PROGRESSIVE RISK MANAGEMENT

Hazardous Building Materials Audit

Ventia Pty Ltd

Abraham Mott Hall

2 Watson Road, Millers Point NSW

P036708.001 / C0186

June 2024

Executive Summary

Progressive Risk Management (PRM) was engaged by Ventia Pty Ltd (the client) to undertake a hazardous building materials audit of the property located at 2 Watson Road, Millers Point NSW (the site).

Andrew Bainton and Jessica Hughan of PRM attended the site on 19 June 2024.

The HBM which were inspected as part of the Survey are as follows:

- Asbestos containing materials (ACM).
- Lead containing paint (LCP) / dust (LCD).
- Synthetic mineral fibre (SMF) materials.
- Ozone Depleting Substances (ODS).
- Polychlorinated Biphenyls (PCB) containing capacitors in fluorescent light fittings.

The objective of the survey was to identify specific HBM located throughout the site and provide a survey report outlining findings and recommendations to support the ongoing management of the identified HBM as per legislative requirements.

The limitations of this report should be read and understood in full. This report has not been compiled to assist with any refurbishment or demolition works. Further intrusive investigations may be required prior to refurbishment or demolition works being commissioned.

The following tables summarise the results of the Survey.

Summary of Items According to Item Type			
Friable ACM:	-	Non-Friable ACM:	Present
LCP:	Present	LCD:	-
SMF:	Present	ODS:	-
PCBs:	-		

Summary of Items According to Priority Risk Rating			
Priority Risk Rating 1:	**Priority Risk Rating 2:**	**Priority Risk Rating 3:**	**Priority Risk Rating 4:**
0	0	0	7

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Document Control:

Project Details:	
Report Name:	Hazardous Building Materials Audit
Client Name:	Ventia Pty Ltd
Project Reference:	P036708.001 / C0186
Site Details:	Abraham Mott Hall | 2 Watson Road, Millers Point NSW

Report Version:					
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	Prepared:	**Reviewed:**	**Approved:**		
VerA 30/07/2024	JEH	AIB	JAW	Ventia Pty Ltd	-
VerB 08/08/2024	AIB	CJM	MAW	Ventia Pty Ltd	Split Abraham Mott Hall and Harry Jensen Activity Centre into separate reports per client request. Refer to: *P036708.010 Ventia Harry Jensen Activity Centre HMA VerA* for information on this site.

Report Review:					
Prepared by:		Technical Review by:		Authorised for Issue by:	
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Position:	Property Risk Consultant	Position:	Property Risk Consultant	Position:	Managing Consultant
Date:	05/08/2024	Date:	07/08/2024	Date:	07/08/2024

1 Introduction

Progressive Risk Management (PRM) was engaged by Ventia Pty Ltd (the client) to undertake a hazardous building materials survey of the property located 2 Watson Road, Millers Point NSW (the site).

Andrew Bainton and Jessica Hughan of PRM attended the site on 19 June 2024.

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- Asbestos containing materials (ACM).
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2 Objective

The objective of the survey was to identify specific HBM located throughout the site and provide a survey report outlining findings and recommendations to support the ongoing management of the identified HBM as per legislative requirements.

The limitations of this report should be read and understood in full. This report has not been compiled to assist with any refurbishment or demolition works. Further intrusive investigations may be required prior to refurbishment or demolition works being commissioned.

3 Scope of Works

The Scope of Works for the Survey included the following elements as per PRM quote Q2643 dated April 2024:

- Inspection of all nominated areas of the site to locate, as far as reasonably practicable, materials suspected of containing ACM, LCP, LCD, SMF, PCB and ODS.
- Collection of ACM samples were analysed at PRM's internal National Association of Testing Authorities (NATA), Australia accredited laboratory. LCP and LCD samples taken were analysed in-house using a portable XRF (X-ray Fluorescence) machine.
- SMF were not sampled, and only visually inspected as far as reasonably practicable, given the nature of inspection.
- Document the nature, location and condition of HBM including a risk assessment and photographic evidence within a Survey report, as well as an HBM Register providing details as well as recommendations for management of the HBM at the site.

The scope of works was developed in order to provide the client with details for the ongoing management of hazardous materials at the site.

The survey was a non-intrusive survey; as such, prior to any refurbishment, intrusive or demolition works, this report and register should be reviewed, and if required, a more detailed and intrusive survey commissioned prior to such works being undertaken in line with legislative requirements and relevant Australian Standards.

Inaccessible areas and survey limitations are presented in **Section 6.2**. Report limitations are presented in **Section 9**.

4 Background & Previous Reports

PRM was provided with the sites previous HBM register which was reviewed during the development of this HBM survey report. Refer to report:

- Healthy Buildings International Pty Ltd Report: *Abraham Mott Hall, 2 Watson Road Millers Point NSW, Ventia Pty Ltd, Hazardous Materials Inspection Report, July 2019*

At the request of the client, previous samples were resampled by PRM to ensure accuracy and reliability of results.

5 Methodology

5.1 Legislative Requirements

The Survey was conducted in general accordance with the following:

- NSW *Work Health and Safety Act 2011*.
- NSW *Work Health and Safety Regulation 2017*.
- SafeWork NSW Code of Practice: *How to Manage and Control Asbestos in the Workplace 2022*.
- SafeWork NSW Code of Practice: *How to Safely Remove Asbestos 2022*.
- Safe Work Australia's *Minor contamination' of asbestos-containing dust or debris fact sheet 2013*.
- Australian Standard (AS) 4964:2004 *Method for the Qualitative Identification of Asbestos in Bulk Samples* (AS4964:2004).
- AS4361.2:1998 *Guide to Lead Paint Management; Part 2 Residential and Commercial Buildings* (AS4361.2:1998).
- Australian and New Zealand Standard (AS/NZS) 4361.2:2017 *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings* (AS/NZS4361.2:2017).
- AS 4874:2000, *Guide to the Investigation of Potentially Contaminated Soil and Deposited Dust as a Source of Lead Available to Humans* (AS4874:2000).
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPM); Schedule B7.
- *Code of Practice for the safe use of Synthetic Mineral Fibres* [NOHSC:2006 (1990)].
- Montreal Protocol on Substances that Deplete the Ozone Layer.
- United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP DTIE) Inventory of Trade Names of Chemical Products Containing Ozone Depleting Substances and their Alternatives.
- Australian Institute of Refrigeration Air Conditioning and Heating Inc (AIRAH) *Air Conditioning and Refrigeration Industry Refrigeration Selection Guide 2003*.
- Ozone Protection and Synthetic Greenhouse Gas Management Amendment Regulation 2012.
- AS1319:1994 *Safety Signs for the Occupational Environment* (AS1319:1994).

5.2 Site Survey and Visual Inspection

The Survey involved a visual inspection of accessible and representative building materials and the collection and analysis of materials suspected of containing asbestos or lead. Where possible, samples were collected from discrete locations and the sample location stabilised to prevent further disturbance.

5.3 Sampling Methodologies

5.3.1 ***Asbestos Containing Materials***

Suspected ACM were sampled by PRM in accordance with AS4964:2004. Where collected, representative samples were placed into clip-lock plastic bags and analysed by PRM's internal NATA-accredited laboratory for the presence of asbestos by polarised light microscopy and dispersion staining techniques.

5.3.2 Paints Containing Hazardous Metallic Pigments

Suspected hazardous paint films were sampled in accordance with AS/NZS 4361.1:2017. Where collected, representative samples of paint were placed in clip-lock plastic bags and then analysed at PRM's internal laboratory using an in-house using a portable XRF (X-ray Fluorescence).

5.3.3 *Lead Containing Dust*

Where general settled dust suspected of containing lead were identified, samples were collected by PRM in accordance with AS/NZS4361.2:2017. An area of 100 cm^2 (10 x 10 cm^2) or 900cm^2 (30 x 30 cm^2) was marked out using a disposable template. A "Ghost Wipe" was then used to collect the sample. The wipe was placed flat onto the surface in one corner of the area to be sampled and rubbed across the entire area in an 'S' pattern. The wipe was re-folded so that the collected dust was on the inside and again rubbed across the area at 90° to the first 'S'. The wipe was again folded with the dust inside and placed in a clip-lock plastic bag. Samples collected using this method were then analysed by an external NATA-accredited laboratory, ELS, for determination of lead concentration by atomic absorption spectroscopy techniques.

Where bulk accumulated dusts suspected of containing lead were identified, samples were collected by PRM using a metal spatula by scraping approximately 5 g of dust into a clip-lock plastic bag. Samples collected using this method were then analysed at PRM's internal laboratory using an in-house using a portable XRF (X-ray Fluorescence).

All samples were allocated a unique sample identification number and the location noted.

5.3.4 *Synthetic Mineral Fibre Materials*

The assessment of SMF materials was carried out by PRM through visual identification of SMF materials with reference NOHSC:2006(1990).

5.3.5 Polychlorinated Biphenyls

Fluorescent light fixtures were disassembled, where safe to do so, as part of the Survey. The assessment for the potential presence of PCB capacitors was made based on a visual assessment of the age and condition of light fixtures. Furthermore, the PCB capacitor serial numbers were cross referenced with ANZECC *Identification of PCB-containing Capacitors,* 1997.

5.3.6 *Ozone Depleting Substances*

This component of the assessment comprised a visual inspection of air conditioning units and any chillers (if applicable) at the site and included a review of the air conditioners' refrigerant types.

5.4 Specific Criteria

5.4.1 *Lead Containing Paint*

AS/NZS4361.2:2017 defines lead content in excess of 0.1 percent by weight of the dry film determined by laboratory testing to be LCP. Results were expressed in percent weight per weight (%w/w).

5.4.2 ***Lead Containing Dust (Bulk Dust)***

There is little guidance with respect to the criteria for lead content of accumulated dusts outside of the residential environment and a correlation to a health risk or bioaccumulation of lead in a receptor.

Sampling, analysis and interpretation of results are frequently compared to clearance and validation criteria for a residential environment as described within Section 5.0 of AS4361.2:1998. These values were developed solely for validation upon completion of lead remediations works and are not indicative acceptable levels of lead within dusts in the general occupied environment.

In contrast to the clearance criteria noted in Section 5.0 of AS4361.2:1998 above, values for lead content in soil have also been used as additional guidance; however, applying the soil criteria alone should not substitute the requirement for a detailed task and environmental risk assessment as the exposure pathway between soils and dusts should not be considered a 'like for like'.

For the purposes of this Survey and interpretation of results, samples collected were compared to a nominated criteria of 1500 mg/kg. In the absence of any specific lead in dust criteria, values of lead in dust are also often compared to the National Environment Protection Measure (NEPM) Guideline on the Health Based Investigation Levels (HSL's) contained with Schedule B7.

Although these HSL's cannot offer a direct comparison to bulk and surface dust loading, they were developed to protect the health of persons who may be exposed to soil contaminants. The duration a person is exposed to the contaminant is considered in the HSL's; for example Residential -A assume that a person may be exposed over a longer period of the day (place of residence) in comparison to Commercial/Industrial – D where a worker may only be exposed for a short period over their 8-hour working day.

The exposure pathway for lead in soil is typically limited to ingestion routes only as the potential for significant levels of airborne particulates containing lead is restricted. Unlike dusts where both ingestion and inhalation pathways are to be considered.

Exceedance of 10 000 mg/kg (1%) is considered a *Lead Process* as described within the *WHS Regulation, 2017* and will require remediation under strict lead remediation controls.

The Health Screening Level contained within the NEPM we have used to determine the acceptable level of lead in dust can be seen below**:**

Table 1: HSL Criteria, NEPM		
Land Use	**Description of Generic Land Uses**	**HSL (mg/kg)**
Residential – A	Residential with garden/accessible soil including childcare centres, preschools and primary schools	300
Residential – B	Residential with minimum opportunity for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments	1200
Recreational – C	Developed open space or recreational areas	600
Commercial / Industrial – D	**Commercial / industrial premises includes shops, offices, factories and industrial site**	**1500**

Based on the above HSL's, we can determine the level of risk assessment required for the affected area.

PRM adopted criteria for LCD and recommendations are outlined below**:**

Table 2: Adopted Criteria for LCD	
Threshold Criteria	**Response**
<1500 mg/kg	Maintain good housekeeping and hygiene practices. Reference to application of hygiene practices within SWMS or JSA.
1,500 – 10,000 mg/kg	Risk Assessment and Intermediate Controls Advised
>10,000 mg/kg	Remediation Advised (Lead Process)

6 Site Specific Details and Survey Limitations

6.1 Inspection and Building Details

Table 3 summarises the Building Details for the site.

Table 3: Building Details	
Description of Site:	Community Hall
Number of Buildings:	1
Building – Abraham Mott Hall:	
Approximate Age:	1960
Internal Construction:	Mixture of plaster and brick walls, plaster ceilings and floorboards.
External Construction:	Brick walls and tiled roof.

Refer to **Appendix B** for building photographs.

6.2 Inaccessible Areas

6.2.1 Site Specific areas not accessed

- External Abraham Mott Hall roof areas could not be accessed due to no safe access granted.

6.2.2 Standard access limitation to survey type (non-destructive).

- Underneath concrete slabs, soils or ground surface soils throughout the site.
- No destructive access was conducted as part of the inspection, therefore only areas routinely accessed were inspected to avoid decorative or structural damage. Areas like wall voids, behind wallpaper or fixed panels, under concrete slabs and any fixed risers, fixed flooring, voids or concealed spaces which would require destructive techniques were not accessed.
- All services (gas, water and electricity etc.) were live at the time of the inspection, with general safety guidelines followed as part of the Survey.
- Within plant or fixed items that were in operation at the time of the Survey or areas only accessible by demolishing or dismantling building structure or plant.
- External roofs and associated roof areas of Abraham Mott Hall could not be safely accessed. As such, all of these areas have been excluded from this report.

All item measurements are approximations only and should not be relied upon for the purpose pricing demolition or removal costs.

7 Risk Assessment Criteria

To assess the health risk posed by the presence of HBM (the material), relevant factors must be considered. These factors include:

- The likelihood the material is to be disturbed by workers.
- Friability of the material particularly for ACM and SMF.
- The condition of the material i.e. evidence of physical damage or influence of external factors such as weather conditions and water.
- The risk of exposure to workers when working within close proximity to the material.

Where these factors have indicated that there is a possibility of exposure, this provides the consultant with a risk priority rating and the ability to provide the most appropriate recommendations for repair, maintenance or abatement of the material.

7.1 Material Condition

The condition of the material identified during the inspection, and the meaning of each category rating, are summarised as follows:

- **Very Good condition**: Refers to the material being undamaged and in "original" condition with no deterioration and sealed i.e. no exposed asbestos fibres.
- **Good condition**: Refers to the material being undamaged and in "near original" condition with minimal deterioration, minor cracked edges, flaking paint or sealant i.e. not exposing asbestos fibres.
- **Fair condition**: Refers to the material exhibiting minor damage including breaks, cracks, deterioration, holes etc. and some surface damage.
- **Poor condition**: Refers to the material being severely damaged, associated debris and dust is located within close proximity, the material is weathered and broken down with the potential for exposure to workers.

7.2 Friability

Friability, as it relates to ACM and SMF, describes the ease of which fibres can be released from the material, in its current condition.

- **Friable ACM**: Refers to ACM which may become crumbled, pulverised or reduced to powder by hand pressure when dry. Examples of products include fire door core insulation, sprayed insulation and pipe lagging. Generally this type of material contains more asbestos fibres and is considered more hazardous than non-friable asbestos products.
- **Non-friable ACM**: Also known as bonded asbestos, are ACM that typically comprise asbestos fibres tightly bound in a stable product matrix. Examples of non-friable asbestos products include asbestos cement materials, vinyl floor tiles, gaskets and electrical backing boards.
- **Unbonded SMF**: Are SMF materials that have no adhesives or cements and the SMF is loose material in a package. Examples of unbonded SMF material includes rockwool, sprayed insulation and damaged SMF materials.
- **Bonded SMF**: Are SMF materials where adhesives or cements have been applied to the SMF before delivery and the SMF product has a specific shape. Examples of products include sarking insulation, insulation batts and pre-form pipe lagging.

This risk criteria does not relate to lead or PCB containing materials or ODS.

7.3 Likelihood of Disturbance of the Material

HBM can be classified as having low, medium or high likelihood of disturbance. This means that workers, contractors or the general public can get within close proximity of a material, potentially exposing themselves to the material.

- **Unlikely**: Unlikely accessibility describes a material that cannot be easily disturbed, such as materials in voids, set ceilings or where work activates within the area are unlikely to disturb the material.
- **Likely**: Likely accessibility describes a material that is visible but normal access is impeded by physical barriers, such as materials behind cladding or present in a ceiling space or are height restricted and where work activities within the area are likely to impact the material.
- **Highly Likely**: High accessibility describes a material that can be easily accessed or damaged due to their close proximity to worker, contractors, general public, and where work activities are going to impact on the material with high occupancy within the area.

7.4 Risk Matrix

To determine the level of risk a material has, the risk matrix is used. The risk rating is based on the condition of the material and the likelihood of disturbing the material.

Condition	Likelihood of Disturbance		
	Highly Likely	Likely	Unlikely
Poor	Very High	High	Medium
Fair	High	Medium	Low
Good	Medium	Medium	Low
Very Good	Medium	Low	Very Low

7.5 Level of Risk

The level of risk for the material identified are described below:

- **Very Low Risk**: Describes a material that poses a very low health risk to workers, contractors and the general public as the material in very good condition and is unlikely to be disturbed.
- **Low Risk**: Describes a material that poses a low health risk to workers, contractors and the general public providing the material stays in a stable condition, for example a material that is in good condition and has unlikely accessibility.
- **Medium Risk**: Describes a material that poses an increased risk to workers, contractors and the general public in the area, however, is in a semi-stable condition with minor amounts of damage.
- **High Risk**: Describes a material that poses a high risk of exposure to workers, contractors and the general public working in the area of the material. Generally, a material with a high-risk ranking is in a poor condition.
- **Very High Risk**: Describes a material that poses a very high risk of exposure to workers, contractors and the general public working in the area of the material and therefore the area is not suitable for occupancy. Urgent remediation is required (i.e. within 24 hours of identification of the material). There is a likelihood of imminent risk of harm to workers. Generally, sites that require demolition or refurbishment works where the identified material is to be impacted on warrant a very high-risk rating.

8 Priority Risk Rating

The priority risk rating is determined from the likelihood of disturbing the material, the condition of the material and the level of risk to workers, contractors and the general public. The priority risk rating system ranges from 1 to 4, with Priority Risk Rating 1 being the highest and Priority Risk Rating 4 being the lowest.

8.1 Priority Risk Rating 1: High or Very High Risk Potential

Work area has a material, which is either damaged or being exposed to continual disturbance or potential to expose workers to the material. Due to these conditions, there is an increased potential for exposure and to contaminate the work area.

Recommendation usually includes isolation through physical barriers, air monitoring to be undertaken and the material to be promptly removed by an appropriately licensed asbestos contractor or similar. After abatement of the material, a re-inspection or clearance inspection should be conducted by a competent person (e.g. Licensed Asbestos Assessor for asbestos) to confirm that the area has been satisfactorily cleared of the material.

8.2 Priority Risk Rating 2: Hazard with Medium Risk Potential

Work area has a material with a potential for disturbance due to the following conditions:

1. The material, friable or non-friable, bonded or unbonded, has been disturbed or damaged and its current condition is unstable; or
2. The material, friable or non-friable, bonded or unbonded, is accessible and can, when disturbed, present a short-term exposure risk to workers, contractors and the general public; or
3. The material, friable or non-friable, bonded or unbonded, could pose an exposure risk if workers, contractors or the general public are in close proximity.

Recommendations usually include remediation abatement measures to be taken within a 3-month period or less and management through the appropriate management plans and systems.

8.3 Priority Risk Rating 3: Hazard with Low Risk Potential

Work area has a material where:

1. The condition of a material is stable (including friable ACM and unbonded SMF) and has a low potential for disturbance; or
2. The material is non-friable, bonded or in fair condition, however has been damaged, but does not present an exposure risk unless cut, drilled, sanded or otherwise abraded.

Recommendations include remediation of the material and ongoing management of the friable/unbonded and remediated non-friable/bonded materials.

8.4 Priority Risk Rating 4: Hazard with Very Low Risk Potential

The material is in good condition. It is most unlikely that the material can be disturbed from workers in the work area. It is considered the material poses a negligible health risk.

These materials should be maintained in good condition and the condition monitored in accordance with the HBM Register and the HBM Management Plan.

9 Report Limitations

This Survey has been prepared by PRM for the client. The Survey may only be used and relied on by the client and must not be copied to, used by, or relied on by any person other than the client or altered, amended or abbreviated, issued in part or issued incomplete without the prior written consent of PRM. The Survey may only be used for the purpose of the buildings located within the site as described in this report and must not be used for any other purpose.

PRM and its workers otherwise expressly disclaim responsibility to any person other than the client arising from or in connection with the Survey. To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by PRM and the Survey are excluded unless they are expressly stated to apply in the Survey.

The services undertaken by PRM in connection with preparing the Survey were limited to those specifically detailed in the Scope of Works. The opinions, conclusions and any recommendations in the Survey are based on the inspection findings and reviewed documentation only.

Subject to the paragraphs in this section, the opinions, conclusions and any recommendations in the Survey are based on conditions encountered and information reviewed at the time of preparation.

Please note that subsequent to the date of this report, works or site conditions may have resulted in changes to the status of any identified materials, which should have been documented and provided to PRM as a supplement to the Survey.

The data and advice provided herein relate only to the project and structures described in the Survey and must be reviewed by a competent professional before being used for any other purpose. PRM accepts no responsibility for other use of the data.

Where applicable, if a third party conducted survey work, reports (such as laboratory reports) or verbal information that has been relied upon, the data are included and used in the form provided by others. The responsibility for the accuracy of such data remains with the original entity and not with PRM.

PRM expressly disclaims responsibility for any error in, or omission from, the Survey arising from or in connection with any of the Assumptions above being incorrect.

Appendix A: Hazardous Building Materials Register

How to use this Register

Photo Number: The photo in the photolog that corresponds to the material.

Sample ID: The unique identifier of the sample.

Quantity/Metric: Approximate size or area covered by the material.

Re-Inspection Date: The date the material must be re-checked to determine changes to condition. Is based on the friability and risk rating of the material.

Recommendations: Recommended course of action based on the location, type, status, quantity, condition and likelihood of disturbance of the material.

Asbestos Materials Register

Site Details: Corporation Building, 181 - 187 Hay Street, Haymarket NSW 2000 | **Project Reference:** P034249.001 / C0186

Material Location	Material Type	Photo Number	Sampled	Sample ID	Analysis Result	Material Status	Friable / Non-Friable	Quantity, Area or Extent	Unit or Metric	Material Condition	Likelihood of Disturbance	Risk	Priority Risk Rating	Re-Inspection Date	Recommendations / Comments:
Shop 4, ground floor, internal, shop, walls, remnant	textured coatings	1	Yes	070619/AS001	No asbestos detected	Non-asbestos Containing	-	-	-	-	-	-	-	-	Nil recommendations.
Shop 4, ground floor, internal, middle store, ceiling (underside of slab)	bituminous membrane	2	Not sampled: height restriction	-	-	Suspected Positive	Non-Friable	<1 (visible)	m sq	Very good	Unlikely	Very Low	P4	June-24	Confirm status, label as containing asbestos and maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.

Material Status:

Positive	Material has been sampled and found to contain the hazardous material.
Negative	Material has been sampled and found to not contain the hazardous material.
Presumed Positive	Material has not been sampled but is visually similar 'same as:' to another sampled material which returned a positive result for the hazardous material.
Presumed Negative	Material has not been sampled but is visually similar 'same as:' to another sampled material which returned a negative result for the hazardous material.
Suspected Positive	Material has not been sampled but is likely to contain the hazardous material based on its visual appearance/age.
Suspected Negative	Material has not been sampled but is likely to not contain the hazardous material based on its visual appearance/age.

Priority Risk Rating: Calculated based on material condition and the likelihood of disturbance for the material. Four levels of risk are used in PRM's registers:

- P1 – High Risk
- P2 – Moderate Risk
- P3 – Low Risk
- P4 – Very Low Risk

Please Note: The example used in this guide is not exhaustive of the combinations that can be seen in a materials register, and the columns may vary based on the hazardous material in question.

PROGRESSIVE RISK MANAGEMENT

Asbestos Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW											Project Reference:	P036708.001 / C0186	
Material Location	**Material Type**	**Photo Number**	**Sampled**	**Sample ID**	**Analysis Result**	**Material Status**	**Friable / Non-Friable**	**Quantity, Area or Extent**	**Unit or Metric**	**Material Condition**	**Likelihood of Disturbance**	**Risk**	**Priority Risk Rating**	**Re-Inspection Date**	**Recommendations / Comments:**
Abraham Mott Hall, subfloor, internal, packers between supports	Fibre cement sheet	1	Yes	P036708.001 /AS001	No Asbestos Detected	Non Asbestos Containing	-	-	-	-	-	-	-	-	Nil recommendations.
Abraham Mott Hall, ground floor, external, west of kitchen adjacent north hall entrance, eaves	Fibre cement sheeting	2	Not sampled: Height restriction	-	-	Suspected Positive	Non-Friable	20	m2	Very good	Unlikely	Very Low	P4	Jun-29	Confirm status, label as containing asbestos and maintain in current condition if to remain in-situ. Remove under controlled non-friable asbestos removal conditions prior to refurbishment or demolition works by a Class A (friable) or Class B (non-friable) licensed asbestos removal contractor.
End of Register															

PROGRESSIVE RISK MANAGEMENT

Lead Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW	Project Reference:	P036708.001 / C0186

Material Location and Description	Photo Number	Sampled	Material Type	Sample ID	Result	mg/m² or %w/w	Material Status	Quantity, Area or Extent	Unit or Metric	Material Condition	Likelihood of Disturbance	Risk	Priority Risk Rating	Re-Inspection Date	Recommendations / Comments:
Abraham Mott Hall, ground floor , external, gutters, downpipes and doors, Green (dark) - upper coloured paint system	3	Yes	Paint	P036708.001/ LP007	<0.01	% w/w	Non-lead based	-	-	-	-	-	-	-	Not lead-containing paint (<0.1% w/w) as described in AS/NZS 4361.2:2017 Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings.
Abraham Mott Hall, subfloor , internal, floor void hatch, rim , Dust	4	Yes	Dust	P036708.001/ LD002	771.16	mg/kg	Non-lead based	-	-	-	-	-	-	-	Accumulated dust and debris was below the adopted NEPM HIL soil contamination criteria of 1,500 mg/kg for industrial or commercial sites. Monitor accumulations of dust and debris with periodic samples to detect any increase in lead content in dust and debris throughout the site where required.
Abraham Mott Hall, ground floor, external, walls, throughout, White - upper coloured paint system	5	Yes	Paint	P036708.001/ LP006	0.13	% w/w	Lead based	250	m2	Very good	Unlikely	Very Low	P4	Jun-29	Maintain in current condition, over paint with a lead-free paint as part of ongoing maintenance. Remove under controlled conditions in accordance with AS/NZS 4361.2:2017 Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings prior to renovation or demolition works.
Abraham Mott Hall, ground floor, internal, ceiling and support structures, Red - upper coloured paint system	6	Not sampled: Height Restriction	Paint	-	-	-	Suspected Lead Based	50	m2	Very good	Unlikely	Very Low	P4	Jun-29	Confirm status, ensure sampling by a compentant person prior to intrusive or remedial works commencing.
Abraham Mott Hall, ground floor , internal, walls, throughout, White - upper coloured paint system	7	Yes	Paint	P036708.001/ LP001	3	% w/w	Lead based	500	m2	Very good	Unlikely	Very Low	P4	Jun-29	Maintain in current condition, over paint with a lead-free paint as part of ongoing maintenance. Remove under controlled conditions in accordance with AS/NZS 4361.2:2017 Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings prior to renovation or demolition works.
Abraham Mott Hall, ground floor, internal, window frames and doors, Cream - upper coloured paint system	8	Yes	Paint	P036708.001/ LP002	<0.01	% w/w	Non-lead based	-	-	-	-	-	-	-	Not lead-containing paint (<0.1% w/w) as described in AS/NZS 4361.2:2017 Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings.
Abraham Mott Hall, ground floor, internal, south east store room, window frames and doors, White - upper coloured paint system	9	Yes	Paint	P036708.001/ LP003	0.26	% w/w	Lead based	5	m2	Very good	Unlikely	Very Low	P4	Jun-29	Maintain in current condition, over paint with a lead-free paint as part of ongoing maintenance. Remove under controlled conditions in accordance with AS/NZS 4361.2:2017 Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings prior to renovation or demolition works.

PROGRESSIVE RISK MANAGEMENT

Lead Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW											Project Reference:	P036708.001 / C0186	
Material Location and Description	**Photo Number**	**Sampled**	**Material Type**	**Sample ID**	**Result**	**mg/m² or %w/w**	**Material Status**	**Quantity, Area or Extent**	**Unit or Metric**	**Material Condition**	**Likelihood of Disturbance**	**Risk**	**Priority Risk Rating**	**Re-Inspection Date**	**Recommendations / Comments:**
Abraham Mott Hall, ground floor , internal, south east corner of hall, south store room, window sill, Dust	10	Yes	Dust	P036708.001/ LD001	1015.36	mg/kg	Non-lead based	-	-	-	-	-	-	-	Accumulated dust and debris was below the adopted NEPM HIL soil contamination criteria of 1,500 mg/kg for industrial or commercial sites. Monitor accumulations of dust and debris with periodic samples to detect any increase in lead content in dust and debris throughout the site where required.
Abraham Mott Hall, ground floor , internal, under stage, floor surfaces, Dust	11	Yes	Dust	P036708.001/ LD003	780.26	mg/kg	Non-lead based	-	-	-	-	-	-	-	Accumulated dust and debris was below the adopted NEPM HIL soil contamination criteria of 1,500 mg/kg for industrial or commercial sites. Monitor accumulations of dust and debris with periodic samples to detect any increase in lead content in dust and debris throughout the site where required.
End of Register															

PROGRESSIVE RISK MANAGEMENT

SMF Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW											Project Reference:	P036708.001 / C0186
Material Location and Description	**Photo Number**	**Visually Confirmed**	**Sample ID**	**Sample Analysis Result**	**Material Status**	**Bonded / Unbonded**	**Quantity, Area or Extent**	**Unit or Metric**	**Material Condition**	**Likelihood of Disturbance**	**Risk**	**Priority Risk Rating**	**Re-Inspection Date**	**Recommendations / Comments:**
Abraham Mott Hall, ground floor , external, south of hall, on wall, gas heating unit , Insulation material - internal	12	Yes	-	Not sampled due to known material	SMF containing	Bonded	1	units	Very good	Unlikely	Very Low	P4	Jun-29	Maintain in current condition if to remain in-situ. Remove under controlled SMF conditions as per the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
Abraham Mott Hall, ground floor , internal, northern store room, south east corner of hall, hot water heater, Insulation material - internal	13	Yes	-	Not sampled due to known material	SMF containing	Bonded	1	units	Very good	Unlikely	Very Low	P4	Jun-29	Maintain in current condition if to remain in-situ. Remove under controlled SMF conditions as per the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].
End of Register														

PCB Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW										Project Reference:			P036708.001 / C0186
Material Location and Description	**Photo Number**	**Visually Inspected**	**Capacitor Model / Make**	**ANZECC Register Listing**	**Positive / Suspected / Negative**	**Material Status**	**Quantity**	**Units**	**Material Condition**	**Likelihood of Disturbance**	**Risk**	**Priority Risk Rating**	**Re-Inspection Date**	**Recommendations / Comments:**
There were no suspected PCB materials identified at the time of inspection.														
End of Register														

PROGRESSIVE RISK MANAGEMENT

ODS Materials Register

Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW										Project Reference:			P036708.001 / C0186
Material Location and Description	**Photo Number**	**Visually Inspected**	**Model / Make**	**Refrigerant Type**	**Positive / Suspected / Negative**	**ODS Status**	**Quantity**	**Units**	**Material Condition**	**Likelihood of Disturbance**	**Risk**	**Priority Risk Rating**	**Re-Inspection Date**	**Recommendations / Comments:**
Abraham Mott Hall, ground floor, external, south of hall, on wall, a/c unit	14	Yes	LG	R410a hydrofluorocarbon (hfc)	Negative	No ODS present	-	-	-	-	-	-	-	Hydrofluorocarbon (HFC) non ozone depleting substances.
End of Register														

No Access Locations			
Site Details:	Abraham Mott Hall, 2 Watson Road, Millers Point NSW		
Location Description	**Reason for No Access During Audit**	**Photo Number**	**Recommendations / Comments:**
Abraham Mott Hall, roof, external, roof and associated areas throughout	No safe access granted.	15	Prior to any intrusive works commencing in this area, access should be arranged and an audit conducted by a competent asbestos contractor.
Abraham Mott Hall, ground floor, internal, ceiling and support structures	No safe access granted.	16	Prior to any intrusive works commencing in this area, access should be arranged and an audit conducted by a competent asbestos contractor.
End of Register			

Appendix B: Photographic Log

Photographic Log

Site:	2 Watson Road, Millers Point NSW	**Project Details:**	P036708.001

Photo 1:	Abraham Mott Hall, subfloor, internal, packers between supports - Non Asbestos Containing Fibre cement sheet

Photo 2:	Abraham Mott Hall, ground floor, external, west of kitchen adjacent north hall entrance, eaves - Suspected Positive Fibre cement sheeting

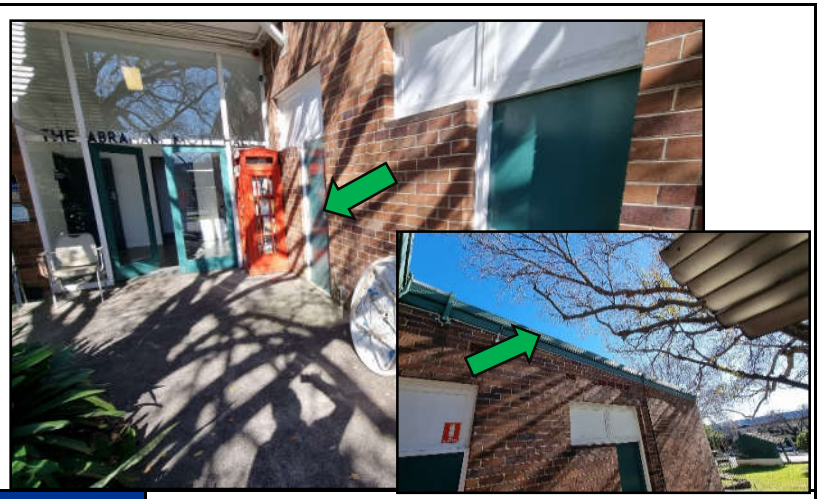

Photo 3:	Abraham Mott Hall, ground floor , external, gutters, downpipes and doors - Non-lead based Green (dark) - upper coloured paint system

Photo 4:	Abraham Mott Hall, subfloor , internal, floor void hatch, rim - Non-lead based Dust

Photographic Log			
Site:	2 Watson Road, Millers Point NSW	**Project Details:**	P036708.001

Photo 5:	Abraham Mott Hall, ground floor, external, walls, throughout - Lead based White - upper coloured paint system

Photo 6:	Abraham Mott Hall, ground floor, internal, ceiling and support structures - Suspected Lead Based Red - upper coloured paint system

Photo 7:	Abraham Mott Hall, ground floor , internal, walls, throughout - Lead based White - upper coloured paint system

Photo 8:	Abraham Mott Hall, ground floor, internal, window frames and doors - Non-lead based Cream - upper coloured paint system

Photographic Log			
Site:	2 Watson Road, Millers Point NSW	**Project Details:**	P036708.001

Photo 9: Abraham Mott Hall, ground floor, internal, south east store room, window frames and doors - Lead based White - upper coloured paint system

Photo 10: Abraham Mott Hall, ground floor , internal, south east corner of hall, south store room, window sill - Non-lead based Dust

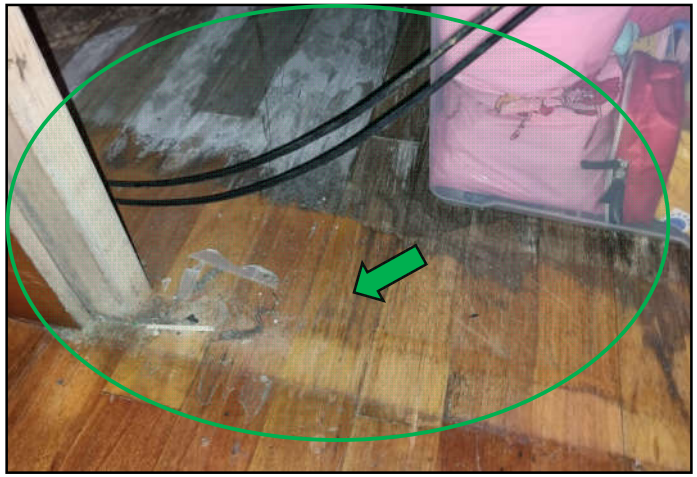

Photo 11: Abraham Mott Hall, ground floor , internal, under stage, floor surfaces - Non-lead based Dust

Photo 12: Abraham Mott Hall, ground floor , external, south of hall, on wall, gas heating unit - SMF containing Insulation material - internal

Photographic Log			
Site:	2 Watson Road, Millers Point NSW	**Project Details:**	P036708.001

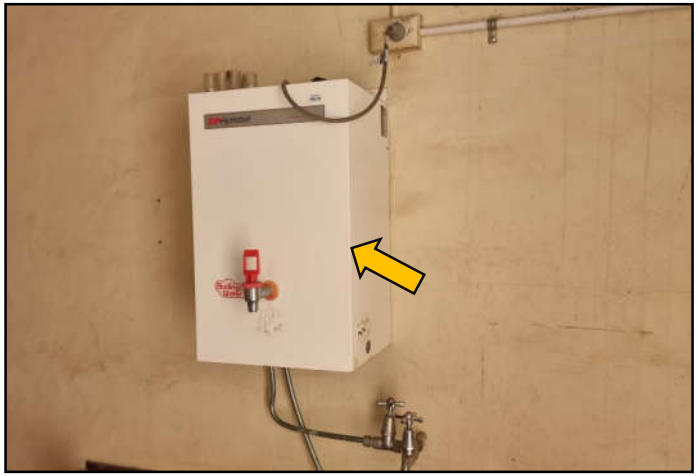

Photo 13:	Abraham Mott Hall, ground floor , internal, northern store room, south east corner of hall, hot water heater - SMF containing Insulation material - internal

Photo 14:	Abraham Mott Hall, ground floor, external, south of hall, on wall, a/c unit - LG - R410a hydrofluorocarbon (hfc) No ODS present

Photo 15:	Abraham Mott Hall, roof, external, roof and associated areas throughout - No safe access granted.

Photo 16:	Abraham Mott Hall, ground floor, internal, ceiling and support structures - No safe access granted.

End of Photolog

Appendix C: Survey Recommendations

Survey Recommendations

In general, recommendations are based upon the following broad site-based scenarios:

- On-going management of the site and the health risks associated with HBM present within the property.
- Demolition of the property and the health risks associated with the removal of the HBM, present within the site, prior to demolition.

The recommendations detailed within the HBM Register, as well as summarised within the Survey report, factor in various parameters associated with the material, including the scenarios listed above.

Ongoing General HBM Management Strategies

The following recommendations are provided for the management of the HBM to be managed in-situ within the building structure:

- Label all ACM or areas suspected of containing ACM with asbestos warning labels to provide signage and awareness for personnel as per AS1319:1994 and Clause 424, Section 8.3 of the NSW *WHS Regulation 2017*.
- Re-inspect the ACM and other HBM and update the HBM Audit as per the HBM Register, due to the nature and friability of the ACM and HBM identified on the site by a competent person or Licensed Asbestos Assessor in accordance with legislative requirements.
- Manage the ACM and HBM within the site in accordance with the sites HMMP and associated documentation.
- Train workers, contractors and other staff in Asbestos and HBM awareness training as per Chapter 8 of the NSW *WHS Regulation 2017*. Training should cover topics such as, but not limited to, emergency management, worker responsibilities, health effects, management strategies.

Inaccessible Areas Management Strategies

The following recommendations are provided for the management of the HBM that were inaccessible at the time of the Survey taking place:

- Engage a competent person or a Licenced Asbestos Assessor to confirm the status of any suspected ACM or HBM unable to be sampled at the time of this Survey, prior to any planned demolition or refurbishment works.
- Should suspect ACM or HBM be identified during future works that are not identified within the HBM Register, then the material should be sampled and analysed for the suspected hazard by a competent person or Licensed Asbestos Assessor.
- If any works with potential to disturb any suspect materials are likely to occur, the works are to cease, and the area is to be made safe. If the suspect material has already been disturbed, then the overarching provisions of the HBM Management Plan, is to be followed, including advice sought from a competent person or Licensed Asbestos Assessor.
- Prior to planned demolition or refurbishment works, undertake a Destructive HBM Survey as per AS2601:2001 and the NSW Code of Practice: *Demolition Works 2019.*

Removal Management Strategies

The following recommendations are provided as general removal management strategies for any proposed or future removal works with HBM. Any Priority P1, P2 or P3 Risk Ratings should be referred to the HBM Register for specific removal strategies for the particular HBM:

Asbestos Containing Materials

- Engage a Class A (friable) or Class B (non-friable) licensed asbestos contractor to remove all non-friable ACM within the site prior to planned refurbishment or demolition works under controlled condition.
- Engage a Licensed Asbestos Assessor to conduct control asbestos fibre air monitoring during asbestos remediation works, clearance asbestos fibre air monitoring, a visual clearance inspection and issue a clearance certificate at the conclusion of the asbestos remediation works.

Lead Containing Paint

- Exposure risk remains for paint below 1% w/w lead content. Disturbing paint with lead content as low as 0.1% w/w requires control measures and personal protective equipment considerations. Further risk assessment required prior to maintenance or refurbishment works.
- If the LCP is flaking or in a poor/unstable condition, repainting is recommended as soon as practicable. The surface may be prepared by using wet sanding techniques. Take care not to generate LCD or contaminate the immediate workplace or environment with water from the wet-sanding process.
- Painting over LCP is a temporary solution limited by the life of the paint. Alternatives to painting or the removal of LCP include encapsulating the paint with other materials.
- LCP in good condition should be left in place, unless major renovation and/or comprehensive refurbishment works are planned.
- Prior to demolition works, LCPs may be disposed of attached to the substrates as long as they are in good condition. If the LCPs are chalking or delaminating, the paint residues should be removed from the substrates in accordance with AS/NZS4361.2:2017 and the waste must be disposed of as a lead containing material in accordance with the NSW Environmental Protection Authority (EPA) requirements.
- An occupational hygienist should be engaged to conduct lead dust air monitoring during the removal works to ensure airborne lead concentrations do not exceed the current occupational exposure standard of 0.05 mg/m^3.

Synthetic Mineral Fibre Materials

- Engage a suitable contractor to remove all bonded and unbonded SMF materials within the site prior to planned refurbishment or demolition works under controlled condition in accordance with NOHSC: 2006 (1990).

Register Review

Review of the ACM or HBM Register is required so that it remains current and workers and contractors can rely upon it as an accurate representation of the materials present at the site. In order to continually improve the completeness and accuracy of the HBM Register, it is recommended the following is undertaken:

- Action and document the management recommendations made within the Register, particularly where an elevated risk is present.
- Add entries related to additional testing of suspect materials, if conducted.
- Undertake re-inspection surveys to determine the presence of ACM or HBM that were not accessible.
- Record the removal or demolition of ACM or HBM within the site.
- Undertake a re-inspection survey as per the register to maintain the register and review the level of risk assigned to the particular instance of the materials identified.
- Record removal and maintenance of any HBM within the site.
- Distribute or otherwise make available all HBM surveys, registers or other relevant information to all workers, contractors and maintenance people or companies with potential to disturb or work with known or presumed ACM or HBM.

Appendix D: NATA Accredited Laboratory Report

Certificate of Analysis | Asbestos Sample Report

Certificate of Analysis:	
Number:	P036708.001
Date Issued:	Wednesday, 26 June 2024

External Client Details:	
Client Name:	Ventia
Client Address:	Level 21, 456 Kent Street, Sydney NSW
Client Contact:	Ashley Wood
Contact Details:	ashley.remnant@ventia.com

Internal PRM Project Details:	
Reference:	P036708.001
Site Details:	Abraham Mott Hall | 2 Watson Road, Millers Point NSW
Sampled By:	Andrew Bainton and Jessica Hughan
Sampling Date:	Wednesday, 19 June 2024

Test Method and Notes:

Progressive Risk Management (PRM) qualitatively analyses bulk samples for asbestos, synthetic mineral fibre and organic fibre. All sample analysis was perform using polarised light microscopy including dispersion staining and trace analysis at our Sydney Laboratory in accordance with Australian Standard (AS) 4964 – 2004 and in accordance with in house method PRMLAB004 Asbestos Bulk Sample Analysis Test Method.

Sampling where conducted by PRM is performed in accordance with Friable and Non-Friable Asbestos Sampling in house methods OPR011 and OPR014 respectively, and in accordance with AS 4964 - 2004. Where sampling and/or sub-sampling is performed by the client, responsibilities relating to these activities lie with the client and samples are tested as received.

The results of the asbestos identification analysis are presented in the appended table. Accreditation covers testing activities only, sampling activity is outside the scope of ISO 17025 accreditation. Results relate only to the items tested and are for the sole use by the client.

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accreditation No. 20368, Site No. 24388 PRM Laboratory.
This document shall not be reproduced except in full.

Analysis Laboratory and Dates:	
Laboratory:	PRM Sydney Laboratory: 14/76 Reserve Road, Artarmon NSW
Number of Samples:	6
Received:	Wednesday, 19 June 2024
Analysed:	Tuesday, 25 June 2024

Report Version:	
Version:	VerA

Approval:	Approved Asbestos Identifier	Signatory
Signature:		
Name:	Vince Nguyen	Vince Nguyen

Certificate of Analysis | Asbestos Sample Report

Certificate of Analysis:	
Certificate Number:	P036708.001

Sample Analysis Results:

Lab ID:	External Client ID:	Location Description:	Sample Description:	Weight (g) or Dimensions (mm x mm x mm):	Analysis Results:	Trace Results:
1	P036708.001/AS001	Internal, Abraham Mott Hall, subfloor , subfloor void, packers between supports - Fibre cement sheet	Unpainted gold-grey compressed fibre-cement sheet material	~ 0.8 g	No asbestos detected + Organic fibres detected	No asbestos detected
2	P036708.001/AS002	Internal, Harry Jensen Activity Centre, ground floor, storeroom north of electrical switchroom, ground floor, ceiling lining - Fibre cement sheeting	White-painted grey compacted fibre-cement sheet material	~ 0.9 g	Chrysotile asbestos + Amosite asbestos + Crocidolite asbestos detected	N/A
3	P036708.001/AS003	External, Harry Jensen Activity Centre, ground floor, laundry block, verandah ceiling lining - Fibre cement sheeting	White-painted grey compacted fibre-cement sheet material	~ 4.1 g	Chrysotile asbestos + Amosite asbestos + Crocidolite asbestos detected	N/A
4	P036708.001/AS004	Internal, Harry Jensen Activity Centre, ground floor, laundry block, east room, ceiling lining	White-painted grey compacted fibre-cement sheet material	~ 1.0 g	Chrysotile asbestos + Amosite asbestos detected	N/A
5	P036708.001/AS005	Internal, Harry Jensen Activity Centre, ground floor, storage annex, east of kitchen, eaves	Grey-painted grey compacted fibre-cement sheet material	~ 1.0 g	Chrysotile asbestos + Amosite asbestos + Crocidolite asbestos detected	N/A
6	P036708.001/AS006	External, Harry Jensen Activity Centre, ground floor, all exterior eaves	White-painted grey compacted fibre-cement sheet material	~ 9.6 g	Chrysotile asbestos + Amosite asbestos detected	N/A

Appendix E: XRF Laboratory Reports

Progressive Risk Management
Unit 14, 76 Reserve Road
Artarmon NSW 2064

XRF - Certificate of Analysis

Project Details:			
Client Name:	Ventia		
Client Address:	Level 21, 456 Kent Street, Sydney NSW		
Project Reference:	P036708.001 / C0186		
Site Address:	2 Watson Road, Millers Point NSW		
Site Asset ID:	-	**Site Name:**	Abraham Mott Hall

Sample Details:	
Number of Samples:	7
Date sampled:	Wednesday, 19 June 2024

Methodology:

Paint chips/scrapings were analysed using a X-ray Fluorescence (XRF) Spectrometer - Niton XL3t 950 GOLDD+ by an EPA Radiation Licensed User.

The analysis was conducted in accordance with the Australian & New Zealand Standard (AS/NZS) 4361.1: 2017 Guide to Hazardous Paint Management Part 1: Lead and other hazardous metallic pigments in industrial applications.

Analysis Results:

Sample Number	XRF Reference	Type of Sample	Date analysed	Lead (%w/w)
P036708.001/LP001	167	Paint	24/01/1900	3.00
P036708.001/LP002	171	Paint	24/01/1900	<0.01
P036708.001/LP003	175	Paint	24/01/1900	0.26
P036708.001/LP004	179	Paint	24/01/1900	0.50
P036708.001/LP005	183	Paint	24/01/1900	0.06
P036708.001/LP006	187	Paint	24/01/1900	0.13
P036708.001/LP007	191	Paint	24/01/1900	<0.01

	Analysed by:	Reviewed by:
Signature:		
Name:	Vince Nguyen	Andrew Bainton
Position:	Laboratory Coordinator	Consultant
Date:	24/01/1900	26/06/2024

Progressive Risk Management
Unit 14, 76 Reserve Road
Artarmon NSW 2064

XRF - Certificate of Analysis

Project Details:			
Client Name:	Ventia		
Client Address:	Level 21, 456 Kent Street, Sydney NSW		
Project Reference:	P036708.001 / C0186		
Site Address:	2 Watson Road, Millers Point NSW		
Site Asset ID:	-	**Site Name:**	Abraham Mott Hall

Sample Details:	
Number of Samples:	3
Date sampled:	Wednesday, 19 June 2024

Methodology:

Soil samples were analysed using a X-ray Fluorescence (XRF) Spectrometer - Niton XL3t 950 GOLDD+ by an EPA Radiation Licensed User.

The analysis was conducted in accordance with the Australian & New Zealand Standard (AS/NZS) 4361.1: 2017 Guide to Hazardous Paint Management Part 1: Lead and other hazardous metallic pigments in industrial applications.

Analysis Results:

Sample Number	XRF Reference	Type of Sample	Date analysed	Lead (mg/kg)
P036708.001/LD001	195	Dust	24/06/2024	1015.36
P036708.001/LD002	199	Dust	24/06/2024	771.16
P036708.001/LD003	203	Dust	24/06/2024	780.26

	Analysed by:	Authorised by:
Signature:		
Name:	Vince Nguyen	Andrew Bainton
Position:	Laboratory Coordinator	Consultant
Date:	24/06/2024	26/06/2024

CITY OF SYDNEY

PROGRESSIVE RISK MANAGEMENT

Hazardous Materials Management Plan

Ventia Pty Ltd

City of Sydney

P035974.001 / C0186

May 2023

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Appendix A – Risk Assessment Criteria
Appendix B – Forms

Document Control

Project Details	
Project Name:	Hazardous Materials Management Plan
Client Address:	Entire Property Portfolio
Client Name:	Ventia
Project Reference:	P035974.001 / C0186

Report Version:					
Version Date:	Review Process:			Issued to:	Summary of changes from previous version:
	Prepared:	Reviewed:	Approved:		
VerA:Draft 11/10/2022	CJM	JJC	JJC	Ventia	-
VerB:Draft 3/05/2023	CJM	JJC	JJC	Ventia	Added additional hazardous materials (SMF, PCB, CFC's). Addressed client comments.
VerA: Final 19/06/2023	CJM	JJC	JJC	Ventia	No changes. Final issue of report.

Report Review: VerA Final					
Prepared by:		Technical Review by:		Authorised for Issue by:	
Name:	Calum Mathewson	Name:	Jared Clifford	Name:	Jared Clifford
Position:	Consultant	Position:	Principal Consultant	Position:	Principal Consultant
Date:	19/06/2023	Date:	19/06/2023	Date:	19/06/2023

Key Terms

Term	Meaning
Airborne asbestos	Any fibres of asbestos small enough to be made airborne. For the purposes of monitoring airborne asbestos fibres, only respirable fibres or fibres of similar type are counted.
Asbestos	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 containing material (ACM) means any material or thing that, as part of its design, contains asbestos.
Asbestos Containing Material (ACM)	Any material that contains asbestos fibres.
Asbestos-contaminated dust or debris (ACD)	Dust or debris that has settled within a workplace and is (or assumed to be) contaminated with asbestos.
Asbestos-related work	Work involving asbestos (other than asbestos removal work to which Part 8.7 of the WHS Regulations applies) that is permitted under the exceptions set out in regulation 419(3), (4) and (5).
Asbestos removal contractor	A person conducting a business or undertaking who carries out asbestos removal work. Asbestos removalists are licenced in NSW by SafeWork NSW and defined in one of two categories as: • Class A – Can conduct friable and non-friable removal work. • Class B – Can conduct non-friable removal work only.
Asbestos Removal Control Plan (ARCP)	A plan that describes the step by step process of how the removal of friable or non-friable asbestos is to take place and also describes the specific controls which are to be implemented for each step. An ARCP is required for all ACM licensed asbestos removal works
City	City of Sydney Council
City Worker	Worker working directly for City of Sydney within City property.
Contractor	Worker engaged outside of the City of Sydney organisation, conducting works on City of Sydney property.
CoP: Management	SafeWork NSW approved Code of Practice: How to Manage and Control Asbestos in the Workplace, 2019
CoP: Removal	SafeWork NSW approved Code of Practice: How to Safely Remove Asbestos, 2019

Term	Meaning
Competent person	A person who has acquired, through training, qualification or experience, the knowledge and skills to carry out the task as defined under the Regulation.
Exposure standard	The asbestos exposure standard is a respirable fibre level of 0.1 fibres/ml of air measured in a person's breathing zone and expressed as a time weighted average fibre concentration calculated over an eight-hour working day and measured over a minimum period of four hours in accordance with: • the Membrane Filter Method. • a method determined by the relevant regulator.
Friable asbestos	Material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos (see also *non-friable* asbestos).
Hazard	Describes something that has the potential to cause harm.
Hazardous Materials Register (HMR)	A component of the Hazardous Materials Survey Report This Register contains all information of identified hazardous materials at City sites as required by the Regulation.
Hazardous Materials (HM)	Defined within the scope of work as being: • Asbestos Containing Materials (ACM). • Asbestos Contaminated Dusts (ACD). • Lead Containing Paint (LCP). • Lead Containing Dusts (LCD). • Synthetic Mineral Fibre (SMF) containing materials. • Polychlorinated Biphenyls (PCB) containing capacitors in fluorescent light fittings. • Ozone Depleting Substances (ODS)
Health and Safety Representative (HSR)	Health and Safety Representatives (HSRs) are elected to represent workers in a 'work group' on health and safety matters.
Lead Containing Paint (LCP)	A paint system that contains equal to or great than 0.1% lead (weight for weight as a dry mass) as defined by Australian and New Zealand Standard (AS/NZS) 4361.2:2017 *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings*
Lead Containing Dust (LCD)	Significant accumulated dusts that contain lead in a concentration greater than 1500 mg/kg. There is limited guidance for lead containing dusts; as such, PRM has adopted an action criteria of 1500 mg/kg from the National Environmental Protection Measure, 1999 (updated 2013) as a trigger for management of dusts.
Lead Process	As defined within the Regulation, a Lead Process involves work undertaken with materials containing equal to, or great than 1% lead. For the purpose of this HMMP, a lead process applies to LCD with a concentration of 10,000 mg/kg or greater.
Licenced Asbestos Assessor	A person holding an assessor licence (recognised in NSW) to carry out air monitoring, clearance inspections and issue clearance certificates for friable asbestos removal works.

Term	Meaning
Managing Agent	A person with charge of the management of specific City assets. Duties include, but are not limited to: • Assessments of City property conditions and engaging contractors to fix broken equipment • Management of site-specific documentation and induction registers for workers' attending site.
Membrane Filter Method (MFM)	National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd Edition [NOHSC: 3003(2005)].*
NATA-accredited laboratory	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 asbestos	Material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound (see also *friable* asbestos).
Ozone Depleting Substances (ODS)	Gaseous compounds including chlorofluorocarbons (CFC), halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons (HCFC) or mixtures of these used in refrigeration.
Person Conducting a Business or Undertaking (PCBU)	Any person conducting a business or undertaking as defined by the Act and Regulation. For the purpose of the HMMP, the client is defined as the PCBU.
Poly Chlorinated Biphenyls (PCB)	For the purpose of this HMMP, PCB materials are specified as capacitors or ballasts contained with light fittings or electrical components that contains PCB oils (as an insulating media).
Respirable asbestos fibres	Asbestos fibre or fibres of similar type 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	Describes the probability with due consideration to the severity and consequence of a hazard.
SafeWork Australia	Former National Occupational Health and Safety Commission (NOHSC). The Regulatory body responsible for the development of the Work Health and Safety (WHS) legislation then applied by each state and territory operating under the WHS legislation.
SafeWork NSW	Formerly WorkCover NSW. The Regulator responsible for the development of the WHS legislation in New South Wales.
Stakeholders	Refers to individuals present on, or responsible for, City property. This includes: • Managing agents • Property / Portfolio Managers • City workers • Contractors

Term	Meaning
The *Act*	NSW *Work Health and Safety Act, 2011*
The *Regulation*	NSW *Work Health and Safety Regulation, 2017*
Worker	Any individual performing work at City sites including general maintenance or asbestos removal work and applies to direct employees as well as contractors.

1. Introduction

Progressive Risk Management (PRM) was engaged by Ventia (the client) to develop this Hazardous Materials Management Plan (HMMP) to assist the City of Sydney (City) to manage Hazardous Building Materials (HBMs) present at City-owned sites across the CoS Local Government Area (LGA)

This HMMP has been commissioned to fulfill legislative requirements, and to enable the appropriate management of the following Hazardous Building Materials (HBM):

- Asbestos Containing Materials (ACM).
- Asbestos Contaminated Dusts (ACD).
- Lead Containing Paint (LCP).
- Lead Containing Dusts (LCD).
- Synthetic Mineral Fibre (SMF) containing materials.
- Polychlorinated Biphenyls (PCB) containing capacitors in fluorescent light fittings.
- Ozone Depleting Substances (ODS).

The HBM's listed are potentially present within City-owned sites across the CoS Local Government Area (LGA). This HMMP has been written to assist the City Stakeholders in the responsible and safe management of HBM's within the workplace and ensure that the City complies with current New South Wales state legislation, industry standards, codes of practice and guidance documents for the management of hazardous materials in workplaces.

Sections contained within this HMMP provide information and guidance on:

- The identification of HBM at the site.
- Guidance on management of hazardous materials in the workplace and associated decisions to provide a safe working procedure, control measure and training for Stakeholders.
- Clarification of the protocols, roles and responsibilities as they relate to HBM.
- Emergency procedures for accidents or incidents relating to HBM.
- Workers undertaking any hazardous materials related work.

Information contained within this HMMP has been provided to meet the above mandatory requirements, as well as facilitate the overall effective management of HBM within City sites. This HMMP should be read in conjunction with any procedures and protocols specific and any site-specific Hazardous Materials Survey and Registers report available on City sites.

2. Objective

The objective of this HMMP is to manage hazardous materials at the site and minimise the risk of exposure to hazardous materials for employees, contractors and subcontractors that work at the sites.

To accomplish this objective, the HMMP specifies work practices and procedures to:

- Maintain the hazardous materials in good condition.
- Ensure the implementation of control strategies.
- Monitor the condition of the hazardous materials.
- Minimise the possibility of accidental damage or exposure of personnel and others, to hazardous materials.
- Ongoing management strategies for hazardous materials at the site.

The HMMP has been developed for the site and all site occupants. The HMMP is to be referred to and after a suitable training program, the City expects all site personnel to understand their responsibilities with regards to the HMMP. This HMMP has been developed solely for the use of the City at their sites.

The HMMP must be made available to, and understood by, all persons involved in the management and operation of the site. Personnel at the site, nominated to have responsibilities under this HMMP, should be aware of the presence of hazardous materials at the site and the associated management requirements.

The HMMP should be referred to regularly and updated and maintained by the Managing Agent (See Section 4 for further information) when any hazardous materials are disturbed, removed or repaired. The HMMP should be updated on a regular basis by a competent person or hygienist/asbestos assessor, as nominated by the Managing Agent.

2.1 Previous Reports, Surveys and Management Plans

The HMMP is to be read in full, in conjunction with the Hazardous Materials Survey and Registers prepared for the City for each site independently.

All records, including the HBM register, results of inspection and analysis, any work done on the HBM's (such as encapsulation or removal), disposal records, details of the contractor engaged to do the work, permits for removal, air monitoring results and work clearance certificates should be provided to the building management agent to maintain, store and make available to others in a manner consistent with the record-keeping framework.

2.2 Legislative Requirements and Reference Documents

In order to achieve the above objective, PRM was engaged to prepare an HMMP consistent with the following Legislative Requirements:

- NSW *Work Health and Safety Act,* 2011: updated 1 July 2019 (the Act).
- NSW *Work Health and Safety Regulation*, 2017: updated 1 July 2019 (the Regulation).
- NSW *Protection of the Environment Operations Act* 1997 (POEO Act).
- NSW *Protection of the Environment Operations (Waste) Regulation* 2014 (the Regulation: Waste).
- SafeWork NSW Code of Practice: *How to Manage and Control Asbestos in the Workplace* 2022 (CoP: Management).
- SafeWork NSW Code of Practice: *How to Safely Remove Asbestos* 2022 (CoP: Removal).
- Safe Work Australia's Minor contamination' of asbestos-containing dust or debris fact sheet 2013.
- Australian Standard (AS) 4964:2004 *Method for the qualitative identification of asbestos in bulk samples.*
- Australian Standard (AS)4361.2:1998, *Guide to Lead Paint Management; Part 2 Residential and Commercial Buildings* (AS4361.2:1998).
- Australian and New Zealand Standard (AS/NZS) 4361.2:2017 *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings* (AS/NZS4361.2:2017).
- Australian Standard (AS)4874:2000, *Guide to the Investigation of Potentially Contaminated Soil and Deposited Dust as a Source of Lead Available to Humans* (AS4874:2000).
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPM); Schedule B7.
- National Occupational Health and Safety Commission (NOHSC), *Code of Practice for the safe use of Synthetic Mineral Fibres* [NOHSC:2006 (1990)].
- Australian and New Zealand Environment and Conservation Council (ANZECC) *Identification of PCB-containing capacitors*, 1997.
- Australian and New Zealand Environment and Conservation Council (ANZECC), *Polychlorinated Biphenyls Management Plan*, Revised Edition April 2003.

- Western Australia, Department of Occupational Health Safety & Welfare, *Safe handling of PCBs in fluorescent light capacitors* 1993.
- Australian and New Zealand Standard (AS/NZS) 1716:2012 *Respiratory Protective Devices.*
- Australian and New Zealand Standard (AS/NZS) 1715:2009 *Selection, use and maintenance of respiratory equipment.*
- Australian Standard (AS)1319:1994, *Safety Signs for the Occupational Environment* (AS1319:1994).
- AS/NZS 1337.1:2010; Personal eye protection, eye and face protectors for occupational applications.
- Australian Institute of Occupational Hygienists Inc. (AIOH), Position Paper: *Asbestos and its potential for Occupational Health Issues*, 2016.
- The Australian Institute of Occupational Hygienists Inc. (AIOH), Position Paper: *Synthetic Mineral Fibres (SMF) and Occupational Health Issues*, 2016.
- National Occupational Health and Safety Commission (NOHSC), *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition* [NOHSC:3003(2005)].
- National Occupational Health & Safety Commission (NOHSC), *Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres* [NOHSC: 3006(1989)].
- Montreal Protocol on Substances that Deplete the Ozone Layer.
- United Nations Environment Programme's Division of Technology, Industry and Economics (UNEP DTIE) *Inventory of Trade Names of Chemical Products Containing Ozone Depleting Substances and their Alternatives.*
- Australian Institute of Refrigeration Air Conditioning and Heating Inc (AIRAH) Air Conditioning and Refrigeration Industry Refrigeration Selection Guide 2003.
- Ozone Protection and Synthetic Greenhouse Gas Management Amendment Regulation 2012.
- Australian Chlorofluorocarbon Management Strategy (ACMS), 2001.
- Ozone Protection Regulation, 1997
- AS1319:1994 Safety Signs for the Occupational Environment (AS1319:1994).

3. Hazardous Building Materials

3.1 Asbestos

ACMs were used extensively within residential and commercial buildings and structures, plant and equipment in Australia between 1950 and 1990. However, the use of ACM was phased out during the 1980s – 1990s as a result of growing awareness of the health risks associated with exposure to asbestos. Despite the reduction in private and commercial use of asbestos, the import, storage, supply, sale, installation or reuse of ACM was not legislated until 31 December 2003.

The versatile use of asbestos as a strengthening, water proofing and heat insulating agent resulted in its application to over 3,000 products and materials. Some of the most common uses for asbestos include ACM include:

- Brakes, gaskets and other friction materials and gaskets.
- Cements for conduits or wall and roof panelling.
- Corrugated roofing.
- Vinyl floor tiles.
- Sprayed (loose) insulation.
- Heat resisters and insulation within air conditioning units, ovens and fire doors.
- Pipe insulation.

- Woven products including gaskets and bandaging insulation.
- Electrical backing boards.

3.1.1 Heath Effects – Asbestos

The human health effects from long-term unsafe asbestos exposure are well documented and have been linked with respiratory and other diseases.

The very properties of the asbestos minerals that make them industrially useful, contribute to their potential to cause disease. The health effects from exposure to asbestos result from the inhalation of asbestos fibres in the respirable size range.

Respirable asbestos fibres have the following geometric criteria:

- Length - greater than 5 micrometres.
- Width - less than 3 micrometres in width.
- Aspect ratio (length:width ratio) greater than 3:1.

The respirable fibres possess the aerodynamic characteristics that allow them to travel in an air stream and penetrate deep into the small airways of the lungs, to the gas exchange regions (called the alveoli).

The asbestos properties of greatest biological significance are its fibrous nature and biopersistence (durability in the lungs). The fibrous nature and formation in bundles of separable fibrils allows the production of large numbers of respirable asbestos fibres.

The chemical composition, shape and structure of asbestos fibres makes them resistant to attack from biological fluids and mechanisms, and hence very biopersistent. The biopersistence is relevant in terms of residence time in the lungs with consequent greater potential for damage

When airborne, asbestos fibres can be easily inhaled and carried into the lower regions of the lung where they can cause fibrotic lung disease (asbestosis) and changes in the lining of the chest cavity (pleura). These diseases can lead to reduced respiratory function and death. Long-term inhalation of asbestos fibres also increases the risk of lung cancer and mesothelioma.

3.1.2 National Exposure Standards - Asbestos

National Exposure Standards (NES) are based on the airborne concentrations of individual substances which, according to current knowledge, should not cause adverse health effects nor cause undue discomfort to nearly all workers. It must be emphasised that exposure standards are not to be regarded as fine lines distinguishing safe from unsafe exposure.

NES should not be considered as representing an acceptable level of exposure to workers, rather they establish a statutory maximum upper limit. NES are generally published by Safe Work Australia.

8-hour time-weighted average exposure standards are the average airborne concentration of a particular substance that is permitted over an 8-hour working day, and a 5-day working week. The following occupational exposure standard was adopted from Safe Work Australian for this assessment:

Table 1: National Exposure Standards

Substance	Time Weighted Average (TWA)
Chrysotile (white Asbestos)	0.1 fibres/mL
Amosite (Brown Asbestos)	0.1 fibres/mL
Crocidolite (Blue Asbestos)	0.1 fibres/mL
Any mixture or unknown type	0.1 fibres/mL

Current occupational exposure standards are listed in the document (and subsequent revisions) *Worksafe Australia [National Occupational Health and Safety Commission (NOHSC)] 'Exposure Standards for Atmospheric Contaminants in the Occupational Environment,'* May 1995 *and from the Hazardous Substances Information System (HSIS)* database on the Safe Work Australia *website*

Current scientific knowledge in the form of epidemiological studies, indicates asbestos related diseases exhibit a dose response relationship and a no effect threshold. These studies also indicate very clearly that the development of the asbestos related disease (asbestosis, lung cancer and mesothelioma) requires significant (heavy) exposure to asbestos. It is generally accepted that there must be sufficient non-trivial exposure (i.e. dose greater than 25 fibre/mL years) to airborne respirable asbestos fibres before the development of asbestos related disease can occur.

3.2 Lead

Lead is a naturally occurring metal. Prior to 1970, lead was used widely in industry, added to petrol and paints. Paints manufactured since 1997 contain less than 0.1% of lead by mass, and this limit has been adopted for the definition of lead-containing paint in accordance with AS/NZS 4361.2:2017 *Guide to hazardous paint management, Part 2: Lead paint in residential, public and commercial buildings*. Lead was added to paint to accelerate drying, increase durability, maintain a fresh appearance, and resist moisture that causes corrosion. Lead-containing dust generation is related to industrial pollution, car exhausts, breakdown of old lead paint or emissions from burning coal or lead-painted wood and commonly occurs in ceiling spaces which have accumulated over time. The duties contained in the NSW *Work Health and Safety Regulation 2017* apply to workplaces where lead processes are undertaken. A lead process is a process that generates lead dust, fumes or mist.

Table 2: Lead Sources‡

Approximate date of construction	Sources of lead hazards
1920-1990's	Paint
1920-1978	Plumbing
1923-1986	Automobile exhaust *(accumulates as dust within ceiling spaces)*

‡Source: *Code of Practice Demolition Work*, SafeWork NSW (2016)

3.2.1 Lead Process

NSW *WHS Regulation 2017, Clause* 392 defines a lead process as consisting of any of the following carried out at a work place:

a) work that exposes a person to lead dust or lead fumes arising from the manufacture or handling of dry lead compounds,
b) work in connection with the manufacture, assembly, handling or repair of, or parts of, batteries containing lead that involves the manipulation of dry lead compounds, or pasting or casting lead,
c) breaking up or dismantling batteries containing lead, or sorting, packing and handling plates or other parts containing lead that are removed or recovered from the batteries,
d) spraying molten lead metal or alloys containing more than 5% by weight of lead metal,
e) melting or casting lead alloys containing more than 5% by weight of lead metal in which the temperature of the molten material exceeds 450°C,
f) recovering lead from its ores, oxides or other compounds by thermal reduction process,

g) dry machine grinding, discing, buffing or cutting by power tools alloys containing more than 5% by weight of lead metal,
h) machine sanding or buffing surfaces coated with paint containing more than 1% by dry weight of lead,
i) a process by which electric arc, oxyacetylene, oxy gas, plasma arc or a flame is applied for welding, cutting or cleaning, to the surface of metal coated with lead or paint containing more than 1% by dry weight of lead metal,
j) radiator repairs that may cause exposure to lead dust or lead fumes,
k) fire assays if lead, lead compounds or lead alloys are used,
l) hand grinding and finishing lead or alloys containing more than 50% by dry weight of lead,
m) spray painting with lead paint containing more than 1% by dry weight of lead,
n) melting lead metal or alloys containing more than 50% by weight of lead metal if the exposed surface area of the molten material exceeds 0.1 square metre and the temperature of the molten material does not exceed 450°C,
o) using a power tool, including abrasive blasting and high pressure water jets, to remove a surface coated with paint containing more than 1% by dry weight of lead and handling waste containing lead resulting from the removal,
p) a process that exposes a person to lead dust or lead fumes arising from manufacturing or testing detonators or other explosives that contain lead,
q) a process that exposes a person to lead dust or lead fumes arising from firing weapons at an indoor firing range,
r) foundry processes involving:
    (i) melting or casting lead alloys containing more than 1% by weight of lead metal in which the temperature of the molten material exceeds 450°C, or
    (ii) dry machine grinding, discing, buffing or cutting by power tools lead alloys containing more than 1% by weight of lead metal,
s) a process decided by the regulator to be a lead process under clause 393.

3.2.2 Lead Risk Work

Work carried out in a lead process that is likely to cause the blood lead level of a worker carrying out the work to exceed:

a) Female of reproductive capacity – 5 µg/dL (0.24 µmol/L), or
b) All other cases – 20 µg/dL (0.97 µmol/L).

It should be noted that the definition of lead risk work relies on blood lead level data. In the absence of such data, a lead process must be presumed to be lead risk work.

3.2.3 Lead Containing Dusts

There is little guidance with respect to the criteria for lead content of accumulated dusts outside of the residential environment. Typically, values for lead content in soil have been used as additional guidance; however, applying the soil criteria alone should not substitute the requirement for a detailed task and environmental risk assessment. Results are presented in either mg/m^2 (where a ghost wipe swab has been used) or mg/kg (where bulk dusts have been collected using a stainless-steel scraper).

It is inappropriate to use lead swabs alone to inform a risk assessment for lead dust exposure. The technique and criteria was created to validate surfaces within a residential environment post lead abatement works.

According to the superseded AS4361.2:1998, for clearance after lead paint management activities, the acceptance limits for clearance lead dust swabs are as follows:

a) Interior floors: 1 mg/m^2
b) Interior windowsills: 5 mg/m^2
c) Exterior surfaces: 8 mg/m^2

In the absence of any specific lead in dust criteria, value of lead in dust are also often compared to the National Environment Protection Measure (NEPM) Guideline on the Health Based Investigation Levels (HSL's) contained within Schedule B7.

Although these HSL's cannot offer a direct comparison to bulk and surface dust loading, they were developed to protect the health of persons who may be exposed to soil contaminants in any of the four prescribed environments. HSL value were developed with due consideration for the activities and potential contact with contaminated soils in each environment, and the nature of the contaminant within the soil, for example the exposure pathways and chemical stability of the contaminant. The duration a person is exposed to the contaminant is also considered, for example Residential, assume that a person may be exposed over a longer period of the day (place of residence) in comparison to Commercial/Industrial, where a worker may only be exposed for a short period over their 8-hour working day.

The exposure pathway for lead in soil is typically limited to ingestion routes only as the potential for significant levels of airborne particulates containing lead is restricted. Unlike dusts where both ingestion and inhalation pathways are to be considered.

In summary, an area or task specific Risk Assessment should be conducted when considering the risk associated with lead containing dusts.

3.2.4 Health Effects – Lead

Lead is a toxic substance that can affect people of any age. Lead can be hazardous when taken into the body by ingestion or inhalation of lead or materials contaminated with lead. The health effects associated with lead occurs via an accumulative effect within the human body. Depending on the amount of exposure, side effects of lead poisoning would not be apparent for many years. Young children are particularly vulnerable to the toxic effects of lead and can suffer profound and permanent adverse health effects, particularly affecting the development of the brain and nervous system. Lead also causes long-term harm in adults, including increased risk of high blood pressure and kidney damage. Exposure of pregnant women to high levels of lead can cause miscarriage, stillbirth, premature birth and low birth weight, as well as minor malformations.

Adults are most often exposed to lead if they work in a job which involves lead processes. It is therefore recommended that workers associated with lead processes have regular medical examinations to monitor the amount of lead in their system.

Lead processes generally relates to abrading or burning lead or lead painted surfaces. Other common sources of lead dust or fumes are as follows:

- Lead based paints, when removing paint by sanding or heat (e.g. creating dust), or when welding or cutting steel coated with lead or lead based paints.
- Welding, oxy cutting of steel coated with lead-based paint or primer.
- Dismantling of equipment containing lead-based paint.

3.2.5 Synthetic Mineral Fibre

SMF is a generic term used to collectively describe a number of amorphous (non-crystalline) fibrous materials including glass fibre, mineral wool and ceramic fibre. Much of the international literature refers to SMF as 'Man Made Mineral Fibres' (MMMF).

Glass fibre and mineral wool have been used for many decades. The major application of SMF materials is in thermal and acoustic insulation, and as a reinforcing agent.

In some specialised instances, these materials have been used as a replacement for asbestos, especially where high temperature insulation properties are required. Ceramic fibre has also been used to replace refractory brick and mortar materials.

3.2.6 Health Effects – Synthetic Mineral Fibre

The human health effects, based on available animal experiments and epidemiological evidence, are summarised below. It is important to note that there have been no studies of the respiratory cancer effects of MMMF in humans:

- Available evidence from animal and human studies demonstrates that all forms of SMF are significantly less potent as a health hazard than white asbestos (chrysotile) fibres.

- Animal experiments and evidence from human studies have caused the International Agency for Research on Cancer (IARC) to conclude that glass wool, rock wool, slag wool and ceramic fibre are possibly carcinogenic to humans (Group 2B). Glass reinforcing filament is not classifiable (Group 3) based on insufficient evidence in both human and animal studies. The IARC classifications are based on a review of evidence that the disease could occur. They do not necessarily reflect the level of risk that is likely to exist in the workplace.
- Irritation of the skin, eyes and upper respiratory tract may occur with certain SMF materials.

3.2.7 Polychlorinated Biphenyl (PCB)

Polychlorinated biphenyl (PCB) production in Australia ceased in 1975 and the importing of PCB containing products to Australia was banned in 1986. PCBs are identified during a hazardous building materials assessment. The purpose of this assessment is to identify within the practical constraints of access, the presence, location, condition and amount of PCB containing materials and equipment within a building or site.

The assessment usually comprises a review of available information, interviews with site personnel and a visual inspection of reasonably accessible areas. The assessment is conducted in accordance State and territory Health & Safety Regulations and the ANZECC documents *Polychlorinated Biphenyls Management Plan, 1997 and National Strategy for the Management of Scheduled Waste, 1992.*

PCBs are an organic compound that comprise of a number of chlorine atoms attached to the aromatic hydrocarbon, biphenyl. There are 209 possible PCB compounds known as congeners. Approximately 100 of these congeners are present in mixtures that were produced commercially in large quantities until the late 1970's. PCBs range in appearance from colourless, oily liquids to more viscous and increasingly darker liquids or resins ranging in colour from yellow to black depending on the chlorine content.

The PCB Plan of the Australian and New Zealand Environment Conservation Council "Polychlorinated Biphenyls Management Plan, Revised Edition: April 2003" outlines the National Strategy for the management of PCBs. In summary, this document defines PCB materials and wastes as follows:

<2 mg/kg	- PCB free
>2 mg/kg - <50 mg/kg	- Non-Scheduled PCB material or waste
>50 mg/kg & >50 g	- Scheduled PCB material or waste
>100,000 mg/kg (10%)	- Concentrated PCB material

PCB compounds are chemically stable, do not degrade appreciably over time or with exposure to high temperatures, and are good thermal insulators making them excellent for use in electrical devices.

Common Applications of PCBs include:

- Lighting and Power capacitors in large buildings.
- Use in large scale electrical equipment.
- Hydraulic and cooling fluids.
- Heat transfer systems.
- Electric motors.
- Plasticisers in plastic and paint.
- Pesticides.
- Fluorescent lighting.

3.2.8 Heath Effects – PCB

PCBs have different toxic effects based on their composition and the toxicity of an individual PCB compound is indicated by a toxicity equivalency factor. PCBs are a persistent organic pollutant and a bio-accumulator. PCBs accumulate in body fat and may persist in this body fat for many years after exposure has ceased. People are generally exposed to PCBs through ingestion or dermal absorption but can also be exposed via inhalation however vapours are rare at room temperatures.

Health effects of PCBs have been observed in both humans and other animals. The most commonly observed symptom in people exposed to high levels of PCB is a rash known as chloracne which is severe, persistent, acne like rash. Very high exposure to PCBs may also cause damage to the liver and nervous system resulting in weakness and numbness. PCBs can also have reproductive and developmental effects and are noted as a possible carcinogen.

3.2.9 Ozone Depleting Substances (ODS)

Ozone Depleting substances are a class of gaseous compounds including chlorofluorocarbons (CFC), halons, carbon tetrachloride, methyl chloroform, and hydrochlorofluorocarbons (HCFC) or mixtures of these compounds commonly used as a refrigerant. When ODS's are released into the atmosphere, the gas is broken down by ultraviolet (UV) radiation releasing chlorine atoms. These atoms come into contact with ozone molecules and destroy them. One chlorine atom can destroy over one hundred thousand ozone molecules. In line with the Montreal Protocol, production and importation of ODS was banned in Australia in 1995 for all industries outside of essential use to protect the ozone layer.

Generally, ODS containing refrigerants and chillers are identified and risk assessed by determining age, condition and inspecting labels with specific refrigerant information.

3.2.10 Health Effects - Ozone Depleting Substances (ODS)

Upon release of ODS gas, humans are generally exposed through inhalation or dermal interaction. These interactions can cause light-headedness, tremors and convulsions and continued exposure can lead to heart arrhythmia and death. In the long term, the continued destruction of the ozone layer by ODS will increase UV radiation levels on Earth and increase the risk of skin cancers, eye cataracts and immune deficiency disorders.

4. Hazardous Materials Management Plan

The following section outlines the systems, policies and procedures developed to assist with the effective ongoing management of HBM at City sites. This Section provides guidance for the day to day management of HBM including management agents, Property / Portfolio Managers, contractors and City workers.

4.1 Principles of Management

The ongoing effective management of in-situ HBM in the workplace can be achieved by ensuring they remain undisturbed and in good condition and so as to limit any potential risk of asbestos fibres or lead containing materials becoming airborne or person being exposed to such materials.

As such, the purpose of this HMMP is to prevent, or minimise the risk of stakeholders inadvertently damaging, deteriorating or disturbing HBM and their role in achieving this.

Hazardous Building Materials Registers have been developed and provided for City sites by PRM and other hazardous materials consultants. These documents list the type, locations, condition and friability (if applicable) of all HBM identified.

Also contained within the Register is a risk assessment of the HBM and recommendations for their management.

Decisions regarding the stability of HBM and their potential to release fibres or harmfully expose persons may only be determined by risk assessment performed by a Competent Person (for example an Occupational Hygienist) or a Licenced Asbestos Assessor (LAA) as recognised by SafeWork NSW. Findings from the risk assessment will assist in determining the most appropriate HBM management option based on the Hierarchy of Controls as provided in the Code of Practice: *Management.*

4.2 HBM Register and Management Plan Review Time Frames

The following section details the specific legislative requirements for the ongoing review of the HBM Register and the HMMP.

4.2.1 Hazardous Materials Register Review

The Regulation lists the requirements for re-inspections of ACM only. For the purpose of this HMMP, it is assumed the City will review all HBM on the same frequency as required for the review of ACM or as detailed with the HBM Register as a precautionary measure.

Regulation 426 states: A person with management or control of a workplace where an asbestos register (i.e. the HBM Register) is kept must ensure that the Register is reviewed and as necessary revised if:

(a) the asbestos management plan is reviewed under clause 430, or

(b) further asbestos or ACM is identified at the workplace, or

(c) asbestos is removed from, or disturbed, sealed or enclosed at, the workplace.

For the purposes of this HMMP, the person with management or control of a workplace will be considered to be the managing agent.

4.2.2 Hazardous Materials Management Plan Review

Under Regulation 430: A PCBU that has control of the workplace where ACM are identified must ensure that the plan is reviewed and as necessary revised in the following circumstances:

(a) there is a review of the asbestos register or a control measure,

(b) asbestos is removed from, or disturbed, sealed or enclosed at, the workplace,

(c) the plan is no longer adequate for managing asbestos or ACM at the workplace,

(d) a health and safety representative requests a review under subclause (2),

(e) at least once every 5 years.

4.3 Administrative and Operational Responsibilities

This HMMP is a tool designed to ensure that any workers or occupants of the building are not exposed to HBM through inadvertent disturbance or as a result of refurbishment or removal works. The effectiveness of the HMMP depends on the implementation of the plan by the PCBU, the Managing Agent, Property / Portfolio Managers and other key personnel outlined below.

4.3.1 Managing Agent

The appropriate Managing Agent is responsible for the management and supervision of HBM related tasks at their designated sites.

The Managing Agent is to be nominated by the City, or a person appointed to have management and control of the site.

Duties of the Managing Agent include:

- Receipt of maintenance requests from its client(s).
- To package the HBM works, including scope of works, performance requirements and identification of known or possible presence of hazardous materials.
- Calling of tenders / quotations – including briefing of contractors for refurbishment or maintenance.
- Assessment and recommendation of quotations and tenders.
- Ensuring all workers attending site have been inducted.
- Conducting site-specific training sessions with workers to ensure they are made aware of their duties, the location of HBM onsite, and procedures in the instance of inadvertent or accidental damage to HBM.
- Ensuring no work commences prior to workers reviewing and signing the site-specific Hazardous Materials Register and this HMMP.
- Facilitating contractor's access for site inspections and clarification of requirements.
- Ensure works are classified as a high priority where they involve the identification of known or possible presence of hazardous materials.
- Issue work order requests for the work to be completed.
- Confirm with the client that the ordered works have been completed.
- Notify the Property Manager as soon as practically possible.
- Confirmation with tenant / contractor that ordered works have been completed.
- Sign-off of works completed by contractors; and
- Update the HBM Register and management plan if any hazardous materials remedial works are completed at the site.
- Maintain the HBM Register and ensure that HBM are inspected at least once every five years by a competent person or LAA or sooner as indicated by a risk assessment and the HBM Register.
- Maintain this HMMP and ensure it is reviewed whenever the Register is reviewed.
- Administer asbestos inductions and facilitate appropriate asbestos awareness training for City workers, contractors and any other persons as necessary.
- Examine works to be performed and advise on what can and cannot be undertaken.
- Inform occupants of any planned HBM remedial works as required.
- Engage an appropriately licensed asbestos removal contractor as required by NSW legislative requirements to conduct HBM abatement works as required.
- Notifying workers or occupants of air monitoring results during the works.
- Administer the Permit to Work system and assess work proposals for their potential impact on HBM.
- With the assistance of a competent person or LAA, install asbestos warning signage and labels to ensure HBM's are not accidentally disturbed.
- Arrangement of sample collection of suspected HBM not previously identified.
- Prior to any renovation / demolition, ensure the HBM register and survey report is reviewed and where required, a further intrusive survey commissioned so that otherwise concealed HBM are identified and safely removed from any proposed work area or appropriately contained to prevent accidental damage.
- Ensure exposure to asbestos is kept as low as practically achievable and that no person is exposed in excess of the exposure standard.

- Ensure that HBM related records are maintained in this HMMP. Documentation must be archived for an indefinite period and be accessible to any SafeWork NSW representatives if requested. Important documentation requiring retention includes:
    - Updates to the Register including details of location and quantities of HBM removed and any HBM still present.
    - Contractor Safe Work Method Statements (SWMS).
    - Contractor Asbestos Removal Control Plans (ARCP).
    - Air monitoring and clearance inspection certificates.

4.3.2 Property / Portfolio Managers

- Monitoring of managing agent;
- Ensure workers, contractors, managing agents and tenants are aware of the Hazardous Materials Management Plan and its location on the property.

4.3.3 Contractors

All external workers undertaking work at the site including routine maintenance, plumbing or electrical work, which have the potential to disturb existing HBM shall be responsible for ensuring their works are conducted in accordance with the HMMP, and that:

- All site-specific training has been conducted by the managing agent, providing the worker with:
    - a comprehensive understanding of the HBM Register;
    - the HBM labelling strategy implemented at the site;
    - this HMMP.
- A copy of the Register and this HMMP has been received, reviewed and where required, further guidance sought from a Competent Person or LAA.
- Developing and implementing safe working methods that comply with Work Health and Safety legislation, including using only competent and trained workers.
- Undertaking pre-tender/quotation inspections to ascertain the scope of works, including the possible presence of hazardous materials.
- Notifying their appointed contact being the managing agent or Property Manager of any previously unidentified hazardous materials affecting the proposed works – whether during the pre-tender inspection or during execution of the works.
- Notifying their appointed contact being the managing agent or Property Manager of any issues or concerns about the behaviour of the occupiers in relation to safe management of any hazardous materials that are encountered.
- Notifying their appointed contact being the managing agent or Property Manager when the works are completed; and
- In the event a contractor has removed a hazardous material they are to provide the managing agent with documentation that the hazardous material have been disposed of in accordance with SafeWork NSW, EPA and Local Government guidelines.

4.3.4 City Workers, clients and tenants

City workers, clients and tenants also have an obligation under the HMMP and is as follows:

- Reasonably comply with the requirements of this plan.
- Obtaining approvals prior to undertaking any works or attachments of fixtures to the premises that may expose or damage hazardous materials.

4.3.5 Worker Induction and Provision of the Register

All Stakeholders present on City sites must be inducted. These induction programs provide general guidance with regards to site hazards and potential HBM that may be present at City sites.

For individual sites, a site-specific induction must be conducted with the nominated Managing Agent. This induction should cover the following:

- The parts of the buildings that are known to contain HBM.
- The site specific HBM indication tool (labelling of ACM's) to ensure that persons conducting works are able to effectively identify areas where HBM's have been or suspected to be present.
- Direction on how to work safely with HBM at the site.
- The Permit to Work (see below) system and how it controls any asbestos related/removal work.
- Emergency procedures if HBM is accidentally disturbed during works.

Workers should also be informed of the following:

- That any asbestos abatement works must be approved by the Managing Agent and conducted by appropriately licensed contractors.
- All workers must stop work and report any residual, deteriorating or damaged HBM of which they become aware to the Managing Agent as soon as possible so that the appropriate corrective action can be initiated.
- That there is no guarantee that all HBM have been identified on site, and any unknown or suspect HBM encountered during building, demolition or maintenance works must be reported to the Managing Agent.

Where it is likely that planned works may impact upon HBM at the site. Provision of the Register and this HMMP must be provided to the worker by the Managing Agent.

A register of all personnel who have attended the site-specific induction is to be kept on site. The managing agent is required to manage this document and ensure it is up-to-date when new workers arrive on-site. Under no circumstances are contractors permitted to come on site and commence work without reviewing and signing the HMMP.

4.4 Permit to Work: General Maintenance Works

For any general maintenance works to be undertaken by City workers and contractors where HBM have been identified, a Permit to Work (PTW) must be issued by the organisation that has engaged the City worker or contractor. Before being issued with an PtW, workers are required to read and understand this HMMP as well as copies of relevant site-specific HBM register and address any inaccessible areas as required (areas not accessed during the HBM survey).

The PtW should detail the nature of the work to be performed and document that the worker agrees to:

- Abide with the requirements for working with ACM as detailed in the Safe Work Australia Codes of Practice.
- Provide proof of appropriate training to work on or around HBM.
- Isolate/restrict access to the work area.
- Provide and erect appropriate warning signs.
- The use of safe work procedures.
- Appropriate use of PPE.
- Remove and dispose of any ACM (including PPE) in accordance with WHS legislation.

4.5 HBM Risk Assessment: General Maintenance Works

The condition and friability of ACM dictate the potential for respirable asbestos fibres to be released. ACM that are in good condition, are non-friable and are left undisturbed are unlikely to release airborne fibres and present a low risk of exposure. However, if the ACM is in a friable form, has deteriorated, has been disturbed, or if asbestos-contaminated dust is present, the likelihood for airborne respirable asbestos fibres to be released into the air is increased.

With regards to lead paint systems, while the paint systems are in good condition, they present a low risk. When works cause their disturbance, for instances, sanding, grinding or areas of deterioration such as chalking or flaking, then the potential for lead exposure is increased.

SMF products are typically found in a bound state. Exposure to SMF can be controlled by ensure the materials are not disturbed in a way to generate significant airborne fibres.

PCBs are often contained within the capacitor or ballast body. While these remain intact, the potential for exposure is limited. If PCB containing capacitors or ballasts as sighted to be in poor condition, rusted or visibly leaking oil, the risk associated with exposure to PCB increases. PCB vapour are only emitted if there is a source of heat (ie, light bulb/fire). Typically PCB exposure is limited to dermal contact and ingestion.

For any HBM related-work, **Table 3** below outlines the Hierarchy of Controls (HoC) which can be utilised to prevent HBM from being damaged or disturbed:

Table 3: Hierarchy of Controls

Control	Description
Elimination *(most preferred);*	Eliminate the risk by removing the asbestos from the work area.
Substitute	Substitute hazards with something safer.
Engineering Controls	Installation of barriers or screens between the hazard and the work area.
Administrative	Implementation of systems of work or procedures to minimise the risk.
PPE *(least preferred);*	Use of personal protective equipment in addition to higher controls.

Administrative control measures and PPE do not control the hazard at the source. They rely on human behaviour and supervision and used on their own tend to be the least effective in minimising risks. A combination of these controls may be required in order to adequately manage and control risks associated with HBM's. the Code of Practice: *How to manage work health and safety risks* provides more information on the different control measures that can be used.

The control measures that may applied may change the way work is carried out. In these situations, workers must be consulted in order to develop safe work procedures. Workers must be provided with training, instruction, information and supervision on the changes. Refer to the Code of Practice: *How to Manage and Control Asbestos in the Workplace 2019* (Management CoP) for examples of how the HoC can be implemented for routine maintenance work or any other work which may be considered HBM-related at the site.

In most cases, if the ACM is in good condition and non-friable, it is safer to conduct work around the ACM ensuring it remains undisturbed; however, where friable ACM are present in a damaged or poor condition; or if asbestos contaminated dusts (more than a minor contamination) are present; then works shall cease and a full risk assessment and alternative methods developed and employed prior to works commencing.

4.6 Specific HBM Actions and Controls

This section of the HMMP summaries the actions to be undertaken in order to minimise the potential for person to be exposed to HBM. Consideration to apply to Hierarchy of Control as noted in **Table 3** above should be given preference when discussing the most suitable management strategy for each HBM.

4.6.1 Friable ACM

Where friable ACM have been identified, the Managing Agent must perform a risk assessment to ensure the material remains in a good condition or the area where they have been identified has been isolated, demarcated and labelled. This is to ensure that the potential for damage is minimised so far as reasonably practicable.

Friable ACM are to be managed in line with the recommendations outlined within the site-specific HBM Register for the site and in accordance with the Regulation and CoP: Management.

Where friable ACM have been identified in a damaged or poor condition, managing agents should engage a Licenced Asbestos Assessor to conduct asbestos-fibre air monitoring and an Asbestos Removal Contractor to encapsulate the damaged material until effective remedial works can be undertaken to remove ACM.

Background airborne asbestos fibre monitoring is to be conducted periodically until the friable ACM is removed. The frequency of this monitoring is to be determined by the LAA in discussion with the client and will include considerations such as the location of the material, damage, potential for disturbance and potential receptors in the immediate vicinity etc.

All works involving friable ACM must be conducted by a SafeWork NSW Class A Asbestos Removal Contractor. All hygiene works pertaining to these works must be undertaken by an LAA (Refer to **Section 5** for further information pertaining to asbestos removal requirements).

4.6.2 Non-Friable ACM

Where non-friable ACM have been identified in a damaged or poor condition, preference should be given to isolating and stabilising the material until effective remedial works can be undertaken to remove the associated with the material.

Non-friable ACM are to be managed in line with the recommendations outlined within the site-specific HBM Register for the site and in accordance with the Regulation and CoP: Management.

Where non-friable ACM has been identified in a damaged or poor condition, managing agents should engage a Class A or B Asbestos Removal Contractor to encapsulate or remove damaged sections of ACM.

Managing agents should consider engaging a Licenced Asbestos Assessor to conduct control airborne asbestos fibre monitoring during this work.

Background airborne asbestos fibre monitoring is not mandatory, however should be considered depending on the location of the material, potential for disturbance and person to be exposed to the material. The frequency of any background airborne asbestos fibre monitoring is to be determined by the LAA in discussion with the client.

All works involving non-friable ACM greater than 10m^2 must be conducted by a SafeWork NSW Class A or Class B Asbestos Removal Contractor. All hygiene works pertaining to these works must be undertaken by an LAA or competent person (Refer to **Section 5** for further information pertaining to asbestos removal requirements).

4.6.3 Lead Containing Paints

All LCP are to be managed in line with the recommendations outlined within the site-specific HBM Register for the site and in accordance with the Regulation and AS/NZS4361.2:2017.

The following options for managing LCP are provided in AS/NZS 4361.2:2017 Section 3.

- *Maintain:* This is an option when the paint is in good condition and does not need to be disturbed. This is usually only an applicable strategy where LCP is not directly accessible or the hazard lies in underlying layers of paint that have been overpainted with lead-free paint. Leaving the paint in place will require regular inspections of condition.
- *Lead Paint Stabilisation:* Considered the easiest and cheapest way to manage LCP, is to overpaint or cover it with an encapsulant. This is considered an interim or long-term solution, allowing more permanent treatment to be deferred until changes in policy or advancements in lead paint management occur. The integrity of the existing painted surface will determine the effectiveness of stabilization.
- *Lead Paint Abatement:* This technique involves the suppression, reduction, or elimination of the hazard from the building. This is a necessary technique if the LCP presents a hazard in its current state, and if encapsulation is not viable due to poor condition of the surface, or other reasons. There are three approaches to lead-paint abatement:
  - *Replacement of painted items:* components with LCP are removed in large pieces and replaced with new materials.
  - *Enclosure:* The lead paint remains in position with this technique. Enclosure methods including gypsum board overlays on interior walls or ceilings, and, for exterior walls, vinyl or aluminium siding, fake brick panelling, cedar cladding or weatherboard; all enclosure work should comply with building code requirements. The enclosure of floors or stairs painted with lead paint can be achieved by the use of tiles, plywood, stone or vinyl covering.
  - *Removal or disturbance of LCP:* The removal or disturbance of lead paint has the greatest potential to generate dust and waste. The practices recommended by AS/NZS 4361.2:2017 for the removal of lead paint include: wet scraping and wet sanding, on or off-site chemical stripping, removal by heat gun or scraper.

Where lead paint is found to have been unexpectedly disturbed on-site, contractors and workers should:

- Isolate the area and identify the removal of this material as a high priority within the site maintenance program.
- Wash hands immediately.
- Contact the Managing Agent as soon as practicable to notify them of the issue.

Managing Agents should:

- Review the condition of the paint and advise on the most appropriate risk mitigation strategy.
- Engage a suitably qualified competent person to assess the damaged/flaking lead paint and provide a strategy for safe remediation.
- Update the site-specific HBM.

4.6.4 Lead Containing Dusts

All bulk accumulated dusts that have been identified as containing lead above the adopted criteria are to be managed in line with the recommendations outlined within the site-specific HBM Register for the site.

Access to areas where bulk accumulated dusts have been identified above the adopted criteria should be limited to maintenance personnel and critical works only. Prior to accessing such areas, contractors must ensure proper safety procedures are followed and works are conducted in accordance with all relevant legislative requirements and best industry practice. SWMS should be issued to the Managing Agent for approval prior to works being completed in areas where LCD have been identified.

A PtW may also be introduced help control entry into these areas.

Remediation of LCD is to be conducted by a contractor specialising in lead abatement works and in accordance with AS/NZS 4361.2:2017. All hygiene works are to be conducted by an independent hygiene consultant and include the following:

- Preparation of a Lead Dust Remediation Technical Specification.
- Review of the Lead Removal Control Plan.
- Lead dust monitoring for the duration of the remedial works.
- Clearance and validation inspections and sampling (and monitoring as required).

Where accumulated dust suspected of containing lead is found to have been unexpectedly disturbed or discovered on-site, contractors and workers should:

- Isolate the area and identify the removal of this material as a high priority within the site maintenance program.
- Wash hands immediately.
- Contact the Managing Agent as soon as practicable to notify them of the issue.

Managing Agents should:

- Review the condition of the paint and advise on the most appropriate risk mitigation strategy.
- Engage a suitably qualified competent person to assess/sample the suspected dust and provide a strategy for safe remediation.
- Update the site-specific HBM.

4.6.5 Synthetic Mineral Fibre Materials

SMF materials are to be managed in line with the recommendations outlined within the HBM Register (See **Appendix A**) and in accordance with the Regulation and the Code of Practice for the safe use of Synthetic Mineral Fibres [NOHSC:2006 (1990)].

4.6.6 PCB Containing Capacitors and Ballasts

If PCB containing capacitors have been identified or suspected at the site, it is not practical to inspect every light fitting for PCB capacitors; as such, persons undertaking any electrical or work that involves inspection, removing or disturbing light fittings are to be aware of the process of PCB capacitor identification.

Capacitors identified in fluorescent light and ceiling fans can be examined to determine PCB content. The details of the brand and model of the capacitors can be recorded and compared against the (ANZECC) *Identification of PCB-containing capacitors*, 1997.

Where capacitors suspected to contain PCB material (i.e. solid metal case capacitors in equipment installed before 1980) are not listed in the abovementioned ANZECC PCB Booklet and are present in small numbers, they will be assumed to contain PCB. Where large numbers of such capacitors are identified, advice shall be sought from the Occupational Hygiene Consultant on a suitable method of testing to determine the PCB content.

Where PCB material is suspected in other components (e.g. transformer oil), advice shall be sought from the Occupational Hygiene Consultant on a suitable method of testing and assessment which may include liaising with the electrical body/corporation responsible for the transformer in question.

In the instance that a known or suspected PCB containing capacitor is observed to be leaking, suitably trained personnel are to remove, store and dispose of the capacitor in accordance with the Regulation and the Regulation: Waste.

4.6.7 Ozone Depleting Substances (ODS)

If ODS containing refrigerants have been identified on site, there is no requirement to disturb or remove gas from the cooling element. However, it is important to manage ODS containing refrigerants in accordance with *Ozone Protection and Synthetic Greenhouse Gas Management Amendment Regulation* 2012 and keep records of these items. Per the *Australian Chlorofluorocarbon Management Strategy (ACMS)*, it is conceivable that domestic refrigerators and small air conditioners can continue running for the duration of the products' useful life without maintaining the ODS containing components.

During the maintenance of larger ODS containing plant, a qualified technician should inspect the hermetic compressors and other potentially ODS containing components to ensure there are no leakages occurring.

Where refrigerants are found to be leaking ODS gas, suitably trained personnel should degas the affected item and dispose of the material per *Greenhouse Gas Management Amendment Regulation 2012.* Under the *Ozone Protection Regulation 1997,* a technician conducting maintenance or charging refrigeration equipment must place a label in a prominent position detailing the refrigerants used within the equipment.

4.7 Medical Surveillance

4.7.1 Health Monitoring – Asbestos

Health monitoring will be made available, upon application, to City workers where there is a risk of exposure to asbestos as prescribed within Part 8.5 of the NSW WHS Regulation. Initial requests need to be made through the Ventia WHS Manager or the site Managing Agent.

4.7.2 Health Monitoring – Lead

Health monitoring will be made available, upon application, to City workers where there is a risk of exposure to lead as prescribed within Part 7.2, Division 4 of the NSW WHS Regulation. Initial requests need to be made through the Ventia WHS Manager or the site Managing Agent. There is a duty to perform health monitoring before commencing lead work (to ascertain a baseline lead blood level). Regulation 407 describes the frequency of biological monitoring required for a worker undertaking lead risk work.

4.8 Training and Awareness

Training is an essential element of any comprehensive risk management plan and a requirement as prescribed within Section 8.5, Division 2 of the Regulation in relation to asbestos (there is no regulatory requirement for training in relation to the other HBM's such as lead paint etc).

Training is provided to ensure personnel have adequate knowledge to maintain the risk management plan efficiently and effectively including how to develop risk and work controls and the preparation of a suitable SWMS and PtW.

In addition to a general induction, all workers who have the potential to impact HBM while on City property must attend a site-specific induction generated by the managing agent.

As per the Management CoP, the site-specific training program should include the following topics:

- Purpose of the training.
- Health risks.
- Types, uses and likely presence of hazardous building materials in the workplace.
- Roles and responsibilities of the managing agent and workers under the HMMP.
- Where to find the Register and how to understand the information contained.
- Information on the presence of hazardous materials in City properties.
- Overview of the legislation, codes of practice and standards.

- Typical locations where hazardous materials may be encountered on-site.
- Information on the health risks associated with the hazardous materials covered by this HMMP.
- Procedures to be followed in the event of discovery, damage or disturbance to a hazardous material; and
- Protocols for informing property managers, managing agents and contractors about known and suspected hazardous materials prior to any works commencing as well as for the updating of the site-specific HMMP.
- Safe work procedures to be followed with examples to prevent exposure.
- The correct use of PPE including respiratory protective equipment (RPE).
- How to implement of control measures and safe work procedures.
- When licenced asbestos removal works are required.
- Air monitoring requirements and exposure standard for airborne asbestos or SMF.

The objective of the training is to create changes in behaviour and HBM management through improved awareness of workers at the site.

The purpose of the training is also to provide understanding to City workers and contractors of the health implications with of exposure to the relevant HBM's, the appropriate control measures and their responsibilities and legislative obligations.

It should be considered that building occupant and tenants, although not considered workers at the site, undergo an asbestos awareness/information session to advise of the presence of asbestos within the buildings.

4.9 Labelling and Signage – Asbestos

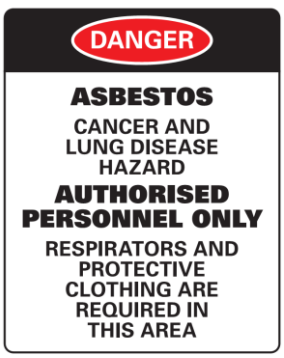
The Management CoP states that all identified or presumed ACM should be clearly indicated using signs or labels; if labels are to be used, they should comply with Australian Standard AS 1319 *Safety Signs for the Occupational Environment*.

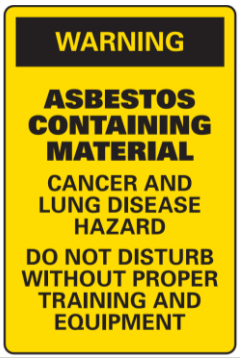
The asbestos warning label should be affixed to an ACM or at the access point to an area containing asbestos materials, i.e. ceiling spaces or floor cavities, in order to warn personnel of potential exposure to asbestos fibres if the material is disturbed or if this area is accessed without precautions being taken.

A competent person or LAA should determine the quantity and positions of the labels and signposts required.

The type and location of the ACM need to be assessed prior to applying a label. Sticker-type labels will not adhere to certain surfaces and may have to be fixed into place with adhesive. Generally, vinyl stickers are suitable for indoor areas, while PVC or other more hard-wearing material may be required externally.

Types of asbestos warning labels and signs are contained within the Management CoP. Some examples are provided below:





4.10 Damaged ACM or Changes to Condition or Friability

Any ACM that has been impacted upon so as to deteriorate its condition or increase the likelihood of fibres being release must be reported to the managing agent as soon as possible. Instances where there are changes to the condition or friability of the ACM may be sudden and the result of a direct action, or may be gradual as a result of ongoing damage or disruption.

The managing agent will instigate the appropriate corrective action and if necessary, arrange to have the damage assessed and the materials repaired or removed as required.

If ACM has been disturbed and it is likely to have released fibres causing potential contamination and exposure to workers or occupants, the emergency response procedures as outlined in **Section 6** should be followed. A risk assessment of the material should also be conducted by a competent person or LAA.

Refer to **Appendix A** for risk assessment criteria and decision rules relating to management of disturbed or damaged ACM.

All reports of damaged asbestos materials are to be registered in the site-specific HBM Report by the managing agent as soon as practicable.

4.11 Unknown or Suspected Hazardous Building Materials

4.11.1 Inaccessible Areas

Previously unidentified HBM are likely to be present within concealed or inaccessible areas of the site. Such inaccessible areas may include:

- Above-ceiling & below-floor/crawl spaces.
- Locations behind locked doors.
- In wall cavities.
- Beneath multiple floor coverings.
- Areas accessible only by dismantling equipment or performing demolition works.
- Concealed service shafts, ducts and risers etc.
- Voids or internal areas of plant, equipment, air conditioning units and ducting.
- Areas only accessible during major demolition works.
- Height restricted areas.

If suspected HBM are encountered by building occupants or a part of maintenance, refurbishment or demolition (but are not listed in the register) the managing agent should be notified and the suspected HBM managed accordingly. Precautionary testing should be undertaken for any suspected HBM identified. The managing agent will engage a suitably competent person, Occupational Hygiene Consultant or LAA to carry out the testing and subsequent reporting of the findings. The affected area should be appropriately isolated and signposted prior to assessment or removal works taking place.

4.11.2 Sample Collection of Suspected Asbestos

Workers undertaking routine maintenance or site works should consult the Asbestos Register and this HMMP if it is possible they might encounter or disturb ACM prior to works being conducted. In the event that workers or building occupants encounter suspected ACM which is not listed in the Register, or it is unclear if the material encountered is listed, the worker or occupant should notify the managing agent immediately.

The managing agent should then arrange a competent person or LAA to collect a sample of the suspected material. The competent person/LAA must collect the sample in accordance with the safe work practices as described in the CoP so as to not cause any additional damage to the suspected material.

Samples collected must be delivered to a NATA accredited laboratory for asbestos presence. Once the NATA accredited laboratory report has been made available, the managing agent should update the site-specific Register, and engage a competent person/LAA to conduct a risk assessment should the material be found to contain asbestos.

4.12 Record Keeping

The managing agent shall maintain detailed records of all activities and work guides relating to HBM which have been undertaken at the site. The records kept should include:

- Copies of all Audit Reports and any sampling investigations.
- A current copy, and all previous versions of the Register with details of updates and amendments, and occurrences of any re-inspections.
- Site induction records for all workers coming onto the site including evidence of awareness training undertaken by the managing agent informing workers of the locations of HBM at the site.
- Copies of SWMS for workers with evidence of compliance to Safe Work Practices around asbestos and other HBM.
- Documentation of the any asbestos removal or abatement/remedial works carried out, including any ARCP made available by the removal contractor.
- Clearance certificates indicating areas are safe to reoccupy after HBM removal or abatement/remedial works.
- Any control, clearance or background asbestos air monitoring results and air monitoring reports if made available.
- Previous versions of the Register.

All above related records and documents are to be retained for an indefinite period after the: removal of the asbestos hazard; after the building has been demolished; after the last action.

5. Hazardous Materials Removal and Related Work

5.1 Remedial Methods

A range of measures are available for the control of HBM at City sites.

Refer to the site-specific Register which details the recommended controls to manage the HBM identified. Abatement works must be performed in accordance with all legislative requirements.

The selection of appropriate remedial measures is based on the assessed risk for each HBM at a specific location. These measures include:

- Removal in accordance with safe work practices under controlled conditions.
- Encapsulation or remediation using adhesive or mastic.
- Isolation of the material to prevent further damage or disturbance.
- Providing a barrier such as a box enclosure or cladding.
- Leave *in-situ* and maintain in good condition. Label (signage) and isolate to prevent potential damage or disturbance.

Periodic background asbestos fibre air monitoring should be considered in adjacent occupied areas, where deemed necessary. Refer to the **Appendix A** for the Risk Assessment Criteria, which outlines the decisions and reasons for decisions relating to the management of HBM at the site.

Statutory requirements for asbestos removal are prescribed in the Regulation. The CoP: Removal provides guidelines for the safe removal of friable and non-friable ACM. Depending on the nature of the abatement operations, it may be necessary to engage a licensed asbestos contractor (see **Section 5.2**).

Assessment of the ACM identified at the site should be conducted at least once every 5 years or as per the timeframes detailed in the specific HBM Register for the site.

Furthermore, SMF materials should be removed in accordance with the *Code of Practice for the Safe use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)]* for bonded or unbonded SMF materials.

5.2 Licenced Removal Work

5.2.1 Asbestos Removal Work

For all asbestos removal work greater than 10m^2 of non-friable ACM or any friable asbestos work, a licenced asbestos removalist is required to conduct the works.

There are two types of licences: Class A and Class B. The type of licence required will depend on the type and quantity of asbestos or ACM that is being removed at the site.

- Class A Licenced Removalists – Can remove any amount of **friable** and **non-friable** asbestos or ACM.
- Class B Licenced Removalists – Can remove any amount of **non-friable** ACM (including asbestos containing dust associated with the removal of non-friable ACM).
- Unlicensed Removal Work – Can remove up to **10 m^2 of non-friable** ACM (including asbestos containing dust associated with the removal of non-friable ACM less than 10 m^2, or what is considered to be minor contamination).

Although unlicensed asbestos removal may take place when removing less than 10 m^2, it is recommended that a licensed removalist is engaged for any asbestos removal work at the site.

Prior to commencement of asbestos removal works, the removal contractor must ensure that:

- A detailed site-specific Asbestos Removal Control Plan (ARCP) in accordance with the requirement in the CoP: Removal has been prepared and provided to the managing agent prior to work commencing. This is also to be reviewed and authorised by the nominated independent LAA prior to works commencing.
- A PtW approved by the managing agent has been received.
- Where greater than 10m² of non-friable, or any friable ACM is to be removed, that a notification for the intent to remove ACM has been submitted to the Regulator.
- All workers have been inducted into the site.
- The appropriate licences and training/competencies of the workers undertaking the removal works are up to date and have been supplied to the managing agent.
- A SWMS for the removal work has been developed, reviewed and authorised by the Managing Agent and the nominated independent LAA.

Other considerations to be introduced prior to any remedial works commencing include the development of a Technical Specification Report, issued by an Occupational Hygiene Consultant or LAA. The Technical Specification Report outlines the project specific requirements and expectations and forms the framework for the ARCP. This documents assists in the facilitation and delivery of safe and successful projects.

5.2.2 Lead Paint and Dust Removal Work

According to AS/NZS 4361.2:2017, contractors should be able to demonstrate that they are competent to carry out the required work in compliance with all work health and safety requirements for the jurisdiction within which the work is carried out.

A Responsible Person should be on-site at all times during any disturbance of LCP and LCD, to implement and maintain the compliance program. The duties of the Responsible Person in relation to worker protection should include the following:

(a) Ensuring that all worker protection activities are undertaken.

(b) Ensuring that all workers wear the required protective clothing and equipment and

are trained in and use appropriate exposure control methods.

(c) Ensuring that hygiene facilities appropriate to the scope of work and level of risk are provided, and that workers are trained in, and use, those facilities.

Evidence of the Remediation Contractors Competency must be provided to the Occupational Hygiene Consultant and the managing agent prior to performing the work.

SafeWork NSW Requirements

According to the Regulation, clause 403, if a PCBU at a workplace determines that work at the workplace is lead risk work, the person must give the regulator written notice within 7 days that the work is lead risk work. Whilst working in New South Wales, the regulator is SafeWork NSW. The written notice must state the kind of lead process being carried out that includes the lead risk work.

Occupational Hygiene Consultant

According to AS/NZS 4361.2:2017, it is recommended that a Lead Specialist (Occupational Hygiene Consultant) should be engaged, in order to ensure that lead abatement work will deliver the required durability, with no negative impact on the health and safety of workers or the public, or to the interior or exterior environment. The consultant will undertake a desktop review of the removal methods being conducted by the remediation contractor prior to works commencing. The removal method may involve the requirement for lead dust air monitoring to be conducted to assess the controls employed.

At the end of the project the Occupational Hygiene Consultant should conduct a visual clearance of the site, this may include a combination of a visual inspection and validation sampling (as required). The Occupational Hygienist should also be informed of any LCP to be remediated that is attached to an asbestos containing surface, to ensure that all appropriate controls are put in place.

5.2.3 SMF Removal Work

For SMF removal works, an experienced contractor can conduct SMF removal works. Generally, SMF removal is similar to ACM removal and a licensed asbestos contractor is recommended.

The type of PPE required for the removal works is to be determined by the contractor conducting the works. Where respirators are used, they are to be correctly fitted and maintained in good condition and the worker having undertaken and passed a face fit test. Other PPE may also be considered such as eye / face protection as well as other methods to covers one's skin to prevent irritation. PPE is not a substitute for the lack of other controls designed to mitigate fibre release during any maintenance or removal work of SMF.

5.2.4 PCB Removal Work

For PCB removal works, an experienced contractor can conduct PCB removal works with the assistance of a licensed electrician to ensure the equipment is de-energised. PCB materials will be retained for disposal, in accordance with the requirements of the Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Waste) Regulation 2014, and the ANZECC PCB Plan.

5.2.5 ODS Removal Work

For ODS removal works, a suitably trained contractor can degas and remove the affected refrigerant in line with the *Australia and New Zealand Refrigerant Handling Code of Practice* 2007 *Part 1 – Self-Contained Low Charge Systems* and (if applicable) allowing disposal of the material to the original supplier or the National Halon Bank, in line with *Ozone Protection Regulation 1997 and the Greenhouse Gas Management Amendment Regulation 2012.* It is a legal requirement that the contractor contains the gas in an airtight container and does not inadvertently release the gas into the atmosphere.

5.3 Permit to Work: HBM Removal/Abatement Works

For any HBM removal work to be undertaken by a licenced contractor, or for any planned asbestos related work, an asbestos Permit to Work (PtW) will need to be issued to, and signed by, the removalist contractor and any other workers engaging in the work activity. The PTW will be issued by the organisation that engaged the contractor.

Before being issued with an PtW, removalists/contractors are required to read and understand the HMMP as well as copies of relevant asbestos containing materials registers and address any inaccessible areas as required.

The PtW should detail the nature of the work to be performed and document the removalist/contractor agreement to:

- Provide all professional insurances to the client as required.
- Provide all relevant licenses, training and tickets to perform the works as required by the Regulation and all relevant Codes of Practice and Australian Standards.
- Abide with the requirements for working with HBM as detailed in the relevant legislation.
- Development and submission of an ARCP, works procedures and SWMS to be reviewed by the managing agent and the nominated independent LAA/Hygiene Consultant.
- Isolate/restrict access to the proposed work area.
- Provide and erect appropriate warning signs.
- The use of safe work procedures.
- Appropriate use of PPE.
- Appropriate decontamination and clearance inspections of the work area.
- Remove and dispose of any ACM (including PPE) in accordance with WHS legislation.

The PtW formally transfers the responsibility for compliance with this HMMP and the *WHS Regulation 2017* to the signatories.

5.4 Worker Induction and Provision of the Register

The development of a site-specific induction by the managing agent should be generated to aid in the management of HBM at the site. The managing agent will provide a unique site-specific induction course as detailed in **3.3.5** for the site and examine if any of the works are likely to impact HBM present at the site.

Where it is likely that planned works may impact upon HBM at the site. Provision of the Register and this HMMP should be provided to the worker. The induction should include the following:

- The parts of the buildings that are known to contain HBM.
- The site specific HBM indication tool (labelling of ACM's) to ensure that persons conducting works are able to effectively identify areas where HBM's have been or suspected to be present.
- Direction on how to work safely with HBM at the site.
- The Permit to Work (see below) system and how it controls any asbestos related/removal work.
- Emergency procedures if HBM is accidentally disturbed during works.

Workers should also be informed of the following:

- That any asbestos abatement works must be approved by the Managing Agent and conducted by appropriately licensed contractors.
- All workers must stop work and report any residual, deteriorating or damaged HBM of which they become aware to the Managing Agent as soon as possible so that the appropriate corrective action can be initiated.

- That there is no guarantee that all HBM have been identified on site, and any unknown or suspect HBM encountered during building, demolition or maintenance works must be reported to the Managing Agent.

The managing agent must ensure a induction register is filled out by inductees prior to work taking place.

5.5 Personal Protective Equipment (PPE)

All workers undertaking HBM removal or related works at the site shall be responsible for providing their workers with appropriate PPE to minimise risk of exposure. The level of PPE required for work should be determined by a risk assessment and detailed with the ARCP and SWMS (as required for each HBM situation).

An outline of some of the types of PPE used as a minimum, but not limited to, for work is outlined below.

5.5.1 Coveralls and Boot Covers

Disposable coveralls should be utilised to minimise the risk of asbestos and SMF fibres contaminating clothing or under garments during remedial work. Coveralls rated Type 5 or Category 3 (prEN ISO 13982–1) are of a suitable standard and should be fitted with elastic hoods, cuffs and anklets to reduce the risk of penetration of asbestos or SMF fibres.

If laced boots with eyelets are worn by workers, it is advisable that protective boot covers are worn in tandem with coveralls. Boot covers help ensure asbestos, lead dusts or SMF fibres do not contaminate footwear which cannot be easily decontaminated.

Coveralls and boot covers should be used for single use only. Once coveralls and boot covers have been used, they should be treated as asbestos/SMF contaminated waste.

Consideration should be given to coveralls and boot covers specific to dealing with chemical waste if a leaking PCB containing capacitor has been identified and PCB oil is visible. It would be preferable that impermeable, safety gum boots be worn during these activities to provide a non-slip sole and an outer that is able to be cleaned.

5.5.2 Gloves

Disposable latex or nitrile gloves should be worn when handling or working around asbestos and other HBM. Gloves should be single use only and disposed of as asbestos / hazardous waste once used.

5.5.3 Eye and Face Protection

Site requirements may include a provision of eye protection to be worn. Eye and face protection should be considered when conducting works with SMF and PCB's due to the irritant nature of SMF fibres and the liquid nature of PCB's.

All eye and face protection controls are to conform with AS/NZS 1337.1:2010; Personal eye protection, eye and face protectors for occupational applications.

5.5.4 Respiratory Protective Equipment (RPE)

The selection of suitable RPE depends on the nature of the work, the probable maximum concentrations of fibres encountered and any personal characteristics of the wearer that may affect the facial fit of the respirator (facial hair and glasses etc).

The level of respiratory protection (or supplied air respirators) should be determined by a competent person and must meet the requirements of AS/NZS 1716:2012 *Respiratory Protective Devices* or its equivalent. Fitted respirator masks should be decontaminated after each use and stored in a suitable and clean location between uses.

Proof of face fit testing for all workers undertaking HBM removal works may be requested by the managing agent, Property / Portfolio Managers, contractors or the nominated LAA or Hygiene Consultant.

5.6 Decontamination

Decontamination for the work area, workers, PPE and tools used in asbestos related/lead work is an important requirement in the process of minimising exposure to airborne asbestos fibres or LCD. Decontamination not only reduces the exposure risk to workers exiting a controlled work area but also to persons outside the controlled removal work area.

To determine the appropriate decontamination procedure, the risks of each individual asbestos/LCD removal job should be assessed. Either wet decontamination, dry decontamination methods (or a combination of both) should be utilised each time persons or equipment enter/exit an asbestos work area and at the completion of the asbestos work. The selection of decontamination methods and procedures including how to set up an effective decontamination area/s is outlined in the Removal CoP.

5.7 Air Monitoring Requirements

5.7.1 Air Monitoring: Asbestos

Air monitoring is conducted to measure potential asbestos contamination and exposure associated with asbestos related work, asbestos removal works or as a result of incidents at the site. Types of air monitoring associated with asbestos related/asbestos removal work is outlined below. Details of air monitoring procedures relating to uncontrolled releases of asbestos fibres or emergencies or incidents is outlined in **Section 6**.

For **friable** asbestos related/asbestos work (including removal) the following is required:

- Background air monitoring is required to have been conducted prior to works commencing.
- Control air monitoring around the asbestos work area must be conducted during the friable asbestos related/asbestos works to assess the control measures in place are adequate.
- Clearance air monitoring must be conducted within the asbestos work area at the completion of work to determine if the work area is suitable for re-occupation. Clearance air monitoring MUST be conducted prior to the application of any post work binding agent/emulsion (such as Emerclad or PVA) in line with the CoP: Removal.
- Air monitoring must only be conducted by a Licenced Asbestos Assessor.

Although the Removal CoP does not specifically require air monitoring for **non-friable** asbestos related/asbestos work greater than 10 m^2, it is strongly recommended for any asbestos related/asbestos work (including removal) next to or within a public location.

It is therefore recommended that the following air monitoring is conducted at the site as a minimum:

- Control air monitoring around the asbestos work area during the asbestos related/asbestos works.

Airborne fibre monitoring may also be conducted if there has been, or suspected to have been an uncontrolled release of asbestos fibres; this may be the resultant of inadvertent damage to an ACM or a level of deterioration of an ACM that may have resulted in fibre release.

Once air monitoring results are received by the competent person or LAA, the results will be communicated to the managing agent and the licenced removalist undertaking the works. In accordance with the Removal CoP, the current **detection limit and clearance standard for airborne asbestos fibres is less than 0.01 fibres/ml**.

If results are below the exposure standard, then the existing control measures to minimise exposure are adequate. Refer to **Section 6** for procedure to address elevated air monitoring readings above the exposure standard.

5.7.2 Air Monitoring: Lead

Lead dust monitoring is required for all lead dust abatement works. An independent Hygiene Consult will be engaged to conduct this monitoring.

Lead dust monitoring shall be undertaken in accordance with AS 3640:2009 *Workplace Atmospheres – Method for sampling and gravimetric determination of inhalable dust.* The analysis should be performed by a NATA-accredited laboratory and reported on endorsed certificates.

Lead dust air monitoring shall be undertaken as follows:

- Control lead dust air monitoring samples shall be collected from the exclusion zone boundaries i.e. outside of the lead remediation work area. All air monitoring results must be below the adopted AS 4361.2-1998 standard of 0.03 mg/m^3 for lead exposure at the boundary of the regulated (work) area.

5.7.3 Air Monitoring: SMF

Air monitoring is conducted to measure potential SMF contamination and exposure associated with SMF related work, SMF removal works or as a result of incidents at the site.

Generally, as SMF is a known irritant, air monitoring is required based off a risk assessment where workers are deemed at risk of being exposed to SMF fibres due to removal methodologies not being adhered to by the removal contractor.

All SMF air monitoring is to be undertaken in accordance with the SMF membrane filter method and by a trained and competent person.

Once air monitoring results are received by the competent person, the results will be communicated to the HMMPC and the contractor or removalist undertaking the works. In accordance with the CoP, the current **detection limit and clearance standard for airborne SMF fibres is less than 0.05 fibres/ml**.

5.8 Clearance Inspections and Certificates

Where HBM related/asbestos work is being undertaken, an independent competent person or an LAA should be engaged to undertake the following:

- Visual Clearance Inspections of the work area the completion of the work to ensure no HBM or associated dust or debris is present.
- Undertake clearance asbestos fibre air monitoring for friable asbestos related/asbestos work (by an LAA only).
- Conduct validation sampling as required (Lead dust only).
- Provision of a Clearance Certificate of the work area.

Once Clearance Certificates have been prepared and issued by the independent competent person or LAA, they are to be filed and stored in line with **Section 3.12**. The Hazardous Material Register and HMMP are to be reviewed and updated as described within **Sections 3.2.1** and **3.2.2** to reflect the items that have been removed.

5.9 Safe Work Practices

For general maintenance works required at the site such as electrical or plumbing work, the Register should be consulted to determine if any HBM are likely to be disturbed by the maintenance worker/contractor.

If maintenance work is to be conducted within an area suspected of containing HBM not listed in the register, the managing agent should consider engaging a competent person or LAA to undertake an intrusive audit to identify the presence of absence of asbestos and other hazardous building materials.

If HBM is identified, it may be removed by a licenced removalist. If the HBM is unable to be removed, but likely to be impacted upon by the contractor, appropriate Safe Work Practices must be utilised by the worker/contractor to limit the risk of potential exposure to the HBM.

Techniques of limiting the generation of airborne asbestos fibres include:

- The wetting of asbestos using surfactants or wetting agents, such as detergent water
- The use of thickened substances, pastes and gels, to cover the surfaces of asbestos being worked on.
- The use of shadow vacuuming
- Performing the task in a controlled environment (for instance, a ventilated enclosure).

Specific examples of Asbestos Safe Work Practices are outlined in Appendix F of the Management CoP, which relate to specific maintenance tasks that are likely to be undertaken at the site.

6. Planned Refurbishment or Demolition

Prior to any proposed refurbishment or demolition works, a destructive audit must be undertaken to identify any HBM likely to be disturbed by the refurbishment or demolition. As well as a risk assessment and scope of works documentation.

The Code of Practice: Demolition Works (SafeWork NSW 2019) states that any hazardous materials should be clearly identified and managed.

A destructive audit is an intrusive investigation aimed at identifying the potential presence of HBM in areas unable to be inspected as part of previous audits with additional sampling regimes where required. Inaccessible areas which may contain HBM can include wall and ceiling cavities, crawl spaces, any structures or plant and otherwise restricted areas. The Register should be consulted prior to conducting a destructive audit.

If HBM listed in the Register, or HBM identified as part of the demolition audit are likely to be disturbed by planned demolition or refurbishment, they must be removed prior to the commencement of works.

7. Incidents and Emergency Procedures

The following sections outline the emergency procedures to follow should there be an uncontrolled release of asbestos fibres at the site, or if air monitoring detects is an exceedance of respirable airborne fibres above the exposure standard. Any incidents or unplanned disturbances should be reported to the following immediately:

- WHS Manager
  Ventia Pty Ltd,
  Level 21 Town Hall House,
  456 Kent Street, Sydney 2000,
  Phone: 1800 332 254 Helpdesk
  Email: CityOfSydney@ventia.com.au
- The appropriate managing agent of the site.
- The Property / Portfolio Managers.

7.1 Asbestos Disturbance

In the event that an activity causes the accidental disturbance of asbestos materials resulting in the potential uncontrolled release of airborne fibres, **Table 4** outlines the steps which should be followed:

Table 4: Emergency Response Procedure		
Step	**Responsible**	**Action**
1	City Worker or Contractor	• Stop work and immediately notify the managing agent. • If the managing agent is unavailable, contact Helpdesk for assistance. • Isolate the area if practicable, signpost appropriately.
2	Managing Agent	• Remove personnel from area potentially at risk of exposure. • Notify the Property / Portfolio Managers as soon as practicable.
3	Managing Agent	• Restrict access and isolate the area, as far as reasonably practicable. • Turn off any ventilation or air conditioning units near the area. • Erect signage and barricades to restrict access to the area.
4	Managing Agent	• Contact a competent / LAA to provide advice on additional controls. • If asbestos confirmed, engage a competent person or LAA to conduct background air monitoring of the area, depending on classification of asbestos. • Engage an appropriate licensed asbestos removalist to undertake asbestos removal/clean-up work following advice from competent person/LAA. • Removal works must be in accordance with legislation and Code of Practice: How to Safely remove asbestos (SafeWork NSW, 2019) • Inform any tenants that may be affected by the removal works of the planned Scope and duration of the works.
5	Competent Person / LAA	• Collect a sample of the material if presence of asbestos is unknown or suspected. • Consider background asbestos air monitoring to be undertaken to assess fibre airborne concentrations depending on classification of the suspected material (IE Friable material or disturbed non-friable ACM. • Provide advice to the managing agent on potential isolation and removal strategies dependant on the friability and location of the ACM.
6	Asbestos Removalist Competent Person / LAA	• Asbestos Removalist to perform asbestos removal / clean up works. • Competent person / LAA is to perform control asbestos air monitoring during removal works (if required). All air monitoring results must be below the lowest detectable limit for the method of <0.01 fibres/ml.
7	Competent Person / LAA	• Perform clearance asbestos air monitoring within removal works (if required), to ensure the area is suitable for reoccupation. • Provide clearance certificate based on successful clearance inspection and/or clearance air monitoring. All air monitoring results must be below the lowest detectable limit for the method of <0.01 fibres/ml.
8	Managing Agent	• Inform Property / Portfolio Managers of completed ACM removal works. • Confirmation with tenant / contractor that ordered works have been completed. • Sign-off of works completed by contractors; and • Update the HBM Register and management plan to reflect the remedial ACM that took place.
9	City Employees	• City employees are to complete and submit an incident report using the online Incident / Accident Report form on the internal Safety Management System as soon as reasonably practicable.

7.2 Lead Disturbance

In the event that an activity causes the accidental disturbance of Lead-Containing Paint/Dust, **Table 5** outlines the steps which should be followed:

Table 5: Emergency Response Procedure		
Step	**Responsible**	**Action**
1	City Worker or Contractor	• Stop work and immediately notify the managing agent. • If the managing agent is unavailable, contact Helpdesk for assistance. • Isolate the area if practicable, signpost appropriately.
2	Managing Agent	• Remove personnel from area potentially at risk of exposure. • Notify the Property / Portfolio Managers as soon as practicable.
3	Managing Agent	• Restrict access and isolate the area, as far as reasonably practicable. • Turn off any ventilation or air conditioning units near the area. • Erect signage and barricades to restrict access to the area.
4	Managing Agent	• Contact an Occupational Hygienist / Competent Person to provide advice on additional controls. • Engage an appropriate licensed removalist to undertake Lead removal/clean-up work following advice from competent Occupational Hygienist. • Inform any tenants that may be affected by the removal works of the planned Scope and duration of the works.
5	Occupational Hygienist / LAA	• Collect a sample of the material if presence of lead is unknown or suspected. • Provide advice to the managing agent on potential isolation and removal strategies dependant on the location of the lead material.
6	Appropriate Licensed Removalist Occupational Hygienist	• Appropriate licensed removalist to perform lead removal / clean up works. • Occupational Hygienist / LAA should perform lead monitoring during the clean-up works on the boundary of the work area to ensure lead dust levels do not exceed the exposure standard of 0.15 mg/m^3
7	Occupational Hygienist	• Perform an inspection within removal works to ensure all surface are lead free. • Provide clearance certificate based on successful clearance inspection and air monitoring results that are be below 0.15 mg/m^3.
8	Managing Agent	• Inform Property / Portfolio Managers of completed lead removal works. • Confirmation with tenant / contractor that ordered works have been completed. • Sign-off of works completed by contractors; and • Update the HBM Register and management plan to reflect the remedial works that took place.
9	City Employees	• City employees are to complete and submit an incident report using the online Incident / Accident Report form on the internal Safety Management System as soon as reasonably practicable.

7.3 Elevated Asbestos Air Monitoring Results

If during asbestos related/asbestos removal work, background, control or clearance air monitoring results exceed the method detection limit of 0.01 fibres/mL of air, the existing controls will need to be reviewed and improved before works may continue. **Table 6** provides the procedure to be followed depending on the air monitoring result.

Table 6: Airborne Fibre Action Levels

Action Level	Responsible	Control / Action
<0.01 fibres/ml	Asbestos Removalist	• Continue with existing control measures.
≥0.01 fibres/ml and ≤0.02 fibres/ml	Competent Person / LAA	• Notify Asbestos Removalist and Managing Agent of results as soon as practicable. • Managing Agents to keep all documentation regarding results for an indefinite period.
	Competent Person / LAA Managing Agent / Asbestos Removalist	• Investigate potential cause for the exceedance. • Existing controls to be reviewed and new and/or improved controls to be implemented where applicable.
>0.02 fibres/ml	Competent Person / LAA	• Notify Asbestos Removalist and Managing Agent of results as soon as practicable.
	Asbestos Removalist	• Stop work immediately. • Notify the regulator (Safe Work NSW) by phone or in writing with air monitoring result and that removal works have ceased.
	Managing Agent Asbestos Removalist	• Erect signage and barricades around asbestos work area to restrict access.
	Competent Person / LAA Managing Agent Asbestos Removalist	• Conduct an investigation into the cause for the exceedance. This is to be performed by thorough visual inspection of the work area and equipment in consultation with workers. • Once suspected cause is identified existing controls to be reviewed and new and/or improved controls to be implemented.
	Competent Person / LAA	• Conduct additional air monitoring around the asbestos work area once new controls have been implemented. • Works must not recommence until air monitoring results are <0.01 fibres/ml

Appendix A – Risk Assessment Criteria

Risk Assessment Criteria

To assess the health risk posed by the presence of HBM (the material), relevant factors must be considered. These factors include:

- The likelihood the material is to be disturbed by workers.
- Friability of the material particularly for ACM and SMF.
- The condition of the material i.e. evidence of physical damage or influence of external factors such as weather conditions and water.
- The risk of exposure to workers when working within close proximity to the material.

Where these factors have indicated that there is a possibility of exposure, this provides the consultant with a risk priority rating and the ability to provide the most appropriate recommendations for repair, maintenance or abatement of the material.

Material Condition

The condition of the material identified during the inspection, and the meaning of each category rating, are summarised as follows:

- **Very Good condition**: Refers to the material being undamaged and in "original" condition with no deterioration and sealed i.e. no exposed asbestos fibres.
- **Good condition**: Refers to the material being undamaged and in "near original" condition with minimal deterioration, minor cracked edges, flaking paint or sealant i.e. not exposing asbestos fibres.
- **Fair condition**: Refers to the material exhibiting minor damage including breaks, cracks, deterioration, holes etc. and some surface damage.
- **Poor condition**: Refers to the material being severely damaged, associated debris and dust is located within close proximity, the material is weathered and broken down with the potential for exposure to workers.

Friability of ACM's

Friability, as it relates to ACM and SMF, describes the ease of which fibres can be released from the material, in its current condition.

- **Friable ACM**: Refers to ACM which may become crumbled, pulverised or reduced to powder by hand pressure when dry. Examples of products include fire door core insulation, sprayed insulation and pipe lagging. Generally, this type of material contains more asbestos fibres and is considered more hazardous than non-friable asbestos products.
- **Non-friable ACM**: Also known as bonded asbestos, are ACM that typically comprise asbestos fibres tightly bound in a stable product matrix. Examples of non-friable asbestos products include asbestos cement materials, vinyl floor tiles, gaskets and electrical backing boards.
- **Unbonded SMF**: Are SMF materials that have no adhesives or cements and the SMF is loose material in a package. Examples of unbonded SMF material includes rockwool, sprayed insulation and damaged SMF materials.
- **Bonded SMF**: Are SMF materials where adhesives or cements have been applied to the SMF before delivery and the SMF product has a specific shape. Examples of products include sarking insulation, insulation batts and pre-form pipe lagging.

This risk criteria do not relate to lead or PCB containing materials or ODS.

Likelihood of Disturbance of the Material

HBM can be classified as having low, medium or high likelihood of disturbance. This means that workers, contractors or the general public can get within close proximity of a material, potentially exposing themselves to the material.

- **Unlikely**: Unlikely accessibility describes a material that cannot be easily disturbed, such as materials in voids, set ceilings or where work activates within the area are unlikely to disturb the material.
- **Likely**: Likely accessibility describes a material that is visible but normal access is impeded by physical barriers, such as materials behind cladding or present in a ceiling space or are height restricted and where work activities within the area are likely to impact the material.
- **Highly Likely**: High accessibility describes a material that can be easily accessed or damaged due to their close proximity to worker, contractors, general public, and where work activities are going to impact on the material with high occupancy within the area.

Risk Matrix

To determine the level of risk a material has, the risk matrix is used. The risk rating is based on the condition of the material and the likelihood of disturbing the material.

Condition	Likelihood of Disturbance		
	Highly Likely	**Likely**	**Unlikely**
Poor	Very High	High	Medium
Fair	High	Medium	Low
Good	Medium	Medium	Low
Very Good	Medium	Low	Very Low

Level of Risk

The level of risk for the material identified are described below:

- **Very Low Risk**: Describes a material that poses a very low health risk to workers, contractors and the general public as the material in very good condition and is unlikely to be disturbed.
- **Low Risk**: Describes a material that poses a low health risk to workers, contractors and the general public providing the material stays in a stable condition, for example a material that is in good condition and has unlikely accessibility.
- **Medium Risk**: Describes a material that poses an increased risk to workers, contractors and the general public in the area, however, is in a semi-stable condition with minor amounts of damage.
- **High Risk**: Describes a material that poses a high risk of exposure to workers, contractors and the general public working in the area of the material. Generally, a material with a high-risk ranking is in a poor condition.
- **Very High Risk**: Describes a material that poses a very high risk of exposure to workers, contractors and the general public working in the area of the material and therefore the area is not suitable for occupancy. Urgent remediation is required (i.e. within 24 hours of identification of the material). There is a likelihood of imminent risk of harm to workers. Generally, sites that require demolition or refurbishment works where the identified material is to be impacted on warrant a very high-risk rating.

Priority Risk Rating

The priority risk rating is determined from the likelihood of disturbing the material, the condition of the material and the level of risk to workers, contractors and the general public. The priority risk rating system ranges from 1 to 4, with Priority Risk Rating 1 being the highest and Priority Risk Rating 4 being the lowest.

Priority Risk Rating 1: Hazard with High or Very High-Risk Potential

Work area has a material, which is either damaged or being exposed to continual disturbance or potential to expose workers to the material when accessing the area. Due to these conditions, there is an increased potential for exposure and to contaminate the work area or surrounding areas.

Recommendation usually includes isolation through physical barriers, air monitoring to be undertaken and the material to be promptly removed by an appropriately licensed asbestos contractor or similar. After abatement of the material, a re-inspection or clearance inspection should be conducted by a competent person (e.g. Licensed Asbestos Assessor for asbestos) to confirm that the area has been satisfactorily cleared of the material.

Priority Risk Rating 2: Hazard with Medium Risk Potential

Work area has a material with a potential for disturbance due to the following conditions:

1. The material, friable or non-friable, bonded or unbonded, has been disturbed or damaged and its current condition is unstable; or
2. The material, friable or non-friable, bonded or unbonded, is accessible and can, when disturbed, present a short-term exposure risk to workers, contractors and the general public; or
3. The material, friable or non-friable, bonded or unbonded, could pose an exposure risk if workers, contractors or the general public are in close proximity.

Recommendations usually include remediation abatement measures to be taken within a 3-month period or less and management through the appropriate management plans and systems.

Priority Risk Rating 3: Hazard with Low Risk Potential

Work area has a material where:

1. The condition of a material is stable (including friable ACM and unbonded SMF) and has a low potential for disturbance; or
2. The material is non-friable, bonded or in fair condition, however has been damaged, but does not present an exposure risk unless cut, drilled, sanded or otherwise abraded.

Recommendations include remediation of the material and ongoing management of the friable/unbonded and remediated non-friable/bonded materials.

Priority Risk Rating 4: Hazard with Very Low Risk Potential

The material is in good condition. It is most unlikely that the material can be disturbed from workers in the work area. It is considered the material poses a negligible health risk.

These materials should be maintained in good condition and the condition monitored in accordance with the HBM Register and the HBM Management Plan.

Appendix B – Forms

FORM 1

Hazardous Materials Management Plan
Summary of Changes/Revisions Register

In accordance with Clause 430 of the NSW *Work Health and Safety Regulation 2017* a review of the HMMP must be conducted at least once every five years to ensure systems and procedures within this HMMP can effectively manage asbestos and asbestos containing materials at the site. A register of revisions for this HMMP is provided in the table below.

Rev. No	Date	Section	Description	Sign

FORM 2

Site Induction Register

Note: To be managed by managing agent

Company Name	Name	Work Description	Date	Acknowledgement of Hazardous Materials Register review - signature

FORM 3

Site Training Register

Name	Company	Sign	Date