GREENCAP
Going Further in Managing Risk

Level 2 / 11-17 Khartoum Road
North Ryde NSW 2113
Australia

HAZARDOUS MATERIALS MANAGEMENT PLAN

January 2018
J153823

Mirvac Real Estate Pty Ltd
1 Darling Island Road, Pyrmont

Our Ref : C122134 : J153823 : PJB

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No of Copies	Type	Customer Name	Position & Company
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Statement of Limitations

This report has been prepared in accordance with the agreement between Mirvac Real Estate Pty Ltd and Greencap Pty Ltd (Greencap). Within the limitations of the agreed upon scope of services, this work has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by members of its profession and consulting practice. No other warranty, expressed or implied, is made.

This report is solely for the use of Mirvac Real Estate Pty Ltd and any reliance on this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties or for other uses. This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval with comments are provided by Greencap.

Hazardous Materials Management Plan
Mirvac Real Estate Pty Ltd

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Mirvac Real Estate Pty Ltd

Hazardous Materials Management Plan

1 Darling Island Road, Pyrmont, NSW

SECTION 1: PREAMBLE

SECTION 1 - PREAMBLE

1.1 Introduction

Exposure to certain hazardous materials has been linked with respiratory and other diseases and some hazardous materials are known or suspected human carcinogens. The identification of the hazards associated with hazardous materials, the evaluation of the risk they pose to persons and the implementation of appropriate controls to minimise that risk is an important part of overall health and safety risk management in the workplace.

This plan is designed to address the statutory obligations of Mirvac Real Estate Pty Ltd to manage identified hazards relating to the presence of hazardous materials, by providing a single point of reference for all related issues pertaining to the site located at 1 Darling Island Road, Pyrmont and managed by Mirvac Real Estate Pty Ltd. The hazardous materials to be managed by this plan are as follows:

- Asbestos-Containing Materials (ACM); and
- Synthetic Mineral Fibre (SMF)-containing materials.

SECTION NO.	CONTENTS
1	Preamble Preamble associated with this Hazardous Materials Management Plan (HMMP).
2	Hazardous Materials Register The hazardous materials register for this site. The report is reference for this HMMP: Hazardous Materials Risk Assessment C122134: J153823 1 Darling Island, Pyrmont, dated January 2018.
3	Hazardous Materials Management Plan The HMMP, detailing the management procedures designed to ensure that all practicable steps are taken to prevent or minimise the risk of exposure to hazardous materials. This section also provides information on each hazardous material and details the requirements for its management (e.g. work permit system, labelling, etc.).
4	Emergency and Work Procedures Details procedures when working in areas that contain or may contain hazardous materials.
5	Hazardous Materials Management Timetable The Hazardous Materials Management Timetable outlines further activities required to successfully manage the hazardous materials at the site. The timetable is based upon recommendations documented in the Hazardous Materials Survey Report undertaken by Greencap (Ref: Hazardous Materials Risk Assessments C122134:J153823 1 Darling Island Road, Pyrmont, dated January 2018 which should be read in conjunction with this Management Plan.

SECTION NO.	CONTENTS
6	Contacts and Hazardous Materials Records/Documentation Section set aside for record keeping. It is recommended that the following information be filed in this section: • Records of re-inspections and review of the HMMP; • Records of hazardous material removal and clean-up works; • Hazardous materials clearance certification and asbestos fibre air monitoring reports (if applicable); • Reports of inspections by a hazardous materials Consultant/Competent Person; • Work Permits; • Reports of accidental damage and clean-up procedures; • Details of licensed asbestos contractors; • Details of staff and tenant briefings and contractor inductions; and • Details of hazardous materials scope of works, work outlines and procedures of specifications.

1.2 Hazardous Materials Identified

The following details provide a brief outline of the hazardous materials found within the building located at 1 Darling Island Road, Pyrmont (✓ = material present):

Building	Hazardous Material		
	Asbestos		SMF
	Friable	Non-Friable	
Ground Level	-	-	✓
Level 1	-	-	✓
Level 2	-	-	✓
Level 3	-	-	✓
Level 4	-	-	✓
Level 5	-	-	✓

Mirvac Real Estate Pty Ltd

Hazardous Materials Management Plan

1 Darling Island Road, Pyrmont, NSW

SECTION 2: HAZARDOUS MATERIALS RISK ASSESSMENT REGISTER

Hazardous Material Risk Assessment

Mirvac Operations

1 Darling Island Road, Pyrmont NSW 2009

Site Reference: 001

Our Reference : C122134 : J153823

Date: January 2018

Greencap

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23/01/2018
REPORT PREPARED BY

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12/02/2018
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13/02/2018
REPORT AUTHORISED BY

JAMES STEWART
Hazmat Team Manager NSW

Limitations - Overview

Please note there are limitations associated with this report due to a range of factors, including, but not limited to the scope of works, survey methodology and inaccessible areas. To ensure its contextual integrity, the report must be read in its entirety and should not be copied, distributed or referred to in part only.

This report is not adequate for the purposes of refurbishment or demolition works. This report must be reviewed prior to the commencement of such works and a more intrusive risk assessment undertaken to identify asbestos-containing materials which may be disturbed during building demolition or refurbishment works.

Refer to the Statement of Limitations for further details.

Refer to the Areas Not Accessed for further details.

Introduction

This report presents the findings of a Hazardous Material Risk Assessment conducted for Mirvac Operations located at 1 Darling Island Road, Pyrmont NSW 2009. The risk assessment was performed by Paul Brown on 23/01/2018.

This report was performed in accordance with:

- How to Manage and Control Asbestos in the Workplace: Code of Practice (SafeWork NSW, 2016)
- NSW Work Health & Safety Regulation 2017
- Code of Practice for the Safe Use of Synthetic Mineral Fibres

Scope of Works

The scope of works for this project was as follows:

- Inspect representative and accessible areas of the site to identify the following hazardous materials: Asbestos and SMF
- Identify the likelihood of hazardous materials in inaccessible areas
- Identify the types of hazardous materials and their condition
- Assess the risks posed by the materials
- Compile a hazardous materials register for the site
- Take photographs of suspected hazardous materials
- Recommend control measures and actions necessary to manage any hazardous material related risks
- Collect samples of suspected asbestos-containing materials

Refer to Methodology for full details.

Site Asbestos Risk Profile

The following table provides a summary of the Asbestos Risk Assessment for the site; item-specific findings are presented in the Hazardous Materials Register.

Building / Level	Number of Items by Risk Rating		
	High	Medium	Low
Main Building - All Levels	0	0	0
Main Building - Level Five	0	0	0
Main Building - Level Six	0	0	0
Main Building - Parking Level P1	0	0	0
Total	**0**	**0**	**0**

Summary of Identified Items

The following table provides a general overview of the types of Hazardous Materials identified on site; specific findings are presented in the Hazardous Materials Register.

Building / Level	Asbestos		Hazardous Materials
	Friable	Non Friable	SMF
Main Building - All Levels			YES
Main Building - Level Five			YES
Main Building - Level Six			YES
Main Building - Parking Level P1			YES

Recommendations

- Develop a Hazardous Materials Management Plan (HMMP) to manage the risks associated with remaining in-situ hazardous materials located at the site and ensure compliance with relevant Legislation, Codes of Practice and Australian Standards.
- Prior to demolition/refurbishment works undertake a destructive hazardous materials survey of the premises as per the requirements of AS 2601: 2001 The Demolition of Structures, Part 1.6.1 and Demolition Work Code of Practice (Safe Work Australia, Feb 2016).
- Synthetic Mineral Fibre (SMF) materials should be removed under controlled conditions prior to demolition /refurbishment works, in accordance with the requirements of the Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006(1990)].
- Should any personnel come across any suspected asbestos or hazardous materials, work should cease immediately in the affected areas until further sampling and investigation is performed.
- Areas highlighted in the Areas Not Accessed section as areas of 'no access' should be presumed to contain hazardous materials. Appropriate management planning should be implemented in order to control access to and maintenance activities in these areas, until such a time as they can be inspected and the presence or absence of hazardous materials can be confirmed.
- Greencap can assist with the implementation of any of the above recommendations.

How to use this Register

The location and item information of identified materials

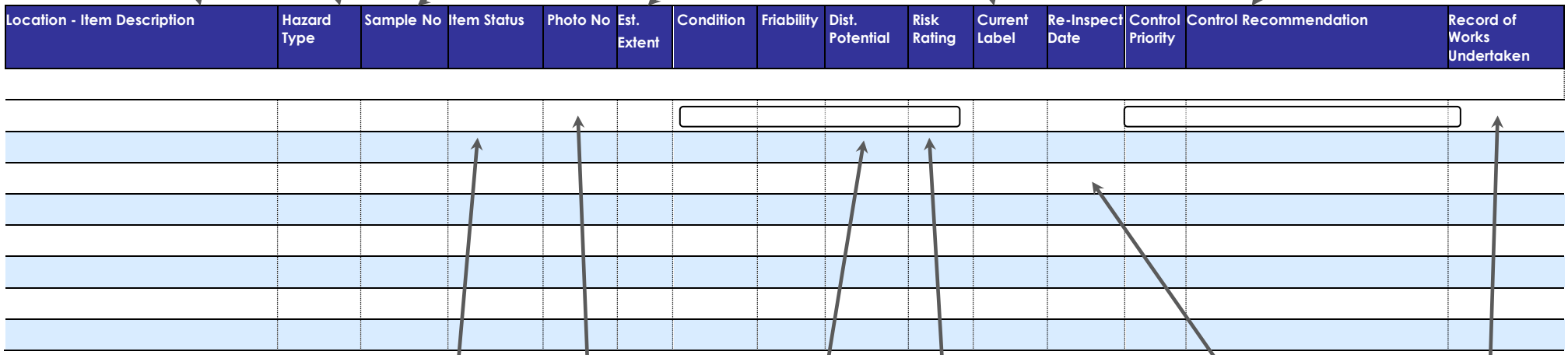
Hazard type: e.g. Asbestos, Lead Paint, SMF, etc.

Refer to the Sample Analysis Results for further details

Estimated quantity of material present

Details of warning labels present

The **control priority** and **control recommendations** indicate the recommended management actions, shaded according to priority. Refer to the Priority Rating System section for further information



This indicates if the material contains asbestos / hazardous materials:

Positive	Item contains asbestos or other hazardous material.
Negative	Item does not contain asbestos or other hazardous material covered in the scope of work.
Presumed Positive	Item has not been sampled, but is visually similar to another positive sample or it is likely to contain asbestos / hazardous materials
Presumed Negative	Item has not been sampled, but is visually similar to another negative sample or it is NOT likely to contain asbestos / hazardous materials

A photo of the item is within the Photo section

The potential of disturbance to material to liberate asbestos fibres

These are the **risk assessment factors** and **risk rating** of the item. Refer to the Risk Assessment Factors section for further information

Recommended re-inspection date, based on the risk rating of the material

Any information relating to remedial or removal works undertaken should be recorded by the Register controller.

Control Priority: The following priority rating system is adopted to assist in the programming and budgeting for control of asbestos risk identified in the assessment.

Priority 1 (P1)	Restrict access to area, organise abatement works ASAP, manage any remaining materials as part of an AMP.
Priority 2 (P2)	Organise remedial works in the next few months & manage any remaining materials as part of an AMP.
Priority 3 (P3)	No short-term remedial works required. Review periodically and manage as part of an AMP.
Priority 4 (P4)	No short-term remedial works required. Review periodically and manage as part of an AMP.

Hazardous Materials Register

Site Details		Building Details				Audit Details	
Full Address:	**1 Darling Island Road, Pyrmont NSW 2009**	**Building Name:**	**Main Building**	**Number of Levels:**	**5**	**Survey Date:**	**23-01-2018**
Property ID:	**001**	**Est. Building Size:**	**44394m²**	**Est. Building Age:**	**2006**	**Inspected By:**	**Paul Brown**
Client Name:	**Mirvac Operations**	**Roof Type:**	**Metal**	**Construction Type:**	**Concrete Floor Slab, Concrete Columns, Brick, Plasterboard and Cement Walls, Plasterboard Ceilings and Timber Floors**	**Company:**	**Greencap**

Location - Item Description	Hazard Type	Sample No.	Item Status	Photo No.	Est. Extent	Condition	Friability	Dist. Potential	Risk Rating	Current Label	Reinspect Date	Control Priority	Control Recommendation	Record of Works Undertaken
Main Building - Interior - All Levels														
All rooms - Various Throughout Ductwork Insulation - Insulation Material	SMF		Presumed Positive	J153823-001-Photo003	1000 m	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Main Building - Interior - Level Five														
Cooling Towers - Throughout Wall - Insulation Material	SMF		Presumed Positive	J153823-001-Photo009	200 m²	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Plant Room - South Hot Water Heater - Insulation Material	SMF		Presumed Positive	J153823-001-Photo005 J153823-001-Photo004	7 Unit/s	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Plant Room - Throughout Roof Lining - Sarking Insulation	SMF		Presumed Positive	J153823-001-Photo008	400 m²	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Plant Room - Various Throughout Pipework Insulation - Insulation Material	SMF		Presumed Positive	J153823-001-Photo006 J153823-001-Photo007	500 m	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Main Building - Interior - Level Six														
Plant Room - East Wall Lining - Fibre Cement Sheeting	Asbestos	J153823-001-002	Negative											
Plant Room - Throughout Ductwork - Sprayed Insulation	Asbestos	J153823-001-001	Negative											
Plant Room - Throughout Roof Lining - Sarking Insulation	SMF		Presumed Positive	J153823-001-Photo010	200 m²	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Plant Room - Various Throughout Pipework Insulation - Insulation Material	SMF		Presumed Positive	J153823-001-Photo012	100 m	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Main Building - Interior - Parking Level P1														
Car park - Southeast Flexible Ductwork Insulation - Insulation Material	SMF		Presumed Positive	J153823-001-Photo001	8 m	Good	Bonded (SMF)						Maintain in good condition and incorporate into a HMMP. Remove under controlled conditions prior to demolition or refurbishment.	
Car park - Throughout	None			J153823-001-Photo002										

Areas Not Accessed

It is noted that Hazardous Materials may be contained within or behind those areas identified in the below table: Areas Not Accessed. Caution should be exercised when accessing these areas, particularly in relation to potential disturbance of the building fabric or concealed spaces.

1 of 1 Building

Area / Item	Not Accessed	Comments
	Main Building	
Behind ceramic wall tiles throughout	All	Main Building - No damage to surfaces
Building facade fixing brackets	All	Main Building - No damage to surfaces
Ceiling spaces	Some	
Fire door cores	All	Main Building - No damage to fire door integrity
Height restricted areas of site and ceiling where safe lifting platforms were not provided	All	Main Building - No safe access at time of inspection
Roof	All	Main Building - No safe access at time of inspection
Under carpeted floor coverings in office areas	Some	Main Building - Various office areas
Wall cavities	All	Main Building - No damage to surfaces
Within electrical switchboard cupboard or backing	Some	Main Building - Plant rooms & vertical risers
Within internal walls partitioning	All	Main Building - No damage to surfaces

Photographs

PHOTO NO.: **J153823-001-PHOTO003**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - ALL LEVELS**
ROOM/LOCATION: **ALL ROOMS - VARIOUS THROUGHOUT**
FEATURE/MATERIAL: **DUCTWORK INSULATION - INSULATION MATERIAL**
SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO009**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**
ROOM/LOCATION: **COOLING TOWERS - THROUGHOUT**
FEATURE/MATERIAL: **WALL - INSULATION MATERIAL**
SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO005**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**
ROOM/LOCATION: **PLANT ROOM - SOUTH**
FEATURE/MATERIAL: **HOT WATER HEATER - INSULATION MATERIAL**
SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO004**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**
ROOM/LOCATION: **PLANT ROOM - SOUTH**
FEATURE/MATERIAL: **HOT WATER HEATER - INSULATION MATERIAL**
SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO008**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**
ROOM/LOCATION: **PLANT ROOM - THROUGHOUT**
FEATURE/MATERIAL: **ROOF LINING - SARKING INSULATION**
SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO006**
RESULT: **SMF - PRESUMED POSITIVE**
BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**
ROOM/LOCATION: **PLANT ROOM - VARIOUS THROUGHOUT**
FEATURE/MATERIAL: **PIPEWORK INSULATION - INSULATION MATERIAL**
SAMPLE NO.: **-**

Photographs

PHOTO NO.: **J153823-001-PHOTO007**

RESULT: **SMF - PRESUMED POSITIVE**

BUILDING/LEVEL: **MAIN BUILDING - LEVEL FIVE**

ROOM/LOCATION: **PLANT ROOM - VARIOUS THROUGHOUT**

FEATURE/MATERIAL: **PIPEWORK INSULATION - INSULATION MATERIAL**

SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO010**

RESULT: **SMF - PRESUMED POSITIVE**

BUILDING/LEVEL: **MAIN BUILDING - LEVEL SIX**

ROOM/LOCATION: **PLANT ROOM - THROUGHOUT**

FEATURE/MATERIAL: **ROOF LINING - SARKING INSULATION**

SAMPLE NO.: **-**

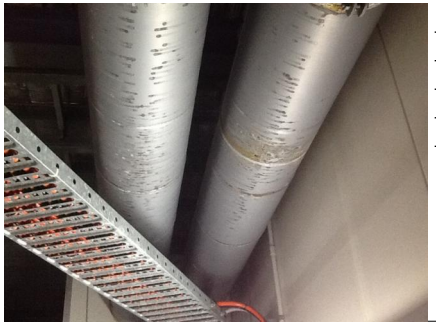


PHOTO NO.: **J153823-001-PHOTO012**

RESULT: **SMF - PRESUMED POSITIVE**

BUILDING/LEVEL: **MAIN BUILDING - LEVEL SIX**

ROOM/LOCATION: **PLANT ROOM - VARIOUS THROUGHOUT**

FEATURE/MATERIAL: **PIPEWORK INSULATION - INSULATION MATERIAL**

SAMPLE NO.: **-**

PHOTO NO.: **J153823-001-PHOTO001**

RESULT: **SMF - PRESUMED POSITIVE**

BUILDING/LEVEL: **MAIN BUILDING - PARKING LEVEL P1**

ROOM/LOCATION: **CAR PARK - SOUTHEAST**

FEATURE/MATERIAL: **FLEXIBLE DUCTWORK INSULATION - INSULATION MATERIAL**

SAMPLE NO.: **-**

Greencap Pty Ltd
ABN: 76 006 318 010
Level 2 / 11 Khartoum Road
North Ryde NSW 2113
Australia
P: (02) 9889 1800
F: (02) 9889 1811
www.greencap.com.au

Lab Report Date: Tuesday, 30/01/2018

Our ref: C122134:J153823 - 001

Paul Jolly
Mirvac Real Estate Pty Ltd (NSW)
Level 26, 60 Margaret St
SYDNEY NSW 2000

Dear Paul,

Re: Asbestos Identification Analysis - 1 Darling Island Road, Pyrmont NSW 2009

This letter presents the results of asbestos fibre identification analysis performed on 2 samples collected by Paul Brown of Greencap on Tuesday, 23 January 2018. The samples were collected from 1 Darling Island Road, Pyrmont NSW 2009.

All sample analysis was performed using polarised light microscopy, including dispersion staining in our Sydney Laboratory by the method of Australian Standard AS4964-2004 and supplementary work instruction in house method NALAB 302 Asbestos Identification.

The analysis was completed on Tuesday, 30 January 2018.

The samples will be kept for six months and then disposed of, unless otherwise directed.

The results of the asbestos identification analysis are presented in the appended table.

Should you require further information please contact Paul Brown.

Yours sincerely,
Greencap

Holly Kitamura : Approved Identifier

Holly Kitamura : Approved Signatory

NATA
WORLD RECOGNISED ACCREDITATION

Sydney Laboratory
Sample Analysis Results

GREENCAP

Report Date: Tuesday, 30/01/2018

Our ref: C122134:J153823 - 001

Site Location:	1 Darling Island Road, Pyrmont NSW 2009		
	Sample ID	**Sample Location/Description/Weight or Size**	**Analysis Result**
1	J153823 - 001 - 001	Main Building - Interior - Level Six - Plant Room - Throughout - Ductwork - Sprayed Insulation Gold-grey compressed/formed powder, mica, organic fibre vermiculite-type material ~ 40 x 40 x 7 mm	No Asbestos Detected Organic Fibres
2	J153823 - 001 - 002	Main Building - Interior - Level Six - Plant Room - East - Wall Lining - Fibre Cement Sheeting Unpainted gold-grey fibre-cement sheet material ~ 18 x 8 x 2 mm	No Asbestos Detected Organic Fibres

Asbestos

2 (Two) assumed asbestos samples where collected during this inspection and analysis of samples has been undertaken by an approved analyst.
This assessment was undertaken in accordance with the following documents and within the constraints of the scope of works:

- How to Manage and Control Asbestos in the Workplace: Code of Practice (SafeWork Australia, 2016)
- NSW Work Health & Safety Regulation 2017

Where it was determined that asbestos was present, a risk and priority assessment was conducted in accordance with Greencap's standard Risk Assessment and Priority Ranking System. Refer to section on Priority Rating System for detailed information on this system.

Synthetic Mineral Fibre (SMF)

Accessible areas where Synthetic Mineral Fibre (SMF) insulation was visually confirmed as being present were noted to give a general indication to the presence of SMF materials throughout the building.

Risk Assessment Factors - Asbestos

The presence of asbestos-containing materials (ACMs) does not necessarily constitute an exposure risk. However, if the ACM is sufficiently disturbed to cause the release of airborne respirable fibres, then an exposure risk may be posed to individuals. The assessment of the exposure risk posed by ACMs assesses (a) the material condition and friability, and (b) the disturbance potential.

Material Condition

The assessment factors for material condition include:

- Evidence of physical deterioration and/or water damage.
- Degree of friability of the ACM.
- Surface treatment, lining or coating (if present).
- Likelihood to sustain damage or deterioration in its current location and state.

Physical Condition and Damage

The condition of the ACM is rated as either being good, fair or poor.

Good	refers to an ACM that has not been damaged or has not deteriorated
Fair	refers to an ACM having suffered minor cracking or de-surfacing.
Poor	describes an ACM which has been damaged or its condition has deteriorated over time.

Friability and Surface Treatment

The degree of friability of ACMs describes the ease of which the material can be crumbled, and hence to release fibres, and takes into account surface treatment.

Friable asbestos
Friable asbestos or ACM is asbestos or ACM in powder form, or able to be crumbled, pulverised, or reduced to a powder by hand pressure when it is dry e.g. sprayed asbestos beam insulation (limpet), pipe lagging.

Non-friable asbestos
also referred to as bonded asbestos, typically comprises asbestos fibres tightly bound in a stable non-asbestos matrix or impregnated with a coating. Examples of non-friable asbestos products include asbestos cement materials (sheeting, pipes etc), asbestos containing vinyl floor tiles, compressed gaskets and electrical backing boards.

Disturbance Potential

In order to assess the disturbance potential, the following factors are considered:

- Requirement for access for either building work or maintenance operations.
- Likelihood and frequency of disturbance of the ACM.
- Accessibility of the ACM.
- Proximity of the ACM to air plenums and direct air stream.
- Quantity and exposed surface areas of ACM.
- Normal use and activity in area, and numbers of persons in vicinity of ACM.

These factors are used to determine (i) the potential for fibre generation, and (ii) the potential for exposure to person/s, as a rating of low, medium or high disturbance potential:

Risk Status

The risk factors described previously are used to rank the asbestos exposure risk posed by the presence of the ACM.

- A low risk rating describes ACMs that pose a low exposure risk to personnel, employees and the general public providing they stay in a stable condition, for example asbestos materials that are in good condition and have low accessibility.
- A medium risk rating applies to ACMs that pose an increased exposure risk to people in the area.
- A high risk rating applies to ACMs that pose a higher exposure risk to personnel or the public in the vicinity of the material due to their condition or disturbance potential.

Priority Actions

The following priority rating system is adopted to assist in the programming and budgeting for the control of asbestos risk identified in the assessment.

Priority 1 (P1)	**Action:**	**Restrict Access to Area &** **Organise Abatement Works as soon as practicable &** **Manage any remaining materials as part of an AMP**

Area has ACMs, which are either damaged or are being exposed via continual disturbance. Due to these conditions, there is an increased potential for exposure and/or transfer of the material to other locations with continued unrestricted use of the area. Representative asbestos fibre monitoring should be conducted in the area during normal building operation where recommended. Prompt abatement of the asbestos hazard is recommended.

As an interim, restrict access.

Priority 2 (P2)	**Action:**	**Organise Remedial Works as soon as practicable &** **Manage any remaining materials as part of an AMP**

Area has ACMs with a potential for disturbance due to the following conditions:

1. Material has been disturbed or damaged and its current condition, while not posing an immediate hazard, is unstable.
2. The material is accessible and when disturbed, can present a short-term exposure risk.
3. Demolition, renovation, refurbishment, maintenance, modification or new installations, involving air-handling systems, ceilings, lighting, fire safety systems or floor layout.

Appropriate abatement measures should be taken as soon as practicable. A negligible exposure risk exists if materials remain under the control of an Asbestos Management Plan (AMP).

Priority 3 (P3)	**Action:**	**No Short-Term Remedial Works Required** **Review periodically and Manage as part of an AMP**

Area has ACMs, where:

1. The condition of friable ACMs is currently stable and has low potential of being disturbed.
2. The ACM is currently in a non-friable form, may have slight damage, but does not present an exposure risk unless cut, drilled, sanded or otherwise abraded.

This presents a low risk of exposure where the materials are left undisturbed under the control of an Asbestos Management Plan (AMP). Defer any major action unless materials are to be disturbed as a result of maintenance, refurbishment or demolition operations.

Priority 4 (P4)	**Action:**	**No Short-Term Remedial Works Required** **Review periodically and Manage as part of an AMP**

Area has ACMs in a non-friable form and in good condition. It is unlikely that the material can be disturbed under normal circumstances and can be safely subjected to normal traffic. Even if it were subjected to minor disturbance the material poses a negligible health risk. These materials should be maintained in good condition and their condition monitored during subsequent reviews. As with any asbestos materials, these materials must be removed prior to renovations that may impact on the materials.

The Occupational Health and Safety Regulations of most Australian states refer to a Code of Practice for guidance on identification and management of asbestos materials (ACMs) in workplaces. The requirements are summarised below.

Asbestos Management Plan (AMP)

An AMP should be developed for the site as per the Code of Practice. The AMP should be a broad ranging document detailing the following information:

- The site's asbestos material register.
- Responsibilities for relevant persons in the management of ACMs.
- Mechanisms for communicating the location, type and condition of ACMs, the risks posed by these and the control measures adopted to minimise these risks.
- Training arrangements for workers and contractors.
- A Procedure for reviewing and updating the AMP and the register.
- Air Monitoring and clearance inspection arrangements.
- Timetable for action to review risk assessments and undertake asbestos management activities.
- Records of any maintenance or service work conducted on ACMs, including clearance certificates for removed items.

Updates to Register, AMP and Risk Assessments

The asbestos register and the AMP should be reviewed (via visual inspection by a competent person) and updated at least every 5 years or earlier where a risk assessment indicates the need for a re-assessment or if any ACMs have been removed or updated as per the requirements of the Code of Practice.

Risk assessments should be reviewed regularly and as specified by the Code of Practice, particularly when there is evidence that the risk assessment is no longer valid, control measures are shown to be ineffective or there is a significant change planned for the workplace or work practices or procedures relevant to the risk assessment; or there is a change in ACM condition or ACMs have since been enclosed, encapsulated or removed.

Labelling

All confirmed or presumed ACMs (or their enclosures) should be labelled to identify the material as asbestos-containing or presumed asbestos-containing and to warn that the items should not be disturbed as per the requirements of the Code of Practice.

Training

Staff and site personnel must be provided with Asbestos Awareness training in accordance with the Code of Practice. Training should inform staff how to work safely alongside asbestos by instructing them of:.

1. The health risks associated with asbestos.
2. Their roles and responsibilities under the AMP.
3. Procedures for managing asbestos on-site.
4. The correct use of control measures and safe work methods to minimise the risks from asbestos.

Refurbishment / Demolition Requirements

This audit is limited by the Scope of Works and Methodology outlined within this report.

Generally, a new audit or revised audit is required prior to any planned refurbishment, alteration, demotion or upgrade works that may disturb ACMs at the site in accordance with Australia Standard AS 2601: The Demolition of Structures and Demolition Work Code of Practice(Safe Work Australia, Feb 2016).

Removal of Asbestos Materials

Any works involving the removal of ACMs should be undertaken by a Licensed Asbestos Removal Contractor (LARC). In addition, an appropriately qualified independent asbestos consultant / occupational hygienist should undertake asbestos fibre air monitoring during/after works, and issue a Clearance Certificate to validate the works have been undertaken safely.

All works should be conducted in accordance with legislative requirements and following the requirements of the document 'How to Safely Remove Asbestos: Code of Practice (SafeWork Australia, 2016)'.

The Occupational Health and Safety Regulations of most Australian states have requirements for the identification and control of risks within workplaces. These broad requirements extends to the hazardous materials that may be present within the workplace. The requirements for management of hazardous materials are summarised below

Synthetic Mineral Fibre (SMF)

Synthetic Mineral Fibre (SMF) is a man-made insulation material used extensively in industrial, commercial and residential sites as fire rating, reinforcement in construction materials and as acoustic and thermal insulators. Types of SMF materials include fibreglass, rockwool, ceramic fibres and continuous glass filaments.

There are two basic forms of Synthetic Mineral Fibre (SMF) insulation, bonded and un-bonded.

- Bonded SMF is where adhesives, binders or cements have been applied to the SMF before delivery and the SMF product has a specific shape.
- Un-bonded SMF has no adhesives, binders or cements and the SMF is loose material packed into a package.

Exposure to SMF can result in short-term skin, eye and respiratory irritation. SMF is also classified as a possible human carcinogen with a possible increase in risk in lung cancer from long-term exposure.

The use of and the safe removal of SMF materials should be conducted in accordance with the National Code of Practice for the safe use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)].

Statement Of Limitations

This report has been prepared in accordance with the agreement between Mirvac Operations and Greencap.

Within the limitations of the agreed upon scope of services, this work has been undertaken and performed in a professional manner, in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by members of its profession and consulting practice. No other warranty, expressed or implied, is made.

This report is solely for the use of Mirvac Operations and any reliance on this report by third parties shall be at such party's sole risk and may not contain sufficient information for purposes of other parties or for other uses. This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval with comments are provided by Greencap.

This report relates only to the identification of hazardous materials used in the construction of the building and does not include the identification of dangerous goods or hazardous substances in the form of chemicals used, stored or manufactured within the building or plant.

The following should also be noted:

While the survey has attempted to locate the hazardous materials within the site it should be noted that the review was a visual inspection and a limited sampling program was conducted and/or the analysis results of the previous report were used. Representative samples of suspect hazardous materials were collected for analysis. Other hazardous materials of similar appearance are assumed to have a similar content.

Not all suspected hazardous materials were sampled. Only those hazardous materials that were physically accessible could be located and identified. Therefore it is possible that hazardous materials, which may be concealed within inaccessible areas/voids, may not have been located during the audit. Such inaccessible areas fall into a number of categories.

(a) Locations behind locked doors;
(b) Inset ceilings or wall cavities;
(c) Those areas accessible only by dismantling equipment or performing minor localised demolition works;
(d) Service shafts, ducts etc., concealed within the building structure;
(e) Energised services, gas, electrical, pressurised vessel and chemical lines;
(f) Voids or internal areas of machinery, plant, equipment, air-conditioning ducts etc;
(g) Totally inaccessible areas such as voids and cavities created and intimately concealed within the building structure. These voids are only accessible during major demolition works;
(h) Height restricted areas
(i) Areas deemed unsafe or hazardous at time of audit.

In addition to areas that were not accessible, the possible presence of hazardous building materials may not have been assessed because it was not considered practicable as:

1. It would require unnecessary dismantling of equipment; and/or
2. It was considered disruptive to the normal operations of the building; and/or
3. It may have caused unnecessary damage to equipment, furnishings or surfaces; and/or
4. The hazardous material was not considered to represent a significant exposure risk; and
5. The time taken to determine the presence of the hazardous building material was considered prohibitive.

Only minor destructive auditing and sampling techniques were employed to gain access to those areas documented in the Hazardous Materials Register. Consequently, without substantial demolition of the building, it is not possible to guarantee that every source of hazardous material has been detected.

During the course of normal site works care should be exercised when entering any previously inaccessible areas or areas mentioned above and it is imperative that work cease pending further sampling if materials suspected of containing hazardous materials or unknown materials are encountered. Therefore during any refurbishment or demolition works, further investigations and assessment may be required should any suspect material be observed in previously inaccessible areas or areas not fully inspected previously, i.e. carpeted floors.

This report is not intended to be used for the purposes of tendering, programming of works, refurbishment works or demolition works unless used in conjunction with a specification detailing the extent of the works. To ensure its contextual integrity, the report must be read in its entirety and should not be copied, distributed or referred to in part only.

Mirvac Real Estate Pty Ltd

Hazardous Materials Management Plan

1 Darling Island Road, Pyrmont, NSW

SECTION 3: HAZARDOUS MATERIALS MANAGEMENT PLAN

SECTION 3 – HAZARDOUS MATERTIALS MANAGEMENT PLAN

3.1 Hazardous Materials Identified

The success of any option involving hazardous materials remaining in-situ is dependent on the need to ensure the hazardous material remains undisturbed and in good condition.

Accordingly, the purpose of this HMMP is to ensure that all practicable steps are taken to prevent, or minimise the risk of exposure to hazardous materials, for all occupants of the site. This is driven by state legislation and is achieved through the identification and listing of the known and typical locations of hazardous materials and the implementation of appropriate control measures including engineering and administrative systems.

Hazardous materials to be managed by this plan are as follows:

- Asbestos-Containing Materials (ACM); and
- Synthetic Mineral Fibre (SMF)-containing materials.

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

- Maintain the hazardous materials in good condition;
- Ensure implementation of hazard control strategies;
- Nominate the management plan controller;
- Monitor the condition of the hazardous materials; and
- Minimise the possibility of accidental damage or exposure to hazardous materials.

The HMMP must be made available to, and understood by, all participants involved in the management and operation of the building located at 1 Darling Island Road, Pyrmont. The appropriate personnel at the site should be aware of the presence of the hazardous materials and the need to ensure they remain undisturbed and in good condition. They should also understand their role in achieving this.

The management plan should be read in conjunction with the Hazardous Materials Risk Assessment Report undertaken by Greencap (C122134:J153823 – 1 Darling Island Road, Pyrmont, Dated January 2018).

3.2 Objectives of this Hazardous Materials Management Plan

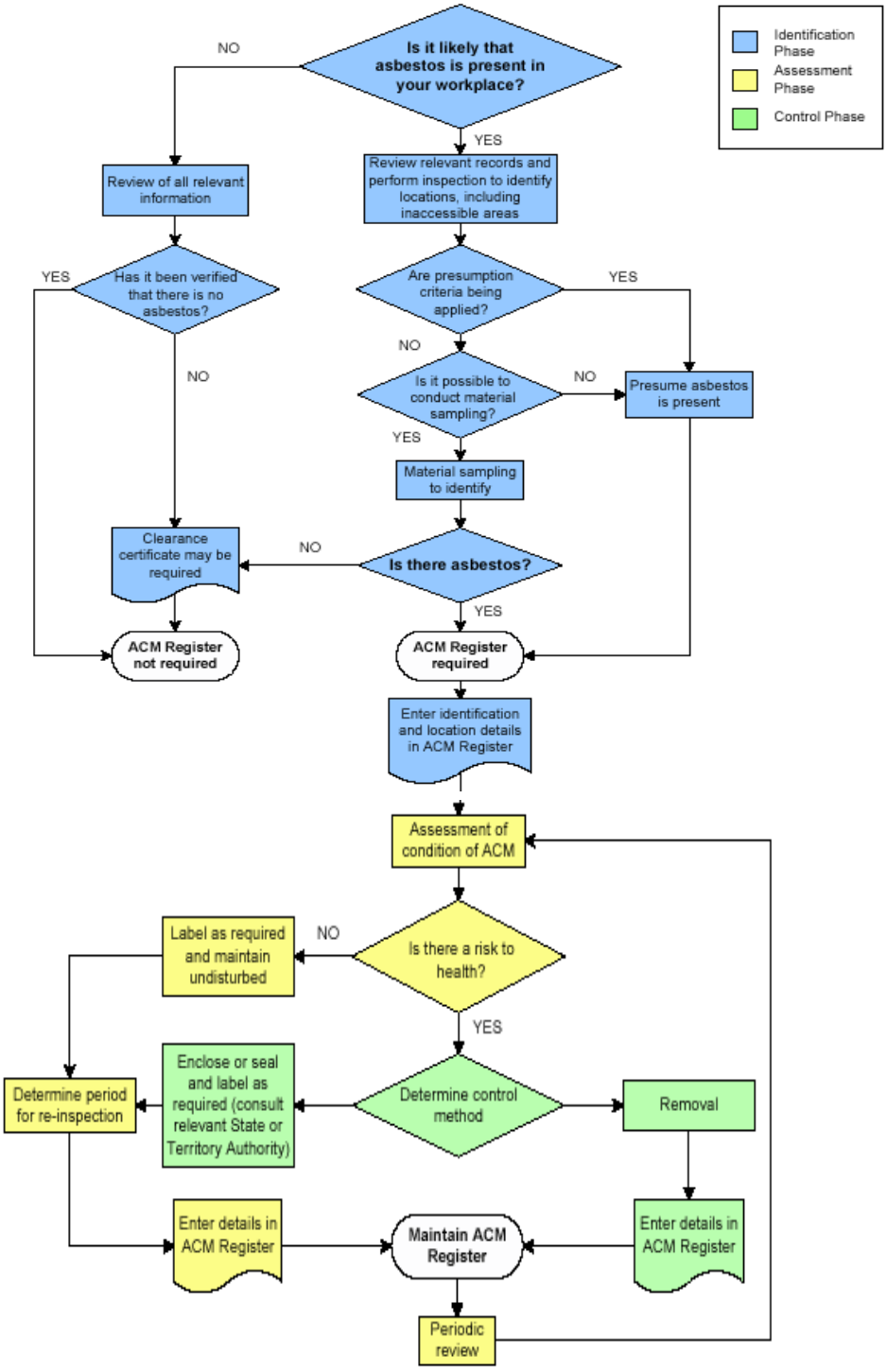
The HMMP represents an integrated risk management approach to ensure that all practicable steps are taken to prevent or minimise the risk of exposure to hazardous materials in the buildings located at 1 Darling Island Road, Pyrmont.

The HMMP therefore:

- Outlines the necessary actions to control the risk as required by state legislation;
- Identifies and describes the administrative line of authority for the site, outlining responsibilities, procedures and systems for the effective management and control of hazardous materials at the site;
- Establishes a timetable for the review and assessment of the hazardous materials;
- Where appropriate, instigates a work permit system, which ensures that any proposed maintenance, installation, alteration or renovation at the site are notified to the Management Plan Controller;
- Requires that all participants involved in the management and operations at the site are clearly informed and where necessary trained to manage the hazardous material risks; and
- The Hazardous Materials Register forms an integral part of an effective HMMP. The HMMP and Hazardous Materials Register must be made available as required for inspection by tenants, other employers, employees, union representatives, government representatives, contractors and maintenance personnel.

Figure 1. Below outlines the process identifying, assessing and controlling asbestos materials in developing a Management Plan. A similar approach should be adapted to all hazardous materials.

Figure 1. General principles of an asbestos management plan



Source: Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC:2018(2005)]. (note: although a new version of the Code of Practice has been issued (Code of Practice: How to Manage and Control Asbestos in the Workplace (safeWork NSW, September 2016)), general principals described above are still relevant for a Management Plan)

3.3 Legislative Requirements

This HMMP is designed to assist Mirvac Real Estate Pty Ltd in fulfilling its general obligation to ensure the health and safety of employees, contractors, visitors and others accessing the building at 1 Darling Island Road, Pyrmont, NSW. The HMMP also addresses specific hazardous materials related legislative requirements and guidelines in approved industry standards.

Chapter 8, Part 8.3 Management of Asbestos and Associated Risks of the Work Health and Safety Regulation 2017 (NSW) states that a person with management or control of a workplace must ensure that a register (an asbestos register) is prepared and kept at the workplace. All asbestos or ACM at the workplace are to be identified by a competent person as far as is reasonably practicable. Asbestos sample analysis must be carried out by a NATA-accredited laboratory for the relevant test method (Australian Standard AS4964-2004).

The person responsible for the management of the workplace must ensure the review of the asbestos register and management plan is conducted as necessary. This should take place if further ACM are identified, if ACM are removed, disturbed or encapsulated and/or at least once every 5 years. A health and safety representative has the authority to request a review of the asbestos register and management plan if they believe that the health and safety of an employee is at risk.

The personnel responsible for the management plan must ensure that the document is available for review to contractors, health and safety representatives and workers who are and/or intend to be conducting work within the workplace.

The following legislation and industry standard documentation are relevant to this HMMP and are to be construed as forming an integral part of this HMMP:

- Work Health and Safety Act 2011 (NSW);
- Work Health and Safety Regulation 2017 (NSW);
- Code of Practice: How to Safely Remove Asbestos (SafeWork NSW, 2016);
- Code of Practice: How to Manage and Control Asbestos In The Workplace (SafeWork NSW, 2016);
- Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC:2006 (1990)];
- NSW Protection of the Environment Operations Act 1997.

3.4 Organisational Responsibilities

The HMMP is an operation and maintenance program designed to ensure that future works in the building located at 1 Darling Island Road, Pyrmont do not result in hazardous material related risks. All hazardous material related activities carried out at the site shall be conducted under the control of the HMMP, and the following key personnel are responsible for its implementation:

3.4.1 Management Plan Controller

The Management Plan Controller is responsible for the management and supervision of hazardous material related issues and supervision of hazardous material related tasks at the building located at 1 Darling Island Road, Pyrmont, NSW. The Management Plan Controller will be as nominated by the Operations Manager, within Mirvac Real Estate Pty Ltd.

The following tasks are to be conducted by the Management Plan Controller:

- Maintain the Hazardous Materials Register and ensure that hazardous materials are regularly re-assessed to comply with the Work Health and Safety Regulation 2017 (NSW) and the Code of Practice: How to Manage and Control Asbestos In The Workplace (SafeWork NSW, 2016);
- Hazardous materials should be inspected every 5 years by a competent person or sooner as indicated by a risk assessment;
- Maintain the HMMP and ensure it is reviewed whenever the Hazardous Materials Register is

reviewed;

- Liaise with tenants, contractors and maintenance personnel and ensure that all personnel whose work may impact on hazardous materials are informed of the presence and location of hazardous materials at the property;
- Administer hazardous material inductions and hazardous material awareness training for contractors and other personnel as necessary;
- Inform occupants of any hazardous material remedial works;
- Engage an appropriately licensed asbestos contractor as required by NSW legislative requirements to conduct asbestos and hazardous material abatement works and notify occupants of air monitoring results during the works;
- Engage an appropriately Licensed Asbestos Assessor (LAA)/Asbestos Consultant to undertake any relevant air monitoring and clearance inspections during and following removal of ACM;
- Administer the Permit to Work system for any work to be conducted in areas containing hazardous materials;
- Install asbestos warning signage and labels to ensure ACM are not accidentally disturbed;
- Prior to renovation or demolition works, ensure identified hazardous materials are safely removed from any proposed work area or appropriately contained so as to prevent accidental damage;
- Ensure exposure to hazardous materials is kept as low as practically achievable and that no person is exposed in excess of the Workplace Exposure Standards; and
- Ensure that hazardous materials 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. Section 6 of this HMMP is to be used to file hazardous materials related documentation on an on-going basis including summaries of Hazardous Materials Register updates, hazardous materials removal specifications, contractor Safe Work Method Statements (SWMS), air monitoring and clearance inspection certificates and hazardous materials waste disposal documents.

3.4.2 Building Occupants

All building occupants, Project Manager or nominated representatives must notify the Management Plan Controller of proposed refurbishment, demolition or maintenance works that involve the disturbance of the building fabric/structure or areas of the buildings where hazardous materials are located. Building occupants, Project Manager or nominated representatives must notify the Management Plan Controller if hazardous materials are in poor condition or if there are suspected hazardous materials. In providing a permit to work the Management Plan Controller should assess any proposal for its potential to impact on hazardous materials.

3.4.3 Contractors

All contractors working at the site shall be responsible for ensuring that their works are conducted in accordance with the HMMP, which all permits have been issued and inductions have been conducted. All contractors working with asbestos must be licensed to do so, in accordance with SafeWork NSW requirements (Class A license for friable works and Class B for non-friable works).

Contractors must notify the Management Plan Controller if hazardous materials are in poor condition or if there are suspected hazardous materials.

Contractors must supply a SWMS prior to conducting any maintenance works on hazardous materials or works that may inadvertently disturb hazardous materials.

Contractors must ensure proper safety procedures are followed and works are conducted in accordance with all relevant legislative requirements and best industry practice.

3.4.4 Hazardous Materials Consultant/ Licensed Asbestos Assessor

The Management Plan Controller may appoint a suitably qualified independent Asbestos Consultant/LAA to assist in the following areas:

- Conduct surveys to assess risk involved with proposed works where asbestos materials are likely to be disturbed prior to commencing the proposed works;
- Regularly reassess the risk posed by asbestos materials on site, as is required by state legislation;
- Develop 'Scope of Works' documentation for removal of asbestos materials;
- Provide asbestos hygiene services during asbestos abatement works (e.g. air monitoring and visual inspections); and
- Review the HMMP on a regular basis.

3.4.5 Workplace Health and Safety NSW

SafeWork NSW administers and enforces the hazardous materials related state legislation. The Work Health and Safety Regulation 2017 (NSW) require 'Duty Holders' of premises to identify, assess and control risks arising from hazardous materials in buildings. The Work Health and Safety Act 2011(NSW) also details the overriding general obligation of various parties including employers, self-employed persons and persons in control of workplaces to ensure the workplace health and safety of persons affected by their work activities. Combined, the Act and Regulation essentially require the implementation of a HMMP.

SafeWork NSW inspectors may request access to hazardous materials related documentation from time to time. The Work Health and Safety Act 2011 (NSW) outlines the powers of inspectors.

3.4.6 Licensed Asbestos/Hazardous Materials Removal Contractor

If necessary, the Management Plan Controller will engage a licensed asbestos removal contractor, as prescribed by state legislation, to conduct abatement works. The asbestos contractor must perform all works in accordance with licensing requirements and standard industry practice.

The Work Health and Safety Regulation 2017 (NSW) allows only Class A licensed asbestos removal contractors (i.e. a contractor holding a business certificate for the prescribed activity of asbestos removal/remediation) to conduct works involving friable ACM.

The asbestos removal contractor must prepare a SWMS, detailing the proposed work methodologies to be used to safely and effectively remove, enclose or encapsulate (as directed by the Management Plan Controller) the ACM. This SWMS must be submitted to Property Management and/or the nominated Hazardous Materials Consultant for review and approval prior to commencing work on site.

A licensed asbestos removal contractor must prepare an Asbestos Removal Control Plan for any licensed asbestos removal work the removalist is commissioned to undertake (Clause 464, Part 8.7 of the NSW Work Health and Safety Regulation 2017). An Asbestos Removal Control Plan is a document that identifies the specific control measures a licence holder will use to ensure workers and other persons are not at risk when asbestos removal work is being conducted. It is similar to a SWMS but is focused on the specific control measures necessary to minimise any risk from exposure to asbestos. An Asbestos Removal Control Plan helps ensure the asbestos removal is well planned and carried out in a safe manner and maintains compliance with the regulations.

Further information on licensed asbestos contractors is detailed in Sections 3.14.1.4 and 6.

3.5 Remedial Options

Greencap conducted Hazardous Materials Risk Assessment Surveys of the site (Ref: Hazardous Materials Risk Assessments C122134: J153823 1 Darling Island Road, Pyrmont, dated January 2018) to identify hazardous materials, assess the risk they present and to provide remedial options for the materials, if necessary.

Refer to the Hazardous Materials Register for full details, however, typical hazardous materials that were identified or suspected are as follows:

3.5.1 Asbestos

Nil.

3.5.2 SMF

- Insulation material;
- Flexable ductwork insulation;
- Hot Water heaters insulation; &
- Pipe work insulation.

A range of measures are available for the control of hazardous materials risks. The selection of the appropriate control measures are based on the assessed risk for each specific location. These measures may include:

- Leave and maintain in existing condition.
- Repair and maintain in good condition.
- Encapsulate using adhesive, mastic or providing a barrier such as a box enclosure or steel cladding.
- Remove by approved methods under controlled conditions.
- Labelling of hazardous materials that are to remain in-situ should be undertaken where practical to ensure that the hazardous materials are not damaged/disturbed inadvertently by maintenance contractors etc.

3.6 Proposed Refurbishment or Demolition

Prior to any proposed refurbishment or demolition works, a Hazardous Materials Demolition Survey, risk assessment and scope of works documentation must be carried out (Clause 457-452, WHS Regulation 2017 (NSW) (Note: Only ACM mentioned in Regulation), Section 1.6 of Australian Standard AS 2601, The Demolition of Structures and the Demolition Work Code of Practice (SafeWork Australia, November 2013). These will specify appropriate work procedures and identify any hazardous materials abatement works required.

The Hazardous Materials Survey Report should not be used for the purposes of costing for removal or programming of future refurbishment or demolition works unless accompanied by an appropriate and site-specific scope of works as part of a hazardous materials management and abatement program.

3.7 Asbestos Induction for Contractors

All contractors and maintenance personnel visiting the site must report to the Management Plan Controller prior to commencing any works. The Management Plan Controller will provide a brief induction course for the site or building, examine the works to be performed and advise what can, and cannot, be done. The induction will advise on the following:

- Those parts of the buildings that are known to contain hazardous materials;
- That the HMMP must be made available on site to all contractors for reference;

- That the HMMP provides direction on how to work safely with the hazardous materials and work on site is controlled by the Work Permit System;
- That any hazardous materials abatement works must be approved by the Management Plan Controller and conducted by appropriately licensed contractors;
- That during normal, routine maintenance work, all personnel, including external contractors, must report any residual, deteriorating or damaged hazardous materials of which they become aware to the Management Plan Controller as soon as possible so that the appropriate corrective action can be initiated; and
- That there is no guarantee that all hazardous materials have been identified on site due to access limitations and therefore, that any unknown or suspect materials encountered during building, demolition or maintenance works must be reported to the Management Plan Controller as soon as possible.

Details of all personnel who have attended the induction are to be kept on site in **Section 6** of this HMMP.

3.8 Damaged Hazardous Materials

Damaged hazardous materials are to be reported to the Management Plan Controller as soon as possible. The Management Plan Controller will instigate the appropriate corrective action and arrange to have the damage assessed if necessary and the materials repaired or removed as required.

The emergency response procedures for damaged hazardous materials or suspected hazardous materials are outlined in **Section 4** of this HMMP.

A short list of licensed asbestos/hazardous materials contractors that can be contacted to provide emergency clean up works is provided in **Section 6** of this HMMP.

All reports of damaged hazardous materials are to be kept on file in **Section 6** of this HMMP.

3.9 Hazardous Materials Consultant/Asbestos Assessor Services

3.9.1 Contractor SWMS and Asbestos Removal Control Plan Review

The contractor SafeWork Method Statement (SWMS) must be reviewed to ensure it adequately covers the SafeWorking requirements of the project. If ACM are to be removed, the contractor's Asbestos Removal Control Plan should also be reviewed. The Management Plan Controller may request a suitably qualified consultant to undertake such reviews (Refer to 3.14.1.4 and 3.4.6 Licensed Asbestos/Hazardous Materials Removal Contractor for more details on the Asbestos Removal Control Plan).

3.9.2 Visual Inspections and Supervision

A suitably qualified asbestos consultant/LAA must inspect the removal works and a clearance certificate for each work area must be issued. Further, the Management Plan Controller may require asbestos materials abatement works to be supervised on site by the consultant.

3.9.3 Asbestos and SMF Fibre Air Monitoring

Asbestos fibre air monitoring must be conducted by a LAA during the removal of all friable asbestos materials (refer to Section 3.11 of the *Code of Practice: How to Safely Remove Asbestos (SafeWork NSW, 2016).*

The Management Plan Controller may also require asbestos fibre air monitoring during the removal of, or work on, non-friable asbestos products such as asbestos cement sheeting and vinyl floor tiles. The requirements for air monitoring must be established prior to commencement of asbestos related

works.

All asbestos fibre air monitoring must be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC: 3003 (2005)]. The Code of Practice: How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2016)* requires that this analysis work be conducted by a NATA accredited laboratory. All friable air monitoring must be undertaken by a LAA, as stated with the WHS Regulations and the *Code of Practice: How to Safely Remove Asbestos (SafeWork NSW, 2016*).

It is recommended that SMF air monitoring be undertaken during SMF removal works. All SMF monitoring must be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Synthetic Mineral Fibres, 2nd Edition [NOHSC 3006 (1989)]* by a NATA accredited laboratory.

3.9.4 Bulk Sample Analysis of previously unidentified ACM

Suspected ACM may from time to time be uncovered at the site (e.g. during demolition works). Where additional sample analysis is required, analysis will normally be by polarised light microscopy, supplemented with dispersion staining. Other approved methods may be used where required. *The Code of Practice: How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2016)* requires that this analysis work be conducted by a NATA accredited laboratory.

3.10 Unknown or Presumed Hazardous Materials

It is not possible to guarantee that every source of hazardous material has been located at the site. Hazardous materials, which may be concealed within inaccessible areas/voids, may not have been located during previous surveys. Such inaccessible areas may include:

- Behind ceramic wall tiles throughout;
- Roof;
- Inaccessible ceiling spaces;
- Top side of front awning;
- Below-floor spaces;
- In wall cavities, where demolition/refurbishment works were not planned;
- Areas accessible only by dismantling equipment or performing demolition works;
- Service shafts, ducts etc., concealed within the building structure;
- Voids or internal areas of plant, equipment, air conditioning ducts etc.;
- Totally inaccessible areas such as voids and cavities created and intimately concealed within the building structure. These voids are only accessible during major demolition works; and
- Height restricted areas.

Therefore, prior to any refurbishment works, further investigations should be performed using more destructive survey and sampling techniques. During the course of normal site works care should be exercised when entering any previously inaccessible areas and it is imperative that work cease pending further sampling if suspected hazardous materials are encountered.

Please refer to Hazardous Materials Risk Assessment reports undertaken by Greencap (Ref: Hazardous Materials Risk Assessments C122134:J153823 1 Darling Island Road, Pyrmont, dated January 2018) which has been prepared for the site and lists specific areas not accessed during the course of the survey.

If any materials are encountered which are not listed in the Hazardous Materials Register or are suspected of being an ACM, work should cease immediately pending further inspection, sampling and assessment by a suitably experienced consultant, if required.

3.11 Work Permit System

When is a work permit required?

Prior to performing any works on the property that may impact on the building fabric/structure, it must be ascertained if the works could disturb any hazardous materials. Accordingly the contractor/tenant must obtain a Work Permit from the Management Plan Controller when either of the following applies:

- The Hazardous Materials Register has identified or suspects the presence of hazardous materials in the area of the proposed works; or
- The area where proposed works are to be conducted has not been fully assessed with regard to the presence of hazardous materials.

Why is a work permit required?

The Work Permit is required to ensure that future works at the site are conducted in a controlled manner to prevent the accidental disturbance of ACM located at the site.

Any works likely to disturb the building fabric requires the completion of the Work Request Form. During the completion of the Work Request Form, it is to be determined if a Hazardous Materials Work Permit is required.

Examples of a Work Request Form and Hazardous Materials Work Permit form are overleaf.

FORM 1 – WORK REQUEST FORM (EXAMPLE)

Any tenants/contractors, prior to commissioning works likely to disturb the building fabric or structure, must complete this work request form.

Section 1 - Contractor to Complete

Date:	**Reference No:**
Location:	
Start Date:	**Completion Date:**
Proposed Works:	
Contractor:	
Signed By:	**Position:**
Print Name:	**Date:**

Section 2 - Management Plan Controller to Complete

Is the location clearly defined (If NO request further information from tenant)		YES ❑ NO ❑
Proposed plans appended		YES ❑ NO ❑
Are hazardous materials present in work area (refer to Hazardous Materials Register)		YES ❑ NO ❑
Is contractor inducted to site and qualified to conduct works		YES ❑ NO ❑
Risk management consultant advised		YES ❑ NO ❑
Are permits required (if YES state type/s of permits)		YES ❑ NO ❑
Asbestos ❑	Hot Works ❑	Other (nominate) ❑ .....
Hazardous materials likely to be disturbed:		
Approval to Proceed:		YES ❑ NO ❑
Signed:		
Dated:		

Original to be retained by the **Management Plan Controller**.

Copy to be retained by **Tenant/Instigator of Work Request**.

FORM 2 – ASBESTOS/HAZARDOUS MATERIALS WORK PERMIT (EXAMPLE)

The contractor must retain a copy of the permit and work request form on site for the duration of works.

WORK REQUEST FORM REFERENCE:	.....
VALID UNTIL (Insert Date)	.....
Description of asbestos/hazardous materials:	
Has work specification altered from Work Request Form?	YES ❑ NO ❑
Will a NSW Licensed Asbestos Assessor be required?	YES ❑ NO ❑
Is contractor inducted/qualified for all tasks? (if no, sub-contractors must be listed)	YES ❑ NO ❑
Will a licensed asbestos contractor be required?	YES ❑ NO ❑
Company Name:	.....
Supervisor:	.....
Contact Number:	

SPECIFIC PERMIT REQUIREMENTS (TICK AS REQUIRED)	
Scope of works/technical specification for asbestos/hazardous materials removal?	YES ❑ NO ❑
Contractor Safe Work Method Statement (SWMS) and Asbestos Removal Control Plan (ARCP) issued for review and approval prior to commencement of work?	YES ❑ NO ❑
Other Items (list details):	

CONTRACTOR ACCEPTANCE STATEMENT	
I have read and understood the permit requirements and will undertake to work in accordance with all necessary procedures and specifications.	
Signed:	.....
Print Name and Position:	.....
Date:	

WORK PERMIT COMPLETION

(To be completed by the Management Plan Controller and Contractor)

Date Work Completed:	
Clearance certificate and asbestos air monitoring results received (list reference numbers)	
I am satisfied that the works have been completed in accordance with the work permit and the area has been cleaned to the required standard. Inspections and asbestos air monitoring confirm that the area can be safely re-occupied.	
Management Plan Controller Signature:	.....
Date:	.....
Contractor Signature:	.....
Date:	

Original to be retained by the **Management Plan Controller.**

Copy to be retained by **Instigator of Work Request.**

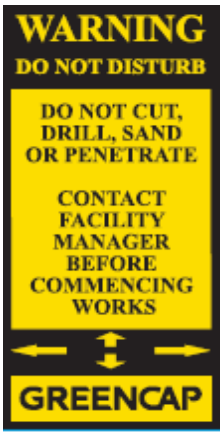
3.12 Labelling

The Code of Practice: How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2016) states that all identified or presumed ACM should be clearly labelled. All labels should comply with Australian Standard AS 1319 Safety Signs for the Occupational Environment.

The asbestos warning label should be affixed to an asbestos based material or at the access point to an area containing friable asbestos materials 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 should determine the number 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.

Where practical asbestos materials have been labelled. Labels used should comply with current legislation on ACM identified on site.



Source: Greencap Library

3.13 Hazardous Materials Awareness Training

It is recommended that key Facility Management staff be provided with hazardous materials awareness training. It may be prudent to also offer such training to site occupiers and contractors (especially long term/regular contractors) to increase their awareness of hazardous materials issues at the site. The training should include the following:

- Background information on hazardous materials;
- Hazardous material related health effects and risks (e.g. asbestos is only a health risk when disturbed, resulting in the release of asbestos fibres into the airborne environment which may be subsequently inhaled);
- Hazardous materials related legislation;
- Sources and general locations of hazardous materials located at the property (as noted in the Hazardous Materials Register);
- An overview of the structure and function of the HMMP (i.e. a summary of how hazardous materials issues are managed at the site); and
- Responsibilities of the building owner, management, tenants, staff and contractors.
- The training should be designed to serve a number of purposes:
- To increase the awareness and knowledge of building management personnel with respect to their statutory obligations in respect of the management of hazardous materials at the site;
- To provide valuable introductory information to staff/contractors who may have a requirement to handle hazardous materials or enter areas where hazardous materials are present; and
- To assist the employer in addressing their statutory duties in respect of providing information, instruction and training to those potentially exposed to risk.
- Specific PowerPoint based hazardous materials awareness training packages can be developed to meet such training requirements (typical information provided at such training sessions is illustrated below).

3.14 Hazardous Materials Information and Procedures

3.14.1 Asbestos

Asbestos is defined as the fibrous form of mineral silicates. There are two major groups of asbestos:

- Serpentine group minerals: Chrysotile (white asbestos); and
- Amphibole group minerals: Amosite (brown asbestos), Crocidolite (blue asbestos) and minor forms including Actinolite, Tremolite and Anthophyllite.

Asbestos minerals have separable long fibres that are strong and flexible enough to be spun and woven and are heat resistant. Because of these characteristics, asbestos has been historically used for a wide range of manufactured goods, mostly in building materials, friction products, heat-resistant fabrics, gaskets, and coatings.

Asbestos mainly affects the lungs, and breathing in high levels of asbestos fibres over time can lead to a number of diseases and cancers (asbestos is a known carcinogen). The aim is to minimise the risk of exposure to ACM. This management plan aids in ensuring that ACM in the workplace are managed in such a way that they do not become damaged and increase the risk of exposure.

3.14.1.1 Types of ACM

ACM can be classified into two main groups: **friable** and **non-friable**.

ACM considered to be friable are materials that can be crumbled, pulverised or reduced to powder by hand pressure when dry. Friable ACM are considered higher risk materials as they are more readily damaged, thereby possibly releasing fibres into the air.

Those that cannot be pulverised are considered as non-friable and generally considered 'low' risk if properly managed. Non-friable ACM are often referred to as ‘bonded’, where asbestos is bound in a matrix such as Portland cement (e.g. fibre cement sheeting) or various resin/binders (e.g. vinyl floor tiles).

The following table details the common materials found in the two groups:

Friable	Non-Friable
• Sprayed or trowelled asbestos materials applied to ceilings, walls and other surfaces for fire-rating purposes. This material is often referred to as ‘limpet asbestos’. • Asbestos-containing insulation on pipes, boilers, tanks, ducts etc. which is often referred to as asbestos lagging. • Asbestos paper products, millboard in underlying lining for linoleum or vinyl floor coverings. • Asbestos textiles, braided asbestos, rope, tape, etc. • Asbestos millboard inside electrical switchboxes/fuse boards or air-conditioning re-heat boxes.	• Asbestos cement sheeting and corrugated sheeting products, i.e. cement or concrete like products (e.g. ‘fibro’ and ‘super six roofing’ – see description below). • Vinyl tiles and vinyl flooring mastic and associated adhesives. • Asbestos-containing compounds, gaskets and mastic from mechanical fittings, and roofing membranes. • Compressed bitumen electrical backing boards and asbestos-cement sheeting in electrical cupboards and switchboards. • Roofing sealants, bituminous membranes, tar composites and similar materials were occasionally mixed with asbestos.

3.14.2 Synthetic Mineral Fibres (SMF)

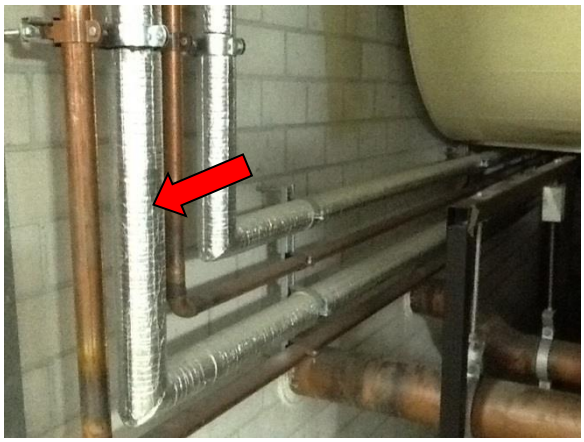
SMF is a generic term used to collectively describe a number of amorphous (non-crystalline) fibrous materials, commonly referred to as "Man Made Mineral Fibres" (MMMF).

3.14.2.1 Types of Synthetic Mineral Fibre Materials

SMF materials include fibreglass, rockwool and ceramic fibre based products. These products are used in a number of areas throughout buildings. These materials are generally used as insulation within ceilings and walls, as well as heating hot water pipework and associated mechanical equipment.

SMF materials are classified as bonded and unbonded materials. Unbonded SMF material includes loose fill fibreglass or rockwool dry wall or ceiling insulation, and sprayed rockwool to structural steel and acoustic finishes. Bonded SMF insulation materials include sectional fibreglass and rockwool pipe insulation; ceiling batts, duct blankets (lined and unlined with mesh/foil), dry wall batt insulation and acoustic mineral fibre ceiling tiles etc.

See below an examples of bonded SMF materials identified/presumed on site.

	
Interior, Level 5, Plant Room, Hot Water Services Tanks – SMF insulation material	Interior, All Levels, All Rooms, Air-condiitoning Ductwork – SMF insulation material (foil-clad)
	
Interior, Levels 5 & 6, Plant Rooms, Pipework insulation – SMF Pipework insulation material	Interior, Levels 5 & 6, Plant Rooms, Roof Lining, – SMF sarking insulation material (foil-clad)

3.14.2.2 Duties of Management Plan Controller

- When using SMF, so far as is practicable, select materials or product forms so as to minimise the release of fibres and/or dust;
- Engage appropriately qualified contractors to perform works with SMF;
- Action shall be taken to apply appropriate control strategies on a continuing basis. The aim of these strategies is to reduce exposure to SMF to the lowest practical levels. Personal protection should not be used to replace other control measures unless they are deemed inadequate or not workable; and
- Ensure appropriate site maintenance throughout building.

3.14.2.3 Management of SMF

In all cases, it is essential that SMF materials be handled appropriately to control dust and debris, as they are irritating to the skin and mucous membranes. SMF fibres are generally thick and will scratch and puncture the skin causing rashes and irritation to the skin, nose and eye if exposed to high levels of dust and debris. Protective eyewear therefore should be worn if handling SMF materials above the head, i.e. entering ceiling cavities.

3.14.2.4 Overall Strategy

Action should be taken on a continuing basis to achieve the lowest workable exposure levels of SMF. The provision of engineering controls, close attention to plant cleanliness, in particular within plant rooms and air handling units, and the containment of waste material may achieve this. Additionally, the use of binders or work practices which reduce the liberation of fibres and the provision of appropriate personal protective equipment can help reduce SMF levels to personnel and the environment.

3.14.2.5 Handling and Disposal of SMF Materials

Caution is required when handling SMF products in order to minimise airborne SMF fibre levels. It is recommended that the following code of practice be closely adhered to when handling such materials:

- *Code of Practice for the Safe Use of Synthetic Mineral Fibres NOHSC:2006 (1990)]*

Essentially, SMF materials should be handled in such a way as to minimise dust and disturbance of the materials. Where SMF materials are installed or removed, then suitable controls and appropriate personal protection are to be provided. Consultation should be sought with regard to appropriate procedures prior to the handling of such materials.

Mirvac Real Estate Pty Ltd

Hazardous Materials Management Plan

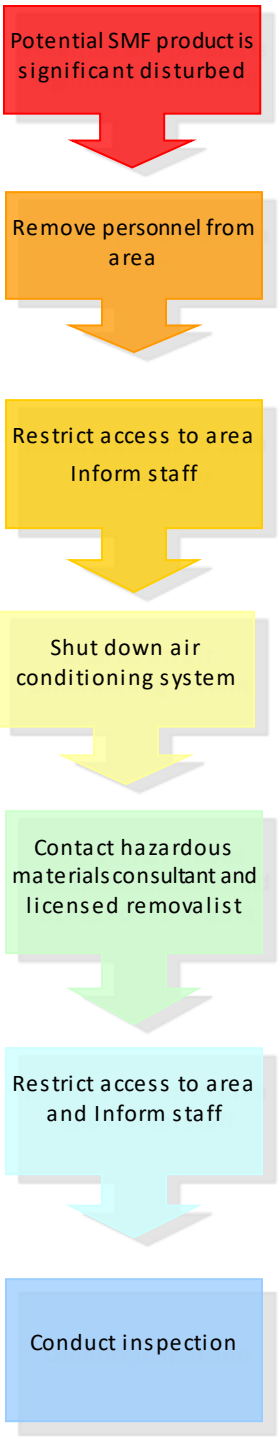
1 Darling Island, Pyrmont, NSW

SECTION 4: EMERGENCY AND WORK PROCEDURES

SECTION 4 – EMERGENCY AND WORK PROCEDURES

4.1 Emergency Response Procedure – SMF Significant Disturbance

In the event that an activity involves the accidental significant disturbance of SMF materials, the following steps should be followed:



Step	Who	Steps/Notes
1	Management Plan Controller	Remove personnel from areas considered to be at risk in relation to SMF exposure. **Go to Step 2.**
2	Management Plan Controller	Access to the area should be controlled and sign posted to prevent unauthorised persons entering the disturbance area. Inform relevant staff. **Go to Step 3.**
3	Management Plan Controller	The air handling system should be shut-off and temporarily modified to prevent the distribution of fibres from the area to other areas in the building. **Go to Step 4.**
4	Management Plan Controller, Hazardous Materials Consultant and Accredited Removalist	Engage an appropriate removalist to undertake the SMF clean-up works. Removalists should wear a minimum of a half-face respirator fitted with a P2 filter, disposable coveralls, including hood, rubber gloves and eye protection. Polythene sheeting should be placed over furnishings, carpeting and equipment not affected by the disturbance to minimise the spread of SMF fibres. Affected areas shall be vacuumed using a vacuum cleaner fitted with a HEPA filter and cleaned using damp cloths to remove surface dusts. Removalists shall remove any damaged ceiling tiles, insulation batts, debris, cloths, vacuum bags, filters and other contaminated materials and discard in an appropriate waste bag and place them in the designated sealed bin for transfer to an Synthetic Mineral Fibre disposal site. Polythene sheeting shall be wiped with a damp cloth, folded and discarded as SMF waste. **Go to Step 5.**
5	Hazardous Materials Consultant	Air monitoring outside the area of the SMF contamination shall be conducted (if relevant) while clean-up works are being conducted to ensure that SMF levels do not exceed acceptable exposure levels. **Go to Step 6.**
6	Hazardous Materials Consultant and Management Plan Controller	After clean-up works have been completed, airborne monitoring shall be conducted in the affected area to ensure that SMF exposure levels are at an acceptable standard. Only when the SMF exposure level is acceptable and the clean-up works have been conducted to a satisfactory standard, shall personnel be allowed to reoccupy the affected area.

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Hazardous Materials Management Plan

1 Darling Island, Pyrmont, NSW

SECTION 5: HAZARDOUS MATERIALS MANAGEMENT TIMETABLE

SECTION 5- HAZARDOUS MATERIALS MANAGEMENT TIMETABLE

5.1 Hazardous Materials Management – Timetable for Action (Low Risk)

1 Darling Island, Pyrmont, NSW

Hazardous Materials Management – Timetable for action

Low Priority Risks

Action Required	Location	Material	Condition	Works Completed by (Company)	Sign-Off	Date Completed
Update HMMP	-	All	-			

By January 2023 The above actions must be completed by January 2023. **All items completed?** _____ (Sign Off)

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Hazardous Materials Management Plan

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SECTION 6: CONTACTS AND RECORDS/DOCUMENTATION

SECTION 6 – RECORDS/DOCUMENTATION AND CONTACTS

6.1 Records and Documentation

Asbestos Contractors

Below is a short list of contractor's independent of Greencap and in alphabetical order for remedial or emergency clean-up works. They are licensed by NSW SafeWork to perform friable asbestos material removal work (i.e. all hold a Class A). It is however recommended to verify currency prior to commissioning.

CONTRACTOR	CONTACT	PHONE/FAX/EMAIL
Australasian Technical Services (ATS) (Licence No. AD202389) 9 Phiney Place Ingleburn NSW 2565	Sarey Tin (Project Manager)	Phone: 02 9605 4733 Fax: 02 9605 4744 Mob: 0412 213 462 Email: sydney@atstech.com.au Web: www.atstech.com.au
Beasy (Licence No. AD211426) 16 Orchardleigh Street, Yennora NSW 2161 PO Box 2769, North Parramatta NSW 1750	Bret Baker (Project Manager)	Phone: 02 9807 3800 Fax: 02 9807 3811 Mob: 0410 484 789 Email: bret@beasy.com.au Web: www.beasy.com.au
McMahon Services (Licence No. AD211713) Level 4, 79 Commonwealth Street Surry Hills NSW 2010	Mick Merriman (State Manager)	Phone: 02 9307 9900 Fax: 08 8260 5210 Mob: 0458 070 554 Email: sydney@mcmservices.com.au Web: http://www.mcmservices.com.au
Pure Contracting (Licence No. AD210803) 4/31-33 Nyrang Street, Lidcombe NSW 2141	Colm Burke / James Low (project Managers)	Phone: 02 8016 2400 Fax: 02 8016 2499 Mob: Colm - 0422 022 440 James - 0402 163 007 Email: james.low@purecontracting.com.au colm.burke@purecontracting.com.au Web: www.purecontracting.com.au

Ross Mitchell & Associates Pty Ltd (Licence No. AD211090) Unit 27, 6 -20 Braidwood Street, South Strathfield NSW 2136 PO Box 149 Strathfield South NSW 2136	Stephen Hickey (Project Manager)	Phone: 1300 798 808 / 02 9642 0011 Fax: 02 9642 0111 Mob: 0411 674 120 Email: stephen@rossmitchell.com.au Web: www.rossmitchell.com.au

Asbestos Consultants

For consulting works such as; air monitoring, clearance inspections, investigation and analysis of asbestos materials.

Greencap	Level 2, 11 Khartoum Road, NORTH RYDE NSW 2113	(02) 9889 1800

Other Contact Numbers

NSW Waste Service Booking Line	-	1300 651 116
NSW SafeWork	92-100 Donnison Street, GOSFORD NSW 2250	13 10 50