Hazardous Materials Survey

75 Warnervale Road, Warnervale NSW

N2680_HMS_R1_180818
August 2018

OHS | WASTE | ENVIRONMENT

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Hazardous Materials Survey

75 Warnervale Road, Warnervale NSW

N2680_HMS_R1_180818

August 2018

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DOCUMENT HISTORY AND STATUS

Rev	Status	Description	Author	Reviewer	Date
0	Final	Approved for Use Issued for Information	Michael Freund Licensed Asbestos Assessor (LAA001184)	Andrew Russell Managing Director / Principal Consultant	07/09/2018
1	Revised Final	Site Address amendment Approved for Use Issued for Information	Michael Freund Licensed Asbestos Assessor (LAA001184)	Andrew Russell Managing Director / Principal Consultant	19/09/2018

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ABBREVIATIONS

AC	Asbestos Cement
ACD	Asbestos Contaminated Dust or Debris
ACM	Asbestos-Containing Material
AMP	Asbestos Management Plan
ANZECC	Australian and New Zealand Environment and Conservation Council
ARCP	Asbestos Removal Control Plan
ASET	Australian Safer Environment and Technology
EDB	Electrical Distribution Board
FC	Fibre Cement
NATA	National Association of Testing Authorities
PCB	Polychlorinated Biphenyl
SMF	Synthetic Mineral Fibre
TWA	Time Weighted Average
XRD	X-Ray Diffraction

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1 INTRODUCTION

Hazmat Services Pty Ltd ("**Hazmat**") was commissioned by Brendon Grant of Klienfelder (the "**Client**") to undertake a hazardous materials survey of the existing buildings located on the site of the former Warnervale Public School (the "**Buildings**") located at 75 Warnervale Road Warnervale, NSW (the "**Site**").

The areas included in the survey are the accessible exterior and interior areas of the Buildings. Existing Site and Building Plans are contained in **Appendix A: Site Plans**.

The purpose of the survey which is required to be undertaken prior to any refurbishment or demolition works and which is also intended to meet owner/employer obligations under the *NSW Work Health and Safety Regulation 2017*, was to identify the location, extent and condition of accessible asbestos based construction materials present at the Site and also determine the likely impact of these materials on persons accessing the buildings or on any proposed demolition or refurbishment works. Furthermore, the *NSW Work Health and Safety Act 2011* requires that all premises containing asbestos have an Asbestos Management Plan.

In addition, Australian Standard *AS 2601-2001 - The Demolition of Structures*, specifies the requirement for a hazardous materials survey to be undertaken prior to demolition.

For the purpose of this report, hazardous materials include asbestos-containing materials ("**ACM**"), synthetic mineral fibres ("**SMF**"), lead based paint, lead in ceiling dust and polychlorinated biphenyl ("**PCB**") materials.

This report should be read in its entirety and with reference to the survey limitations outlined in **Section 8: Limitations and Disclaimer**.

For the purpose of this survey report north is defined as true north.

The Buildings were vacant at the time of the survey.

This report presents the findings of the hazardous materials survey undertaken on the 18th August 2018 by Hazmat's Michael Freund, Asbestos Assessor (LAA001184). Photographic records of hazardous materials were collected during the survey and are presented in the Hazardous Materials Register with an asbestos risk assessment which is contained in **Appendix B: Hazardous Materials Register**.

The following areas were inaccessible during the survey:

- Wall cavities;
- Sub-floor cavities and voids;
- Sub-surface concrete and soil layers of the Site; and
- Ceiling cavity of Block A.

2 SCOPE OF SURVEY

The survey was undertaken by way of a non-destructive visual inspection of construction materials located within visible and accessible areas of the Buildings at the Site.

2.1 Asbestos-Containing Materials

Sixteen samples of materials that were suspected of containing asbestos were collected and sent for analysis to Australian Safer Environment and Technology Pty Ltd.'s ("**ASET**") NATA registered laboratory. The samples were examined using a stereo microscope and selected fibres were further examined using Polarised Light Microscopy in conjunction with Dispersion Staining techniques.

One sample of vinyl floor tile required confirmatory analysis and was further analysed by X-Ray Diffraction ("**XRD**").

The NATA endorsed asbestos identification reports from ASET are contained in **Appendix C: Laboratory Analysis Results**.

Not all surfaces and suspected ACM were sampled due to the prohibitive cost and physical damage associated with the sampling process or were unable to be sampled due to their lack of accessibility (height), good condition (without causing damage), possibility of causing contamination. Where materials appear to be identical to those physically sampled, and confirmed by analysis to contain asbestos or assumed to contain asbestos based on their age, physical appearance or fixing types (i.e. nail and screw heads, cover strips or cover battens), the term "assumed asbestos" will be used in this report and thus indicates that it is highly likely that the material contains asbestos and should be treated as such unless positively confirmed otherwise.

2.2 Synthetic Mineral Fibre

SMF materials were identified by visual means or as a result of the asbestos identification analysis.

2.3 Lead Based Paint

Determination of lead based paints was conducted in accordance with *Appendix A – Identification of Lead in Paint, Method 2: Lead detection by laboratory testing* taken from *AS4361.2:2017 Guide to Hazardous Paint Management – Part 2: Lead Paint in Residential, Public and Commercial Buildings*.

Fourteen samples of paint scrapings/flakes were collected and sent Australian Laboratory Services ("**ALS**") a NATA accredited laboratory for analysis. The NATA endorsed laboratory analysis report from ALS is contained in **Appendix C: Laboratory Analysis Results**.

2.4 Lead in Ceiling Dust

Determination of lead in ceiling dust was conducted in accordance with *Appendix A – Identification of Lead in Paint, Method 2: Lead detection by laboratory testing* taken from *AS4361.2:2017 Guide to Hazardous Paint Management – Part 2: Lead Paint in Residential, Public and Commercial Buildings*.

Four surface swab samples of dust were collected and to ALS for analysis. The NATA endorsed laboratory analysis report from ALS is contained in **Appendix C: Laboratory Analysis Results**.

2.5 Polychlorinated Biphenyls

Representative fluorescent light fittings were inspected where present and accessible to assess the presence of capacitors that may contain PCB's. The identification details printed on the capacitor were recorded and later compared to the Australian and New Zealand Environment and Conservation Council ("**ANZECC**") *Identification of PCB-Containing Capacitors* register to determine whether the capacitor contained PCB.

3 EXTENT OF SURVEY

Fundamental to the entire basis of an inspection of this type, where the constraints of a "non-destructive" survey are imposed, is the fact that no matter how thorough or professionally it is conducted, not all hazardous materials might be found and recorded.

Hence, the presence of hazardous materials can therefore be reported only within the constraints of these methods.

Whilst one can be reasonably confident that all hazardous materials that might be routinely encountered in the normal day-to-day activities of the building can be identified and assessed, no guarantees can be made that all hazardous materials have been identified since refurbishment and demolition activities may well reveal hazardous materials in areas inaccessible to this inspection.

This report is confined to reporting the discovery and presence of hazardous materials by visual inspection and non-destructive method of those areas of the buildings accessible to and inspected by Hazmat at the date of the inspection. Hazmat will not be liable in the event the report fails to notify the presence of any hazardous materials in any area of the building (or property) which was on the date of inspection physically inaccessible for inspection using the methods employed or which was not otherwise inspected on that day. Nothing herein contained implies that any inaccessible or uninspected area of the building reveals or does not reveal hazardous materials.

The survey was limited to the buildings structures and associated buildings elements. Hazardous materials which may be present in the ground associated with the former occupancies are generally not included in this report.

4 ASBESTOS RISK ASSESSMENT

The potential health risks posed by ACM in premises are due to a number of risk factors including:

- Accessibility of the material
- Friability of the material
- Condition of the material
- Location of the material

The methodology used in our risk assessment is based on the Australian Standard *AS4360-2004 Risk Management*. The hazard levels for this assessment have been assessed according to the information provided in **Table 1.**

Table 1: Asbestos Risk Assessment – Hazard Levels

Risk Factor / Description			Hazard Level
ASBESTOS TYPE	***Bonded or Non-Friable***	Materials that contain asbestos in a bonded matrix (may consist of Portland cement or various resin/ binders and cannot be crushed by hand when dry).	2
	Friable	ACM which, when dry, is or may become crumbled, pulverised or reduced to powder by hand pressure.	3
CONDITION	***Good***	No sign of damage or deterioration.	1
	Fair	Only mild damage or deterioration.	2
	Poor	Severe damage or deterioration.	3
LOCATION	***Low***	Totally enclosed behind a false ceiling or wall, sealed or painted.	1
	Moderate	Partially protected by encapsulation or enclosure.	2
	High	No encapsulation or enclosure.	3
AIRBORNE POTENTIAL	***Low***	No exposure to air movement.	1
	Moderate	Exposed to natural ventilation.	2
	High	Exposed to forced ventilation or within an air plenum (i.e. intakes/vents, air conditioners, fans).	3
EXPOSURE	***Low***	Activities undertaken in the area are not likely to result in further damage or deterioration of the material.	1
	Moderate	Activities undertaken in the area may result in further damage or deterioration of the material.	2
	High	Activities undertaken in the area are likely to result in further damage or deterioration of the material.	3

The multiplication of the hazard level from the asbestos type and each risk factor can be then used to determine the recommended health risk/action priority rating as provided in **Table 2**.

Table 2: Asbestos Risk Assessment – Recommended Health Risk/Action Priority Rating

Rating		Definition
Health Risk	**Negligible**	Products or Bonded ACM that pose negligible health risk to employees and the general public, such as painted cement sheeting, vinyl floor tiles etc. They consist of materials that currently are in an undamaged, stable, non-friable condition within a low accessible area. The ACM does not present a health risk unless disturbed by intrusive work such as drilling, cutting, breaking or sanding. Control must be implemented to protect these materials from damage including ACM identified by warning signs. Reassessment of the priority rating will be required if any planned maintenance, refurbishment or demolition works impact on their condition. If damage, maintenance work should be carried out to stabilise and repair the damaged area.
Hazard Level	**0 - 3**	
Action Priority	**P4**	
Health Risk	**Low**	Products or materials that pose little health risk to employees and the general public. They consist of ACM that currently are in a stable, non-friable condition and have a low accessibility. These materials should be identified and warning signs erected. The material does not present a health risk unless disturbed by intrusive work such as drilling, cutting, breaking or sanding. Where planned maintenance, refurbishment or demolition works will disturb these materials, removal by a licensed asbestos removal contractor is required.
Hazard Level	**4 – 19**	
Action Priority	**P3**	
Health Risk	**Moderate**	Products or materials that pose a health risk to employees and the public in their current state. They consist of ACM that are mildly damaged, moderately friable and accessible. Removal or encapsulation and regular monitoring are recommended for these materials. Where planned maintenance, refurbishment or demolition works will disturb these materials, removal by a licensed asbestos removal contractor is required.
Hazard Level	**20 – 49**	
Action Priority	**P2**	
Health Risk	**High**	Products or materials that pose an immediate or elevated risk to employees or the public in their current state. They consist of materials that are readily accessible, in poor friable condition. Immediate actions should be taken for these materials to be removed by a licensed asbestos removal contractor is required.
Hazard Level	**> 50**	
Action Priority	**P1**	

5 SAMPLE IDENTIFICATION RESULTS

5.1 Asbestos Identification Analysis

Sixteen samples were collected for asbestos identification analysis during the survey with the results shown in **Table 3**. The NATA endorsed report (ASET Report Ref: ASET67039/70219/1-16) detailing the results of the asbestos identification analysis is attached in **Appendix C: Laboratory Analysis Results**.

Table 3: Asbestos Identification Analysis Results

Sample No.	Description	Asbestos Detected
N2680/01	Block A, Step Treads, Compressed cement sheeting.	No Asbestos Detected
N2680/02	Block A Pier Packers, Fibrous cement sheeting.	No Asbestos Detected
N2680/03	Block A Eave Linings, Fibrous cement sheeting	No Asbestos Detected
N2680/04	Block A Ceiling lining, Fibrous cement sheeting	No Asbestos Detected
N2680/05	Block B Subfloor infill panel, Fibrous cement sheeting	No Asbestos Detected
N2680/06	Block B Electrical Switch Board, Zelminite	**Chrysotile Asbestos Detected**
N2680/07	Block B, Vinyl Tiles, Linoleum.	*Confirmatory Analysis Required**
N2680/08	Block B, Floor underlay, Fibrous cement sheeting.	No Asbestos Detected
N2680/09	Block B, Disabled Toilet Ramp, Fibrous Cement sheeting	No Asbestos Detected
N2680/10	Block B, Eave Lining, Fibrous cement sheeting.	No Asbestos Detected
N2680/11	Block B, Window Putty.	No Asbestos Detected
N2680/12	Block C, Window Putty	No Asbestos Detected
N2680/13	Block D, Ladies Toilet wall Linings, Fibrous cement sheeting.	No Asbestos Detected
N2680/14	Block D, Men's Toilet wall linings, Fibrous cement sheeting.	No Asbestos Detected
N2680/15	Block D, Cleaners store room ceiling lining, Fibrous cement sheeting.	No Asbestos Detected
N2680/16	Block D, Eave Lining, Fibrous Cement sheeting.	No Asbestos Detected

Notes: Chrysotile is a fibrous silicate mineral commonly known as white asbestos. Amosite is a fibrous silicate mineral commonly known as brown or grey asbestos. Crocidolite is a fibrous silicate mineral commonly known as blue asbestos.

* No asbestos detected by Polarised Light Microscopy Method. The analysing laboratory recommends that an independent confirmatory analytical technique is conducted due to the nature of the sample.

Sample N2680/07 was further analysed for asbestos identification by XRD, with the result shown in **Table 4**. The NATA endorsed report (ASET Report Ref: ASET67039/ 70219-1) detailing the results of the XRD asbestos identification analysis is attached in **Appendix C: Laboratory Analysis Results**.

Table 4: Asbestos Identification Analysis Results

Sample No.	Description	Asbestos Detected
N2680/07	Block B, Vinyl Tiles, Linoleum.	No asbestos detected**

Notes: ** No Serpentine or Amphibole minerals detected.

5.2 Lead Based Paint Sampling

Ten samples of paint were collected and tested for the presence of lead with results shown in **Table 5**.

Table 5: Lead Based Paint Sampling Results

Sample No.	Description	Lead Detected %
N2680/L2	Block B, Yellow Paint to Veranda Posts	**0.29%**
N2680/L3	Block B, Brown Paint to Hand Rails	**1.29%**
N2680/L4	Block B Windows and Door Frames	**1.76%**
N2680/L5	Block B, Weather Boards	**2.16%**
N2680/L9	Block C Weather Boards	**0.20%**
N2680/L10	Block C Windows and Door Frames	**2.05%**
N2680/L11	Block D Windows and Door Frames	**1.74%**
N2680/L12	Block D Fascia's	**0.85%**
N2680/L13	Block E Weather Boards	**0.13%**
N2680/L14	Block E, Windows and Door Frames	**0.11%**

5.3 Lead in Ceiling Dust

Four samples of ceiling dust were collected and tested for the presence of lead with results shown in **Table 6**.

Table 6: Lead Based Paint Sampling Results

Sample No.	Description	Lead Detected mg/m^2
N2680/L1	Block B, Ceiling Cavity East Elevation, dust Swab	14.6
N2680/L6	Block B, Ceiling Cavity West Elevation, dust Swab	20.6
N2680/L7	Block C, Ceiling Cavity West Elevation, dust Swab	2.9
N2680/L8	Block C, Ceiling Cavity, East Elevation, dust Swab	3.6

6 RESULTS OF SURVEY

Detailed results of the hazardous materials discovered during the survey are contained **Appendix B: Hazardous Materials Register**.

75 Warnervale Road, Warnervale. NSW

The former Warnervale Public School located at the Site consists of single storey buildings.

Block A is a demountable building constructed of metal exterior cladding and flat corrugated roofing. Interior is of plywood wall linings with fibrous cement sheet ceilings and aluminium window frames.

Blocks B & C are of timber frame and weather board construction on piers with timber floors and corrugated iron roofing. Interior construction is of 'Masonite' wall linings, fibrous plaster ceilings and timber window frames.

Block D is constructed of brick masonry with corrugated iron roofing, fibrous cement sheet ceilings to the interior and timber window frames.

Block E is of timber frame construction with lined with weather boards to the exterior and plaster internal wall linings.

Table 7 provides a summary of the hazardous materials present within the Buildings at the Site during the time of the survey.

Table 7: Summary of Hazardous Materials

Site Address	ACM	SMF	Lead	PCB	Comments
75 Warnervale Road, Warnervale NSW	✓	✓	✓	✗	

7 RECOMMENDATIONS

These recommendations are made with the view that the Buildings at the Site are to be demolished.

7.1 Asbestos-Containing Materials

ACM that were discovered at the Site are detailed in **Appendix B: Hazardous Materials Register**. Only one asbestos-containing pitch-based electrical backing board was found within Block B at the Site. No other ACM was detected in samples collected. Based on the results, materials that were of similar appearance to those tested negative for asbestos have been assumed to not contain asbestos or listed in the Hazardous Materials Register as "not likely to contain asbestos".

Materials listed in the Hazardous Materials Register "not likely to contain asbestos" should have their composition confirmed if suspected of containing asbestos. Materials listed as "assumed" should be treated as ACM unless confirmed otherwise.

In addition, ACM may be present in areas that were inaccessible during the survey including but not limited to ceiling spaces, sub-floor voids, wall cavities and subsurface concrete and soil layers of the Site.

In its current state, the ACM located at the Site would meet the definition of "**non-friable**" asbestos as defined in the *NSW Work Health and Safety Regulation 2017* and on page 9 of the *Working with Asbestos Guide - 2008* produced by NSW WorkCover Authority.

These ACM should be removed by a Class A or Class B licensed asbestos removal contractor under controlled asbestos conditions in accordance with all relevant regulations prior to any refurbishment or demolition works.

Removal of ACM is to be undertaken in accordance with the regulations and requirements of the NSW Government and Safe Work Australia, these being:

- *NSW Work Health and Safety Act 2011*;
- *NSW Work Health and Safety Regulation 2017*;
- *Code of Practice: How to Manage and Control Asbestos in the Workplace*;
- *Code of Practice: How to Safely Remove Asbestos*; and
- *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [NOHSC:3003 (2005)]*.

All ACM and assumed ACM identified in **Appendix B: Hazardous Materials Register** should be removed in accordance with the *Code of Practice: How to Safely Remove Asbestos* prior to any refurbishment or demolition works being undertaken. Any work involving the disturbance or penetration of these materials must be undertaken under controlled conditions. Following the ACM removal, visual and air clearances should be provided by competent persons to validate that the ACM have indeed been removed.

An Asbestos Removal Control Plan ("**ARCP**") is to be developed by the licenced asbestos removalist to address the requirements of NSW legislation.

Air monitoring should be undertaken during asbestos removal work. Air monitors are to be placed around the boundaries of the Asbestos Work Area by a Licensed Asbestos Assessor or Competent Person (e.g. Hazmat) during all stages of the work. All air monitoring and clearance inspections will be carried out by the Licensed Asbestos Assessor or Competent Person to Safe Work Australia and NATA Standards.

The Time Weighted Average ("**TWA**") airborne concentrations for asbestos shall not exceed the legislated exposure standard of 0.1 fibres per millilitre for Chrysotile, Amosite and Crocidolite, any mixture of these, or where the composition is unknown.

Visual clearance inspections and air clearance monitoring and soil validation sampling must be undertaken at the completion of asbestos remediation works by a Licensed Asbestos Assessor or Competent Person to validate that the asbestos contamination has indeed been removed and that the affected areas are safe for re-occupation.

Asbestos waste is to be disposed at an approved waste collection facility and disposal dockets provided to record that the asbestos was disposed of in the appropriate manner.

Should any ACM remain *in-situ*, and as required under the *NSW Work Health and Safety Regulation 2017*, an Asbestos Management Plan ("**AMP**") should be initiated to ensure tradespersons undertaking works at the property are made aware of the presence and location of all ACM.

The following recommendations would apply for *in-situ* ACM:

- All ACM should be labelled to warn of the presence of asbestos in accordance with the *NSW Work Health and Safety Regulation 2017* and the *Code of Practice: How to Manage and Control Asbestos in the Workplace*.
- Any ACM identified should be regularly maintained and painted and should not be sawn, drilled or abraded. Any work involving the disturbance or penetration of these materials must be undertaken under controlled conditions.
- Broken or damaged sections of ACM should be removed and replaced with suitable non-asbestos alternatives.
- Regular monitoring of the condition of the ACM identified in this report and replacement with suitable non-asbestos alternatives if damaged or structural alteration is required.

7.2 Synthetic Mineral Fibre

SMF materials were identified as detailed in **Appendix B: Hazardous Material Register**.

SMF materials should be removed if damaged or in poor condition and prior to refurbishment or demolition works if they are to be disturbed as part of that work.

Removal of SMF should be carried out in accordance with the current requirements of SafeWork NSW recommendations and documentation, these being:

- *Safe Management Of Synthetic Mineral Fibres (Smf) – Glasswool And Rockwool* (SafeWork NSW – 1 May 2015)
- *National Standard for Synthetic Mineral Fibres [NOHSC:1004(1990)];*
- *National Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)];* and
- Guidance Note on the Membrane Filter Method for the Estimation of Airborne Synthetic Mineral Fibres *[NOHSC:3006(1989)]*.

7.3 Lead Based Paint

Lead based paints were identified as detailed in **Appendix B: Hazardous Material Register**.

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:

- *NSW Work Health and Safety Regulation 2017*;
- Safe Work Australia exposure standard for airborne lead is 0.15 mg/m^3 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*; and
- *Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices – A Guide for Council's May 2003*, published by NSW EPA and 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 Waste Classification Guidelines Part 1: Classifying Waste, 2014* to ensure correct disposal procedures are followed.

7.4 Lead in Ceiling Dust

Lead was detected in the surface swab samples of ceiling dust collected.

There are currently no regulations or standards for acceptable levels of lead in ceiling dust in Australia. Generally, guidance documentation available from NSW EPA and SafeWork NSW recommends that if lead is present in ceiling dust that the dust is removed under controlled conditions during demolition to prevent worker exposure to elevated levels of lead.

The precautions which should be taken when demolishing buildings containing lead include:

- Use work practices that minimise the generation of lead dust;
- Clean work areas properly during and after work;
- Wear the appropriate PPE, and
- Maintain good personal hygiene.

The current regulations, standards and guidelines relating to the removal and disposal of lead dust include the following:

- *NSW Work Health and Safety Regulation 2017*;
- Safe Work Australia exposure standard for airborne lead is 0.15 mg/m^3 as an 8 hour TWA;
- *Managing Lead Contamination in Home Maintenance, Renovation and Demolition Practices – A Guide for Council's May 2003*, published by NSW EPA and Planning NSW;
- The *Code of Practice for Managing Health and Safety Risks Associated With Demolition Work*; and
- *NSW EPA Waste Classification Guidelines Part 1: Classifying Waste, 2014*.

7.5 Polychlorinated Biphenyl's

There were no fluorescent light fittings likely to contain PCB capacitors sighted during the time of the survey.

Where PCB containing capacitors are found, they should be handled and/or disposed of in accordance with the *PCB Chemical Control Order In Relation to Materials and Wastes Containing Polychlorinated Biphenyl, 1997*, issued by the Environment Protection Authority of NSW and the *PCB Management Plan* issued by ANZECC.

8 LIMITATIONS AND DISCLAIMER

The survey Hazmat conducted for you was undertaken by visual inspection and through non-destructive means of those areas of the building (being the building structure and associated building elements) that were accessible to us at the time of our inspection. This means, therefore, that Hazmat cannot guarantee that each and every hazardous material that exists within the building has been located, identified and documented by us in this report.

Hazmat prepared this report for the purpose set out in **Section 1** 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 Hazmat'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 Hazmat so that we may discuss your wishes in further detail with you.

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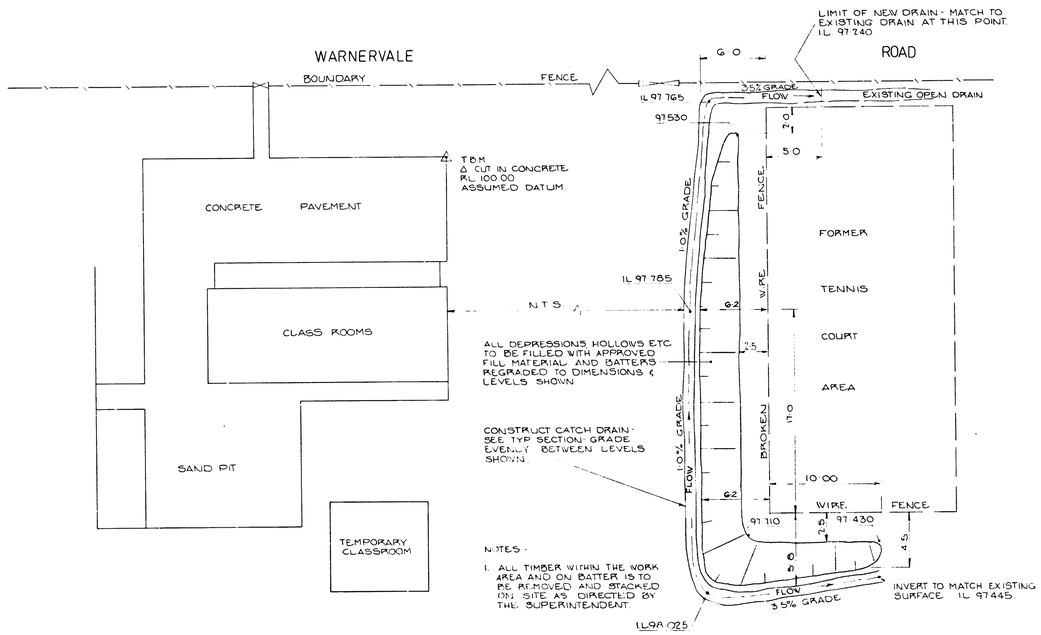
Hazmat have relied upon information identified in this report and have assumed this information to be both adequate and accurate for the purpose of preparing this report for you. Hazmat have not, therefore, verified or audited any of the information you, or others, have supplied to us. If there is further information that becomes available, Hazmat may need to amend the information contained in this report. Hazmat reserves their right to do so should this become necessary.

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

APPENDICES

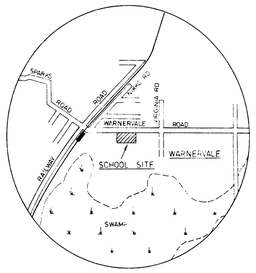
APPENDIX A: SITE PLANS



PLAN

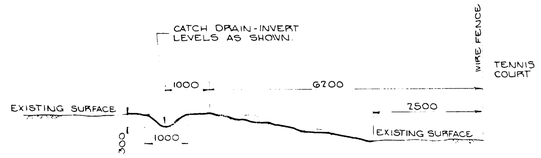
0 4 8 12 15m

1 200



LOCALITY PLAN

N.T.S.



TYPICAL SECTION

0 1000 2000 3000 4000 5000mm

1 50

MK	DETAILS OF AMENDMENTS	APPROVED	DATE

ALL LEVELS ARE IN METRES.
ALL OTHER DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE

SINCLAIR KNIGHT & PARTNERS PTY LTD
CONSULTING ENGINEERS
1 CHANDOS STREET ST LEONARDS N.S.W. 2065
TELEPHONE 439 7866
Member

DRAWN	TRACED	DESIGNED	APPROVED
B	SMW		
SCALE AS SHOWN		SHEET SIZE 6	DRAWING No 3385-10

DEPARTMENT OF PUBLIC WORKS N.S.W.
W. K. PILZ DIRECTOR OF PUBLIC WORKS
J. P. MESSNER CHIEF ENGINEER

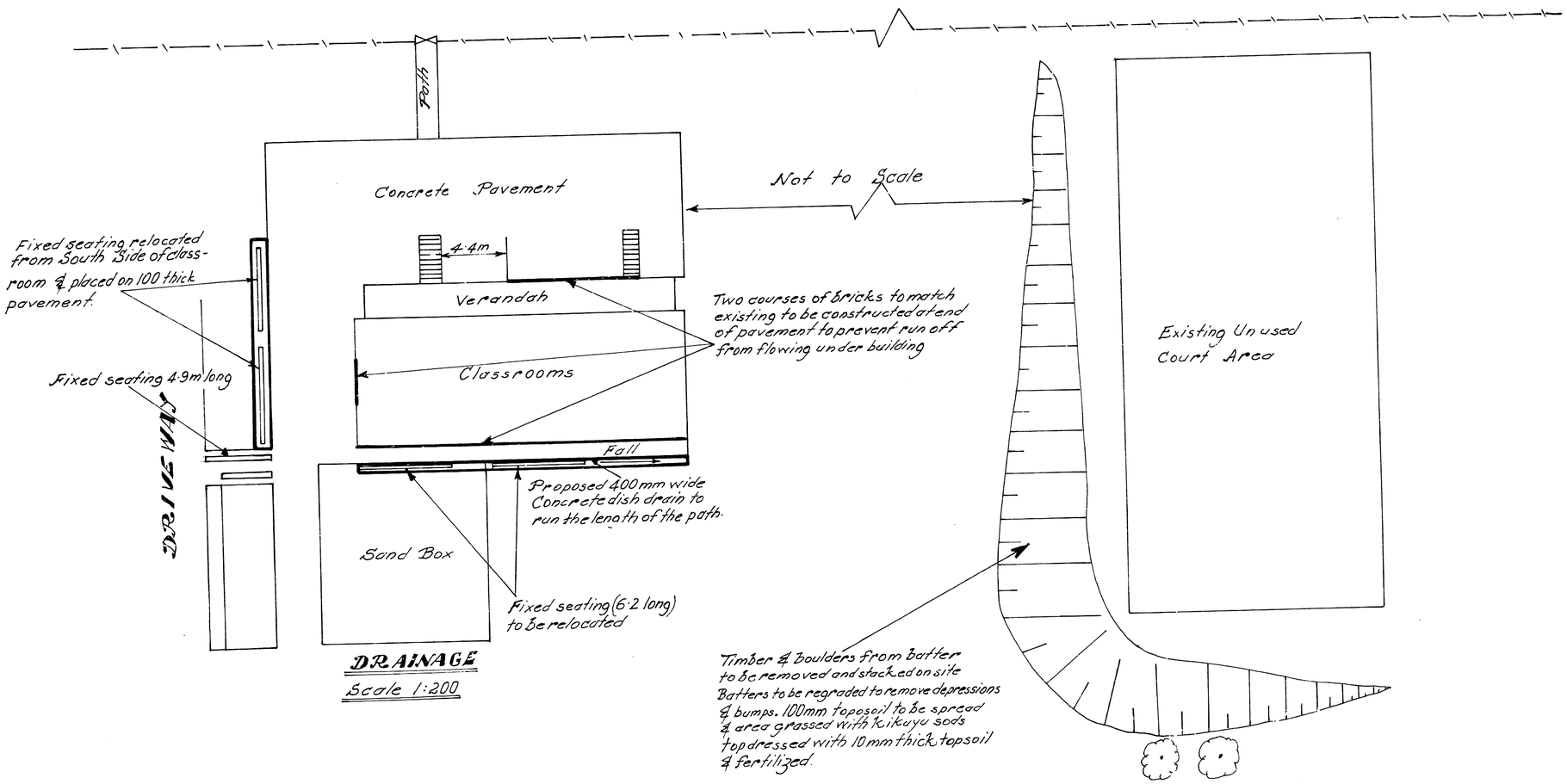
WARNERVALE PUBLIC SCHOOL
GROUND IMPROVEMENTS

FILE

DRAWING 812319 - 1

B1

300m.m. ON ORIGINAL SCALE



DRAINAGE

Scale 1:200

Drawn by F.C. April 1977

DEPARTMENT OF PUBLIC WORK

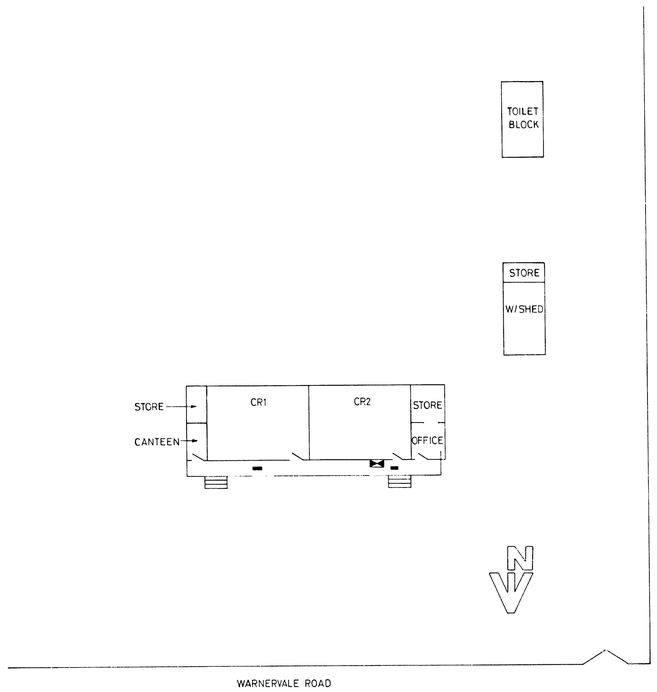
WARNERVALE PUBLIC SCHOOL

Drainage

M 77032 - 1

File No MD7728/1

300m.m. ON ORIGINAL SCALE



SITE PLAN

MINOR BUILDING SERVICES/WORKS CONTRACT CONDITIONS PARTICULARS

a) THE VALUE OF MATERIAL TO BE SUPPLIED BY THE PRINCIPAL IS $ 270

b) THE AMOUNT OF PUBLIC LIABILITY INSURANCE SHALL BE NOT LESS THAN $500,000

c) MONETARY SUM TO BE INCLUDED IN THE LUMP SUM TENDER PRICE IS $ 110

d) THE SUPERINTENDENT'S REPRESENTATIVE SHALL BE A.PALMER SUPERVISING ENGINEER, DEPARTMENT OF PUBLIC WORKS

SCHEDULE OF EQUIPMENT TO BE SUPPLIED AND DELIVERED ON SITE BY THE DEPARTMENT (T.B.S. ITEMS)

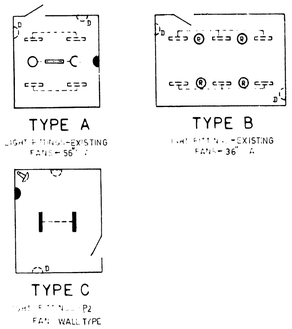
- 1 x 20WATT VANDAL PROOF FLUORESCENT LUMINAIRE WV/B201 (CODE P3)
- PCF 56" CEILING FAN WITH STANDARD SUSPENSION ROD
- CEILING FAN SPEED CONTROLLER MSP57200/015

SCHEDULE OF OTHER EQUIPMENT

THE CONTRACTOR SHALL SUPPLY AND INSTALL EQUIPMENT SIMILAR OR EQUAL TO THE FOLLOWING:-

- OSCILLATING WALL FANS OF APPROVED MANUFACTURE 400mm DIA WITH THREE SPEED SWITCH SUITABLE FOR WALL BRACKET MOUNTING
- FAN WALL MOUNTING BRACKET LUXALITE TYPE FB/01
- 2x40WATT TOTALLY ENCLOSED FLUORESCENT LUMINAIRES HPF WITH BLOCKING INDUCTOR SIMILAR TO LUXALITE EP/WB402
- 2x40WATT VANDAL PROOF FLUORESCENT LUMINAIRES SIMILAR TO LUXALITE CAT Nº WV/B402

ROOM	LIGHTING TYPE	LIGHTING CIRCUIT	FANS TYPE	FANS CIRCUIT	POWER TYPE	POWER CIRCUIT	REMARKS
CLASSROOM BLOCK							
CR1	A						
	1P1V	W	–	–	–	–	FITTING EX. IN OFFICE. EX. LIGHTS ELIMINATE. RELOCATE EXIST. FANS
		–	–	–	–	–	
	1K	–	2RAT	Y	–	–	
CR2	B						
		–	2RV	Y	–	–	REUSE EXIST. FITS EX. CIRC. RELOCATE EXIST. FANS.
	–	–	2RV	Y	–	–	
PRINCIPAL	C 2P2,T	S	1MC	S	1X	–	
CANTEEN	1P2,T	U	1M	S	–	–	
VERANDAH	2P3,T	U	–	–	–	–	
WEATHERSHED							
	2P4,T	S	–	–	–	–	
TOILET BLOCK							
TOILETS	2P3,T	U	–	–	–	–	EX. GLASSPAK VERANDAH. RELOCATE UNDER EAVES
STOREROOM	1V	W	–	–	–	–	
EXTERNAL	1P3	S	–	–	–	–	



TYPICAL ROOM LAYOUTS

SYMBOLS

- 20WATT VANDALUX FLUORESCENT FITTING-NEW
- 40WATT TOTALLY ENCLOSED FLUORESCENT FITTING-EXISTING TO REMAIN
- [illegible] WATT TOTALLY ENCLOSED FLUORESCENT FITTING-NEW
- 56" CEILING MOUNTED FAN-NEW
- 36" CEILING MOUNTED FAN-EXISTING TO BE RELOCATED
- WALL MOUNTED OSCILLATING FAN 400mm DIA
- MAIN SWITCHBOARD
- DISTRIBUTION BOARD
- GENERAL PURPOSE POWER OUTLET-NEW
- GENERAL PURPOSE POWER OUTLET SINGLE-EXISTING
- GENERAL PURPOSE POWER OUTLET DOUBLE-EXISTING
- SWITCHWIRE

KEY

A, B, C ETC - LAYOUT OF FITTINGS ETC TO BE USED IN ROOM.

P - FLUORESCENT FITTINGS, TO BE EQUALLY SPACED IN ROOM.
FIRST Nº - NUMBER OF FITTINGS SECOND Nº-TYPE OF FITTING
P1 - 3x40W DIFFUSER TYPE-EXISTING
P2 - 2x40W TOTALLY ENCLOSED FLUORESCENT FITTING
P3 - 1x20W VANDALPROOF FLUORESCENT CAT Nº WV/B201
P4 - 2x40W VANDALPROOF FLUORESCENT

R - FANS IN ROOM SPACED TO SUIT LIGHTING LAYOUT
Nº - NUMBER OF FANS.

L1etc - NEW CIRCUIT AND CONDUIT REQUIRED.

S - NEW FITTING WIRED TO EXTENSION OF EXISTING CIRCUIT

T - EXISTING FITTING TO BE REMOVED.

U - NEW FITTING TO BE WIRED TO EXISTING CIRCUITS.

V - FITTINGS REMOVED FROM ELSEWHERE TO BE USED HERE

W - RELOCATED FITTING TO BE WIRED TO EXTENSION OF EXIST. CIRCUIT.

X - INSTALL 1 G.P.O IN LOCATION SHOWN & WIRE TO EXISTING GPO CIRCUIT

Y - INSTALL CEILING FANS ON EXISTING LIGHTING CIRCUIT.

Z - SLOPING CEILING.

M - WALL MOUNTED OSCILLATING FAN WIRED TO EXTENSION OF EXISTING CIRCUIT.

K - FIT DUMMY COVER TO LIGHT SWITCH GANG PLATE

NOTES:

1. ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE DEPARTMENT'S SPECIFICATION FOR IMPROVED ELECTRICAL SERVICES AND CEILING FAN INSTALLATIONS IN PUBLIC AND HIGH SCHOOLS Nº E77/5002 AND THE DETAILS ON THIS PLAN.
2. LIGHT SWITCHES AND CONTROLLER ARE TO BE LOCATED ADJACENT TO EACH OTHER ON THE LOCK SIDE OF THE DOOR TO THE ROOM.
3. OMISSION OF A ROOM FROM THE SCHEDULE OR A DASH (-) IN THE COLUMN INDICATES NO MODIFICATION REQUIRED IN THAT ROOM OR TO THAT SERVICE.
4. NUMBER IN CIRCUIT COLUMN INDICATES GROUPING OF FITTINGS ONLY. ACTUAL CIRCUIT Nº IS TO FOLLOW EXISTINGS NUMBERS.
5. WHERE EXISTING FITTINGS ARE TO BE REMOVED DAMAGE TO CEILING, WALLS ETC IS TO BE MADE GOOD.
6. LIGHTS IN TOILET BLOCK, WEATHERSHED & VERANDAH TO BE SWITCHED FROM PRINCIPAL'S OFFICE.
7. CEILING FANS MUST NOT BE INSTALLED IN A POSITION SUCH THAT FAN BLADES PASS UNDERNEATH LIGHT FITTINGS
8. ALL FANS & LIGHT FITTINGS INSTALLED OR RELOCATED UNDER THIS CONTRACT TO BE EARTHED.

SCALE: 1:1 — 0 10 20 30 40 50 60 70 80
SCALE: 1:2 — 0 20 40 60 80 100 120 140 160
SCALE: 1:5 — 0 100 200 300 400

NOTES:

ARMSTRONG, PSILLAKIS & SCHRAMM PTY LTD
CONSULTING ENGINEERS
SYDNEY, N.S.W.

Job No. E1314 | Scale N.T.S. | Approved
Drawn D.B. | Chk.

DEPARTMENT OF PUBLIC WORKS N.S.W.
W.K. PILZ Director of Public Works
C.P. WEATHERBURN Government Architect
Principal Engineer Schools
W.R. BATES Deputy Chief Engineer Govt. Architect's Branch

WARNERVALE PUBLIC SCHOOL

IMPROVED ELECTRICAL SERVICES

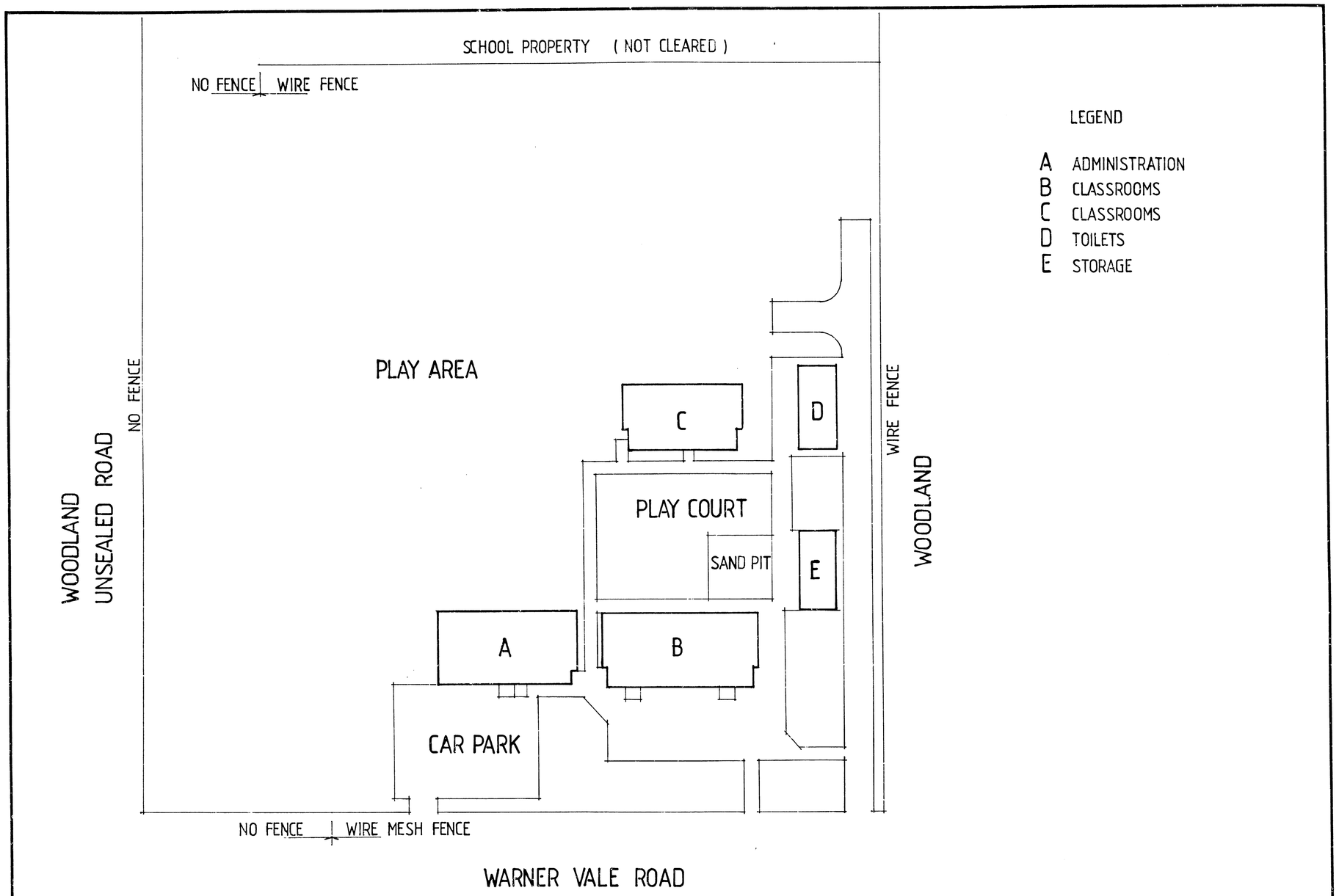
PLAN RM. No. SB 2394-13/1

NUMBER IN SET 1 | SHEET NUMBER 1

SCALES: N.T.S.

B1

ROLL 6 18



N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNERVALE PUBLIC SCHOOL	PLAN RM S/B 2394-13/2
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 1
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

ROLL 1374

300m.m. ON ORIGINAL SCALE

Key:

M	main terminal panel (m.t.p.)
G	G.P.O.
K	keypanel
Kr	remote keypanel
◢	electrical cupboard
S	slave
▶	detector location

Detector Locations

100s _ plan	110s _ plan
200s _ plan	210s _ plan
300s _ plan	310s _ plan
400s _ plan	410s _ plan
500s _ plan	510s _ plan
600s _ plan	610s _ plan
700s _ plan	710s _ plan
800s _ plan	810s _ plan
900s _ plan	910s _ plan
1000s _ plan	1010s _ plan
1100s _ plan	1110s _ plan
1200s _ plan	1210s _ plan
1300s _ plan	1310s _ plan
1400s _ plan	1410s _ plan

Master location _ plan

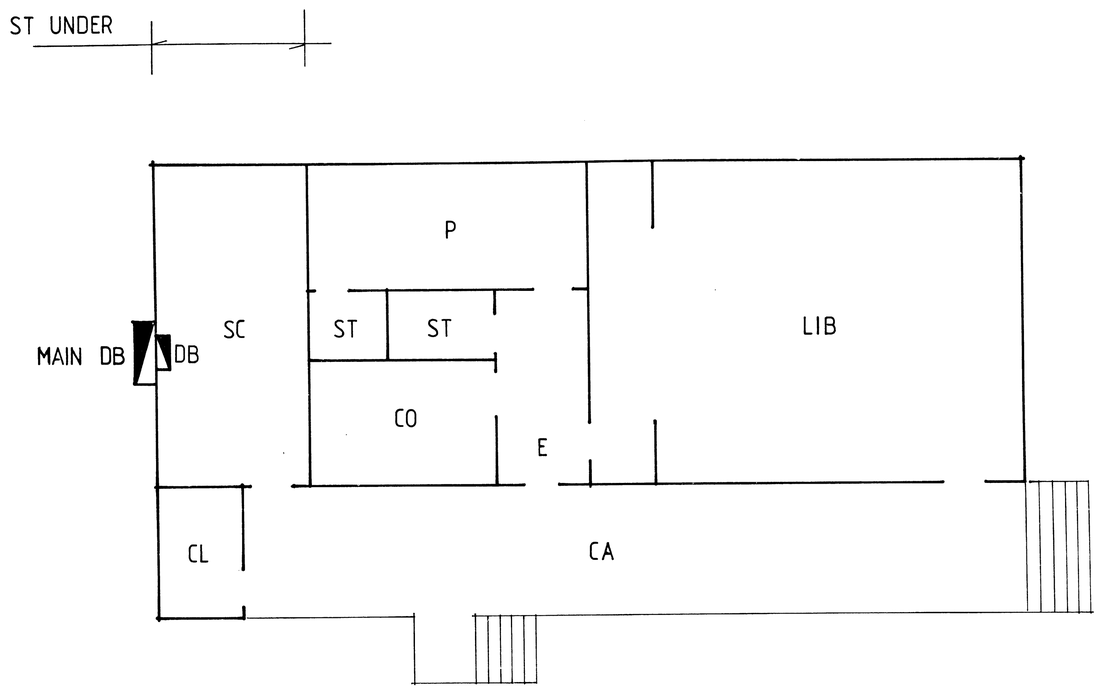
Main key panel _ plan

Remote key panel/s _ plan

N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNER VALE PUBLIC SCHOOL	PLAN RM SB 2394-13/3
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 2
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

ROLL 1379

300m.m. ON ORIGINAL SCALE

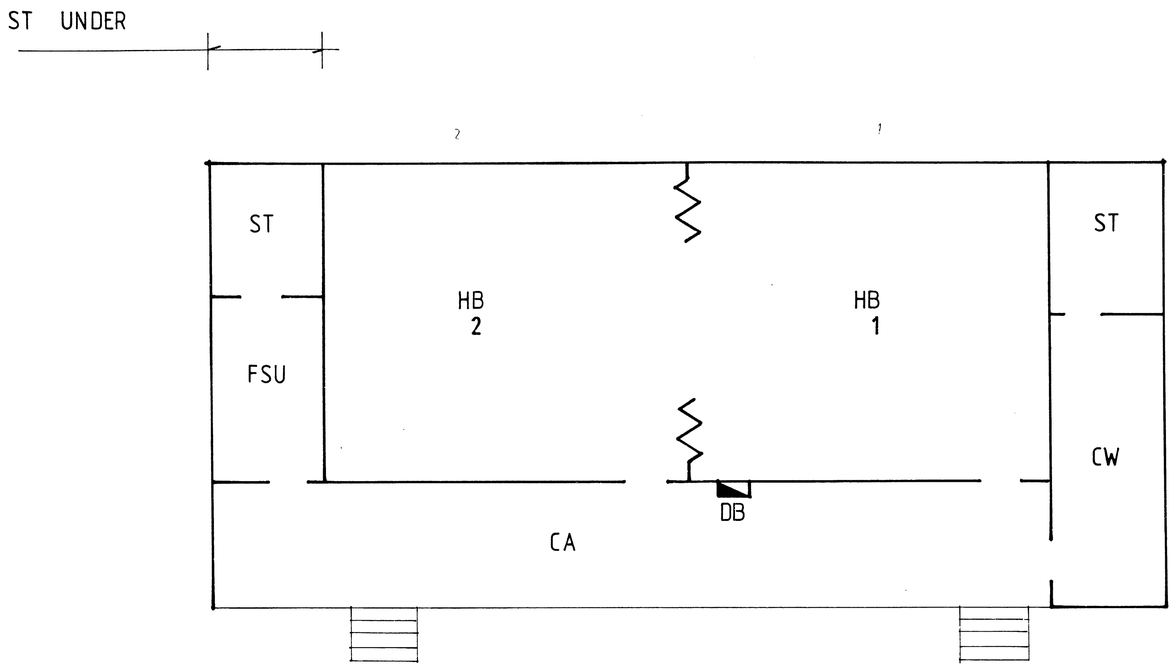


BLOCK A ADMINISTRATION

N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNER VALE PUBLIC SCHOOL	PLAN RM SB 239413/4
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 3
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

ROLL 1577

300m.m. ON ORIGINAL SCALE

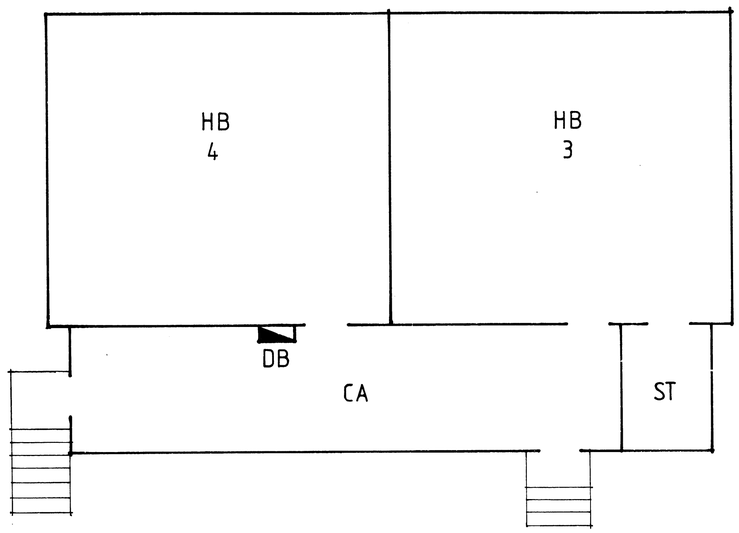


BLOCK B CLASSROOMS

N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNER VALE PUBLIC SCHOOL	PLAN RM SB 2394-13/5
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 4
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

TROLL. 13/5

300m.m. ON ORIGINAL SCALE

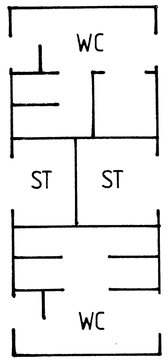


BLOCK C CLASSROOMS

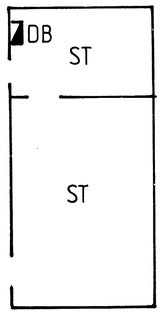
N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNER VALE PUBLIC SCHOOL	PLAN RM SB 2394-13/6
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 5
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

ROLL 1379

300m.m. ON ORIGINAL SCALE



BLOCK D TOILETS



BLOCK E STORAGE

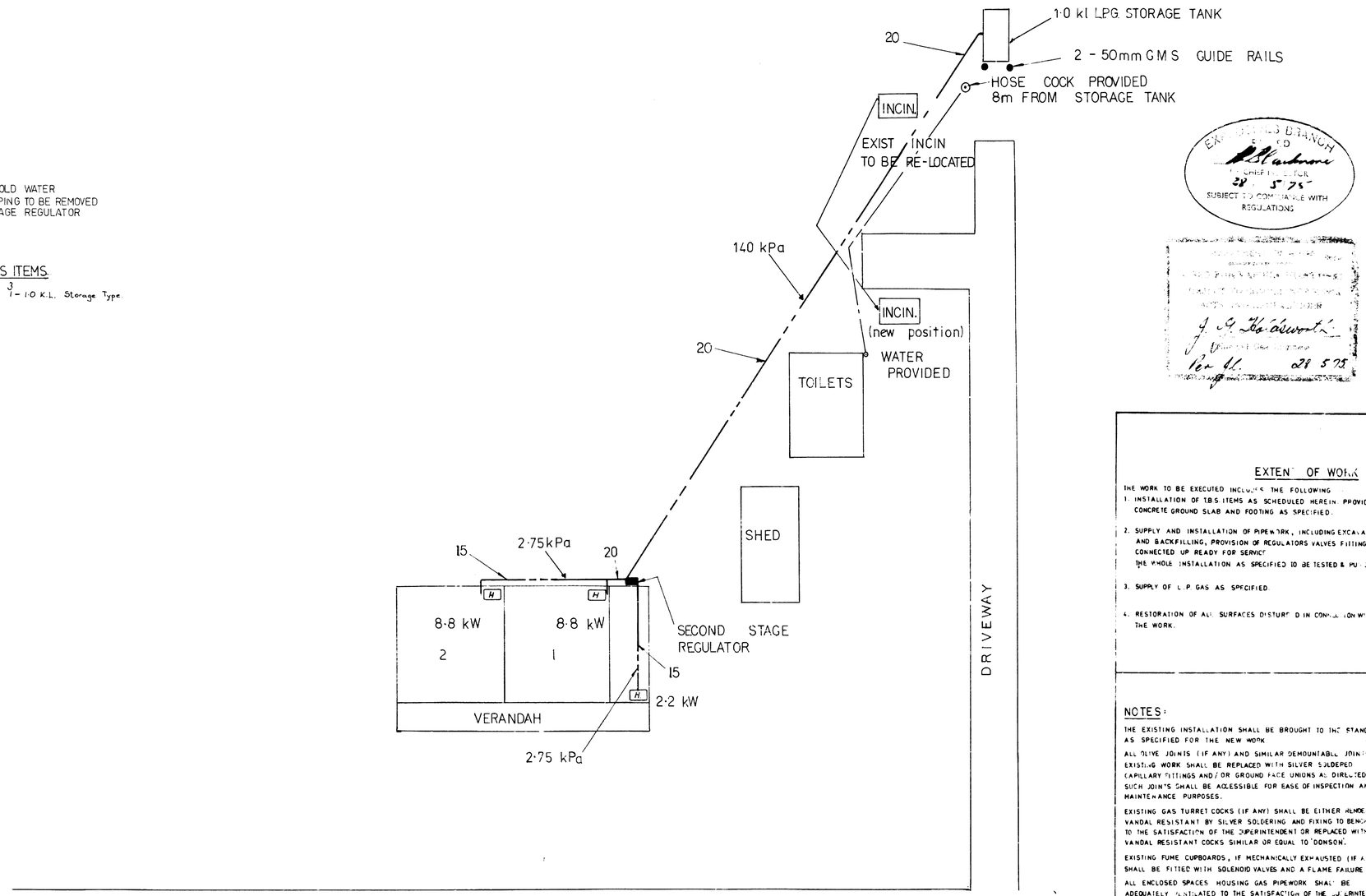
N.S.W. EDUCATION DEPT. (PROPERTIES) SECURITY SERVICES	PUBLIC WORKS DEPARTMENT, N.S.W. R.D. CHRISTIE DIRECTOR OF PUBLIC WORKS	WARNER VALE PUBLIC SCHOOL	PLAN RM SB 2394-13/7
J.E. ALLSOPP DIRECTOR	L.D. KELLY GOVERNMENT ARCHITECT		NUMBER IN SET 6 / SHEET NUMBER 6
APPROVED M. WILLS A.D.S.S.	CONSULTING ARCHITECTS PETER BROKKE & ASSOC. PTY. LTD.		SCALE NTS

Roll 1370

300m.m. ON ORIGINAL SCALE

LEGEND
- GAS
- DOMESTIC COLD WATER
- EXISTING PIPING TO BE REMOVED
- SECOND STAGE REGULATOR
- HEATER
- HOSE COCK

SCHEDULE OF TBS ITEMS
FLOOR HEATERS 3
L.P.G. TANK 1 - 1·0 K.L. Storage Type.



EXTENT OF WORK

THE WORK TO BE EXECUTED INCLUDES THE FOLLOWING

1. INSTALLATION OF T.B.S. ITEMS AS SCHEDULED HEREIN. PROVIDE CONCRETE GROUND SLAB AND FOOTING AS SPECIFIED.
2. SUPPLY AND INSTALLATION OF PIPEWORK, INCLUDING EXCAVATION AND BACKFILLING, PROVISION OF REGULATORS VALVES FITTINGS ETC CONNECTED UP READY FOR SERVICE
   THE WHOLE INSTALLATION AS SPECIFIED TO BE TESTED & PURGED,
3. SUPPLY OF L.P. GAS AS SPECIFIED.
4. RESTORATION OF ALL SURFACES DISTURBED IN CONNECTION WITH THE WORK.

NOTES:

THE EXISTING INSTALLATION SHALL BE BROUGHT TO THE STANDARD AS SPECIFIED FOR THE NEW WORK

ALL OLIVE JOINTS (IF ANY) AND SIMILAR DEMOUNTABLE JOINTS IN EXISTING WORK SHALL BE REPLACED WITH SILVER SOLDERED CAPILLARY FITTINGS AND/OR GROUND FACE UNIONS AS DIRECTED, AND SUCH JOINTS SHALL BE ACCESSIBLE FOR EASE OF INSPECTION AND MAINTENANCE PURPOSES.

EXISTING GAS TURRET COCKS (IF ANY) SHALL BE EITHER RENDERED VANDAL RESISTANT BY SILVER SOLDERING AND FIXING TO BENCH TOP TO THE SATISFACTION OF THE SUPERINTENDENT OR REPLACED WITH VANDAL RESISTANT COCKS SIMILAR OR EQUAL TO 'DONSON'.

EXISTING FUME CUPBOARDS, IF MECHANICALLY EXHAUSTED (IF ANY) SHALL BE FITTED WITH SOLENOID VALVES AND A FLAME FAILURE DEVICE

ALL ENCLOSED SPACES HOUSING GAS PIPEWORK SHALL BE ADEQUATELY VENTILATED TO THE SATISFACTION OF THE SUPERINTENDENT.

EXISTING GAS INSTALLATION AS MODIFIED SHALL BE TESTED FOR LEAK AND THE CERTIFICATE OF COMPLIANCE TO BE ISSUED BY THE CONTRACTOR SHALL INCLUDE FOR THE NEW AND EXISTING WORK.

NOTES:

THE HOURLY GAS RATING FOR EACH ROOM HEATER IS AS SHOWN ON PLAN (8·8, 4·4, 2·2) KW

ALL ROOM HEATERS ARE TO BE FLOOR MOUNTED CONVECTION TYPE

TYPE WHOLE OF THE GAS SERVICE IS TO BE OF COPPER MATERIAL TO AS 1432 1973 UNLESS STATED OTHERWISE

COPPER PIPE SIZE SHALL BE TAKEN AS OUTSIDE DIAMETER

ALL PIPE WORK SHALL BE CONCEALLED WHERE PRACTICABLE

SERVICE REGULATOR AND APPLIANCE POSITIONS SHOWN ARE DIAGRAMATIC AND APPROXIMATE FINAL POSITIONS ARE TO BE DIRECTED BY THE SUPERINTENDENT

SCALE: 1:1 SCALE: 1:2 SCALE: 1:5

A2 0 10 20 30 40 50 60 70 80 0 20 40 60 80 100 120 140 160 0 100 200 300 400

DEPARTMENT OF PUBLIC WORKS N.S.W.
W.K.PILZ Director of Public Works
C.P. WEATHERBURN Government Architect
PER Principal Engineer Central Service 29.5.75
W.R.BATES Deputy Chief Engineer Govt. Architects Branch

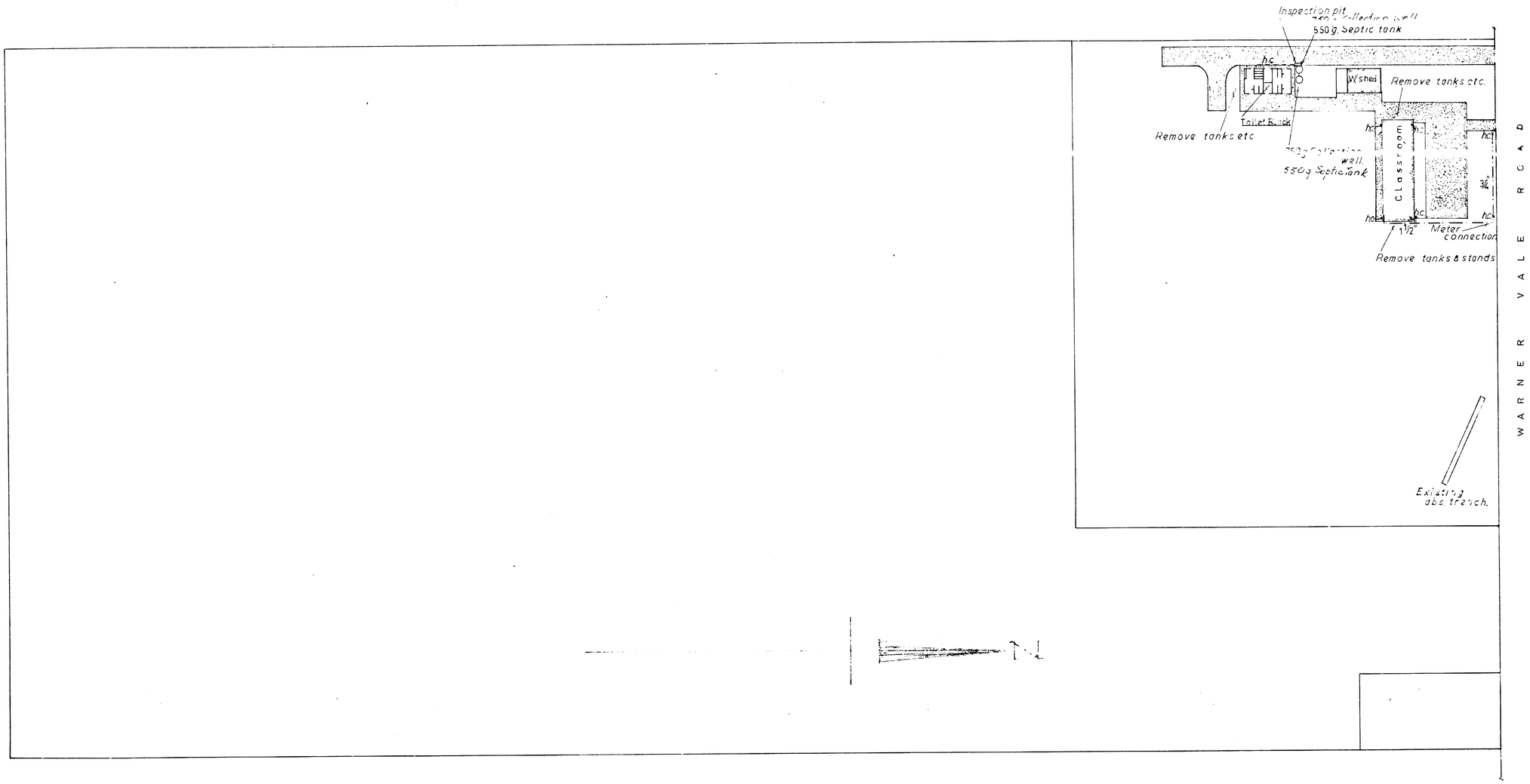
L.P. GAS INSTALLATION

WANERVALE PUBLIC SCHOOL
WANERVALE RD.
WANERVALE.

PLAN RM. NO. S.B. 2394-15/1 G.C.
NUMBER IN SET 1 SHEET NUMBER 1
SCALES: N.T.S.

ROLL 503

300 MMS ON ORIGINAL SCALE



Soil drainage - - - - - -
Water service —·—·—

WARNER VALE PUBLIC SCHOOL

INSTALLATION OF SEPTIC TANK

SCALE 1" = 40'-0"
FILE S7004/2 CONTRACT NO.

J. C. HUMPHREY
DIRECTOR of PUBLIC WORKS

E. H. Farmer pr
GOVERNMENT ARCHITECT.
13.12.67

W.A.E. NICOLE SR2294 1/1

300m.m. ON ORIGINAL SCALE

APPENDIX B: HAZARDOUS MATERIALS REGISTER

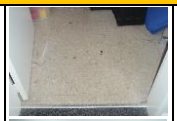
Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Block A																		
	A single storey demountable building on piers with metal external cladding and metal roof. Internal walls are lined with 'Masonite' and fibrous cement sheet ceiling with aluminium windows							1										
Exterior																		
Ground Floor	Northern Elevation	Steps	Compressed Fibrous Cement sheeting	Sampled Asbestos	N2680/01	No Asbestos Detected		2										
Ground Floor	Southern Elevation	Steps	Compressed Fibrous Cement sheeting	Not Likely to contain Asbestos	Visually the same as sample N2680/01			3										
Ground Floor	Subfloor	Pier packers	Flat FC Sheeting	Sampled Asbestos	N2680/02	No Asbestos Detected		4										
Ground Floor	North and South elevations	Eaves	Flat FC Sheeting	Sampled Asbestos	N2680/03	No Asbestos Detected		5										
Ground Floor	No lead based paints were identified to the exterior of the building at the time of the survey																	
Ground Floor	No SMF materials were identified to the exterior of the building at the time of the survey																	
Ground Floor	No ACM nor assumed ACM were identified to the exterior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the exterior of the building at the time of the survey																	
Interior																		
Ground Floor	Throughout	Ceiling	Flat FC Sheeting	Sampled Asbestos	N2680/04	No Asbestos Detected		6										
Ground Floor	No lead based paints were identified to the interior of the building at the time of the survey																	

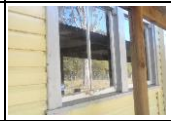
Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	No SMF materials were identified to the interior of the building at the time of the survey																	
Ground Floor	No ACM nor assumed ACM were identified to the interior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the interior of the building at the time of the survey																	
Block B																		
Ground Floor	A single storey weatherboard building on piers with corrugated metal roof. Interior walls are lined with 'Masonite' with fibrous plaster ceilings, timber floors and timber windowframes							7										
Exterior																		
Ground Floor	North & South Elevation	Eaves	Flat FCS sheeting	Sampled Asbestos	N2680/10	No Asbestos Detected		8										
Ground Floor	Eastern Elevation	Eaves	Flat FC Sheeting	Not Likely to contain Asbestos	Visually similar to N2680/10			9										
Ground Floor	Western Elevation	Subfloor Infill panel	Flat FC Sheeting	Sampled Asbestos	N2680/05	No Asbestos Detected		10										
Ground Floor	Northern Elevation	Electrical Switchboard - Backing Board	Zelminite	Sampled Asbestos	N2680/06	**Chrysotile Asbestos Detected**		11	Non-Friable	1	1	1	1	2	P4 / Negligible		Good condition. Remove prior to demolition	
Ground Floor	Northern Elevation	Ramp to Disabled Toilets	Flat FC Sheeting	Sampled Asbestos	N2680/09	No Asbestos Detected		12										
Ground Floor	All Elevations	Windows	Putty	Sampled Asbestos	N2680/11	No Asbestos Detected		13										

Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	Northern Elevation	Handrails	Brown Paint	Lead Paint	N2680 / L3	**1.29%**		14									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	All Elevations	Veranda Posts	Yellow Paint	Lead Paint	N2680 / L2	**0.29%**		15									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	All Elevations	Windows and Door frames	White Paint	Lead Paint	N2680 / L4	**1.76%**		16									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	All Elevations	Weather Boards	Yellow Paint	Lead Paint	N2680 / L5	**2.16%**		17									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	No SMF materials were identified to the exterior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the exterior of the building at the time of the survey																	
Interior																		
Ground Floor	Store Room - HB2 classroom	Floor	Vinyl Tiles	Sampled Asbestos	N2680/07	No Asbestos Detected		18 19										
Ground Floor	Kitchen underlay - Western Elevation	Floor	Flat FC Sheeting	Sampled Asbestos	N2680/08	No Asbestos Detected		20										
Ground Floor	Throughout	Ceiling Cavity	Insulation	SMF				21									Remove prior to or during demolition	

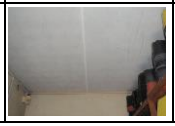
Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	Ceiling cavity - East Elevation	Settled dust	Dust	Lead	N2680 / L6	20.6mg/m^2		22										
Ground Floor	Ceiling cavity West Elevation	Settled dust	Dust	Lead	N2680 / L1	14.6mg/m^2		23										
Ground Floor	No lead based paints were identified to the interior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the interior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the interior of the building at the time of the survey																	
Block C																		
Ground Floor	A single storey weatherboard building on piers with corrugated metal roof. Interior walls are lined with 'Masonite' with fibrous plaster ceilings, timber floors and timber windowframes							24										
Exterior	**Internal walls are lined with Masonite and fibrous plaster ceilings. With timber windows**																	
Ground Floor	North and South elevations	Eaves	Flat FC Sheeting	Not Likely to contain Asbestos	Visually the same as Sample N2680/10			25										
Ground Floor	All Elevations	Windows	Putty	Sampled Asbestos	N2680/12	No Asbestos Detected		26										
Ground Floor	All Elevations	Weather Boards	Yellow paint	Lead Paint	N2680 / L9	**0.20%**		27									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	All Elevations	Windows	Grey Paint	Lead Paint	N2680 / L10	**2.05%**		28									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	No SMF materials were identified to the exterior of the building at the time of the survey																	

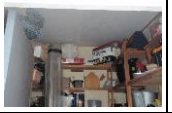
Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	No ACM nor presumed ACM were identified to the exterior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the exterior of the building at the time of the survey																	
Interior																		
Ground Floor	Eastern Elevation	Walls	Flat FC Sheeting	Not Likely to contain Asbestos				29									Unable to be sampled. Sample to determine precence of asbestos prior to demolition	
Ground Floor	Throughout	Ceiling Cavity	Insulation	SMF				30										
Ground Floor	West Elevation	Ceiling Cavity	Settled Dust	Lead	N2680 / L7	2.9mg/m^2		31									Remove prior to or during demolition	
Ground Floor	North Elevation	Ceiling Cavity	Settled Dust	Lead	N2680 / L8	3.6mg/m^2		32										
Ground Floor	No lead based paints were identified to the interior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the interior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the interior of the building at the time of the survey																	
Block D																		
Ground Floor	A single storey brick and concrete structure with timber windows and a corrugated metal roof. Interior is rendered brick walls with fibrous cement sheet ceilings							33										
Exterior																		
Ground Floor	All Elevations	Eaves	Flat FC Sheeting	Sampled Asbestos	N2680/16	No Asbestos detected		34										

Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	All Elevations	Windows & Doors	White Paint	Lead Paint	N2680 / L11	**1.74%**		35									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	All Elevations	Fascia's	White Paint	Lead Paint	N2680 / L12	**0.85%**		36									Paint contains lead >0.1%. Manage during demolition	
Ground Floor	No SMF materials were identified to the exterior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the exterior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the exterior of the building at the time of the survey																	
Interior																		
Ground Floor	Ladies Toilet	Walls	Flat FC Sheeting	Sampled Asbestos	N2680/13	No Asbestos Detected		37										
Ground Floor	Ladies Toilet	Ceilings	Flat FC Sheeting	Not likely to contain Asbestos	Visually same as Sample N2680/15			38										
Ground Floor	Men's Toilet	Walls	Flat FC Sheeting	Sampled Asbestos	N2680/14	No Asbestos Detected		39										
Ground Floor	Men's Toilet	Ceilings	Flat FC Sheeting	Not likely to contain Asbestos	Visually same as Sample N2680/15			40										
Ground Floor	Cleaners Store	Ceilings	Flat FC Sheeting	Sampled Asbestos	N2680/15	No Asbestos Detected		41										

Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	Asbestos Risk Assessment							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	Gardeners Store	Ceilings	Flat FC Sheeting	Not likely to contain Asbestos	Visually same as Sample N2680/15			42										
Ground Floor	No lead based paints were identified to the interior of the building at the time of the survey																	
Ground Floor	No SMF materials were identified to the interior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the interior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the interior of the building at the time of the survey																	
Block E																		
Ground Floor	A single storey weather board building with aluminium window. Interior is timber floors and gyprock wall linings							43										
Exterior																		
Ground Floor	East Elevation	Eaves	Flat FC Sheeting	Not likely to contain Asbestos	Visually the same as Sample N2680/16			44										
Ground Floor	All Elevations	Weather Boards	Yellow Paint	Lead Paint	N2680 / L13	**0.13%**		45										
Ground Floor	All Elevations	Window & Doors	White Paint	Lead Paint	N2680 / L14	**0.11%**		46										
Ground Floor	No SMF materials were identified to the exterior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the exterior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the exterior of the building at the time of the survey																	
Interior																		
Ground Floor	No lead based paints were identified to the interior of the building at the time of the survey																	

Hazardous Material Register
Warnervale Public School - 75 Warnervale Road Warnervale NSW

Building Level / Floor	Location Description	Material Location	Type of Material	Hazard Type	Sample No.	Sample Result	Photos	Photo No.	*Asbestos Risk Assessment*							Labelled	Comments/ Condition	Action Taken
									Asbestos Type	Condition	Location	Airborne Potential	Exposure	Hazard Level	Health Risk/Action Priority Level			
Ground Floor	No SMF materials were identified to the interior of the building at the time of the survey																	
Ground Floor	No ACM nor presumed ACM were identified to the interior of the building at the time of the survey																	
Ground Floor	No PCB containing capacitors were identified to the interior of the building at the time of the survey																	

APPENDIX C: LABORATORY ANALYSIS RESULTS

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref: ASET67039 / 70219 / 1 - 16
Your ref: N2680 – 75 Warnervale Road, Warnervale NSW
NATA Accreditation No: 14484

30 August 2018

Hazmat Services Pty Ltd
PO Box 114
Carrington NSW 2294

Attn: Mr Andrew Russell

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

Dear Andrew

Asbestos Identification

This report presents the results of sixteen samples, forwarded by Hazmat Services Pty Ltd on 22 August 2018, for analysis for asbestos. This report supersedes the report issued on 22 August 2018.

1.Introduction: Sixteen 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. ASET67039 / 70219 / 1. N2680/01 – Block A, Step Treads, Compressed cement sheeting.
Approx dimensions 1.25 cm x 1.0 cm x 0.35 cm
The sample consisted of a fragment of a fibre cement material having fibro plaster cement containing organic fibres attached to it.
No asbestos detected.

Sample No. 2. ASET67039 / 70219 / 2. N2680/02 – Block A Pier Packers, Fibrous cement sheeting.
Approx dimensions 2.5 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.

Sample No. 3. ASET67039 / 70219 / 3. N2680/03 – Block A, Eave Linings, Fibrous cement Sheeting.
Approx dimensions 3.0 cm x 1.25 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. 4. ASET67039 / 70219 / 4. N2680/04 – Block A, Ceiling Linings, Fibrous Cement Sheeting.
Approx dimensions 1.5 cm x 1.5 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. 5. ASET67039 / 70219 / 5. N2680/05 – Block B, Subfloor infill Panel, Fibrous Cement Sheeting.
Approx dimensions 2.0 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.

Sample No. 6. ASET67039 / 70219 / 6. N2680/06 – Block B, Electrical Switch board, Zelminite.
Approx dimensions 0.65 cm x 0.65 cm x 0.35 cm
The sample consisted of a hard fibrous material.
Chrysotile asbestos detected.

Sample No. 7. ASET67039 / 70219 / 7. N2680/07 - Block B, Vinyl Tiles, Linoleum.
Approx dimensions 2.5 cm x 2.5 cm x 0.25 cm
The sample consisted of a fragment of a hard floor tile.
No asbestos detected (An independent confirmatory analytical technique is advised due to the nature of the sample).

Sample No. 8. ASET67039 / 70219 / 8. N2680/08 – Block B, Floor underlay, Fibrous cement sheeting.
Approx dimensions 5.0 cm x 1.2 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. 9. ASET67039 / 70219 / 9. N2680/09 – Block B, Disabled Toilet Ramp, Fibrous Cement sheeting.
Approx dimensions 1.5 cm x 1.0 cm x 0.55 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 10. ASET67039 / 70219 / 10. N2680/10 – Block B, Eave Lining, Fibrous cement sheeting.
Approx dimensions 0.65 cm x 0.55 cm x 0.55 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 11. ASET67039 / 70219 / 11. N2680/11 – Block B, Window Putty.
Approx dimensions 5.0 cm x 0.85 cm x 0.45 cm
The sample consisted of a fragment of a soft mastic material.
No asbestos detected.

Sample No. 12. ASET67039 / 70219 / 12. N2680/12 – Block C, Window Putty.
Approx dimensions 2.0 cm x 0.45 cm x 0.35 cm
The sample consisted of a fragment of a soft mastic material.
No asbestos detected.

Sample No. 13. ASET67039 / 70219 / 13. N2680/13 – Block D, Ladies Toilet wall Linings, Fibrous cement sheeting.
Approx dimensions 3.0 cm x 0.65 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. 14. ASET67039 / 70219 / 14. N2680/14 – Block D, Mens Toilet wall linings, Fibrous cement sheeting.
Approx dimensions 2.0 cm x 1.0 cm x 0.24 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Sample No. 15. ASET67039 / 70219 / 15. N2680/15 – Block D, Cleaners store room ceiling lining, Fibrous cement sheeting.
Approx dimensions 1.25 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.

Sample No. 16. ASET67039 / 70219 / 16. N2680/16 – Block D, Eave Lining, Fibrous Cement sheeting.
Approx dimensions 3.5 cm x 2.5 cm x 0.45 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Analysed and reported by,

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

WORLD RECOGNISED ACCREDITATION

Accredited for compliance with ISO/IEC 17025.

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.

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref: ASET67039/ 70219 - 1
Your ref: N2680 – 75 Warnervale Road, Warnervale, NSW

5 September 2018

Hazmat Services Pty Ltd
PO Box 118
Carrington NSW 2294

Attn: Mr Andrew Russell

Dear Andrew

Asbestos Identification
This report presents the results of one sample, forwarded by Hazmat Services Pty Ltd on 21 August 2018, for analysis for asbestos.

1. Introduction: One sample forwarded was examined and analysed for the presence of asbestos by X Ray Diffraction by Bureau Veritas.

2. Methods : The sample was mounted onto sample holder and analyzed by X ray diffraction to identify the presence of any asbestos forming minerals, namely amphiboles and serpentine. A quartz standard was applied to the surface of the tiles for any angular corrections.

3. Results: **Sample No. 1. ASET67039 / 70219-1 / 1. N2680/07 – Block B, Vinyl Tiles, Linoleum.**
The sample consisted of a fragment of a hard floor tile.
No Serpentine or Amphibole minerals detected.

Reported by,

Mahen De Silva . BSc. MSc. Grad Dip (Occ Hyg)
Occupational Hygienist

SUITE 710 / 90 GEORGE STREET, HORNSBY NSW 2077 – P.O. BOX 1644 HORNSBY WESTFIELD NSW 1635
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ASBESTOS DETECTION & IDENTIFICATION • REPAIR & CALIBRATION OF SCIENTIFIC EQUIPMENT • AIRBORNE FIBRE & SILICA MONITORING

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1824727**	Page	: 1 of 5
Amendment	: **1**		
Client	: **HAZMAT SERVICES PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR ANDREW RUSSELL	Contact	: Customer Services ES
Address	:	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: N2680	Date Samples Received	: 22-Aug-2018 08:30
Order number	: 3729	Date Analysis Commenced	: 24-Aug-2018
C-O-C number	: ----	Issue Date	: 03-Sep-2018 12:20
Sampler	: MICHAEL FREUND		
Site	: ----		
Quote number	: EN/333		
No. of samples received	: 14		
No. of samples analysed	: 14		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA144: NATA accreditation covers the standard 8 metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)
- Amendment (03/09/2018): This report has been amended as a result of a request to change sample identification numbers (IDs) received by ALS from Florence Mananyu on 03/09/2018. All analysis results are as per the previous report.
- EA144: The metal concentration in the filter is reported in µg/filter on a total filter basis calculated up from the proportion of the filter paper analysed.

Analytical Results

Sub-Matrix: PAINT (Matrix: SOIL)			Client sample ID	N2680/L2 BLOCK B, YELLOW PAINT TO VERANDAH POTS	N2680/L3-BLOCK B, BROWN PAINT TO HAND RAILS	N2680/L4-BLOCK B, WINDOWS AND DOOR FRAMES	N2680/L5-BLOCK B, WEATHERBOARDS	N2680/L9 - BLOCK C, WEATHERBOARDS
			Client sampling date / time	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00
Compound	CAS Number	LOR	Unit	ES1824727-002	ES1824727-003	ES1824727-004	ES1824727-005	ES1824727-009
				Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES								
ø **Lead**	7439-92-1	5	mg/kg	**2940**	**12900**	**17600**	**21600**	**1990**

Analytical Results

Sub-Matrix: PAINT (Matrix: SOIL)			Client sample ID	N2680/L10-BLOCK C, WINDOWS AND DOOR FRAMES	N2680/L-BLOCK D, WINDOWS AND DOOR FRAMES	N2680/L12-BLOCK D, FASCIAS	N2680/L13-BLOCK E,WEATHERBOARDS	N2680L14-BLOCK E, WINDOWS AND DOOR FRAMES
			Client sampling date / time	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00
Compound	CAS Number	LOR	Unit	ES1824727-010	ES1824727-011	ES1824727-012	ES1824727-013	ES1824727-014
				Result	Result	Result	Result	Result
EG005T: Total Metals by ICP-AES								
ø **Lead**	7439-92-1	5	mg/kg	**20500**	**17400**	**8530**	**1280**	**1120**

Analytical Results

Sub-Matrix: **SWAB** (Matrix: **AIR**)			Client sample ID	N2680/L1- BLOCK B, CEILING CAVITY EAST ELEVATION, DUST SWAB	N2680/L6 BLOCK B, CEILLING CAVITY WEST ELEVATION, DUST SWAB	N2680/L7 - BLOCK C, CEILING CAVITY WEST ELEVATIO , DUST SWAB	N2680/L8-BLOCK C, CEILING CAVITY EAST ELEVATION, DUST SWAB	----
			Client sampling date / time	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	18-Aug-2018 00:00	----
Compound	CAS Number	LOR	Unit	ES1824727-001	ES1824727-006	ES1824727-007	ES1824727-008	--------
				Result	Result	Result	Result	----
EA144: Particulate Base Metals in Filter Papers								
Lead	7439-92-1	10	µg/filter	**146**	**206**	**29**	**36**	**----**

APPENDIX D: HAZARDOUS MATERIALS INFORMATION

HAZARDOUS MATERIALS INFORMATION

Types and Uses of Asbestos Containing Materials

Asbestos is the fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming materials. The most significant types include chrysotile, crocidolite and amosite (white, blue and brown or grey asbestos respectively). As a naturally occurring rock fibre, asbestos is mined, and then broken down from mineral clumps into groups of loose fibres.

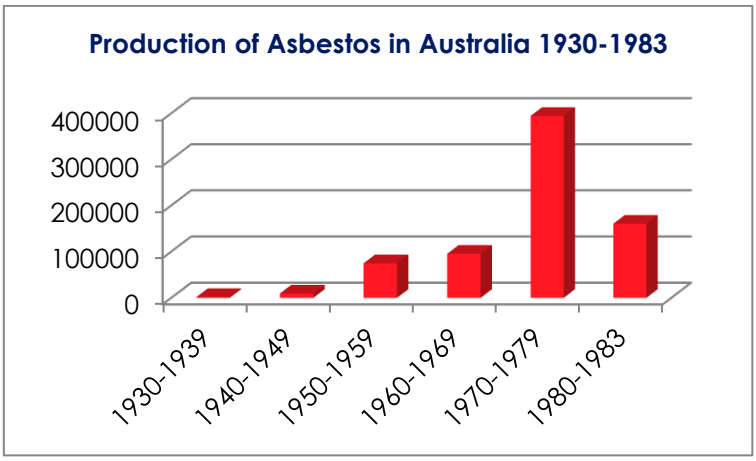
During the 1950s, 1960s and early 1970s it was common to use asbestos as fire insulation on structural members and as fire rating of penetration core holes. Its thermal energy conservation properties were used to insulate hot and cold water pipes and ducting. Asbestos was also used to a later date in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

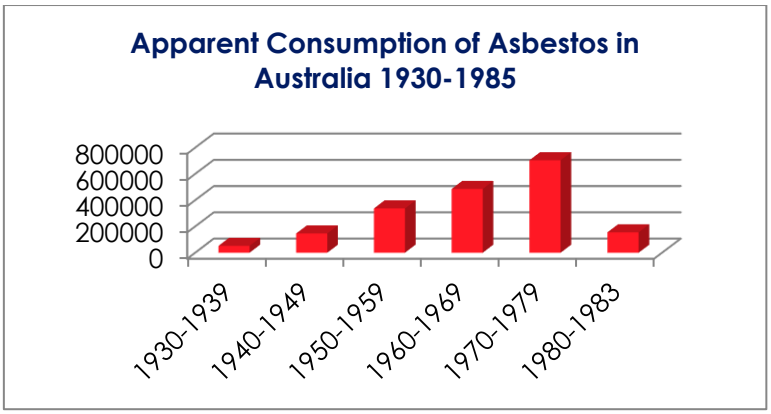
Asbestos has unique properties, and because of this was used up until the mid/late 1980's in a large number of applications (over 3000 have been identified).

Asbestos was mined within Australia up until 1983, and commonly used in manufacturing until the mid to late 1980's. The final asbestos containing product sold in Australia was car brake pads. The sale of these was discontinued at the end of 2003.

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

Notes: Data have been rounded off to the nearest 50 tonnes.
Source: Based on data from the Bureau of Mineral Resources and modified from Leigh, J., Driscoll, T. Internal Journal of Occupational and Environmental Health, Number 3, July/September 2003, pp 206-217





The first recorded production of asbestos in Australia was at Gundagai in 1880, where small amounts of Amphibole asbestos were mined until 1921. In Australia, production peaked in 1980 when 92,418 tonnes were produced, mainly from the Woodsreef mine located near Barraba in northern New South Wales, but by 1983, only 3909 tonnes was produced, and production ceased entirely shortly after.

The primary use of asbestos was in asbestos cement sheeting, and production of this peaked in 1974 when about 44,000,000 m^2 (44 km^2) was produced. The year 1987 is generally regarded as the cut-off year for asbestos use. Asbestos containing materials are widespread in the community, and it can be expected that any building constructed prior to 1987 may contain asbestos products. This includes a significant percentage of the existing Australian housing stock.

Nature of the Potential Hazard from Asbestos

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

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

The primary types of asbestos used were chrysotile (white asbestos), crocidolite (blue asbestos) and amosite (brown asbestos). The risk to human health from asbestos arises primarily from the inhalation of asbestos fibre derived from the disturbance of asbestos-containing products. Because of its small fibre size, asbestos may penetrate deep into the lung, and because of its inert nature, body processes have difficulty expelling the material.

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

Asbestos fibre may be held strongly in a matrix, for example cement (asbestos cement) and in this form is known as bonded. If the matrix does not hold the asbestos fibre strongly, and the fibre can be liberated easily, for example by crushing between the fingers, the form is known as friable. Friable asbestos is more of a health risk than bonded because exposure to fibres happens more easily.

Asbestos cement is a bonded asbestos product with the asbestos fibre contained within a stable matrix. Because asbestos cement is bonded, asbestos fibre is only liberated if the materials are degraded in some way, such as by sawing, drilling or grinding. Broken asbestos cement pieces are regarded as bonded by WorkCover NSW. Issues related to occupational exposure to asbestos are administered in NSW by WorkCover NSW under the *Work Health and Safety Act and Regulation 2017*. WorkCover also licence asbestos removal contractors.

HAZARDOUS MATERIALS INFORMATION

Types and Uses of Synthetic Mineral Fibre

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 for 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 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.

Lead Based Paint

AS4361.2 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 of 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.

Types and Uses of Polychlorinated Biphenyls

The extent of the use of PCB is varied. They were used in fluorescent light capacitors for power factor correction on an inductive ballast circuit. They have also been used in transformers, vacuum pumps and gas – transmission turbines, and in the United States as plasticisers, adhesives and pesticide extenders and as well as many other products

Prolonged exposure to high concentrations of PCB can cause problems including cancerous growths, nervous disorders, skin irritations, liver and pregnancy problems.