



HAZARDOUS MATERIALS DEMOLITION/REFURBISHMENT REPORT SYDNEY CATHOLIC SCHOOLS

BLOCK B

CHAMPAGNAT CATHOLIC COLLEGE MAROUBRA, NSW

24th August 2019

Prepared for: Sydney Catholic Schools 38 Renwick Street LEICHHARDT NSW 2040

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DISTRIBUTION

Hazardous Materials Demolition Report – SCS: BLOCK B, Champagnat Catholic College, Maroubra, NSW

August 2019

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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:

- 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.
- 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 for the purposes of demolition of the current Block B at the Champagnat Catholic College and located at 35 Donovan Ave., Maroubra, NSW.



BLOCK B CHAMPAGNAT COLLEGE, MAROUBRA, 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 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 Thursday 15th August 2019.

All areas of the site (Block B) were inspected and an assessment of the presence of hazardous materials was made. Samples of suspected hazardous materials were collected where accessible.

Potential asbestos-containing materials were deemed where suspected but not accessible for sampling, in accordance with Part 9.2 of the NOHSC Code of Practice [NOHSC:2018(2005)]. Other hazardous materials were similarly assessed.

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 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	С	Review in 3 years (or as per state specific requirements) and adopt appropriate control measures as advised in Hazardous Materials Register							
10-15	В	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

The presence of asbestos-based materials at the site (Block B) was as follows:

Block B

The upper level eaves to the perimeter of the building are lined with fibre cement sheeting (Photographs 1, 2, 3, 4, 5, 6 & 7). This material was found to contain Chrysotile asbestos (Samples 4 & 5). Where the fibre cement eave linings are present, they should be removed as asbestos-based material.

The upper level walkway awning on the southern side of the block is lined with semicompressed fibre board sheeting which was found to contain Chrysotile asbestos (Samples 6 & 7; Photographs 8 & 9).

The upper level walkway awning connecting Block A to Block B on the western side of the block is also lined with semi-compressed fibre board sheeting which was found to contain Chrysotile asbestos (Samples 8 & 9; Photographs 10 & 11).

Vermiculite plaster has been used extensively to the internal ceilings of Block B and Photographs 12, 13, 14, 15 and 16 show some examples of the areas surveyed. Previous sampling and analysis of some of the internal ceilings of Block B have returned negative asbestos results in the past. An additional three (3) random and representative samples were collected from various points within the block during the current survey and all samples were found to be asbestos free (Samples 1, 2 & 3). Together with the past and current findings of similar material analysis, the vermiculite plaster applied to the ceilings throughout this block may be reasonably assumed to be asbestos free.

Wide vinyl flooring has been used to cover the rear sections of the floors of the science laboratory rooms (Photographs 17 & 18). This material was found to contain Chrysotile asbestos (Sample 10).

It is assumed that a bituminous membrane acting as water-proofing for the roof is in place beneath the flat section of roof of the block as shown in Photograph 20. In an effort to maintain the integrity of the roof and membrane during the current survey it was decided that deeming the presence of asbestos-based bituminous membrane was appropriate until demolition works are to commence. If it is found that a bituminous membrane exists beneath the metal roof lining during demolition works, this material should be assumed to be asbestos-based and tested for asbestos content or removed under controlled conditions on the assumption that it contains asbestos.

NB: Wherever other fibre board or bituminous material not listed in this report is identified or is identified in the future it should be assumed to asbestos-based until testing proves otherwise. The composition of the fibre board/bituminous material should be confirmed by laboratory testing prior to planned disturbance of the material.

6.2 Lead

Lead-based paints were detected in the paintwork of the exposed and sealed surfaces throughout the Block. Due to the limited number of field samples collected, any painted surfaces which are to be sanded/grinded as part of the demolition works should be retested to determine lead content.

6.3 Synthetic Mineral Fibre

SMF was identified as insulating material in ceiling spaces throughout the site.

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 (ACM) were both identified to be present in fibre cement used on the eaves and awning linings and in the wide vinyl flooring in some areas in Block B. Asbestos-based bituminous membrane was deemed to be present on the flat roof sections of the block beneath the metal lining. Full details are provided in the Results section of this report.

As a precaution, any other fibre cement material not specified in this report and which is encountered at the site should be treated as asbestos containing until testing proves otherwise.

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

Synthetic mineral fibre was detected as insulation in ceiling spaces.

No PCB containing capacitors were detected.

Lead-based paints were detected in the paintwork of the exposed and sealed surfaces throughout the Block.

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



8.0 ASBESTOS REGISTER

BLOCK B - Champagnat College, Maroubra																	
Assessment by:	Mr. Nik Orr	Date of Inspection	15th August, 2019	Register Review & Re-Inspection:	5 years or earlier following changes												
ite Contact: Mr. Kent Fague Site Location: 35 Donovan Av., Maroubra NSW 2035																	
				Risk Rating													
Area of Property	Result/Sample ID	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 Con	Asbestos Containing Materials																
Block B	Chrysotile Asbestos Present - Samples 4 & 5	1, 2, 3, 4, 5, 6, 7	Compressed Flat Fibre Cement Sheeting	(Upper Level) Eave Linings to Perimeter	NF	1	1	1	1	0	0	0	0	4	Р4	30m ²	Remove by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager PRIOR to any planned demolition or refurbishment works likely to disturb this material.
Block B	Chrysotile Asbestos Present - Samples 6 & 7	8, 9	Semi-Compressed Fibre Board	Southern Upper Level Walkway Ceiling Linings Throughout	NF	1	1	0	1	1	0	0	1	5	Р4	40m ²	Remove by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager PRIOR to any planned demolition or refurbishment works likely to disturb this material.
Block B	Chrysotile Asbestos Present - Samples 8 & 9	10, 11	Semi-Compressed Fibre Board	Upper Level Walkway (Connecting to Block A) Ceiling Lining	NF	1	1	1	1	0	0	0	0	4	Р4	10m ²	Remove by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager PRIOR to any planned demolition or refurbishment works likely to disturb this material.



Hazardous Materials Demolition Report Champagnat College, Maroubra - BLOCK B

Block B	Negative, No Asbestos Present Samples 1, 2, & 3	12, 13, 14, 15, 16	Vermiculite Plaster	Internal Ceilings Throughout	NF	0	1	0	1	1	0	0	1	0	-	-	No action necessary
Block B	Chrysotile Asbestos Present - Sample 10	17, 18	Wide Vinyl	Science Laboratory (Rear) Floor Coverings	NF	1	1	1	1	0	0	2	0	6	Р4	15m²	Remove by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager PRIOR to any planned demolition or refurbishment works likely to disturb this material.
Block B	Deemed Positive, Asbestos Present if in Place	20	Bituminous Membrane	Water-Proofing Membrane Beneath Metal Lining to Flat Roof	NF	1	1	1	1	0	0	0	0	4	Ρ4	20m ²	If Present, Test for Asbestos prior to disturbing and is positive Remove by a registered asbestos removal contractor in accordance with specifications provided by the Maintenance Manager PRIOR to any planned demolition or refurbishment works likely to disturb this material.
Other Hazard	ous Materia	ls			Risk Rating												
Generally Throughout	Positive, Lead Present	-	Lead Paint	General Exposed/Sealed Paintwork Throughout	D							No grinding, sanding etc. which would create dust.					
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	Negative, No SMF Present	19	SMF	Insulation in Hot Water Heaters, Ceiling Cavities & Air Conditioning Ducting	- -								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 use	ed in ACM Register
Acronying use	
CH:	Chrysotile Asbestos
CH: AM:	Chrysotile Asbestos Amosite Asbestos
CH: AM: CR:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos
CH: AM: CR: SP:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible)
CH: AM: CR: SP: NAD:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected
CH: AM: CR: SP: NAD: NAD ⁺ :	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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).
CH: AM: CR: SP: NAD: NAD ⁺ : NA:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material)
CH: AM: CR: SP: NAD: NAD ⁺ : NA: Vis:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment)
CH: AM: CR: SP: NAD: NAD ⁺ : NA: Vis: F:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable
CH: AM: CR: SP: NAD: NAD: NAD ⁺ : NA: Vis: F: NF:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable Non-Friable
CH: AM: CR: SP: NAD: NAD ⁺ : NA: Vis: F: NF: VL:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable Non-Friable Very low
CH: AM: CR: SP: NAD: NAD: NAD ⁺ : NA: Vis: F: NF: VL: L:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable Non-Friable Very low Low
CH: AM: CR: SP: NAD: NAD: NAD ⁺ : NA: Vis: F: NF: VL: L: M:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable Non-Friable Very low Low Moderate
CH: AM: CR: SP: NAD: NAD: NAD ⁺ : NA: Vis: F: NF: VL: L: M: H:	Chrysotile Asbestos Amosite Asbestos Crocidolite Asbestos Strongly presumed to contain asbestos (consultant experience determines material to contain asbestos however sampling deemed unsafe or material inaccessible) No Asbestos Detected 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). Not assessable (relative to estimated quantity measurement of material) Visible (as in quantity assessment) Friable Non-Friable Very low Low Moderate High



10.0 ASBESTOS ASSESSMENT ALOGORITHM

Asbestos - Material Assessment Algorithm

Sample Variable	Score	Examples of Scores
	0	No Asbestos Detected (NAD)
1. Friability/Product	1	Non-friable ACMs - Asbestos-reinforced composites (plastics, resins, mastics, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc).
product)	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.
	0	Good condition: no visible damage.
2. Condition – Extent of damage/	1	Low damage: a few scratches or surface marks, broken edges on boards, tiles etc.
deterioration	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.
	0	Composite materials containing asbestos: reinforced plastics, resins, vinyl tiles.
3. Surface treatment	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.
	0	No Asbestos Detected (NAD).
4 Ashertes Time	1	Chrysotile.
4. Asbestos Type	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
	0	Rare disturbance, e.g. little used store room
	1	Low disturbance, e.g. Office type activity
1. Occupant 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
	0	Usually inaccessible or unlikely to be disturbed
2. Likelihood of	1	Occasionally likely to be disturbed
disturbance	2	Easily disturbed
	3	Routinely disturbed
	0	Infrequent
3. Human Exposure	1	Monthly
potential	2	Weekly
	3	Daily
	0	Minor disturbance (e.g. possibility of contact when gaining access)
4. Maintenance	1	Low Disturbance (e.g. changing light bulbs in AIB ceiling)
activities	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 L	evel						
High	 There is an immediate risk of exposu ACM which has already been disturbe spread of asbestos fibres as well as be advised of the urgency of such situ <i>Priority 1 (P1) - Restrict access a</i> <i>environmental damage</i>) Friable or poorly bonded to substr Severely water damaged, or unsta Further damage or deterioration li Friable asbestos material located Asbestos debris in reasonably accessible stored asbestored asbestor	re to asbestos fibres to anyone entering the area due to friable ed. Immediate action is required to restrict access and stop the plan for decontamination and remedial works. The client is to uation at the time of the survey. and remove (Unacceptable risk due to likely exposure and/or rate, located in accessible areas able - ikely in air conditioning ducting cessible areas bestos 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 							
Low	 Moderate risk of exposure to asbest Usually applies to non-friable ACM in levels, or accessible friable ACM in go <i>Priority 3 (P3) - Remove prior to re</i> <i>elevated risk due to potential exposi</i> <i>environmental damage</i>) Asbestos debris in rarely accesse Disturbance or damage unlikely ov visible for further assessment Asbestos friction materials, gaske 	rate risk of exposure to asbestos fibres due to the material status and/or activity in the area. Ily applies to non-friable ACM in a state of minor deterioration and in moderate occupant activity s, or accessible friable ACM in good condition. ity 3 (P3) - Remove prior to refurbishment / maintenance or demolition (Possibility of an ited risk due to potential exposure from the ongoing degradation of the material, or potential onmental damage) usbestos debris in rarely accessed areas Disturbance or damage unlikely other than during maintenance, service or demolition - Readily isible for further assessment usbestos friction materials, gaskets and brake linings						
Very Low	There is a negligible or low risk of ex- material being one which doesn't read applies to non-friable ACM products accessibility. Priority 4 (P4) - No remedial action <i>conditions or site activities change</i>) • Firmly bonded to substrate and re • Inaccessible and fully contained -	kposure to asbestos fibres to occupants of the area due to the dily release asbestos fibres unless seriously disturbed. Usually s in at least average condition, or materials with no or low on required, unless disturbed (Elevated risk unlikely, unless eadily visible for inspection Stable and damage unlikely.						



13.0 MANAGEMENT OF ASBESTOS RELEASE/EXPOSURE





Hazardous Materials Demolition Report Champagnat College, Maroubra - BLOCK B

14.0 SITE LAYOUT IDENTIFYING AREA OF SURVEY - (BLOCK B)



15.0 PHOTOGRAPHS



Photo 1 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present



Photo 2 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present







Photo 4 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present







Photo 5 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present



Photo 6 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present





Photo 7 – Fibre Cement Eave Linings to Perimeter – Chrysotile Asbestos Present



Photo 8 – Semi-Compressed Fibre Board Lining to Upper Level Walkway Ceiling – Chrysotile Asbestos Present





Photo 9 – Semi-Compressed Fibre Board Lining to Upper Level Walkway Ceiling – Chrysotile Asbestos Present



Photo 10 – Semi-Compressed Fibre Board Lining to Upper Level Walkway Ceiling from Block A – Chrysotile Asbestos Present





Photo 11 – Semi-Compressed Fibre Board Lining to Upper Level Walkway Ceiling from Block A – Chrysotile Asbestos Present



Asbestos Present





Photo 13 – Vermiculite Plaster to Internal Ceilings Throughout – No Asbestos Present



Photo 14 – Vermiculite Plaster to Internal Ceilings Throughout – No Asbestos Present







Photo 15 – Vermiculite Plaster to Internal Ceilings Throughout – No Asbestos Present



Asbestos Present



Photo 17 – Wide Vinyl Floor Covering to Science Laboratory Floors – Chrysotile Asbestos Present



hoto 18 – Wide Vinyl Floor Covering to Science Laboratory Floors – Chrysotile Asbestos Present





Photo 19 – SMF Present as Ceiling Insulation Throughout



Lining – If Present, Test for Asbestos Before Disturbing



Hazardous Materials Demolition Report Champagnat College, Maroubra - BLOCK B



16.0 ASBESTOS READING LOG

Date	Name (Print)	Signature	Company



17.0 ASBESTOS REMOVAL LOG

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



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



19.0 LABORATORY RESULTS

		A division of Enviro-Net ABN 39 067 499 389 ACN 067 499 389	Australia Pty. Ltd. NATA Reg. 3110				
		www. Email: esp	environet.com.au @esplabs.com.au				
e	Environmental & Safety Professionals	Melb Unit 2 Footsc Pl	ourne Laboratory /2B Parker Street ray, Victoria 3011 n: (03) 9688 8000				
ASBESTOS IDENTIFICATION REPORT							
Date:	21 August 2019						
ESP Job Nu	imber: J41413						
Customer:	Banksia EnviroSciences						
Address:	5 Cantwell Road, Lochinvar 2321,						
Attention:	Mr. Nik ORR						
Sampled Fi	rom: As received (Your ref: Block - B, Champagnat Colleg	ge, Maroubra, NSW)					
Sampled B	y: As received	As received					
Date Recei	ved: 21 August 2019						
Date Analy	rsed: 21 August 2019						
	-						
Test Metho	od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2.	opy, including .01 %, using				
Test Metho ESP Lab No	 Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in Sample location (if provided) and sample description 	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2. Result	ppy, including 0.01 %, using Notes				
Test Metho ESP Lab No E68424	 Od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in the standard state of the state	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2. Result No asbestos detected	ppy, including 0.01 %, using Notes				
ESP Lab No E68424 E68425	 Od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in O. Sample location (if provided) and sample description 1: CMB - 1 - Vermiculite (115x 55 x 20 mm) 2: CMB - 2 - Vermiculite (115x 15 x 10 mm) 	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2. Result No asbestos detected No asbestos detected Organic fibre detected	ppy, including 0.01 %, using Notes - -				
ESP Lab No E68424 E68425 E68426	 od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in o. Sample location (if provided) and sample description CMB - 1 - Vermiculite (115x 55 x 20 mm) CMB - 2 - Vermiculite (115x 15 x 10 mm) CMB - 3 - Vermiculite (115x 25 x 15 mm) 	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2. Result No asbestos detected Organic fibre detected Organic fibre detected Organic fibre detected	ppy, including .01 %, using Notes - - -				
E68425 E68427	 Od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in O. Sample location (if provided) and sample description CMB - 1 – Vermiculite (115x 55 x 20 mm) CMB - 2 – Vermiculite (115x 15 x 10 mm) CMB - 3 – Vermiculite (115x 25 x 15 mm) CMB - 4 – Fibro cement material (45x 35 x 5 mm) 	samples by polarised light microsco ulated practical detection limit of 0 h-house Method No. 2. Result No asbestos detected Organic fibre detected Organic fibre detected Organic fibre detected Chrysotile asbestos detected	ppy, including .01 %, using .01				
ESP Lab No E68424 E68425 E68426 E68427 E68428	 Od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in O. Sample location (if provided) and sample description CMB - 1 – Vermiculite (115x 55 x 20 mm) CMB - 2 – Vermiculite (115x 15 x 10 mm) CMB - 3 – Vermiculite (115x 25 x 15 mm) CMB - 4 – Fibro cement material (45x 35 x 5 mm) CMB - 5 – Fibro cement material (55x 15 x 5 mm) 	samples by polarised light microsco ulated practical detection limit of 0 n-house Method No. 2. Result No asbestos detected Organic fibre detected Organic fibre detected Organic fibre detected Chrysotile asbestos detected Chrysotile asbestos detected	ppy, including .01 %, using .01 %				
ESP Lab No E68424 E68425 E68426 E68427 E68428 E68429	 Od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in Sample location (if provided) and sample description CMB - 1 – Vermiculite (115x 55 x 20 mm) CMB - 2 – Vermiculite (115x 15 x 10 mm) CMB - 3 – Vermiculite (115x 25 x 15 mm) CMB - 4 – Fibro cement material (45x 35 x 5 mm) CMB - 5 – Fibro cement material (55x 15 x 5 mm) CMB - 6 – Fibro cement material (45x 35 x 5 mm) 	samples by polarised light microsco ulated practical detection limit of 0 h-house Method No. 2. Result No asbestos detected No asbestos detected Organic fibre detected Organic fibre detected Chrysotile asbestos detected Chrysotile asbestos detected Chrysotile asbestos detected	ppy, including .01 %, using .01 %				
Est Metho ESP Lab No E68424 E68425 E68426 E68427 E68428 E68429 E68430	 od: Qualitative identification of asbestos types in bulk dispersion staining and trace analysis, with a calc methodology in accordance with AS 4964 and ESP in o. Sample location (if provided) and sample description CMB - 1 – Vermiculite (115x 55 x 20 mm) CMB - 2 – Vermiculite (115x 15 x 10 mm) CMB - 3 – Vermiculite (115x 25 x 15 mm) CMB - 4 – Fibro cement material (45x 35 x 5 mm) CMB - 5 – Fibro cement material (55x 15 x 5 mm) CMB - 6 – Fibro cement material (45x 35 x 5 mm) CMB - 7 – Fibro cement material (75x 45 x 10 mm) 	samples by polarised light microsco ulated practical detection limit of 0 h-house Method No. 2. Result No asbestos detected No asbestos detected Organic fibre detected Organic fibre detected Chrysotile asbestos detected Chrysotile asbestos detected Chrysotile asbestos detected Chrysotile asbestos detected	ppy, including .01 %, using .01 %				

The results contained in this report relate only to the sample(s) submitted for testing. ESP Environmental & Safety Professionals accepts no responsibility for the representivity of the sample(s) submitted.



NATA Accredited Laboratory Accredited for compliance with ISO/IEC-17025 - Testing

R_190821_J41413_Banksia EnviroSciences_Block - B_ID_F1 Page 1 of 2



Approved Identifier: Vena Beera Approved Signatory: Ray Boast

> R_190821_J41413_Banksia EnviroSciences_Block - B_ID_F1 Page 2 of 2