibres detected	No asbestos detected  Synthetic mineral fibres detected	No asbestos detected  Organic fibres detected
Trace Analysis	-	[NT]	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

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Asbestos ID - materials						
Our Reference		248030-21	248030-22	248030-23	248030-24	248030-25
Your Reference	UNITS	KP-I-A12	KP-I-A13	PH-E-A01	PH-E-A02	PH-E-A03
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	20x16x2mm	15x8x3mm	45x30x6mm	25x11x1mm	70x13x4mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material	Beige fibre cement material	Beige fibre cement material	Beige hardened mastic
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
		Amosite asbestos detected	Amosite asbestos detected	Organic fibres detected	Organic fibres detected	Organic fibres detected
		Crocidolite asbestos detected	Crocidolite asbestos detected			
Trace Analysis	-	[NT]	[NT]	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - materials						
Our Reference		248030-26	248030-27	248030-28	248030-29	248030-41
Your Reference	UNITS	PH-E-A04	PH-E-A05	PH-I-A01	PH-I-A02	PH-E-A06
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	33x19x1mm	40x22x4mm	17x9x2mm	45x30x7mm	65x25x8mm
Sample Description	-	Beige fibrous material	Beige quartz cement material	Brown fibrous material	Grey quartz cement material	Beige quartz cement material
Asbestos ID in materials	-	No asbestos detected	No asbestos detected	Chrysotile asbestos detected	No asbestos detected	No asbestos detected
		Organic fibres detected	Synthetic mineral fibres detected			Synthetic mineral fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	[NT]	No asbestos detected	No asbestos detected

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Asbestos ID - materials					
Our Reference		248030-42	248030-43	248030-44	248030-45
Your Reference	UNITS	PH-E-A07	PO-A01	PO-A02	PO-A03
Type of sample		Material	Material	Material	Material
Date analysed	-	31/07/2020	31/07/2020	31/07/2020	31/07/2020
Mass / Dimension of Sample	-	20x5x1mm	60x15x3mm	100x30x8mm	80x20x6mm
Sample Description	-	Grey fibre cement material	Grey fibre cement material	Black bitumenous material	Brown mastic
Asbestos ID in materials	-	Chrysotile asbestos detected  Amosite asbestos detected	Chrysotile asbestos detected	No asbestos detected  Organic fibres detected	No asbestos detected  Organic fibres detected  Synthetic mineral fibres detected
Trace Analysis	-	[NT]	[NT]	No asbestos detected	No asbestos detected

Method ID	Methodology Summary
<b>ASB-001</b>	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
<b>Metals-020/021/022</b>	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.

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QUALITY CONTROL: Lead in Paint				Duplicate			Spike Recovery %			
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			31/07/2020	33	31/07/2020	31/07/2020		31/07/2020	[NT]
Date analysed	-			31/07/2020	33	31/07/2020	31/07/2020		31/07/2020	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	33	0.29	0.30	3	100	[NT]

**Result Definitions**

<b>NT</b>	Not tested
<b>NA</b>	Test not required
<b>INS</b>	Insufficient sample for this test
<b>PQL</b>	Practical Quantitation Limit
<b>&lt;</b>	Less than
<b>&gt;</b>	Greater than
<b>RPD</b>	Relative Percent Difference
<b>LCS</b>	Laboratory Control Sample
<b>NS</b>	Not specified
<b>NEPM</b>	National Environmental Protection Measure
<b>NR</b>	Not Reported

## Quality Control Definitions

<b>Blank</b>	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
<b>Duplicate</b>	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
<b>Matrix Spike</b>	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
<b>LCS (Laboratory Control Sample)</b>	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
<b>Surrogate Spike</b>	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	
The recommended maximums for analytes in urine are taken from "2018 TLVs and BEIs", as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.	
Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2	

## Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.