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Fibre Identification Certificate of Analysis

Laboratory Report Number: T-03999 **Analyst:** [redacted] **Page** 2 of 2

Non Asbestos Fibre Table
* I0496 - Organic Fibres Detected
* I0497 - Organic Fibres Detected
* I0498 - Organic Fibres Detected
* I0499 - Organic Fibres Detected
* I0500 - Organic, Synthetic Mineral Fibres Detected
* I0501 - Organic Fibres Detected
* I0502 - Organic Fibres Detected

[redacted]

Robson Approved Identifier [redacted]

NATA No. 1681

Accredited for compliance with ISO/IEC 17025

[redacted]

Robson Approved Signatory [redacted]

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

Client ACT Property Group (Schools) T 03999_Yarralumla Primary School-Fibre Identification Certificate of Analysis_20170724 Page 2 of 2

Robson ENVIRONMENTAL

Evan Byrne
ACT Property Group
PO Box 777
Fyshwick ACT 2609

8/05/2018

Dear Evan,

Re: Asbestos analysis and Risk Assessment of pipe lagging insulation to hot water pipes in the sub floor of the Gambarri Centre and Montessori Building during [redacted] between the staff room and classroom 16 at Yarralumla Primary School on the 8th of May 2018.

Site Work

[redacted] ACT Asbestos Assessor of Robson Environmental sampled suspected asbestos containing material (ACM) from the above location. The analytical result is presented in Table 2 and a photograph in Appendix A.

Risk Assessment

A Risk Assessment was undertaken to enable informed decisions to be made concerning the management of ACM as per current legislation. This Risk Assessment takes into account:

- the type of ACM (non friable or friable)
- the condition and location of the ACM
- whether the ACM is likely to be disturbed due to its condition and location and
- the likelihood of exposure to asbestos fibre

Material Assessment Restrictions and Caveats

Robson Environmental has taken care to ensure that this report includes the most accurate information available. This report does not constitute a full register of asbestos containing materials at the above premises as required by current legislation. The material assessments, recommendations and/or conclusions contained in this report must not be used to absolve a person of their responsibility to work in accordance with relevant Statutory Requirements, Codes of Practice, Guidelines, Safety Data Sheets, Work Instructions or reasonable work practices.

Table 1 details the ratings for the condition and associated risk of each positively identified asbestos material at the time of the assessment. The ratings for each item are presented in Table 2.

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Table 1: ACM Condition & Risk Ratings

ACM CONDITION RATING		
1	**Severe**	Material in very poor condition
2	**Poor**	Deteriorated material and considerable damage
3	**Fair**	Minor damage or signs of weathering
4	**Good**	Well sealed stable material
ACM RISK RATING		
A	**Very High**	Exposure to airborne asbestos likely as a consequence of minor disturbance
B	**High**	Exposure to airborne asbestos possible as a consequence of minor disturbance
C	**Medium**	Exposure to airborne asbestos unlikely during normal building use
D	**Low**	Negligible exposure to airborne asbestos during normal building use

LABORATORY METHODOLOGY

The sampled material was double bagged and transported to Robson Environmental's National Association of Testing Authorities (NATA) accredited laboratory with a Chain of Custody (COC) form written by the assessor which was signed off on receipt by the laboratory. The received material was analysed for asbestos fibre content which is determined by Polarised Light Microscopy with dispersion staining techniques. Refer to Appendix B for the Certificate of Analysis.

The sample taken from suspected ACM is representative of the material sampled, individually identified, transported, analysed and reported in accordance with current legislation and Robson Environmental In-house Procedures 2 & 3.

All inspections, sampling, identification and reporting was undertaken in accordance with Robson Environmental's NATA, ISO9001, ISO14001 and AS4801 accreditations.

Non friable ACM

Non friable asbestos is any material that contains asbestos firmly bound into a matrix. It may consist of cement or various resins/binders and cannot be reduced to a dust by hand pressure. As such it does not present an exposure hazard unless cut, abraded, sanded or otherwise disturbed. Therefore, the exposure risk from non friable ACM is negligible during normal building occupation.

Note: If non friable ACM is damaged or otherwise deteriorated, the Risk Assessment must be reviewed to reflect a higher potential for exposure to asbestos fibres. When severely damaged, non friable ACM may be assessed as being friable. A licensed Asbestos Assessor must perform the Risk Assessment.

Friable ACM

Friable asbestos material can be crumbled or reduced to a dust by hand pressure when dry. It can represent a significant exposure hazard as a consequence of minor disturbance. Examples of friable asbestos are hot water pipe lagging, severely damaged asbestos cement sheet, limpet spray and electrical duct heater millboard.

Table 2: Sample Analysis Results

Sample Number	Location description	Material	Type	Risk Rating	Fibrous Content
01303	Sub floor below corridor between staff room and classroom 16	Pipe lagging (fibrous)	Friable	28	Chrysotile Asbestos

Asbestos containing material
Presumed asbestos containing material
Non- asbestos containing material

Conclusions & Recommendations

The pipe lagging insulation sampled from the hot water pipe in the sub floor of the Gambarri Centre and Montessori Building was found to contain chrysotile asbestos.

The asbestos pipe lagging was identified during an inspection for termite damage to the timber floor where access hatches were cut into the floor in the corridor between the staff room and classroom 16. These access hatches have been sealed and access to this area has been restricted.

It is recommended that the friable asbestos pipe lagging to the hot water pipes be removed by licensed Class A Asbestos Removalist as soon as possible. In addition the loose soil below the asbestos lagged pipes should be removed back to a hard packed surface. As a minimum the asbestos pipe lagging to the hot water pipes should removed from at least two meters beyond where the termite damage to the timber floor has occurred so as to facilitate the repair works and investigation of the termite damage. This will allow the pest control contractor safe access to complete the above mentioned repair works. Consideration should be given to remove all of the asbestos lagging to the pipes in this area. All of the asbestos removal works must be carried out under friable asbestos removal conditions. Air monitoring must be carried out during all friable asbestos removal works. It is presumed that the asbestos pipe lagging to the hot water pipes in sub floor continues as a minimum along the full length of the building.

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Asbestos Removal

Removal of ACM must be undertaken by a licensed Asbestos Removalist as per current legislation. The removal/remediation of friable ACM must be undertaken by a licensed Class A Asbestos Removalist. Removal or remediation of non friable asbestos may be undertaken by either an A or B Class Asbestos Removalist.

Prior to the commencement of any removal or remediation works associated with any amount or type of asbestos, a Building Certifier must be engaged and Building Approval sought from WorkSafe ACT and Comcare (where applicable) a minimum of 5 working days prior to the commencement of the works. An asbestos removal contractor must supply an Asbestos Removal Control Plan (ARCP) and a Safe Work Method Statement (SWMS). An independent licensed Asbestos Assessor should be engaged to ensure that the ARCP addresses all safety issues relating to the planned asbestos works.

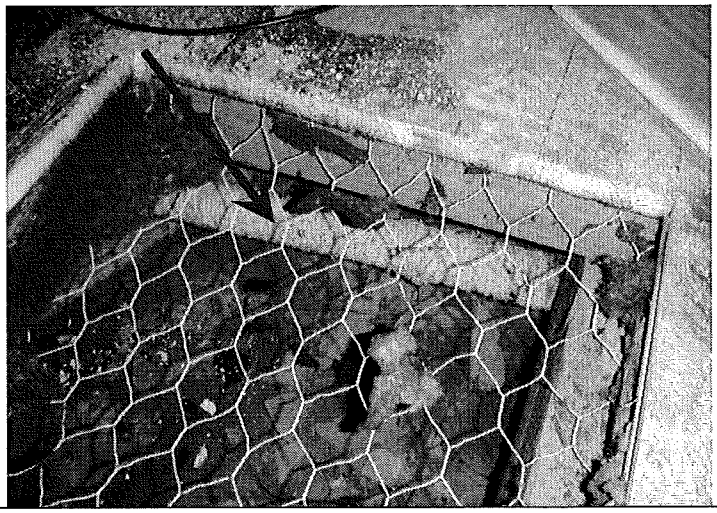
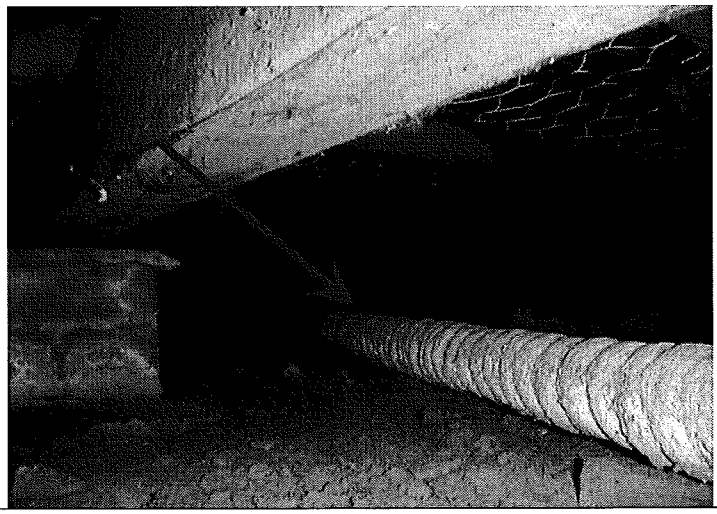
Air monitoring is mandatory during the removal or remediation of friable asbestos and should be considered during the removal or remediation of non friable asbestos. Air sampling is to be undertaken in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd* Edition [NOHSC: 3003(2005)] and test certificates must be National Association of Testing Authorities (NATA) endorsed.

An independent licensed Asbestos Assessor must also be employed to undertake a Clearance Inspection of both friable and non friable asbestos removal or remediation works. A satisfactory clearance certificate for the remediated areas must ensure that no visible asbestos or presumed asbestos remains, or that the ACM has been satisfactorily sealed or remediated. Additionally no asbestos fibres should be detected by laboratory analysis in any validation samples. All surfaces within the remediated area must be free of general dust and debris.

Yours sincerely,

Robson ENVIRONMENTAL

APPENDIX A - PHOTOGRAPH OF ACM

SAMPLE NO	LOCATION DESCRIPTION	MATERIAL	PHOTOGRAPH
O1303	Sub floor below corridor between staff room and classroom 16	Pipe lagging (fibrous)	
O1303	Sub floor below corridor between staff room and classroom 16	Pipe lagging (fibrous)	
O1303	Sub floor below corridor between staff room and classroom 16	Pipe lagging (fibrous)	

APPENDIX B - FIBRE IDENTIFICATION CERTIFICATE OF ANALYSIS

Fibre Identification Certificate of Analysis

Report Number: T-05803
R.E. Job Number: 7335471

Date of Report: 8/05/2018

Samples Taken by: [redacted]

Page 1 of 1

Client Details		Laboratory Details	
Client:	ACT Property Group (Schools)	Address:	140 Gladstone Street, Fyshwick, Canberra 2609
Attention:	ACT Response Centre	Manager:	[redacted]
Received:	08/05/2018	Telephone:	02 6239 5656
Client Reference:	Yarralumla Primary School	Fax:	02 6239 5669
Email:		Email:	hazmat@robsonenviro.com.au

Test Specification(s) Employed: AS4964 (2004) & In-House Procedure No.2

Methodology Summary

Samples of material are examined to determine the presence of asbestos fibres using AS4964 (2004) & In-House Procedure No.2 i.e. Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by **Polarised Light Microscopy (PLM)** in conjunction with **Dispersion Staining (DS)**. Unequivocal identification of asbestos minerals present is made by assessing fibre properties to see whether the values are typical and consistent with published data. This provides a reasonable degree of certainty to determine whether a fibre under investigation is asbestiform or not. Careful application of the test procedure provides sufficient diagnostic clues to allow unequivocal identification of asbestos types, and so, to determine whether a sample contains asbestos or not. If sufficient diagnostic clues are absent, then positive identification of fibrous asbestos is not possible.

Client Supplied Samples

Robson Environmental is not responsible for the accuracy or competence of sampling carried by third parties. Sample location(s) and/or sample type(s) of third party samples delivered to the laboratory are given by the client at the time of delivery. Under these circumstances, Robson Environmental cannot be held responsible for the interpretation of the results shown. When the test certificate indicates that bulk samples were taken by the client, they are outside the scope of our NATA Accreditation for sampling. Robson Environmental takes responsibility of information reported only when a staff member takes the sample(s).

Reporting of Results

'Asbestos Detected': Asbestos detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining (DS)**
'No Asbestos Detected': No Asbestos detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining (DS)**
'UMF Detected': Mineral fibres of unknown type detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining (DS)**. Confirmation by another independent analytical technique may be necessary.
"Hand-picked" refers to small discrete amounts of asbestos unevenly distributed in a large body of non-asbestos material.
Non asbestos fibres such as "Organic" and "Synthetic Mineral Fibres" detected in samples will be marked with an *. Please refer to non asbestos fibre table beneath main table.

Limit of Detection & Reporting Limit

Known limitations of the test procedure using **Polarised Light Microscopy (PLM)** are:

- **PLM** is a qualitative technique only;
- It does not cover identification of airborne or water-borne asbestos;
- The less encountered asbestos mineral fibres actinolite, anthophyllite and tremolite exhibit a wide range of optical properties that preclude unequivocal identification by **PLM** and **Dispersion Staining** (DS). Thus, the method is used to positively identify the three major asbestos minerals: amosite ("brown"), chrysotile ("white") and crocidolite ("blue");
- Valid identification requires that the sample material contains a sufficient quantity of the unknown fibres in excess of the practical detection limit used (in this case, **PLM** and **Dispersion Staining**, which has a calculated practical detection limit of 0.01-0.1% equivalent to 0.1-1g/kg (AS4946-2004:App. A4).

Results relate only to the sample(s) submitted for testing.
Test report must not be reproduced except in full.
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Sample No.	Client Ref.	Location	Physical Structure	Sample Description	Analysis of Fibrous Content
O1303		Sub floor below corridor between staff room and classroom 16	Pipe lagging (fibrous)	1g	Chrysotile Asbestos Detected

[redacted]
Robson Approved Identifier

NATA
No. 3161
Accredited for compliance with ISO/IEC 17025

[redacted]
Robson Approved Signatory

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Client: ACT Property Group (Schools)

7335471_T-05803_Yarralumla Primary School-Fibre Identification Certificate of Analysis_20180508

ASBESTOS CLEARANCE CERTIFICATE
INSPECTION PASS

Project/Location:	Yarralumla Primary School, Loftus Street, Yarralumla, ACT, 2600
Job Number:	7335471
Client:	ACT Property Group
Client Contact:	Evan Byrne
Time And Date Of Inspection:	15:00 Sunday, 13 May 2018
Date(s) And Description Of Work:	Removal of floor in corridor adjacent Staff Room and front entry. Removal of accessible lagging to hot water pipes and removal of soil and debris to hard packed substrate. 12-13/05/2018.
Asbestos Removalist:	

Certification:

A visual inspection was carried out on Sunday, 13 May 2018, by following the completion of the asbestos works listed above in accordance with Robson Environmental's NATA, ISO9001, ISO14001 and AS4801 accreditations. It should be noted that this clearance certificate relates only to the exact area(s) specified above.

The inspection found no visible asbestos residue from the asbestos work in the area or in the vicinity of the area where the work was carried out.

Air monitoring during the works returned results below the minimum practical detection limit of <0.01 F/mL.

The work area has been given the "all clear" and restrictions associated with the asbestos works can now be lifted and the area safely reoccupied.

Note: lagging was only removed as far as practicable. Lagging is still present where the pipes leave the removal area. These areas have been sealed with black paint, as have the remaining cleaned hot water pipes. Great care must be taken not to disturb remaining lagging. If works are to be conducted in this area (such as reflooring) by persons other than licensed Asbestos Assessors and Removalists they must be supervised and directed by a licensed Asbestos Assessor. It must be assumed that lagged pipes are present throughout all voids in the building.

The subfloor has been left open but sealed with plastic, as it is understood that it is to be repaired at a later date. Access should be prohibited to the area (to prevent slips, trips, and falls, as well as

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possible asbestos exposure). Any persons who are to perform work in the area including but not limited to replacing the floor must be

comprehensively briefed on ACM in this area.

Soil samples were taken as part of this inspection, with results to follow in a separate report. Until asbestos free results are received the plastic must remain in place. Should asbestos be detected in the soil further remediation works under friable conditions will be required.

Authorised by:

Appendix A – Air Monitoring Results

Report No: 7335471-180513-01

Respirable Fibre Estimation Test Report

Job No.: 7335471 **Sampling Date:** 12/05/2018 - 13/05/2018 **Report Issued:** 13/05/2018

Monitoring Location: Yarralumla Primary School, Loftus Street, Yarralumla, ACT 2600

Client Name & Address: ACT Property Group 255 Canberra Avenue Fyshwick ACT 2609

Work in Progress: Removal of friabel asbestos pipe lagging from hot water pipes in the subfloor

Asbestos Removalist: [redacted]

Test Specifications(s) Employed: NOHSC: Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)], In-House Procedure No. 1

Sample No.	Sample Location	Time On	Time Off	Av. Flow Rate	No. of Fields Counted	No. of Fibres Counted	Airborne Fibre Conc. (fibres/mL)
7335471-042	On windowsill in staff room -	08:25	08:03	1000	100	0	< 0.01
7335471-043	In corridor adjacent removal area -	08:27	08:07	1000	100	2	< 0.01
7335471-044	Adjacent external entry doors to removal area from front -	08:31	08:13	1000	100	0	< 0.01
7335471-045	Adjacent external entry doors to removal area from side -	08:33	08:17	1000	100	0	< 0.01
7335471-046	Field Blank	-	-	-	100	0	-

Field blanks and samples taken in direct flow of negative air units are reported as a fibre count only

TDR = Filter too heavily loaded with background dust to read

The Detection Limit of the analytical method is 0.01 fibres/mL
The Work Health and Safety Act 2011 Control Level for all forms of asbestos is 0.01 fibres/mL
Worksafe Australia's recommended Exposure Standard for all forms of asbestos is 0.1 fibres/mL

[redacted] Robson Approved Signatory

NATA No. 3181

[redacted] Robson Approved Counter

[redacted]

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Page 1 of 1

Report No: 7335471-180513-02

Respirable Fibre Estimation Test Report

Job No.: 7335471 **Sampling Date:** 13/05/2018 **Report Issued:** 13/05/2018

Monitoring Location: Yarralumla Primary School, Loftus Street, Yarralumla, ACT 2600

Client Name & Address: ACT Property Group 255 Canberra Avenue Fyshwick ACT 2609

Work in Progress: Removal of friabel asbestos pipe lagging from hot water pipes in the subfloor

Asbestos Removalist:

Test Specifications(s) Employed: NOHSC: Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)], In-House Procedure No. 1

Sample No.	Sample Location	Time On	Time Off	Av. Flow Rate	No. of Fields Counted	No. of Fibres Counted	Airborne Fibre Conc. (fibres/mL)
7335471-047	On decon -	08:03	15:32	1000	100	5.5	< 0.01
7335471-048	In corridor adjacent removal area -	08:07	15:34	1000	100	0	< 0.01
7335471-049	Adjacent external entry doors to removal area from front -	08:13	15:36	1000	100	0	< 0.01
7335471-050	Adjacent external entry doors to removal area from front -	08:17	15:38	1000	100	0	< 0.01
7335471-051	Field Blank	-	-	-	100	0	-
7335471-052	Clearance - in removal area on plastic to walls. Composite of two pumps run for 45 minutes, with results added to form one sample. -	14:59	16:30	4000	100	0	< 0.01

Field blanks and samples taken in direct flow of negative air units are reported as a fibre count only

TDR = Filter too heavily loaded with background dust to read

The Detection Limit of the analytical method is 0.01 fibres/mL
The Work Health and Safety Act 2011 Control Level for all forms of asbestos is 0.01 fibres/mL
Worksafe Australia's recommended Exposure Standard for all forms of asbestos is 0.1 fibres/mL

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[redacted] [redacted]

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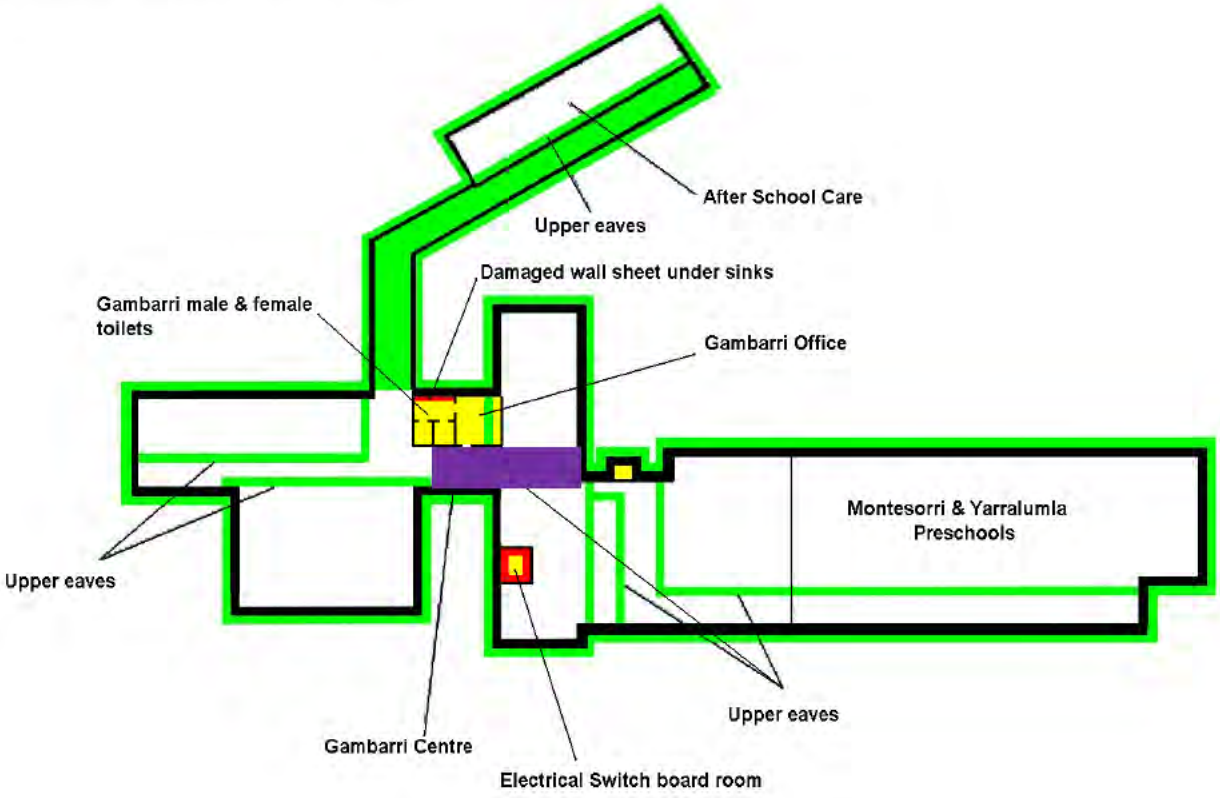
Appendix B – Photo(s)

Area of works

Areas of remaining lagging where pipes leave removal area

Appendix C – Site Plan(s)

Approximate area of works shown by purple rectangle



ASBESTOS CLEARANCE CERTIFICATE
INSPECTION PASS

Project/Location:	Yarralumla Primary School, Loftus Street Yarralumla, ACT, 2600
Job Number:	7335471
Client:	ACT Property Group
Client Contact:	Evan Byrne
Time And Date Of Inspection:	1820 on Monday, 14 May 2018
Date(s) And Description Of Work:	PVA glue encapsulation of subfloor soil, timber floor beams and visible lagged pipe ends under central corridor on 14 May 2018.
Asbestos Removalist:	

Certification:

A visual inspection was carried out on Monday, 14 May 2018, by following the completion of the encapsulation works listed above in accordance with Robson Environmental's NATA, ISO9001, ISO14001 and AS4801 accreditations. It should be noted that this clearance certificate relates only to the exact area(s) specified above.

The inspection found no visible asbestos residue from the asbestos work in the exact area of the removal work.

Air monitoring during the works returned results below the minimum practical detection limit of <0.01 F/mL.

Please note that sample number 7335471-054 was too dirty to read/analyse (TDR). It was located adjacent to the entry/exit of the removal area. Although the door was closed during PVA spraying, the licensed asbestos removalists used this doorway to enter/exit the removal area so very fine PVA glue aerosol droplets were sucked into the sample head and attached to the sample filter.

As shown on the next page, these are very round and do not look anything like respirable fibres but they do obscure the view of the sample filter and make it difficult to read. Although there were no

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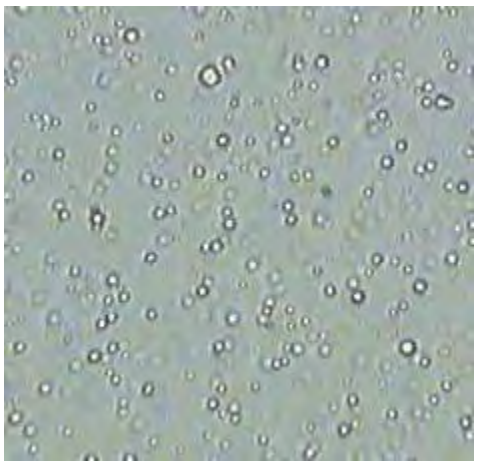
visible airborne fibres, it is a requirement of our NATA accreditation that this sample is deemed invalid. Since the PVA glue spraying process did not disturb the soil surface or the remaining pipe lagging, no elevated airborne fibre levels would have occurred at this sample location. This is verified by the low levels of airborne fibres observed on the other three sample filters.

The work area has been given the “all clear” and restrictions associated with the encapsulation works can now be lifted and the area safely reoccupied.



Example of PVA droplets on sample filter

Note: Lagging is still present where the pipes leave the removal area. These have been sealed with black paint and pink PVA glue. Care must be taken not to disturb remaining lagging. If works are to be conducted in this area (such as termite inspections or re-flooring) by persons other than licensed Asbestos Removalists, it is recommended that they be briefed by a licensed Asbestos Assessor.

Authorised by:

Appendix A – Air Monitoring Results

Report No: 7335471-180515-01

Respirable Fibre Estimation Test Report

Job No.: 7335471 **Sampling Date:** 14/05/2018 **Report Issued:** 15/05/2018

Monitoring Location: Yarralumla Primary School, Loftus Street, Yarralumla, ACT 2600

Client Name & Address: ACT Property Group 255 Canberra Avenue Fyshwick ACT 2609

Work in Progress: PVA glue encapsulation of subfloor soil, floor beams and lagged ends of existing pipes under central corridor.

Asbestos Removalist: [redacted]

Test Specifications(s) Employed: NOHSC: Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC: 3003 (2005)], In-House Procedure No. 1

Sample No.	Sample Location	Time On	Time Off	Av. Flow Rate	No. of Fields Counted	No. of Fibres Counted	Airborne Fibre Conc. (fibres/mL)
7335471-053	West of removal area - In central corridor -	16:01	18:09	3000	100	3	< 0.01
7335471-054	North of removal area - Adjacent removal area entry/exit in Teacher's Office -	16:05	18:10	3000	0	0	TDR
7335471-055	East of removal area - Outside building in covered area -	16:09	18:11	3000	100	1	< 0.01
7335471-056	South of removal area - Outside building adjacent car park -	16:13	18:12	3000	100	0	< 0.01
7335471-057	Field Blank	-	-	-	100	0	-

Field blanks and samples taken in direct flow of negative air units are reported as a fibre count only

TDR = Filter too heavily loaded with background dust to read

The Detection Limit of the analytical method is 0.01 fibres/mL
The Work Health and Safety Act 2011 Control Level for all forms of asbestos is 0.01 fibres/mL
Worksafe Australia's recommended Exposure Standard for all forms of asbestos is 0.1 fibres/mL

[redacted]
Robson Approved Signatory

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[redacted]
Robson Approved Counter

[redacted]

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Appendix B – Photo(s)

Looking East at removal area after pink PVA glue spraying

Looking West at removal area after pink PVA glue spraying

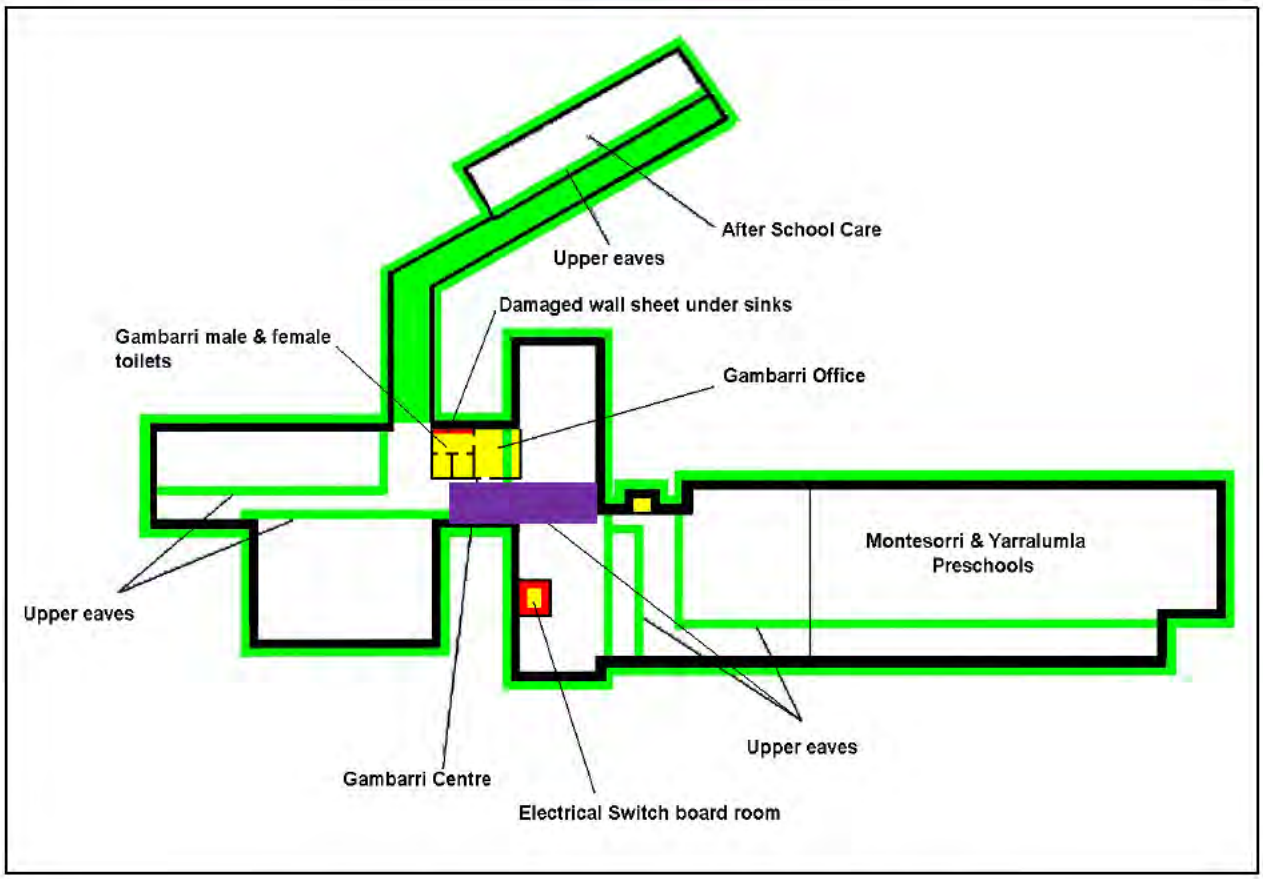
Visible lagging after black painting and before pink PVA glue spraying

Visible lagging after black painting and after pink PVA glue spraying

Visible lagging after black painting and before pink PVA glue spraying

Visible lagging after black painting and after pink PVA glue spraying

Appendix C – Site Plan(s)



Approximate area of works shown by purple rectangle

Robson ENVIRONMENTAL

Evan Byrne
ACT Property Group
PO Box 777
Fyshwick ACT 2609

22/05/2018

Dear Evan,

Re: Asbestos analysis and Risk Assessment of pipe lagging insulation to hot water pipes located in the wall cavity adjacent to the Staff room (Room 17) in the Gambarri Centre and Montessori Building at Yarralumla Primary School on the 21st of May 2018.

Site Work

[redacted] ACT Asbestos Assessor of Robson Environmental sampled suspected asbestos containing material (ACM) from the above location. The analytical result is presented in Table 2 and a photograph in Appendix A.

Risk Assessment

A Risk Assessment was undertaken to enable informed decisions to be made concerning the management of ACM as per current legislation. This Risk Assessment takes into account:

- the type of ACM (non friable or friable)
- the condition and location of the ACM
- whether the ACM is likely to be disturbed due to its condition and location and
- the likelihood of exposure to asbestos fibre

Material Assessment Restrictions and Caveats

Robson Environmental has taken care to ensure that this report includes the most accurate information available. This report does not constitute a full register of asbestos containing materials at the above premises as required by current legislation. The material assessments, recommendations and/or conclusions contained in this report must not be used to absolve a person of their responsibility to work in accordance with relevant Statutory Requirements, Codes of Practice, Guidelines, Safety Data Sheets, Work Instructions or reasonable work practices.

Table 1 details the ratings for the condition and associated risk of each positively identified asbestos material at the time of the assessment. The ratings for each item are presented in Table 2.

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Table 1: ACM Condition & Risk Ratings

ACM CONDITION RATING		
1	**Severe**	Material in very poor condition
2	**Poor**	Deteriorated material and considerable damage
3	**Fair**	Minor damage or signs of weathering
4	**Good**	Well sealed stable material
ACM RISK RATING		
A	**Very High**	Exposure to airborne asbestos likely as a consequence of minor disturbance
B	**High**	Exposure to airborne asbestos possible as a consequence of minor disturbance
C	**Medium**	Exposure to airborne asbestos unlikely during normal building use
D	**Low**	Negligible exposure to airborne asbestos during normal building use

LABORATORY METHODOLOGY

The sampled material was double bagged and transported to Robson Environmental's National Association of Testing Authorities (NATA) accredited laboratory with a Chain of Custody (COC) form written by the assessor which was signed off on receipt by the laboratory. The received material was analysed for asbestos fibre content which is determined by Polarised Light Microscopy with dispersion staining techniques. Refer to Appendix B for the Certificate of Analysis.

The sample taken from suspected ACM is representative of the material sampled, individually identified, transported, analysed and reported in accordance with current legislation and Robson Environmental In-house Procedures 2 & 3.

All inspections, sampling, identification and reporting was undertaken in accordance with Robson Environmental's NATA, ISO9001, ISO14001 and AS4801 accreditations.

Non friable ACM

Non friable asbestos is any material that contains asbestos firmly bound into a matrix. It may consist of cement or various resins/binders and cannot be reduced to a dust by hand pressure. As such it does not present an exposure hazard unless cut, abraded, sanded or otherwise disturbed. Therefore, the exposure risk from non friable ACM is negligible during normal building occupation.

Note: If non friable ACM is damaged or otherwise deteriorated, the Risk Assessment must be reviewed to reflect a higher potential for exposure to asbestos fibres. When severely damaged, non friable ACM may be assessed as being friable. A licensed Asbestos Assessor must perform the Risk Assessment.

Friable ACM

Friable asbestos material can be crumbled or reduced to a dust by hand pressure when dry. It can represent a significant exposure hazard as a consequence of minor disturbance. Examples of friable asbestos are hot water pipe lagging, severely damaged asbestos cement sheet, limpet spray and electrical duct heater millboard.

Table 2: Sample Analysis Results

Sample Number	Location description	Material	Type	Risk Rating	Fibrous Content
O1318	Gambarri Centre and Montessori Building - Wall cavity adjacent Staff room (room 17) - Pipe lagging to hot water pipes	Pipe lagging (fibrous)	Non-friable	2B	Chrysotile Asbestos

Asbestos containing material
Presumed asbestos containing material
Non- asbestos containing material

Conclusions & Recommendations

The pipe lagging insulation sampled from the hot water pipe in the wall cavity adjacent to the staff room (room 17) was found to contain chrysotile asbestos.

It is recommended that the access hatch to the wall cavity be locked and labelled. Also consideration should be given to remove the asbestos pipe lagging in the wall cavity as this area may need to be accessed for repair and maintenance works to the plumbing located in the wall cavity. All asbestos removal works must be carried out by a licensed asbestos removalist. It should also be noted that there is a no risk of exposure to staff and students due to the pipe lagging be in a wall cavity.

Only specific materials sampled and analysed in the Robson NATA accredited laboratory can be completely defined as being ACM or Non-ACM. All remaining visually consistent materials in the same vicinity are presumed as being the same material. However this is not a definitive statement that these materials are ACM or Non ACM. Extensive sampling may be advised in properties where construction materials used have not been consistent throughout.

Asbestos Removal

Removal of ACM must be undertaken by a licensed Asbestos Removalist as per current legislation. The removal/remediation of friable ACM must be undertaken by a licensed Class A Asbestos Removalist. Removal or remediation of non friable asbestos may be undertaken by either an A or B Class Asbestos Removalist.

Prior to the commencement of any removal or remediation works associated with any amount or type of asbestos, a Building Certifier must be engaged and Building Approval sought from WorkSafe ACT and Comcare(where applicable) a minimum of 5 working days prior to the commencement of the works. An asbestos removal contractor must supply an Asbestos Removal Control Plan (ARCP) and a Safe Work Method Statement (SWMS). An independent licensed Asbestos Assessor should be engaged to ensure that the ARCP addresses all safety issues relating to the planned asbestos works.

Air monitoring is mandatory during the removal or remediation of friable asbestos and should be considered during the removal or remediation of non friable asbestos. Air sampling is to be undertaken in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres, 2nd* Edition [NOHSC: 3003(2005)] and test certificates must be National Association of Testing Authorities (NATA) endorsed.

An independent licensed Asbestos Assessor must also be employed to undertake a Clearance Inspection of both friable and non friable asbestos removal or remediation works. A satisfactory clearance certificate for the remediated areas must ensure that no visible asbestos or presumed asbestos remains, or that the ACM has been satisfactorily sealed or remediated. Additionally no asbestos fibres should be detected by laboratory analysis in any validation samples. All surfaces within the remediated area must be free of general dust and debris.

Yours sincerely,

APPENDIX A - PHOTOGRAPH OF ACM

SAMPLE NO	LOCATION DESCRIPTION	MATERIAL	PHOTOGRAPH
O1318	Gambarri Centre and Montessori Building - Wall cavity adjacent Staff room (room 17) - Pipe lagging to hot water pipes	Pipe lagging (fibrous)	
	Location of access hatch to wall cavity behind children's painting in corridor adjacent the Staff room (room 17)		
	Location of access hatch to wall cavity behind children's painting in corridor adjacent the Staff room (room 17)		

APPENDIX B - FIBRE IDENTIFICATION CERTIFICATE OF ANALYSIS

Fibre Identification Certificate of Analysis

Report Number: T-05876
R.E. Job Number: 7335471
Date of Report: 21/05/2018
Samples Taken by: [redacted]
Page 1 of 1

Client Details	Laboratory Details
Client: ACT Property Group (Schools)	Address: 140 Gladstone Street, Fyshwick, Canberra 2609
Attention: ACT Response Centre	Manager [redacted]
Received: 21/05/2018	Telephone: 02 6239 5656
Client Reference: Yarralumla Primary School	Fax: 02 6239 5669
Email:	Email: hazmat@robsonenviro.com.au

Test Specification(s) Employed: AS4964 (2004) & In-House Procedure No.2

Methodology Summary

Samples of material are examined to determine the presence of asbestos fibres using AS4964 (2004) & In-House Procedure No.2 i.e. Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by **Polarised Light Microscopy** (**PLM**) in conjunction with **Dispersion Staining** (**DS**). Unequivocal identification of asbestos minerals present is made by assessing fibre properties to see whether the values are typical and consistent with published data. This provides a reasonable degree of certainty to determine whether a fibre under investigation is asbestiform or not. Careful application of the test procedure provides sufficient diagnostic clues to allow unequivocal identification of asbestos types, and so, to determine whether a sample contains asbestos or not. If sufficient diagnostic clues are absent, then positive identification of fibrous asbestos is not possible.

Client Supplied Samples

Robson Environmental is not responsible for the accuracy or competence of sampling carried by third parties. Sample location(s) and/or sample type(s) of third party samples delivered to the laboratory are given by the client at the time of delivery. Under these circumstances, Robson Environmental cannot be held responsible for the interpretation of the results shown. When the test certificate indicates that bulk samples were taken by the client, they are outside the scope of our NATA Accreditation for sampling. Robson Environmental takes responsibility of information reported only when a staff member takes the sample(s).

Reporting of Results

'Asbestos Detected': Asbestos detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining** (**DS**)
'No Asbestos Detected': No Asbestos detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining** (**DS**)
'UMF Detected': Mineral fibres of unknown type detected by **Polarised Light Microscopy** (PLM), including **Dispersion Staining** (**DS**). Confirmation by another independent analytical technique may be necessary.
"Hand-picked" refers to small discrete amounts of asbestos unevenly distributed in a large body of non-asbestos material.
Non asbestos fibres such as "Organic" and "Synthetic Mineral Fibres" detected in samples will be marked with an *. Please refer to non asbestos fibre table beneath main table.

Limit of Detection & Reporting Limit

Known limitations of the test procedure using **Polarised Light Microscopy** (**PLM**) are:

- **PLM** is a qualitative technique only;
- It does not cover identification of airborne or water-borne asbestos;
- The less encountered asbestos mineral fibres actinolite, anthophyllite and tremolite exhibit a wide range of optical properties that preclude unequivocal identification by **PLM** and **Dispersion Staining** (DS). Thus, the method is used to positively identify the three major asbestos minerals: amosite ("brown"), chrysotile ("white") and crocidolite ("blue");
- Valid identification requires that the sample material contains a sufficient quantity of the unknown fibres in excess of the practical detection limit used (in this case, **PLM** and **Dispersion Staining**, which has a calculated practical detection limit of 0.01-0.1% equivalent to 0.1-1g/kg (AS4946-2004:App. A4).

Results relate only to the sample(s) submitted for testing.
Test report must not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025

Sample No.	Client Ref.	Location	Physical Structure	Sample Description	Analysis of Fibrous Content
O1318		Gambarri Centre and Montessori Building - Wall cavity adjacent Staff room (room 17) - Pipe lagging to hot water pipes	Pipe lagging (fibrous)	<1g	Chrysotile Asbestos Detected

[redacted]
Robson Approved Identifier
[redacted]

NATA
No. 3181
Accredited for compliance with ISO/IEC 17025

[redacted]
Robson Approved Signatory
[redacted]

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

Robson Environmental Pty Ltd ~ ABN: 55 008 660 900 ~ www.robsonenviro.com.au
p: 02 6239 5656 ~ f: 02 6239 5669 ~ admin@robsonenviro.com.au
PO Box 112 Fyshwick ACT 2609 ~ 140 Gladstone Street Fyshwick ACT 2609

Client: ACT Property Group (Schools) 7335471_T-05876_Yarralumla Primary School-Fibre Identification Certificate of Analysis_20180521

Rhys Husselbee
ACT Property Group
255 Canberra Avenue
Fyshwick
ACT 2609
Client Ref. No. 30897

Date of Report: 6 December 2018

Dear Rhys

Re: Analysis of exposed wall sheet and visual assessment of the flooring in the Kitchen at Yarralumla Primary School on the 6 December 2018

Site Work

Asbestos Assessor from Robson Environmental sampled suspected asbestos containing material(s) (ACM) from the above location(s). The analytical results are presented in Table 1 and photographs in Appendix 1.

Material Assessment Restrictions and Caveats

Robson Environmental has taken care to ensure that this report includes the most accurate information available. This report does not constitute a full register of asbestos containing materials at the above premises as required by current legislation. The material assessments, recommendations and/or conclusions contained in this report must not be used to absolve a person of their responsibility to work in accordance with relevant Statutory Requirements, Codes of Practice, Guidelines, Safety Data Sheets, Work Instructions or reasonable work practices.

Laboratory Methodology

The sampled material was double bagged and transported to Robson Environmental's National Association of Testing Authorities (NATA) accredited laboratory with a Chain of Custody (COC) form written by the assessor which was signed off on receipt by the laboratory. The received material was analysed for asbestos fibre content which is determined by Polarised Light Microscopy with Dispersion Staining techniques. Refer to Appendix 2 for the Certificate of Analysis.

The sample taken from suspected ACM is representative of the material sampled, individually identified, transported, analysed and reported in accordance with current legislation and Robson Environmental In-house Procedures for Fibre Identification and for Surveys and Bulk Sampling.

All inspections, sampling, identification and reporting was undertaken in accordance with Robson Environmental's NATA, ISO9001, ISO14001 and AS4801 accreditations.

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Table 1: Sample Analysis Results

Sample Number	Location Description	Material	Fibrous Content
O1794	Kitchen area where cabinet had been removed	Wall sheet	No Asbestos Detected
VA1	Kitchen area adjacent to where cabinet had been removed	Masonite and timber flooring under brown vinyl floor covering	No Asbestos Detected

Asbestos containing material
Presumed asbestos containing material
Non-asbestos containing material

Conclusions & Recommendations

The exposed wall sheet sampled from within the Kitchen at Yarralumla Primary School was found to be non-asbestos and no further action is required. Additionally the flooring under the brown vinyl covering was found to be masonite attached to the timber floor boards.

Only specific materials sampled and analysed in the Robson NATA accredited laboratory can be completely defined as being ACM or Non-ACM. All remaining visually consistent materials in the same vicinity are presumed as being the same material. However this is not a definitive statement that these materials are ACM or Non-ACM. Extensive sampling may be advised in properties where construction materials used have not been consistent throughout.

Yours sincerely,