Douglas Partners
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Integrated Practical Solutions

Hazardous Building Materials Report

871-877 Pacific Highway
Chatswood NSW

Prepared for
Megland Group Pty Ltd
C/-PBD Architects

Project 84772.03
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Douglas Partners
Geotechnics / Environment / Groundwater

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Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by Megland Group Pty Ltd, C/- PBD Architects, to conduct a hazardous building materials survey of 871-877 Pacific Highway, Chatswood NSW 2067. The survey was undertaken to assess the location, extent and condition of asbestos-containing materials (ACM) and other hazardous building materials prior to demolition of buildings at the site. The survey consisted of a visual inspection supplemented by a limited program of sample collection and laboratory analysis.

Hazardous building materials were identified or assumed present during the survey. These included, but were not necessarily limited to:

- ACM in the form of asbestos cement wall, ceiling, eave and gable linings, asbestos cement head panels and infill panels, window putties/sealants, electrical boards, vinyl tiles and fibre cement debris;
- SMF insulation materials in the form of insulation batts to the ceiling/roof cavities, hot water systems and air conditioning units;
- Polychlorinated biphenyls (PCBs) in the capacitors of fluorescent lights;
- Lead based paints; and
- Ceiling cavity dust containing elevated levels of lead.

Limited or no access was available to certain areas of the site as outlined in the Hazardous Materials Register (Appendix A) and Section 5. Inaccessible areas should be assumed to contain hazardous building materials unless assessment of these areas by a Competent Person confirms otherwise.

Hazardous building materials should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2011 (WHS Regulation) and subordinate Codes of Practice, Australian Standards and guidelines.

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

Limitations apply to this hazardous building materials survey and report as outlined in Section 7.

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Table of Contents

Page

Hazardous Building Materials Report
871-877 Pacific Highway, Chatswood NSW 2067

1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by Megland Group Pty Ltd, C/- PBD Architects, to conduct a hazardous building materials survey of 871-877 Pacific Highway, Chatswood NSW 2067. The survey was undertaken to assess the location, extent and condition of the following hazardous building materials prior to potential acquisition and demolition of buildings at the site:

- Asbestos containing materials (ACM);
- High risk synthetic mineral fibre (SMF);
- Polychlorinated biphenyls (PCBs) in light fittings;
- Lead paint systems; and
- Lead contaminated dust.

The full results of the survey, including details of the hazardous building materials identified and the results of ACM risk assessments, are provided in the Hazardous Materials Register (the Register) in Appendix A.

Laboratory analysis certificates for the samples collected and analysed during the survey are provided in Appendix B.

A photographic record is provided in Appendix C.

Limited or no access was available to certain areas as outlined in Section 5 of this report.

2. Site Description

The site is located on the eastern side of the Pacific Highway at its intersection with Wilson Street in Chatswood NSW. The buildings at the site comprise two (2) double storey commercial office buildings (Buildings 1 and 2) and an adjoining single storey building containing two (2) commercial units (Units 2 and 3). The buildings are identified in Figure 1 below.

Figure 1: Site Layout

3. Survey Method

The survey consisted of a visual inspection of safely accessible areas supplemented by a limited program of sample collection and laboratory analysis. The survey methods included limited destructive and intrusive techniques.

Samples of suspected ACM were collected and analysed for asbestos by polarised light microscopy (PLM) with dispersion staining in accordance with AS4964-2004 *Method for the qualitative identification of asbestos in bulk samples*.

Samples of suspected lead paint were collected and analysed for lead by Inductively Coupled Plasma – Atomic Emission Spectrometry/Mass Spectrometry (ICP-AES/MS). Paint samples contain all layers of paint at the location sampled, to the extent practicable, and therefore reflect the average lead content of the paints sampled.

High risk SMF materials were identified primarily by visual inspection. SMF materials may also be identified as a result of laboratory analysis for asbestos.

Where safe access is provided selected light fittings are partially dismantled to obtain capacitor details. Capacitor details are then compared to the list of PCB-containing and PCB-free equipment provided in *Identification of PCB-Containing Capacitors: An Information Booklet for Electricians and Electrical*

Contractors, 1997 prepared by the Australian and New Zealand Environment and Conservation Council (ANZECC).

Lead dust samples are collected from ceiling cavities found to contain significant settled dust loadings. Samples are collected from a specified surface area in accordance with AS436.1-1998, Appendix C – *Standard Practice for the Determination of Lead in Surface Dust*. Analysis is by ICP-AES/MS. The sampling area and laboratory analysis result are then used to calculate the lead dust loading which is expressed as milligrams of lead per square metre (mg/m^2).

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 Douglas Partners considers several key factors that influence risk and a numerical score is assigned to each (refer Table 1 below). These scores are then added together to determine an overall risk rating for the ACM (refer Table 2 below). A degree of professional judgement may be applied when determining the final risk rating since it is not practicable to include in Table 1 all risk factors 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 1: Key Risk Factors

Risk Factor	Score	Description
Friability	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 non-friable asbestos cement in poor condition)
	3	Friable (thermal insulation to pipes/boilers, sprayed insulation, loose fill insulation)
Condition	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. Structural stability may be compromised. Material performance is significantly impaired.
Treatment	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 significantly damaged or ineffective in area(s).
	3	Enclosure/encapsulation/sealing material is significantly damaged and/or generally ineffective or there is no treatment.
Accessibility	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 no effort.
Activity	0	Area generally not occupied. Normally very little or no activity. Activities may be highly restricted or 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 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 unrestricted. Examples may include production/manufacturing areas, construction sites and public areas/thoroughfares.
Ventilation	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 is 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. interior of AC system or at air exhaust) which may result in elevated airborne fibre concentrations.

Table 2: 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.
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 where reasonably practicable.

5. Results

The full results of the survey, including details of the hazardous building materials identified, are provided in the Hazardous Materials Register (the Register) in Appendix A.

Hazardous building materials were identified or assumed present during the survey. These included, but were not necessarily limited to:

- ACM in the form of asbestos cement wall, ceiling, eave and gable linings, asbestos cement head panels and infill panels, window putties/sealants, electrical boards, vinyl tiles and fibre cement debris;
- SMF insulation materials in the form of insulation batts to the ceiling/roof cavities, hot water systems and air conditioning units;
- Polychlorinated biphenyls (PCBs) in the capacitors of fluorescent lights;

- Lead based paints; and
- Ceiling cavity dust containing elevated levels of lead.

Laboratory analysis certificates for the samples collected and analysed are provided in Appendix B.

Photographs collected during the survey are provided in Appendix C.

Limited or no access was available to certain areas as outlined in the Register (Appendix A) and Table 3 below.

Table 3: Access Limitations*

Location / Area	Access Type	Reason(s)
Areas/materials at height (e.g. roof and facades generally)	Limited	Access limited to safely accessible areas and use of 1.8 m step ladder. Work at height not included in survey scope.
Electrical and other base plant/services	Limited	Risk of electrocution, no licenced electrician provided. Detailed dismantling/demolition typically required.
Ceiling cavity and subfloor voids	Limited	Available designated access points, clearance (crawl space) and extent of services.
Building 1, upper level (with the exception of display unit)	Nil	Area boarded off by recent construction.
Unit 6, rear portion.	Nil	Locked. No keys available from owner/site contact.

* Refer also to the Register (Appendix A).

6. Recommendations

A summary recommendation for each hazardous material identified at the site is provided in the Register (Appendix A). The following general recommendations also apply, however these are only applicable where the hazardous building material has been identified.

6.1 General

Hazardous building materials should be managed in accordance with the requirements of the NSW Work Health and Safety (WHS) Act 2011 (WHS Act), NSW WHS Regulation 2011 (WHS Regulation) and subordinate Codes of Practice, Australian Standards and guidelines.

A hazardous materials management plan 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.

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

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

A destructive/intrusive hazardous building materials survey should be conducted prior to major refurbishment and demolition works, and subsequent to decanting of building occupants, to help ensure that the extent of hazardous building materials has been adequately determined.

Hazardous materials remediation and removal work should be undertaken in controlled conditions.

At the completion of hazardous material remediation and removal work a clearance inspection should be conducted by a suitably qualified and experienced person.

6.2 Asbestos-containing Material (ACM)

ACM must be managed in accordance the WHS Regulation, the Safe Work Australia (SWA) *Code of Practice: How to Manage and Control Asbestos in the Workplace, 2016* and the SWA *Code of Practice: How to Safely Remove Asbestos, 2016.*

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 (Regulation 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.

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. 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.

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 suitably qualified, experienced, and where necessary licenced, consultant.

Removal of friable asbestos must only be undertaken by a Class A licensed asbestos removal Contractor.

Removal of 10m^2 or more of non-friable asbestos must only be undertaken by a Class A or Class B licensed asbestos removal contractor.

Air monitoring is required 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 and 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 National Association of Testing Authorities (NATA) Accredited laboratory that holds accreditation for the required analysis.

At the completion of asbestos removal 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 asbestos removal contractor.

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

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

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:

- National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)];

- National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)];
- 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)].

Where reasonable concern exists over possible respirable fibre concentrations in any application, the first step shall be to confirm that the work practices, as recommended for the particular product in the schedules to [NOHSC:2006(1990)] are being followed. Air monitoring is not required when it has been clearly established that the work practices outlined in the schedules are being carried out.

Notwithstanding the above, exposures should not exceed the relevant SWA exposure standards outlined in Table 4 below.

Table 4: 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^3 (inhalable dust)
Refractory ceramic fibres (RCF), special purpose glass fibres and high biopersistence MMVF	0.5 f/mL (respirable) 2mg/m^3 (inhalable dust)

SMF waste should be disposed at a licenced waste collection facility. 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 the NSW EPA *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014.

All disposal receipts should be retained.

6.4 Polychlorinated Biphenyls (PCBs)

The potential presence of PCB in in fluorescent light capacitors should be considered during the risk assessment for any proposed work at the Site.

Prior to any significant disturbance, such as demolition, refurbishment or maintenance works, fluorescent light fittings should be electrically isolated and inspected in detail for metal canister-type capacitors that may contain PCB's. Any capacitors containing or suspected to contain PCB should be removed by a suitably qualified and experienced contractor.

PCB containing capacitors should be managed in accordance with the general requirements of the WHS Regulation 2011 and the:

- 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 capacitors that exhibit leakage should be removed and replaced by a suitably qualified and experienced contractor as soon as possible. Access to areas containing leaking capacitors should be suitably restricted.

The conveyance and disposal of PCB material and PCB waste is subject to special 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) that may contain lead.

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

- AS4361.1 – 1995, *Guide to Lead Paint Management, Part 1: Industrial;* and
- AS4361.2 – 1998, *Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings.*

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 TWA exposure standard for lead (inorganic dusts and fumes) is 0.15 mg/m^3. 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 the NSW EPA *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014:

- Waste contaminated with lead (including lead paint waste) from residential premises or educational or child care institutions is pre-classified as general solid waste (non-putrescible); and
- Lead paint waste arising otherwise than from residential premises or educational or child care institutions is pre-classified as hazardous waste.

All disposal receipts should be retained.

6.6 Lead Dust

Laboratory analysis results for lead dust should be taken as indicative 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 dust concentrations in ceiling cavities. Notwithstanding this, AS4361.2-1998, *Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings* outlines acceptance limits for lead in surface dust after lead paint management activities. These limits are:

- Interior floors: 1 mg/m^2 (as lead);
- Interior window sills: 5 mg/m^2 (as lead); and
- Exterior surfaces: 8 mg/m^2 (as lead).

The above acceptance limits may be used as a guide to assessing lead concentrations in settled dust. The acceptance limit for exterior surfaces (8 mg/m^2) is taken to be the most relevant when assessing the concentration of lead in ceiling cavity dust.

Where the concentration of lead in ceiling dust exceeds 8 mg/m^2 appropriate control and/or remedial measures should be identified via risk assessment and with a detailed knowledge of the workplace and proposed use/activities.

Where ceiling spaces are effectively enclosed and provide limited or no opportunity for lead dust to enter occupied areas below the dust may remain in place. In such as case access to the ceiling cavity should be suitably restricted and all entrances signposted with appropriate warning signs.
Any personnel required to enter ceiling cavities containing elevated concentrations of lead in dust should undertake an appropriate risk assessment and develop a Safe Work Method Statement (SWMS) for the work. The SWMS must identify controls that ensure the risk of exposure to lead remains at an acceptable level for personnel entering the cavity and other building occupants.

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

- There is a significant risk of the lead entering into occupied areas below; or
- Significant disturbance of lead dust is likely due to maintenance, refurbishment or demolition work 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 removal contractor.

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 0.15 mg/m^3.

Air monitoring for lead may be required based on the results of the 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 the NSW EPA *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014.

All disposal receipts should be retained.

7. Limitations

Douglas Partners (DP) has prepared this report (or services) for this project at 871-877 Pacific Highway, Chatswood NSW in accordance with DP's proposal SYD170309 dated 15 March 2017 and acceptance received from Megland Group Pty Ltd, C/-Tomy Chan (PBD Architects), by email on 24 April 2017. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Megland Group Pty Ltd, C/- PBD Architects, 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 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 sampled and analysed. This is either due to undetected variations in ground conditions or to budget constraints (as discussed above), or to parts of the site being inaccessible and not available for inspection/sampling, or to occupants, furnishings or stored items preventing access for inspection and/or sampling. It is therefore considered possible that HBM, including asbestos, may be present in unobserved or untested parts of the site, between and beyond sampling locations, and hence no warranty can be given that all hazardous building materials 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 expose 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.

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

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 hazardous building materials and the limitations of the method(s) used mean that we cannot guarantee that all hazardous building materials have been identified. This report should therefore not be considered a definitive account of all hazardous building materials that may be present at the site.

DP 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.

Douglas Partners Pty Ltd

Appendix A

Hazardous Materials Register

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Building 1

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
External	Cream paint to exterior walls	P01	Non-Lead Paint (≤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.
External	South elevation, window putty to external metal windows and doors	A01	Asbestos detected	1	2	1	2	1	1	8	Low	1	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
External	Throughout, external, red window paint and door trims	P02	Lead paint (>1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2	Avoid disturbance and implement controls to prevent exposure and dispersal during demolition. Lead paint waste arising otherwise than from residential premises or educational or child care institutions is pre-classified as hazardous waste under the NSW EPA Waste Classification Guidelines.
External	Caulking to sash windows	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 hazardous material identified.
External	North-facing external bathroom windows, white/brown paint system	P03	Lead paint (>1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	Avoid disturbance and implement controls to prevent exposure and dispersal during demolition. Lead paint waste arising otherwise than from residential premises or educational or child care institutions is pre-classified as hazardous waste under the NSW EPA Waste Classification Guidelines.
External	Fibrous wrapping to external water pipe of north-facing bathroom	A03	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	No hazardous material identified.
Internal	Level 1, Display unit, un-renovated lounge room, black decorative vinyl sheet	A04	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Internal	White paint to internal window sills (Unit 7)	P04	Non-Lead Paint (≤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. Caution advised as the lead concentration detected (0.81% w/w) approaches that of lead paint (1% w/w).
Internal	Textured cream paint to east internal wall (Unit 7)	P05	Non-Lead Paint (≤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.
Internal	Dark green paint system to skirting boards (Unit 6)	P06	Non-Lead Paint (≤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.
Internal	Light blue wall paint to walls throughout (Unit 5)	P07	Non-Lead Paint (≤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.
Internal	White paint to internal ceiling linings (flaking and mould damaged) (Unit 5)	P08	Non-Lead Paint (≤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.
Internal	Textured cream wall paint to western offices (Unit 5)	P09	Non-Lead Paint (≤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.
External	Eaves lining around intersection with Unit 3	Refer A19, A21	Assumed asbestos	1	2	1	2	1	1	8	Low	4	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

Building 1

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
Internal	Hot water heating systems, internal insulation	N/A	Assumed SMF (no access)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
External	Adjacent carport , electrical panel, electrical backing boards(x2)	N/A	Assumed asbestos	1	2	2	2	1	0	8	Low	5	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Upper Level (other than current display unit)	N/A	Unknown	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Access blocked by new construction. Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Internal	Roof insulation, throughout ceiling space	A17	SMF detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Manhole cover to bathroom (display unit)	A18	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Internal and external	Fluorescent light fittings throughout, capacitors, insulating oil	N/A	Presumed PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Internal	Ceiling space, settled dust	Refer LD01	Assumed Lead conc. ≥ 8 mg/m^2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Restrict/control access. Persons entering the cavity/area should undertake a risk assessment and implement suitable controls to prevent exposure. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

Building 2

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
External	North-east corner of site, loose fibre cement sheeting on the ground	A05	Asbestos detected	1	3	2	2	1	1	10	Moderate	9	Restrict access. Asbestos should be removed in full by a licensed asbestos removalist. Reinspect any remaining material on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
External	Fibre cement walls and porch infill panel above door to sunroom/extension	A06	Asbestos detected	1	1	2	1	1	0	6	Low	10	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
External	Weathered red/brown paint system to ground floor window sills	P10	Non-Lead Paint (≤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.
External	External toilets, flaking blue/grey paint system	P11	Non-Lead Paint (≤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.
External	Red paint to external window sills throughout	P12	Non-Lead Paint (≤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. Caution advised as the lead concentration detected (0.83% w/w) approaches that of lead paint (1% w/w).
External	Exterior wall paint - cream	P13	Non-Lead Paint (≤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.
Internal	Below stairs, ceiling lining, fibre cement sheeting	A07	Asbestos detected	1	3	2	2	1	1	10	Moderate	11	Restrict access. Damaged portions(s) of asbestos should be removed by a licensed asbestos removalist. Reinspect any remaining material on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	North west portion of first floor, ceiling lining - fibre cement sheet	A08	Asbestos detected	1	2	1	2	1	1	8	Low	12	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Ground floor, rear exit, east elevation, brown brittle vinyl floor tile	A09	Asbestos detected	1	2	1	2	1	1	8	Low	13	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Ground floor, rear exit, east elevation, below vinyl tiles, masonite material with black backing paper	A10	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Internal	Ground floor, rear exit, east elevation, fibre cement sheet to service riser	A11	Asbestos detected	1	2	2	2	1	1	9	Low	13	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	White paint to window sills throughout	P14	Lead paint (>1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	Avoid disturbance and implement controls to prevent exposure and dispersal during demolition. Lead paint waste arising otherwise than from residential premises or educational or child care institutions is pre-classified as hazardous waste under the NSW EPA Waste Classification Guidelines.
Internal	Level 1 - Wall lining to north office room, fibre cement sheet	A12	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

Building 2

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
Internal	Level 1 - North office room, ceiling debris, fibre cement sheet	A13	Asbestos detected	2	3	2	2	1	1	11	Low	12	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Level 1, Kitchen, blue vinyl floor sheeting	A14	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Internal	Level 1, Sunroom wall lining, fibre cement sheet	A15	Asbestos detected	1	2	1	2	1	1	8	Low	15	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Ceiling space, settled dust	LD01	Lead conc. ≥ 8 mg/m^2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Restrict/control access. Persons entering the cavity/area should undertake a risk assessment and implement suitable controls to prevent exposure. Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Level 1, ceiling lining to sunroom, fibrous plaster	A16	No asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Internal	Ceiling insulation throughout	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal	Hot water heater, internal insulation	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Internal and external	Fluorescent light fittings throughout, capacitors, insulating oil	N/A	Assumed PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	Area/materials inaccessible. Hazardous material(s) not likely to be present. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Internal	Ground floor, rear exit, beige paint	P15	Lead paint (>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 demolition. Lead paint waste arising otherwise than from residential premises or educational or child care institutions is pre-classified as hazardous waste under the NSW EPA Waste Classification Guidelines.

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Units 2 & 3

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
Unit 3, Exterior	Eaves, fibre cement sheeting	A19	Asbestos detected	1	1	2	1	1	0	6	Low	16, 17	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 3, Exterior	Gable and head linings throughout	A24	Asbestos detected	1	1	2	1	1	0	6	Low	16, 18, 19	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 3, Exterior	Walls, typical cream paint	P17	Non-Lead Paint (≤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.
Unit 3, Exterior	Fascia, typical red-brown paint	P16	Non-Lead Paint (≤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.
Unit 3, Exterior	Various Air-Conditioning Units, internal insulation	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Refer 27	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Unit 3, Interior	Fluorescent light, capacitor	N/A	Assumed PCB	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Unit 3, Generally	Window frames, glazing putty	A20	Asbestos detected	0	2	3	1	1	1	6	Low	21	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 3, Interior	Ceiling cavity, settled dust	LD02	Lead conc. ≥ 8 mg/m^2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	Avoid disturbance and implement controls to prevent exposure and dispersal during demolition. Classify material for disposal IAW the NSW EPA Waste Classification Guidelines. Building cavity dust waste removed from residential premises, packaged securely to prevent dust emissions and direct contact, is pre-classified as General Solid Waste (non-putrescible).
Unit 3, Interior	Ceiling cavity, insulation batts	N/A	SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	Avoid disturbance. Material should be removed by a suitably qualified and experienced contractor prior to general demolition. Dispose material in accordance with requirements of the local waste disposal authority.
Unit 3, Interior	Walls, typical white and underlying pink paint	P18	Non-Lead Paint (≤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.
Unit 3, Interior	Kitchen, base of sink, bituminous pad	A23	No asbestos detected	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Unit 3, Interior	Hot water unit, internal insulation	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Avoid disturbance. Material should be removed by a suitably qualified and experienced contractor prior to general demolition. Dispose material in accordance with requirements of the local waste disposal authority.
Unit 2, Exterior	Eaves, fibre cement sheeting	A21	Asbestos detected	1	1	2	1	1	0	6	Low	23	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 2, Exterior	Gable and head linings throughout	Refer A21 & A24	Assumed asbestos	1	1	2	1	1	0	6	Low	24, 25	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

Units 2 & 3

Location (General)	Location (Specific) and Material	Sample No.	Material Status	Asbestos Risk Assessment: Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation
Unit 2, Exterior	Walls, typical cream paint	Refer P17	Assumed non-lead paint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Unit 2, Exterior	Fascia, typical red-brown paint	Refer P16	Assumed non-lead paint	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.
Unit 2, Exterior	Gable ends, linings at base of metal bargeboard	Refer A19, A21, A24	Assumed asbestos	1	1	2	1	1	0	6	Low	26	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 2, Exterior	Various Air-Conditioning Units, internal insulation	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Unit 2, Generally	Window frames, glazing putty	A22	Asbestos detected	0	2	3	1	1	1	6	Low	Refer 21	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 2, Interior	Ceiling cavity, settled dust	Refer LD02	Assumed lead conc. ≥ 8 mg/m^2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Refer 22	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Unit 2, Interior	Ceiling cavity, insulation batts	N/A	Assumed SMF	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Refer 22	Area/material inaccessible. Hazardous material(s) assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.
Unit 2, Interior	Walls, typical white/cream pink paint	P19	Non-Lead Paint (≤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.
Unit 2, Interior	Infill panel to wall mounted Air Conditioning unit	A25	Asbestos detected	1	1	2	3	1	1	6	Low	N/A	Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Unit 2, Interior	Kitchen, base of sink, bituminous pad	Refer A23	Assumed non-asbestos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	No hazardous material identified.

Appendix B

Laboratory Analysis Results

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CERTIFICATE OF ANALYSIS 166276

Client:
Douglas Partners Pty Ltd
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Tim Kulmar

Sample log in details:

Your Reference:	**84772.03, Chatswood Hazmat**
No. of samples:	25 Materials, 19 Paints, 2 Swabs
Date samples received / completed instructions received	03/05/17 / 03/05/17

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.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

Date results requested by: / Issue Date:	4/05/17 / 4/05/17
Date of Preliminary Report:	Not Issued

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Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

Asbestos ID - materials						
Our Reference:	UNITS	166276-1	166276-2	166276-3	166276-4	166276-5
Your Reference	---------- -	A01	A02	A03	A04	A05
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	4/05/2017	4/05/2017	4/05/2017	4/05/2017	4/05/2017
Mass / Dimension of Sample	-	25x23x4mm	43x40x6mm	55x40x5mm	50x40x2mm	98x77x4mm
Sample Description	-	Brown crumbly hardened mastic material	Beige hardened mastic material	Grey fibrous matted material	Black fibrous bituminous material	Grey compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference:	UNITS	166276-6	166276-7	166276-8	166276-9	166276-10
Your Reference	---------- -	A06	A07	A08	A09	A10
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	4/05/2017	4/05/2017	4/05/2017	4/05/2017	4/05/2017
Mass / Dimension of Sample	-	42x30x5mm	180x80x4mm	105x80x5mm	82x35x2mm	65x50x4mm
Sample Description	-	Grey compressed fibre cement material	Grey compressed fibre cement material	Grey compressed fibre cement material	Orange brittle vinyl tile material	Brown organic fibrous matted material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected Organic fibres detected

Asbestos ID - materials						
Our Reference:	UNITS	166276-11	166276-12	166276-13	166276-14	166276-15
Your Reference	---------- -	A11	A12	A13	A14	A15
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	4/05/2017	4/05/2017	4/05/2017	4/05/2017	4/05/2017
Mass / Dimension of Sample	-	55x30x5mm	49x33x5mm	55x55x5mm	78x23x2mm	50x37x5mm
Sample Description	-	Grey crumbly fibre cement material	Beige layered fibre cement material	Grey compressed fibre cement material	Grey flexi vinyl tile material	Grey fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	No asbestos detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference:	UNITS	166276-16	166276-17	166276-18	166276-19	166276-20
Your Reference	---------- -	A16	A17	A18	A19	A20
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	4/05/2017	4/05/2017	4/05/2017	4/05/2017	4/05/2017
Mass / Dimension of Sample	-	65x25x8mm	75x70x8mm	76x35x4mm	70x23x5mm	25x18x4mm
Sample Description	-	White fibrous plaster material	Yellow vitreous fibrous material	Beige layered fibre cement material	Grey compressed fibre cement material	Brown hardened mastic material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Synthetic mineral fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference:	UNITS	166276-21	166276-22	166276-23	166276-24	166276-25
Your Reference	---------- -	A21	A22	A23	A24	A25
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	4/05/2017	4/05/2017	4/05/2017	4/05/2017	4/05/2017
Mass / Dimension of Sample	-	18x10x5mm	22x10x3mm	49x35x2mm	14x10x3mm	20x18x2mm
Sample Description	-	Grey compressed fibre cement material	Brown hardened mastic material	Black fibrous bituminous material	Grey fibre cement material	Beige fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected	Chrysotile asbestos detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected	Chrysotile asbestos detected Organic fibres detected

Lead in Paint						
Our Reference:	UNITS	166276-26	166276-27	166276-28	166276-29	166276-30
Your Reference	---------- -	P01	P02	P03	P04	P05
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Date analysed	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Lead in paint	%w/w	<0.05	12	15	0.81	<0.05

Lead in Paint						
Our Reference:	UNITS	166276-31	166276-32	166276-33	166276-34	166276-35
Your Reference	---------- -	P06	P07	P08	P09	P10
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Date analysed	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Lead in paint	%w/w	0.2	<0.05	0.07	<0.05	0.1

Lead in Paint						
Our Reference:	UNITS	166276-36	166276-37	166276-38	166276-39	166276-40
Your Reference	---------- -	P11	P12	P13	P14	P15
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Date analysed	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Lead in paint	%w/w	0.1	0.83	<0.05	6.1	1.9

Lead in Paint					
Our Reference:	UNITS	166276-41	166276-42	166276-43	166276-44
Your Reference	---------- -	P16	P17	P18	P19
Date Sampled	----------	1/05/2017	1/05/2017	1/05/2017	1/05/2017
Type of sample		Paint	Paint	Paint	Paint
Date prepared	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Date analysed	-	04/05/2017	04/05/2017	04/05/2017	04/05/2017
Lead in paint	%w/w	<0.05	<0.05	<0.05	<0.05

Lead in swab			
Our Reference:	UNITS	166276-45	166276-46
Your Reference	----------	LD01	LD02
	-		
Date Sampled	----------	1/05/2017	1/05/2017
Type of sample		Swab	Swab
Date prepared	-	04/05/2017	04/05/2017
Date analysed	-	04/05/2017	04/05/2017
Lead in Swabs	µg/swab	1,500	140

Method ID	Methodology Summary
ASB-001	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.
Metals-004	Digestion of Paint chips/scrapings/liquids for Metals determination by ICP-AES/MS and or CV/AAS.
Metals-005	Digestion of Dust wipes/swabs and /or miscellaneous samples for Metals determination by ICP-AES/MS and/or CV-AAS

QUALITY CONTROL Lead in Paint	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			04/05/2017	166276-29	04/05/2017 || 04/05/2017	LCS-1	04/05/2017
Date analysed	-			04/05/2017	166276-29	04/05/2017 || 04/05/2017	LCS-1	04/05/2017
Lead in paint	%w/w	0.05	Metals-004	<0.05	166276-29	0.81 || 0.70 || RPD: 15	LCS-1	104%
QUALITY CONTROL Lead in swab	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			04/05/2017	[NT]	[NT]	LCS-1	04/05/2017
Date analysed	-			04/05/2017	[NT]	[NT]	LCS-1	04/05/2017
Lead in Swabs	µg/swab	1	Metals-005	<1	[NT]	[NT]	LCS-1	103%

QUALITY CONTROL Lead in Paint	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD
Date prepared	-	166276-33	04/05/2017 || 04/05/2017
Date analysed	-	166276-33	04/05/2017 || 04/05/2017
Lead in paint	%w/w	166276-33	0.07 || 0.06 || RPD: 15

Report Comments:

Acid Extractable Metals in Paint: Sample 37; paint is bonded to wood, every effort has been made to scrape the paint off.

Asbestos ID was analysed by Approved Identifier: Lucy Zhu
Asbestos ID was authorised by Approved Signatory: Paul Ching

INS: Insufficient sample for this test
NR: Test not required
<: Less than
PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than
NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

Quality Control Definitions

Blank: 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.

Duplicate: 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.

Matrix Spike : 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.

LCS (Laboratory Control Sample) : 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.

Surrogate Spike: 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.

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: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-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.

Appendix C

Plates

Photograph 1: Building 1, external, south elevation, beige caulking to metal windows and doors (asbestos).

Photograph 2: Building 1, external, throughout, red paint to windows and external trims (lead paint).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 1 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 3: Building 1, external, north facing bathroom windows, flaking white paint (lead paint).

Photograph 4: Building 1, external, eaves linings near intersection with Unit 3 (asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 2 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 5: Building 1, external, carport, electrical backing board x2 (assumed asbestos).

Photograph 6: Building 1, internal, ceiling space throughout, ceiling insulation (SMF).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 3 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 7: Building 1, throughout, capacitors in fluorescent light fittings (assumed PCB).

Photograph 8: Building 2, internal, capacitors in fluorescent light fittings (PCB).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 4 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 9: Building 2, external, north-east corner of site, loose asbestos debris on ground (asbestos).

Photograph 10: Building 2, external, walls to sunroom and porch above door infill panel (asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 5 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 11: Building 2, fibre cement ceiling lining below stairs (asbestos).

Photograph 12: Building 2, ceiling lining and associated debris, north west portion of first floor (asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 6 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 13: Building 2, internal, rear exit room, brittle brown vinyl tiles (asbestos) and fibre cement service riser (asbestos).

Photograph 14: Building 2, internal, white paint to window sills throughout (lead).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 7 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 15: Building 2, internal, sunroom wall lining, fibre cement sheet (asbestos)

Photograph 16: Unit 3, eaves and gable lining, fibre cement sheeting (asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 8 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 17: Unit 3, eaves, fibre cement sheeting (asbestos).

Photograph 18: Unit 3, Gable and head linings throughout (asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 9 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 19: Unit 3, Gable and head linings throughout (asbestos).

Photograph 20: Unit 3, interior, fluorescent light, capacitor (assumed PCB).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 10 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 21: Unit 3, window frames, glazing putty (asbestos).

Photograph 22: Unit 3, ceiling cavity, settled dust (lead) and insulation batts (SMF).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 11 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 23: Unit 2, eaves, fibre cement sheeting (asbestos).

Photograph 24: Unit 2, gable and head linings (assumed asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 12 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 25: Unit 2, gable and head linings (assumed asbestos).

Photograph 26: Unit 2, gable ends, linings at base of metal bargeboard (assumed asbestos).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 13 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Photograph 27: Unit 2, air-conditioning units, internal insulation (assumed SMF).

Douglas Partners Geotechnics / Environment / Groundwater	**Site Photographs** **Hazardous Materials Survey** **871-877 Pacific Highway**	PROJECT: 84772.03 PLATE No: 14 REV: A
	CLIENT: PBD Architects Pty Ltd	DATE: 2-May-17

Appendix D

About This Report

About this Report

Douglas Partners

Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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