

3 ASBESTOS CONTAINING MATERIALS REGISTER

3.1 Asbestos Register

The following table is a register of all identified ACM on site, confirmed through analysis or assumed materials deemed to be homogenous or consistent in appearance and manufacture to similar samples collected/analysed. This Summary of ACM should be read in conjunction with all sections of this report.


| Sample No./ Visual observation | Photo | Location | | | Analysis | Risk assessment | | | | | | Additional information | | |
|---|-------|--------------------------------------|-------------------------|--------|----------|------------------------|---|------------------------------|----------------------------------|---|--------------------------------|------------------------|------------------------|--------------------------------|
| | | Int / Ext Floor Specific Location | Material Application | Extent | Result | Risk of Disturbance | Overall Condition / deterioration | Friability of Asbestos | Sealed/ Surface Treatments | Outcome of Risk or Exposure Risk Assessment | Recommended Control Actions | Labels Affixed | Additional Comments | Next Inspection due date |
| No Asbestos Containing Materials Found | | | | | | | | | | | | | | |

Notes:

- The Asbestos Containing Materials Register should be read in conjunction with all sections of this report.

3.2 Non Asbestos Containing Materials

The following table is a register of all identified non-asbestos containing materials on site, confirmed through analysis.

| Sample No./ Visual Observation | Photo | Location | | | Analysis |
|--------------------------------------|---|---|-------------------------|------------------|----------|
| | | Int / Ext Floor Specific Location | Material Application | Extent | Result |
| 5-843 |  | Ground Floor External | Eave, Fibrous Cement | 46m ² | NAD |

Notes:

- The Asbestos Containing Materials Register should be read in conjunction with all sections of this report.
- Certificate of analysis/test results are detailed in **Appendix B** of this report.

4 DISCUSSION AND RECOMMENDATIONS

As previously detailed in the Scope Section 2, SLR was appointed to complete a survey and assessment of Building 753 - Mackay Accommodation Unit C - Mackay Ooralea Campus with regards to the identification of ACM. The extent of the inspection and samples collected for subsequent analysis was completed in order to confirm, as far as reasonably practicable, the location, condition and risk presented by ACM remaining in-situ (and was based on the level of access available).

- Within the scope and limitations of this report, no ACM were identified in the building surveyed at the time of inspection.
- This document should be held as an Asbestos Register of the building inspected and updated where a risk assessment indicates the need for re-assessment. All occupiers of the workplace are to be provided with a copy of this register and all updates to it.
- If any material that may contain asbestos is found on site the material should be sent for identification and expert advice sought. The material should be assumed to contain asbestos in the interim.

In order to comply with the Work Health and Safety Regulations 2011(QLD), any action taken to control asbestos and ACM in the place of work, or in plant at the place of work, is to be recorded in this register. These details are to be recorded in the Asbestos Control Log attached in **Appendix A**.

5 LEGISLATION, GUIDELINES AND REGULATIONS

- Work Health and Safety Act 2011
- Work Health and Safety Regulations 2011
- Code of Practice: How to Safely Remove Asbestos [QLD Workplace Health and Safety (2011)]
- Code of Practice: How to Manage and Control Asbestos in the Workplace [QLD Workplace Health and Safety (2011)]
- Code of Practice: Demolition Work [QLD Workplace Health and Safety (2011)]

- Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres 2nd Edition [National Occupational Health and Safety Commission: 3003 (2005)]
- AS/NZS 1716-2012 - Respiratory Protective Devices
- AS/NZS 1715-2009 - Selection, Use and Maintenance of Respiratory Protective Devices
- AS 2601-2001 - The Demolition of Structures
- AS 1319-1994 Safety Signs for the Occupational Environment

Appendix A

Asbestos Control Log

ASBESTOS ANALYTICAL REPORT

Report Number 622.10968.00030-R01-v0.1-ANA-MackayOoralea

Client: Central Queensland University - Rockhampton

Client Contact: Grant Farrell

Client Address: Bruce Highway,
Rockhampton,
QLD 4702

Date Sampled: 2-4 August 2017

Report Date: 17 August 2017

**Site Address/
Location:** CQ University Campus - Mackay Ooralea

Test Methods: Sample(s) examined under a Polarised Light Microscope including dispersion staining techniques, in accordance with AS 4964 and method AIP.01.03



Accredited for compliance with ISO/IEC 17025.

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

Results

| Sample No. | Description | Analysis Result |
|------------|------------------|-----------------|
| 5-842 | Fibre cement | Organic Fibres |
| 5-843 | Fibre cement | Organic Fibres |
| 5-844 | Fibre cement | Organic Fibres |
| 5-845 | Fibre cement | Organic Fibres |
| 5-846 | Fibre cement | Organic Fibres |
| 5-847 | Fibre cement | Organic Fibres |
| 5-848 | Fibre cement | Organic Fibres |
| 5-849 | Fibre cement | Organic Fibres |
| 5-850 | Fibre cement | Organic Fibres |
| 5-851 | Fibre cement | Organic Fibres |
| 5-852 | Fibre cement | Organic Fibres |
| 5-853 | Fibre cement | Organic Fibres |
| 5-854 | Fibrous Material | SMF |
| 5-855 | Fibre cement | Organic Fibres |
| 5-856 | Fibre cement | Organic Fibres |
| 5-857 | Fibre cement | Organic Fibres |
| 5-858 | Fibre cement | Organic Fibres |
| 5-859 | Fibre cement | Organic Fibres |
| 5-860 | Fibre cement | Organic Fibres |
| 5-861 | Fibre cement | Organic Fibres |
| 5-862 | Fibre cement | Organic Fibres |
| 5-863 | Fibre cement | Organic Fibres |
| 5-864 | Fibre cement | Organic Fibres |
| 5-865 | Fibre cement | Organic Fibres |
| 5-866 | Fibre cement | Organic Fibres |
| 5-867 | Fibre cement | Organic Fibres |
| 5-868 | Fibre cement | Organic Fibres |
| 5-869 | Fibre cement | Organic Fibres |
| 5-870 | Fibre cement | Organic Fibres |

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| | | |
|-------|--------------|----------------|
| 5-871 | Fibre cement | Organic Fibres |
| 5-872 | Fibre cement | Organic Fibres |
| 5-873 | Fibre cement | Organic Fibres |
| 5-874 | Fibre cement | Organic Fibres |
| 5-875 | Fibre cement | Organic Fibres |
| 5-876 | Fibre cement | Organic Fibres |
| 5-877 | Fibre cement | Organic Fibres |
| 5-878 | Fibre cement | Organic Fibres |
| 5-879 | Fibre cement | Organic Fibres |
| 5-880 | Fibre cement | Organic Fibres |
| 5-881 | Fibre cement | Organic Fibres |
| 5-882 | Fibre cement | Organic Fibres |
| 5-883 | Fibre cement | Organic Fibres |

Fibre identification Legend

| | | | |
|-----|-------------------------------|-----|-------------------------|
| AMO | Amosite (brown/grey asbestos) | ORF | Organic Fibre |
| BIT | Bitumen | NAD | No Asbestos Detected |
| CHR | Chrysotile (white asbestos) | NFD | No Fibres Detected |
| CRO | Crocidolite (blue asbestos) | SMF | Synthetic Mineral Fibre |
| INS | Insulation | UMF | Unknown Mineral Fibres |

Notes:

- Sampling was undertaken by SLR Consulting.
- The results contained within this report relate only to sample(s) submitted for testing.
- The report(s) and/or information produced by SLR Consulting Australia Pty Ltd should not be reproduced and/or presented/reviewed except in full.
- Even after disintegration of some bulk samples (eg bituminous materials and vinyl tiles/sheeting) detection of fibres may be difficult when using polarized light microscopy and dispersion staining techniques. This may be due to the matrix of the samples (uneven distribution) or fine fibres that are difficult to detect and positively identify.
- Detection Limit - 0.1 g/kg (AS 4964).
- An Independent Analytical Technique is Recommended for Vinyl Samples (i.e. Vinyl Floor Tiles).



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Limitations

Thus, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to Central Queensland University - Rockhampton and/or associated parties.

The analysis was undertaken by SLR Consulting, 2 Lincoln Street, Lane Cove NSW 2066 (NATA Accreditation No. 3130).

All work conducted and reports produced by SLR Consulting are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR Consulting and the Client. Information and/or report(s) prepared by SLR Consulting may therefore not be suitable for any use other than the intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with SLR Consulting.

Before passing on to a third party any information and/or report(s) prepared by SLR Consulting, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR Consulting.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR Consulting are suitable for a specific objective.

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Appendix C

Limitations

LIMITATIONS

Surveys are conducted in a conscientious and professional manner. The nature of the task and the likely disproportion between any damage or loss which might arise from the work or reports prepared, and the cost of our services, is such that SLR cannot guarantee that all asbestos building materials have been identified and/or addressed.

Due to the possibility of renovations and additions to the building(s) over time, ACMs may have been concealed (for example behind new walls, flooring, ceilings, within boxing, etc.); such areas were inaccessible during the inspection. It is recommended that prior to any refurbishment/demolition works at the site that a full destructive asbestos building materials refurbishment/demolition survey is undertaken by a suitably qualified and experienced consultancy, such as SLR. An intrusive survey is required under AS 2601 (2001) The Demolition of Structures. If any materials reasonably suspected of containing asbestos are found on site, which are not identified within this report, the client's independent consultant, SLR, should be contacted to complete additional confirmatory sampling and analysis as required.

A change in building use/nature of activities could affect the control actions recommended within this report and a re-survey may be required.

Thus, while we carry out the work to the best of our ability, we totally exclude any loss or damages which may arise from services we have provided to CQ University and/or associated parties.

Where potentially ACM are identified these are normally reported on to the best of the consultant's ability. Analysis is not normally included and there is no guarantee that all such materials have been identified and/or addressed.

All work conducted and reports produced by SLR are prepared for a particular Client's objective and are based on a specific scope, conditions and limitations, as agreed upon between SLR and the Client. Information and/or report(s) prepared by SLR may therefore not be suitable for any use other than the intended objective. No parties other than the Client should use any information and/or report(s) without first conferring with SLR.

Before passing on to a third party any information and/or report(s) prepared by SLR, the Client is to inform fully the third party of the objective and scope, and all limitations and conditions, including any other relevant information which applies to the information and/or report(s) prepared by SLR.

It is the responsibility of third parties to investigate fully to their satisfaction if any information and/or report(s) prepared by SLR are suitable for a specific objective.

The report(s) and/or information produced by SLR should not be reproduced and/or presented/reviewed except in full.

Materials other than asbestos are generally outside the scope as identification can require specialised analysis/inspection techniques.

Settled dust is generally not sampled or commented on. Settled dust may contain asbestos, particularly if it is in the vicinity of ACM or areas where ACM have been removed.

Appendix D

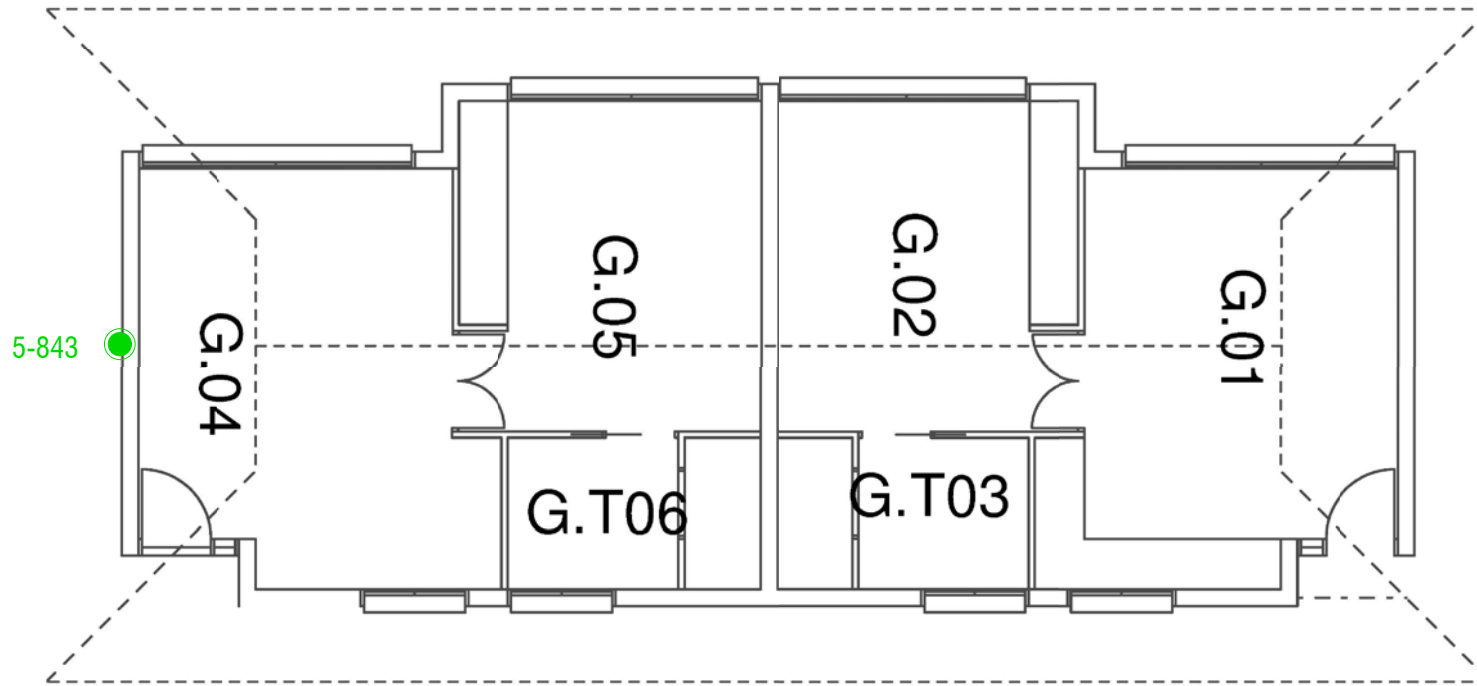
Photographs

No Asbestos Situations Identified.

Appendix E

Site Plan

H:\Projects\SLR\622-Svt\TOW\622-TOW\622-TOW\622-TOW\CAD\CURRENT\SLR62210968_753_01.rvt



GROUND FLOOR

LEGEND:

-  Sample location
No Asbestos Detected

NOT TO SCALE FOR DIAGRAMMATIC PURPOSES ONLY



| | |
|------------------|--------------------|
| Building No: | 753 |
| Inspection Date: | 2/08/17 - 4/08/17 |
| Inspected By: | NC |
| Figure No.: | SLR62210968-753-01 |
| Drawn By: | LF |
| Drawn Date: | 13/9/17 |

Appendix F

General Information

ASBESTOS**Asbestos: Description, Properties and Uses**

Asbestos is the generic term given to a group of naturally occurring fibrous minerals, based on hydrated silicates, which are found in various rock formations. Differing ratios of oxygen, hydrogen, sodium, iron, magnesium and calcium elements account for several different types of asbestos minerals, the most common varieties being Amosite (brown asbestos), Chrysotile (white asbestos), Crocidolite (blue asbestos). Other types include Anthophyllite, Actinolite and Tremolite.

The immense popularity of asbestos as a building material is attributed to its near unique properties of fire resistance, high abrasion resistance and superb acoustical characteristics coupled with its relatively low cost. Prior to 1973, asbestos was the material of choice for fire proofing, thermal insulation, sound insulation and abrasion resistance. It was used as a spray-on insulation of ceilings and steel girders; as a thermal insulation of boilers, pipes, ducts, air conditioning units, etc; as an abrasion resistant filler in floor tiles, vinyl sheet floor coverings, roofing and siding shingles; as a flexible, though resistant joining compound and filler of textured paints and gaskets; as the bulking material with the best wear characteristics for automobile brake shoes and in countless domestic appliances such as toasters, grills, dishwashers, refrigerators, ovens, clothes dryers, electric blankets, hair dryers, etc.

Asbestos: Health Effects

Many asbestos bearing materials or products are of no significant health risk whatsoever when used in the normal course of events. A health risk exists when asbestos fibres are released into the air and when that air is inhaled into the lungs. Even then, it appears that most people exposed to relatively small amounts of asbestos do not develop any related health problems. There is however no "safe" level of asbestos exposure since the risk is dependent on numerous factors including the time since exposure, exposure duration and concentration, asbestos type, the attributes of the particular individual and environmental factors such as exposure to cigarette smoke and other airborne pollutants.

There are three main diseases associated with airborne asbestos fibres:

Asbestosis - A fibrosis (or scarring) of the lung associated with relatively massive exposure to asbestos.

Lung Cancer - Indistinguishable from that caused by smoking and a common cause of death. The risk of lung cancer is much higher when there is exposure to both cigarette smoking and to airborne asbestos.

Mesothelioma - A cancer of the chest and abdominal lining, it is specific to asbestos exposure.

A feature of these diseases is that symptoms take a long time to appear, generally 5 to 40 years. Once symptoms are evident the disease progresses rapidly.

There is some evidence that Chrysotile asbestos is less carcinogenic than Amosite, and that Amosite is less carcinogenic than Crocidolite in causing mesothelioma, but the evidence is less clear for lung cancer.

Measurement of Airborne Asbestos Fibres

The Work Health and Safety Regulations 2011(QLD), and the Safe Work Australia Asbestos Codes of Practice & Guidance Note set the maximum allowable time weighted average for all forms of asbestos at 0.1 fibre/mL of air.

Air monitoring is used to determine airborne fibre levels. SLR is NATA certified for Asbestos Fibre Counting and Volume Measurement to carry out such monitoring.

The Safe Work Australia Code of Practice How to Safely Remove Asbestos 2011 states that air monitoring should be performed whenever Asbestos Containing Materials (ACM) are being removed, to ensure the control measures are effective.

The onus to provide a safe environment rests with persons in control of a business or undertaking, persons with management or control and persons carrying out demolition or refurbishment work. To meet these obligations it is recommended that SLR be engaged by the site controller, or their representative, and not an asbestos removal contractor as there could be a conflict of interest in the latter arrangement.

Asbestos Survey

Asbestos surveys are undertaken to identify any asbestos materials/hazards and assess the risk associated with the material/hazard.

Surveys are conducted through visual inspection by experienced personnel. During the inspection material samples are taken as appropriate for analysis.

Limitations

Due to the nature of the task all asbestos surveys are limited. Since asbestos can occur in so many forms and in so many locations, and as there is no instrument to detect asbestos, it is never possible to guarantee all asbestos has been identified. Access is usually restricted, and there may be asbestos hidden behind walls or other structures. Building plans are of great assistance to consultants undertaking surveys.

Asbestos Register

An asbestos register is a record of the location, type and condition of all asbestos containing products identified in a building. Under the Safe Work Australia Codes of Practice and the legislation, any place of work constructed prior to 31 December 2003 must have an Asbestos Register. A SLR Asbestos Survey Report includes an asbestos register.

Registers must be maintained and changes in the condition or extent of any asbestos present should be recorded. Registers should also detail the next review date, at present annually since the condition of asbestos materials, legislation, guidelines and standards change.

Management Plan

An asbestos management plan is required where asbestos materials have been identified and are to remain on site. The plan would normally be a component in the overall Hazard Management Plan for the site.

Control Options

Asbestos judged to constitute a health risk should be removed, enclosed or encapsulated by an approved asbestos contractor.

Enclosure

This involves the installation of a permanent, solid, non-porous, impervious barrier between the asbestos material and the surrounding environment. Examples include building boxes around steam pipes etc. A suspended ceiling is not permanent and, since occasional access is necessary above a suspended ceiling, enclosure is negated. Furthermore, many suspended ceilings act as return air plenums so enclosure is impossible.

Encapsulation

Encapsulation involves coating the material with a sealant. Good sealants penetrate through the asbestos material to the substrate. The encapsulating substance then hardens and binds all the asbestos fibres into a solid matrix. This is usually a short to medium term management option.

Removal

Removal is not without hazards to the occupants of the building. If not strictly controlled, the removal process can result in increased fibre counts in other areas. Technical competence, experience and integrity are of prime importance in evaluating asbestos removal plans.

We advise clients to work within the usual practised time frames of the experienced asbestos removal companies under strict supervision by a qualified person. Pressing for quicker turnaround times may result in low quality workmanship and unnecessary asbestos risk. Building owners may be in part responsible for risks created by the removal Contractor due to carelessness or negligence.

An independent consultant such as SLR, experienced in the supervision of asbestos removal, should be retained to act on the client's behalf.

Clearance Inspection

A clearance inspection must be conducted at the completion of asbestos removal works. The clearance inspection may include airborne asbestos monitoring and/or sampling/analysis of materials and should be completed by a suitably qualified and experienced consultant, such as SLR.