



























## 4 DISCUSSION AND RECOMMENDATIONS

As previously detailed in the Scope Section 2, SLR was appointed to complete a survey and assessment of Bundaberg 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).

Further to the completion of the on-site investigation and collection/analysis of samples, there are detailed site/work-specific requirements and precautions that must be taken in the management, control and removal of ACM. In addition to those listed on the Asbestos Containing Materials Register, the following are some general recommendations and precautions that should be considered. Detailed documents, which may include, Scope of Works, Safe Work Method Statements and Risk Assessments, should be prepared to appropriately address health and safety issues associated with specific work and site conditions.

- 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

## Appendix A

Report Number 622.10968.00010-R01-BLD 407-ASR

### ASBESTOS CONTROL LOG

To comply with the WHS Code of Practice How to Safely Remove Asbestos 2011, all actions taken to control asbestos and ACM are to be recorded in the table below. It is recommended that similar details also be recorded for any other asbestos materials identified.

<b>NAME</b>	<b>COMPANY</b>	<b>DATE</b>	<b>ASBESTOS MATERIAL RELATED WORK UNDERTAKEN</b> (Include any assessment concerning asbestos that took place before the work was carried out)	<b>REFERENCE NUMBER</b> (Include sample numbers, report numbers, quote number and/or purchase order number etc)
Jason Hutchins	SLR Consulting Australia Pty Ltd	23/08/2017	Asbestos Building Materials Survey	Report No 622.10968.00010-R01-BLD407-ASR





## ASBESTOS ANALYTICAL REPORT

Report Number 622.10968.00010-R01-v0.1-ANA-Bundaberg

**Client:** Central Queensland University - Rockhampton

**Client Contact:** Grant Farrell

**Client Address:** Bruce Highway,  
Rockhampton,  
QLD 4702

**Date Sampled:** 21<sup>st</sup> -24<sup>th</sup> September 2017

**Report Date:** 19 September 2017

**Site Address/  
Location:** Bundaberg Campus.

**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
3-891	Fibre Cement	ORF / NAD
3-892	Fibrous mass	ORF / NAD
3-893	Glue/Sealant	ORF / NAD
3-894	Fibre Cement	ORF / NAD
3-895	Fibre Cement	ORF / NAD
3-896	Fibre Cement	ORF / NAD
3-897	Fibre Cement	ORF / NAD
3-898	Fibre Cement	ORF / NAD
3-899	Fibre Cement	ORF / NAD
3-900	Fibre Cement	ORF / NAD
3-901	Fibre Cement	ORF / NAD
3-902	Fibre Cement	ORF / NAD
3-903	Fibre Cement	ORF / NAD
3-904	Fibre Cement	ORF / NAD
3-905	Fibre Cement	ORF / NAD
3-906	Fibre Cement	ORF / NAD
3-907	Fibre Cement	ORF / NAD
3-908	Fibre Cement	ORF / NAD
3-909	Fibre Cement	ORF / NAD
3-910	Fibre Cement	ORF / NAD
3-911	Fibre Cement	ORF / NAD
3-912	Fibre Cement	ORF / NAD

### 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
FCS	Fibre cement sheet		

Please direct correspondence to:

### SLR Consulting Australia Pty Ltd

ABN 29 001 584 612

2 Lincoln Street Lane Cove NSW 2066 Australia

+61 2 9427 8100 +61 2 9427 8200

E: Hazmatau@slrconsulting.com www.slrconsulting.com

**Notes:**

- Sampling was undertaken by SLR.
- 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).



Andrew Lynam  
BEnvSc

**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.

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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

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

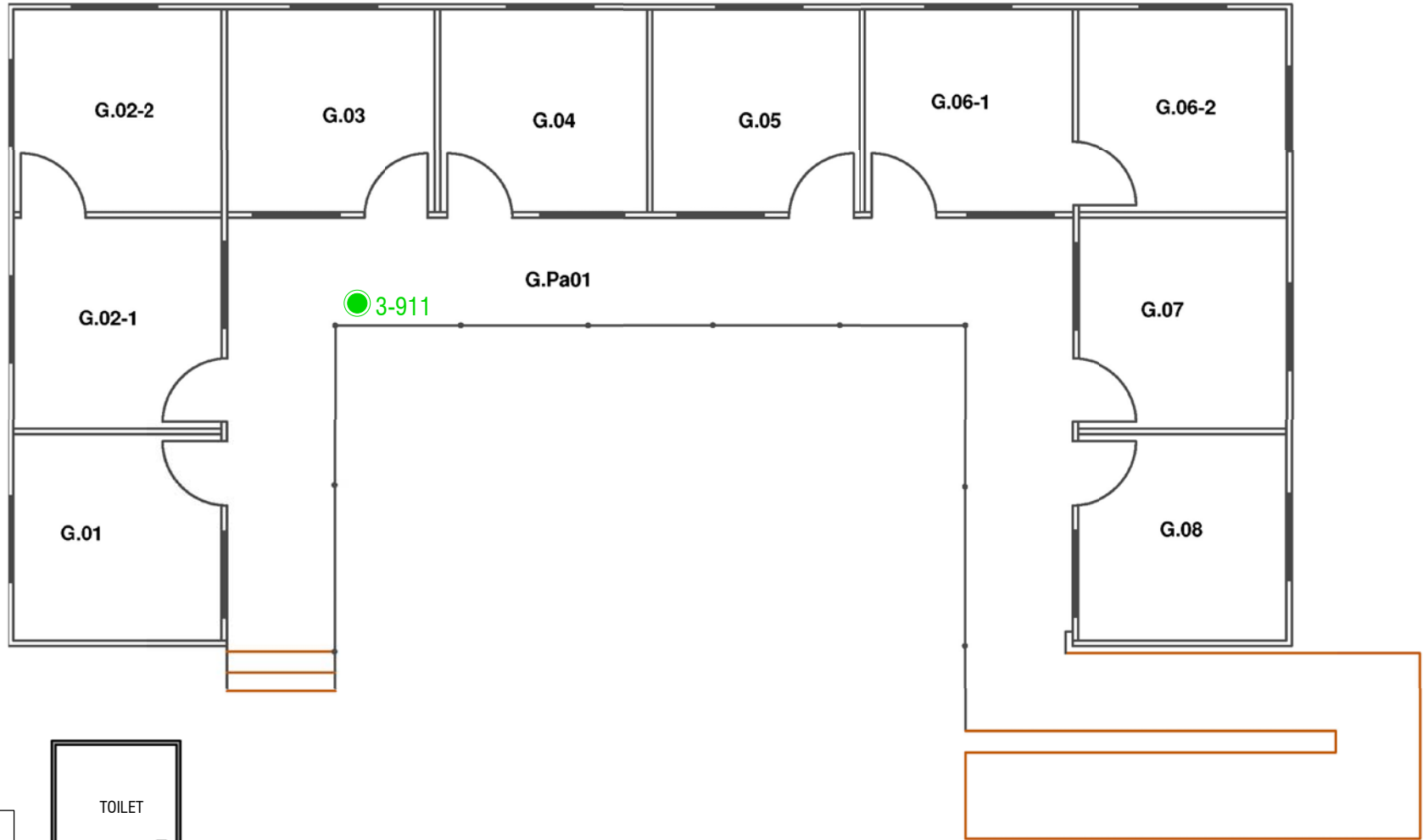
No Asbestos containing situations Identified.



# Appendix E

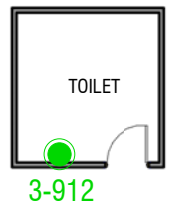
Site Plan

C:\LF\SLR\622-10968\BUNDABERG\SLR62210968\_407-01.rvt



**LEGEND:**

 Sample location  
No Asbestos Detected



NOT TO SCALE FOR DIAGRAMMATIC PURPOSES ONLY

Building No:	407
Inspection Date:	21/08/17 - 24/08/17
Inspected By:	NC
Figure No.:	SLR62210968-407-01
Drawn By:	LF
Drawn Date:	7/10/17

# 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.