PRACTICAL ENVIRONMENTAL SOLUTIONS

Report to:

NEWCASTLE GRAMMAR SCHOOL
C/- APP CORPORATION PTY LTD.
LEVEL 2, 426 KING STREET
NEWCASTLE NSW 2300

Concerning the

Hazardous Substances Management Plan

For

Newcastle Grammar School – Park Campus
Cnr. Union Street & Parkway Avenue
Cooks Hill NSW, 2300

May 2021

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LIST OF ABBREVIATIONS

ACD	Asbestos-Containing Debris/Dust
ACM	Asbestos-Containing Material
CFCS	Corrugated Fibrous Cement Sheet
CFC	Compressed Fibrous Cement ('FRC')
EPA	Environment Protection Authority
FFCS	Flat Fibrous Cement Sheet
NATA	National Association of Testing Authorities of Australia
PES	Practical Environmental Solutions
SAFEWORK	SafeWork NSW
SP	Strongly Presumed
FRC	Fibre Reinforced Cement aka 'compressed'.
MMMF	Man Made Mineral Fibres
SMF	Synthetic Mineral Fibres
NAD	No Asbestos Detected
Chrysotile	White Asbestos
Amosite	Brown Asbestos (**A**sbestos **M**ines **o**f **S**outh **A**frica -site)
Crocidolite	Blue Asbestos

1 EXECUTIVE SUMMARY

Practical Environmental Solutions Pty Ltd. (PES) was commissioned by Brendan Fisher for APP Corporation Pty Ltd. on behalf of our respective Client, Newcastle Grammar School, to prepare a Hazardous Substances Management Plan (HSMP) for all built infrastructure standing on the School's Park Campus in the inner Newcastle NSW suburb of Cooks Hill.

The land is described as Lot 102 DP 861562 and bounded by Union Street, Parkway Avenue and Corlette Streets. The relevant Local Government Area (LGA) is Newcastle City Council.

The field audit phase of this service provision was conducted on the afternoon of Monday 17 May 2021 by PES's Tony Milligan with Nick Milligan. The structures were not occupied at the time of inspection due the audit taking place after school hours.

In precis, an asbestos containing material is now identified as:

Administration/Library

- External – eastern elevation – electrical switchboard – Insulation Panel

NOTE: The following materials were tested and proven **NOT** to contain asbestos or confirmed not to be an ACM:

Staff Room

NOTE: ***The ceiling in the main space in this building is confirmed to be Masonite® , a timber-based, manmade product.***

Former Pre-School Building [now Art Space(s)]

- Eaves – soffit lining – Flat Fibre Cement Sheet
- External / South Elevation – cladding – Fibre Reinforced Cement
- North-east elevation – verandah / deck – Fibre Reinforced Cement
- Western entry – floor – Fibre Reinforced Cement
- External – Hardiplank® with wood grain finished – Flat Fibre Cement Sheet
- Western entry – wall cladding in alcove – Flat Fibre Cement Sheet
- Blue-coloured toilet cubicle partitions to bathroom of pre-school/art room _ Fibre Reinforced Cement.
- Ceiling void – there is the original Masonite® ceiling above the later, retrofitted plasterboard ceiling lining that is evident from below.
- Kitchen – wall lining – Flat Fibre Cement Sheet
- Storeroom – wall lining – Flat Fibre Cement Sheet

Storage Shed (including Maintenance Equipment Storage Space)

- Cladding – Hardiplank® with wood grain finish – Flat Fibre Cement Sheet
- Wall lining (inside LHS of leftmost roller door of storage shed) – Flat Fibre Cement Sheet

Administration Building

- FFCS eave lining to Administration building

Performance Hall

- Blue-coloured toilet cubicle partitions to spaces at the rear of the stage _ Fibre Reinforced Cement.

This audit and report do not in themselves constitute an Asbestos Removal Control Plan. The lawful responsibility for preparation of an Asbestos Removal Control Plan lies with the engaged, SafeWork NSW-licensed asbestos removal contractor.

However, subject to a site-specific removal plan prepared by the licensed removalist, this report provides information with respect to the general requirements for the removal / clean-up of bonded asbestos.

The limitations of this report are summarised in **Section 9**.

PLEASE NOTE: Based on the known build dates of the buildings known respectively as the 'Performance Centre' and 'The Sarich Building', Practical Environmental Solutions contends that no asbestos-containing materials were incorporated into the construction of these buildings.

The manufacture of building products that contained asbestos had been phased out since the early 1908s and completely banned in December 2003.

Except for a 'suspicious' electrical switchboard insulation panel on the Administration Building, we would contend that no asbestos-containing materials have been incorporated into the construction of any building currently standing within the bounds of the NGS Park Campus.

PRACTICAL ENVIRONMENTAL SOLUTIONS

CONTENTS

2 INTRODUCTION

Practical Environmental Solutions Pty Ltd. (PES) was commissioned by Brendan Fisher for APP Corporation Pty Ltd. on behalf of our respective Client, Newcastle Grammar School, to prepare a Hazardous Substances Management Plan (HSMP) for all built infrastructure standing on the School's Park Campus in the inner Newcastle NSW suburb of Cooks Hill.

The land is described as Lot 102 DP 861562 and bounded by Union Street, Parkway Avenue and Corlette Streets. The relevant Local Government Area (LGA) is Newcastle City Council.

The findings of this audit will form the scope of work for the removal of identified, hazard-containing building materials from any of the existing built infrastructure; prior to any demolition works undertaken on the site.

This HSMP will facilitate, in part, the proponent's compliance with any relevant approval condition relating to the identification of any hazardous substances within the structure prior to any demolition works taking place. This report also includes an asbestos register; in line with the SafeWork Authority of NSW's requirement of hazard and demolition contractors licensed by it.

Provision of information with respect to the identification, location and condition of building materials known to be injurious to human health is a pre-requisite to the safe removal of hazards of concern from these buildings by a suitably licensed removal and demolition contractor.

3 SCOPE OF WORKS

PES understood the scope of works for this engagement to be:

- A thorough inspection of the fabric of all built infrastructure on the land described, internally and externally, to determine the presence or otherwise of all hazardous materials[1] with particular emphasis on the hazard of concern, asbestos. The inspection was limited to the accessible parts of the building at the time of field work and
- Preparation of a Hazardous Substances Management Plan (HSMP) including a register describing the type, location, and condition of identified hazardous materials so that the Client is informed and, in turn, is able to inform any entity or person who may, for whatever reason, come into contact with this building. The HSMP is to include photo identification of the building and identified hazards as well as copies of any NATA-accredited analytical certification generated as a result of the audit.

[1] *Materials known to be hazardous include those containing SMF (Synthetic Mineral Fibre) products, asbestos-based building materials, lead-based paint and PCB-containing capacitors typically found in old fluorescent light fittings.*

4 TABLE OF SAMPLE RESULTS – 2014 PRACTICAL ENVIRO AUDIT

Sample No.	*Date Analysed*	*Sample Description*	*Asbestos ID in materials*
PS1	2nd August 2013	Woodgrain-effect 'Hardiplank®' wall board cladding to storage sheds adjacent to Pre-School (now Art Space) off Corlette Street.	No Asbestos Detected
PS2	2nd August 2013	FRC structural flooring – Former pre-school spaces (now Art Space) _'Compressed' cement flooring to classrooms & outside elements (ramp and decking to covered verandah)	No Asbestos Detected
PS3	2nd August 2013	FFCS wall lining in space within area described for PS2	No Asbestos Detected
PS4	2nd August 2013	FRC 'compressed' – Wall cladding to southern end of former pre-school (now Art Space) building	No Asbestos Detected
PS5	2nd August 2013	FFCS eave lining to Administration building	No Asbestos Detected
PS6	2nd August 2013	Ceiling insulation above the stage in the Performance Centre	No Asbestos Detected
PS7	2nd August 2013	FRC wall partition to the stage in the Performance Centre.	No Asbestos Detected

5 TABLE OF SAMPLE RESULTS – 2021 PRACTICAL ENVIRO AUDIT

Sample No.	*Date Analysed*	*Sample Description*	*Asbestos ID in materials*
PS8	20th May 2021	Flat Fibre Cement Sheet, wall lining (inside LHS of leftmost roller door of storage shed)	No Asbestos Detected
PS9	20th May 2021	Fibre Reinforced Cement, blue-coloured toilet cubicle partitions to bathroom of pre-school/art room.	No Asbestos Detected

6 SAMPLING STRATEGY

PES conducted a review of past documents specifically pertaining to the presence of asbestos on the site including previous Asbestos Registers and Asbestos Surveys (completed by others). This was done to ensure no previously tested materials were unnecessarily re-tested, and to assist in the identification of ACM. Complementing existing information, a thorough re-audit and inspection of the built infrastructure on the subject land was undertaken.

During this audit, PES inspected all structures and locations therein where ACM has been identified and documented. Also, we have accounted for fibrous cement materials that are suspected of or have the potential to be an ACM that were previously presumed to be so ONLY or were inadvertently overlooked in previous audits.

Judgemental sampling of such materials was conducted with a view to providing a conclusive report of ACMs likely to be encountered by others during any maintenance work, refurbishment, asbestos removal and/or demolition operation. The sampling locations were chosen to limit damage to the material surface(s) and to prevent potential disturbance of the hazard, if any.

For an unexpected find of material that is suspected of or has the potential to contain asbestos but is not identified in the Asbestos Register, the recommendation is that the material be treated as asbestos containing until it can be analysed and proven otherwise.

In these circumstances, a sample of the material (sampled by a competent person in the appropriate manner) shall be sent to a NATA-accredited laboratory for analysis; testing for the presence of asbestos. The result of this analysis is to be communicated to, and then noted on the register, by the person with principal control of the Asbestos Register for the site.

In the interim, the material shall be managed as if it were an asbestos-containing material; in line with the NSW *Work Health and Safety Regulation 2017*.

7 FIELD WORK

The field audit phase of this service provision was conducted on the afternoon of Monday 17 May 2021 by PES's Tony Milligan with Nick Milligan. The structures were not occupied at the time of inspection due the audit taking place after school hours.

All accessible areas of the buildings were visually inspected with a view to identifying discernible, hazardous building materials. Judgemental sampling of materials suspected of or with the potential to be asbestos containing was conducted with a view to providing a conclusive report of hazardous materials likely to be encountered by others during any maintenance works conducted on this building or any removal and/or demolition operation.

8 RISK ASSESSMENT

The most significant hazard identified is the inhalation of asbestos fibres, which can lead to health impacts that include asbestosis, lung cancer and mesothelioma. Therefore, it is important that ACMs' condition and location does not present a human exposure pathway, otherwise risks to health are increased.

A thorough risk assessment was conducted and is applicable to the audit conducted by PES of the site and to the ACM identified on the site and is not applicable to works which involve the disturbance of ACM on the site. The risk assessment attached in Appendix C provides details of the risk assessment algorithm and the risk assessment matrix used in the re-audit of building materials and fitments on the site.

This risk assessment addresses the health risks posed by ACMs and categorises each occurrence of ACM identified on the site and includes a risk assessment algorithm which is an assessment for friability, type of ACM product, labelling of material identified as ACM, accessibility of the ACM, and the condition of the ACM. A risk-based rating is then given to each ACM identified based on the score they achieved in the risk assessment algorithm. Additionally, a rating-based system for control measures is included in the attached risk assessment.

To determine the level of risk linked to the identified ACM the following areas needs to be assessed:

- Friability (friable or non-friable) of ACM;
- Product Type (Type of ACM);
- Labelling of ACM's;
- Accessibility of the ACM; and
- Condition of ACM;

The components of this risk assessment algorithm, risk rating and control measures are detailed in the asbestos register for the site (**Appendix C)**.

9 RESULTS OF THE AUDIT

The built infrastructure being audited is shown in the campus layout plan attached to this report:

9.1 ASBESTOS

During the 2021 audit only materials suspected of or with the potential to contain asbestos were collected for laboratory analysis; materials not analysed in previous audits.

Two (2) such material samples were sent to the NATA-accredited, Australian Safer Environment and Technology laboratory in Sydney for analysis.

Neither of those samples proved positive for the presence of asbestos.

In precis, an asbestos containing material is now identified as:

Administration/Library

- External – eastern elevation – electrical switchboard – Insulation Panel

NOTE: The following materials were tested and proven **NOT** to contain asbestos or confirmed not to be an ACM:

Staff Room

NOTE: ***The ceiling in the main space in this building is confirmed to be Masonite® , a timber-based, manmade product.***

Former Pre-School Building [now Art Space(s)]

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9.2 SWITCHBOARDS

There are electrical switchboards located throughout the campus, though the switchboard of particular concern is on the end of the library building. The switchboard was live at the time and as such the insulation panel was not able to be safely sampled.

The insulation panel (backing board) was of like age and appearance to proven asbestos containing materials (ACM[2]) utilised in this manner and as such will almost certainly be an asbestos-containing material.

Without sampling, we would advise that it be considered an ACM and treated accordingly.

9.3 LEAD PAINT

Surfaces throughout the structure are painted; the accepted means of preservation and decoration.

In this instance, paints were not sampled. Due to the industrial nature of the older buildings on the campus, the majority of windows are made from metal and the paint is not easily sampled.

However, due to the age of the buildings, the presence of lead-paint layers cannot be discounted; PES would presume that the lower layers of paint used on some surfaces will have been lead-based. Materials with painted surfaces should be, as far as possible, removed or disposed intact, with minimal disturbance of the painted surfaces. PES' assessment is based on this hazard being able to be managed in the workplace by regular maintenance of painted surfaces or should the building, or any part of it, be demolished that 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] ACM – Asbestos Containing Material

9.4 SYNTHETIC MINERAL FIBRES (SMF)

MMMF[3] (or SMFs as they are colloquially known) were observed in the ceiling voids of the Pre-School and Staff Room buildings.

SMF materials should be removed intact as far as possible, prior to renovation by a specialist contractor, and measures are taken to minimise the creation of dust. The contractor should adopt suitable personal protection systems, in accordance with Safe Work NSW guidelines at the time of demolition. Typical protection involves the use of overalls, gloves, safety boots, and filtration respirators.

9.5 POLYCHLORINATED BIPHENYLS (PCBs)

Fluorescent light fittings were observed in the building but not accessed due to the 'live' status of the building. These and any other fluorescent lights that may be discovered in areas that were inaccessible during the inspection, based on the age of the three (3) older buildings, are considered likely to contain PCBs.

[3] MMMF – Man Made Mineral Fibres

10 CONCLUSION AND RECOMMENDATIONS

10.1 ASBESTOS-CONTAINING MATERIALS (ACM)

Following an inspection of the buildings except for a 'suspicious' electrical switchboard insulation panel on the Administration Building, we would contend that there no asbestos-containing materials have been incorporated into the construction of any building currently standing within the bounds of the NGS Park Campus.

However, should ACMs be encountered in areas that were inaccessible to PES during this or previous audits, the removal, handling, and disposal of any asbestos material is to be undertaken only by an asbestos removal contractor who holds the appropriate class (Class A_ friable OR Class B_non-friable) of Asbestos Licence, issued by SafeWork NSW and must notify SafeWork NSW a minimum five (5) days prior to any removal operation.

Importantly, it has been mandatory since July 2012 that a clearance certificate be obtained following the removal of bonded asbestos by a Class B licensed contractor. The inspection and issue of a clearance is to be provided by an independent, competent person.

Further, the asbestos removal must be conducted in accordance with the requirements of SafeWork NSW and the National Occupational Health and Safety Commission's Code of Practice for the Safe Removal of Asbestos, 2nd Edition [NOHSC: 2002 (2005)] and Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)].

Further, all asbestos and other hazardous materials are to be appropriately contained and disposed of at a facility holding the appropriate license issued by the NSW Environment Protection Authority (EPA). Tipping dockets should be provided to record that the asbestos was disposed of in the appropriate manner.

Any demolition or refurbishment works involving the existing buildings should allow for the removal and disposal of the ACM identified in this audit and any subsequent audit. The ACM should be removed prior to any other demolition works and visual and air clearances, determined by a risk assessment, provided by competent persons to validate that the ACM have been removed.

A Scope of Work should be produced defining the extent of work required for removal of the ACM and provided to licensed removal contractors for quotation purposes. Further, an Asbestos Removal Control Plan is advisable to document the agreed (between Client, removalist, and hygienist) methodology for the most cost efficient, regulatory compliant means of effecting the removal of the most significant hazard of concern, asbestos.

It is highly advisable that task specific Job Safety Analyses/Safe Work Method Statements should be developed by the licensed removal / demolition contractor and submitted to the building Principal for approval before work proceeds. These management plans would necessarily be kept on site along with other relevant site safety documentation.

A risk assessment process should be used to determine if monitoring of the atmosphere for airborne particulates should be carried out during the removal of ACM. Should air monitoring be deemed necessary, the monitoring is to be conducted in accordance with the National Occupational Health and Safety Commission's (NOHSC) 'Guidance Note on the Membrane Filter Method for Estimating

Airborne Asbestos Fibres, 2nd Edition [NOHSC:3003(2005)]'. The Time Weighted Average (TWA) airborne concentrations for asbestos shall not exceed the legislated exposure standard of 0.01 fibres/mL of air for Chrysotile, Amosite or Crocidolite asbestos. Any combination of these asbestos types, or where the composition is unknown – also 0.1 fibres/mL.

10.2 SYNTHETIC MINERAL FIBRE

Removal of any SMF materials should be carried out in accordance with the current requirements of legislation and the Worksafe Australia documentation, these being:

- National Standard for Synthetic Mineral Fibres.
- National Code of Practice for the Safe Use of Synthetic Mineral Fibres.
- Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres.
- Worksafe Australia exposure level for airborne synthetic mineral fibre is 0.5 fibre per millilitre of air (fibres/mL) as an 8-hour TWA.

10.3 POLYCHLORINATED BIPHENYLS

The serial numbers of the ballasts units inside any fluorescent lights capacitors should be removed intact at the time of demolition works and checked against a register of known PCBs to confirm the presence of PCBs. Any capacitors of an unknown nature should be deemed to contain PCBs. All capacitors containing PCBs (including those deemed to contain PCBs) should be disposed of properly, generally, necessitating the PCB-containing capacitor being wrapped in plastic and then stored in a sealed metal drum for transport to a facility specialising in Base Catalysed Dechlorination (BCD) or High Temperature Plasma Arc technologies which destruct PCB oil.

10.4 LEAD BASED PAINT

According to current standards and guidelines, where the percentage lead content of paint by weight exceeds 0.1% the paint should be stabilised or removed by either chemical means or in a manner, which does not liberate dust to the atmosphere. The waste material should be also tested for total lead and lead leachate to determine the appropriate method for disposal. The paint is not to be removed by dry sanding or by electrical means.

The current standards and guidelines pertaining to lead paint management, removal, stabilisation, and disposal include the following:

- Worksafe Australia exposure level for airborne lead is 0.15 mg/m³ as an 8-hour TWA.
- Australian Standard AS4361.1 :2017 _ Guide to hazardous paint management, Part 1: Lead and other hazardous metallic pigments in industrial applications.
- Australian Standard AS4361.2 :2017 _ Guide to hazardous paint management, Part 2: Lead paint in residential, public, and commercial buildings.
- NSW EPA Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes.
- "Managing Lead Contamination in Home Maintenance, Renovation & Demolition Practices — A Guide for Council's" May 2003, published by NSW EPA & Planning NSW.

It should be noted that during any lead paint removal and prior to disposal of waste materials sampling should be undertaken to assess the appropriate waste disposal criteria. Results of the sample analysis should be compared against the NSW EPA Environmental Guidelines: Assessment, Classification and Management of Liquid & Non-Liquid Wastes to ensure correct disposal procedures are followed.

11 LIMITATIONS AND DISCLAIMER

This audit report was prepared for Brendan Fisher for APP Corporation Pty Ltd. solely for the purpose of identifying and documenting the presence of any hazard-containing materials in nominated built infrastructure standing on Newcastle Grammar School's Park Campus, on the corner of Union Street and Parkway Avenue, Cooks Hill NSW, 2300.

The audit was undertaken by a combination of visual inspection and minor intrusive means of all surfaces/materials of the building that were accessible to us at the time of our inspection. This means, therefore, that we cannot guarantee that each and every hazardous material that exists within the building has been located, identified, and documented by us in this report.

PES prepared this report for the purpose set out in the Introduction and because this report has been prepared for that purpose, it is not appropriate for this report to be used for any other purpose, without prior written consent. It is also not appropriate for this report to be released to any other party (either in whole or in part) without Practical Environmental Solutions Pty Ltd.'s prior written consent. Should you wish to use this report for a purpose other than the purpose for which it was prepared, or to release this report (either in whole or in part) to any other party, please contact PES to discuss the matter.

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In addition, this report does not, and does not purport to, give legal advice as to your actual or potential asbestos or hazardous material liabilities, or draw conclusions as to whether any particular circumstances constitute a breach of relevant legislation. You will appreciate that this advice can only be given by qualified legal practitioners.

Finally, PES does not make any other warranty, expressed or implied, as to the professional advice contained in this report.

All works carried out in preparing this report have utilised and were based on Practical Environmental Solutions Pty Ltd (PES) professional knowledge and our understanding of current relevant National and State standards, codes of practice, regulations, and acts. Changes in legislation and guidance may occur at any time in the future and cause conclusions contained in this report to become incorrect or inappropriate. PES does not accept responsibility for advising the fact or implications of any such changes.

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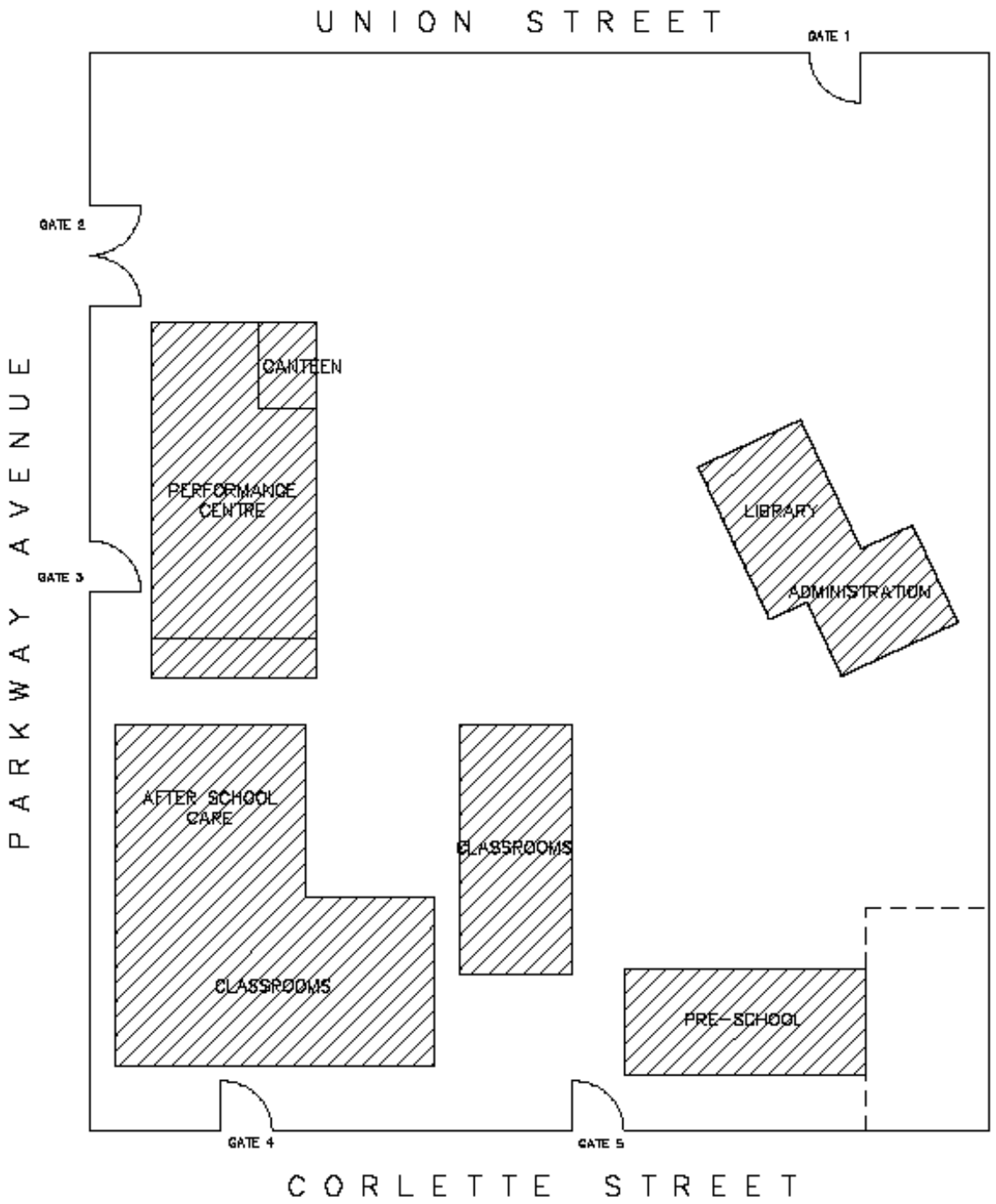
APPENDIX A
Site Identification

PROJECT TITLE: Hazardous Substances Management Plan			**DRAWING TITLE:** Aerial Image of NGS Park Campus, Cooks Hill NSW	
CLIENT: AAP Corporation Pty Ltd. (for NGS)				
DATE: 24/05/2021	**SCALE:** NTS	**DESIGNED**: NM	**DRAWING NUMBER**: 1	**JN**: 21.3419
PRACTICAL ENVIRONMENTAL SOLUTIONS PTY LTD.			**SOURCE**: SIX Maps (NSW Government 2021)	

NEWCASTLE GRAMMAR SCHOOL
PARK CAMPUS



LIBRARY/ADMINISTRATION

SIDE ELEVATION

FRONT ELEVATION

REAR ELEVATION

SIDE ELEVATION

PRE-SCHOOL / ART ROOM

SIDE ELEVATION

SIDE ELEVATION

SIDE ELEVATION

SIDE ELEVATION

STAFF ROOM

SIDE ELEVATION

SIDE ELEVATION

STORAGE SHED SIDE ELEVATION

SIDE ELEVATION (including maintenance staff equipment storage space)

REAR ELEVATION

CLASSROOMS/OOSH

FRONT ELEVATION

PERFORMANCE CENTRE

PRACTICAL ENVIRONMENTAL SOLUTIONS

APPENDIX B
Identified Hazard Photos

Admin/Library: Photo No. 001: Eastern elevation

The Insulation Panel to the electrical switchboard to the eastern elevation was presumed to contain asbestos and **as such SHALL be considered an asbestos-containing material until or unless it is proven otherwise.**

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APPENDIX C
Asbestos Register

Pre-School													
Location and Application	Product Type	Sample No.	Photos Number	Asbestos Type	Asbestos Nature	Accessibility	Labelled	Condition	Risk Rating	Reinspection Date	Control Measures	Comments / Condition	Action Taken
Administration / Library _ eastern elevation, electrical switchboard	Insulation Panel	SP	001	Presumed Asbestos	Non-Friable 1	Limited Access 1	No 1	Good condition 0	Very Low 4	May 2026	C1; C2; C3; C4;		Noted in Register

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APPENDIX D
Risk Assessment

1. Asbestos / ACM Risk Assessment Algorithm

Sample Variable		Score	Example of Score
A	**Asbestos Classification**	1	Non-Friable (bonded)
		2	Friable
B	**Product Type**	1	Asbestos-reinforced composites (plastics, resins, roofing felts, vinyl floor tiles, semi-rigid paints or decorative finishes, asbestos cement etc.) Asbestos contained within ground soil
		2	Asbestos Insulation Board (AIB), millboards, other low-density insulation boards (LDB), asbestos textiles, gaskets, ropes and woven textile, asbestos paper and felt
		3	Thermal insulation (e.g., pipe and boiler lagging), sprayed asbestos, loose asbestos, asbestos mattresses, and packaging.
C	**Accessibility**	0	No Access (e.g., under floorboards)
		1	Limited access, typically accessible by maintenance staff only, no public access
		2	Moderate access, accessible by maintenance and general staff only, no public access
		3	High access, Access for both staff and public at all times
D	**Labelled**	0	Adequate labelling/signage.
		1	Inadequate or no labelling/signage.
E	**Condition**	0	Good condition: no visible damage
		1	Low damage: a few scratches or surface masks, 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.
TOTAL SCORE			

2. Risk Rating Based Upon Algorithm

Score	Risk Rating	Timeframe to implement controls
12	High	Immediate 0 – 3 months
9-11	Medium	0 to 6 months
7-8	Low	0 to 2 years
6 or less	Very Low	0 to 5 years

3. Reinspection Date

Score	Risk Rating	Timeframe
12	High	Minimum 5 years
9-11	Medium	
7-8	Low	
6 or less	Very Low	

4. Example of Control Measures

Control Number	Action
C1	Manage in-situ.
C2	Incorporate into a current / develop an Asbestos Management Plan
C3	Label as asbestos containing in accordance with AS 1319-1994 Safety signs for the occupational environment.
C4	Re-inspect conditions every 5 years or sooner if deemed necessary in accordance with the WHS Regulations 2011 & code of Practice 'How to Manage and Control Asbestos in the Workplace [SWA (2011)].
C5	Consider further sampling/analysis to establish whether asbestos is present within the material.
C6	Consider further sampling/analysis to establish whether asbestos is present within the associated dust
C7	Consider further sampling/analysis to establish whether asbestos is present within the sub-soil.
C8	Seal damaged edges with an appropriate sealant such as Emerclad paint.
C9	Encapsulate / enclose in accordance with the WHS Regulations 2011 and Code of Practice 'How to safely remove asbestos'
C10	Seal-off area and erect appropriate warning signage in accordance with AS 1319-1994 Safety Signs for the Occupational Environment
C11	Undertake a suitable and sufficient risk assessment prior to access, which may include the use of appropriate PPE and RPE.
C12	Restrict access to maintenance/service personnel.
C13	Restrict access to all personnel.
C14	Remove in accordance with the WHS Regulations 2011 and Code of Practice 'How to Safely Remove Asbestos'.
C15	Remove in accordance with the WHS Regulations 2011 and Code of Practice 'How to Safely Remove Asbestos' prior to any works in the area that may disturb the material.
C16	Undertake a dust sampling regime within the area in accordance with the WHS 2011 Code of Practice 'How to Manage and control asbestos in the Workplace'.
C17	Undertake airborne fibre monitoring within the area in accordance with the WHS Regulations 2011, code of Practice how to manage and control asbestos in the workplace and how to safely remove asbestos.
C18	A detailed roof inspection by a competent person, is inspected to investigate the potential for contamination in areas such as gutter, drains/pipes and air conditioning systems. Subsequent to this detailed inspection, recommendations can be made about the condition of the roof and an appropriate course of action detailed.

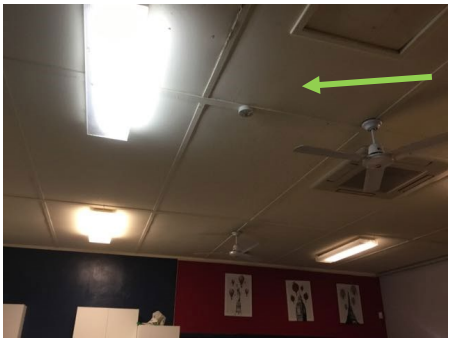
Note: Asbestos Survey Consultant to determine Control Measures based on Professional Judgement.

PRACTICAL ENVIRONMENTAL SOLUTIONS

APPENDIX E
Photographs of Materials Not Containing Asbestos

Staff Room

Photo No. 002: Throughout



The ceiling lining throughout was found to be Masonite®, **a product known to be a manmade, timber-based proprietary product.**

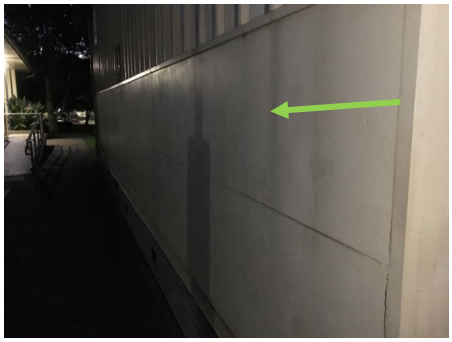
Library/Administration

Photo No. 003: Eaves & Soffits

The Flat Fibre Cement Sheet soffit lining to the eaves was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Pre-School/Art Rooms

Photo No. 004: External



The Fibre Reinforced Cement cladding to the building's exterior was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 005: External

The Flat Fibre Cement Sheet external HardiPlank® wall board with a wood grain finish was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

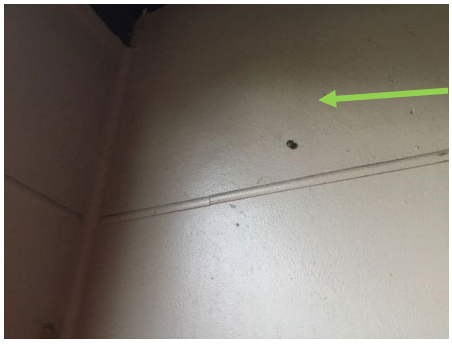
Photo No. 006: North-east elevation

The Fibre Reinforced Cement structural flooring to the north-east elevation was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 007: External western entry

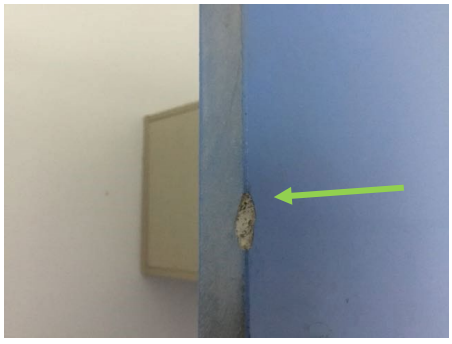
The Fibre Reinforced Cement structural flooring to the western entry was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 008: Western entry



The Flat Fibre Cement Sheet wall cladding in alcove to the western entry was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 009: Bathroom



The Fibre Reinforced Cement blue partitions to the bathroom were tested (by PES 2021) and **proved NOT to be an asbestos containing material.**

Photo No. 010: Ceiling void

Above the visible plasterboard ceiling lining is a secondary, remnant ceiling lining, **which was found to be made of the timber-based proprietary product Masonite®, a non-asbestos-containing material.**

Photo No. 011: Kitchen

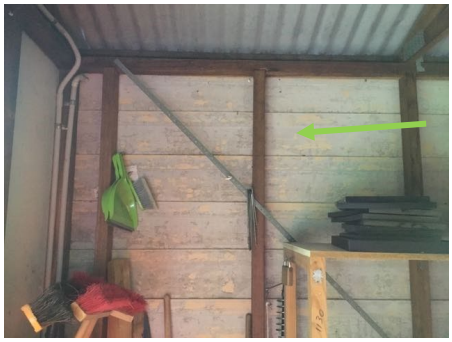
The Flat Fibre Cement Sheet wall lining to the kitchenette / office space was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 012: Storeroom

The Flat Fibre Cement Sheet wall lining to the storeroom was referred to a sample of like material in adjacent areas which **proved NOT to be an asbestos containing material.**

Storage Shed

Photo No. 013: Hardiplank® wall cladding



The Flat Fibre Cement Sheet Hardiplank® cladding with wood grain finish was previously tested (by PES, 2014) and **proved NOT to be an asbestos containing material.**

Photo No. 014: Inside left roller door

The Flat Fibre Cement Sheet wall lining to the inside left roller door was tested (PES 2021) and **proved NOT to be an asbestos containing material.**

PRACTICAL ENVIRONMENTAL SOLUTIONS

APPENDIX F
Laboratory Results

PRACTICAL ENVIRONMENTAL SOLUTIONS

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET34470/ 37650 / 1 - 7
Your ref : 10469 - Pre School HSA - Newcastle Grammar School, Union Street, Cooks Hill
NATA Accreditation No: 14484

2 August 2013

Practical Environmental Solutions
PO Box 167
Mayfield NSW 2304

Attn: Mr Tony Milligan

Dear Tony

Asbestos Identification
This report presents the results of seven samples, forwarded by Practical Environmental Solutions on 2 August 2013, for analysis for asbestos.

1.Introduction: Seven samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET34470 / 37650 / 1. PS1 - FRC board - Timber grain finished hard plank board on exterior of pre-school storage sheds.
Approx dimensions 1.5 cm x 1.2 cm x 0.35 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 2. ASET34470 / 37650 / 2. PS2 - FRC Board - Compressed flooring at kindergarten class rooms.
Approx dimensions 1.2 cm x 1.0 cm x 0.25 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 3. ASET34470 / 37650 / 3. PS3 - FFCS - Kindergarten store room walls - refer verandah partition.
Approx dimensions 2.5 cm x 2.0 cm x 0.3 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 4. ASET34470 / 37650 / 4. PS4 - FRC Board - Kindergarten external cladding boards.
Approx dimensions 1.5 cm x 1.2 cm x 0.3 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
PHONE: (02) 99872183 FAX: (02)99872151 EMAIL: aset@bigpond.net.au WEBSITE: www.Ausset.com.au

Sample No. 5. ASET34470 / 37650 / 5. PS5 - FFCS - Administration building eaves.
Approx dimensions 1.2 cm x 0.5 cm x 0.3 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 6. ASET34470 / 37650 / 6. PS6 - Insulation - Material from ceiling above stage + lighting cradle.
Approx dimensions 4.0 cm x 1.0 cm x 0.35 cm
The sample consisted of a fibrous mass of synthetic mineral fibres.
No asbestos detected.

Sample No. 7. ASET34470 / 37650 / 7. PS7 - FRC - Stage + dressing toilet partition walls.
Approx dimensions 0.8 cm x 0.6 cm x 0.3 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Analysed and reported by,

Nisansala Maddage. BSc(Hons)
Environmental Scientist/Approved Identifier
Approved Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

PRACTICAL
ENVIRONMENTAL
SOLUTIONS

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET93461 / 96641 / 1 - 2
Your ref : 21.3419 – Newcastle Grammar School Park Campus
NATA Accreditation No: 14484

20 May 2021

Practical Environmental Solutions
P O Box 167
Mayfield NSW 2304

Attn: Mr Tony Milligan

Dear Tony

Asbestos Identification
This report presents the results of two samples, forwarded by Practical Environmental Solutions on 20 May 2021, for analysis for asbestos.

1.Introduction: Two samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

3. Results : **Sample No. 1. ASET93461 / 96641 / 1. 21.3419 - PS8 - FFCS wall lining inside shed.**
Approx dimensions 4.0 cm x 1.5 cm x 0.45 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 2. ASET93461 / 96641 / 2. 21.3419 - PS9 - FRC partition to art room toilets.
Approx dimensions 1.0 cm x 1.0 cm x 0.45 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory

NATA
WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating "No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected.

PRACTICAL ENVIRONMENTAL SOLUTIONS

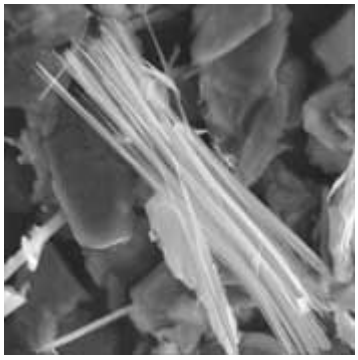
APPENDIX G
Hazardous Materials Information

TYPES AND USES OF ASBESTOS-CONTAINING MATERIALS

Asbestos refers to a group of magnesium silicates which have both a crystalline and a fibrous structure; the six most common are actinolite, chrysotile (white), tremolite, anthophyllite, crocidolite (blue) and amosite (brown or grey). The modern English word asbestos comes from the ancient Greek word asbestos, meaning 'unquenchable or inextinguishable'.

As a naturally occurring rock fibre, asbestos is mined then broken down from mineral clumps into groups of loose fibres.

During the 1950s, 1960s and early 1970s it was common to use asbestos as fire insulation on structural members and as fire rating of penetration core holes. Its thermal energy conservation properties were used to insulate hot and cold-water pipes and ducting. Asbestos was also used to a later date in products to increase their compressive and tensile strength. These products include fibre cement (FC) sheeting, bituminous mastic and membrane, vinyl tiles, electrical backing boards and many other products.



Asbestos is extremely resistant to heat and flame and is an excellent insulator. Its fibres are so light that they become airborne, and so flexible that they can be spun and woven into fabric. The fibres occur in two basic forms: amphiboles, which are straight needle-like fibres, and serpentine asbestos, whose fibres are curled and more flexible. Until recently, studies suggested that only amphiboles caused cancer. More recent research has established that Chrysotile fibres, which are serpentine, can also cause **mesothelioma**. Tremolite and Crocidolite, straight fibres, are considered more hazardous.

Major asbestos deposits are found in Russia, China, Canada, Brazil, Kazakhstan and Zimbabwe, and smaller outcrops are found in North America and southern Europe.

<u>Asbestos in the ancient world</u>

Humans have known about and used asbestos for 4000 years. The ancient Egyptians, Greeks, and Romans were familiar with asbestos, and regarded its resistance to flame was as akin to magic. They reserved asbestos for use in religious purposes, such as wicks for the sacred lamps used by the vestal virgins, priestesses of the goddess Vesta, protector of Rome. Asbestos was also used for cremation robes for emperors and other nobles. The Greek geographer Strabo and Pliny the Elder, a Roman historian and naturalist, both wrote about asbestos. Each of them noted that slaves who worked with the material frequently developed a sickness of the lungs.

The explorer Marco Polo travelled to Siberia, and later wrote of a cloth he was shown there that could be thrown into a fire and would not burn nor be consumed. His guides told him that it was woven from a mineral mined in the local mountains.

In the Middle Ages the emperor Charlemagne was believed to have magical powers. He convinced a group of hostile warlords of his powers when he pulled a tablecloth from the table, threw it into the fireplace, and then pulled it out, unburned. The cloth was woven of asbestos.

Modern industrial uses of asbestos

Asbestos has been used in industrial applications since about 1880. More than 3000 products using asbestos have been identified. The list of asbestos products includes fire resistant insulation, gas masks, water and sewage pipes, cement building materials, reinforcement in asbestos-cement products, brakes and clutches, sprayed fire-proofing products, floor tiles and coverings. Boilers and pipes in factories, steel plants, and power stations, as well as in hospitals, schools, and homes were insulated with asbestos products. Railroads and shipbuilding facilities have relied on asbestos as a primary insulator. Building contractors have used asbestos in industrial and domestic construction for thermal and acoustic insulation, protection from moisture and condensation and of course for fireproofing.

How asbestos causes cancer

Asbestos minerals consist of fibres that are easily separable. Individual fibres are extremely small and fine, light enough to be carried in the air.

In the course of mining, manufacturing, and installing products using asbestos, fibres are dislodged and become airborne. Workers have described mining and factory environments where the air was white with asbestos dust, and their clothes and hair were covered with the fine white fibres. Asbestos workers cannot avoid inhaling the airborne fibres, especially when ventilation is poor, and protective apparatus is insufficient or lacking.

Most inhaled fibres are cleared from the lungs within hours of inhalation. Coughing carries them to the throat in a layer of mucus, where they are either spit out, or swallowed, and make their way out of the body.

Inhaled asbestos fibres that are not expelled stay in the lungs, and progress into the alveoli, the tiny pockets within the lung where oxygen passes into the bloodstream. Once asbestos fibres reach the alveoli, they may remain for years, even the rest of a person's life. Amphibole asbestos fibres tend to remain in the lung the longest. Asbestos fibres tend to move toward the lower regions of the lungs. In autopsies, most asbestos disease of the lungs is found in the bottom lobes of the lungs and on the surface of the diaphragm, the large muscle that moves the lungs in breathing, which sits just under the lungs.

Asbestos fibres that remain embedded in the lungs can cause **mesothelioma**, **lung cancer**, and **asbestosis**, three serious and potentially fatal diseases. All of these diseases develop very slowly. The first symptoms of mesothelioma may not show up for 15, sometimes for as long as 40 years after the victim's exposure to asbestos. By the time symptoms are troublesome enough for a victim to seek medical attention; the mesothelioma may have progressed so far that the life expectancy will be measured in months.

TYPES, USES & EFFECTS OF SYNTHETIC MINERAL FIBRE (SMFs)

For more than 60 years glass fibre, mineral wool and ceramic fibre materials have been used in products for their thermal, acoustic and fire insulation properties and, in some products, as fibre reinforcement. These fibres have, in special circumstances, been used as a replacement for asbestos based materials. The fibres of all these types of materials are described as SMF and are categorised as an amorphous (non-crystalline) fibre.

The potential for detrimental health effects resulting from exposure to synthetic mineral fibre particularly glass wool and rock wool has for many years been the subject of conjecture, primarily due to its irritant properties. However, exhaustive research over a 30-year period by the IARC (International Agency for Research on Cancer) found this material to be non-carcinogenic to humans.

HISTORY, USES & EFFECTS OF POLYCHLORINATED BIPHENYLS (PCBs)

PCB is the acronym for a man-made compound formed from the chlorination of the chemical biphenyl; known as polychlorinated biphenyl.

The first PCB-like chemicals were discovered in 1865 as a by-product of coal tar, a known carcinogen. By 1914 enough PCBs had escaped into the environment to leave measurable amounts in the feathers of birds held in museums today. PCBs were first manufactured commercially in 1927 by a US company. The last year of manufacture in the US was 1983 but their use may continue today particularly in poorer nations.

PCBs are chemically related to dioxin-based pesticides such as the infamous defoliant, Agent Orange.

PCBs came to worldwide prominence during the 1950s for their thermodynamically stable or heat insulating properties which saw their use across a range of farming equipment and commercial products. The most common of the uses to everyday living most of us might have experienced is as the insulating oil in the capacitor of fluorescent lamp ballasts. They can be readily, and typically, recognized in these light fittings as a rectangular tin container with soldered seams.

PCBs are described as an oily or viscous liquid varying from colourless to dark shades of yellow or black. They do not readily breakdown and when released into the environment they can accumulate in the fatty tissues of animals and, once in the food chain, they become a hazard to humans. They are particularly harmful to young fish.

PCBs can enter your system by being absorbed through the skin, through inhalation of their vapour or by ingestion through the mouth. Prolonged exposure to high concentrations of PCB can cause problems including chloracne (a persistent acne-like rash), liver damage or damage to the central nervous system. PCBs are regarded as a carcinogen and a neurotoxin that can cause pregnancy problems with ensuing developmental effects in young children.

LEAD BASED PAINT

White lead (lead carbonate) was once the principal white pigment in paints for houses and public buildings. Its use was restricted in Queensland in 1923. In the other States, paint with lead pigment was manufactured up until the late 1960s, although in diminishing quantities from 1950 onwards. In 1969, the National Health and Medical Research Council's Uniform Paint Standard was amended to restrict lead content in domestic paint.

Many older Australian homes and buildings still contain lead paint, even though it may be covered with layers of more recent paint. It was used mainly on exterior surfaces and, to a lesser extent, on interior doors and architraves especially in undercoats and primers where concentrations of up to 20% lead were commonly used. Interior walls were not commonly painted with paint containing white lead, but some colours did contain red, yellow, or orange lead-chrome pigments. Although all paints manufactured for Australian dwellings from the 1970s onwards will have contained less than 1% lead, it is possible that industrial paints, having higher concentrations of lead, may have been applied to housing and commercial buildings.

AS 4361.2 Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings defines a lead-based paint as a paint film or component coat of paint system containing lead or lead compounds, in which the lead content is in excess of 1.0% by weight of the dry film as determined by laboratory testing.

Exposure to high levels of dust or paint can have negative effects in both children and adults. Exposure to lead may cause reproductive problems, high blood pressure, digestive, nerve, and memory issues, as well as muscular and joint pain.

Lead in any form is toxic to humans when ingested or inhaled. Repeated inhalation or ingestion of lead paint particles may produce the cumulative effects of lead poisoning or plumbism. Thus, lead paint removal methods give rise to two potential health problems, i.e., inhalation or ingestion of lead paint by the workers and the public in the vicinity of the structure and the deposition of lead paint particles on nearby footpaths, streets, or soil where they may be resuspended, tracked into houses or buildings where it can be inhaled or ingested. In most instances workers involved in paint management may be simply and easily protected by protective equipment, and the public may be protected by preventing access to the work site. However, lead paint deposition may be much more complex and difficult to manage depending on the size, shape, and location of the building.