MIRVAC

HAZARDOUS MATERIALS REPORT AND REGISTER RHODES WATERSIDE SHOPPING CENTRE 1 RIDER BLVD, RHODES NSW, 2138

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Status of hazardous materials at Rhodes Waterside Shopping Centre



WARNING: Hazardous materials identified at the Site.

Refer to the report in its entirety for details of identified hazardous materials and the associated limitations (e.g. areas unable to be assessed).



Question today Imagine tomorrow Create for the future

Hazardous Materials Report and Register Rhodes Waterside Shopping Centre 1 Rider Blvd, Rhodes NSW, 2138 MIRVAC

WSP Level 27, 680 George Street Sydney, NSW 2000 Australia wsp.com

REV	DATE	DETAILS	
А	19 August 2024	Initial Report Issued to Client	

	NAME	DATE	SIGNATURE
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GLOSSARY

Report / Register - Risk Assessment Glossary

Primary Location/Room	The primary location description of the material described in the hazardous materials register (e.g. Main Office).	
Secondary Location/Application	Means the use or application of the material described in the asbestos register (e.g. wall linin floor covering, soffit lining, pipe lagging, etc.).	
Material/Product Description	Refers to the type of known/suspected ACM identified (e.g. vinyl tile, fibre cement sheeting, fibrous insulation, etc.). Does not refer to the use or application of the material. This is covered in 'Secondary Location/Application'.	
Friable (Asbestos)	Means asbestos-containing material which, when dry, is or may become crumbled, pulverised or reduced to powder by hand pressure.	
Non-Friable (Bonded Asbestos)	Material containing asbestos that is not friable asbestos, includes materials containing asbestos fibres reinforced with a bonding compound.	
Condition (Good)	Condition of a material where:	
	 The material has no evidence of any significant damage/deterioration. The material is in, or is close to, 'as new' condition. 	
Condition (Fair)	Condition of a material where:	
	 There is some minor damage or wear throughout the extent of the material. There is some obvious damage or significant wear but only in localised areas. 	
Condition (Poor)	Condition of a material where:	
	 The material exhibits consistent damage or wear throughout the extent of the material. Major or significant damage is evident, even if only in localised areas. Any non-fixed material (e.g. debris). 	
Disturbance (Low)	The potential for disturbance is low when:	
	 Activities in the area where the hazardous material is located are unlikely to result in damage or deterioration of the material. The material is completely isolated from normal day to day activities. The material is completely protected from nearby activities by an enclosure or encapsulation. 	
Disturbance (Medium)	The potential for disturbance is medium when:	
	 Activities in the area have a potential to mildly impact upon the material and the activities are infrequent The material is protected from activities by an enclosure or encapsulation, however the protection is not comprehensive. 	
Disturbance (High)	The potential for disturbance is high when:	
	 Activities undertaken in the area are likely to result in immediate damage to identified hazardous materials Activities in the area, whilst typically of low impact, happen on a regular basis and are likely to result in deterioration or damage to the material in the short to medium term. 	

Any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable fibres are counted.	
The asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals, including actinolite asbestos, grunerite (or amosite) asbestos (brown), anthophyllite asbestos, chrysotile asbestos (white), crocidolite asbestos (blue) and tremolite asbestos.	
Products consisting of sand aggregate and cement reinforced with asbestos fibres (e.g. asbestos cement pipes and flat or corrugated asbestos cement sheets).	
Any material, object, product or debris that contains asbestos.	
Dust or debris that has settled within a workplace and is (or is assumed to be) contaminated with asbestos.	
Work involving the removal of asbestos or ACM, friable asbestos removal work or non-friable asbestos removal work.	
A person conducting a business or undertaking who carries out asbestos removal work.	
Work involving asbestos.	
A person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill, for the safe performance of specific work.	
Visible particles, fragments or chunks of material, large and heavy enough to have settled in the work area, that are likely to have originated from ACM.	
Anything in the workplace that has the potential to harm people and the environment.	
Areas that are difficult to access, such as wall cavities and the interiors of plant and equipment.	
Asbestos or ACM fixed or installed in a structure, equipment or plant but does not include naturally occurring asbestos.	
A testing laboratory accredited by the National Association of Testing Authorities (NATA), Australia, or recognised by NATA either solely or with someone else.	
A person conducts a business or undertaking is one who meets the definition outlined in Section 5 of the WHS Act.	
In relation to premises, a person who has control of premises used as a workplace. The person with control may be:	
 The owner of the premises A person who has, under any control or lease, an obligation to maintain or repair the premises A person who is occupying the premises A person who can make decisions about work undertaken at the premises. 	
An asbestos fibre that:	
 Is less than 3 microns (μm) wide Is more than 5 μm long Has a length to width ratio of more than 3:1. 	
Refers to the level of risk posed by the ACM based on its condition, friability, potential for disturbance (accessibility) and other factors such as proposed demolition/refurbishment works. Refer to the Risk Matrix in Appendix D	
Refers to whether the ACM is encapsulated with a sealant (such as paint, wall paper, etc.), concealing its exposed surfaces.	

Airborne asbestos	Means any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable fibres are counted	
Asbestos	Means the asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals, including actinolite asbestos, grunerite (or amosite) asbestos (brown), anthophyllite asbestos, chrysotile asbestos (white), crocidolite asbestos (blue) and tremolite asbestos.	
Asbestos	Means the asbestiform varieties of mineral silicates belonging to the serpentine or amphibole groups of rock-forming minerals, including actinolite asbestos, grunerite (or amosite) asbestos (brown), anthophyllite asbestos, chrysotile asbestos (white), crocidolite asbestos (blue) and tremolite asbestos.	
Asbestos Cement (AC)	Means products consisting of sand aggregate and cement reinforced with asbestos fibres (e.g. asbestos cement pipes and flat or corrugated asbestos cement sheets.	
Asbestos containing material (ACM)	Means any material, object, product or debris that contains asbestos.	
Asbestos contaminated dust or debris (ACD)	Means dust or debris that has settled within a workplace and is (or assumed to be) contaminated with asbestos.	
Asbestos removal work	Means work involving the removal of asbestos or ACM, friable asbestos removal work or non-friable asbestos removal work.	
Asbestos removalist	Means a person conducting a business or undertaking who carries out asbestos removal work.	
Asbestos-related work	Means work involving asbestos.	
Competent person	Means a person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skill, for the safe performance of specific work.	
Condition (Fair)	Means: — There is some minor damage or wear throughout the extent of the material — There is some obvious damage or significant wear but only in localised areas.	
Condition (Good)	Means: — The material has no evidence of any significant damage/deterioration — The material is in, or is close to, 'as new' condition.	
Condition (Poor)	 Means: The material exhibits consistent damage or wear throughout the extent of the material Major or significant damage is evident, even if only in localised areas Any non-fixed material (e.g. debris). 	
Disturbance (High)	 Means: Activities undertaken in the area are likely to result in immediate damage to identified hazardous materials Activities in the area, whilst typically of low impact, happen on a regular basis and are likely to result in deterioration or damage to the material in the short to medium term. 	

Disturbance (Low)	Means:		
	 Activities in the area where the hazardous material is located is unlikely to result in damage or deterioration of the material 		
	— The material is completely isolated from normal day to day activities		
	 The material is completed protected from nearby activities by an enclosure or encapsulation. 		
Disturbance (Medium)	Means:		
	 Activities in the area have a potential to mildly impact upon the material and the activities are infrequent 		
	 The material is protected from activities by an enclosure or encapsulation, however the protection is not comprehensive. 		
Dust and debris	Means visible particles, fragments or chunks of material, large and heavy enough to have settled in the work area, that are likely to have originated from ACM.		
Friable (Asbestos)	Means asbestos-containing material which, when dry, is or may become crumbled, pulverised or reduced to powder by hand pressure.		
Hazard	Anything in the workplace that has the potential to harm people.		
Inaccessible areas	Means areas which are difficult to access, such as wall cavities and the interiors of plant and equipment.		
In-situ asbestos	Means asbestos or ACM fixed or installed in a structure, equipment or plant but does not include naturally occurring asbestos.		
Material/Product Description	Refers to the type of known/suspected ACM identified (e.g. vinyl tile, fibre cement sheeting, fibrous insulation, etc). Does not refer to the use or application of the material. This is covered in 'Application (secondary location)'.		
NATA-accredited laboratory	Means a testing laboratory accredited by the National Association of Testing Authorities (NATA), Australia, or recognised by NATA either solely or with someone else.		
Non-Friable (Bonded Asbestos)	Means material containing asbestos that is not friable asbestos, includes materials containing asbestos fibres reinforced with a bonding compound.		
Person conducting a business or undertaking (PCBU)	A person conducts a business or undertaking is one who meets with the definition outlined in Section 5 of the WHS Act.		
Person with control	Means, in relation to premises, a person who has control of premises used as a workplace. The person with control may be:		
	— The owner of the premises		
	 A person who has, under any control or lease, an obligation to maintain or repair the premises 		
	— A person who is occupying the premises		
	— A person who is able to make decisions about work undertaken at the premises.		
Primary Location/Room	Means the primary location description of the material described in the hazardous materials register (e.g. Main Office).		

Respirable asbestos	Means an asbestos fibre that:	
	— Is less than 3 microns (μm) wide	
	— Is more than 5 microns (μm) long	
	— Has a length to width ratio of more than 3:1.	
Risk	Refers to the level of risk posed by the ACM based on its condition, friability, potential for disturbance (accessibility) and other factors such as proposed demolition/refurbishment works. Refer to the Risk Matrix in Appendix A .	
Sealed	Refers to whether or not the ACM is encapsulated with a sealant such as paint, wallpaper, etc. concealing its exposed surfaces.	
Secondary Location/Application	Means the use or application of the material described in the asbestos register (e.g. wall lining, floor covering, soffit lining, pipe lagging, etc).	

ABBREVIATIONS

А	Amosite Asbestos (brown Asbestos)		
AC	Asbestos cement (Asbestos-containing fibrous cement material)		
ACD	Asbestos contaminated dust or debris		
ACM	Asbestos containing material		
AMP	Asbestos management plan		
ARCP	Asbestos removal control plan		
ASCC	Australian Safety & Compensation Council		
С	Crocidolite Asbestos (blue Asbestos)		
СН	Chrysotile Asbestos (white Asbestos)		
EPA	Environment Protection Authority		
FC	Fibre cement (usually sheeting)		
Fibres/mL	Countable fibres per millilitre of air sampled		
L/min	Litres per minute of air		
LAA	Licensed asbestos assessor		
NAD	No Asbestos Detected		
NATA	National Association of Testing Authorities, Australia		
NOHSC	National Occupational Health and Safety Commission		
ODS	Ozone Depleting Substance		
OH&S	Occupational health and safety (also, refer to WH&S)		
PAM	Presumed Asbestos material		
PCB	Polychlorinated biphenyls		
PCBU	Person conducting a business or undertaking		
PPE	Personal protective equipment		
RPE	Respiratory protective equipment		
SMF	Synthetic Mineral Fibre		
SWMS	Safe work method statement		
WH&S	Workplace health and safety		

EXECUTIVE SUMMARY

WSP Australia Pty Ltd (WSP) was engaged by Mirvac (referred to as the 'Client') to undertake a hazardous materials survey of Rhodes Waterside Shopping Centre, located at 1 Rider Blvd, Rhodes NSW, 2138 (referred to as the 'Site'). The survey was conducted by WSP on 23rd July 2024.

SITE NAME	Rhodes Waterside Shopping Centre		
SITE ADDRESS	1 Rider Blvd, Rhodes NSW, 2138		
SURVEYOR NAME	Hamish Cowan		
SURVEY DATE	23 July 2024	Next Survey Date	N/A

The Client's objective is to comply with applicable legislative requirements by ensuring that all hazardous materials have been identified and located in the Site buildings so that they can be appropriately managed, removed and/or disposed of as required. The hazardous materials targeted as part of the survey were:

- Asbestos
- Lead based paints (LBP)
- Lead containing dust
- Synthetic mineral fibres (SMF)
- Polychlorinated biphenyl (PCB)
- Ozone depleting substances (ODS)

The scope of services for this inspection comprised a detailed visual inspection of all accessible areas on the Site. Representative samples were collected from materials suspected of being a hazardous material. All data generated from the survey was used to create an hazardous materials register (Appendix A) and assesses the risk associated with identified hazardous material (refer to risk matrix in Appendix D).

The following buildings/structures were surveyed.

BUILDING	BUILDING DESCRIPTION	APPROXIMATE BUILDING AGE
Rhodes Waterside	The shopping centre is a ten-storey building constructed of metal and brick.	2004
Shopping Centre	Interior walls are constructed of metal, concrete and plasterboard. Interior	
	ceilings are plasterboard. Floors are Concrete and tile.	

FINDINGS

The following table summarises ACM identified during the Site inspection.

MATERIAL	IDENTIFIED	NUMBER OF ITEMS	RISK RANGE						
Rhodes Waterside Shopping Centre									
Friable ACM	No	-	-	to	-				
Non-friable ACM	No	-	-	to	-				
Synthetic Mineral Fibres	8	8	Low	to	Low				

MATERIAL	IDENTIFIED	NUMBER OF ITEMS	RISK RANGE						
Rhodes Waterside Shopping Centre									
Lead Based Paints	0	0	-	to	-				
Lead Containing Dust	0	0	-	to	-				
PCBs	0	0	-	to	-				
Ozone Depleting Substances	0	0	-	to	-				

INACCESSIBLE AREAS

During the hazardous materials inspection, access was not gained to certain areas and consequently these areas may contain hazardous materials that are not documented in this report. Only those areas or facilities above ground, safe and able to be accessed were inspected.

The following table summarises Site specific inaccessible areas identified during the Site inspection.

INACCESSIBLE AREAS	DETAILS
No site specific exclusions	_

RECOMMENDATIONS

To ensure that identified hazardous materials are appropriately managed, WSP recommends the following:

- Refer to the hazardous materials register and specific management actions to remove/maintain identified hazardous
 materials to ensure that health and environmental risks are appropriately managed.
- The survey was undertaken using non-destructive methods. There may remain a potential for hazardous materials to be concealed within the building structure(s). Accordingly, caution should be exercised if subsequent renovation, demolition or dismantling of the structure(s) is required. If any suspected materials are identified during those works a sample of these materials should be collected and tested in a NATA registered laboratory for the presence of asbestos.
- Inaccessible areas should be assumed to contain hazardous materials and managed accordingly until such time that this can be assessed by a competent person.
- Activities near asbestos should be restricted to minimise the potential for damaging asbestos.
- Ensure a current copy of the hazardous materials register is kept on Site, and readily available to personnel, employees and any contractors likely to encounter hazardous materials.
- Apply asbestos warning labels to known and suspected ACMs to ensure ACM is readily identifiable and the risks appropriately managed.
- Ensure that appropriately qualified contractors are engaged to perform any works associated with hazardous
 materials (most prominently asbestos), including maintenance, repairs and removal works. For removal works,
 contractors must be licenced and complete the works in accordance with relevant legislation and National Codes of
 Practice (Appendix G).

1 INTRODUCTION

WSP Australia Pty Ltd (WSP) was engaged by Mirvac (referred to as the 'Client') to undertake a hazardous materials survey of Rhodes Waterside Shopping Centre, located at 1 Rider Blvd, Rhodes NSW, 2138. (referred to as the 'Site').

This report presents the findings of the inspection conducted on 23rd July 2024.

No one section or part of a section of this report should be taken as giving an overall idea of this report. Each section must be read in conjunction with the whole of this report, including the asbestos register and sample results.

1.1 OBJECTIVE

The Client's objective is to comply with applicable legislative requirements by ensuring that all hazardous materials have been identified and located in the Site buildings so that they can be appropriately managed, removed and/or disposed of as required.

1.2 SCOPE OF WORK

WSP's completed scope of work is summarised below:

- Reviewed information provided by the Client to assist in identifying areas of potential concern
- Attended Site to survey and sample all accessible areas for hazardous materials
- Inspected the Site and collected representative samples (no samples collected) using non-destructive techniques to:
 - Confirm the presence/absence of hazardous materials
 - Assess the condition and potential for disturbance of hazardous materials encountered; and
 - Determine the extent and quantities of hazardous materials
- All identified hazardous materials were photographed
- The Site survey encompassed all accessible Site buildings, features, services, ceilings, roofing and areas of the Site.
 Where areas were inaccessible or samples could not be collected, this was noted.

1.3 SURVEY TYPE

The survey was undertaken by visual inspection and through non-destructive sampling and analysis of those areas of the site that were nominated for inspection and were accessible at the time of the survey.

This type of survey aims to identify materials from easily accessible areas without major destruction, dismantling or damage to building aesthetics. This type of survey cannot access all construction materials and as such cannot identify hazardous materials that are present in inaccessible areas.

The survey is also limited by what can be safely accessed without the need for specialist equipment or training.

2 SITE INFORMATION

2.1 SITE DETAILS

WSP was engaged to complete a hazardous materials survey of the following Site.

 Table 2.1
 Site details

 SITE NAME
 Rhodes Waterside Shopping Centre

SITE ADDRESS	1 Rider Blvd, Rhodes NSW, 2138
MAJOR SITE STRUCTURES	Rhodes Waterside Shopping Centre
APPROXIMATE AGE OF SITE	2004

2.2 SITE DESCRIPTION

The survey was restricted to buildings owned and managed by the Client. Details of the buildings are presented below:

Table 2.2 Building description

Building	Building Description	Approximate Building Age
Rhodes Waterside	The shopping centre is a ten-storey building constructed of metal and brick.	2004
Shopping Centre	Interior walls are constructed of metal, concrete and plasterboard. Interior	
	ceilings are plasterboard. Floors are Concrete and tile.	

The inspection was not intrusive and was limited to the building(s) listed above. Hazardous materials located in inaccessible areas, or located in areas that posed an unacceptable risk to health and safety (e.g. live electrical areas, confined spaces, etc.), were not inspected or sampled during the survey.

3 HAZARDOUS MATERIALS RISK ASSESSMENT

To assess the health risk posed by the presence of ACMs, SMF, lead based paint, and PCBs, the following factors must be considered:

3.1 ACM & SMF RISK ASSESSMENT FACTORS

These factors include:

- Condition of the material. This is described as being either good (not been damaged or have not deteriorated), medium (minor deterioration or damage) or poor (materials which have been extensively damaged, or their condition has deteriorated over time);
- Proximity of air plenums and direct air stream;
- Friability of the material (ease with which the material can be crumbled) listed as either friable or non-friable;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high);
- Likelihood of disturbance of the material;
- Exposed surface areas and;
- Environmental conditions.

These aspects are in turn judged upon; (i) potential for fibre generation; and, (ii) the potential for exposure. When these factors have indicated that there is a possibility of exposure to airborne fibres, appropriate recommendations for repair, maintenance or abatement of the asbestos containing materials are made.

3.2 LEAD BASED PAINT RISK ASSESSMENT FACTORS

Risk assessment factors include:

- Concentration of lead in paint;
- Condition of the paint.
- Deterioration/damage (peeling, flaking);
- Proximity of air plenums, direct air stream and sensitive receptors such as foodstuffs;
- Ease with which the paint can be disturbed/removed;
- Requirement for access for building or maintenance operations and accessibility (low, medium or high); and
- Magnitude of exposed surface areas.

These aspects are in turn judged upon the potential for exposure. When these factors have indicated that there is a possibility of exposure to lead-based paint/dust, appropriate recommendations for the repair, maintenance, abatement and removal of the paint are made.

3.3 POLYCHLORINATED BIPHENYLS (PCBS) RISK ASSESSMENT FACTORS

Risk assessment factors include:

- The manufacture age and location of the capacitor;
- The condition of the capacitor (visible leaks/spills of fluid);
- Potential of exposure to the PCBs from contact with capacitors;
- Ease with which the capacitors can be accessed and;
- The requirement for access to light fittings for building or maintenance operations and accessibility (low, medium or high).

As above, these aspects are in turn judged upon the potential for exposure. When risk factors have indicated a possibility of exposure to PCBs, appropriate recommendations for the removal and disposal of the capacitors are made.

4 SURVEY METHODOLOGY

4.1 PRELIMINARY

Prior to attendance at the site, a desktop review of existing asbestos registers or related materials and relevant management plans and asbestos abatement or treatment records, where available, was undertaken.

4.2 SITE INSPECTION

The Site inspection involved a thorough and systematic walkthrough of the buildings and structures. Access was made only where safe access by solid floors, decking, walkways, protected catwalks or ladders was available. Minimal to no disturbance of any equipment was undertaken as part of the survey as all plant, electrical installations, pipe-work and associated equipment were considered live at the time of the survey.

The identification of hazardous materials involved a combination of visual inspection of the accessible areas of the building/structure and the collection of small representative samples (where required as sample collection is not always a requirement during asbestos surveys) of the suspect materials for analytical confirmation. Where identical suspect materials were detected at different locations, visual confirmation only may have been made rather than additional sample collection.

Observations recorded for known and suspected hazardous materials included details of the:

- Location
- Condition
- Potential for disturbance/accessibility
- Friability
- Quantity/extent.

4.3 ASBESTOS SAMPLE ANALYSIS

Representative samples of materials suspected of containing asbestos were collected and analysed by WSP's in-house NATA accredited laboratory. The identification of asbestos fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. This is detailed in Australian Standard 4964-2004 'Method for the qualitative identification of asbestos in bulk samples'. Asbestos samples were only collected for analysis where the safety of personnel would not be compromised. Sampling was conducted in accordance with WSP's in-house survey guide.

4.4 COLLECTION OF DATA

Following the hazardous materials inspection survey and any subsequent sample analysis, all data collected was tabulated to form a hazardous materials register that includes risk ratings, location, and representative photos.

4.5 INACCESIBLE AREAS

Hazardous materials located in inaccessible areas, or located in areas that pose an unacceptable risk to health and safety (e.g. live electrical areas), were not inspected or sampled during the survey. Common locations where access may be limited or missing are listed below:

 Inside set ceilings, wall cavities or other voids/areas (e.g. fire doors) concealed within a building structure that cannot be accessed without major dismantling

- Roofs, ceiling spaces and other height restricted areas that cannot be accessed without specialised equipment

- Locations behind locked doors
- Within confined spaces
- Energised services, including gas and electrical
- Areas where access would create an unacceptable risk to building occupants.

The following table summarises inaccessible areas identified during the Site inspection.

 Table 4.1
 Summary of inaccessible areas at time of inspection

INACCESSIBLE AREAS	DETAILS						
No site-specific exclusions	-						

4.6 IDENTIFICATION OF MATERIAL

4.6.1 ASBESTOS CONTAINING MATERIALS (ACM)

Representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's NATA Accredited Laboratory. The identification of asbestos fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. This is detailed in Australian Standard 4964-2004 '*Method for the qualitative identification of asbestos in bulk samples*'. Asbestos samples were only collected for analysis where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide.

4.6.2 LEAD-BASED PAINTS

Representative samples of paint suspected to be lead based were collected and analysed at Eurofins NATA Accredited Laboratory. Laboratory analysis of lead based paints is used to achieve a reportable weight by weight percentage of lead throughout the paint layers and is reported against AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings lead containing paint system level of 0.1 per cent (w/w) of the dried film.

The analysis of the physical samples is achieved by digestion of the sample for determination of lead content by one of two methods, atomic absorption spectroscopy (AAS) or inductively coupled plasma emission spectrometry (ICP-AES). Collection of lead based paint samples was only conducted where the safety of personnel would not be compromised. Sampling was conducted in accordance with the WSP Australia's in house survey guide and AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings.

Sampling methodology will consider the various paint coats and record these layers accordingly, these observations will be referred to alongside the analytical sample results to acknowledge that lead paint layers of varying lead content will affect the analytically observed lead weight concentration recorded from the sample. To this end, where multiple lead paint layers have been visually recorded but analytically determined lead percentage of the collective paint layers is below actionable limits, the paint undercoats may still be determined as hazardous due to its dilution in the sample by the non-lead topcoats. Sampling methodology may also consist of the use of a lead paint chemical colorimetric test reagent that can provide an instantaneous result of lead presence within specific layers. This testing will however be used in conjunction with a physical sample to determine the lead concentration as above.

4.6.3 LEAD CONTAINING DUST

In the absence of regulatory guidelines, WSP has adopted guidelines from AS/NZS 4361.2:2017, Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings. This has been justified in WSP's technical memo TM01/18 "Lead in Dust Guidance Levels" dated 9th July 2018. The adopted guidelines for commercial facilities are listed in the table below.

Table 4.2 Adopted lead containing dust surface loading guidelines for commercial facilities

Commercial Facilities Areas	Concrentration
Exterior surfaces	8 mg/m ²
Ceiling dust	8 mg/m²
Interior surfaces	5 mg/m ²
Floors and eating areas	1 mg/m ²

These surface contamination reference limits should be used as a guideline to assist in the evaluation and control of workplace housekeeping standards and not as defined lines between safe and un-safe levels. Wherever possible, surface dust loading levels should be as low as reasonably achievable (ALARA). The ALARA principal is recommended to keep any potential hazardous material exposures as much below the guidelines as practicable

4.6.4 SYNTHETIC MINERAL FIBRES (SMF) MATERIALS

If representative samples of materials suspected to contain asbestos were collected and analysed at WSP Australia's inhouse NATA Accredited Laboratory, SMF can also be identified. The identification of SMF fibres is based on using Polarised Light Microscopy supplemented with Dispersion Staining techniques. Alternatively, our experienced surveyor visually identified and recorded the presence of synthetic mineral fibre products onsite.

4.6.5 POLYCHLORINATED BIPHENYLS (PCBS)

Where access was available, and power was isolated representative examples of each major type of fluorescent light fittings were examined to determine which lights were fitted with PCB containing ballast capacitors. The details of the brand, model of each capacitor and capacity were recorded and checked against with the ANZECC database of known PCB capacitors and PCB free capacitors.

The Australian and New Zealand Environment Conservation Council 'Polychlorinated Biphenyls Management Plan, November 1996' outlines the National Strategy for the management of PCBs.

The document defines PCB materials and wastes as follows:

Table 4.3 PCB Concentration Classification

PCB CONCENTRATION	WASTE CLASSIFACTION
<2 mg/kg	PCB free
2 mg/kg to <50 mg/kg	Non-scheduled PCB material or waste
>50 mg/kg	Scheduled PCB material or waste
>100,000 (10%)	Concentrated PCB material

5 RESULTS / FINDINGS

All data generated from the survey was used to create a hazardous materials register (Appendix A) with photographs of site structures (Appendix B) and documented materials. A risk assessment was completed for known and suspected hazardous materials using the risk matrix presented in Appendix D.

This section summarises findings from the survey.

Table 5.1	Summary of identified a	sbestos containing materials
-----------	-------------------------	------------------------------

MATERIAL	IDENTIFIED NUMBER OF ITEMS RISK RANGE								
Rhodes Waterside Shopping Centre									
Friable ACM	No	-	-	to	-				
Non-friable ACM	No	-	-	to	-				
Synthetic Mineral Fibres	8	8	Low	to	Low				
Lead Based Paints	0	0	-	to	-				
Lead Containing Dust	0	0	-	to	-				
PCBs	0	0	-	to	-				
Ozone Depleting Substances	0	0	-	to	-				

No high-risk hazardous materials were identified during the Site inspection.

6 **RECOMMENDATIONS**

To ensure that identified hazardous materials are appropriately managed, WSP recommends the following:

- Refer to the hazardous materials register and specific management actions to remove/maintain identified hazardous
 materials to ensure that health and environmental risks are appropriately managed.
- The survey was undertaken using non-destructive methods. There may remain a potential for hazardous materials to be concealed within the building structure(s). Accordingly, caution should be exercised if subsequent renovation, demolition or dismantling of the structure(s) is required. If any suspected materials are identified during those works a sample of these materials should be collected and tested in a NATA registered laboratory for the presence of hazardous materials.
- Inaccessible areas should be assumed to contain hazardous materials and managed accordingly until such time that this can be assessed by a competent person.
- Activities near hazardous materials should be restricted to minimise the potential for damaging hazardous materials.
- Ensure a current copy of the hazardous materials register is kept on Site, and readily available to personnel, employees and any contractors likely to encounter hazardous materials.
- Apply asbestos warning labels to known and suspected ACMs to ensure ACM is readily identifiable and the risks appropriately managed.
- Ensure that appropriately qualified contractors are engaged to perform any works associated with hazardous
 materials, including maintenance, repairs and removal works. For removal works, contractors must be licenced and
 complete the works in accordance with relevant legislation and National Codes of Practice (Appendix G).

7 GENERAL MANAGEMENT GUIDELINES

7.1 HAZARDOUS BUILDING MATERIALS MANAGEMENT PLAN

To assist in the management of hazardous materials and to ensure compliance with relevant regulations, it is recommended that a separate Hazardous Materials Management Plan be prepared, which should include information regarding:

- Roles and responsibilities
- Prohibitions
- Management plan and register reviews
- Labelling
- Demolition and refurbishment works
- Remediation works
- Incidents and emergencies
- Record keepings

Hazardous materials outlined in this report are not to be disturbed (e.g. brushed, sanded or tooled in any way) to prevent the generation of dust and minimise the potential health risks.

7.2 ASBESTOS GENERAL MANAGEMENT GUIDELINES

WSP Australia has provided the following recommendations as a general guide for the safe removal of asbestos containing materials in accordance with the requirements of SafeWork NSW How to Safely Remove Asbestos, Code of Practice 2022.

If friable asbestos is identified the following is recommended:

- Access be restricted to areas where friable asbestos is present, and a management plan be implemented to control the risk of human exposure. Where practicable, positively identified asbestos containing materials should be labelled to indicate the presence of asbestos.
- Any persons wishing to access areas where presumed friable asbestos exists are to undertake a suitable and sufficient Risk Assessment prior to doing so, the results of which may include the use of appropriate Personal Protective Equipment (PPE) such as disposable coveralls and respiratory protection.
- Consideration should be given to engaging a qualified and experienced asbestos consultant to conduct a program of asbestos air monitoring in/around area containing friable asbestos to document airborne asbestos levels and help assess the exposure risk to occupants.
- Consideration should be given to engaging a qualified and experienced asbestos consultant to conduct a program of settled dust sampling/analysis to more accurately assess the extent of asbestos contamination that may be present.

If non-friable asbestos such as fibre cement sheeting (flat and corrugated), pipes and visually identified electrical distribution boards are identified, the following is recommended:

- All damaged / poor condition ACM should have access restricted and make safe works conducted to seal exposed damaged areas. A management plan is to be implemented to control the risk of human exposure to damaged asbestos materials. Where practicable, positively identified asbestos containing materials should be labelled to indicate the presence of asbestos.
- All non-friable ACM in an in-tact condition may remain in-situ provided they are not drilled, ground or otherwise disturbed. If damaged, broken pieces are to be removed as soon as practicable. As part of good ongoing management we recommend regular inspections of ACM left in-situ to check the condition of these materials.
- Any areas of the workplace that contain ACM including plant, equipment and components should be signposted with appropriate warning signs to ensure that asbestos is not unknowingly disturbed without the correct precautions being taken. These signs should be placed at all the main entrances to the work areas where asbestos is present and should conform with *Australian Standard 1319-1994 Safety Signs for the Occupational Environment*.
- This document should be held as an Asbestos Register of the areas inspected and updated as indicated in Section 2.1
 <u>or earlier where ACM have been disturbed or a risk assessment indicates the need for re-assessment</u>. All occupiers of
 the workplace are to be provided with a copy of this register and all updates to it.
- Prior to renovation or demolition works a refurbishment/demolition building materials survey should be undertaken by a suitable qualified and experience consultancy, such as WSP. A Refurbishment and/or Demolition Survey is required under the AS2601 (2001): The Demolition of Structures.
- Prior to the commencement of any specific asbestos removal works, a site and material specific asbestos removal control plan must be developed by a competent person such as a licenced asbestos assessor or licensed asbestos removal contractor.
- All persons engaged in asbestos removal work should wear appropriate PPE including respiratory protective equipment (RPE) conforming with the requirements of AS/NZS 1716:2012, *Respiratory Protective Devices* and AS/NZS 1715:2009, *Selection, Use and Maintenance of Respiratory Protective Equipment*. Protective disposable coveralls must be chosen that provide particle-tight protection (Type 5) and limited splash-tight protection (Type 6). Disposable coveralls should not have external pockets or Velcro fastenings.
- All removal work and asbestos disposal should be carried out in accordance with the applicable legislation (Appendix H).
- All fibre air monitoring shall be carried out by a competent person or licenced asbestos assessor with NATA accreditation in accordance with National Occupational Health and Safety Commission (NOHSC), Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003(2005)], NOHSC, Australia.
- Personal decontamination must be undertaken each time workers leave the asbestos work area and at the completion of the asbestos removal work. Personal decontamination should be undertaken within the nominated decontamination area. The extent of decontamination required is dependent upon the type of asbestos being removed. If friable asbestos is being removed, then a three-stage wet decontamination unit shall be required. If it is noted that non-friable ACM is being removed this may be undertaken in a nominated dry decontamination area.
- A clearance inspection of the work area shall be undertaken at the completion of the asbestos removal works by a licenced asbestos assessor.

7.3 GENERAL LEAD PAINT / DUST MANAGEMENT

If lead containing paints and / or lead in dust are identified the following management controls are recommended:

- Lead paint in poor, flaking condition must be remediated as soon as reasonably practicable.
- Paint in good condition may remain in situ provided it is not disturbed and maintained in a good condition.

All lead paint removal/stabilisation must be undertaken in accordance with AS/NZS 4361.2:2017, *Guide to Hazardous Paint Management, Part 2: Lead paint in residential, public and commercial buildings*. It should be noted that this

document does not replace AS/NZS 4361.2:2017. Rather it provides general advice to assist with the creation of a site-specific document to facilitate the safe removal/stabilisation of lead paint works.

This document provides general guidance for the removal of lead based paint systems via various methods commonly employed such as the use of a chemical strippers and the stabilisation of flaking lead based paints via scraping and wet sanding. Reference is made to a particular brand name of chemical stripper; however, this advice does not replace information provided by the manufacturer and one should always refer to the products guidance and relevant Australian legislation, standards, MSDS and guidance material.

In addition, it provides guidance for decontamination procedures. Disposal requirements and provisions for lead air monitoring and clearance inspections.

While it may not be practicable to remove lead based paints, it is important to ensure they are appropriately managed to minimise risks. To achieve this WSP recommends the following management measures be implemented in relation to the handling of any suspected lead based paints:

- Do not disturb lead based paints. If activities are likely to disturb lead based paints, their use should only be permitted with appropriate controls in place.
- Keep children and pets away from lead based paints and make sure they don't eat or play with paint debris.
- Do not burn lead paint or timber that is coated with paint containing lead.
- Ensure demolition staff are aware of the safety issues associated with lead and encourage good hygiene practices, with facilities to be available for hand washing before eating.
- Air monitoring can be considered to provide assurance to regulators and personnel that activities are not generating airborne lead dust.
- Should any lead exposure be suspected, health surveillance monitoring can be undertaken. If this is necessary, having baseline health surveillance results (blood lead testing) for comparison purposes would be beneficial and this should be considered in consultation with the occupational hygienist prior to commencing any refurbishment / demolition activities.

7.3.1 LEAD PAINT CLEARANCE

- Following the completion of the lead based paint removal works the occupational hygiene consultant will be required to undertake a thorough visual inspection of the work area and transit route.
- If removal works are not to the satisfaction of the occupational hygiene consultant, removal contractors will be required to re-enter the work area and rectify any issues arising from the inspection.
- AS/NZS 4361.2:2017 states that following the completion of works and the appropriate clean-up of the area, samples
 of dust can be collected and sent for analysis to determine if there has been a significant impact on the property and
 surrounding area from works undertaken and if the building is safe to reoccupy. Clearance dust samples can be
 collected and compared with the surface dust loading levels detailed within Table 4.1.
- Only following satisfactory clearance inspection, air monitoring and dust sampling, will removal works be deemed as completed.
- A final inspection of the work site will be required by the occupational hygiene consultant following removal of enclosure and equipment to ensure no debris or dust remains onsite.

7.4 GENERAL SMF MANAGEMENT GUIDELINES

All SMF removal should be done in accordance with the National Occupational Health and Safety Commission *National Code of Practice for the Safe Use of Synthetic Mineral Fibres* [NOHSC: 2006 (1990)]. Some of the practices recommended are as follows:

- The work area should be designated by using barricade tape and signs where workable. Persons not involved in the removal should not be within 3 metres of the designated area.
- Waste shall be placed in plastic bags or other containers which prevent fibre and/or dust emission, and disposed of in accordance with local waste disposal authority requirements.
- PPE including goggles, half-face P2 respirator, gloves, long sleeve and loose fitting clothing should be worn.

7.5 GENERAL PCB MANAGEMENT GUIDELINES

To manage the potential risks associated with PCBs should any be identified, WSP recommends the following:

- A certified and experienced electrician, aware of the hazards associated with PCBs and able to identify suspect PCB containing materials, should be used to isolate electricity and advise on the removal requirements.
- If any suspect PCB containing materials are suspected, the presence of PCBs should be further assessed against the 1997 ANZECC *Identification of PCB-Containing Capacitors*. Information Booklet to identify PCB-containing capacitors.
- If PCB containing materials are confirmed to exist, the appropriate PPE (disposable suits, nitrile gloves, full face shield and hair protection) should be worn in case materials (e.g. capacitors) are damaged and potentially leaking PCBs. PCB containing materials should be carefully removed so as not to further damage them and prevent leakage and cross contamination.
- Removal staff are to be aware of the safety issues associated with PCBs and encourage good hygiene practices after handling PCBs with facilities to be available for washing.
- Any identified PCB-containing materials and PPE are to be placed in strong sealed polyethylene bags and then sealed in a sturdy metal drum with an absorbent material added to absorb any leaking PCB. All drums should be labelled 'PCB Waste' and be appropriately stored and disposed.

8 LIMITATION STATEMENT

This Report is provided by WSP Australia Pty Limited (*WSP*) for Mirvac (*Client*) in response to specific instructions from the Client and in accordance with WSP's proposal dated 1/05/2024 and agreement with the Client dated 08/06/2024 (*Agreement*).

8.1 PERMITTED PURPOSE

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (*Permitted Purpose*).

8.2 QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (*Conclusions*) are based in whole or in part on information provided by the Client and other parties identified in the report (*Information*), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

Where the survey identifies that hazardous materials are on Site, the Conclusions are indicative of the presence of hazardous materials and cannot be regarded as absolute without further extensive sampling, outside the scope of the services set out in the Agreement. Site conditions, including the extent and visibility of hazardous materials, can change with time. On all sites, varying degrees of non-uniformity of conditions are encountered and the presence of hazardous materials which are not visually apparent at the time of inspection, may not be detected. No monitoring, common testing or sampling technique provides results that are totally representative of the presence or non-presence of hazardous materials at the Site. Site conditions, including subsurface conditions can change with time due to natural and anthropogenic causes.

Only material that was physically accessible at the time of inspection was sampled. Consequently, not all hazardous material may have been located at the Site. The survey identifying hazardous materials on Site should be reviewed prior to demolition or refurbishment as a more detailed destructive survey may be required prior to demolition or refurbishment works. Care should be taken during normal Site works, refurbishment or demolition works when entering previously inaccessible areas. If suspect material is encountered, works should cease in the area until samples have been collected and analysed by competent personnel.

It is impossible to locate all hazardous materials during an inspection. This is due to such factors as (without limitation):

- Time, budget and constraints requested by the Client;
- Access restrictions;
- The need to avoid causing physical damage to fixtures or structures on the Site;
- The need to minimise hazardous materials exposures to building occupants;
- The need to minimise inconvenience when the Site is in use (e.g. occupied) whilst an inspection is being conducted; and / or
- The availability of relevant building / plant construction plans.

Hazardous materials that could be routinely encountered in the normal day-to-day activities occurring on the Site have been identified and assessed, however there is no guarantee that the Site is free of hazardous materials, since future activities may reveal hazardous materials in areas inaccessible or unknown to WSP.

Within the limitations referred to above, the preparation of this Report has been undertaken and performed in a professional manner in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by reputable consultants. No other warranty, expressed or implied, is made.

WSP has prepared the Report without regard to any special interest of any person other than the Client when undertaking the services described in the Agreement or in preparing the Report.

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This Report can only be relied upon for the Permitted Purpose and may not be relied upon for any other purpose. The Report does not purport to recommend or induce a decision to make (or not make) any purchase, disposal, investment, divestment, financial commitment or otherwise. It is the responsibility of the Client to accept (if the Client so chooses) the Conclusions and implement any recommendations in an appropriate, suitable and timely manner. WSP does not (and will not) accept liability arising out of or in connection with any health or safety risks associated with hazardous materials.

In the absence of express written consent of WSP, no responsibility is accepted by WSP for the use of the Report in whole or in part by any party other than the Client for any purpose whatsoever. Without the express written consent of WSP, any use which a third party makes of this Report or any reliance on (or decisions to be made) based on this Report is at the sole risk of those third parties without recourse to WSP. Third parties should make their own enquiries, rely on the results of their own site inspections, and / or obtain independent advice in relation to any matter dealt with or conclusions expressed in the Report.

8.4 DISCLAIMER

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APPENDIX A HAZARDOUS MATERIALS REGISTER



A1 HAZARDOUS MATERIALS REGISTER

A1.1 ASBESTOS CONTAINING MATERIALS

Rhodes	Rhodes Waterside Shopping Centre												
Level	Primary location / room	Secondary location / application	Material	Sample number	Result	Quantity	Labelled	Friability	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
External	Sprinkler valve cupboard 3	Wall lining	Fibre cement sheeting	Previously Sampled J160473-001- 004	Not Detected	-	-	-	-	-	No Asbestos	No Action Required	<u>157039</u>
Level 1	Switchrooms	Electrical components	Electrical mounting board	Visual Observation	Not Detected	100 items	-	-	-	-	No Asbestos	No Action Required	<u>157037</u>
Level 4	Northern elevators	South and North - Infill panels	Fibre cement sheeting	Previously Sampled J160473-001- 001	Not Detected	20 m²	-	-	-	-	No Asbestos	No Action Required	<u>157036</u>
Level 9	Office tower - Plant room	Electrical components	Electrical mounting board	Visual Observation	Assumed Negative	-	-	-	-	-	No Asbestos	No Action Required	<u>157030</u>
Level 9	Office tower - Plant room	Fire door	Insulation material	Visual Observation	Assumed Negative	2 items	-	-	-	-	No Asbestos	No Action Required DOM tag 2000s	<u>157035</u>
Level 10	Office tower	Plant room - Fire door core	Insulation material	Visual Observation	Assumed Negative	1 items	-	-	-	-	No Asbestos	No Action Required	<u>157029</u>
Level 10	Office tower - Plant room	Electrical components	Electrical mounting board	Visual Observation	Assumed Negative	6 items	-	-	-	-	No Asbestos	No Action Required Not sampled - Live electrical hazard	<u>157038</u>
Level 11	Fire stairs	South and North - Infill panels	Fibre cement sheeting	Ref: WSP- J160473-001- 001	Not Detected	10 m²	-	-	-	-	No Asbestos	No Action Required	<u>157031</u>
All Floors	Carpark	Expansion gap sealant	Mastic sealant	Previously Sampled J160473-001- 005	Not Detected	1000 lin m	-	-	-	-	No Asbestos	No Action Required	<u>157034</u>
Roof	Lift motor room	Brake pads	Brake disc/pad	Visual Observation	Assumed Negative	6 items	-	-	-	-	No Asbestos	No Action Required	<u>157032</u>
Roof	Plant external	Gasket	Gaskets	Previously Sampled J160473-001- 002	Not Detected	10 items	-	-	-	-	No Asbestos	No Action Required	<u>157033</u>

Rhodes	Waterside Shopping	Centre											
Level	Primary location / room	Secondary location / application	Material	Sample number	Result	Quantity	Labelled	Friability	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
Roof	External	Infill panel	Fibre cement sheeting	Previously Sampled J160473-001- 003	Not Detected	30 m²	-	-	-	-	No Asbestos	No Action Required	<u>157041</u>
Roof	Plant external	Electrical components	Electrical mounting board	Visual Observation	Assumed Negative	3 items	-	-	-	-	No Asbestos	No Action Required	157042

A1.2 SYNTHETIC MINERAL FIBRES

Rhodes	Waterside Shopping Co	entre								
Level	Primary location / room	Secondary location / application	Sample number	Result	Quantity	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
Level 4	Food court ceiling space	Insulation	Visual Observation	SMF	100 lin m	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28775</u>
Level 9	Office tower - Plant room	Insulation	Visual Observation	SMF	1 units	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28774</u>
Level 9	Office tower - Plant room	Ducts	Visual Observation	SMF	30 lin m	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28773</u>
Level 10	Office tower - Plant room	Ducts	Visual Observation	SMF	40 m²	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28772</u>
Level 10	Office tower - Plant room	Insulation	Visual Observation	SMF	1 units	Good	Low	Low Risk	No Action Required.	<u>SMF-28771</u>
All Floors	Risers	Insulation	Visual Observation	SMF	400 lin m	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28769</u>
All Floors	Various rooms	Susp. Ceiling	Visual Observation	SMF	2000 m ²	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28768</u>
Roof	Lift motor room	Sarking insulation	Visual Observation	SMF	25 m ²	Good	Low	Low Risk	Leave insitu and manage.	<u>SMF-28770</u>

A1.3 LEAD BASED PAINTS

Rhode	s Waterside Shopping Ce	ntre									
Level	Primary location / room	Secondary location / application	Material	Sample number	Result	Quantity	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
All Floors	Fire stairs	Internal Wall	Light Grey	Lead Paint Sample 303336	LBP Not Detected <0.01% w/w	1000 m²	-	-	-	-	<u>LBP-29294</u>

A1.4 POLYCHLORINATED BIPHENYLS

Level	Primary location / room	Secondary location / application	Material	Sample number	Result	Quantity	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
				No suspect polychlor	inated biphenyls	identified during t	he Site inspection.				

A1.5 OZONE DEPLETING SUBSTANCES

Level	Primary location / room	Secondary location / application	Material	Sample number	Result	Quantity	Condition	Disturbance Potential	Risk rating	Comments / Management Recommendations	Photo reference
				No suspect ozone dep	leting substances	identified during	the Site inspection.				

Notes:

'-' Not applicable (e.g. no asbestos detected)

APPENDIX B SITE / BUILDING PHOTOGRAPHS



B1 SITE / BUILDING PHOTOGRAPHS

Rhodes Waterside Shopping Centre



APPENDIX C MATERIAL PHOTOGRAPHS



C1 PHOTOGRAPHS

C1.1 ASBESTOS CONTAINING MATERIALS

C1.2 NON-ASBESTOS CONTAINING MATERIALS

NON-ASB	ESTOS CO	ONTAININ	G MATERIAL
Photo Ref	<u>157039</u>	Sample No	Previously Sampled J160473-001- 004
Building	Rhodes Wa	aterside Sh	opping Centre
Level	External		
Room	Sprinkler v	alve cupbo	pard 3
Application	Wall lining	5	
Material	Fibre ceme	ent sheeting	5
Risk Rating	No Asbest	os	



NON-ASBE	ESTOS CO	NTAINING	MATERIAL
Photo Ref	<u>157037</u>	Sample No	Visual Observation
Building	Rhodes Wa	aterside Sho	pping Centre
Level	Level 1		
Room	Switchroor	ns	
Application	Electrical c	omponents	
Material	Electrical r	nounting bo	ard
Risk Rating	No Asbesto	DS	





NON-ASB	ESTOS CO	ONTAININ	G MATERIAL		
Photo Ref	<u>157036</u>	Sample No	Previously Sampled J160473-001- 001		
Building	Rhodes W	aterside Sh	opping Centre		
Level	Level 4			In the second	
Room	Northern e	elevators			
Application	South and	North - Inf	ill panels		
Material	Fibre ceme	ent sheeting			
Risk Rating	No Asbest	tos			

NON-ASBE	ESTOS CO	NTAINING	MATERIAL
Photo Ref	<u>157030</u>	Sample No	Visual Observation
Building	Rhodes Wa	aterside Sho	pping Centre
Level	Level 9		
Room	Office towe	er - Plant ro	om
Application	Electrical c	components	
Material	Electrical n	nounting bo	ard
Risk Rating	No Asbesto	DS	





NON-ASBE	ESTOS CO	NTAINING	MATERIAL
Photo Ref	<u>157035</u>	Sample No	Visual Observation
Building	Rhodes Wa	aterside Sho	pping Centre
Level	Level 9		
Room	Office tow	er - Plant ro	om
Application	Fire door		
Material	Insulation	material	
Risk Rating	No Asbesto	DS	





NON-ASBE	ESTOS CO	NTAINING	MATERIAL
Photo Ref	<u>157029</u>	Sample No	Visual Observation
Building	Rhodes Wa	aterside Sho	pping Centre
Level	Level 10		
Room	Office tow	er	
Application	Plant room	- Fire door	core
Material	Insulation	material	
Risk Rating	No Asbesto	DS	





NON-ASB	ESTOS C	ONTAININ	G MATERIAL
Photo Ref	<u>157038</u>	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	opping Centre
Level	Level 10		
Room	Office toy	ver - Plant ro	oom
Application	Electrical	components	5
Material	Electrical	mounting be	oard
Risk Rating	No Asbes	tos	

NON-ASB	ESTOS CO	ONTAINING	G MATERIAL
Photo Ref	<u>157031</u>	Sample No	Ref: WSP- J160473-001- 001
Building	Rhodes W	aterside Sho	opping Centre
Level	Level 11		
Room	Fire stairs		
Application	South and	North - Infi	ll panels
Material	Fibre ceme	ent sheeting	
Risk Rating	No Asbest	os	

NON-ASB	ESTOS CO	NTAININ	G MATERIAL	
Photo Ref	<u>157034</u>	Sample No	Previously Sampled J160473-001- 005	
Building	Rhodes Wa	aterside Sh	opping Centre	
Level	All Floors			
Room	Carpark			
Application	Expansion	gap sealan	t	
Material	Mastic sea	lant		
Risk Rating	No Asbeste	OS		





NON-ASB	ESTOS CO	ONTAINING	MATERIAL
Photo Ref	<u>157032</u>	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	pping Centre
Level	Roof		
Room	Lift motor	room	
Application	Brake pad	s	
Material	Brake disc	c/pad	
Risk Rating	No Asbest	tos	

NON-ASBI	ESTOS C	ONTAINII	IG MATERIAL
Photo Ref	<u>157033</u>	Sample No	Previously Sampled J160473-001- 002
Building	Rhodes V	Vaterside S	nopping Centre
Level	Roof		
Room	Plant exte	ernal	
Application	Gasket		
Material	Gaskets		
Risk Rating	No Asbes	stos	

NON-ASB	ESTOS CO	ONTAININ	G MATERIAL
Photo Ref	<u>157041</u>	Sample No	Previously Sampled J160473-001- 003
Building	Rhodes W	aterside Sh	opping Centre
Level	Roof		
Room	External		
Application	Infill pane	el.	
Material	Fibre cem	ent sheeting	5
Risk Rating	No Asbes	tos	

NON-ASB	ESTOS CO	ONTAINING	MATERIAL
Photo Ref	<u>157042</u>	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	pping Centre
Level	Roof		
Room	Plant exter	rnal	
Application	Electrical	components	
Material	Electrical	mounting bo	ard
Risk Rating	No Asbest	tos	

C1.3 SYNTHETIC MINERAL FIBRES

SY	NTHETIC	MINERAL	FIBRE
Photo Ref	<u>SMF-</u> 28775	Sample No	Visual Observation
Building	Rhodes V	Vaterside Sh	opping Centre
Level	Level 4		
Room	Food cou	rt ceiling spa	ace
Application	Insulation	1	
Risk Rating	Low Risk	1	

SY	NTHETIC	MINERAL	FIBRE		
Photo Ref	<u>SMF-</u> 28774	Sample No	Visual Observation	and a second	t
Building	Rhodes W	aterside Sho	pping Centre		
Level	Level 9				Nº AM
Room	Office tow	ver - Plant ro	om		
Application	Insulation				
Risk Rating	Low Risk				

SYI	NTHETIC I	MINERAL I	IBRE
Photo Ref	<u>SMF-</u> 28773	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	pping Centre
Level	Level 9		
Room	Office tow	er - Plant ro	om
Application	Ducts		
Risk Rating	Low Risk		

SY	NTHETIC	MINERAL	FIBRE
Photo Ref	<u>SMF-</u> 28772	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	opping Centre
Level	Level 10		
Room	Office tow	ver - Plant ro	oom
Application	Ducts		
Risk Rating	Low Risk		





SYI	NTHETIC N	MINERAL F	IBRE
Photo Ref	<u>SMF-</u> 28771	Sample No	Visual Observation
Building	Rhodes Wa	aterside Sho	pping Centre
Level	Level 10		
Room	Office tow	er - Plant ro	om
Application	Insulation		
Risk Rating	Low Risk		





SY	NTHETIC	MINERAL	FIBRE
Photo Ref	<u>SMF-</u> 28769	Sample No	Visual Observation
Building	Rhodes V	Waterside Sh	opping Centre
Level	All Floor	rs	
Room	Risers		
Application	Insulatio	n	
Risk Rating	Low Ris	k	

SYNTHETIC MINERAL FIBRE			
Photo Ref	<u>SMF-</u> 28768	Sample No	Visual Observation
Building	Rhodes W	aterside Sho	opping Centre
Level	All Floors		
Room	Various ro	oms	
Application	Susp. Ceili	ing	
Risk Rating	Low Risk		

SYNTHETIC MINERAL FIBRE								
Photo Ref	<u>SMF-</u> 28770	SMF- 28770Sample NoVisual Observation						
Building	Rhodes W	Rhodes Waterside Shopping Centre						
Level	Roof	Roof						
Room	Lift motor	Lift motor room						
Application	Sarking insulation							
Risk Rating	Low Risk							





C1.4 LEAD BASED PAINTS

	LBP NOT DETECTED			
Photo Ref	<u>LBP-</u> 29294	Sample No	Lead Paint Sample 303336	
Building	Rhodes W	aterside Sho	opping Centre	
Level	All Floors	All Floors		
Room	Fire stairs	Fire stairs		
Application	Internal W	all		
Risk Rating	-			

C1.5 POLYCHLORINATED BIPHENYLS

C1.6 OZONE DEPLETING SUBSTANCES

APPENDIX D RISK MATRIX



RISK MATRIX

POTENTIAL TO BE DISTURBED

Score	Potential to be disturbed
High (3)	Disturbance may occur during typical occupancy of the building and is likely during maintenance works.
Medium (2)	Disturbance unlikely during typical occupancy of the building however may occur during maintenance works.
Low (1)	Disturbance unlikely during typical occupation of the building.

CONDITION

Score	Condition description						
Poor (3)	Obvious damage or deterioration, extensive dust/contamination.						
	Tradie aspesios not encapsurated.						
Fair (2)	Minor damage or deterioration, not sealed/encapsulated.						
	Friable asbestos encapsulated (e.g. fire door) with no damage to encapsulation.						
Good (1)	No obvious damage or deterioration, secured in place, sealed/encapsulated.						
Unknown (1)	No access to assess condition.						

FRIABILITY

Score	Friability Descriptor
Friable (1)	Material that; (A) is in a powder form or that can be crumbled, pulverised or reduced to powder by hand pressure when dry, and (B) contains asbestos.
Non-friable (0)	Material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound.

RISK MATRIX TABLE

Material Condition	Disturbance Potential							
	High (3)	Medium (2)	Low (1)					
Poor (3)	>6	5	4					
Fair (2)	5	4	3					
Good / Unknown (1)	4	3	2					

Note - Friable asbestos containing materials also assigned a score of one (1).

Legend

>6	High Risk
4–5	Medium Risk
2–3	Low Risk

APPENDIX E NATA LABORATORY ANALYTICAL REPORTS





WSP Australia P/L NSW 104 Market Street Wollongong NSW 2500





NATA Accredited Accreditation Number 1261 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Ben Morgan			
Report	1121311-S			
Project name	HAZARDOUS MATERIAL	S INSPECT	TION 2024	4
Project ID				
Received Date	Jul 24, 2024			
Client Sample ID				WSP-303336
Sample Matrix				Paint
Eurofins Sample No.				W24-JI0063261
Date Sampled				Jul 23, 2024
Test/Reference		LOR	Unit	
			-	
Lead (% w/w)		0.01	%	< 0.01



Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Lead (% w/w)	Sydney	Jul 25, 2024	6 Months

- Method: LTM-MET-3040 Metals in Waters Soils & Sediments by ICP-MS

	Eurofins Environment Testing Australia Pty Ltd		Eurofins ARL Pty Ltd				Eurofins ProMicro Pty Lto	Eurofins Environment Testing NZ Ltd									
- 🎎 eur	ofing	ABN: 50 005	085 521						ABN: 91 05 0	159 898	ABN: 47 009 120 549	NZBN: 9429046024954					
web: www.eurofins.com.au email: EnviroSales@eurofins.com		Melbourne 6 Monterey F Dandenong 5 VIC 3175 +61 3 8564 5 NATA# 1261 Site# 1254	Geelong Road 19/8 Lewal South Grovedale VIC 3216 5000 +61 3 8564 NATA# 126 Site# 2540	Sydney Ian Street 179 Magowar Girraween NSW 2145 4 5000 +61 2 9900 8 NATA# 1261 3 Site# 18217	Canberra Road Unit 1,2 Dacre Stree Mitchell ACT 2911 400 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisba ti 1/21 Si Murarri QLD 4 T: +61 NATA# Site# 2	ane mallwood Plac ie 4172 7 3902 4600 ± 1261 20794 & 2780	Newcastle ce 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksi Welshpool WA 6106 +61 8 6253 4 NATA# 2377 Site# 2370	a Road 444	Perth ProMicro 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2561 Site# 2554	Auckland 35 O'Rorke Road Penrose, Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland Unit C1/4 Mount We Auckland +64 9 523 IANZ# 13	d (Focus) Pacific Rise, ellington, 1061 5 0568 308	Christchurch 43 Detroit Drive Rolleston, Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa, Tauranga 3112 +64 9 525 0568 IANZ# 1402	
Company Name: WSP Australia P/L (Wollongong) Address: 104 Market Street Wollongong NSW 2500								Order No.: Report #: Phone: Fax:	11213 02 927	11 72 5586	Received: Due: Priority: Contact N	ame:	Jul 24, 2 Jul 31, 2 5 Day Ben Mor	024 4:00 PM 024 gan			
Project Nar Project ID:	ame: :	HAZARDOUS PS214355-103	MATERIALS	INSPECTION 2	2024						Euro	fins Analytica	I Servic	es Manaç	ger : Ursula L	ong	
		Si	ample Detai	I		Lead (% w/w)											
Sydney Labo	Sydney Laboratory - NATA # 1261 Site # 18217					Х											
External Lab	boratory																
No Samp	ple ID	Sample Date	Sampling Time	Matrix	LAB ID												
1 WSP-30	03336	Jul 23, 2024		Paint	W24-JI0063261	Х											
Test Counts	Test Counts					1											



Internal Quality Control Review and Glossary

General

- 1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- 2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- 3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- 4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- 5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- 6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- 7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- 8. Samples were analysed on an 'as received' basis.
- 9. Information identified in this report with blue colour indicates data provided by customers that may have an impact on the results.
- 10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units		
mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
μg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

Unite

••••••	
APHA	American Public Health Association
CEC	Cation Exchange Capacity
сос	Chain of Custody
СР	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
твто	Tributyltin oxide (bis-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is <30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 - 150%, VOC recoveries 50 - 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- 1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- 2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
- 3. pH and Free Chlorine analysed in the laboratory Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- 4. Recovery Data (Spikes & Surrogates) where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- 5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data



Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Lead (% w/w)	%	< 0.01			0.01	Pass	



Comments

Sample Integrity	
Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	N/A
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Ursula Long Mickael Ros Analytical Services Manager Senior Analyst-Metal

Glenn Jackson Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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APPENDIX F GENERAL INFORMATION ON HAZARDOUS MATERIALS



F1 BACKGROUND

Asbestos is the generic term for a group of naturally occurring mineral fibres with high tensile strength, flexibility, and resistance to thermal, chemical and electrical conditions. On account of these properties, asbestos has been used in many products for strength, heat, friction resistance and as insulation.

There are six types of the fibrous asbestos minerals, in two groups as described below:

- The serpentine asbestos is chrysotile (or white) asbestos. Chrysotile has been the most commonly used form of asbestos.
- Amphibole asbestiforms of which amosite (brown asbestos) and crocidolite (blue asbestos), were the most common types of amphibole asbestos used in building products.

Asbestos fibres enter the body by the inhalation and/or ingestion of airborne particles that can become embedded in tissues of the respiratory or digestive systems. International agencies and national authorities now recognise asbestos to be a human carcinogen. This designation was based on an observation of an increased incidence of lung cancer, mesotheliomas and gastrointestinal cancer in occupationally exposed workers, being consistent across investigators and study populations. Information from animal studies on the inhalation of fibres support these findings, although evidence for carcinogenicity via ingestion is limited.

In recognition of the above-mentioned issues, every effort should be made to eliminate the use of asbestos materials in buildings.

F2 USE OF ASBESTOS PRODUCTS

Asbestos was used extensively in structures such as buildings, processing plants, ships, trains and motor vehicles in the 1950s, 1960s and 1970s. Asbestos cement products are commonplace in building materials and buildings constructed prior to 1990.

Asbestos has been used in hundreds of different building materials. Some of the common building materials include:

- Adhesive sealants and paints.
- Electrical backing boards and internal linings.
- Vinyl floor tiles and vinyl sheets.
- Fibro-cement sheets in wall, ceiling and eave linings (internal & external).
- Fibro-cement internal flues and downpipes
- Bitumen-based water proofing such as malthoid (typically on roofs).

Whilst these materials are known to commonly contain asbestos, not all will. Confirmation must be made by detailed visual inspections coupled with laboratory analysis.

Generally, ACM consists of asbestos fibres bound in a cement matrix. The degree of fibre release and the risk posed by the asbestos will depend on the type of material (e.g. friable or non-friable), its condition and the potential for disturbance. As a result, it is necessary to have in place safe systems of work when working with or near asbestos.

F3 LEGISLATIVE REQUIREMENTS

State and Territory governments around Australia have generally adopted a consistent approach to asbestos management within workplaces. Whilst some minor differences are present from state to state, the following general requirements apply within workplaces:

- The owner of a workplace must determine if ACM are present in the workplace. This is usually undertaken through a visual inspection of the property.
- Upon identifying ACM, a risk assessment must be undertaken and must consider the following:
 - Friability
 - Condition
 - Location
 - Surrounding activities that could disturb the asbestos
- Where ACM is identified, it should be removed if removal is reasonably practicable. Where it is not reasonably
 practicable to remove, it must, depending on the level of risk, be either repaired, maintained and/or protected from
 future damage.
- ACM that is to remain in use (i.e. *in-situ*) must, when reasonably practicable, be labelled. An example of a warning label is shown below:

Figure F.1 Example asbestos warning label



- If ACM is found to be damaged, or is in a position where it is likely to be damaged, steps must be taken to prevent it being or becoming an unacceptable risk.
- If the risk of the ACM is found to be elevated, then steps must be taken to minimise the risk to employees / workers and other personnel who attend the workplace.

F4 HEALTH IMPACTS

As ACM is no longer used in Australia, most worker exposures now occur during the removal of asbestos and the renovation and maintenance of buildings and structures containing asbestos; particularly when asbestos is disturbed during activities such as handling, sawing, sanding, grinding, drilling, turning or similar.

The presence of asbestos may constitute a potential hazard; however, risk to health is based on the likelihood that respirable asbestos fibres are inhaled in significant quantities.

The level of risk posed by asbestos is linked to the size and shape of the fibres and the ability of it to penetrate deep into the lungs and become lodged. Fibres that measure less than three (3) microns wide and greater than five (5) microns long are referred to as respirable fibres and may enter the deepest part of the lungs. Larger fibres are deposited in the nose and major airways and can generally be cleared by normal physiological processes.

Once asbestos fibres have been inhaled (particularly respirable fibres) they can become lodged and are harder for our bodies to destroy, breakdown or remove. This is when they pose the greatest potential to cause disease and the likelihood of disease increases as the number of asbestos fibres inhaled increases.

Significant health risks may arise from the inhalation of airborne asbestos fibres, and their passage into the lungs. The risk of cancer increases as fibres diameter decreases and with increased exposure. Cigarette smoking greatly increases the risk of lung cancer in people heavily exposed to asbestos, but has no known association with mesothelioma.

Crocidolite and amosite have the most potent documented effects in producing the highly malignant mesothelioma tumour.

Asbestos fibres reaching the alveoli are handled in different ways. Some are carried out of the lung through the lymphatic system (part of the immune system). Of those fibres that remain some do not cause health effects whilst some may lead to lung changes such those outlined below:

Asbestosis	A form of fibrosis (scarring) of the lungs, which results in breathlessness. Asbestosis is a serious, chronic, non-cancerous respiratory disease. Asbestosis can take between 20 to 40 or longer years to develop.
Lung Cancer	Lung cancer is a disease which consists of uncontrolled cell growth in tissues of the lung. The incidence of lung cancer in people who are directly involved in the mining, milling, manufacturing and use of asbestos and its products is much higher than those who weren't involved in those industries.
Mesothelioma	Mesothelioma is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal.
	Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer.
	The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness.
	Mesothelioma was once rare, but its incidence is increasing throughout the industrial world because of past exposures to asbestos. Australia has the highest incidence rate in the world.

The primary objective in any asbestos management plan is to eliminate, where possible, exposure to airborne asbestos fibres, or as a minimum, ensure workers are not exposed to fibre concentrations greater than the National Occupational Health and Safety Commission's occupational exposure standards for asbestos. It should be noted, that in situations where asbestos has been incorporated into a stable matrix and airborne dust is not generated, the asbestos-related health risk is negligible.

F5 SYNTHETIC MINERAL FIBRES

Synthetic Mineral Fibres (SMF) are a group of amorphous substances, including Glasswool, Rockwool and Ceramic fibre that have been fiberised by mechanical means, such as spinning or blowing during manufacturing. SMFs are commonly found in false ceiling panels and insulation and are typically identified by visual observation or by Optical Microscope techniques.

In the late 1980s the International Agency for Research on Cancer (IARC) evaluated certain SMF materials as being possibly carcinogenic to humans. The similarity in application and appearance to asbestos has resulted in some community concern regarding the health effects associated with exposure to SMF.

Reference information on SMF and their management is provided in the rescinded National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)]

F6 LEAD BASED PAINTS

In the past lead was added to paint as a pigment and to assist with drying, improve durability, resist moisture and retain a fresh appearance. Lead carbonate (white lead) was once the principal white pigment in paints for houses and public buildings. Paint with lead pigment was manufactured up until the late 1960s, and in 1969 the National Health and Medical Research Council's Uniform Paint Standard was amended to restrict the lead content in domestic paint. The use of lead in paint as a significant component was phased out in Australia by the early 1980s.

Many older Australian buildings still contain lead-based paint, even though it may be covered with layers of more recent paint. Lead-based paint was used mainly on exterior surfaces, and to a lesser degree on interior doors and door and window architraves, especially in undercoats and primers, where concentrations of up to 20 percent lead content were used. Interior walls were not commonly painted with paint containing white lead pigment, although some colours did contain red, orange and yellow lead pigments.

Other areas that may contain lead include lead flashing and lead backing in electrical components. Lead in any form is toxic to humans when ingested or inhaled, with repeated transmission of particles cumulating in lead poisoning. Lead paint removal poses two potential avenues of transmission. Firstly, by inhalation or ingestion by workers and public near the works, and secondly by the deposition of particles on nearby footpaths, streets or soil where they may be resuspended, tracked into houses or buildings where it can be inhaled or ingested.

Lead based paints are to be managed in accordance with the Australian Standard *Guide to hazardous paint management Part 2: Lead paint in residential, public and commercial buildings* (AS4361.2:2017).

F7 POLYCHLORINATED BIPHENYLS

Polychlorinated biphenyl (PCBs) compounds are synthetic organic compounds that were used in transformer oils, capacitor oils, hydraulic and heat-exchange fluids, lubricating oils, cutting oils, fluorescent light fittings, ceiling fans, dishwashers, clothes dryers, vacuum pumps, electric motors and washing machines. PCBs are highly stable chemicals with good insulating properties; they do not degrade appreciably over time or with exposure to high temperatures, acids or alkalis. It is these properties that made PCBs attractive for use in electrical devices. They were first used in about 1929 and were commonly used from the 1950s to the 1970s.

Fluorescent light-fittings containing capacitors can be compared with details contained in the ANZECC Identification of PCB Containing Capacitors database (1997).

It is considered that Australian electrical equipment manufactured since 1970 is unlikely to contain PCBs. Imports of PCBs to Australia were banned since 1986 once it became known that PCBs could harm human health and contaminate the environment.

F8 OZONE DEPLETING SUBSTANCES

Australia is a signatory of the Montreal Protocol which details banned ozone depleting substances. This is legislated through the Commonwealth's Ozone Protection Act, 1989.

Ozone depleting substances (ODSs) are those substances which deplete the ozone layer and 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 controlled by Montreal Protocol include:

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

APPLICABLE LEGISLATION AND REFERENCES



G1 LEGISLATION

PRIMARY ASBESTOS LEGISLATION	ASBESTOS SURVEY REQUIREMENTS	ASBESTOS RESURVEY REQUIREMENTS	REPORTING REQUIREMENTS	MANAGEMENT AND LABELLING/SIGNAGE REQUIREMENTS	OTHER REQUIREMENTS
Work Health and Safety Act 2011 Work Health and Safety Regulations 2017 Supported by: Code of Practice – How to Manage and Control Asbestos in the Workplace (2022) Code of Practice – How to Safely Remove Asbestos (2022)	A PCBU must, for work place buildings/structures that are constructed prior to December 31, 2003 Survey to identify and locate any ACMs; and Compile and keep at the workplace a site specific Asbestos Register. If ACM is identified at the work place, an AMP is to be compiled for the management of the identified ACM. The Asbestos Register and the AMP must be made available at the work place for workers, people intending to conduct business at the work place and to Health and Safety representatives.	Re-inspections of identified ACM is determined on a case- by-case basis depending on the risk situation and should be informed by and conducted in accordance with the site specific AMP.	 The site specific Asbestos Register needs to include the date, type, location, condition and ACM identified during the survey. The Asbestos Register must be maintained and also updated if: The AMP is under review Further ACM is identified and/or ACM is removed, disturbed or encapsulated. The site specific AMP must include management actions and justifications, incident and emergency response plans and record details of works carried out that involves ACM at the work place. The AMP must be maintained and updated: When the Asbestos Register is under review If asbestos is removed, disturbed or encapsulated The AMP must be maintained and updated: When the Asbestos register is under review If asbestos is removed, disturbed or encapsulated If a Health and Safety Officer requests a review and/or at least Once every 5 years. 	Generally, health monitoring is not required except for workers involved in asbestos removal works. Training is required for persons involved in asbestos removal work or carrying out asbestos related works. All identified ACM in a workplace has to be labelled to indicate clearly asbestos presence and location of the asbestos item. Before refurbishment or demolition: — Ensure Asbestos Register is current — Undertake necessary inspections. A licensed asbestos removalist is required unless: ACM <10 m ² and non-friable and then by a competent person.	 WHS Regulation 419 requires that a PCBU must not carry out, or direct or allow a worker to carry out, work involving asbestos; excepting as is applicable: Managing risk Sampling, identification and analysis Maintenance Removal/disposal Other exemptions per s.419 (3).

G2 REFERENCES

NOHSC. (April 2005a). *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition*. National Occupational Health & Safety Commission, Australian Government.

Standards Australia. (April 1994). Safety Signs for the Occupational Environment. Australian Standard.

Standards Australia. (February 2009). Selection, use and maintenance of respiratory protective equipment.

Standards Australia. (February 2012). Respiratory protective devices. Australian / New Zealand Standard, Joint Technical Committee QR-011.

Standards Australia. (September 2001). Demolition of structures. Australian Standard, Committee BD-059.

ABOUT US

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WSP is one of the world's leading engineering professional services consulting firms. We are dedicated to our local communities and propelled by international brainpower. We are technical experts and strategic advisors including engineers, technicians, scientists, planners, surveyors, environmental specialists, as well as other design, program and construction management professionals. We design lasting Property & Buildings, Transportation & Infrastructure, Resources (including Mining and Industry), Water, Power and Environmental solutions, as well as provide project delivery and strategic consulting services. With 36,000 talented people in more than 500 offices across 40 countries, we engineer projects that will help societies grow for lifetimes to come.