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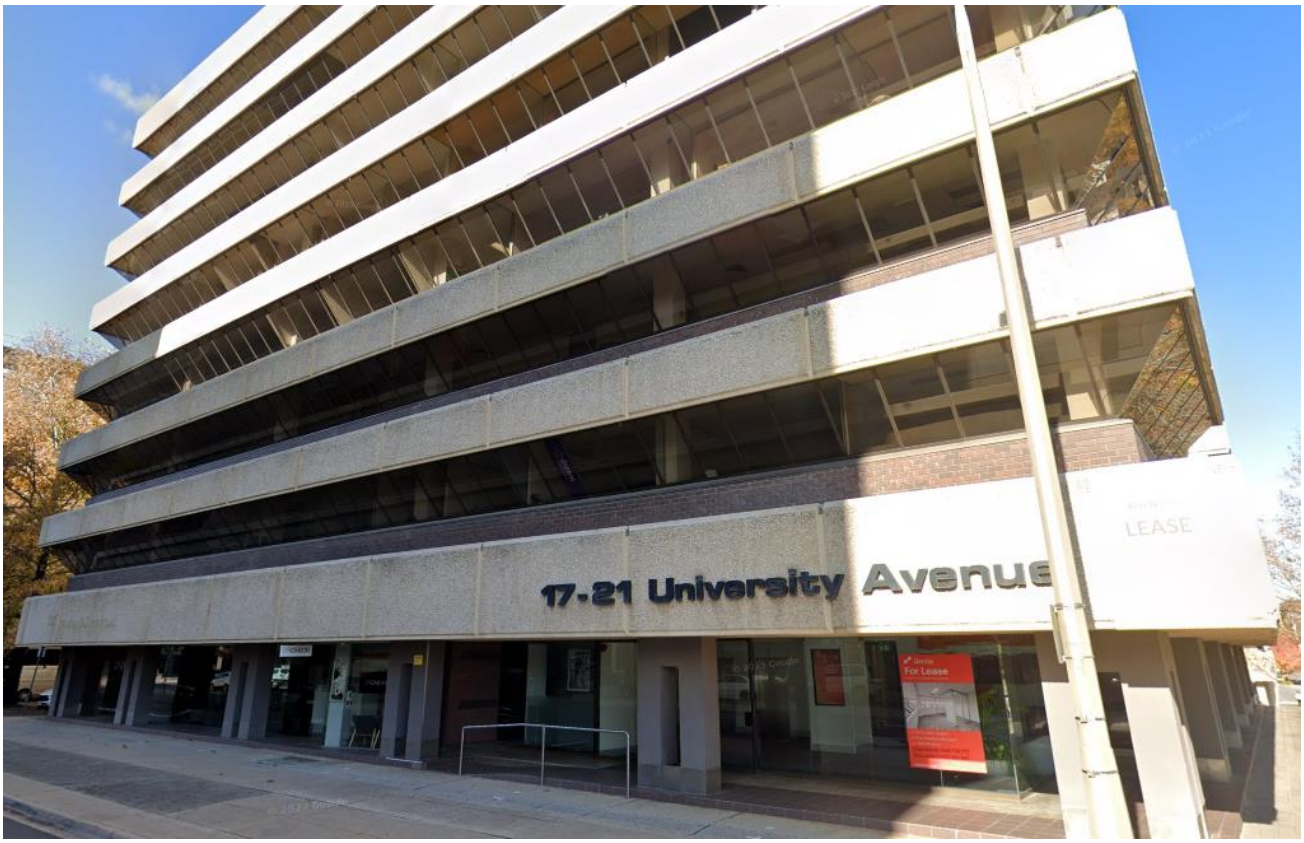
HAZARDOUS MATERIALS SURVEY REPORT & MANAGEMENT PLAN

17-21 University Avenue,
Canberra ACT 2601



Prepared For: SYZYGY

Survey Completion Date: 9 August 2024

Job reference: LDJ3334

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CANBERRA ACT 2601

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APPENDICES

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GLOSSARY

ACM	Asbestos containing material. Any material, object, product or debris that contains asbestos.
Amosite	Grey or brown asbestos.
ARCP	Asbestos Removal Control Plan. A document detailing the control measures for undertaking licenced asbestos removal works.
Chrysotile	White asbestos.
Crocidolite	Blue asbestos.
Friable asbestos	Friable asbestos material can be crumbled or reduced to a dust by hand pressure when dry. It can represent a significant exposure hazard as a consequence of minor disturbance. Pipe lagging, loose-fill asbestos, millboard and severely damaged non-friable asbestos are examples of friable asbestos.
LAA	Licensed Asbestos Assessor
Non-friable asbestos	Non-friable asbestos is material that contains asbestos firmly bound into a matrix. It may consist of cement or various resins/binders and cannot be reduced to a dust by hand pressure. As such it does not present an exposure hazard unless cut, abraded, sanded or otherwise disturbed. Therefore, the exposure risk from non-friable ACM is negligible during normal building occupation.
ODS	Ozone Depleting Substances. Substances which deplete the ozone layer. Are commonly used in refrigeration and air conditioning.
PCB	Polychlorinated Biphenyls. A class of man-made organic chemicals. Their resistance to acids, bases and heat make them useful as insulating material in electric equipment, such as transformers and capacitors, and in heat transfer fluids and lubricants
SMWS	Safe Work Method Statement. Details the methodology and requirement for carrying out high-risk construction work, including asbestos works.
SMF	Synthetic Mineral Fibre. A general term used to describe a number of fibrous materials made from glass, rock, alumina and silica
WHS	Work Health and Safety

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EXECUTIVE SUMMARY

On 9 August 2024, Lancaster & Dickenson Consulting completed a hazardous materials survey of 17-21 University Avenue, Canberra, ACT, 2601. The assessment includes an update of the previous SWE report and asbestos register (file reference: C108379-AMP1.v1).

A.1 Asbestos

Nineteen (19) asbestos items were identified or presumed during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

The two unlabelled fire doors adjacent to the boilers within the Level 8 Plant Room are in poor condition and should be removed by a licensed asbestos removalist as soon as practicable.

Asbestos containing adhesive and vinyl floor tiles are present below existing flooring in several locations throughout the building. This material should be presumed to be present below all existing floor coverings unless intrusive inspections prove otherwise.

The exposed edges of the fibre cement ceiling in the Ground Floor Gas Valve Cupboard should be sealed with paint or a similar product in order to prevent fibre release.

The asbestos mastic to the joints between the exterior concrete panels is cracking and weathered in several locations. Weathered sections should be sealed in order to prevent further deterioration.

The waterproofing membrane to the Level 3 Roof Top Garden and the exterior parapets is weathered in several locations. Weathered sections should be sealed in order to prevent further deterioration.

All electrical items were presumed live at the time of assessment. Further investigation of switchboards and other electrical items should be conducted prior to any planned disturbance after these items have been electrically isolated.

All further ACM identified during the assessment were in a good condition and pose a low risk to health. All identified ACM should be labelled, maintained and reinspected at least once every five (5) years or as per recommendations in the asbestos registers in Sections D.1.1 and D.1.2.

Further information relating to the safe management of asbestos containing materials is detailed in Section F.

A.2 Lead Containing Paint

Six (6) lead painted items were identified during the survey 17-21 University Avenue, Canberra, ACT, 2601. Paint in similar applications throughout the building should be treated as lead paint unless further testing proves otherwise.

The brown lead paint to the metal roof supports was found to be sound condition and should be maintained as such.

All other identified lead paints were found to be in poor condition with flaking and chipping present. The paints should be stabilised via overpainting with a lead free alternative in order to minimise the lead exposure risk.

Further information relating to the safe management of synthetic mineral fibre is detailed in Section G.1.

A.3 Synthetic Mineral Fibre

Five (5) SMF items were identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

All SMF items were found to be in good condition and to present a low risk at the time of the assessment. The disturbance of the materials should be minimised during any works within the building.

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Further recommendations for the management of SMF can be found in Section G.2.

A.4 Polychlorinated Biphenyls

Fluorescent lights were not inspected due to being electrically live at the time of the survey. They should be presumed to contain PCB containing capacitors unless further inspection proves otherwise. No evidence of deterioration or leaking of capacitors was identified during the survey.

Further inspection for PCB containing capacitors should be conducted prior to the removal of any light fittings. Metal capacitors in particular should be assumed to contain PCB and should be handled and disposed of accordingly.

Further information relating to the safe management of polychlorinated biphenyls is detailed in Section G.3.

A.5 Ozone Depleting Substances

One (1) ODS containing refrigerant was located during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

The unit should be degassed by a qualified technician prior to disposal.

Firthe information on the safe management of ODS refrigerants can be found in Section G.4

A.6 Fuel Storage Tanks

No evidence of underground or above ground fuel storage tanks was identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

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A - INTRODUCTION

A.1 What are 'Hazardous Materials'?

Hazardous materials have been widely used in the construction, insulation (asbestos and synthetic mineral fibre), maintenance (lead paint), heating (heating oil) and cooling (ozone depleting substances) of built structures for many years. The EPA Hazardous Materials Environment Protection Policy (EPP) November 2010 defines hazardous materials as:

- Asbestos
- Lead containing paints
- polychlorinated biphenyls (PCB)
- Synthetic Mineral Fibre (SMF)
- Ozone Depleting Substances (ODS) and
- Fuel tanks

These materials can have adverse effects on human health and the environment.

A.1.1 Asbestos

Asbestos is the generic term for a number of fibrous silicate minerals. Before it was identified that asbestos was classified as a carcinogen, asbestos was widely used in the manufacture of building material between the 1940s and late 1980s.

Asbestos products were so widely used because they were durable, fire resistant and had good insulation properties. The manufacture and use of asbestos products were banned nationally in Australia from 31 December 2003. This ban applies to manufacture, supply, storage, sale, use, reuse, installation and replacement of asbestos.

Examples of building materials which were made with Asbestos include; asbestos cement sheet, asbestos cement pipe, asbestos rope, asbestos vinyl tiles and asbestos insulation.

Disturbance of ACM can result in release of asbestos fibre, which due to its carcinogenic effects, can result in persons contracting severe respiratory diseases (e.g. asbestosis, mesothelioma) when inhaled.

A.1.2 Lead Containing Paint

Paint on buildings prior to the 1970s often had lead concentrations of 10% to 20%. Paints containing white lead pose the greatest risk since the white lead is highly reactive, readily absorbed and its sweet taste is attractive to children. However, paint with more than 1% lead, or paint containing any amount of white lead, were prohibited for domestic use after 1965.

Since 1997, paints manufactured for use in buildings were prohibited through regulation from containing lead in excess of 0.1%. Most manufacturers had already reduced the lead content of paints to such levels prior to 1997, and water-borne acrylic paints in particular rarely had a lead content above 0.1%. However, it is possible that paints with more than 0.1% lead have been applied at some time prior to 1997. It should also be noted that industrial paints, which do not comply with these requirements, might have been used on large residential, public or commercial building projects.

Lead is toxic to humans when ingested or inhaled. Repeated inhalation or ingestion of lead paint particles can result in a building of lead in the body which can lead to lead poisoning (plumbism). Even small amounts of lead can cause serious health problems. Children younger than 6 years are especially vulnerable to lead poisoning, which has been found to severely affect mental and physical development. At very high levels, lead poisoning can be fatal.

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A.1.3 Synthetic Mineral Fibre

Synthetic Mineral Fibre (SMF) also known as 'man-made mineral fibres' (MMMF), is the generic term referring to fibrous inorganic substances typically manufactured from rock, clay, slag, or glass for use as insulation. These products are extensively manufactured and used in buildings and residential properties.

SMF can be categorised into three (3) main groups:

A.1.3.1 Refractory Ceramic Fibres (RCF) / High Bio-persistence Fibres (HBF)

RCF are a sub-category of man-made vitreous fibres (MMVF) manufactured for high temperature, high performance thermal insulation applications and used mostly to line furnaces, kilns and other industrial

heaters. They are also used as an insulation medium or thermal barrier in the automotive, marine, petrochemical, steel, aluminium, ceramic, glass and construction industries.

RCF are made from kaolin, a naturally occurring aluminosilicate clay or a synthetic mix of alumina and refined beach sand.

RCF are classified as being presumed to have the potential to cause cancer by inhalation. Many RCF F products that do not contain binders are dusty and can release inhalable fibres when being used. Inhalable fibres can irritate the throat, eyes and upper respiratory tract.

For some people RCF exposure can irritate and redden the skin. This effect is normally temporary and should reduce over time. Fibres can also be caught under the eyelid and scratch the cornea.

HBF are MMVF which do not break down in the lungs and are considered to pose similar health risks as RCF. Whether a fibre is high bio-persistence or not is determined by toxicological testing. SMF which are not glasswool or rockwool and have not been tested should be assumed to be HBF.

Examples of RCF and HBF include:

- Furnace linings
- Pipe and duct insulation
- Expansion joints and seals
- Burner ports/tubes

A.1.3.2 Old style Mineral wools (Glass wool and Rockwool)

Dust from glass wool and rockwool products can cause discomfort, tickling and dryness of the nose, throat, and respiratory tract, especially for those who suffer hay fever, asthma, or bronchitis. Temporary skin irritation, particularly where there is rubbing from clothing such as cuffs and collars, and severe irritation to eyes.

In 2001, glasswool and rockwool were reclassified as non-carcinogenic.

For over 70 years, glasswool and rockwool insulation materials have been the most widely used insulation in Australia.

A.1.3.3 Low Bio-Persistent Fibres

Since 2000, low/moderate temperature (building/construction style insulation) and all high-performance temperature SMF manufactured in Australia is 'low bio-persistent' and usually is clearly identified as being 'bio-soluble/low bio-persistent'. Low Bio-Persistent Fibres are classified as non-carcinogenic.

A.1.4 Polychlorinated Biphenyls

Polychlorinated Biphenyls (PCB) are a group of man-made organic chemicals consisting of carbon, hydrogen, and chlorine atoms.

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Due to their non-flammability, chemical stability, high boiling point and electrical insulating properties, PCBs were used in hundreds of industrial and commercial applications.

PCBs were commonly used in Australia until importation was banned in 1976. For hazardous materials surveys the major consideration relating to the management of PCB is for dealing with large holdings of PCB. The assessment and identification of PCB focuses on transformer units and capacitors including those used in light fittings.

PCBs have been demonstrated to cause a variety of adverse health effects. They have been shown to cause cancer in animals as well as serious non-cancer health effects in animals, including effects on the immune system, reproductive system, nervous system and endocrine system. Studies in humans have provided evidence for carcinogenic and non-carcinogenic effects of PCBs. The different health effects of PCBs may also be interrelated.

The proper handling, transporting and disposal of PCB is very important because if these chemicals are released into the environment, they do not readily break down and can accumulate in fatty tissues of animals. The longevity of PCBs and their affinity for fatty tissue can result in PCBs moving up and concentrating through the food chain.

A.1.5 Ozone Depleting Substances

Ozone depleting substances (ODSs) are substances which deplete the ozone layer. They are widely used in refrigerators, air conditioners, fire extinguishers, in dry cleaning, as solvents for cleaning, electronic equipment and as agricultural fumigants.

Ozone depleting substances include:

- Chlorofluorocarbons (CFCs)
- Halon
- Carbon tetrachloride (CCl4), Methyl chloroform (CH3CCl3)
- Hydrobromofluorocarbons (HBFCs)
- Hydrochlorofluorocarbons (HCFCs)
- Methyl bromide (CH3Br)
- Bromochloromethane (CH2BrCl)

To prevent release of ODS into the atmosphere, equipment containing ODS must be managed and disposed of/recycled.

In recent years alternatives to ozone depleting substances, particularly refrigerants have been developed.

A.1.6 Fuel Storage Tanks

All sites known to have had fuel storage tanks present are considered to be potentially contaminated until investigated, assessed and shown to be free of contamination. It is therefore important for sites undergoing redevelopment to be assessed for evidence indicating that above or underground fuel storage tanks may be or have been present. The assessment for fuel storage tanks during a hazardous materials assessment is typically a basic visual assessment and is rarely exhaustive.

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A.2 Purpose

A.2.1 Health, Safety and Environment

Hazardous materials have been widely used in the construction of built structures for many years. These materials can have adverse effects on human health and the environment. This hazardous materials report is developed is assist the persons conducting a business or undertaking (PCBU) with identifying, as far as practicable, all hazardous materials on site and assessing the risk the materials pose. This information is vital in assessing the appropriate measures which so that the hazardous materials can be adequately managed. The management of hazardous materials is important to help prevent persons working or visiting the site from being exposed to risks associated with the hazardous materials. This report also details information relating to the safe removal, transport, and processing/disposal of hazardous materials to limit their impact on the environment.

A.2.2 Legislative Requirements

As required by the current ACT Work Health and Safety Regulation, this document must be revised at least once every five (5) years, or more frequently where:

- there is a review of the Asbestos Register or control measure
- ACM is removed from or disturbed, sealed, or enclosed at the workplace
- the plan is no longer adequate for managing asbestos or ACM at the workplace; or
- further ACM is identified

A health and safety representative may also request a review if they reasonably believe that a circumstance mentioned above affects or may affect the health and safety of a member of their work group, and the Asbestos Management Plan was not adequately reviewed in response to this circumstance.

This report was writing in accordance with and with reference to:

- *ACT Work Health and Safety (WHS) Act 2011*
- *ACT WHS Regulation 2011*
- *ACT WHS (How to Manage and Control Asbestos in the Workplace Code of Practice)*
- *ACT WHS (How to Safely Remove Asbestos in the Workplace Code of Practice)*
- *National Code of Practice for the Safe Use of Synthetic Mineral Fibres. [NOHSC: 2006 (1990)]*
- *National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)].*
- *Safe Work Australia Guide to Handling Refractory Ceramic Fibres 2013*
- *AS/NZS 4361.2:2017. Australian/New Zealand Standard. Guide to hazardous paint management. Part 2: Lead paint in residential, public, and commercial buildings*
- *AIOH Position Paper - Synthetic Mineral Fibres (SMF) And Occupational Health Issues 2016*
- *ANZECC (1997) Identification of PCB-containing Capacitors: An Information Booklet for Electricians and Electrical Contractors.*
- *NEPC, Assessment of Site Contamination, National Environment Protection Measure, December 1999 as amended May 2013 (ASC NEPM 2013)*

A.2.3 Project Scoping

Although not a primary purpose of this document, a thorough hazardous materials assessment can also provide useful information from which the relevant parties are able to scope the time and costs associated with managing hazardous materials on site.

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B - ASSESSMENT METHODOLOGY

The hazardous materials survey includes a site inspection and investigation to identify, as far as practicable all hazardous materials on site. The limitations of the site assessment for this hazardous materials survey are detailed in Section E.

Identified hazardous materials are also risk assessed based on the likelihood that an identified hazardous material may cause harm. This is conducted to provide management with an understanding of what risk a material poses, and which also informs the control measures which help mitigate the risk posed by the material.

B.1 Asbestos

B.1.1 Site Inspection

Identification of ACM begins with a systematic inspection of the site being conducted by the nominated licenced asbestos assessor(s). Suspect ACM is noted on the L&D Hazardous Materials Survey Record Sheet along with details on the location, type, condition, and accessibility of the material.

Following visual assessment of a suspect material, a bulk sample is taken of the suspected ACM for analysis with the purpose of confirming whether the material contains asbestos. The site sampling regime is dependent on such things as the nature of the building and the building history. Materials consistent with those positively identified to contain asbestos are also assumed to contain asbestos and should be treated as such. Samples are taken using fibre suppression techniques and sample locations are sealed following sampling to prevent any subsequent asbestos fibre release. Sampled materials are given unique sample reference numbers which are also noted on the site survey record sheets.

Samples collected during the assessment for asbestos analysis are delivered to L&D's National Association of Testing Authorities (NATA) accredited laboratory with a chain of custody form. Samples are analysed using polarised light microscopy and dispersion staining techniques. Certificates of analysis for asbestos are presented in Appendix A of the document.

B.1.2 Risk Assessment

The difficulty in assessing the likelihood that harm may occur for asbestos, is that the mechanisms and factors which make contracting an asbestos related disease are not fully understood. Therefore, when assessing risk relating to asbestos, it is the likelihood of an exposure to airborne asbestos fibre that is assessed.

This risk is categorised into one of four (4) risk categories:

Very Low Risk:	Material is very unlikely to cause harm in its current condition during standard building use.
Low Risk:	Material is unlikely to pose an exposure risk in its current condition during standard building use.
Medium Risk:	Material is likely to pose an exposure risk in its current condition during standard building use.
High Risk:	Material poses an exposure risk in its current condition.

There are a number of factors that are considered during an asbestos material risk assessment:

- **Type of product or binding matrix**: Asbestos fibres were used in the manufacture of many different building products. These materials typically utilised an agent to bind the asbestos fibres within the

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matrix of the building material. Fibres which are bound within a matrix cannot be inhaled and therefore do not pose an exposure risk until the fibres are released from the matrix.

- **Condition of ACM:** The condition of an ACM is important for assessing risk. An example of this would be asbestos cement sheet in poor condition. Although the asbestos fibres were manufactured to be bound within the cement matrix, damage has resulted in the release of airborne fibre as well as making further disturbance of the material more likely to generate airborne asbestos fibres.
- **Location:** The location of an ACM is typically a great indicator on the likelihood that an ACM will become disturbed. The more accessible and ACM or if an ACM is present in an "Active" work area, the more likely it is that an ACM will become disturbed. Direct disturbance of ACM can result in an asbestos exposure and increases the likelihood of the further fibre release if disturbed again.

Risk assessments are relevant to the specific time of the assessment and are made by the licenced asbestos assessor using their professional judgement.

Where a risk assessment indicates there is an elevated risk of exposure to airborne asbestos fibre, suitable control measures must be implemented to eliminate or reduce the risk as far as practicable.

B.1.3 Determining Suitable Control Measures

Recommended control measures are made by the LAA based on the results of the risk assessment. These recommendations are presented within the site asbestos register (Section D.1.1). However, should the condition of identified ACM change or should site conditions increase the likelihood that ACM may be disturbed, this risk assessment may need to be revised.

The *ACT WHS (How to Manage and Control Asbestos in the Workplace Code of Practice) Approval 2014* requires that when choosing the most appropriate control measure for managing ACM or asbestos, the hierarchy of controls must be considered. It is important that Management refers to the hierarchy of controls (Section F.5.2) to make determinations on whether further/alternative action is required.

B.2 Lead Containing Paint

All surface paints on site were assessed for their likelihood to contain lead. The assessment concentrated on areas where lead-based paints were commonly used (e.g. Building exterior, window frames, skirting boards etc.) and was made based upon factors such as the age and construction of the building structures. The sampling program included taking three (3) sub samples for each identified paint to ensure that representative analysis. Samples size is typically 25mm^2. Painted surfaces samples were delivered to a NATA accredited facility for lead analysis. Certificates of analysis for lead in paint are presented in Appendix B of the document.

B.2.1 Assessment Criteria

AS/NZS 4361.2:2017. Australian/New Zealand Standard. Guide to hazardous paint management. Part 2: Lead paint in residential, public and commercial buildings defines lead paint as that containing in excess of 0.1% lead by weight.

B.2.2 Risk Assessment & Control Measures

The risk assessment for lead containing paint focuses on the potential for the lead paint to be inhaled and/or ingested. The condition of the paint and the likelihood that the paint will be disturbed are the main factors considered for this risk assessment. The recommended control measures for identified lead paint will typically be one or a combination of the following options:

1. Leave and maintain

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2. Stabilise (overpaint)
3. Removal or enclosure

B.3 SMF

The survey for SMF is carried out in general accordance with the guidelines documented in the *Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC: 2006 (1990)]. This includes documenting any materials visually assessed on site as being consistent with SMF.

Bonded insulation contains binding agents (such as adhesives or cements) that have been cured in the manufacturing process prior to packaging and delivery and the products have a specific shape, such as in a batt or blanket form or as compressed boards. Additionally, some bonded materials may be clad in various coverings on one or more sides. The advantage of the presence of binding agents is that they significantly reduce fibre release during handling.

Typical examples of the use of bonded glasswool and rockwool materials include:

- preformed insulation batts in ceilings and cavity walls
- insulation blankets or batts around air conditioning ducts, and
- preformed pipe sections as lagging around steampipes and hot or chilled water pipes.

Unbonded insulation has no adhesives or cements and is loose material packed into a package. This type of material can be packed loose or mixed with adhesives or cements before, or during, installation. There are three main types of unbonded glasswool and rockwool materials:

- wet spray: fibres are mixed with cement and sprayed as fire protection in multi-storey buildings
- loose-fill: material is sprayed into ceiling and cavity spaces of buildings, and
- dry spray: densely packed material is blown dry into a closed stud cavity

There are four main factors which alone, or in combination, determine the fibre levels present when working with glasswool and rockwool and which therefore determine the risks that may arise and how these risks might be managed. The four factors are the:

1. proportion of respirable fibres in the product
2. degree of disturbance of the product
3. extent of any binders, cladding or sealants, and
4. ventilation in areas where the product is being used

B.4 PCBs

Detailed information found on capacitors of light fittings and other electrical equipment was recorded for cross-referencing with the Australian and New Zealand Environmental and Conservation Council (ANZECC) *Identification of PCB containing capacitors information booklet (1997)*.

Due to the inherent hazard in accessing electrical components, such as live electricity, working at heights and confined spaces, some components may not be safely accessed. In these instances, comment is made on the likelihood of PCB containing materials based upon age and appearance.

For suspect PCB containing capacitor the main factors which govern the appropriate control measures are the condition of the capacitor (i.e. is there a PCB leak) and the potential for the capacitor to be damaged in the future.

B.5 ODS

The assessment for ozone depleting substances included an inspection of air conditioning and refrigeration units for the purposes of identifying any ozone depleting refrigerants. Refrigerants are typically given an "R

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number" which informs what chemical substance is used. This R number is used to determine whether the refrigerant is classified as an ODS.

ODS are considered a risk to the environment as, when released, they have the potential to react and deplete the ozone layer, which absorbs most of the harmful solar ultraviolet radiation impinging on the Earth's atmosphere.

B.6 Fuel Storage Tanks

A visual inspection of the site was undertaken to assess for signs of infrastructure of both below ground fuel storage tanks (tank filler points and vent pipes) and above ground fuel storage tanks.

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C - SITE DETAILS

On 9 August 2024, Lancaster & Dickenson Consulting completed a hazardous materials survey of 17-21 University Avenue, Canberra, ACT, 2601. This document details the findings of this survey. The lead surveyor was ACT Licensed Asbestos Assessor Patrick Cerone (Licence No: AA00031).

C.1 Site Description

Site Name:	17-21 University Avenue, Canberra, ACT, 2601
Block & Section:	CANBERRA CENTRAL: Block 2 Section 5

C.2 Site Location

The red outline in Figure 1 below outlines the location of 17-21 University Avenue, Canberra, ACT, 2601.

Figure 1: Site location

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D - SURVEY FINDINGS

This section details the hazardous materials identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601. Representative photographs are also presented for identified hazardous materials.

Section B of this document explains all rating used in the hazardous materials registers.

Lead Surveyor	Patrick Cerone (AA00031)	**Survey Completion Date:**	9 August 2024
Site Contact:	Nicholas Merriman	**Site Address**	17-21 University Avenue, Canberra, ACT, 2601

D.1 Asbestos Findings

Key codes for Asbestos Register

Asbestos content types: CHR = Chrysotile, AMO = Amosite, CROC = Crocidolite, NAD = No asbestos detected

ACM type: NF = Non-friable, f = friable

Material Condition: G = Good, F = Fair, P = Poor

Likelihood of Disturbance: L = Low, M = Medium, H = High

Risk Rating: VL = Very low, L = Low, M = Medium, H = High

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D.1.1 ACM Register – FMS Workshop Area

ITEM NO.	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	PHOTO NO	SAMPLE NO.	ASBESTOS FIBRE CONTENT	ACM TYPE	MATERIAL CONDITION	LIKELIHOOD OF DISTURBANCE	RISK RATING	MINIMUM RECOMMENDED ACTION
LDJ03334 - 1	All	Exterior - Sealant to joints in concrete panels	Mastic	ACM1	Refer to 85722	CHR	NF	Fair	L	VL	Seal cracked sections
LDJ03334 – 2	G	Exterior - Textured awning and eave soffits	Fibre Cement	ACM2	Refer to 85723	CHR	NF	Good	L	VL	Maintain
LDJ03334 – 3	G	Exterior - Sealant to window aluminium window on southeast façade	Caulking	ACM3	C108379/A01	CHR	NF	Good	L	VL	Label and maintain
LDJ03334 – 4	G	Exterior - Sealant to frosted glass window on south facade	Putty	ACM4	C108379/A02	CHR	NF	Good	L	VL	Label and maintain
LDJ03334 - 5	All	Exterior – Waterproofing to parapet under sloped windows and rooftop garden	Membrane	ACM5	Refer to 67964-12-06	CHR	NF	Fair	L	L	Seal or remove weathered sections
LDJ03334 - 6	3	Exterior – Awning soffit to rooftop garden access	Fibre Cement	ACM6	Refer to 67964-12-07	CHR	NF	Good	L	VL	Label and maintain
LDJ03334 – 7	All	Risers and Ceiling Spaces – Sealant to ductwork flange joints	Mastic	ACM7	Refer to 67964-12-05	CHR	NF	Good	L	VL	Label and maintain
LDJ03334 – 8	G-7	Interior - Remnant adhesive to floor below carpet	Bitumen	ACM8	Refer to 85724	CHR	NF	Good	L	VL	Further investigation prior to works to determine full extent Label and maintain

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ITEM NO.	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	PHOTO NO	SAMPLE NO.	ASBESTOS FIBRE CONTENT	ACM TYPE	MATERIAL CONDITION	LIKELIHOOD OF DISTURBANCE	RISK RATING	MINIMUM RECOMMENDED ACTION
LDJ03334 –9	G	Gas Valve Cupboard - Ceiling	Fibre Cement	ACM9	Refer to 67964-12-10	CHR, AMO	NF	Fair	L	VL	Seal exposed edges Maintain
LDJ03334 –10	G	Gas Valve Cupboard - Beige floor tiles	Vinyl Tiles	ACM10	Refer to 67964-12-09A	CHR	NF	Fair	L	VL	Maintain
LDJ03334 –11	G	Electrical Switchboard & Metering Cupboard – Beige floor tiles below carpet	Vinyl Tiles	-	Refer to 67964-12-09A	CHR	NF	Good	L	VL	Further investigation prior to works to determine full extent Label and maintain
LDJ03334 –12	G-7	Electrical Switchboard & Metering Cupboards- Electrical switchboard backing	Tar Board	ACM11	Visually Assessed	Presumed Asbestos	NF	Good	L	VL	Further investigation prior to disturbance
LDJ03334 –13	G	Main Switch Room - Electronic switchboard backing and various electronic components	Tar Board	-	Visually Assessed	Presumed Asbestos	NF	Good	L	VL	Further investigation prior to disturbance
LDJ03334 –14	3-76	West Stairwell - Bulkhead lining	Fibre Cement	ACM12	Refer to 67964-12-02	CH	NF	Good	L	VL	Maintain
LDJ03334 –15	8	Plant Room – To Boilers 1 and 2	Rope gasket, seals and Insulation	ACM13	Visually Assessed	Presumed Asbestos	F	Good	L	L	Further investigation prior to disturbance
LDJ03334 –16	8	Plant Room - Electrical switchboard backing	Tar board	ACM14	Visually Assessed	Presumed Asbestos	NF	Good	L	VL	Further investigation prior to disturbance
LDJ03334 – 17	8	Plant Room - Sealant to exhaust fan duct flange joint	Mastic	ACM15	LD-PC0407	CH	NF	Good	L	VL	Label and maintain

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ITEM NO.	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	PHOTO NO	SAMPLE NO.	ASBESTOS FIBRE CONTENT	ACM TYPE	MATERIAL CONDITION	LIKELIHOOD OF DISTURBANCE	RISK RATING	MINIMUM RECOMMENDED ACTION
LDJ03334 – 18	**8**	**Interior – Waterproofing to topside of stramit ceiling/roof**	**Membrane**	**ACM16**	**LD-PC0408**	**CH**	**NF**	**Fair**	**L**	**VL**	**Label and maintain**
LDJ03334 – 19	**8**	**Plant Room - Unlabelled Fire doors adjacent to the boilers**	**Fire door core**	**ACM17**	**LD-PC0409**	**CH, AMO**	**F**	**Poor**	**L**	**M**	**Remove**
-	All	Exterior – black expansion joint to brick wall	Mastic	-	C108379/A03	NAD	-	-	-	-	No action required
-	1-7	Electrical Switchboard & Metering Cupboards- Electrical cable insulation	Bitumen	-	Refer to 85721	NAD	-	-	-	-	No action required
-	G	Lobby Hallway – Amber adhesive below floor covering	Adhesive	-	Refer to 67694-12-09B	NAD	-	-	-	-	No action required
-	G	Electrical Switchboard and Metering Cupboard – Amber adhesive below floor covering	Adhesive	-	Refer to 67694-12-09B	NAD	-	-	-	-	No action required
-	G	Gas Valve Cupboard – Amber adhesive below floor covering	Adhesive	-	Refer to 67694-12-09B	NAD	-	-	-	-	No action required
-	1	Southern Stairwell – Female Bathroom – Wall lining of shower compartment	Fibre Cement	-	Refer to 67694-12-08	NAD	-	-	-	-	No action required
-	1	Southern Stairwell – Female Bathroom – Textured wall lining behind door	Fibre Cement	-	C108379/A04	NAD	-	-	-	-	No action required

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ITEM NO.	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	PHOTO NO	SAMPLE NO.	ASBESTOS FIBRE CONTENT	ACM TYPE	MATERIAL CONDITION	LIKELIHOOD OF DISTURBANCE	RISK RATING	MINIMUM RECOMMENDED ACTION
-	1	Southern Stairwell – Male Bathroom – Wall lining of shower compartment	Fibre Cement	-	Refer to 67694-12-08	NAD	-	-	-	-	No action required
-	1	Southern Stairwell – Male Bathroom – Ceiling hatch cover	Fibre Cement	-	Refer to 67694-12-08	NAD	-	-	-	-	No action required

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D.1.2 Asbestos Item Photographs

ASBESTOS ITEM PHOTOGRAPHS			
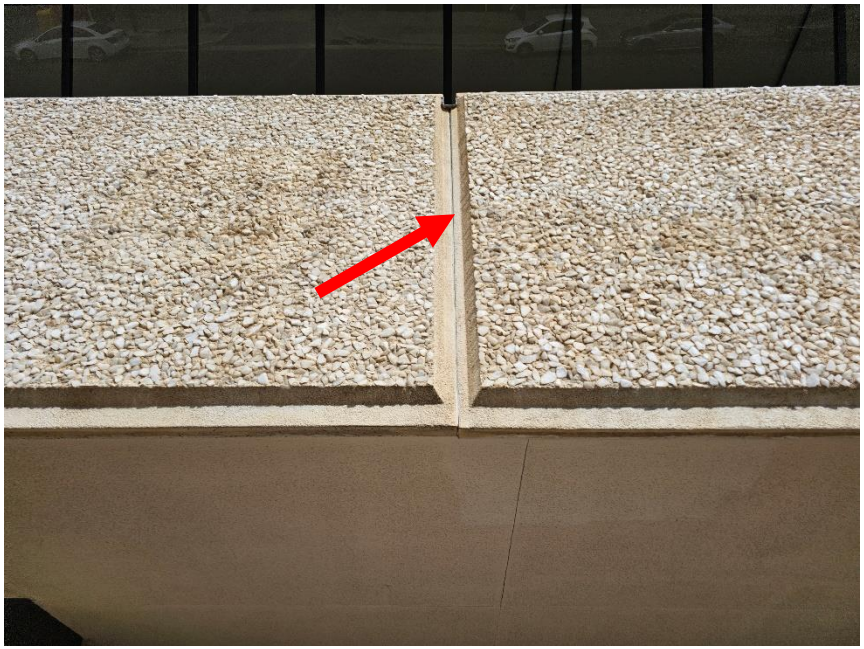			
Photo Number: ACM1		**Photo Number:** ACM2	
Level:	All	**Level:**	G
Location description:	Exterior - Sealant to joints in concrete panels	**Location description:**	Exterior - Textured awning and eave soffits
Material:	Mastic	**Material:**	Fibre Cement

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ASBESTOS ITEM PHOTOGRAPHS			
			
Photo Number: ACM3		**Photo Number:** ACM4	
Level:	G	**Level:**	G
Location description:	Exterior - Sealant to window aluminium window on southeast façade	**Location description:**	Exterior - Sealant to window aluminium window on southeast façade
Material:	Caulking	**Material:**	Caulking

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ASBESTOS ITEM PHOTOGRAPHS

Photo Number: ACM5	
Level:	All
Location description:	Exterior - Waterproofing to parapet under sloped windows and rooftop garden
Material:	Membrane

Photo Number: ACM6	
Level:	3
Location description:	Exterior – Awning soffit to rooftop garden access
Material:	Fibre cement

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ASBESTOS ITEM PHOTOGRAPHS			
			
Photo Number: ACM7		**Photo Number:** ACM8	
Level:	All	**Level:**	G-7
Location description:	Risers and Ceiling Spaces – Sealant to ductwork flange joints	**Location description:**	Interior - Remnant adhesive to floor below carpet
Material:	Mastic	**Material:**	Fibre cement

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ASBESTOS ITEM PHOTOGRAPHS

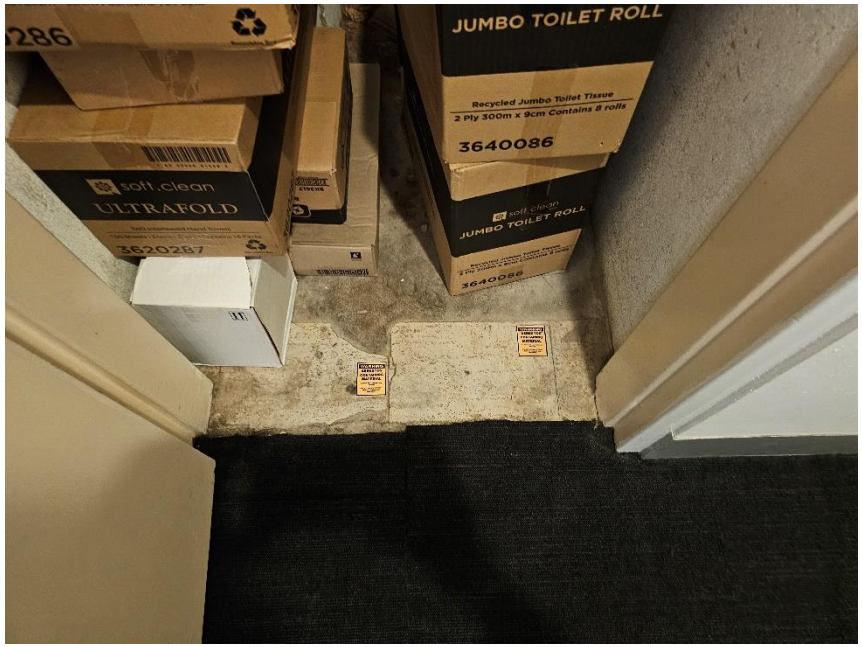

Photo Number: ACM9		**Photo Number:** ACM10	
Level:	G	**Level:**	G
Location description:	Gas Valve Cupboard - Ceiling	**Location description:**	Beige floor tiles
Material:	Fibre cement	**Material:**	Vinyl

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ASBESTOS ITEM PHOTOGRAPHS	
	
Photo Number: ACM11	**Photo Number:** ACM12
Level: G-7	**Level:** 3-6
Location description: Electrical Switchboard & Metering Cupboards- Electrical switchboard backing	**Location description:** West Stairwell - Bulkhead lining
Material: Tar board	**Material:** Fibre cement

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ASBESTOS ITEM PHOTOGRAPHS

Photo Number: ACM13	
Level:	8
Location description:	Plant Room – To Boilers 1 and 2
Material:	Rope gasket, seals and Insulation

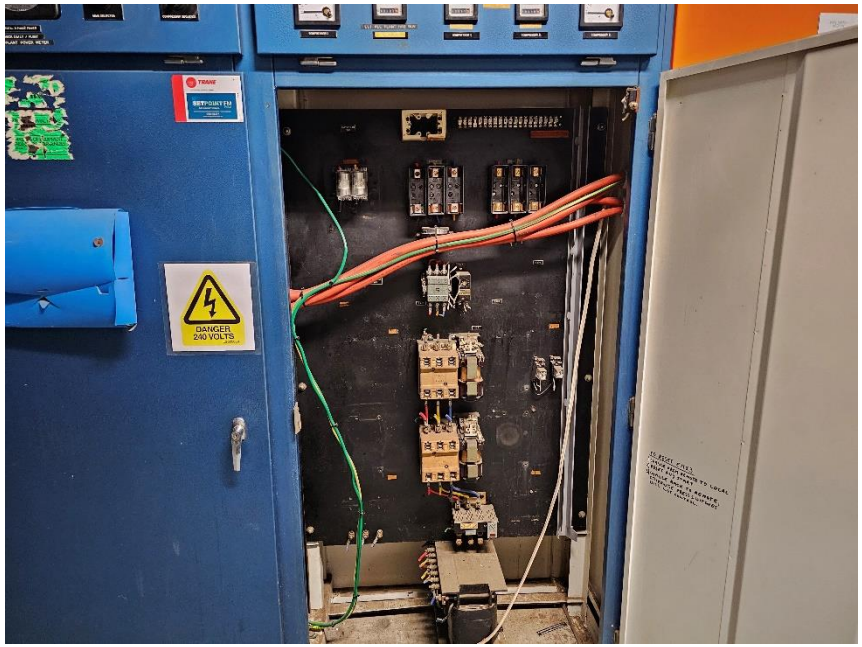

Photo Number: ACM14	
Level:	8
Location description:	Plant Room - Electrical switchboard backing
Material:	Tar board

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ASBESTOS ITEM PHOTOGRAPHS			
			
Photo Number: ACM15		**Photo Number:** ACM16	
Level:	8	**Level:**	8
Location description:	Plant Room - Sealant to exhaust fan duct flange joint	**Location description:**	Interior – Waterproofing to topside of stramit ceiling/roof
Material:	Mastic	**Material:**	Membrane

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ASBESTOS ITEM PHOTOGRAPHS	
	
Photo Number: ACM17	
Level:	8
Location description:	Plant Room – Unlabelled fire doors adjacent boilers
Material:	Fire door core

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D.1.3 Asbestos Material Discussion

Nineteen (19) asbestos items were identified or presumed during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

The two unlabelled fire doors adjacent to the boilers within the Level 8 Plant Room are in poor condition and should be removed by a licensed asbestos removalist as soon as practicable.

Asbestos containing adhesive and vinyl floor tiles are present below existing flooring in several locations throughout the building. This material should be presumed to be present below all existing floor coverings unless intrusive inspections prove otherwise.

The exposed edges of the fibre cement ceiling in the Ground Floor Gas Valve Cupboard should be sealed with paint or a similar product in order to prevent fibre release.

The asbestos mastic to the joints between the exterior concrete panels is cracking and weathered in several locations. Weathered sections should be sealed in order to prevent further deterioration.

The waterproofing membrane to the Level 3 Roof Top Garden and the exterior parapets is weathered in several locations. Weathered sections should be sealed in order to prevent further deterioration.

All electrical items were presumed live at the time of assessment. Further investigation of switchboards and other electrical items should be conducted prior to any planned disturbance after these items have been electrically isolated.

All further ACM identified during the assessment were in a good condition and pose a low risk to health. All identified ACM should be labelled, maintained and reinspected at least once every five (5) years or as per recommendations in the asbestos registers in Sections D.1.1 and D.1.2.

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D.2 Lead Paint Findings

D.2.1 Lead Paint Register

The table below summarises the paints sampled for lead analysis during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

ITEM NO	SAMPLE NO	LOCATIONS	COLOUR	LEAD CONTENT (%)	PHOTO NO.	CONDITION	COMMENTS
Lead Paint (>0.1 % Pb)			Lead-free Paint (≤0.1 % Pb)				
LDJ03334-LP1	**LD-PC0410**	**Level 8 – Plant Room – Pipework**	**Light green**	**0.46**	**LP1**	**Poor**	**Stabilise via overpainting**
LDJ03334-LP2	**LD-PC0411**	**Level 8 – Plant Room – Floor**	**Grey**	**0.14**	**LP2**	**Poor**	**Stabilise via overpainting**
LDJ03334-LP3	**LD-PC0412**	**Level 8 – Plant Room – Metal door frame**	**Brown over red**	**0.63**	**LP3**	**Poor**	**Stabilise via overpainting**
LDJ03334-LP4	**LD-PC0413**	**Level 8 – Plant Room – Metal door frame to fire stairs**	**Pink**	**0.29**	**LP4**	**Poor**	**Stabilise via overpainting**
LDJ03334-LP5	**LD-PC0414**	**Level 8 – Plant Room – Metal frame to roof**	**Brown**	**0.62**	**LP5**	**Stable**	**Maintain in good condition**
-	LD-PC0415	Level 8 – Plant Room – Ceiling	White	0.007	-	-	No action required
-	LD-PC0416	Level 8 – Plant Room – Masonry walls	White	0.04	-	-	No action required
-	LD-PC0417	Level 7 – West Stairwell – Masonry walls	Cream	0.04	-	-	No action required
LDJ03334-LP6	**LD-PC0418**	**Level 7 – West Stairwell – Doorframe**	**Cream**	**0.18**	**LP6**	**Poor**	**Stabilise via overpainting**

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D.2.2 Lead Paint Item Photographs

LEAD PAINT ITEM PHOTOGRAPHS	
	
Photo Number: LP1	**Photo Number:** LP2
Level: 8	**Level:** 8
Location description: Plant Room – Pipework	**Location description:** Plant Room – Floor
Paint colour: Light green	**Paint colour:** Grey

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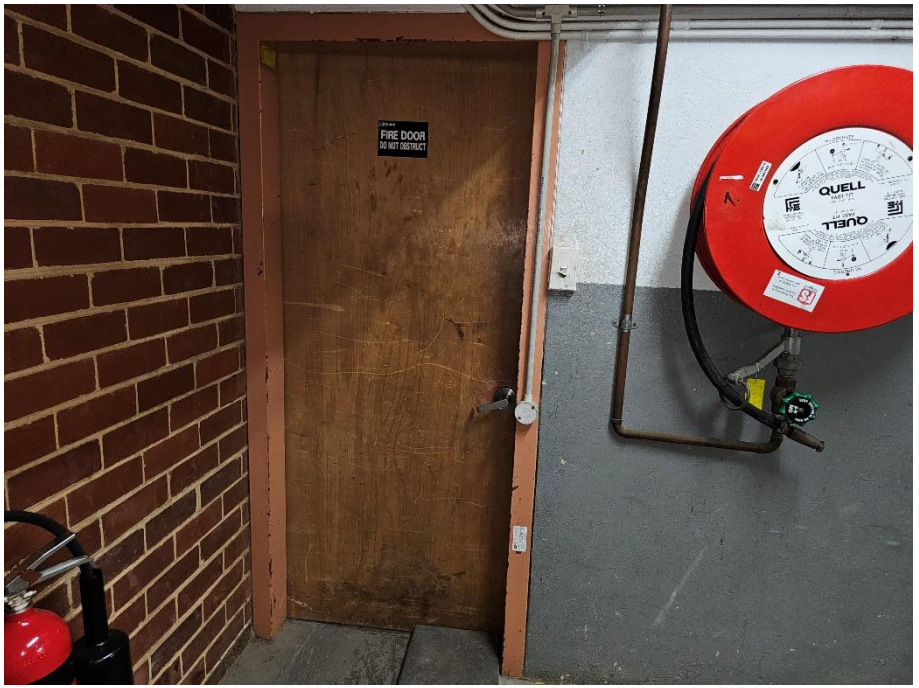
LEAD PAINT ITEM PHOTOGRAPHS	
	
Photo Number: LP3	**Photo Number:** LP4
Level: 8	**Level:** 8
Location description: Plant Room – Metal door frame	**Location description:** Plant Room – Floor
Paint colour: Brown over red	**Paint colour:** Pink

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LEAD PAINT ITEM PHOTOGRAPHS

Photo Number: LP5	
Level:	8
Location description:	Plant Room – Metal frame to roof
Paint colour:	Brown

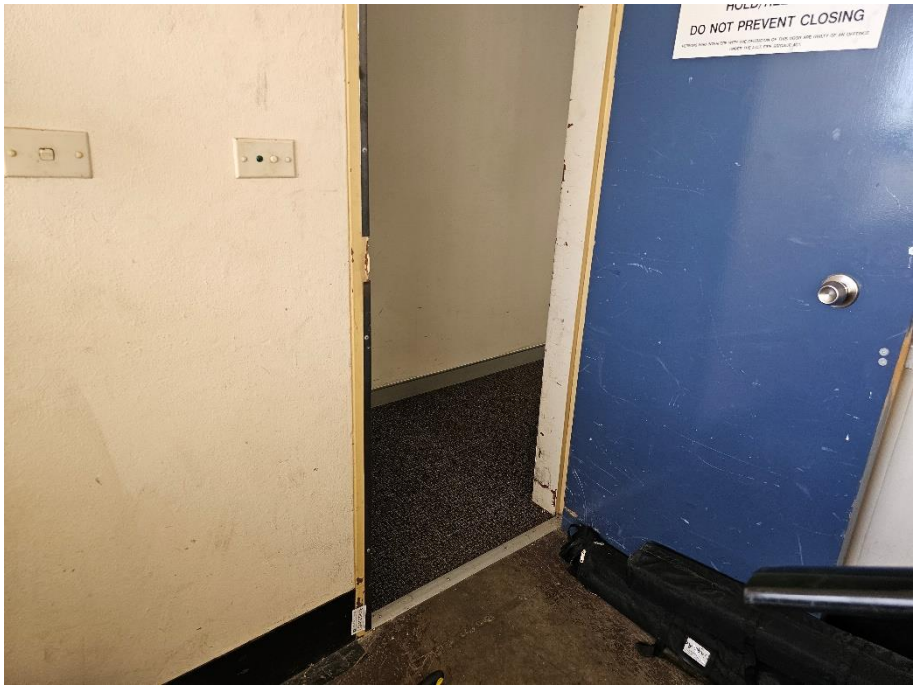

Photo Number: LP6	
Level:	7
Location description:	West Stairwell – Doorframe
Paint colour:	Cream

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D.2.3 Lead Paint Discussion

Six (6) lead painted items were identified during the survey 17-21 University Avenue, Canberra, ACT, 2601. Paint in similar applications throughout the building should be treated as lead paint unless further testing proves otherwise.

The brown lead paint to the metal roof supports was found to be sound condition and should be maintained as such.

All other identified lead paints were found to be in poor condition with flaking and chipping present. The paints should be stabilised via overpainting with a lead free alternative in order to minimise the lead exposure risk.

Further information relating to the safe management of synthetic mineral fibre is detailed in Section G.1.

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D.3 SMF Findings

D.3.1 SMF Register

The table below summarises the SMF items identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

ITEM NO.	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	PHOTO REF.	TYPE	FORM	LIKELIHOOD OF DISTURBANCE	VENTILATION	RISK RATING	RECOMMENDATIONS
LDJ03334-SMF1	All	Throughout - Foil backed insulation to pipework	Fibreglass	SMF1	Glasswool	Bonded	Low	Low	Low	Minimise disturbance
LDJ03334-SMF2	G-7	Ceiling spaces – Insulation to flexi ducting	Fibreglass	SMF2	Glasswool	Bonded	Low	High	Low	Minimise disturbance
LDJ03334-SMF3	8	Plant Room – Insulation to interior of Rheem Hot Water Unit	Fibreglass	SMF3	Glasswool	Bonded	Low	Low	Low	Minimise disturbance
LDJ03334-SMF4	G-7	Throughout – Suspended ceiling tiles	Fibreglass	SMF4	Glasswool	Bonded	Medium	High	Low	Minimise disturbance
LDJ03334-SMF5	G-7	Ceiling spaces – Insulation batts	Fibreglass	SMF5	Glasswool	Bonded	Low	High	Low	Minimise disturbance

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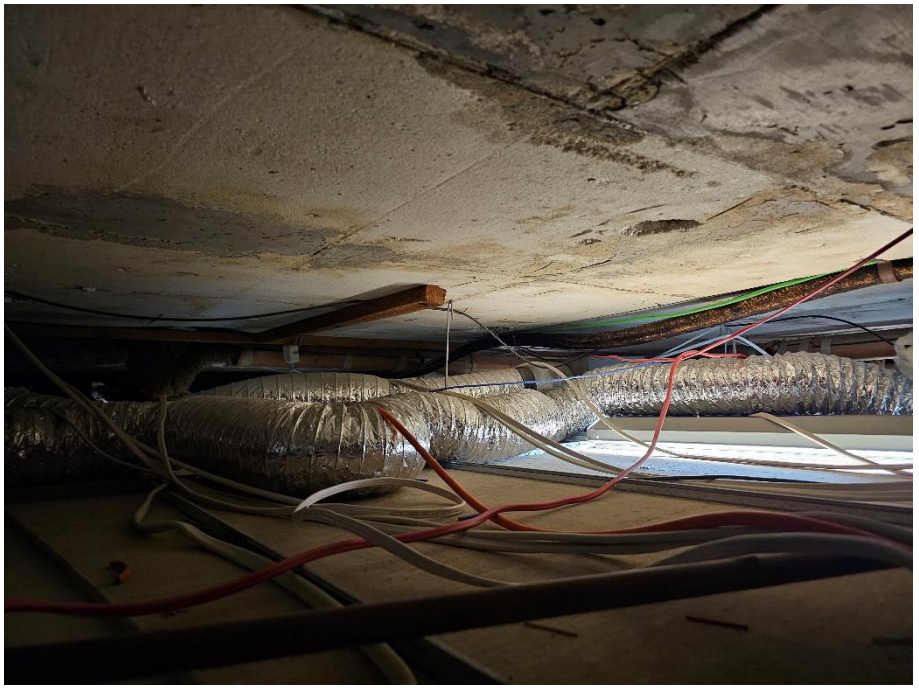
D.3.3 SMF Item Photographs

SMF ITEM PHOTOGRAPHS			
			
Photo Number: SMF1		**Photo Number:** SMF2	
Level:	All	**Level:**	G-7
Location description:	Foil backed insulation to pipework	**Location description:**	Ceiling spaces – Insulation to flexi ducting
Material description:	Fibreglass	**Material description:**	Fibreglass

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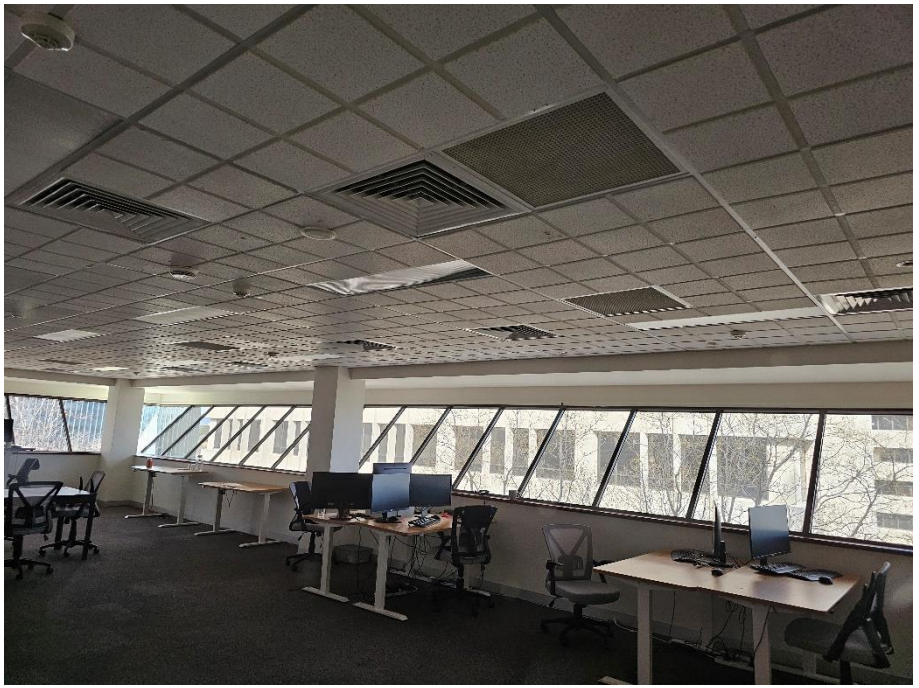
SMF ITEM PHOTOGRAPHS			
			
Photo Number: SMF3		**Photo Number:** SMF4	
Level:	8	**Level:**	G-7
Location description:	Plant Room – Insulation to interior of Rheem Hot Water Unit	**Location description:**	Throughout - Suspended ceiling tiles
Material description:	Fibreglass	**Material description:**	Fibreglass

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SMF ITEM PHOTOGRAPHS	
	
Photo Number: SMF5	
Level:	G-7
Location description:	Ceiling spaces – Insulation batts
Material description:	Fibreglass

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D.3.4 SMF Discussion

Five (5) SMF items were identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

All SMF items were found to be in good condition and to present a low risk at the time of the assessment. The disturbance of the materials should be minimised during any works within the building.

Further recommendations for the management of SMF can be found in Section G.2.

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D.4 PCB Findings

D.4.1 PCB Register

The table below summarises the capacitors inspected for PCB during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

ITEM NO.	LOCATION DESCRIPTION	CAPACITOR DETAILS	PCB?	PHOTO NO	PCB CONDITION	PCB EXTENT	RECOMMENDATIONS
LDJ3334-PCB1	Throughout – Fluorescent light fittings	-	Presumed PCB	-	Good	Throughout	Further investigation after electrical isolation

D.4.2 PCB Discussion

Fluorescent lights were not inspected due to being electrically live at the time of the survey. They should be presumed to contain PCB containing capacitors unless further inspection proves otherwise. No evidence of deterioration or leaking of capacitors was identified during the survey.

Further inspection for PCB containing capacitors should be conducted prior to the removal of any light fittings. Metal capacitors in particular should be assumed to contain PCB and should be handled and disposed of accordingly.

Further information relating to the safe management of polychlorinated biphenyls is detailed in Section G.3.

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D.5 ODS Findings

D.5.1 ODS Register

The table below summarises the refrigerants identified during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

ITEM NUMBER	LEVEL	UNIT DESCRIPTION	REFRIGERANT NUMBER	ODS? (Y/N)	PHOTO NO.	RECOMMENDED ACTION
LDJ03334-ODS1	**8**	**Lift Motor Room – AC unit**	**R410A**	**Yes**	**ODS 1**	**Degas prior to disposal Maintain in good condition**
-	8	Plant Room – Panasonic Multi-Type AC	R410A	No	-	No action required
-	8l	Plant Room – Mitsubishi AC	R410A	No	-	No action required
-	8l	Plant Room – Chiller Unit	R134a	No	-	No action required-

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D.5.2 ODS Item Photographs

ODS ITEM PHOTOGRAPHS	
	
Photo Number: ODS1	
Level:	8
Location description:	Lift Motor Room – AC unit

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D.5.3 ODS Discussion

One (1) ODS containing refrigerant was located during the survey of 17-21 University Avenue, Canberra, ACT, 2601.

The unit should be degassed by a qualified technician prior to disposal.

Firthe information on the safe management of ODS refrigerants can be found in Section G.4.

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D.6 Fuel Tank Storage Findings

D.6.1 Summary of Identified Fuel Storage Tanks

During the survey of 17-21 University Avenue, Canberra, ACT, 2601, no evidence of any above ground or underground fuel storage tanks was identified.

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E - LIMITATIONS

E.1 HAZMAT Survey

HAZMAT surveys are undertaken to identify, as far as practicable, all accessible hazardous materials on site. Site conditions such as building structure and occupation status can limit the accessibility of suspect ACM and the scope of the assessment.

If there is uncertainty (based on reasonable grounds) as to whether asbestos is present, or if there are inaccessible areas that are likely to contain asbestos, the person who controls the workplace must;

a) Presume that asbestos is present; or
b) Arrange for analysis of a sample to be undertaken. If future access is required into previously inaccessible areas, a further assessment to confirm the presence or absence of asbestos is recommended.

Therefore, where a suspect ACM is identified but cannot be sampled for confirming analysis, the material shall be included in the register and treated as if it is an ACM.

It must be assumed that hazardous materials including ACM may be present in any locations of the site which could not be accessed. For this survey unless explicitly mentioned within the survey findings, the following areas were not/could not be accessed:

- Ground – Main Switch room
- Ground – Substation
- Exterior Roof
- Voids and cavities only accessible through destructive means;
- Electrical equipment;
- Internal sections of air conditioning and plant;

E.2 Report

This document may need to be reviewed periodically to ensure it remains current, information regarding the requirements for review of the asbestos register and management plan can be found in Section G.2. All conclusions and recommendations are written by the licenced asbestos assessor using information available at the time of writing the report and their professional judgement. The report was designed to be read as a whole document and therefore should only be reproduced in full. As the purpose of this document is specifically to aid management to effectively manage ACM during normal building use, this report is not suitable for intent of managing refurbishment or demolition projects.

L & D Consulting take no responsibility for the accuracy of analysis results provided by third-party laboratories.

The client should advise any third parties to whom this report is delivered of the specific scope and limitations of the report.

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F - ASBESTOS MANAGEMENT PLAN

The ultimate goal is for all workplaces to be free of asbestos. Accordingly, owners and building managers should consider the phased removal of asbestos materials identified on the property. However, whilst ACM is present on a site, the ACM must be effectively managed to prevent ACM being disturbed.

This asbestos management plan has been compiled to provide guidance and tools to assist with the management of ACM present on site so that employees, visitors and maintenance personnel on site are protected from exposure to asbestos.

The Asbestos Management Plan has also been compiled to assist in meeting the building owner's responsibilities in regard to the provision of a safe and healthy workplace for persons within these buildings and to develop strategies and plans to minimise/eliminate potential health risks to the building users and maintenance and service personnel in accordance with national and state Regulation.

The following are important focuses for effective management of ACM:

- Asbestos Awareness Procedures
    - Communication of ACM to workers and occupants
    - Training Procedures
- Asbestos Management Procedures
- Asbestos Emergency Procedures
    - Unexpected Disturbance of ACM
    - Unexpected Finds

Further information regarding the above management procedures are presented in Section F.

F.1 Nominated Officers

The site controller should nominate personnel responsible for ensuring that all aspects pertaining to this Management Plan are enforced. It is recommended that the Nominated Officers have some familiarity with the asbestos related documents listed in Section A.2.2.

F.1.1 Responsibilities of Nominated Officers

The nominated asbestos management officer(s) should:

- ensure the ACM register and all relevant information pertaining to asbestos in the workplace is freely available upon request
- provide occupants with up-to-date information relating to the condition and relative risk of ACM in the workplace
- ensure adequate control measures are in place to contain ACM-related risk,
- ensure contractors complete site induction prior to commencing works
- and provide information to staff and contractors on measures to be taken to ensure that they are not exposed to asbestos in the workplace, either through accident or negligence

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F.1.2 Details for Chosen Nominated Officers

Details for the nominated persons responsible for management of asbestos materials at 17-21 University Avenue, Canberra, ACT, 2601 are presented below:

Name	Contact Number	Specific Responsibilities
1.		
2.		
3.		
4.		

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F.2 Distribution and Maintenance of Asbestos Materials Register

F.2.1 Distribution of Register

The asbestos materials register for this site should be readily accessible at certain locations or to certain nominated personnel on site. Management is responsible for determining the location where this report is stored and nominated personnel.

The location of the up-to-date site register should be communicated during all site inductions.

F.2.2 Access to Asbestos Register

The WHS Regulation require that the person with management or control of the workplace ensures that the site asbestos register is made readily accessible to workers, the WHS representative or PCBU who has carried out, carries out or intends to carry out, work at the workplace.

It is also required that the PCBU must ensure that a person conducting a business or undertaking who carries out, or intends to carry out, work at a workplace that involves a risk of exposure to airborne asbestos, that the person is given a copy of the asbestos register.

F.2.3 Review of Asbestos Register

The WHS Regulation states that the site asbestos register (and material risk assessment) must be reviewed and revised if:

a) the asbestos management plan is reviewed
b) further asbestos or ACM is identified at the workplace;
c) asbestos is removed or disturbed;
d) asbestos is sealed or enclosed at the workplace or;
e) the condition of an ACM changes

A person with management or control of a workplace where an asbestos register is kept must ensure that a record is made of:

- the date of each review; and
- the name of each person (LAA) who conducted the review; and
- the review's findings and conclusions.

The review of the register is to be undertaken by a LAA who is trained and licensed to undertake asbestos risk assessments.

F.2.4 Maintenance of Asbestos Register

The Nominated Officers (listed in Section F.1.2) are responsible for ensuring that all ACM is reinspected in accordance with the reinspection dates detailed in Section F.7.1, to assess for any changes in the risk posed by ACM on site (particularly that ACM has not deteriorated to the extent that they are likely to release asbestos fibres to the air.

The Nominated Officers shall be responsible for ensuring that any actions undertaken to ACM present on site is recorded (Section F.7).and that workers who are to undertaking works on site have been inducted (including workers reviewing the site asbestos register) prior to commencing works.

It is also advised that regular inspections are undertaken by the nominated officers to visually assess for any changes in the condition of ACM on site.

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F.2.5 Review of Asbestos Management Plan

The WHS Regulation require that the Asbestos Management Plan be reviewed when:

- There is a review of the asbestos register or a control measure;
- Asbestos is removed, disturbed, sealed or enclosed at a workplace;
- The plan is no longer adequate for managing ACM at the workplace;
- A health and safety representative request a review; and
- At least once every 5 years.

F.2.6 Reassessment Prior to Renovation or Demolition Works

Prior to the commencement of renovation or demolition works, intrusive/destructive assessment should be undertaken

This report is not intended to be used for the purpose of assisting with refurbishment or demolition works.

Where refurbishment or demolition works are proposed, a review of the Asbestos Register, and where necessary revision of any control measures must be undertaken. Any ACM which may be disturbed by total demolition, partial demolition works or during the course of refurbishment works shall be removed prior to the commencement of such works.

Where removal of the ACM is not practicable, additional advice should be sought from a LAA with regard to alternative measures that may be available to ensure that the risk of exposure to asbestos is minimised.

Where areas of the building have been previously identified as inaccessible, such areas shall be assessed for ACM prior to demolition works occurring in the area.

F.3 Site Induction

The Nominated Officers should ensure that all workers/contractors/maintenance staff undertaking work in areas in which ACM are located undertake a site induction which covers the ACM located on site. The induction should include a summary of the safe work practices detailed in this document, included procedures for when ACM is uncovered or disturbed.

Following the induction, the contractor/worker should sign an asbestos sign-in register (like presented in Section F.7 of this document). This includes verifying that the site Asbestos Register has been reviewed prior to the commencement of their work.

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F.4 Training

F.4.1 Asbestos Awareness Training

Consideration should be given to providing the nominated asbestos management officers and maintenance staff at the site with asbestos awareness training. The provision of Asbestos awareness training is a regulatory requirement in the ACT for all workers within the construction industry and provides workers with the knowledge to acknowledge when a potential asbestos material is present within its work area.

F.4.2 Asbestos Removal Training for Minor Works

The Work Health and Safety Regulation permits minor works (make safe, minor removal etc.) to be undertaken on non-friable asbestos by persons who have completed the non-friable asbestos removal course. Examples of these works include:

- Making safe (sealing, painting) non-friable ACM
- Removing and disposing of small, isolated pieces of ACM found at a premise
- Drilling a few holes in asbestos cement sheet

Having site personnel who can safely and legally undertake these minor works, can result in a safer working environment, as minor issues (e.g. asbestos sheet fragments, minor damage to ACM etc.) can be addressed without the delays and costs associated with engaging an external contractor.

The WHS Regulation require a person who will undertake minor asbestos works to comply with some of the duties outlined in the asbestos removal code of practice. These duties include the requirements to:

- obtain a copy of the asbestos register for a workplace
- identify hazards at the workplace
- ensure signs and barricades are erected to indicate and delineate the asbestos work area
- use the wet method to removal asbestos where reasonably practicable
- ensure the correct tools, equipment and PPE is used
- ensure decontamination facilities are available
- contain and label asbestos waste and dispose of it as soon as reasonably practicable
- ensure that PPE and clothing used in asbestos removal work and contaminated with asbestos is handled in accordance with the WHS Regulation

F.5 Asbestos Management Actions

F.5.1 Recommendations in the Asbestos Materials Report.

The Asbestos Register may contain any number of recommendations for mitigating risk associated with an ACM. These include:

- Material specific reinspection
- Labelling of ACM and assumed ACM.
- Encapsulation/seal of unsealed or damaged ACM
- Removal of damaged ACM (or ACM which has a high likelihood of being disturbed)

These recommendations are typically a minimum requirement to mitigate the risk associated with an ACM and is based on the finite information the LAA has regarding the material and the general building use. It is up to site management and the nominated officer to determine whether on any action required for an ACM over and above the action recommended by the LAA. Often the minimum required action is not the most effective way to manage risk.

F.5.2 Decision Making

Where it has been assessed that an exposure risk exists as a result of asbestos in the workplace, those with management or control of the workplace, and/or employers and self-employed persons within the workplace are obliged to implement control measures to manage the risk. If it is not reasonably practicable to eliminate the risk (removal of the ACM), the risk must be reduced so far as reasonably practicable.

The hierarchy of controls (**Figure 1**) should be used to assist management in determining the best course of action.

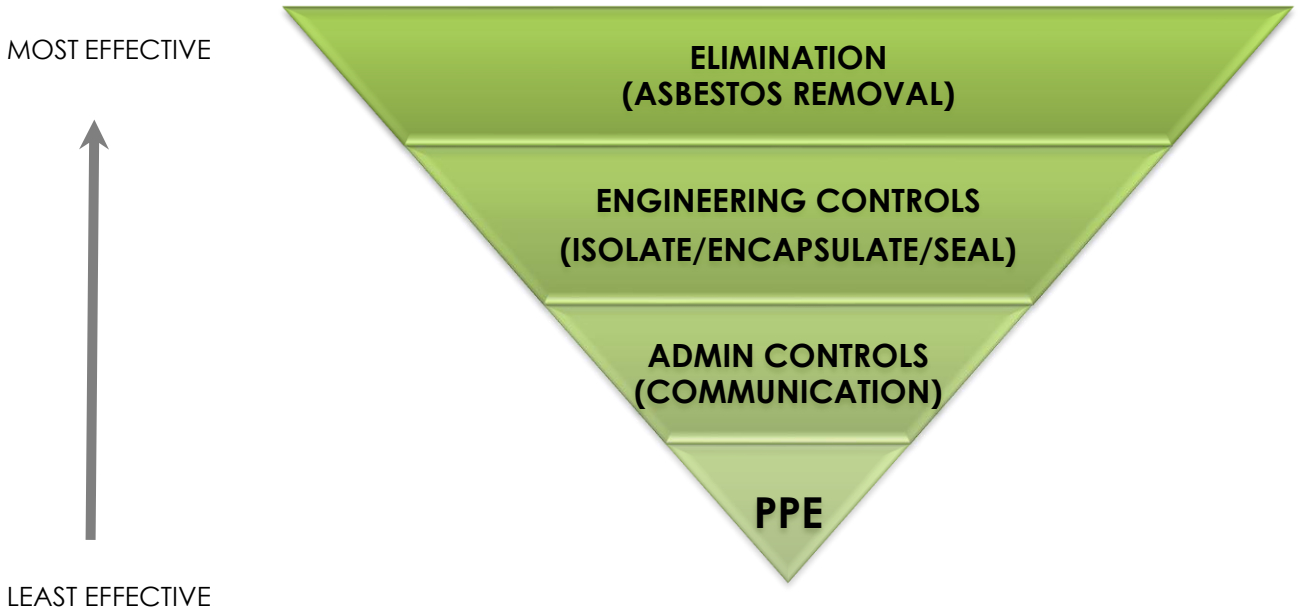

Figure 1: Hierarchy of Controls

F.5.3 Asbestos Management Options

F.5.3.1 Elimination

Removal of ACM is the most effective way of managing the risk associated with asbestos. However, the process of removing ACM can create further risks as the materials may need to be disturbed. It is also impracticable in some cases (e.g. removal of large volumes of concealed ACM that poses very low risk).

F.5.3.2 Isolation

Isolating ACM away from accessible areas is sometimes a more practicable way of managing asbestos risk. It doesn't not complete eliminate the risk like with asbestos removal, however it can often be done quicker, cheaper and with less disruption than what can be caused by asbestos removal. It also typically does not generate additional risks as the material will often remain undisturbed.

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F.5.3.3 Encapsulation/Seal

Encapsulating or sealing creates an additional barrier between occupants of a site and the asbestos fibre with an ACM. The risk of disturbing ACM is typically only reduced slightly in this case but is an action that can be undertaken very easily.

F.5.3.4 Communication (Labelling/Training/Induction)

Communication is an important tool for managing risk. Utilisation of asbestos warning labels on known ACM is an effective way of notifying occupants and workers of the presence and location of ACM. Effective training and induction will assist management in highlighting the risks and the process for managing the risks.

F.5.3.5 PPE

The use of PPE is typically only a valid control in areas of a site that a rarely occupied (e.g. service tunnels, subfloor voids). Use of PPE as a control measure should typically be a last resort.

F.5.4 Asbestos Removal

Where it has been assessed (by LAA or site management) that asbestos removal is required, safe work process should be followed to ensure that the act of removal does not pose a risk in itself. There are also regulatory requirements relating to the removal of asbestos which have also been written to mitigate risks posed by the removal of asbestos.

F.5.4.1 Prior to Licensed Asbestos Removal Work Commencing

Prior to the commencement of any works associated with asbestos, an asbestos removal contractor must notify the regulator of the plan to undertake asbestos removal works. This notification process typically includes completing a notification form and supplying the regulator with an Asbestos Removal Control Plan (ARCP). The ARCP should include as a minimum:

- Proposed method for removal of asbestos;
- Approximate quantity and kind of asbestos to be removed;
- Equipment proposed to be used to remove the asbestos, including PPE and RPE equipment;
- Details of air monitoring programme (as required)

Removal works may only commence five (5) days following submission of this documentation unless provision is given by the regulator for the work to be undertaken sooner, as emergency asbestos removal works.

A Safe Work Method Statement must also be developed and delivered to the head contractor for the site. The SWMS is developed to outline the safe work methods and hazard controls necessary for managing the risk of asbestos exposure.

Prior to asbestos removal being undertaken, the Site Controller should:

- Provide a copy of the asbestos register to the asbestos removal contractor;
- Inform all occupants and workers employees in the areas adjacent the proposed asbestos removal work areas of plan for asbestos to be removed
- Ensure arrangements have been made for air monitoring to be conducted (where required);

F.5.4.2 Asbestos Removal Works

Removal of friable asbestos must be undertaken by an ACT licensed Class A Asbestos Removalist as per the *Work Health and Safety: How to Safely Remove Asbestos Code of Practice* and in accordance with *EPA (2011) Contaminated Sites Information Sheet No. 5 'Requirements for the Transport and Disposal of Asbestos*

Contaminated Wastes' and *Information Sheet No.6 'Management of Small Scale, Low Risk Soil Asbestos Contamination'*. Removal of non- friable asbestos can be undertaken by either an ACT licensed Class A or Class B Asbestos Removalist.

The asbestos removal licence holder must appoint a licensed asbestos removal supervisor to oversee the removal work.

F.5.4.3 Air Monitoring for Asbestos Removal Works

Air monitoring is mandatory during the removal (or remediation) of friable asbestos and must be undertaken in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC: 3003(2005)]*. It is sometimes required but is typically not mandatory for the removal of non-friable asbestos.

Asbestos fibre air monitoring is a tool used by LAA to assess the suitability of controls utilised during asbestos removal works.

Air monitoring can also be used to help assess the asbestos exposure risk posed following the disturbance of a known or suspect ACM (further details regarding undertaking air monitoring following unexpected uncovering or disturbance of known or suspect ACM is detailed in Sections F.6).

It is a requirement that any air monitoring undertaken during asbestos removal works is to be undertaken by an independent LAA. Lab analysis of air monitoring filters should be undertaken at a NATA (National Association of Testing Authorities, Australia) accredited laboratory.

The WHS Regulation outlines required actions depending on the airborne fibre levels recorded following air monitoring:

< 0.01 fibre per mL	• No action required. • Continue control measures
Between 0.01 and <0.02 fibres per mL	• investigate the cause of the respirable asbestos fibre level; • implement controls to prevent exposure of anyone to asbestos; and • prevent the further release of respirable asbestos fibres;
≥ 0.02 fibres per mL	• order the asbestos removal work to stop; • notify the regulator; • investigate the cause of the respirable asbestos fibre level; • implement controls to prevent exposure of anyone to asbestos; • prevent the further release of respirable asbestos fibre • do not resume works until air monitoring shows that the recorded respirable asbestos fibre level is below 0.01 fibres/mL.

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F.5.4.4 Following Completion of Asbestos Removal Works

On completion of asbestos removal works an independent ACT licensed Asbestos Assessor (or competent person for non-friable removal works) must be employed to undertake a Clearance Inspection. A satisfactory clearance certificate for the remediated areas must include no visible suspect material and where applicable, clearance monitoring (required for friable removal enclosures and some non-friable removal works) must also indicate that airborne fibre levels are satisfactory (<0.01 fibres per mL).

Clearance certificates for asbestos removal should be stored within Appendix C of this document. The asbestos management table should also be updated.

F.5.5 Asbestos Warning Labels

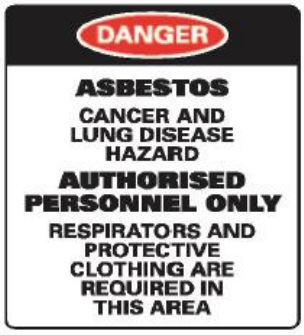
A major step for the effective management of asbestos on site is communicating to all workers, visitors and maintenance staff of the presence and location of any ACM present on site. Although the induction process should communicate the presence of all ACM on site, labelling of identified or assumed ACM can be important as a reminder to site workers or to address confusion, where locations in the site asbestos register are ambiguous, non-specific or when there are changes in building layout/use.

The Code of Practice for the management of asbestos states that "reasonable steps" must be taken to label all identified ACM with warning labels.

F.5.6 Asbestos Warning Signage

Asbestos warning signage and labels can be utilised as a tool to assist management with communicating the location of ACM present on site.

Warning signage needs to be provided in a visible place, such as the office where trades persons and other maintenance contractors obtain their instructions and site induction prior to commencing work. The signage can include contact details for nominated asbestos management officers and locations of the site Asbestos Register. The following are examples of asbestos warning signs and labels which can be used:



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F.6 Emergency Procedures for Asbestos

F.6.1 Unexpected Disturbance of known ACM

1. Works should cease immediately and the area where the suspect material is located should be vacated and access into the area restricted (warning signage may be required).
2. Engage an ACT licensed asbestos assessor (LAA) to assess the immediate risk posed by the asbestos material and recommend remedial actions.
3. The regulator should be notified if it is assessed by the LAA that there has been a potential asbestos exposure.
4. Air monitoring may be undertaken to assess airborne fibre levels within and adjacent the work area (useful to provide data for staff working in the area at the time of the material disturbance).
5. A licensed asbestos removalist (or persons suitably qualified to undertake minor works where relevant) should be engaged to undertake removal or remediation of the material. The licensed asbestos assessor and removalist should discuss and agree on the requirements for methodology for removal/remediation work including air monitoring and set up requirements.
6. On completion of the removal/remediation works and satisfactory clearance by the LAA (including clearance monitoring as required), the work area may be safely accessed, and work may recommence.
7. Where the asbestos material has not been removed, the materials should be labelled, and works should not be undertaken immediately adjacent the material.
8. The event should be recorded in the asbestos management records (Section F.7 of this document).

F.6.2 Unexpected Asbestos Finds

In the event that suspect ACM is identified or uncovered on site the following process should be observed:

1. Works should cease immediately and the area where the suspect material is located should be vacated and access into the area restricted (warning signage may be required).
2. Engage an ACT licensed asbestos assessor (LAA) to inspect the material to assess the immediate risk posed by the material. The material may also require sampling if there is any doubt regarding whether or not the material contains asbestos. Asbestos sample analysis must be undertaken by a NATA (National Association of Testing Authorities, Australia) accredited laboratory.
3. The regulator should be notified if it is assessed by the LAA that there has been a potential asbestos exposure.
4. If the material is sampled and analysed and found to be non-asbestos. Then works and access within the area may recommence without any controls required in relation to asbestos.
5. If the material contains asbestos and the licensed asbestos assessor recommends that the material does not pose an exposure risk, a barrier between the material and work area should be set up and works and access within the work area may recommence.
6. If the material contains asbestos and the licensed asbestos assessor determines the material poses an asbestos exposure risk, access into the work area should remain restricted. Air monitoring may be undertaken to assess airborne fibre levels within and adjacent the work area (useful to provide data for staff working in the area at the time of the material disturbance).
7. Following completion of any reassurance air monitoring, a licensed asbestos removalist should be engaged to undertake removal or remediation of the material. The licensed asbestos assessor and removalist should discuss and agree on the requirements for asbestos removal methodology including air monitoring and set up requirements.

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8. On completion of the removal/remediation works and satisfactory clearance by the LAA (including clearance monitoring as required), the work area may be safely accessed, and work may recommence.
9. Where the asbestos material has not been removed, the materials should be labelled, and works should not be undertaken immediately adjacent the material.
10. The event should be recorded in the asbestos management records (Section F.7 of this document).

F.6.3 Emergency Work in Areas Containing Asbestos

If emergency works are required which may disturb ACM, the following will be required, all requirements for asbestos removal should be observed including;

- Notification requirements
- PPE requirements
- Asbestos removal controls and monitoring
- Safe Work Methods
- Suitable equipment for the job.
- Clearance inspection (and monitoring as required) by LAA on completion of works
- All other requirements for licensed asbestos removal work as detailed in the WHS Regulation and Asbestos Removal Code of Practice.

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F.7 Asbestos Management Records

F.7.1 Asbestos Management Table

ITEM NUMBER	LEVEL	LOCATION DESCRIPTION	MATERIAL DESCRIPTION	MATERIAL REINSPECTION DUE DATE	MINIMUM MANAGEMENT ACTION	ACTION REQUIRED BY	ACTION COMPLETED	DATE ACTION COMPLETED	NAME OF ASSESSOR	NOMINATED OFFICER SIGNATURE
LDJ03334 - 1	All	Exterior - Sealant to joints in concrete panels	Mastic	09/08/2029	Seal cracked sections	09/02/2025				
LDJ03334 – 2	G	Exterior - Textured awning and eave soffits	Fibre Cement	09/08/2029	Maintain	-				
LDJ03334 – 3	G	Exterior - Sealant to window aluminium window on southeast façade	Caulking	09/08/2029	Label and maintain	-				
LDJ03334 – 4	G	Exterior - Sealant to frosted glass window on south facade	Putty	09/08/2029	Label and maintain	-				
LDJ03334 - 5	All	Exterior – Waterproofing to parapet under sloped windows and rooftop	Membrane	09/08/2029	Seal or remove weathered sections	09/02/2025				
LDJ03334 - 6	3	Exterior – Awning soffit to rooftop garden access	Fibre Cement	09/08/2029	Label and maintain	-				
LDJ03334 – 7	All	Risers and Ceiling Spaces – Sealant to ductwork flange joints	Mastic	09/08/2029	Label and maintain	-				
LDJ03334 – 8	G-7	Interior - Remnant adhesive to floor below carpet	Bitumen	09/08/2029	Further investigation prior to works to determine full extent	Prior to disturbance				
LDJ03334 –9	G	Gas Valve Cupboard - Ceiling	Fibre Cement	09/08/2029	Seal exposed edges Maintain	09/02/2025				
LDJ03334 –10	G	Gas Valve Cupboard - Beige floor tiles	Vinyl Tiles	09/08/2029	Maintain	-				
LDJ03334 –11	G	Electrical Switchboard & Metering Cupboard – Beige floor tiles below carpet	Vinyl Tiles	09/08/2029	Further investigation prior to works to determine full extent Label and maintain	Prior to disturbance				
LDJ03334 –12	G-7	Electrical Switchboard & Metering Cupboards- Electrical switchboard backing	Tar Board	09/08/2029	Further investigation prior to disturbance	Prior to disturbance				
LDJ03334 –13	G	Main Switch Room - Electronic switchboard backing and various electronic components	Tar Board	09/08/2029	Further investigation prior to disturbance	Prior to disturbance				
LDJ03334 –14	3-76	West Stairwell - Bulkhead lining	Fibre Cement	09/08/2029	Maintain	-				
LDJ03334 –15	8	Plant Room – To Boilers 1 and 2	Rope gasket, seals and Insulation	09/08/2029	Further investigation prior to disturbance	Prior to disturbance				
LDJ03334 –16	8	Plant Room - Electrical switchboard backing	Tar board	09/08/2029	Further investigation prior to disturbance	Prior to disturbance				
LDJ03334 – 17	8	Plant Room - Sealant to exhaust fan duct flange joint	Mastic	09/08/2029	Label and maintain	-				
LDJ03334 – 18	8	Interior – Waterproofing to topside of stramit ceiling/roof	Membrane	09/08/2029	Label and maintain	-				
LDJ03334 – 19	8	Plant Room - Unlabelled Fire doors adjacent to the boilers	Fire door core	09/08/2029	Remove	As soon as practicable				

F.7.2 Sign-in Register

NAME	COMPANY	REVIEWED ASBESTOS REGISTER? (Y/N)	WORKER SIGNATURE	DATE

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F.7.3 Asbestos Incident Record Form

Record all communication activities undertaken to inform staff/occupants of ACM and asbestos-related activities in the workplace.

DATE	SUMMARY of incident	COMMUNICATION METHOD	COMMUNICATED TO	EMPLOYEE/WORKER SIGNATURES	OFFICER SIGNATURE

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G - MANAGEMENT OF OTHER HAZARDOUS MATERIALS

The following sections detail information regarding the options available for managing the risks associated with lead containing paint, SMF, PCB, ODS and fuel storage tanks.

G.1 Lead Containing Paints

The recommended control measures for identified lead paint will typically be one or a combination of the following options:

1. Leave and maintain
2. Stabilise (overpaint)
3. Removal or enclosure

G.1.1.1 Leave and maintain

Lead containing paint in a good condition does not pose a risk so long as it is maintained. Therefore, the best management option for lead paint in good condition is to leave the paint. Labelling lead paint can also be useful to prevent the lead paint being disturbed in the future.

G.1.1.2 Overpaint

Lead containing paint which is flaking poses a potential exposure risk. To stabilise damaged lead paint, painting over the damaged/flaking paint will seal in the flaking paint preventing the paint from becoming further disturbed and from posing an exposure risk.

G.1.1.3 Lead Paint Removal

Removal of lead has the greatest potential to generate hazardous dust and should therefore only be undertaken where strictly necessary (i.e. where activities could cause the lead paint to generate uncontrolled hazardous dust).

The recommended removal methods include:

- Wet scraping/sanding
- On and off-site chemical stripping
- Removal by heat gun and scraper.

AS 4361.2-2017 outlines these methodologies in detail.

Clearance testing can be undertaken in the form of dust and soil sampling following completion of lead paint removal to assess whether the removal and subsequent clean-up has been completed adequately.

For surface dust, the amount of lead that is permissible following lead removal work is:

- 1 mg/m2 on interior floors
- 5 mg/m2 on interior windowsills
- 8 mg/m2 on exterior surfaces

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G.2 Synthetic Mineral Fibre

There are four main factors which alone, or in combination, determine the fibre levels present when working with glasswool and rockwool and which therefore determine the risks that may arise and how these risks might be managed. The four factors are the:

1. Proportion of respirable fibres in the product
2. Degree of disturbance of the product
3. Extent of any binders, cladding or sealants, and
4. Ventilation in areas where the product is being used

Risk factors 2-4 can typically be addressed for normal building use. The following are controls which can manage the correlating risk factor above:

1. Limit disturbance of SMF or utilise dust suppression measures to
2. Apply binder or encapsulant to SMF
3. Ensure ventilation and air flow is good in locations where SMF is present

Where these control measures are not possible or impractical, removal of SMF may be necessary (e.g. building demolition).

The *National Code of Practice for the Safe Use of Synthetic Mineral Fibres. [NOHSC: 2006 (1990)]* outlines the appropriate procedures for removal of both refractory ceramic fibres and mineral wool.

G.3 PCB

The requirements for management of PCB containing capacitors are typically dependent on the condition of the capacitor and the likelihood that the PCB containing capacitor will be disturbed. PCB containing capacitors in a good condition may remain in-situ. Where PCB oil is found to be leaking from a capacitor, the item should be removed.

G.3.1 Removal of PCB Capacitors

Care must be taken when handling a damaged capacitor to ensure that spillage does not occur. Preferably, a light fitting which contains a damaged capacitor would be removed whole without contact being made with the damaged capacitor the leaked PCB. Where a person is required to handle a damaged capacitor, the following precautions should be observed:

- put on personal protective equipment and clothing before removing damaged or leaking components
- wear gloves that are made of materials that are resistant to PCBs, such as Viton, polyethylene, polyvinyl alcohol (PVA), polytetrafluoroethylene (PTFE), butyl rubber, nitrile rubber, or neoprene. Mid-arm length gauntlets may be required
- do not use gloves made of polyvinyl chloride (PVC) or natural rubber (latex)
- use disposable gloves
- wear disposable overalls made of Tyvek or made of materials with similar chemical resistant properties
- when working with overhead equipment (e.g. Fluorescent light fixtures), wear a full-face shield and appropriate hair protection
- wash any non-disposable contaminated equipment with kerosene and collect the kerosene for disposal as a PCB contaminated solvent

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- if PCB vapours are suspected (e.g. PCB leaks onto a hot surface in a confined space), wear a suitable respirator. Use a twin cartridge type respirator suitable for chlorinated vapours. It is always prudent to ensure adequate ventilation. NOTE: PCBs do not vaporise readily at room temperature
- do not smoke; and
- after handling PCBs, even if gloves were worn, wash hands well in warm, soapy water before eating, drinking, smoking, handling food or drink, or using toilet facilities.

G.3.2 Storage and Disposal of PCB Capacitors

PCB containing equipment (capacitors, ballasts, etc.) is to be placed in a polyethylene bag which then is to be placed in a sealable metal container. This container must be clearly marked with the details of the contents and must be maintained in good order (that is, no visible signs of damage or corrosion). If some of these materials are leaking, the container should be partially filled with an absorbent material, such as a commercial absorbent, kitty litter or a diatomaceous earth. The plastic wrapped leaking components can then be placed in the container.

If PCBs cannot be transported immediately for disposal, all containers are to be stored in an area that prevents any discharge of the PCBs to the environment (no drains and the area must contain any leaks) and the area must be secure from unauthorised entry. The containers should be stored in a separate location, well away from any flammable liquids and from food storage and preparation areas. PCB containing material should be disposed of as soon as possible; however, if PCBs are to be stored for an extended period, they should be raised off the floor to avoid corrosion of the bottom of the container.

If 10 kg or more of this waste requires storage or transportation, the State regulatory body must be notified of the quantity, location and type of material. For transportation or disposal, it should be assumed that capacitors contain PCBs above the threshold concentration for scheduled PCBs (i.e. Greater than 50 milligrams/kilogram). In cases where PCB concentrations are unknown, the following general rules should be adopted:

- absorbent material used to clean up spills from capacitors also contains more than 50 milligrams/kilogram PCB
- kerosene or solvent used to wash PCB-contaminated equipment contains more than 50 milligrams/kilogram of PCB
- absorbent material used to clean up spills of contaminated kerosene or solvents contains less than 50 milligrams/kilogram PCB
- contaminated equipment and solid non-porous surfaces (e.g. contaminated metal and plastic) contain less than 50
- milligrams/kilogram of PCB; and
- contaminated solid porous surfaces (such as paper and wood) contain more than 50 milligrams/kilogram of PCB.

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G.4 ODS

Ozone depleting substances contained in leak-free air conditioning unit do not pose any environmental risk. Where a leak is identified to a unit or a unit requires disposal, the ozone depleting refrigerant will need to be recovered by a licensed contractor as soon as practicable for re-use or approved disposal. This process must be undertaken in such a way that emission of the gas into the atmosphere is minimised

G.5 Fuel Storage Tanks

In the ACT, there are extensive requirements regarding the responsibility that a site controller has for the management (monitoring and/or removal) of fuel storage tanks.

Where fuel storage facilities are to be decommissioned the tank(s) and associated infrastructure must be removed, and the immediate site assessed and (where required) remediated. The following literature details some of the requirement for this process as well requirements for monitoring in-situ fuel storage tanks:

- ACT EPA Environmental Guidelines for Service Station Sites and Hydrocarbon Storage, January (2014)
- ACT EPA Contaminated Sites Environment Protection Policy, 2009
- NEPC, Assessment of Site Contamination, National Environment Protection Measure, December 1999 as amended May 2013 (ASC NEPM 2013)

Further information regarding the required processes for managing fuel storage tanks in the ACT can be obtained through Access Canberra (13 22 81 / www.accesscanberra.act.gov.au).

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APPENDIX A

Certificates of Analysis – Asbestos

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ASBESTOS FIBRE IDENTIFICATION TEST REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Client Name:	SYZYGY	**Address:**	4/6 Dacre Street Mitchell ACT 2911
Client Contact:	Nicholas Merriman		
Email:	nick@syz.au	**Lab Manager:**	Julia Chapman
Site Name:	17-21 University Ave, Canberra	**Email:**	laboratory@landd.com.au
L&D Job Reference:	LDJ03334		

REPORT DETAILS			
Report Reference:	LDJ03334ID14/08/2024	**Samples Received:**	13/08/2024
No. of Samples:	3	**Report Issue Date:**	14/08/2024

Test Specifications: Qualitative identification of Chrysotile, Amosite and Crocidolite asbestos fibre in bulk samples using Polarised Light Microscopy (PLM) and Dispersion Staining Techniques including Synthetic Mineral Fibre (SMF) and Organic Fibre as per Australian Standard 4964-2004 and methods identified in Section C of the Lancaster & Dickenson Consulting (L & D) Laboratory Manual.

L&D ID Reference	*Sample Reference*	*Sample Analysis Date*	*Sample Description*	*Sample Mass*	*Non-Asbestos Fibres Detected*	*Asbestos Fibres Detected*
LDJ03334ID14/08/2024-1	LD-PC0407	14/08/2024	Grey mastic	2.7 g	Organic Fibres Detected	**Chrysotile Asbestos Detected**
LDJ03334ID14/08/2024-2	LD-PC0408	14/08/2024	Black bituminous membrane	2.9 g	SMF and Organic Fibres Detected	**Chrysotile Asbestos Detected**
LDJ03334ID14/08/2024-3	LD-PC0409	14/08/2024	Grey fibrous material	1.8 g	None	**Chrysotile & Amosite Asbestos Detected**

Notes:

1. Asbestos in bulk materials requiring disintegration such as vinyl, resins, mastic and caulking can be difficult to detect using PLM and dispersion staining due to the low grade or small length or diameter of the asbestos fibres present in the material, or due to the fact that very fine fibres have been distributed intimately throughout the materials. Where no asbestos is detected in such a sample, another, independent analytical technique should be considered.
2. Where a sample is delivered to the laboratory by a third party, L & D accepts no responsibility for the quality of sample submitted, including whether the sample is representative of the source material.
3. All L & D reports must not be reproduced except in full.
4. The practical detection limit for identification of asbestos fibre using PLM and dispersion staining techniques is 0.01-0.1%, equivalent to 0.1-1g/kg.
5. This report relates only to the samples as taken by the L&D licensed assessor.
6. Reported sample weights include weight of sample bag.
7. Fibres that cannot be unequivocally identified as one of the three asbestos forms, will be reported as Unknown Mineral Fibres (UMF). The fibres detected may or may not be asbestos fibres. To confirm the identities of these fibres, another independent analytical technique may be required.

L&D Approved Identifier		L&D Approved Signatory
	NATA WORLD RECOGNISED ACCREDITATION **Accreditation no: 19512** **Accredited for compliance with ISO/IEC 17025 - Testing**	
Julia Chapman		**Julia Chapman**

Lancaster & Dickenson Consulting Pty Ltd
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APPENDIX B

Certificates of Analysis – Lead Paint

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 358937

Client Details

Client	Lancaster & Dickenson Consulting Pty Ltd
Attention	labreports
Address	Unit 4, 6 Dacre St, MITCHELL, ACT, 2911

Sample Details

Your Reference	**LDJ03334**
Number of Samples	9 Paint
Date samples received	12/08/2024
Date completed instructions received	12/08/2024

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	19/08/2024
Date of Issue	15/08/2024

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 ***

Results Approved By
Giovanni Agosti, Group Technical Manager

Authorised By
Nancy Zhang, Laboratory Manager

Lead in Paint						
Our Reference		358937-1	358937-2	358937-3	358937-4	358937-5
Your Reference	UNITS	LD-PC0410	LD-PC0411	LD-PC0412	LD-PC0413	LD-PC0414
Date Sampled		09/08/2024	09/08/2024	09/08/2024	09/08/2024	09/08/2024
Type of sample		Paint	Paint	Paint	Paint	Paint
Date prepared	-	14/08/2024	14/08/2024	14/08/2024	14/08/2024	14/08/2024
Date analysed	-	15/08/2024	15/08/2024	15/08/2024	15/08/2024	15/08/2024
Lead in paint	%w/w	0.46	0.14	0.63	0.29	0.62

Lead in Paint					
Our Reference		358937-6	358937-7	358937-8	358937-9
Your Reference	UNITS	LD-PC0415	LD-PC0416	LD-PC0417	LD-PC0418
Date Sampled		09/08/2024	09/08/2024	09/08/2024	09/08/2024
Type of sample		Paint	Paint	Paint	Paint
Date prepared	-	14/08/2024	14/08/2024	14/08/2024	14/08/2024
Date analysed	-	15/08/2024	15/08/2024	15/08/2024	15/08/2024
Lead in paint	%w/w	0.007	0.04	0.04	0.18

Method ID	Methodology Summary
Metals-020/021/022	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	-			14/08/2024	7	14/08/2024	14/08/2024		14/08/2024	[NT]
Date analysed	-			15/08/2024	7	15/08/2024	15/08/2024		15/08/2024	[NT]
Lead in paint	%w/w	0.005	Metals-020/021/022	<0.005	7	0.04	0.04	0	95	[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.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

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

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

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APPENDIX C

Clearance Certificates