Banksia EOHS
Occupational, Environmental and Community Health Risk

HAZARDOUS MATERIALS REINSPECTION REPORT, CATHERINE MCAULEY HIGH SCHOOL WESTMEAD.

20th March 2016

Prepared for:
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1.0 INTRODUCTION

Past construction practices have led to the use of hazardous materials in some buildings. The use of asbestos, lead based paints, ozone depleting substances and PCB's has been discontinued, however, residual material from past construction practices remain in some older buildings.

Where present, hazardous materials must be managed to ensure there is no potential for adverse health effects on building occupiers, or during demolition. Management of these hazards requires a three step approach of recognition of the existence and potential hazardous materials, evaluation of the extent of those hazards (by hazardous materials surveys), and, control (by management procedures including removal before demolition of structures occurs).

This report has been prepared to summarise the results of a hazardous materials reinspection of the Catherine McAuley High School at Westmead. The reinspection was carried out to assess if there had been any change in the status of hazardous materials identified in the initial inspection.

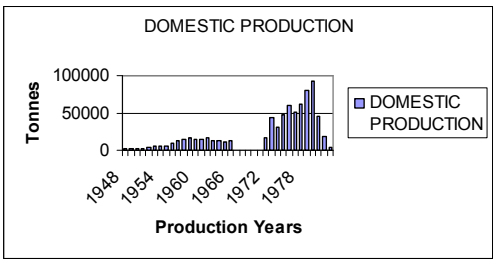
CATHERINE MCAULEY HIGH SCHOOL WESTMEAD

2.0 HAZARDOUS MATERIALS, THEIR USE AND HEALTH RISK

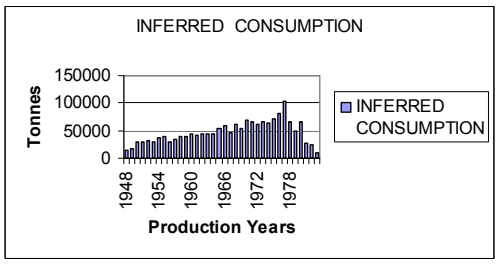
2.1 Asbestos-Containing Materials

Asbestos has unique properties, and because of this was used up until the mid/late 1980's in a large number of applications (over 3000 have been identified). Asbestos was mined within Australia up until 1987, and commonly used in manufacturing until the mid to late 1980's. The final asbestos containing product sold in Australia was car brake pads. The sale of these was discontinued at the end of 2003.

Statistics on Australian production and consumption of asbestos are shown in the tables below:



Australian Domestic Production Of Asbestos.



Australian Consumption Of Asbestos.

The first recorded production of asbestos in Australia was at Gundagai in 1880, where small amounts of Amphibole asbestos were mined until 1921. In Australia, production peaked in 1980 when 92,418 tonnes were produced, mainly from the Woodsreef mine located near Barraba in northern New South Wales, but by 1987, only 3909 tonnes was produced, and production ceased entirely shortly after.

The primary use of asbestos was in asbestos cement sheeting, and production of this peaked in 1974 when about 44,000,000m^2 (44km^2) was produced.

The year 1987 is generally regarded as the cutoff year for asbestos use. Asbestos containing materials are widespread in the community, and it can be expected that any building constructed prior to 1987may contain asbestos products. This includes a significant percentage of the existing Australian housing stock.

The types of asbestos fibre used in asbestos products varied over time with crocidolite and amosite typically found in products manufactured in the earlier years of the 20th century, and chrysotile used exclusively in later years.
Asbestos is a naturally occurring fibrous silicate mineral, one of the Serpentine group. It was mined extensively in Australia until the early 1980's.

These minerals were commonly used in the past because of their fibrous nature (providing structural strength in products such as asbestos cement sheeting), low heat conductivity (providing insulation on steel building structures, steam pipes etc), high electrical resistance (used in power boards, electrical fittings, etc) and chemical inertness.

The primary types of asbestos used were chrysotile (white asbestos), crocidolite (blue asbestos) and amosite (brown asbestos).

The risk to human health from asbestos arises primarily from the inhalation of asbestos fibre derived from the disturbance of asbestos-containing products.

Because of its small fibre size, asbestos may penetrate deep into the lung, and because of its inert nature, body processes have difficulty expelling the material.

Exposure to asbestos fibre may result in an outcome of chronic adverse health effects. These may include asbestosis leading to the onset of mesothelioma, a painful, fatal cancer of the lining of the lung. The health effects of asbestos may take 20 – 40 years to manifest themselves. In Australia at the present time there is a high prevalence of asbestos related disease resulting from the widespread use of the material in the construction and shipping industries during the 1960's and 1970's.

Asbestos fibre may be held strongly in a matrix, for example cement (asbestos cement) and in this form is known as bonded. If the matrix does not hold the asbestos fibre strongly, and the fibre can be liberated easily, for example by crushing between the

fingers, the form is known as friable. Friable asbestos is more of a health risk than bonded because exposure to fibres happens more easily.

Asbestos cement is a bonded asbestos product with the asbestos fibre contained within a stable matrix. Because asbestos cement is bonded, asbestos fibre is only liberated if the materials are degraded in some way, such as by sawing, drilling or grinding. Broken asbestos cement pieces are regarded as bonded by Workcover NSW.

Issues related to occupational exposure to asbestos are administered in NSW by Workcover NSW under the Work, Health and Safety Act and Regulations. Workcover also licence asbestos removal contractors.

The Safe Work Australia has issued two guidelines for the management, control and removal asbestos in the workplace. These have been revised and are:

- "Model Code of Practice – How to Safely Remove Asbestos", and,
- "Model Code of Practice – How to Manage and Control Asbestos in the Workplace".

These Codes are also used as guidelines for industry practice in the area of asbestos management.

2.2 Synthetic Mineral Fibre Materials

SMF was and is used extensively as an insulating material. It may irritate unprotected skin and the eyes and upper respiratory system of individuals who are exposed to it. Although fibrous, long term health effects similar to those of asbestos have not been identified, primarily because of the way fibres fracture when degraded.

Synthetic mineral fibres (SMF), described in international literature as man-made mineral fibres (MMMF), is a collective term used for fibres such as fibreglass, rockwool and ceramic fibres. The biological effects of these fibres are determined by the fibre diameter and length and chemical nature.

Because they are generally regarded as an irritant, the obligation of the employer under the Occupational Health and Safety Act is to provide a safe and healthy work environment, and this is best achieved by protection of skin and the wearing of respiratory protection.

Synthetic mineral fibre is not listed as a Prescribed Waste under the Environmental Protection (Prescribed Waste) Regulations.

2.3 Lead

Lead was used commonly in the building industry for applications such as waterproofing, where it was used in a sheet form. It was also commonly used as a paint additive, and is typically found in paints used in older buildings or in protective steel coating. Lead based paints are no longer used in the building industry.

Lead accumulates in the blood stream primarily by inhalation and ingestion as a result of repeated exposure. Children are most at risk from lead, and it has been found that learning deficiencies are experienced by children who develop high blood lead concentrations.

Lead should not be removed from surfaces by grinding or heat methods unless specific personal protective measures are employed. The National Occupational Health and Safety Commission (Worksafe) publish exposure standards for lead which require that

worker exposures be kept below what is known as the Threshold Limit Value (TLV). The TLV is only likely to be approached where grinding or heat removal of lead based paint is planned, but unlikely to be approached in a demolition situation where building fabric is being dismantled.

The occupational health hazard from lead in a situation where demolition is being carried out is small since it is unlikely that significant quantities of lead-containing dust will be generated. No grinding or heat removal of lead based paints would be contemplated during any proposed refurbishment project, and the only potential exposure would arise from high lead dusts contained in, for example, the ceiling cavity. The wearing of a disposable respirator would provide protection against this type of exposure.

In NSW, demolition waste containing lead-based paints may be regarded as “Solid Waste” and disposed of to a tip licensed to take general demolition waste. This method of disposal is accepted because the lead found in paint is generally in an insoluble form and unavailable for leaching into the environment.

2.4 PCB’s

PCB’s were used in the past in the capacitors of electrical fittings, typically fluorescent light fittings, and in application such as transformers. Their use is now banned.

PCB’s are primarily an environmental hazard. They are accumulated in the fatty body tissue of animals, and are also bioaccumulated up the food chain, that is, the animal at the top of the food chain is most likely to have the highest concentration of PCB in body fat.

PCB’s were banned in 1976, and buildings constructed after that time are unlikely to have them within their electrical fittings. PCB’s are a prescribed waste, and as such, they must be disposed of appropriately. Disposal would include the removal from light fittings of the PCB-containing capacitors, their placement in a suitable container such as a plastic drum and transport under controlled conditions to a licensed disposal or storage site.

Removal would be required prior to the commencement of demolition activities, and the appropriate personal protective equipment would include disposable overalls, impervious apron, impervious gloves (Nitrile), eye protection and appropriate respiratory protection.

2.5 Biological Hazards

Biological hazards are agents which are biological in nature, capable of self-replication and have a capacity to produce a deleterious effect on humans. They may include a range of materials such as Legionella from cooling towers, bacterial and fungal materials from air conditioning systems, fungal hazards from animal faeces found in ceiling spaces, bacterial, fungal, microbiological and viral hazards from hospitals and research facilities, and bacterial viral and fungal hazards from abattoirs and buildings where animals are Housed.

Biological agents can cause infection to exposed persons through oral, respiratory or skin penetration.

3.0 RELEVANT OH&S LEGISLATION

3.1 NSW Work, Health & Safety Act & Regulations 2011

The Work, Health & Safety Act (2011) prescribes general duties and legal obligations on occupational health and safety matters. It covers employer, supplier and employee responsibilities in relation to hazardous substances. The Act and Regulations require employers to ensure the health, safety and welfare of employees at their place of work.

3.2 Work Safe Australia Model Codes of Practice 2011

Work Safe Australia revised its existing Codes of Practice for asbestos in 2011, and issued two new Model Codes Of Practice:

- "Model Code of Practice – How to Safely Remove Asbestos", and,
- "Model Code of Practice – How to Manage and Control Asbestos in the Workplace".

The State asbestos-related Acts and Regulations defer to these where asbestos management or removal issues are identified.

3.3 Australian Standard AS2601-2001 – The Demolition of Structures

AS 2601-2001 requires an employer to determine the presence of hazardous substances or conditions in a structure prior to its demolition. The nature and location of each hazard is to be recorded and the proposed control method included in the control documentation.

3.4 Codes of Practice

- Guidance note for ceiling dusts containing lead: Workcover NSW.
- Code of practice for the safe use of synthetic mineral fibre: Safe Work Australia.
- Workplace Exposure Standards For Airborne Contaminants. Safe Work Australia December, 2011.

4.0 METHODS USED TO IDENTIFY HAZARDS AT THE SITE

The site was visited on Friday the 18th of March, 2016. All accessible areas of the building were inspected and an assessment of the presence of hazardous materials was made.

Samples of suspected asbestos containing materials were collected and analysed during the initial inspection, but for this report the presence of hazardous materials, and their condition, was deemed where necessary in accordance with Part 9.2 of the NOHSC Code of Practice [NOHSC:2018(2005)]. Other hazardous materials were similarly assessed.

Photographs were collected to facilitate easy identification of the areas where hazardous materials were located, and these photographs are included in the report.

While every effort was made to inspect all areas of the site, some locations could not be accessed.

5.0 RISK ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

The basis of the risk assessment methodology is a three step process of;

- *Recognition of the presence of the hazardous material,*
- Evaluation of the degree of health risk that the hazardous material,
- Control of the risk of the hazardous material by engineering or management controls.

5.1 Asbestos Risk Assessment

For asbestos, a score system was used based on the Ferris Index (Ferris, Benjamin Dr., Harvard School Of Public Health in Am. Ind. Hyg. J. April, 1098, pp 270-276.) Five factors were identified as being significant in fibres of asbestos becoming airborne:

- **Accessibility (A)** (scored 1 – 4)
  Totally enclosed: Score 1
  Inaccessible – beyond reach: Score 2
  Accessible in a low activity area: Score 3
  Accessible in a high activity area: Score 4
- **Condition (C)** (scored 1 – 4)
  No damage at all: Score 1
  Mild damage: Score 2
  Moderate damage: 3
  Severe damage: 4
- **Friability (F)** (Scored 1 – 4)
  Non friable, firmly bound: Score 1
  Slightly friable: Score 2
  Moderately friable: Score 3
  Very friable: Score 4
- **Presence in an Air Plenum (L)** (Score 1 – 2)
  Not present: Score 1
  Present: Score 2.
- **Percentage Asbestos (P)** (Score 1 – 4)
  Less than 1%: Score 0
  Less than 10%: Score 1
  11% to 25%: Score 2
  26% to 50%: Score 3
  51% or more: Score 4

A score is then calculated using the equation:

Ferris Index + (A+C+F+L) x P

Where: A = Accessibility Score
C = Condition Score
F = Friability
L = Presence in the air plenum
P = Percentage of asbestos.

The above scoring system is summarised in Figure 1. Each risk assessment is scored then a consultation is held with site management to finalise management response. Figure 2 suggests some management responses.

Figure 1: Ferris Index Score Matrix

A = Accessibility Ratings range from 0-4	C = Condition Ratings range from 0-4	F = Friability Ratings range from 0-4	L = Location Ratings range from 0-4	P = Percentage Asbestos Ratings range from 0-4
1 Totally enclosed behind a false ceiling or wall	1 No sign of surface damage	1 Non friable by hand, firmly bound	1 Material not present in return air plenum	0 Less than 1% asbestos present
2 Inaccessible due to height from floor	2 Only mild or occasional damage to surface	2 Slightly friable some comes off in fingers	2 Material present in return air plenum	1 1 to 10% asbestos present
3 Accessible but low activity area	3 Moderate damage in several areas	3 Moderately friable, breaks apart with little force		2 11 to 25% Asbestos present
4 Accessible in high activity area	4 Severe damage, friable, water damage	4 Very friable, breaks apart easily		3 26 to 50% asbestos present
				4 +51% asbestos present

Figure 2: Suggested Management Responses

Ferris Index Score	Risk Status Priority Rating	Actions Required
0-4	D	No Action Necessary.
5-9	C	Review in 3 years (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register.
10-15	B	Review in 1 year (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register.
16+	A	Remove immediately.

Fire Damage And Friability.

The classification of asbestos containing materials into “bonded” or “friable” depends on their softness or ability to be crushed between the fingers. Asbestos containing material which is soft and easily crushed (and the asbestos fibre released) is classified as friable, material which is hard and not easily crushed, and in which the asbestos fibre is firmly held, is classified as bonded.

Friable asbestos materials are potentially more hazardous since asbestos fibres are more easily released, increasing the health risk.

Fire damaged asbestos cement may be classified as bonded or friable depending the degree of damage.

The issue of the classification of fire damaged bonded asbestos cement was examined extensively in the NSW Land & Environment Court case Cessnock City Council v

Quintaz Pty Limited; Cessnock City Council v McCudden [2010] NSW Lec 3, in January 2010.

Part of the argument in the case centred around whether fire damaged asbestos cement should be classified as bonded or friable.

The judgement found that fire damaged asbestos cement remained "bonded" in the strict definition, provided it retained its bonded character, and had not "exploded" or could be easily crushed between the fingers.

5.2 SMF Risk Assessment

With SMF the hazard is primarily one of skin, eye or upper respiratory tract irritation. Fibres are released when the material is handled or otherwise disturbed.
A risk status of C (Figure 2) is assigned to all SMF.

5.3 Lead

The health risk from lead depends on:

- If the lead compound is soluble,
- If it is accessible,
- The percentage of lead,
- Type of work proposed for the lead material (grinding etc). Lead will be assessed us in the score table (Figure 3) below:

Figure 3: Lead Score Table

A = Accessibility	S = Solubility	C = Concentration
0 Inaccessible – no disturbance such as grinding proposed	0 Insoluble (such as metalling leading)	0 If less than 1%
1 Accessible – disturbance by methods such as grinding proposed	1 Soluble (such as some paints)	1 If greater than 1%

The risk score is then calculated by:
Lead Risk (LR) = Accessibility (A) x Solubility(S) x Concentration (C).
The recommended management options for lead are summarised in Figure 4.

Figure 4: Suggested Management Response

Lead Risk (LR) Score	Risk Status Priority Rating	Actions Required
0	D	No Action Necessary
1	A	Remove immediately using methods advised by Hazardous Materials Consultant or seal by re-painting.

5.4 Polychlorinated Biphenyls (PCB's)

A risk status of B (see Figure 2) assigned to all PCB's.

6.0 RESULTS OF THE SURVEY

6.1 Asbestos

Our assessment of the presence of asbestos materials in this building is as follows:

Block A is a two-storey classroom building. On the upper level, the eaves, awnings and classroom ceilings are lined with fibre cement which was deemed to contain asbestos (Photographs 1, 2, 3 and 4).

On the lower level of Block A there are toilets which have partitions which are constructed from thick, compressed, deemed asbestos cement.

Block B is similar in construction to Block A. It also has fibre cement lined eaves (Photograph 5), awnings and classroom ceilings (Photograph 6).

Block C (Photographs 7 and 8) has been modified as a result of the construction of a new, muli-level classroom block. This building have eaves which are lined with fibre cement which was deemed to contain asbestos.

Block G is a single-level classroom Block, the eaves of which are lined with fibre cement. This material was deemed to contain asbestos.

The location of asbestos containing materials is shown in Figure 1.

6.2 Lead

No Lead based paints were detected but Lead sheeting (flashing) waterproofing was detected at the site.

6.3 Synthetic Mineral Fibre

Synthetic mineral fibre was detected in the ceiling cavities and has been used as insulation on water heaters.

6.4 Polychlorinated Biphenyls

No PCB containing capacitors were detected at the site.

6.5 Biological Hazards

Biological hazards were deemed to be present in the sewer lines at the site.

7.0 CONCLUSIONS & RECOMMENDATIONS

Asbestos containing materials identified in earlier inspections are still in place at the site, but some has been removed – including on Block C. The extent of the remaining materials is shown in Figure 1.

It is good practice to undertake a detailed hazardous materials survey, including material testing, on any area where refurbishment is planned prior to work commencing and this report assists in this regard.

Should any other suspected asbestos materials be uncovered during any site works, the procedure shown in Appendix 1 should be followed.

Synthetic mineral fibre was detected in water heaters and in insulation in the ceiling cavities.

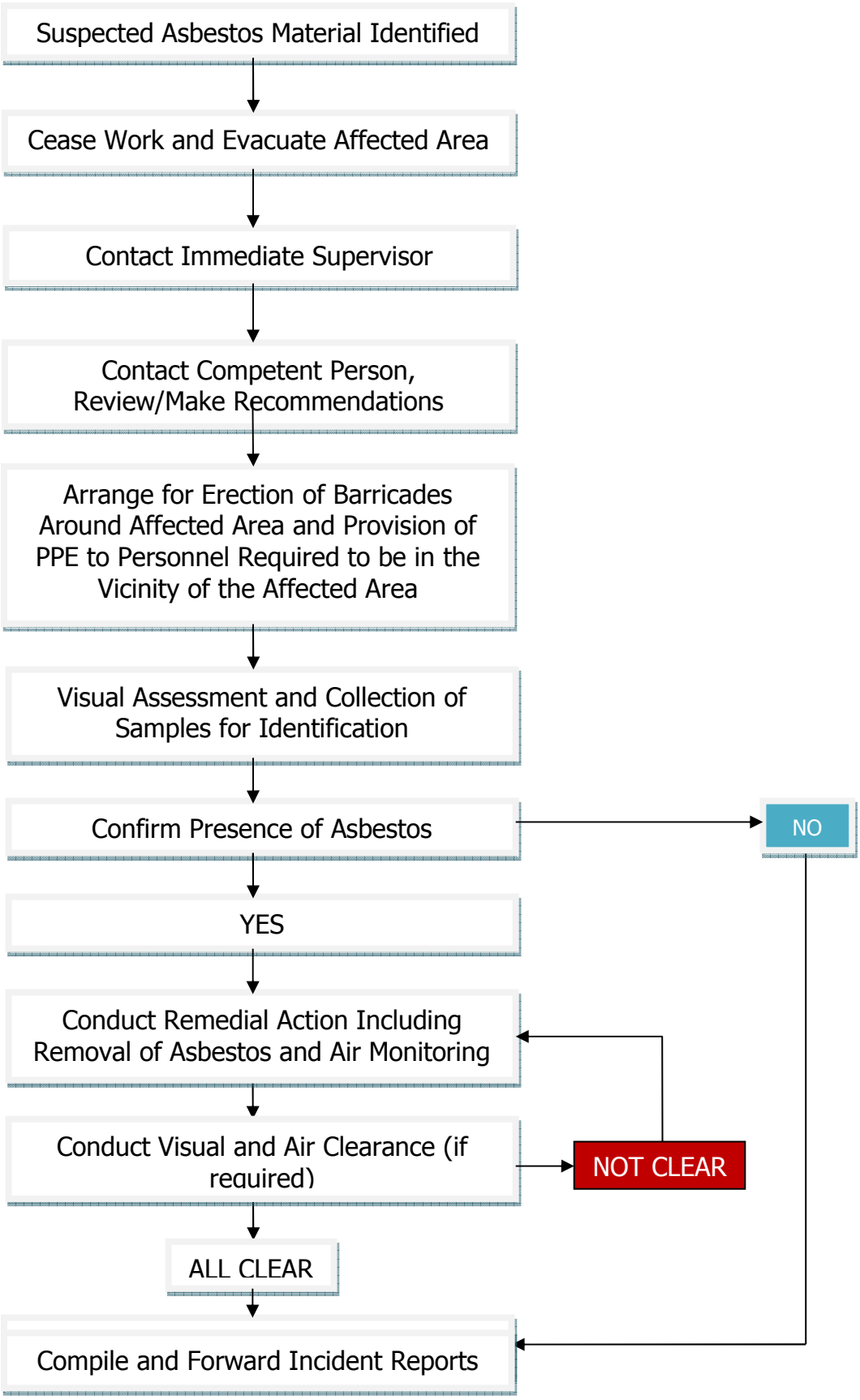
No Lead based paint was detected but Lead flashing were identified in Block A but no PCB containing capacitors were detected.

Biological hazards were deemed to be present in the sewer lines.

Table 1: Summary of Results

Appendix 1: Asbestos Materials Flow Chart

FLOWCHART FOR THE MANAGEMENT OF SUSPECTED ASBESTOS MATERIAL UNCOVERED BY SITE MANAGEMENT



Photographs

Photo 1: Block A Eaves, Upper Level Ceiling Linings & Awnings Lined With Fibre Cement. Deemed Asbestos Present.

Photo 2: Block A Awnings & Classroom Ceilings Lined With Fibre Cement. Deemed Asbestos Present.

Photo 3: Block A Eaves Lined With Fibre Cement. Deemed Asbestos Present.

Photo 4: Block A Ceiling Above Stairs Lined With Fibre Cement. Deemed Asbestos Present.

Photo 5: Block B Eaves Lined With Fibre Cement. Deemed Asbestos Present.

Photo 6: Block B Awning & Classroom Ceilings Lined With Fibre Cement. Deemed Asbestos Present.

Photo 7: Block C. Eaves Lined With Fibre Cement. Deemed Asbestos Present.

Photo 8: Block C. Eaves Lined With Fibre Cement. Deemed Asbestos Present.

Photo 9: Block G Eaves Lined With Fibre Cement. Deemed Asbestos Present.

Photo 10: Block G Eaves Lined With Fibre Cement. Deemed Asbestos Present.

HAZARDOUS MATERIALS INSPECTION & MANAGEMENT REPORT
CATHOLIC EDUCATION - DIOCESE OF PARRAMATTA

CATHERINE MCAULEY COLLEGE

WESTMEAD, NSW

5th July 2019

Prepared for:
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July 2019

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CONTENTS

GENERAL REQUIREMENTS FOR THE SUCCESSFUL OPERATION OF AN ASBESTOS/HAZARDOUS MATERIALS REGISTER

The following simple rules should be followed to ensure the effective operation of this asbestos/hazardous materials register and the protection of the health and wellbeing of staff, students and visitors:

NB: This inspection was prepared as a **management re-inspection** and NO sampling was conducted during the current investigation of the site. The purpose was to visually, and NOT destructively, identify the presence of suspected hazardous materials likely to be present at the site. If required, a formal Demolition/Refurbishment Report should be undertaken.

1. The asbestos identified in the survey is in a stable condition and does not present a danger to health or wellbeing unless it is disturbed by cutting, sawing, drilling, sanding or some activity which will result in the generation of asbestos fibre. For this reason, the facility must ensure that all tradesmen entering the site to do work read and sign the Asbestos Reading Log (**Section 15**). This will make them aware of the presence of asbestos products at the site help to protect them and residents from exposure to asbestos fibre.

2. Ensure that if asbestos is removed from the site, the removal is recorded in the Asbestos Removal Log (**Section 16**).

3. All asbestos should be re-inspected “periodically” – our recommendation is each five (5) years, to ensure that there has been no deterioration in it which would lead to the potential exposure of anyone to the material.

4. Should an emergency arise which leads to the disturbance of asbestos materials, the procedure shown in **Section 13** of this Hazardous/Asbestos Materials Survey should be followed.

5. This Register must be readily accessible to anyone who intends to carry out work at the site, and a copy will be made available to that person for reading and signing acknowledgment while on-site (see **Section 15**).

6. This Register must be transferred by any person relinquishing control of the site to any person assuming control.

1.0 INTRODUCTION

Past construction practices have led to the use of hazardous materials in some buildings. These materials primarily include asbestos. Other materials such as biological hazards, lead-based paints, synthetic mineral fibre and ozone depleting substances may also be found in some sites from time to time. The use of asbestos has been discontinued, however, residual material from past construction practices remain in some older buildings. SMF's continue to be used due to their lower toxicity. The use of lead in paint has been discontinued, but some is still used for waterproofing, and biological hazards are still encountered.

Where present, these materials must be managed to ensure there is no potential for adverse health effects on those accessing the building. Management of these hazards requires a three-step approach of recognition of the existence and potential hazard of asbestos, evaluation of the extent of those hazards (by hazardous materials surveys), and, control (by management procedures including labelling, restrictions on disturbance, removal, periodic reinspection and access restrictions).

This report has been prepared to summarize the results of a hazardous materials inspection of the buildings of the Catherine McAuley College located at 2 Darcy St., Westmead, NSW.

CATHERINE MCAULEY COLLEGE, WESTMEAD, NSW

2.0 NATURE OF THE POTENTIAL HAZARD

2.1 Asbestos

Asbestos is a naturally occurring fibrous silicate mineral - one of the Serpentine group. It was mined extensively in Australia until the early 1980's.

These minerals were commonly used in the past because of their fibrous nature (providing structural strength in products such as asbestos cement sheeting), low heat conductivity (providing insulation on steel building structures, steam pipes etc), high electrical resistance (used in power boards, electrical fittings, etc) and chemical inertness.

The use of asbestos is now banned, but the High types of asbestos used in the past were chrysotile (white asbestos), crocidolite (blue asbestos) and amosite (brown asbestos).

The risk to human health from asbestos arises primarily from the inhalation of asbestos fibre derived from the disturbance of friable asbestos-containing products.

Because of its small fibre size, asbestos may penetrate deep into the lung, and because of its inert nature, body processes have difficulty expelling the material.

Exposure to asbestos fibre may result in an outcome of chronic adverse health effects. These may include asbestosis leading to the onset of mesothelioma, a painful, fatal cancer of the lining of the lung. The health effects of asbestos may take 20 – 40 years to manifest themselves. In Australia at the present time there is a high prevalence of asbestos related disease resulting from the widespread use of the material in the construction and shipping industries during the 1960's and 1970's.

In New South Wales, there are requirements for asbestos management under the Occupational Health and Safety Act (2011), and Regulations (2017), and two Codes of Practice – *How to Safely Remove Asbestos 2016* & *How to Manage and Control Asbestos in the Workplace 2016.* These, together with the NSW Regulations are used to formulate responses in situations where asbestos is detected.

2.2 Synthetic Mineral Fibre Materials

SMF was and is used extensively as an insulating material. It may irritate unprotected skin and the eyes and upper respiratory system of individuals who are exposed to it. Although fibrous, long term health effects similar to those of asbestos have not been identified, primarily because of the way fibres fracture when degraded.

Synthetic mineral fibres (SMF), described in international literature as man-made mineral fibres (MMMF), is a collective term used for fibres such as fibreglass, rockwool and ceramic fibres. The biological effects of these fibres are determined by the fibre diameter and length and chemical nature.

Because they are generally regarded as an irritant, the obligation of the employer under the Work Health and Safety Act is to provide a safe and healthy work

environment, and this is best achieved by protection of skin and the wearing of respiratory protection.

Synthetic mineral fibre is not listed as a Prescribed Waste under the Environmental Protection (Prescribed Waste) Regulations.

2.3 Lead

Lead was used commonly in the building industry for applications such as waterproofing, where it was used in a sheet form. It was also commonly used as a paint additive, and is typically found in paints used in older buildings or in protective steel coating. Lead based paints are no longer used in the building industry.

Lead accumulates in the blood stream primarily by inhalation and ingestion as a result of repeated exposure. Children are most at risk from lead, and it has been found that learning deficiencies are experienced by children who develop high blood lead concentrations.

Lead should not be removed from surfaces by grinding or heat methods unless specific personal protective measures are employed. The National Occupational Health and Safety Commission (Worksafe) publish exposure standards for lead which require that worker exposures be kept below what is known as the Threshold Limit Value (TLV). The TLV is only likely to be approached where grinding or heat removal of lead based paint is planned, but unlikely to be approached in a demolition situation where building fabric is being dismantled.

The occupational health hazard from lead in a situation where demolition is being carried out is small since it is unlikely that significant quantities of lead-containing dust will be generated. No grinding or heat removal of lead based paints would be contemplated during any proposed refurbishment project, and the only potential exposure would arise from high lead dusts contained in, for example, the ceiling cavity. The wearing of a disposable respirator would provide protection against this type of exposure.

In NSW, demolition waste containing lead-based paints may be regarded as “Solid Waste” and disposed of to a tip licensed to take general demolition waste. This method of disposal is accepted because the lead found in paint is generally in an insoluble form and unavailable for leaching into the environment.

2.4 Polychlorinated Biphenyls (PCB’s)

PCB’s were used in the past in the capacitors of electrical fittings, typically fluorescent light fittings, and in application such as transformers. Their use is now banned.

PCB’s are primarily an environmental hazard. They are accumulated in the fatty body tissue of animals, and are also bioaccumulated up the food chain, that is, the animal at the top of the food chain is most likely to have the highest concentration of PCB in body fat.

PCB’s were banned in 1976, and buildings constructed after that time are unlikely to have them within their electrical fittings. PCB’s are a prescribed waste, and as such, they must be disposed of appropriately. Disposal would include the removal from light

fittings of the PCB-containing capacitors, their placement in a suitable container such as a plastic drum and transport under controlled conditions to a licensed disposal or storage site.

Removal would be required prior to the commencement of demolition activities, and the appropriate personal protective equipment would include disposable overalls, impervious apron, impervious gloves (Nitrile), eye protection and appropriate respiratory protection.

2.5 Biological Hazards

Biological hazards are agents which are biological in nature, capable of self-replication and have a capacity to produce a deleterious effect on humans. They may include a range of materials such as Legionella from cooling towers, bacterial and fungal materials from air conditioning systems, fungal hazards from animal faeces found in ceiling spaces, bacterial, fungal, microbiological and viral hazards from hospitals and research facilities, and bacterial viral and fungal hazards from abattoirs and buildings where animals are Housed.

Biological agents can cause infection to exposed persons through oral, respiratory or skin penetration.

3.0 RELEVANT WHS LEGISLATION

3.1 NSW Work, Health & Safety Act (2011) & Regulations (2017)

The Work Health & Safety Act (2011) prescribes general duties and legal obligations on occupational health and safety matters. It covers employer, supplier and employee responsibilities in relation to hazardous substances. The Act and Regulations require employers to ensure the health, safety and welfare of employees at their place of work.

3.2 Work Safe Australia Model Codes of Practice 2018

Work Safe Australia revised its existing Codes of Practice for asbestos in 2016, and issued two new Model Codes Of Practice:

- “Model Code of Practice – How to Safely Remove Asbestos” (2018), and,
- “Model Code of Practice – How to Manage and Control Asbestos in the Workplace” (2018).

The State asbestos-related Acts and Regulations defer to these where asbestos management or removal issues are identified.

3.3 Australian Standard AS2601-2001 – The Demolition of Structures

AS2601-2001 requires an employer to determine the presence of hazardous substances or conditions in a structure prior to its demolition. The nature and location of each hazard is to be recorded and the proposed control method included in the control documentation.

3.4 Codes of Practice

- Guidance note for ceiling dusts containing lead: SafeWork NSW.
- Code of practice for the safe use of synthetic mineral fibre: SafeWork Australia (1990).
- Workplace Exposure Standards for Airborne Contaminants: SafeWork Australia (2018).
- How to Manage/Control Asbestos in the Workplace: SafeWork Australia (2016).

4.0 METHODS USED TO IDENTIFY HAZARDS AT THE SITE

The site was visited on Monday 27th May, 2019.

All areas of the site were inspected and an assessment of the presence of hazardous materials was made. Potential asbestos-containing materials were deemed where suspected in accordance with Part 9.2 of the NOHSC Code of Practice [NOHSC:2018(2005)]. Other hazardous materials were similarly assessed.

NB: This inspection was prepared as a **management re-inspection** and NO sampling was conducted during the current investigation of the site. The purpose was to visually, and NOT destructively, identify the presence of suspected hazardous materials likely to be present at the site. If required, a formal Demolition/Refurbishment Report should be undertaken.

A photographic record was collected to facilitate easy identification of the areas where hazardous materials were located, and these photographs are included in the report. While every effort was made to access all areas of the site, some locations could not be accessed for reasons such as height and inaccessibility.

5.0 RISK ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

The basis of the risk assessment methodology is a three step process of:

- *Recognition* of the presence of the hazardous material,
- *Evaluation* of the degree of health risk that the hazardous material,
- *Control* of the risk of the hazardous material by engineering or management controls.

5.1 Asbestos Risk Assessment

“Materials” and “Location” algorithms were used to calculate the overall asbestos risk assessment score and the subsequent Risk Level and Action Priority.

The scoring system is set out below in **Sections 10, 11 & 12**. Each risk assessment is scored then a consultation is held with management to finalise the management response. **Figure 1** (below) suggests some typical management responses.

Figure 1: Suggested Management Responses

Ferris Index Score	Risk Status Priority Rating	Actions Required
0-4	D	No Action Necessary
5-9	C	Review in 3 years (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register
10-15	B	Review in 1 year (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register
16+	A	Remove immediately

An asbestos register was created for the site and is included in the sites hazardous materials inspection register shown in **Section 8 – Hazardous Materials Register**, below.

5.1.1 Fire Damage and Friability

The classification of asbestos containing materials into “bonded” or “friable” depends on their softness or ability to be crushed between the fingers. Asbestos containing material which is soft and easily crushed (and the asbestos fibre released) is classified as friable, material which is hard and not easily crushed, and in which the asbestos fibre is firmly held, is classified as bonded.

Friable asbestos materials are potentially more hazardous since asbestos fibres are more easily released, increasing the health risk.

Fire damaged asbestos cement may be classified as bonded or friable depending the degree of damage.

The issue of the classification of fire damaged bonded asbestos cement was examined extensively in the NSW Land & Environment Court case Cessnock City Council v Quintaz Pty Limited; Cessnock City Council v McCudden [2010] NSW Lec 3, in January 2010.

Part of the argument in the case centred around whether fire damaged asbestos cement should be classified as bonded or friable.

The judgement found that fire damaged asbestos cement remained “bonded” in the strict definition, provided it retained its bonded character, and had not “exploded” or could be easily crushed between the fingers.

5.1.2 Asbestos in Landfill and/or Soils

Often fragments of bonded asbestos material such as fibro cement are present in or on the soil surface as a result of incomplete clean-up following the past demolition of structures that contained asbestos cement products. Where asbestos material is buried throughout the soil stratum (below 10cm) as a result of onsite disposal of demolition wastes (as landfill), the advice of an experienced occupational hygienist should be sought.

Where fragments of non-friable asbestos (e.g. fibro cement) are identified on the soil surface, then the fragments may be removed by hand-picking, tilling or screening (applying suitable work health and safety practices). A grid pattern should be applied to ensure a structured and systematic approach to assessment and removal.

Upon completion, no visible asbestos fragments should be present on the surface. Where practicable, the top 10cm of wetted soil should be gently raked to expose any residual asbestos fragments. The collected material should be securely wrapped in plastic sheeting and taken to an appropriate landfill.

If the site is a workplace (as defined in the work health and safety legislation), only workers who have been appropriately trained in asbestos removal techniques, that include identification, safe handling and suitable control measures, may conduct asbestos removal work or asbestos related work at a workplace. The Safe Work Australia Code of Practise: How to Safely Remove Asbestos (2011) provides additional information on safety standards when removing asbestos.

For non-friable asbestos totalling greater than the equivalent of 10 square metres of fibro sheet or fragments, only a class A or B asbestos removal licence holder may conduct the asbestos removal work. If there is uncertainty about the quantity of asbestos material, a licensed removalist must be engaged.

For more complex sites, the National Environment Protection (Assessment of site contamination) Measure 1999 (April 2013) identifies criteria for assessment and remediation of non-friable asbestos in soil.

5.2 SMF Risk Assessment

With SMF the hazard is primarily one of skin, eye or upper respiratory tract irritation. Fibres are released when the material is handled or otherwise disturbed.

A risk status of C (**Figure 1**) is assigned to all SMF.

5.3 Lead

The health risk from lead depends on:

- If the lead compound is soluble,
- If it is accessible,
- The percentage of lead,

- Type of work proposed for the lead material (grinding etc.). Lead will be assessed us in the score table (**Figure 2**) below:

Figure 2: Lead Score Table

A = Accessibility	S = Solubility	C = Concentration
0 Inaccessible – no disturbance such as grinding proposed	0 Insoluble (such as metalling leading)	0 If less than 1%
1 Accessible – disturbance by methods such as grinding proposed	1 Soluble (such as some paints)	1 If greater than 1%

The risk score is then calculated by:

Lead Risk (LR) = Accessibility (A) x Solubility (S) x Concentration (C).

The recommended management options for lead are summarized in **Figure 3**.

Figure 3: Suggested Management Response

Lead Risk (LR) Score	Risk Status Priority Rating	Actions Required
0	D	No Action Necessary
1	A	Remove immediately using methods advised by Hazardous Materials Consultant or seal by re-painting

5.4 Polychlorinated Biphenyls (PCB's)

A risk status of B (see **Figure 1**) is assigned to all PCB's.

6.0 RESULTS OF THE SURVEY

6.1 Asbestos

Our assessment of the presence of asbestos-based material at the site is as follows:

Block A

The fibre cement eave linings to this building were deemed to be asbestos-based (Photographs 1 & 2).

The covered walkway linking Block A to Block G is lined with fibre cement sheeting which was deemed to be asbestos based (Photograph 3).

Block B

The fibre cement eave linings to the perimeter of this building were deemed to be asbestos-based (Photographs 4 & 5).

Fibre cement sheeting has been used to line the upper level walkway including the stair well in this block (Photographs 6 & 7). This material was deemed to contain asbestos.

The fibre cement sheeting extends into some classrooms as ceiling lining and where present was also deemed to contain asbestos (Photograph 8).

Vermiculite plaster has been used in places to coat the ceilings of this block (Photograph 9). Although this material is unlikely to contain asbestos, where present it was deemed to contain asbestos as a precaution.

Block C

The fibre cement eave linings to this building were deemed to be asbestos-based (Photographs 10, 11 & 12).

Vermiculite plaster has been used in places to coat the ceilings of this block (Photograph 13). Although this material is unlikely to contain asbestos, where present it was deemed to contain asbestos as a precaution.

Block D

The fibre cement eave linings to this building were deemed to be asbestos-based (Photographs 14 & 15).

Block E

The fibre cement eave linings of this building were deemed to be asbestos-containing (Photographs 16, 17 & 18).

Block F

The fibre cement eave linings of this building were deemed to be asbestos-containing (Photograph 19).

Vermiculite plaster has been used in places to coat the ceilings of this block (Photograph 20). Although this material is unlikely to contain asbestos, where present it was deemed to contain asbestos as a precaution.

Block G

The fibre cement eave linings of this building were deemed to be asbestos-containing (Photographs 21, 22 & 23).

Vermiculite plaster has been used in places to coat the ceilings of this block (Photographs 24 & 26). Although this material is unlikely to contain asbestos, where present it was deemed to contain asbestos as a precaution.

General

NB: Wherever fibre cement/vermiculite has been identified or is identified in the future it should be assumed to asbestos-based until testing proves otherwise. The composition of the fibre cement/vermiculite material should be confirmed by laboratory tests prior to planned disturbance of the material.

A visual inspection of the general grounds and surrounds of the school did not identify any broken fibre cement material or likely contaminated landfill at the site.

6.2 Lead

Lead based paints were deemed to be present in the paintwork (exposed and/or sealed) in the older buildings at the site. Lead flashing has been used on the roofs of some of the buildings as water-proofing at the site.

6.3 Synthetic Mineral Fibre

Synthetic mineral fibre was assumed to be present generally in water heaters, in ceilings where is used as insulation and in air conditioning ducting.

6.4 Polychlorinated Biphenyls

No PCB containing capacitors were detected at the site.

6.5 Biological Hazards

Biological hazards were deemed to be present in the sewer lines at the site.

7.0 CONCLUSIONS & RECOMMENDATIONS

Asbestos was deemed to be present in the older non-refurbished parts of the school buildings, principally in the awning and eave linings and in vermiculite plaster as a precaution.

Fibre cement used elsewhere in this school was deemed to be non-asbestos based.

Any fibre cement/vermiculite which is to be disturbed should be treated as asbestos containing until testing proves otherwise. This rule should also be applied to any other suspected asbestos containing materials.

Should suspected asbestos materials be uncovered during any future site works, the procedure shown in **Section 13 - Management of Asbestos Exposure** should be followed.

It is highly recommended and good practice to undertake a detailed hazardous materials survey, including material testing, on any area where refurbishment or demolition is planned prior to work commencing.

Synthetic mineral fibre was expected to be present in water heaters, on air conditioning ducting and in insulation in the ceiling cavities.

No PCB containing capacitors were detected.

Lead based paints were deemed to be present in the older buildings at the school. Lead flashing has been used on some of the buildings as water-proofing.

Biological hazards were deemed to be present in the sewer lines.

8.0 ASBESTOS & HAZARDOUS MATERIALS REGISTER

Catherine McAuley Centre, Westmead																		
Assessment by:	Mr. Nik Orr	**Date of Inspection:**	21st May, 2019	**Register Review & Re-Inspection:**	3 years or earlier following changes													
Site Contact:	Mr. David Cosgrove	**Site Location:**	2 Darcy Rd., Westmead NSW 2145															
					Risk Rating													
Area of Property	**Result**	**Photograph Reference No.**	**Description of Material**	**Location**	**Friable**	**Asbestos Type**	**Product Type**	**Extent of Damage**	**Surface Treatment**	**Occupant Activity**	**Likelihood of Disturbance**	**Exposure Potential**	**Maintenance Activity**	**Risk Exposure**	**Action Priority**	**Approx. Quantity (m, m^2, m^3)**	**Comments**	
Asbestos Containing Materials																		
Block A	Deemed Positive, Asbestos Present	1, 2	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	P4	40m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.	
Block A	Deemed Positive, Asbestos Present	3	Compressed Flat Fibre Cement Sheeting	Awning Lining to Covered Walkway to Block G	NF	1	1	0	1	1	0	0	1	5	P4	10m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.	
Block B	Deemed Positive, Asbestos Present	4, 5	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	P4	40m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.	

Block B	Deemed Positive, Asbestos Present	6, 7	Compressed Flat Fibre Cement Sheeting	Upper Level Walkway Lining (inc. Stair Well)	NF	1	1	0	1	1	0	0	1	5	**P4**	60m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block B	Deemed Positive, Asbestos Present	8	Compressed Flat Fibre Cement Sheeting	Ceiling Linings to Classrooms	NF	1	1	0	1	1	0	0	1	5	**P4**	70m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block B	Deemed Positive, Asbestos Present as a Precaution	9	Vermiculite Plaster	Ceiling Linings to Some Rooms	NF	1	1	0	1	1	0	0	1	5	**P4**	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block C	Deemed Positive, Asbestos Present	10, 11, 12	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	60m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Block C	Deemed Positive, Asbestos Present as a Precaution	13	Vermiculite Plaster	Ceiling Linings to Classrooms	NF	1	1	0	1	1	0	0	1	5	**P4**	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block D	Deemed Positive, Asbestos Present	14, 15	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block E	Deemed Positive, Asbestos Present	16, 17, 18	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block F	Deemed Positive, Asbestos Present	19	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	20m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Block F	Deemed Positive, Asbestos Present as a Precaution	20	Vermiculite Plaster	Ceiling Linings to Some Areas	NF	1	1	0	1	1	0	0	1	5	**P4**	$20m^2$	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block G	Deemed Positive, Asbestos Present	21, 22, 23	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	$20m^2$	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block G	Deemed Positive, Asbestos Present as a Precaution	24, 26	Vermiculite Plaster	Ceiling Linings to Some Areas	NF	1	1	0	1	1	0	0	1	5	**P4**	$40m^2$	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Other Hazardous Materials					Risk Rating	
Generally Throughout	Deemed Positive, Lead Present	-	Lead Paint	General Older Exposed/Sealed Paintwork	D	No action necessary. No grinding, sanding etc. which would create dust. A field test kit should be used to confirm presence of lead.
Generally Throughout	Deemed Positive, Lead Present	-	Lead Flashing	Flashing to Tiled Roofs Throughout	D	No action necessary. No grinding, sanding etc. which would create dust. A field test kit should be used to confirm presence of lead.
Generally Throughout	Positive, Biological Hazards Present	-	Biological Hazards	General, In Sewer Lines Throughout	-	Avoid skin, eye and upper respiratory system contact. Wear appropriate PPE (long sleeves, respirator, disposable suit, goggles.
Generally Throughout	Deemed Positive, SMF Present	-	SMF	Insulation in Hot Water Heaters, Ceiling Cavities & Air Conditioning Ducting	C	Avoid skin, eye and upper respiratory system contact. Wear appropriate PPE (long sleeves, respirator, disposable suit, goggles.

9.0 GLOSSARY OF TERMS

Accessible:	in a physical location where building occupants or users might readily access material without use of assistance. E.g. - ACM used as wall lining or eaves lining.
A/C:	Air Conditioning
ACM:	Asbestos containing material.
SWA:	Safe Work Australia
Non-friable:	ACM in which the asbestos fibres are bonded by cement, vinyl, resin or other similar material.
Do not abrade:	as far as practicable limit activities on or adjacent to material to avoid damage and release of asbestos fibres, activities such as drilling, cutting, sanding, etc.
EDAX:	Energy Dispersive X-ray Analysis.
F/C:	Fibre Cement
Friable:	ACM that is in a powder form or can be crumbled, pulverised or reduced to powder by hand pressure when dry.
Inaccessible:	Requiring dismantling, demolition or similar to allow access. For example material inside wall cavity, under floorboard, within air conditioning duct or plant, etc.
Limited access:	Requiring assistance or equipment to allow access. For example requiring a ladder or lifting of ceiling tiles or keys to locked rooms, etc.
NATA:	National Association of Testing Authorities, Australia
NOHSC:	National Occupational Health and Safety Commission (currently Safe Work Australia)
PLM:	Polarised Light Microscopy
SEM:	Scanning Electron Microscopy

Acronyms used in ACM Register

CH:	Chrysotile Asbestos
AM:	Amosite Asbestos
CR:	Crocidolite Asbestos
SP:	Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible)
NAD:	No Asbestos Detected
NAD$^+$:	No Asbestos Detected (due to the very low concentration of asbestos fibres and the non-homogenous nature of the sample (e.g. vinyl floor tiles), false negative results may be obtained. Therefore the accuracy of all such results cannot be guaranteed).
NA:	Not assessable (relative to estimated quantity measurement of material)
Vis:	Visible (as in quantity assessment)
F:	Friable
NF:	Non-Friable
VL:	Very low
L:	Low
M:	Moderate
H:	High

10.0 ASBESTOS ASSESSMENT ALOGORITHM

Asbestos - Material Assessment Algorithm

Sample Variable	Score	Examples of Scores
1. Friability/Product type (or debris from product)	0	No Asbestos Detected **(NAD)**
	1	Non-friable ACMs - Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc).
	2	Friable or non-friable ACMs - Asbestos insulating boards (AIB), millboards, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Friable ACM - Thermal insulation (e.g. pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.
2. Condition – Extent of damage/ deterioration	0	Good condition: no visible damage.
	1	Low damage: a few scratches or surface marks, broken edges on boards, tiles etc.
	2	Medium damage: significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of materials, sprays and thermal insulation. Visible asbestos debris.
3. Surface treatment	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
	1	Enclosed sprays and lagging, AIB (with exposed face painted or encapsulated) asbestos cement sheets etc.
	2	Unsealed AIB, or encapsulated lagging and sprays.
	3	Unsealed lagging and sprays.
4. Asbestos Type	0	No Asbestos Detected **(NAD)**.
	1	Chrysotile.
	2	Amphibole asbestos excluding crocidolite. Amosite.
	3	Crocidolite.
Total Score		

Total material assessment score = (1+2+3+4).

When no asbestos is detected then the asbestos Register will indicate a material risk of 0.

11.0 ASBESTOS LOCATION ALOGORITHM

Asbestos - Location Assessment Algorithm

Sample Variable	Score	Examples of Scores
1. Occupant activity	0	Rare disturbance, e.g. little used store room
	1	Low disturbance, e.g. Office type activity
	2	Periodic disturbance, e.g. industrial or vehicular activity which may contact ACMs
	3	High levels of disturbance e.g. fire door with AIB sheet in constant use
2. Likelihood of disturbance	0	Usually inaccessible or unlikely to be disturbed
	1	Occasionally likely to be disturbed
	2	Easily disturbed
	3	Routinely disturbed
3. Human Exposure potential	0	Infrequent
	1	Monthly
	2	Weekly
	3	Daily
4. Maintenance activities	0	Minor disturbance (e.g. possibility of contact when gaining access)
	1	Low Disturbance (e.g. changing light bulbs in AIB ceiling)
	2	Medium disturbance (e.g. lifting one or two ceiling tiles to access a valve)
	3	High level of disturbance (e.g. moving a number of AIB ceiling tiles to replace a valve or for re-cabling)
Total Score		

Total location assessment score = (1+2+3+4)

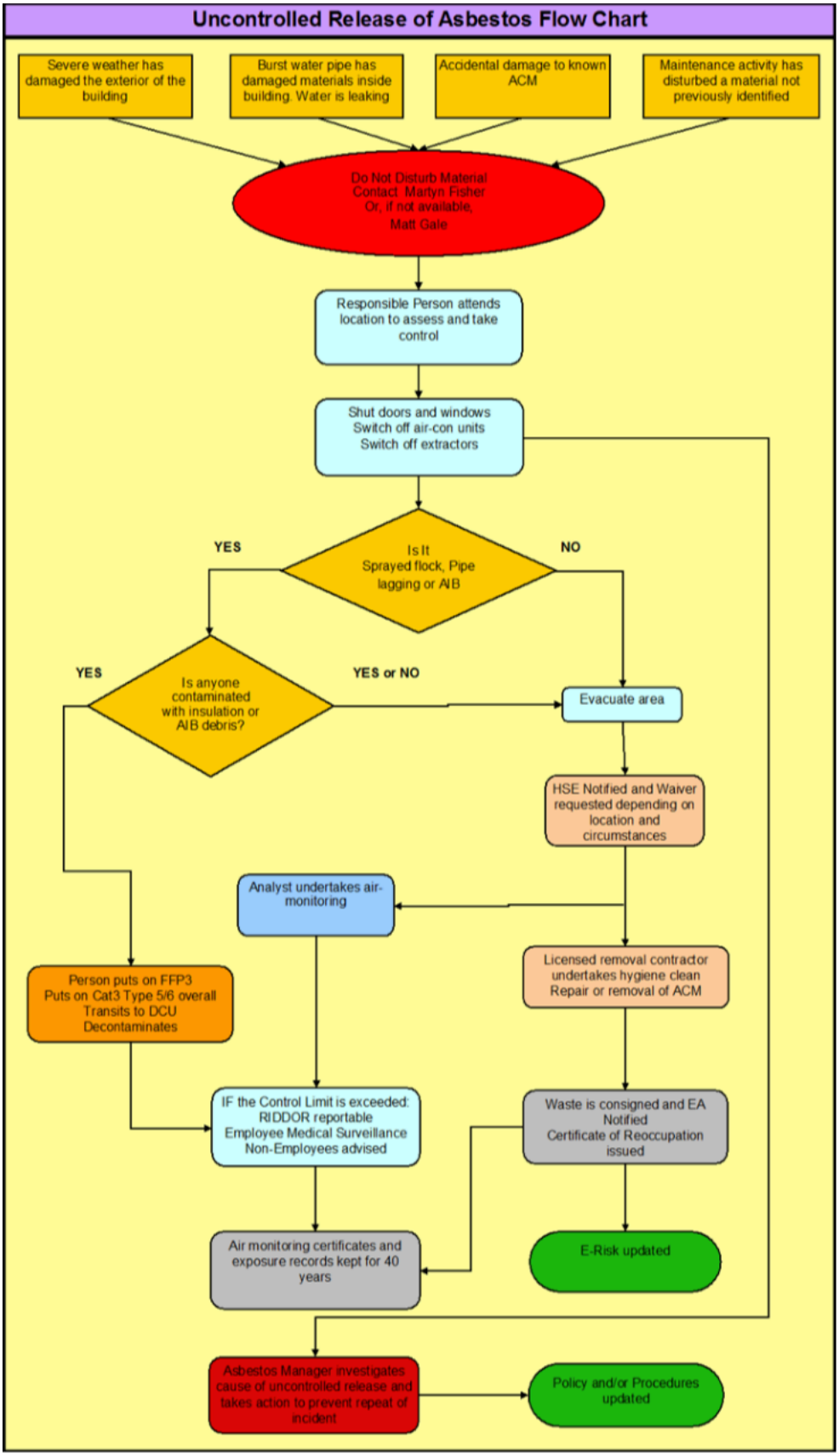
The total risk score for the asbestos material assessed is Material Score + Location Score (out of possible 24) see table below.

12.0 ASBESTOS RISK ASSESSMENT

Score	Risk Level and Action Priority
19 or more	High - Action Priority P1
13 - 18	Medium - Action Priority P2
7 - 12	Low - Action Priority P3
6 or less	Very Low - Action Priority P4

Risk Level	Qualitative Descriptor of Risk Level
High	There is an immediate risk of exposure to asbestos fibres to anyone entering the area due to friable ACM which has already been disturbed. Immediate action is required to restrict access and stop the spread of asbestos fibres as well as plan for decontamination and remedial works. The client is to be advised of the urgency of such situation at the time of the survey. ***Priority 1 (P1) - Restrict access and remove*** *(Unacceptable risk due to likely exposure and/or environmental damage)* • Friable or poorly bonded to substrate, located in accessible areas • Severely water damaged, or unstable - • Further damage or deterioration likely • Friable asbestos material located in air conditioning ducting • Asbestos debris in reasonably accessible areas • Reasonably accessible stored asbestos material.
Medium	There is a short term risk of exposure to asbestos fibres to anyone entering the area. Usually, a friable or non-friable ACM in average condition in accessible areas. Also relates to friable ACM in air plenums with no air monitoring regime in place. ***Priority 2 (P2) - Enclose, encapsulate or seal*** *(Elevated risk due to likely exposure and/or environmental damage)* • High removal risks or not feasible - Complete enclosure achievable • Friable or poorly bonded to substrate, with bonding achievable • Possibility of disturbance through contact • Possibility of deterioration caused by weathering.
Low	Moderate risk of exposure to asbestos fibres due to the material status and/or activity in the area. Usually applies to non-friable ACM in a state of minor deterioration and in moderate occupant activity levels, or accessible friable ACM in good condition. ***Priority 3 (P3) - Remove prior to refurbishment / maintenance or demolition*** *(Possibility of an elevated risk due to potential exposure from the ongoing degradation of the material, or potential environmental damage)* • Asbestos debris in rarely accessed areas • Disturbance or damage unlikely other than during maintenance, service or demolition - Readily visible for further assessment • Asbestos friction materials, gaskets and brake linings.
Very Low	There is a negligible or low risk of exposure to asbestos fibres to occupants of the area due to the material being one which doesn't readily release asbestos fibres unless seriously disturbed. Usually applies to non-friable ACM products in at least average condition, or materials with no or low accessibility. ***Priority 4 (P4) - No remedial action required, unless disturbed*** *(Elevated risk unlikely, unless conditions or site activities change)* • Firmly bonded to substrate and readily visible for inspection • Inaccessible and fully contained - Stable and damage unlikely.

13.0 MANAGEMENT OF ASBESTOS RELEASE/EXPOSURE



14.0 PHOTOGRAPHS

Photo 1 – Block A, Fibre Cement Eve Linings to Perimeter – Deemed Asbestos Present

Photo 2 – Block A, Fibre Cement Eve Linings to Perimeter – Deemed Asbestos Present

Photo 3 – Block A, Fibre Cement Lining to Awning (Connecting to Block G) – Deemed Asbestos Present

Photo 4 – Block B, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 5 – Block B, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 6 – Block B, Fibre Cement Lining to Upper Level Walkway Inc. Stair Well – Deemed Asbestos Present

Photo 7 – Block B, Fibre Cement to Upper Level Walkway Awning & Eave Linings – Deemed Asbestos Present

Photo 8 – Block B, Fibre Cement Linings to Classroom Ceilings – Deemed Asbestos Present

Photo 9 – Block B, Vermiculite Plaster to Ceilings – Deemed Asbestos Present as a Precaution

Photo 10 – Block C

Photo 11 – Block C, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 12 – Block C, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 13 – Block C, Vermiculite Plaster to Ceilings – Deemed Asbestos Present as a Precaution

Photo 14 – Block D

Photo 15 – Block D, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 16 – Block E

Photo 17 – Block E, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 18 – Block E, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 19 – Block F

Photo 20 – Block F, Vermiculite Plaster to Ceilings – Deemed Asbestos Present as a Precaution

Photo 21 – Block G, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 22 – Block G, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 23 – Block G, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 24 – Block G, Vermiculite Plaster to Ceilings – Deemed Asbestos Present as a Precaution

Photo 25 – Block G, Fibre Cement Lining to Awning (Connecting to Block A) – Deemed Asbestos Present

Photo 26 – Block G (Library), Vermiculite Plaster to Library Ceiling – Deemed Asbestos Present as a Precaution

15.0 ASBESTOS READING LOG

Date	Name (Print)	Signature	Company

16.0 ASBESTOS REMOVAL LOG

Date	Description of Removal Work	Location of Removal Work	Asbestos Removal Company	Strata Plan Representative Name	Strata Plan Representative Signature

17.0 ASBESTOS INSPECTION LOG

Date	Defects (If Any) Noted	Date of next Inspection	Inspecting Company	Inspectors Name (Print)	Inspectors Signature

NOTES/COMMENTS:

Banksia EOHS ABN 43 087 166 505
Occupational, Environmental and Community Health Risk

19th March, 2016.

Mr. Mark Desilva,
Facilities Manager,
Catholic Education Diocese of Parramatta,
Locked Bag 4,
North Parramatta. NSW. 1750.

Dear Mark,

I attended the Mother Teresa Primary School on Friday the 18th of March at your request to inspect the school for asbestos containing materials. This letter summarises the results of that inspection.

We noted the following during our inspection:

- The school is of recent construction, being built after 2003.
- The lift at the site is hydraulic and no brake pads are present.
- An inspection of the school and grounds identified no suspected asbestos containing materials.

In summary we were unable to identify any asbestos containing materials at the site, and the school may be regarded as asbestos free.

If you require anything further please get back to me on 0416070709.

Yours sincerely,

Jim Orr
MAIOH, MAIHA, COH,
BSc, MApplSc, PhD.

Certified Occupational Hygienist.
Workcover Licensed Asbestos Assessor 000105.

HAZARDOUS MATERIALS INSPECTION & MANAGEMENT REPORT
CATHOLIC EDUCATION - DIOCESE OF PARRAMATTA

PARRAMATTA MARIST CATHOLIC HIGH SCHOOL

WESTMEAD, NSW

5th July 2019

Prepared for:
Catholic Education - Diocese of Parramatta
12 Victoria Road
PARRAMATTA NSW 2150

Written and Prepared by:	Reviewed by:
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	BOHS IP402 Certified

Ref: CEDP – Parramatta Marist HS, Westmead - HMM

DISTRIBUTION

Hazardous Materials Inspection & Management Report – CEDP: Parramatta Marist Catholic High School, Westmead, NSW

July 2019

Copies	Recipient
1	**CEDP: Mr. David Cosgrove**
1	**Banksia EnviroSciences Pty. Limited**

This document was prepared for the sole use of Catholic Education - Diocese of Parramatta and the regulatory agencies that are directly involved in this project, the only intended beneficiaries of our work. No other party should rely on the information contained herein without the prior written consent of Banksia EnviroSciences P/L and Catholic Education - Diocese of Parramatta.

CONTENTS

GENERAL REQUIREMENTS FOR THE SUCCESSFUL OPERATION OF AN ASBESTOS/HAZARDOUS MATERIALS REGISTER

The following simple rules should be followed to ensure the effective operation of this asbestos/hazardous materials register and the protection of the health and wellbeing of staff, students and visitors:

NB: This inspection was prepared as a **management re-inspection** and NO sampling was conducted during the current investigation of the site. The purpose was to visually, and NOT destructively, identify the presence of suspected hazardous materials likely to be present at the site. If required, a formal Demolition/Refurbishment Report should be undertaken.

1. The asbestos identified in the survey is in a stable condition and does not present a danger to health or wellbeing unless it is disturbed by cutting, sawing, drilling, sanding or some activity which will result in the generation of asbestos fibre. For this reason, the facility must ensure that all tradesmen entering the site to do work read and sign the Asbestos Reading Log (**Section 15**). This will make them aware of the presence of asbestos products at the site help to protect them and residents from exposure to asbestos fibre.

2. Ensure that if asbestos is removed from the site, the removal is recorded in the Asbestos Removal Log (**Section 16**).

3. All asbestos should be re-inspected “periodically” – our recommendation is each five (5) years, to ensure that there has been no deterioration in it which would lead to the potential exposure of anyone to the material.

4. Should an emergency arise which leads to the disturbance of asbestos materials, the procedure shown in **Section 13** of this Hazardous/Asbestos Materials Survey should be followed.

5. This Register must be readily accessible to anyone who intends to carry out work at the site, and a copy will be made available to that person for reading and signing acknowledgment while on-site (see **Section 15**).

6. This Register must be transferred by any person relinquishing control of the site to any person assuming control.

1.0 INTRODUCTION

Past construction practices have led to the use of hazardous materials in some buildings. These materials primarily include asbestos. Other materials such as biological hazards, lead-based paints, synthetic mineral fibre and ozone depleting substances may also be found in some sites from time to time. The use of asbestos has been discontinued, however, residual material from past construction practices remain in some older buildings. SMF's continue to be used due to their lower toxicity. The use of lead in paint has been discontinued, but some is still used for waterproofing, and biological hazards are still encountered.

Where present, these materials must be managed to ensure there is no potential for adverse health effects on those accessing the building. Management of these hazards requires a three-step approach of recognition of the existence and potential hazard of asbestos, evaluation of the extent of those hazards (by hazardous materials surveys), and, control (by management procedures including labelling, restrictions on disturbance, removal, periodic reinspection and access restrictions).

This report has been prepared to summarize the results of a hazardous materials RE-inspection of the buildings of the Parramatta Marist Catholic High School located at 2 Darcy Rd., Westmead, NSW.

PARRAMATTA MARIST HIGH SCHOOL, WESTMEAD, NSW

2.0 NATURE OF THE POTENTIAL HAZARD

2.1 Asbestos

Asbestos is a naturally occurring fibrous silicate mineral - one of the Serpentine group. It was mined extensively in Australia until the early 1980's.

These minerals were commonly used in the past because of their fibrous nature (providing structural strength in products such as asbestos cement sheeting), low heat conductivity (providing insulation on steel building structures, steam pipes etc), high electrical resistance (used in power boards, electrical fittings, etc) and chemical inertness.

The use of asbestos is now banned, but the High types of asbestos used in the past were chrysotile (white asbestos), crocidolite (blue asbestos) and amosite (brown asbestos).

The risk to human health from asbestos arises primarily from the inhalation of asbestos fibre derived from the disturbance of friable asbestos-containing products.

Because of its small fibre size, asbestos may penetrate deep into the lung, and because of its inert nature, body processes have difficulty expelling the material.

Exposure to asbestos fibre may result in an outcome of chronic adverse health effects. These may include asbestosis leading to the onset of mesothelioma, a painful, fatal cancer of the lining of the lung. The health effects of asbestos may take 20 – 40 years to manifest themselves. In Australia at the present time there is a high prevalence of asbestos related disease resulting from the widespread use of the material in the construction and shipping industries during the 1960's and 1970's.

In New South Wales, there are requirements for asbestos management under the Occupational Health and Safety Act (2011), and Regulations (2017), and two Codes of Practice – *How to Safely Remove Asbestos 2016* & *How to Manage and Control Asbestos in the Workplace 2016.* These, together with the NSW Regulations are used to formulate responses in situations where asbestos is detected.

2.2 Synthetic Mineral Fibre Materials

SMF was and is used extensively as an insulating material. It may irritate unprotected skin and the eyes and upper respiratory system of individuals who are exposed to it. Although fibrous, long term health effects similar to those of asbestos have not been identified, primarily because of the way fibres fracture when degraded.

Synthetic mineral fibres (SMF), described in international literature as man-made mineral fibres (MMMF), is a collective term used for fibres such as fibreglass, rockwool and ceramic fibres. The biological effects of these fibres are determined by the fibre diameter and length and chemical nature.

Because they are generally regarded as an irritant, the obligation of the employer under the Work Health and Safety Act is to provide a safe and healthy work

environment, and this is best achieved by protection of skin and the wearing of respiratory protection.

Synthetic mineral fibre is not listed as a Prescribed Waste under the Environmental Protection (Prescribed Waste) Regulations.

2.3 Lead

Lead was used commonly in the building industry for applications such as waterproofing, where it was used in a sheet form. It was also commonly used as a paint additive and is typically found in paints used in older buildings or in protective steel coating. Lead based paints are no longer used in the building industry.

Lead accumulates in the blood stream primarily by inhalation and ingestion as a result of repeated exposure. Children are most at risk from lead, and it has been found that learning deficiencies are experienced by children who develop high blood lead concentrations.

Lead should not be removed from surfaces by grinding or heat methods unless specific personal protective measures are employed. The National Occupational Health and Safety Commission (Worksafe) publish exposure standards for lead which require that worker exposures be kept below what is known as the Threshold Limit Value (TLV). The TLV is only likely to be approached where grinding or heat removal of lead-based paint is planned, but unlikely to be approached in a demolition situation where building fabric is being dismantled.

The occupational health hazard from lead in a situation where demolition is being carried out is small since it is unlikely that significant quantities of lead-containing dust will be generated. No grinding or heat removal of lead-based paints would be contemplated during any proposed refurbishment project, and the only potential exposure would arise from high lead dusts contained in, for example, the ceiling cavity. The wearing of a disposable respirator would provide protection against this type of exposure.

In NSW, demolition waste containing lead-based paints may be regarded as “Solid Waste” and disposed of to a tip licensed to take general demolition waste. This method of disposal is accepted because the lead found in paint is generally in an insoluble form and unavailable for leaching into the environment.

2.4 Polychlorinated Biphenyls (PCB’s)

PCB’s were used in the past in the capacitors of electrical fittings, typically fluorescent light fittings, and in application such as transformers. Their use is now banned.

PCB’s are primarily an environmental hazard. They are accumulated in the fatty body tissue of animals, and are also bioaccumulated up the food chain, that is, the animal at the top of the food chain is most likely to have the highest concentration of PCB in body fat.

PCB’s were banned in 1976, and buildings constructed after that time are unlikely to have them within their electrical fittings. PCB’s are a prescribed waste, and as such, they must be disposed of appropriately. Disposal would include the removal from light

fittings of the PCB-containing capacitors, their placement in a suitable container such as a plastic drum and transport under controlled conditions to a licensed disposal or storage site.

Removal would be required prior to the commencement of demolition activities, and the appropriate personal protective equipment would include disposable overalls, impervious apron, impervious gloves (Nitrile), eye protection and appropriate respiratory protection.

2.5 Biological Hazards

Biological hazards are agents which are biological in nature, capable of self-replication and have a capacity to produce a deleterious effect on humans. They may include a range of materials such as Legionella from cooling towers, bacterial and fungal materials from air conditioning systems, fungal hazards from animal faeces found in ceiling spaces, bacterial, fungal, microbiological and viral hazards from hospitals and research facilities, and bacterial viral and fungal hazards from abattoirs and buildings where animals are Housed.

Biological agents can cause infection to exposed persons through oral, respiratory or skin penetration.

3.0 RELEVANT WHS LEGISLATION

3.1 NSW Work, Health & Safety Act (2011) & Regulations (2017)

The Work Health & Safety Act (2011) prescribes general duties and legal obligations on occupational health and safety matters. It covers employer, supplier and employee responsibilities in relation to hazardous substances. The Act and Regulations require employers to ensure the health, safety and welfare of employees at their place of work.

3.2 Work Safe Australia Model Codes of Practice 2018

Work Safe Australia revised its existing Codes of Practice for asbestos in 2016, and issued two new Model Codes Of Practice:

- “Model Code of Practice – How to Safely Remove Asbestos” (2018), and,
- “Model Code of Practice – How to Manage and Control Asbestos in the Workplace” (2018).

The State asbestos-related Acts and Regulations defer to these where asbestos management or removal issues are identified.

3.3 Australian Standard AS2601-2001 – The Demolition of Structures

AS2601-2001 requires an employer to determine the presence of hazardous substances or conditions in a structure prior to its demolition. The nature and location of each hazard is to be recorded and the proposed control method included in the control documentation.

3.4 Codes of Practice

- Guidance note for ceiling dusts containing lead: SafeWork NSW.
- Code of practice for the safe use of synthetic mineral fibre: SafeWork Australia (1990).
- Workplace Exposure Standards for Airborne Contaminants: SafeWork Australia (2018).
- How to Manage/Control Asbestos in the Workplace: SafeWork Australia (2016).

4.0 METHODS USED TO IDENTIFY HAZARDS AT THE SITE

The site was visited on Monday 27th June 2019.

All areas of the site were inspected and an assessment of the presence of hazardous materials was made. Potential asbestos-containing materials were deemed where suspected in accordance with Part 9.2 of the NOHSC Code of Practice [NOHSC:2018(2005)]. Other hazardous materials were similarly assessed.

NB: This inspection was prepared as a **management re-inspection** and NO sampling was conducted during the current investigation of the site. The purpose was to visually, and NOT destructively, identify the presence of suspected hazardous materials likely to be present at the site. If required, a formal Demolition/Refurbishment Report should be undertaken.

A photographic record was collected to facilitate easy identification of the areas where hazardous materials were located, and these photographs are included in the report. While every effort was made to access all areas of the site, some locations could not be accessed for reasons such as height and inaccessibility.

5.0 RISK ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

The basis of the risk assessment methodology is a three step process of:

- *Recognition* of the presence of the hazardous material,
- *Evaluation* of the degree of health risk that the hazardous material,
- *Control* of the risk of the hazardous material by engineering or management controls.

5.1 Asbestos Risk Assessment

“Materials” and “Location” algorithms were used to calculate the overall asbestos risk assessment score and the subsequent Risk Level and Action Priority.

The scoring system is set out below in **Sections 10, 11 & 12**. Each risk assessment is scored then a consultation is held with management to finalise the management response. **Figure 1** (below) suggests some typical management responses.

Figure 1: Suggested Management Responses

Ferris Index Score	Risk Status Priority Rating	Actions Required
0-4	D	No Action Necessary
5-9	C	Review in 3 years (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register
10-15	B	Review in 1 year (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register
16+	A	Remove immediately

An asbestos register was created for the site and is included in the sites hazardous materials inspection register shown in **Section 8 – Hazardous Materials Register**, below.

5.1.1 Fire Damage and Friability

The classification of asbestos containing materials into “bonded” or “friable” depends on their softness or ability to be crushed between the fingers. Asbestos containing material which is soft and easily crushed (and the asbestos fibre released) is classified as friable, material which is hard and not easily crushed, and in which the asbestos fibre is firmly held, is classified as bonded.

Friable asbestos materials are potentially more hazardous since asbestos fibres are more easily released, increasing the health risk.

Fire damaged asbestos cement may be classified as bonded or friable depending the degree of damage.

The issue of the classification of fire damaged bonded asbestos cement was examined extensively in the NSW Land & Environment Court case Cessnock City Council v Quintaz Pty Limited; Cessnock City Council v McCudden [2010] NSW Lec 3, in January 2010.

Part of the argument in the case centred around whether fire damaged asbestos cement should be classified as bonded or friable.

The judgement found that fire damaged asbestos cement remained “bonded” in the strict definition, provided it retained its bonded character, and had not “exploded” or could be easily crushed between the fingers.

5.1.2 Asbestos in Landfill and/or Soils

Often fragments of bonded asbestos material such as fibro cement are present in or on the soil surface as a result of incomplete clean-up following the past demolition of structures that contained asbestos cement products. Where asbestos material is buried throughout the soil stratum (below 10cm) as a result of onsite disposal of demolition wastes (as landfill), the advice of an experienced occupational hygienist should be sought.

Where fragments of non-friable asbestos (e.g. fibro cement) are identified on the soil surface, then the fragments may be removed by hand-picking, tilling or screening (applying suitable work health and safety practices). A grid pattern should be applied to ensure a structured and systematic approach to assessment and removal.

Upon completion, no visible asbestos fragments should be present on the surface. Where practicable, the top 10cm of wetted soil should be gently raked to expose any residual asbestos fragments. The collected material should be securely wrapped in plastic sheeting and taken to an appropriate landfill.

If the site is a workplace (as defined in the work health and safety legislation), only workers who have been appropriately trained in asbestos removal techniques, that include identification, safe handling and suitable control measures, may conduct asbestos removal work or asbestos related work at a workplace. The Safe Work Australia Code of Practise: How to Safely Remove Asbestos (2011) provides additional information on safety standards when removing asbestos.

For non-friable asbestos totalling greater than the equivalent of 10 square metres of fibro sheet or fragments, only a class A or B asbestos removal licence holder may conduct the asbestos removal work. If there is uncertainty about the quantity of asbestos material, a licensed removalist must be engaged.

For more complex sites, the National Environment Protection (Assessment of site contamination) Measure 1999 (April 2013) identifies criteria for assessment and remediation of non-friable asbestos in soil.

5.2 SMF Risk Assessment

With SMF the hazard is primarily one of skin, eye or upper respiratory tract irritation. Fibres are released when the material is handled or otherwise disturbed.

A risk status of C (**Figure 1**) is assigned to all SMF.

5.3 Lead

The health risk from lead depends on:

- If the lead compound is soluble,
- If it is accessible,
- The percentage of lead,

- Type of work proposed for the lead material (grinding etc.). Lead will be assessed us in the score table (**Figure 2**) below:

Figure 2: Lead Score Table

A = Accessibility	S = Solubility	C = Concentration
0 Inaccessible – no disturbance such as grinding proposed	0 Insoluble (such as metalling leading)	0 If less than 1%
1 Accessible – disturbance by methods such as grinding proposed	1 Soluble (such as some paints)	1 If greater than 1%

The risk score is then calculated by:

Lead Risk (LR) = Accessibility (A) x Solubility (S) x Concentration (C).

The recommended management options for lead are summarized in **Figure 3**.

Figure 3: Suggested Management Response

Lead Risk (LR) Score	Risk Status Priority Rating	Actions Required
0	D	No Action Necessary
1	A	Remove immediately using methods advised by Hazardous Materials Consultant or seal by re-painting

5.4 Polychlorinated Biphenyls (PCB's)

A risk status of B (see **Figure 1**) is assigned to all PCB's.

6.0 RESULTS OF THE SURVEY

6.1 Asbestos

Our assessment of the presence of asbestos-based material at the site is as follows:

Block K

The fibre cement used to line the awning over the older awnings to the front and rear of this block were deemed to contain asbestos (Photographs 1, 2, 3 & 4).

Block H

The fibre cement walkway awning to the upper level and eave linings of this building were deemed to be asbestos-based (Photographs 6 & 7).

Block G

The fibre cement eave linings to the perimeter of this building were also deemed to be asbestos-based (Photographs 8 & 9).

Block J

The fibre cement walkway awning to the upper level and eave linings of this building were deemed to be asbestos-based (Photographs 10 & 11).

The thick compressed fibre cement toilet partitioning used in the student toilet facilities on the lower level of this block were deemed to be asbestos-based (Photographs 12 & 13).

Fibre cement has been used to house the cisterns of each of the toilets in the student facilities. This material was deemed to be asbestos-free (Photograph 14).

Block I

Vermiculite plaster has been used to coat the lower level walkway ceiling of this block (Photographs 15, 16 & 17). Although unlikely to contain asbestos, this material was deemed to contain asbestos as a precaution.

The fibre cement weatherboards used around the doorway to the “school counsellor” were deemed to be asbestos-based (Photograph 18).

Block F

The fibre cement eave linings to the perimeter of this building were also deemed to be asbestos-based (Photographs 19 & 20).

Block E

The fibre cement walkway awning and eave linings of this building were deemed to be asbestos-based (Photographs 21, 22, 23 & 24).

Block D

The fibre cement walkway awning to the upper level and eave linings of this building were deemed to be asbestos-based (Photographs 25 & 26).

Fibre cement has also been used to line the ceiling of the accessway to the student toilets on the lower level of this block (Photographs 27 & 28). This material was also deemed to contain asbestos.

Block C

The fibre cement walkway awning to the upper level and eave linings of this 3-story building were deemed to be asbestos-based (Photographs 29, 30 & 31).

The covered walkway linking Blocks C and D is lined with fibre cement sheeting which was deemed to be asbestos-based (Photograph 32).

General

NB: Wherever fibre cement/vermiculite has been identified or is identified in the future it should be assumed to asbestos-based until testing proves otherwise. The composition of the fibre cement/vermiculite material should be confirmed by laboratory tests prior to planned disturbance of the material.

A visual inspection of the general grounds and surrounds of the school did not identify any broken fibre cement material or likely contaminated landfill at the site.

6.2 Lead

Lead based paints were deemed to be present in the paintwork (exposed and/or sealed) in the older buildings at the site. Lead flashing has been used on the roofs of some of the buildings as water-proofing at the site.

6.3 Synthetic Mineral Fibre

Synthetic mineral fibre was assumed to be present generally in water heaters, in ceilings where is used as insulation and in air conditioning ducting.

6.4 Polychlorinated Biphenyls

No PCB containing capacitors were detected at the site.

6.5 Biological Hazards

Biological hazards were deemed to be present in the sewer lines at the site.

7.0 CONCLUSIONS & RECOMMENDATIONS

Asbestos was deemed to be present in the older non-refurbished parts of the school buildings, principally in the awning and eave linings. Vermiculite plaster has also identified in some older areas of the school.

Any fibre cement/vermiculite which is to be disturbed should be treated as asbestos containing until testing proves otherwise. This rule should also be applied to any other suspected asbestos containing materials.

Should suspected asbestos materials be uncovered during any future site works, the procedure shown in **Section 13 - Management of Asbestos Exposure** should be followed.

It is highly recommended and good practice to undertake a detailed hazardous materials survey, including material testing, on any area where refurbishment or demolition is planned prior to work commencing.

Synthetic mineral fibre was expected to be present in water heaters, on air conditioning ducting and in insulation in the ceiling cavities.

No PCB containing capacitors were detected.

Lead based paints were deemed to be present in the older buildings at the school. Lead flashing has been used on some of the buildings as water-proofing.

Biological hazards were deemed to be present in the sewer lines.

8.0 ASBESTOS & HAZARDOUS MATERIALS REGISTER

Parramatta Marist High School, Westmead

Assessment by:	Mr. Nik Orr	**Date of Inspection:**	21st June, 2019	**Register Review & Re-Inspection:**	3 years or earlier following changes
Site Contact:	Mr. David Cosgrove	**Site Location:**	2 Darcy Rd., Westmead NSW 2145		

Area of Property	Result	Photograph Reference No.	Description of Material	Location	Risk Rating: Friable	Asbestos Type	Product Type	Extent of Damage	Surface Treatment	Occupant Activity	Likelihood of Disturbance	Exposure Potential	Maintenance Activity	Risk Exposure	Action Priority	Approx. Quantity (m, m^2, m^3)	Comments
Asbestos Containing Materials																	
Block K	Deemed Positive, Asbestos Present	1, 2, 3, 4	Compressed Flat Fibre Cement Sheeting	(Older) Awning Linings to Front & Rear	NF	1	1	0	1	1	0	0	1	5	P4	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block H	Deemed Positive, Asbestos Present	5, 6, 7	Compressed Flat Fibre Cement Sheeting	Upper Level Awning Lining & Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	P4	50m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block G	Deemed Positive, Asbestos Present	8, 9	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	P4	30m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Block J	Deemed Positive, Asbestos Present	10, 11	Compressed Flat Fibre Cement Sheeting	Upper Level Awning Lining & Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	P4	50m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block J	Deemed Positive, Asbestos Present	12, 13	Thick Compressed Fibre Cement	Partitioning to Student Toilet Facilities	NF	1	1	0	1	1	0	0	1	5	P4	15m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block J	Deemed Negative, No Asbestos Present	14	Compressed Flat Fibre Cement Sheeting	Cistern Housing to Student Toilet Facilities	NF	1	1	0	1	1	0	0	1	5	P4	10m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block I	Deemed Positive, Asbestos Present	15, 16, 17	Vermiculite Plaster	Lower Level Walkway Ceilings	NF	1	1	0	1	1	0	0	1	5	P4	25m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block I	Deemed Positive, Asbestos Present	18	Compressed Flat Fibre Cement Sheeting	Weather Boards to "School Counsellor	NF	1	1	0	1	1	0	0	1	5	P4	10m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Block F	Deemed Positive, Asbestos Present	19, 20	Compressed Flat Fibre Cement Sheeting	Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	15m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block E	Deemed Positive, Asbestos Present	21, 22, 23, 24	Compressed Flat Fibre Cement Sheeting	Awning Linings & Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	65m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block D	Deemed Positive, Asbestos Present	25, 26	Compressed Flat Fibre Cement Sheeting	Upper Level Awning Lining & Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	55m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block D	Deemed Positive, Asbestos Present	27, 28	Compressed Flat Fibre Cement Sheeting	Access Way Ceiling Lining to Student Toilet Facilities	NF	1	1	0	1	1	0	0	1	5	**P4**	15m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Block C	D	29, 30, 31	Compressed Flat Fibre Cement Sheeting	Upper Level Awning Lining (inc. Stair Wells Area) & Eave Linings to Perimeter	NF	1	1	0	1	1	0	0	1	5	**P4**	55m^2	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.

Block C	Deemed Positive, Asbestos Present	32	Compressed Flat Fibre Cement Sheeting	Covered Walkway from Block D) Ceiling Lining	NF	1	1	0	1	1	0	0	1	5	**P4**	$15m^2$	Review in 3 years. Test material before conducting any site works such as demolition likely to disturb this material. If found positive it should be removed by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager.
Other Hazardous Materials					**Risk Rating**												
Generally Throughout	Deemed Positive, Lead Present	-	Lead Paint	General Older Exposed/Sealed Paintwork	D												No action necessary. No grinding, sanding etc. which would create dust. A field test kit should be used to confirm presence of lead.
Generally Throughout	Deemed Positive, Lead Present	-	Lead Flashing	Flashing to Tiled Roofs Throughout	D												No action necessary. No grinding, sanding etc. which would create dust. A field test kit should be used to confirm presence of lead.
Generally Throughout	Positive, Biological Hazards Present	-	Biological Hazards	General, In Sewer Lines Throughout	-												Avoid skin, eye and upper respiratory system contact. Wear appropriate PPE (long sleeves, respirator, disposable suit, goggles.
Generally Throughout	Deemed Positive, SMF Present	-	SMF	Insulation in Hot Water Heaters, Ceiling Cavities & Air Conditioning Ducting	C												Avoid skin, eye and upper respiratory system contact. Wear appropriate PPE (long sleeves, respirator, disposable suit, goggles.

9.0 GLOSSARY OF TERMS

Accessible:	in a physical location where building occupants or users might readily access material without use of assistance. E.g. - ACM used as wall lining or eaves lining.
A/C:	Air Conditioning
ACM:	Asbestos containing material.
SWA:	Safe Work Australia
Non-friable:	ACM in which the asbestos fibres are bonded by cement, vinyl, resin or other similar material.
Do not abrade:	as far as practicable limit activities on or adjacent to material to avoid damage and release of asbestos fibres, activities such as drilling, cutting, sanding, etc.
EDAX:	Energy Dispersive X-ray Analysis.
F/C:	Fibre Cement
Friable:	ACM that is in a powder form or can be crumbled, pulverised or reduced to powder by hand pressure when dry.
Inaccessible:	Requiring dismantling, demolition or similar to allow access. For example material inside wall cavity, under floorboard, within air conditioning duct or plant, etc.
Limited access:	Requiring assistance or equipment to allow access. For example requiring a ladder or lifting of ceiling tiles or keys to locked rooms, etc.
NATA:	National Association of Testing Authorities, Australia
NOHSC:	National Occupational Health and Safety Commission (currently Safe Work Australia)
PLM:	Polarised Light Microscopy
SEM:	Scanning Electron Microscopy

Acronyms used in ACM Register

CH:	Chrysotile Asbestos
AM:	Amosite Asbestos
CR:	Crocidolite Asbestos
SP:	Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible)
NAD:	No Asbestos Detected
NAD$^+$:	No Asbestos Detected (due to the very low concentration of asbestos fibres and the non-homogenous nature of the sample (e.g. vinyl floor tiles), false negative results may be obtained. Therefore the accuracy of all such results cannot be guaranteed).
NA:	Not assessable (relative to estimated quantity measurement of material)
Vis:	Visible (as in quantity assessment)
F:	Friable
NF:	Non-Friable
VL:	Very low
L:	Low
M:	Moderate
H:	High

10.0 ASBESTOS ASSESSMENT ALOGORITHM

Asbestos - Material Assessment Algorithm

Sample Variable	Score	Examples of Scores
1. Friability/Product type (or debris from product)	0	No Asbestos Detected **(NAD)**
	1	Non-friable ACMs - Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc).
	2	Friable or non-friable ACMs - Asbestos insulating boards (AIB), millboards, other low-density insulation boards, asbestos textiles, gaskets, ropes and woven textiles, asbestos paper and felt.
	3	Friable ACM - Thermal insulation (e.g. pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses and packing.
2. Condition – Extent of damage/ deterioration	0	Good condition: no visible damage.
	1	Low damage: a few scratches or surface marks, broken edges on boards, tiles etc.
	2	Medium damage: significant breakage of materials or several small areas where material has been damaged revealing loose asbestos fibres.
	3	High damage or delamination of materials, sprays and thermal insulation. Visible asbestos debris.
3. Surface treatment	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
	1	Enclosed sprays and lagging, AIB (with exposed face painted or encapsulated) asbestos cement sheets etc.
	2	Unsealed AIB, or encapsulated lagging and sprays.
	3	Unsealed lagging and sprays.
4. Asbestos Type	0	No Asbestos Detected **(NAD)**.
	1	Chrysotile.
	2	Amphibole asbestos excluding crocidolite. Amosite.
	3	Crocidolite.
Total Score		

Total material assessment score = (1+2+3+4).

When no asbestos is detected then the asbestos Register will indicate a material risk of 0.

11.0 ASBESTOS LOCATION ALOGORITHM

Asbestos - Location Assessment Algorithm

Sample Variable	Score	Examples of Scores
1. Occupant activity	0	Rare disturbance, e.g. little used store room
	1	Low disturbance, e.g. Office type activity
	2	Periodic disturbance, e.g. industrial or vehicular activity which may contact ACMs
	3	High levels of disturbance e.g. fire door with AIB sheet in constant use
2. Likelihood of disturbance	0	Usually inaccessible or unlikely to be disturbed
	1	Occasionally likely to be disturbed
	2	Easily disturbed
	3	Routinely disturbed
3. Human Exposure potential	0	Infrequent
	1	Monthly
	2	Weekly
	3	Daily
4. Maintenance activities	0	Minor disturbance (e.g. possibility of contact when gaining access)
	1	Low Disturbance (e.g. changing light bulbs in AIB ceiling)
	2	Medium disturbance (e.g. lifting one or two ceiling tiles to access a valve)
	3	High level of disturbance (e.g. moving a number of AIB ceiling tiles to replace a valve or for re-cabling)
Total Score		

Total location assessment score = (1+2+3+4)

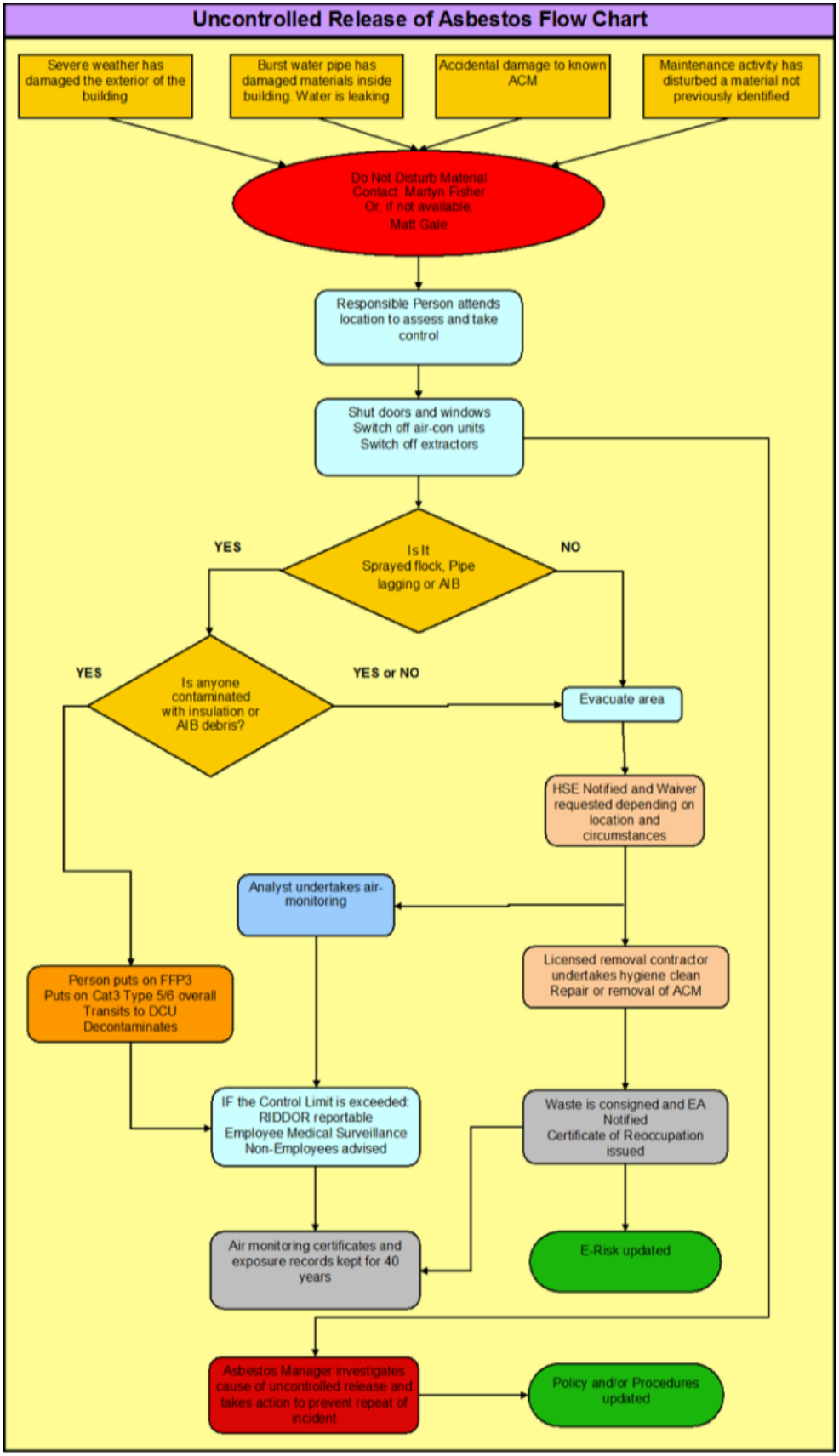
The total risk score for the asbestos material assessed is Material Score + Location Score (out of possible 24) see table below.

12.0 ASBESTOS RISK ASSESSMENT

Score	Risk Level and Action Priority
19 or more	High - Action Priority P1
13 - 18	Medium - Action Priority P2
7 - 12	Low - Action Priority P3
6 or less	Very Low - Action Priority P4

Risk Level	Qualitative Descriptor of Risk Level
High	There is an immediate risk of exposure to asbestos fibres to anyone entering the area due to friable ACM which has already been disturbed. Immediate action is required to restrict access and stop the spread of asbestos fibres as well as plan for decontamination and remedial works. The client is to be advised of the urgency of such situation at the time of the survey. ***Priority 1 (P1) - Restrict access and remove*** *(Unacceptable risk due to likely exposure and/or environmental damage)* • Friable or poorly bonded to substrate, located in accessible areas • Severely water damaged, or unstable - • Further damage or deterioration likely • Friable asbestos material located in air conditioning ducting • Asbestos debris in reasonably accessible areas • Reasonably accessible stored asbestos material.
Medium	There is a short term risk of exposure to asbestos fibres to anyone entering the area. Usually, a friable or non-friable ACM in average condition in accessible areas. Also relates to friable ACM in air plenums with no air monitoring regime in place. ***Priority 2 (P2) - Enclose, encapsulate or seal*** *(Elevated risk due to likely exposure and/or environmental damage)* • High removal risks or not feasible - Complete enclosure achievable • Friable or poorly bonded to substrate, with bonding achievable • Possibility of disturbance through contact • Possibility of deterioration caused by weathering.
Low	Moderate risk of exposure to asbestos fibres due to the material status and/or activity in the area. Usually applies to non-friable ACM in a state of minor deterioration and in moderate occupant activity levels, or accessible friable ACM in good condition. ***Priority 3 (P3) - Remove prior to refurbishment / maintenance or demolition*** *(Possibility of an elevated risk due to potential exposure from the ongoing degradation of the material, or potential environmental damage)* • Asbestos debris in rarely accessed areas • Disturbance or damage unlikely other than during maintenance, service or demolition - Readily visible for further assessment • Asbestos friction materials, gaskets and brake linings.
Very Low	There is a negligible or low risk of exposure to asbestos fibres to occupants of the area due to the material being one which doesn't readily release asbestos fibres unless seriously disturbed. Usually applies to non-friable ACM products in at least average condition, or materials with no or low accessibility. ***Priority 4 (P4) - No remedial action required, unless disturbed*** *(Elevated risk unlikely, unless conditions or site activities change)* • Firmly bonded to substrate and readily visible for inspection • Inaccessible and fully contained - Stable and damage unlikely.

13.0 MANAGEMENT OF ASBESTOS RELEASE/EXPOSURE



14.0 PHOTOGRAPHS

Photo 1 – Block K

Photo 2 – Block K, Fibre Cement Walkway Awning Lining (to Rear) – Deemed Asbestos Present

Photo 3 – Block K, Fibre Cement Walkway Awning Lining (to Front) – Deemed Asbestos Present

Photo 4 – Block K, Fibre Cement Walkway Awning Lining (to Front) – Deemed Asbestos Present

Photo 5 – Block H

Photo 6 – Block H, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 7 – Block H, Fibre Cement Lining to Upper Level Walkway Ceiling & Eaves – Deemed Asbestos Present

Photo 8 – Block G

Photo 9 – Block G, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 10 – Block J, Fibre Cement Upper Level Walkway Ceiling – Deemed Asbestos Present

Photo 11 – Block J, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 12 – Block J, Student Toilet Facilities

Photo 13 – Block J, Student Toilet Facilities, Thick Compressed Fibre Cement Partitions – Deemed Asbestos Present

Photo 14 – Block J, Student Toi.et Facilities, Fibre Cement Cistern Enclosure – Deemed No Asbestos Present

Photo 15 – Block I

Photo 16 – Block I, Vermiculite Plaster to Lower Level Walkway Ceiling – Deemed Asbestos Present as a Precaution

Photo 17 – Block I, Vermiculite Plaster to Lower Level Walkway Ceiling – Deemed Asbestos Present as a Precaution

Photo 18 – Block I, Fibre Cement Weather Boards to "School Counsellor" Doorway/Entrance – Deemed Asbestos Present

Photo 19 – Block F

Photo 20 – Block F, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 21 – Block E

Photo 22 – Block E, Fibre Cement Awning Lining & Eave Linings to Perimeter – Deemed Asbestos Present

Photo 23 – Block E, Fibre Cement Awning Linings – Deemed Asbestos Present

Photo 24 – Block E, Fibre Cement Eave Linings to Perimeter – Deemed Asbestos Present

Photo 25 – Block D, Fibre Cement Eave Linings to Perimeter -Deemed Asbestos Present

Photo 26 – Block D, Fibre Cement Lining to Upper Level Walkway – Deemed Asbestos Present

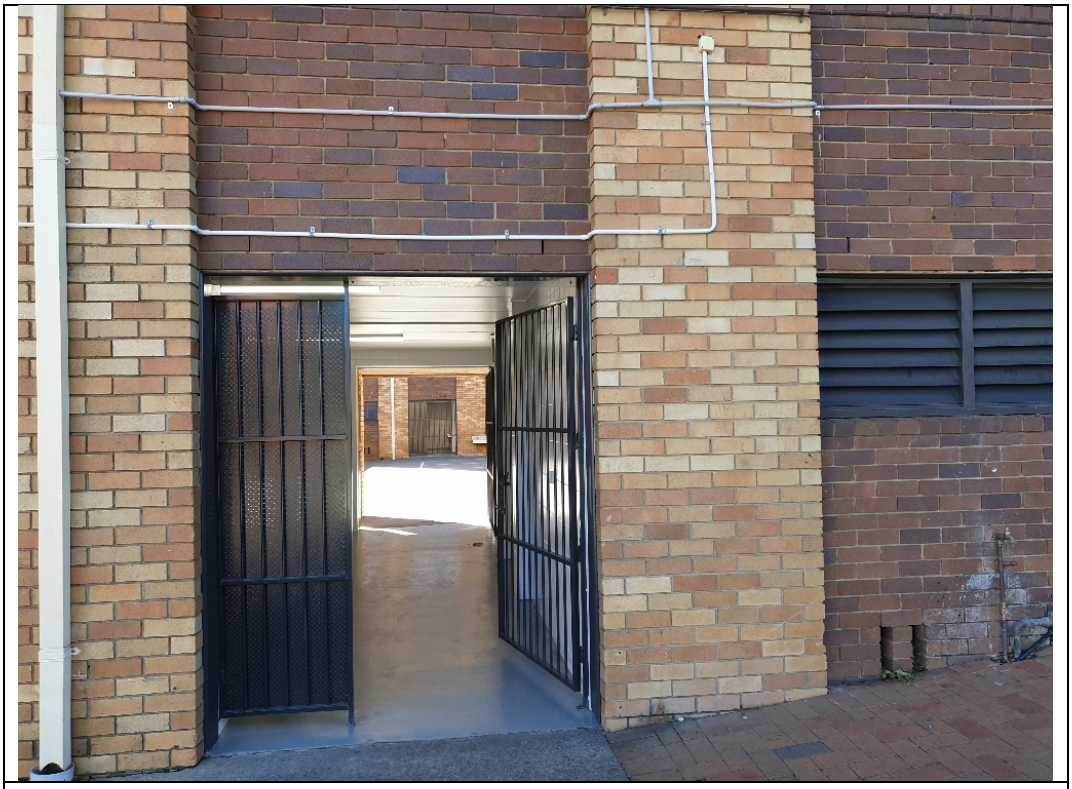


Photo 27 – Block D, Student Toilet Facilities

Photo 28 – Block D, Student Toilet Facilities, Fibre Cement Ceiling Lining to Access Corridor – Deemed Asbestos Present

Photo 29 – Block C

Photo 30 – Block C, Fibre Cement Lining to Upper Level Walkway & Eave Linings – Deemed Asbestos Present

Photo 31 – Block C, Fibre Cement Lining to (Upper Level) Stair Wells – Deemed Asbestos Present

Photo 32 – Fibre Cement Lining to Covered Walkway from Block C to Block D – Deemed Asbestos Present

15.0 ASBESTOS READING LOG

Date	Name (Print)	Signature	Company

16.0 ASBESTOS REMOVAL LOG

Date	Description of Removal Work	Location of Removal Work	Asbestos Removal Company	Strata Plan Representative Name	Strata Plan Representative Signature

17.0 ASBESTOS INSPECTION LOG

Date	Defects (If Any) Noted	Date of next Inspection	Inspecting Company	Inspectors Name (Print)	Inspectors Signature

NOTES/COMMENTS: