



Douglas Partners
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Report on
Hazardous Building Materials (HBM) Survey

Lot 100 DP1261496, Maitland Street, Muswellbrook,
NSW

Prepared for
Pacific Brook Christian School Ltd

Project 91601.01
July 2021

Integrated Practical Solutions



Document History

Document details

Project No.	91601.01	Document No.	91601.01.R.001.Rev2
Document title	Report on Hazardous Building Materials (HBM) Survey		
Site address	Lot 100 DP1261496, Maitland Street, Muswellbrook, NSW		
Report prepared for	Pacific Brook Christian School Ltd		
File name	91601.01.R.001.Rev2. HBM		

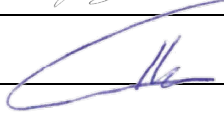
Document status and review

Status	Prepared by	Reviewed by	Date issued
Revision 0	M. Hyde	T. Kulmar	2 July 2019
Revision 1	M. Hyde	T. Kulmar	25 August 2020
Revision 2	M. Hyde/Paulo Sebastian	T. Kulmar	13 July 2021

Distribution of copies

Status	Electronic	Paper	Issued to
Revision 0	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 1	1	0	Chris Baldry, Pacific Brook Christian School Ltd
Revision 2	1	0	Chris Baldry, Pacific Brook Christian School Ltd

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

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Executive Summary

Douglas Partners Pty Ltd (DP) was engaged by Pacific Brook Christian School Ltd to conduct a hazardous building materials (HBM) survey of buildings and structures at Lot 100 DP1261496, Maitland Street, Muswellbrook, NSW (the Site). The survey was undertaken to assess the location, extent and condition of asbestos-containing materials (ACM) and other HBM for general due-diligence purposes. The survey 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: Summary of Results

Building / Area	Non-Friable Asbestos	Friable Asbestos	SMF	Lead Paint	Lead Dust	PCB
Building 1 – Residential Dwelling	✓	✗	✓	✓	✓	✗
Building 2 – Timber shed	✗	✗	✓	✗	✗	✗
Building 3 – Galvanised water tank	✗	✗	✗	✗	✗	✗
Building 4 – Concrete water tank	✗	✗	✗	✗	✗	✗
Building 5 – Potting Shed	✓	✗	✓	✓	✗	✓
Building 6 – Front Office	✓	✗	✓	✗	✗	✓
Building 7 – Shade cloth greenhouse	✗	✗	✓	✗	✗	✗
Building 8 – Rear Office	✓	✗	✓	✓	✗	✓
Building 9 – Hazchem and machinery shed	✗	✗	✓	✓	✗	✓
Building 10 - Glasshouse	✗	✗	✗	✗	✗	✗

SMF = synthetic mineral fibre, PCB = polychlorinated biphenyls, ✓ = material identified and/or assumed present, ✗ = material not identified and not assumed present.

Limited or no access was available to certain areas of the Site. Inaccessible areas should be assumed to 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 7.

This report should be read in its entirety and may not be reproduced other than in full, except with the prior written approval of DP.

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Report on Hazardous Building Materials (HBM) Survey Lot 100 DP1261496, Maitland Street, Muswellbrook NSW

1. Introduction

Douglas Partners Pty Ltd (DP) was engaged by Pacific Brook Christian School Ltd to conduct a Hazardous Building Materials (HBM) survey of the buildings and structures at Lot 100 DP1261496, Maitland Street, Muswellbrook, NSW. The survey was undertaken to assess the location, extent and condition of the following HBM for general due-diligence purposes:

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

Appendix A contains Notes About This Report and a Site Plan.

The full results of the survey conducted on 19 June 2019, including details of the HBM identified, and the results of ACM risk assessments, are provided in the Hazardous Materials Register (the Register) in Appendix B. A photographic record is also provided in Appendix B.

Laboratory analysis certificates for the samples collected and analysed as part of the survey are provided in Appendix C.

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

2. Site Description

The site is triangular and located on the northern side of Maitland Road in Muswellbrook NSW and was unoccupied at the time of inspection. The buildings and structures identified at the Site comprise:

1. Residential dwelling;
2. Timber shed;
3. Galvanised water tank (above-ground);
4. Concrete water tank (in-ground) with timber pump house;
5. Potting Shed;
6. Front office;
7. Shade cloth greenhouse;
8. Rear office (building 8);
9. Hazchem and machinery shed; and
10. Glasshouse.

A Site location and layout plan is provided in Appendix A.

The triangular site has a northwest/southeast alignment and has an area of 2.432 ha. The site is bound by Muswellbrook Golf Course along the north eastern boundary, Maitland Street along the south western boundary and residential properties to the south eastern boundary (see Aerial image of site boundary). The site address is 72-74 Maitland Street and is legally described as Lot 100 in Deposited Plan (DP) 1261496 (see site context image below).

The site is generally level with a slight slope to a watercourse at the north west boundary. This watercourse flows northeast into the adjoining golf course and on to Muscle Creek via a series of dams on the golf course. Muscle Creek flows west into the Hunter River which at its closest is 1.3 km north-west of the site. Stormwater management on site is by overland flow.

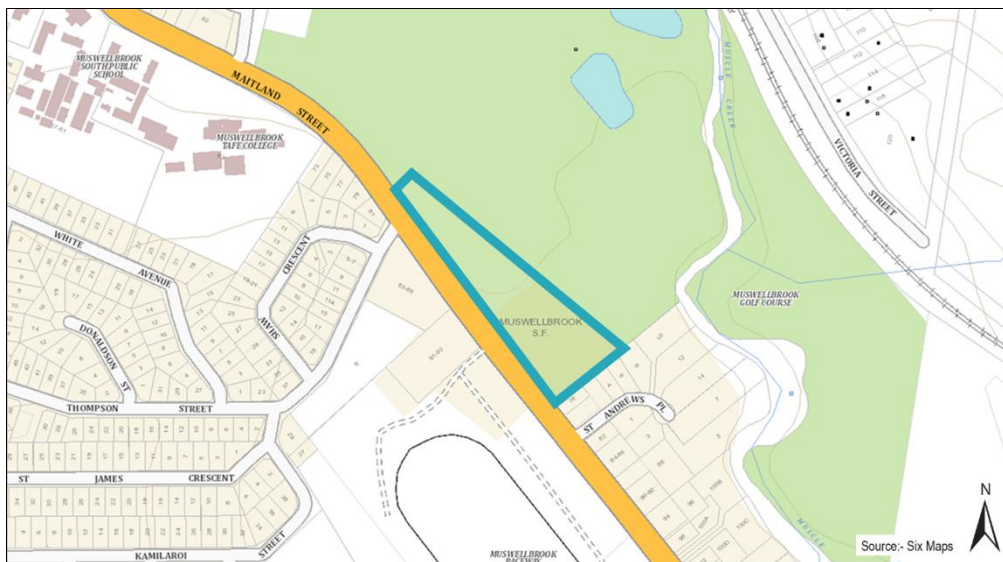
72-74 Maitland Street was previously used for forestry plantation purposes and is mapped as Muswellbrook State Forest. The site is no longer used for this purpose and currently sits as an empty and underutilised site.

The main vehicular access to the site is from Maitland Street, as well as pedestrian access. Existing vehicular parking on site includes open air at grade parking spaces facing Maitland Street.

In terms of travel, Muswellbrook is approximately three (3) hours from Sydney, three hours (3) from Dubbo, two (2) hours from Tamworth and 90 minutes from Newcastle.



Aerial image of site boundary



Site Context

3. Survey Method

The survey comprised a non-destructive, non-intrusive visual inspection supplemented by a limited program of sample collection and laboratory analysis.

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*.

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

SMF was identified primarily by visual inspection or incidentally during laboratory analysis for asbestos.

Where safe access (including certified electrical isolation) is provided to DP selected light fittings may be partially dismantled to obtain capacitor details. Capacitor details are then compared to the list of PCB-containing and PCB-free equipment 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 generally collected from ceiling cavities found to contain significant settled dust loadings. Samples are collected from a specified surface area (normally 100 or 900 cm²) and analysed by a NATA accredited laboratory using ICP-AES/MS. The sampling area and laboratory analysis result (total lead in µg) are then used to calculate the lead dust loading which is expressed as milligrams of lead per square metre (mg/m²).

Surveys typically proceed on a 'risk management' basis whereby priority is given to addressing material(s) likely to pose greatest risk 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 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

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 highly weathered asbestos cement)
	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. Overall 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 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.
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 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.
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. 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 to Table 3:

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 HBM identified, are provided in the Hazardous Materials Register (the Register) in Appendix B. Photographs collected during the survey are provided in Appendix B.

A licensed electrician was not provided to DP to isolate and de-energise electrical plant and/or services during the survey and therefore it was not possible to dismantle and inspect fluorescent light fittings to confirm the presence/absence of capacitors containing PCB.

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

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

Table 4: Access Limitations*

Location / Area	Access Type	Reason(s)
Areas/materials at height (e.g. 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.
Plant, equipment and services in general (e.g. electrical panels, HVAC plant, generators, pumps, motors etc.)	Limited	Inspection limited to safely accessible exterior surfaces. Isolation and detailed dismantling and/or demolition typically required for further assessment.
Confined spaces	Nil	Not included in survey scope.
Interior of air handling plant and duct work	Nil	Generally enclosed behind metal linings. Inspection typically requires isolation by HVAC technician and/or electrician and detailed dismantling/demolition.
Ceiling cavities and subfloor voids	Limited	Access generally limited by height, services and clearance within cavity/void. Inspection of crawl spaces not included in survey scope.
Below flooring materials (e.g. carpet, vinyl sheeting etc.)	Limited	Inspection conducted in selected locations as it is impractical to remove substantial sections of flooring without damage.
Below ceramic tiled surfaces (e.g. walls and floors in wet areas)	Nil	Inspection below ceramic tiles often requires destructive/intrusive inspection techniques.
Enclosed building cavities and voids	Limited	Inspection typically conducted at readily accessible, designated access points. Detailed dismantling/demolition typically required for full access.

Notes to Table 4:

* Refer also to the Register (Appendix A).

6. Recommendations

A summary recommendation for each HBM identified or assumed present at the Site is provided in the Registers (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. Additional targeted inspection, sampling and analysis for HBM should be considered prior to any work that may result in the disturbance of such HBM.

6.1 General

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 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.

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.

Prior to any work involving hazardous materials 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 to the hazardous materials and environmental contamination are adequately controlled.

Waste should be assessed and classified for disposal in accordance with the NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying Waste*, November 2014 (EPA, 2014).

At the completion of hazardous material remediation and 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)

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 (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.

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. 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 removal Contractor.

Removal of 10 m² 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 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 waste should be classified for disposal in accordance with the 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 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 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:

- Safe Work NSW *Safe management of synthetic mineral fibres (SMF) – glasswool and rockwool*; and
- 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)].

For further guidance, 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).

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

SMF waste should be disposed at a licensed 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 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 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 and the:

- Environmentally Hazardous Chemicals (EHC) Act 1985 and *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).

Lead paints should be managed in accordance with the WHS Regulation including (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*.

In general accordance with the abovementioned Australian Standards:

- When one or more tests from a building/structure or comparable area indicate lead is present at a significant concentration, the paint throughout the building/structure or comparable area should be treated as containing a significant concentration of lead unless sufficient additional samples have been analysed to accurately delineate the location(s) of significant lead concentration; and

- A project, or part thereof, should not be classified as free of lead, unless all samples within the relevant area are proven to be free of lead.

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 standards for lead (inorganic dusts and fumes) and lead chromate (as Cr) are both 0.05 mg/m³.

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):

- 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.

Correspondence with the NSW EPA in relation to interpretation of EPA (2014) indicates that AS4361.1 and AS4361.2, including the definition of lead paint therein, have no bearing on how waste is classified in NSW.

All disposal receipts should be retained.

6.6 Lead Dust

Laboratory analysis results for lead dust should be taken as approximate 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* (superseded) outlined acceptance limits for lead in surface dust after lead paint management activities. These limits were:

- Interior floors: 1 mg/m² (as lead);
- Interior window sills: 5 mg/m² (as lead); and
- Exterior surfaces: 8 mg/m² (as lead).

The United States Environmental Protection Authority (US EPA) 40 CFR Part 745 *Lead; Identification of Dangerous Levels of Lead; Final Rule* establishes the following standards for lead hazard identification:

- Floors - 40 µg/ft² (~0.43 mg/m²) lead; and
- Interior Window sills - 250 µg/ft² (~2.7 mg/m²) 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 sensitive nature of the site, a lead concentration of 0.5 mg/m² has been used to identify potentially hazardous conditions in this assessment.

Where the concentration of lead in dust exceeds 0.5 mg/m² 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 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 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; 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 0.05 mg/m³.

Air monitoring for lead may be necessary based on the results of risk assessment and/or 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 Lot 100 DP1261496, Maitland Street, Muswellbrook, NSW in accordance with DP's proposal NCL190331. The work was carried out under DP's Conditions of Engagement. This report is provided for the exclusive use of Pacific Brook Christian School Ltd 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 site 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 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 masonry 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 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 have been identified. This report should therefore not be considered a definitive account of all HBM 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 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 the Comments section of this report, as an extension to the current scope of works, if so requested, and provided that suitable additional information is made available to DP. Any such risk assessment would, however, be necessarily restricted to the environmental components set out in this report and to their application by the project designers to project design, construction, maintenance and demolition.

Douglas Partners Pty Ltd

Appendix A

About This Report
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.



CLIENT: Pacific Brook Christian School Ltd
 OFFICE: Sydney
 DATE: 28 Jun 2019

Site Locations

Lot 100 DP1261496, Maitland Street

Muswellbrook NSW

PROJECT No: 91601.01
 DWG No: 1
 REVISION: 0

Appendix B

Hazardous Building Materials Register and Plates

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Building 1 - Timber framed residential dwelling with timber floors and skillion roof														1	
Residential Dwelling	external south wall	electrical backing board	zelemite	-	asbestos (assumed)	0	1	1	2	2	0	6	Low	2	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	external	walls	fibre cement sheet	1.2	asbestos detected by analysis	1	1	2	2	2	0	8	Low	3	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	external	infill panel below windows	fibre cement sheet	1.3	asbestos detected by analysis	1	1	2	2	2	0	8	Low	4	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	external	eaves	fibre cement sheet	1.4	asbestos detected by analysis	1	1	2	1	2	0	7	Low	5	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	external	carport soffit	fibre cement sheet	1.5	asbestos detected by analysis	1	1	2	1	2	0	7	Low	6	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	external	walls	beige paint	-	lead paint (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	7	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Residential Dwelling	external	windows	green paint	1.7	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Residential Dwelling	external	windows	putty	1.8	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	No hazardous material identified.
Residential Dwelling	internal	walls to bathroom	fibre cement sheet	1.9	asbestos detected by analysis	1	3	2	3	2	1	12	Moderate	10	Asbestos (damaged) - Ensure access is suitably restricted. Remove material as soon as practicable, prior to any disturbance and prior to general demolition work proceeding. Removal must be undertaken by a licensed asbestos removalist.
Residential Dwelling	internal	walls to laundry	fibre cement sheet	1.10	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	11	No hazardous material identified.
Residential Dwelling	internal	windows and architraves	white paint	1.11	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	12	No hazardous material identified.
Residential Dwelling	internal	laundry door	beige paint	1.12	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Residential Dwelling	external	front door	cream paint	1.13	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	14	No hazardous material identified.
Residential Dwelling	external	north east wall	hot water unit	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Residential Dwelling	internal	ceiling cavity	insulation material	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Residential Dwelling	internal	ceiling cavity	settled dust/debris	-	elevated lead assumed	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
2 - Timber Shed to rear of residential dwelling. Hardstand floor with skillion roof, timber frame and timber weatherboard.														17	
Rear Shed	roof	insulation blanket	insulation	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	18	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
3 - Galvanised water tank														19	
Galvanised water tank	throughout	throughout	materials in general	-	nil hazardous materials identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	19	No hazardous material identified.
4 - Concrete water tank (in ground)														20	
Concrete water tank (in ground)	throughout	throughout	materials in general	-	nil hazardous materials identified	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20	No hazardous material identified.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
5 - Potting Shed															21
Potting shed	external	walls	cream paint	5.1	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Potting shed	external	corrugated sheet metal	green paint	5.2	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	23	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Potting shed	external	weatherboard	fibre cement sheet	5.3	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24	No hazardous material identified.
Potting shed	external	walls	fibre cement sheet	5.4	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	25	No hazardous material identified.
Potting shed	external	windows	green paint	5.5	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	26	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Potting shed	external	windows	putty	5.6	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27	No hazardous material identified.
Potting shed	external	ground surface	fibre cement sheet debris	5.7	asbestos detected by analysis	1	3	2	3	2	0	11	Moderate	28	Asbestos (damaged) - Ensure access is suitably restricted. Remove material as soon as practicable, prior to any disturbance and prior to general demolition work proceeding. Removal must be undertaken by a licensed asbestos removalist.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Potting shed	external	downpipes	brown paint	5.8	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	29	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Potting shed	internal	light fittings	capacitors, insulating oil	-	PCB (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	PCB assumed (intact) - Presence of PCB assumed. Confirm status of PCB when safe access available. Avoid disturbance and reinspect condition on a regular basis. Manage and phase-out in accordance with the ANZECC PCB Management Plan, April 2003 and NSW EPA PCB Chemical Control Order 1997.
Potting shed	external	walls	corrugated sheeting	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Potting shed	internal	walls	beige paint	5.11	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	32	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Potting shed	internal	potting shelf	fibre cement sheet	5.12	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	33	No hazardous material identified.
Potting shed	internal	walls	fibre cement sheet	5.13	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	34	No hazardous material identified.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
6 - Front Office - Timber framed building, skillion roof. Concrete hardstand to south east (roller door section) and timber floor to north west section.															35
Front Office	external	walls, south end	fibre cement sheet	6.1	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	36	No hazardous material identified.
Front Office	external	sliding door	pale green paint	6.2	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37	No hazardous material identified.
Front Office	external	eaves	fibre cement sheet	6.3	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	38	No hazardous material identified.
Front Office	external	walls	cream paint	6.4	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	39	No hazardous material identified.
Front Office	internal	walls to bathroom	fibre cement sheet	6.5	asbestos detected by analysis	1	1	1	2	2	1	8	Low	40	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Front Office	internal	wall cavities	insulation material	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	41	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Front Office	internal	"Ajax" brand safe	internal insulation	-	asbestos (assumed)	2	1	0	0	1	1	5	Low	42	Inaccessible Area/Material - Hazardous material(s)assumed present as a precaution. Confirm status of hazardous material(s) when safe access available and prior to any disturbance.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Front Office	internal	fluorescent light fittings	capacitors, insulating oil	-	PCB (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	43	PCB assumed (intact) - Presence of PCB assumed. Confirm status of PCB when safe access available. Avoid disturbance and reinspect condition on a regular basis. Manage and phase-out in accordance with the ANZECC PCB Management Plan, April 2003 and NSW EPA PCB Chemical Control Order 1997.
Front Office	internal	electrical panel	electrical backing board	-	asbestos (assumed)	0	1	2	2	2	0	7	Low	44	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Front Office	internal	windows and architraves	green paint	6.10	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	45	No hazardous material identified.
Front Office	internal	walls, south end	green painted fibre cement sheet	6.11	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46	No hazardous material identified.
Front Office	external	eaves to north	fibre cement sheet	6.12	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	47	No hazardous material identified.
Building 7 - Shade cloth timber framed greenhouse														48	
Shade cloth greenhouse	external	roof	corrugated sheeting	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	49	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment								Photo No.	Summary Recommendation (Demolition Survey)
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority		
Building 8 - Rear office and wet rooms														50	
Rear Office	external	walls	beige paint	8.1	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	51	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Rear Office	external	windows	green paint	8.2	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	52	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Rear Office	external	windows	putty	8.3	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	53	No hazardous material identified.
Rear Office	internal	floors	vinyl floor sheet	8.4	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	54	No hazardous material identified.
Rear Office	internal	walls	yellow paint	8.5	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	55	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
Rear Office	internal	architraves	white paint	8.6	non-lead paint (≤0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	56	No hazardous material identified.
Rear Office	internal	walls	fibre cement sheet	8.7	asbestos detected by analysis	1	1	1	2	2	1	8	Low	57	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
Rear Office	internal	wet room, upper walls	fibre cement sheet	8.8	asbestos detected by analysis	1	1	1	2	2	1	8	Low	58	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Rear Office	internal	wet room, walls, lower half (marbled finish)	fibre cement sheet	8.9	asbestos detected by analysis	1	1	1	2	2	1	8	Low	59	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Rear Office	internal	hot water unit	internal insulation	-	SMF (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	60	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Rear Office	internal	light fittings	capacitors, insulating oil	-	PCB (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	61	PCB assumed (intact) - Presence of PCB assumed. Confirm status of PCB when safe access available. Avoid disturbance and reinspect condition on a regular basis. Manage and phase-out in accordance with the ANZECC PCB Management Plan, April 2003 and NSW EPA PCB Chemical Control Order 1997.
Building 9 - Machinery and HAZCHEM shed														62	
HAZCHEM shed	external	windows	white paint	9.1	lead paint (>0.1% lead w/w)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	63	Lead paint - Any areas of damaged/flaking lead paint and any associated debris should be removed by a suitably qualified and experienced contractor. Consider sealing or enclosing any remaining lead paint per AS4361. Reinspect condition on a regular basis. Avoid disturbance.
HAZCHEM shed	internal	light fittings	capacitors, insulating oil	-	PCB (assumed)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	64	PCB assumed (intact) - Presence of PCB assumed. Confirm status of PCB when safe access available. Avoid disturbance and reinspect condition on a regular basis. Manage and phase-out in accordance with the ANZECC PCB Management Plan, April 2003 and NSW EPA PCB Chemical Control Order 1997.

DP Project No: 91601.01
 Hazardous Building Materials Survey

						Asbestos Risk Assessment									
Building	Location (General)	Location (Specific)	Material	Sample No.	Material Status	Friability	Condition	Treatment	Accessibility	Activity	Ventilation	Risk Score	Action Priority	Photo No.	Summary Recommendation (Demolition Survey)
HAZCHEM shed	internal	roof	insulation material	-	SMF identified visually	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	65	Reinspect hazardous material - Reinspect condition on a regular basis. Remove material prior to any significant disturbance (e.g. renovation, demolition or maintenance work).
Building 10 - Glasshouse														66	
Glasshouse	external	walls	fibre cement sheet	10.1	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	67	No hazardous material identified.
Glasshouse	internal	concrete expansion joint	fibrous mastic	10.2	no asbestos detected by analysis	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	68	No hazardous material identified.



Photograph 1: Building 1 - Timber framed residential dwelling with timber floors and skillion roof



Photograph 2: Residential Dwelling, external south wall, electrical backing board, zelemite, asbestos (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 1
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd	DATE: 19 & 20/06/19	



Photograph 3: Residential Dwelling, external , walls, fibre cement sheet, asbestos detected by analysis.

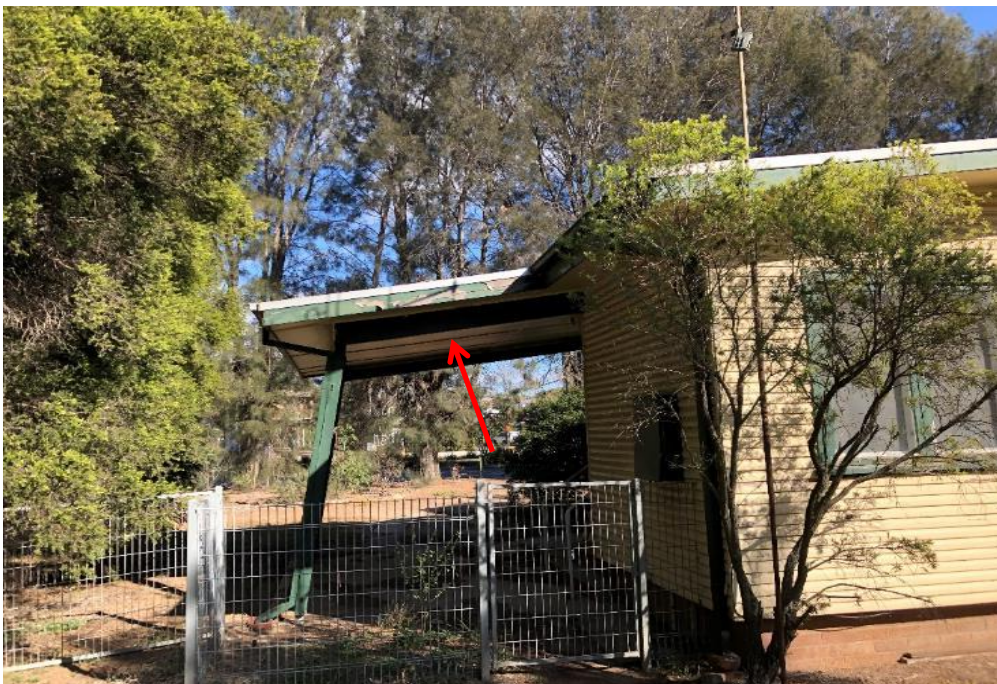


Photograph 4: Residential Dwelling, external, infill panel below windows, fibre cement sheet, asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 2
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 5: Residential Dwelling, external, eaves, fibre cement sheet, asbestos detected by analysis.



Photograph 6: Residential Dwelling, external, carport soffit, fibre cement sheet, asbestos detected by analysis.

	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 3
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 7: Residential Dwelling, external , walls, beige paint, lead paint (assumed).



Photograph 8: Residential Dwelling, external , windows, green paint, lead paint (>0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 4
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 9: Residential Dwelling, external , windows, putty, no asbestos detected by analysis.



Photograph 10: Residential Dwelling, internal , walls to bathroom, fibre cement sheet, asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 5
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 11: Residential Dwelling, internal , walls to laundry, fibre cement sheet, no asbestos detected by analysis.



Photograph 12: Residential Dwelling, internal , windows and architraves, white paint, non-lead paint (≤0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 6
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 13: Residential Dwelling, internal , laundry door, beige paint, lead paint (>0.1% lead w/w).



Photograph 14: Residential Dwelling, external , front door, cream paint, non-lead paint (≤0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 7
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 15: Residential Dwelling, external , north east wall, hot water unit, SMF (assumed).



Photograph 16: Residential Dwelling, internal , ceiling cavity, insulation material, SMF (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 8
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 17: Timber shed to rear of residential dwelling.



Photograph 18: Rear Shed, roof, insulation blanket, insulation, SMF (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 9
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 19: Galvanised water tank.



Photograph 20: Concrete water tank (in ground).

	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 10
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19

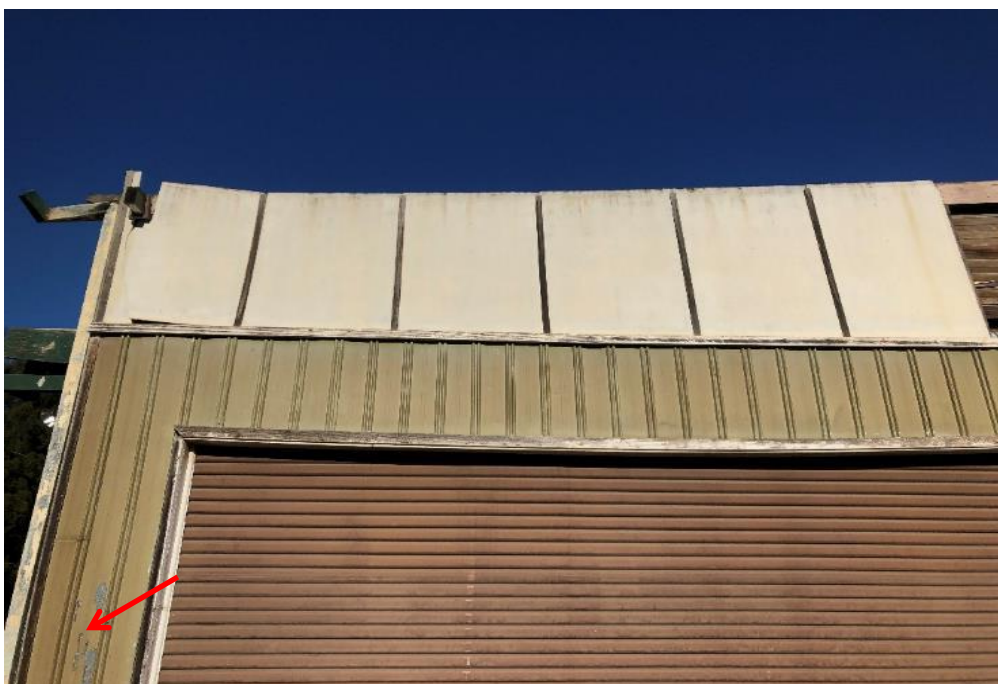


Photograph 21: 5 - Potting Shed



Photograph 22: Potting shed, external , walls, cream paint, lead paint (>0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 11
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 23: Potting shed, external , corrugated sheet metal, green paint, lead paint (>0.1% lead w/w).



Photograph 24: Potting shed, external , weatherboard, fibre cement sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 12
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 25: Potting shed, external , walls, fibre cement sheet, no asbestos detected by analysis.



Photograph 26: Potting shed, external , windows, green paint, lead paint (>0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 13
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 27: Potting shed, external , windows, putty, non-lead paint ($\leq 0.1\%$ lead w/w).



Photograph 28: Potting shed, external , ground surface, fibre cement sheet debris, asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 14
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 29: Potting shed, external , downpipes, brown paint, lead paint (>0.1% lead w/w).



Photograph 30: Potting shed, internal , light fittings, capacitors, insulating oil, PCB (assumed).

	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 15
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 31: Potting shed, external , walls, corrugated sheeting, SMF (assumed).



Photograph 32: Potting shed, internal , walls, beige paint, lead paint (>0.1% lead w/w).

	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 16
	Lot 100 DP1261496, Maitland Street, Muswellbrook		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 33: Potting shed, internal , potting shelf, fibre cement sheet, no asbestos detected by analysis.



Photograph 34: Potting shed, internal , walls, fibre cement sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 17
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 35: Front Office.



Photograph 36: Front Office, external, walls, south end, fibre cement sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 18
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 37: Front Office, external, sliding door, pale green paint, non-lead paint ($\leq 0.1\%$ lead w/w).



Photograph 38: Front Office, external, eaves, fibre cement sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 19
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 39: Front Office, external, walls, cream paint, non-lead paint ($\leq 0.1\%$ lead w/w).



Photograph 40: Front Office, internal, walls to bathroom, fibre cement sheet, asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 20
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 41: Front Office, internal , wall cavities, insulation material, SMF (assumed).



Photograph 42: Front Office, internal , "Ajax" brand safe, internal insulation, asbestos (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 21
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 43: Front Office, internal , fluorescent light fittings, capacitors, insulating oil, PCB (assumed).



Photograph 44: Front Office, internal , electrical panel, electrical backing board, asbestos (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 22
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 45: Front Office, internal , windows and architraves, green paint, non-lead paint (≤0.1% lead w/w).



Photograph 46: Front Office, internal , walls, south end, green painted fibre cement sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 23
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 47: Front Office, external, eaves to north, fibre cement sheet, no asbestos detected by analysis.



Photograph 48: Shade cloth shed.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 24
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 49: Shade cloth greenhouse, external, roof, corrugated sheeting, SMF (assumed).



Photograph 50: Building 8 - Rear office and wet rooms

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 25
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 51: Rear Office, external, walls, beige paint, lead paint (>0.1% lead w/w).



Photograph 52: Rear Office, external, windows, green paint, lead paint (>0.1% lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 26
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 53: Rear Office, external , windows, putty, no asbestos detected by analysis.



Photograph 54: Rear Office, internal , floors, vinyl floor sheet, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 27
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 55: Rear Office, internal , walls, yellow paint, lead paint (>0.1% lead w/w).



Photograph 56: Rear Office, internal , architraves, white paint, non-lead paint ($\leq 0.1\%$ lead w/w).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 28
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 57: Rear Office, internal , walls, fibre cement sheet, asbestos detected by analysis.



Photograph 58: Rear Office, internal , wet room, upper walls, fibre cement sheet, asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 29
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 59: Rear Office, internal , wet room, walls, lower half (marbled finish), fibre cement sheet, asbestos detected by analysis.



Photograph 60: Rear Office, internal, hot water unit, internal insulation, SMF (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 30
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 61: Rear Office, internal , light fittings, capacitors, insulating oil, PCB (assumed).



Photograph 62: Machinery and HAZMCHM shed.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 31
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 63: HAZCHEM shed, external, windows, white paint, lead paint (>0.1% lead w/w).



Photograph 64: HAZCHEM shed, internal , light fittings, capacitors, insulating oil, PCB (assumed).

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 32
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 65: HAZCHEM shed, internal , roof, insulation material, SMF identified visually.



Photograph 66: Glasshouse.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 33
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19



Photograph 67: Glasshouse, external , walls, fibre cement sheet, no asbestos detected by analysis.



Photograph 68: Glasshouse, internal , concrete expansion joint, fibrous mastic, no asbestos detected by analysis.

 Douglas Partners Geotechnics Environment Groundwater	Site Photographs		PROJECT: 91601.01
	Hazardous Building Materials Survey		PLATE No: 34
	Lot 100 DP1261496, Maitland Street, Muswellbrook NSW		REV: A
	CLIENT: Pacific Brook Christian School Ltd		DATE: 19 & 20/06/19

Appendix C

Laboratory Certificate(s) of Analysis

CERTIFICATE OF ANALYSIS 220245

Client Details

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

Sample Details

Your Reference	<u>91601.01</u>
Number of Samples	26 Material, 17 Paint
Date samples received	24/06/2019
Date completed instructions received	24/06/2019

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	01/07/2019
Date of Issue	27/06/2019
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Asbestos Approved By

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

Results Approved By

Giovanni Agosti, Group Technical Manager
 Lucy Zhu, Senior Asbestos Analyst

Authorised By



Nancy Zhang, Laboratory Manager

Asbestos ID - materials						
Our Reference		220245-1	220245-2	220245-6	220245-7	220245-10
Your Reference	UNITS	10.1	10.2	8.3	8.4	8.7
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Mass / Dimension of Sample	-	39x34x5mm	42x38x5mm	36x28x4mm	51x34x6mm	35x28x3mm
Sample Description	-	Beige layered fibre cement material	Black bituminous material	Beige hardened mastic	Beige vitreous fibrous vinyl sheet	Grey compressed fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Synthetic mineral fibres detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	220245-11	220245-12	220245-15	220245-16	220245-19
Your Reference		8.8	8.9	5.3	5.4	5.7
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Mass / Dimension of Sample	-	39x17x5mm	32x31x5mm	34x20x5mm	47x37x5mm	41x40x5mm
Sample Description	-	Grey compressed fibre cement material	Grey compressed fibre cement material	Beige layered fibre cement material	Beige layered fibre cement material	Grey compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	220245-22	220245-23	220245-24	220245-26	220245-28
Your Reference		5.12	5.13	6.1	6.3	6.5
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Mass / Dimension of Sample	-	37x31x5mm	34x29x5mm	45x30x5mm	28x23x5mm	28x15x5mm
Sample Description	-	Beige layered fibre cement material	Beige layered fibre cement material	Beige layered fibre cement material	Beige layered fibre cement material	Grey compressed fibre cement material
Asbestos ID in materials	-	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected

Asbestos ID - materials						
Our Reference	UNITS	220245-30	220245-31	220245-32	220245-33	220245-34
Your Reference		6.11	6.12	1.2	1.3	1.4
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Mass / Dimension of Sample	-	45x38x5mm	41x28x5mm	37x28x8mm	47x26x5mm	32x22x5mm
Sample Description	-	Beige layered fibre cement material	Beige layered fibre cement material	Grey compressed fibre cement material	Peach layered fibre cement material	Peach layered 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	Chrysotile asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected

Asbestos ID - materials						
Our Reference	UNITS	220245-35	220245-37	220245-38	220245-39	220245-43
Your Reference		1.5	1.8	1.9	1.10	6.6
Type of sample		Material	Material	Material	Material	Material
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Mass / Dimension of Sample	-	35x28x5mm	28x25x7mm	30x29x5mm	45x31x5mm	35x22x5mm
Sample Description	-	Peach layered fibre cement material	Beige hardened mastic	Peach layered fibre cement material	Beige layered fibre cement material	White paint & fibrous backing
Asbestos ID in materials	-	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected	No asbestos detected Organic fibres detected

Lead in Paint						
Our Reference		220245-3	220245-4	220245-5	220245-8	220245-9
Your Reference	UNITS	9.1	8.1	8.2	8.5	8.6
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	25/06/2019	25/06/2019	25/06/2019	25/06/2019	25/06/2019
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Lead in paint	%w/w	0.30	0.29	0.19	0.12	0.078

Lead in Paint						
Our Reference		220245-13	220245-14	220245-17	220245-18	220245-20
Your Reference	UNITS	5.1	5.2	5.5	5.6	5.8
Type of sample		Paint	Paint	Paint	Material	Paint
Date prepared	-	25/06/2019	25/06/2019	25/06/2019	25/06/2019	25/06/2019
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Lead in paint	%w/w	1.4	0.14	1.6	<0.005	0.14

Lead in Paint						
Our Reference		220245-21	220245-25	220245-27	220245-29	220245-36
Your Reference	UNITS	5.11	6.2	6.4	6.10	1.7
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	25/06/2019	25/06/2019	25/06/2019	25/06/2019	25/06/2019
Date analysed	-	26/06/2019	26/06/2019	26/06/2019	26/06/2019	26/06/2019
Lead in paint	%w/w	0.16	0.007	0.081	0.04	0.18

Lead in Paint				
Our Reference		220245-40	220245-41	220245-42
Your Reference	UNITS	1.11	1.12	1.13
Type of sample		Paint	Paint	Paint
Date prepared	-	25/06/2019	25/06/2019	25/06/2019
Date analysed	-	26/06/2019	26/06/2019	26/06/2019
Lead in paint	%w/w	0.007	0.12	<0.005

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.

QUALITY CONTROL: Lead in Paint					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			25/06/2019	17	25/06/2019	25/06/2019		25/06/2019	[NT]
Date analysed	-			26/06/2019	17	26/06/2019	26/06/2019		26/06/2019	[NT]
Lead in paint	%w/w	0.005	Metals-004	<0.005	17	1.6	2.3	36	91	[NT]

QUALITY CONTROL: Lead in Paint					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	36	25/06/2019	25/06/2019		[NT]	[NT]
Date analysed	-			[NT]	36	26/06/2019	26/06/2019		[NT]	[NT]
Lead in paint	%w/w	0.005	Metals-004	[NT]	36	0.18	0.18	0	[NT]	[NT]

Result Definitions

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

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.
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.	

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; 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.

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.