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SEAGULL SHORE TOWNHOUSE COMPLEX COMMON AREA ONLY

ASBESTOS MANAGEMENT PLAN

83 GOLLAN DRIVE, TWEED HEADS WEST NSW 2485

REPORT PREPARED FOR:
Lionel Vine
August 2023

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1. EXECUTIVE SUMMARY

OCTIEF Pty Limited (OCTIEF) was commissioned to undertake an asbestos audit with the purpose of identifying the presence, extent and condition of asbestos and asbestos containing materials (ACM) within the nominated building(s) and structure(s) located at 83 Gollan Dr, Tweed Heads West NSW 2485 (the subject site). The subject site was audited on the 11th August 2023 by OCTIEF field consultant Adam Tucker, who is a licensed asbestos assessor, occupational hygienist with asbestos assessing experience or competent and suitably qualified person (SQP).

The objectives of the asbestos audit were to;

- Identify or presume the presence of asbestos and ACM within the boundaries of the subject site;
- Compile an asbestos register to record all identified and presumed asbestos and ACM;
- Conduct a risk assessment for all identified and presumed asbestos and ACM; and
- Make recommendations for the management and control of the identified and presumed asbestos and ACM based on the risk assessment conducted.

Before starting the audit, the OCTIEF field consultant walked through the premises to familiarise themselves with the layout of the site. The asbestos audit involved an inspection of accessible, representative, in situ construction materials, including tapping and prodding building materials to assess the type of materials used during construction, to identify potential asbestos and ACM.

Where potential asbestos or ACM was identified, and where practicable, a sample was collected and submitted to a laboratory accredited by National Association of Testing Authorities (NATA) for the analysis of asbestos to *AS 4964 – Method for the qualitative identification of asbestos in bulk samples* to determine the type(s) of asbestos present within the sample material, if any.

All works were conducted in accordance with the Government *Work Health and Safety Act* (WHS Act) *and Work Health and Safety Regulation* (WHS Regulation), and the following codes of practice approved under section 274 of the WHS Act;

- *Code of Practice: How to Manage and Control Asbestos in the Workplace*; and
- *Code of Practice: How to Safely Remove Asbestos*.

2. SUBJECT SITE IMAGE

3. ASBESTOS REGISTER

An asbestos register has been compiled as a record of all identified and presumed asbestos and ACM within the nominated building(s) and structure(s) located at the subject site.

The asbestos register accompanied this asbestos management plan (AMP) upon delivery by OCTIEF.

4. COMMENTS AND RECOMMENDATIONS

No asbestos or ACM was identified within the boundaries of common areas of the subject site. Areas that have not been accessed or sampled may still contain asbestos or ACM.

5. AREAS NOT ACCESSED

In addition to the inaccessible areas listed in *Section 9 – Limitations*, the following areas were not accessed and therefore, the possible presence of asbestos or ACM cannot be ruled out;

- All private residences.

Under no circumstances should unidentified potential asbestos or ACM be disturbed in any way. If unidentified potential asbestos or ACM are found within the boundaries of the subject site, then that material must either be assumed to contain asbestos and be treated with the appropriate caution based on the level of risk, or a sample should be taken and analysed. If it is assumed to contain asbestos, it is considered to be asbestos for all legal purposes.

6. RISK ASSESSMENT AND MANAGEMENT

Managing the risks associated with asbestos or ACM in buildings or structures involves the following process;

- Identify asbestos or ACM present and record it in an asbestos register;
- Assess the risks associated with the asbestos or ACM identified;
- Eliminate the risks so far as is reasonably practicable;
- Where it is not reasonably practicable to eliminate the risks, implement the most effective, reasonably practicable control measures in accordance with the hierarchy of control measures; and
- Regularly review the control measures implemented to ensure they are working as planned and remain effective over time.

The risk assessment conducted by OCTIEF for all identified and presumed asbestos and ACM within the nominated building(s) and structure(s) located at the subject site was a two-stage assessment;

1. An assessment of the various asbestos and ACM and the likelihood of them releasing fibres into the air – this assessment included the material type, location, quantity, condition, friability, any surface treatment and the type(s) of asbestos present);

   Figure 1 below provides material types listed according to the likelihood that airborne asbestos can be released into the air if it the material has deteriorated or been disturbed. The potential risk to health is greater for items higher up the list if people are exposed to airborne fibres. However, it is important to note that any of the materials listed can produce asbestos fibres if they become deteriorated or are disturbed.

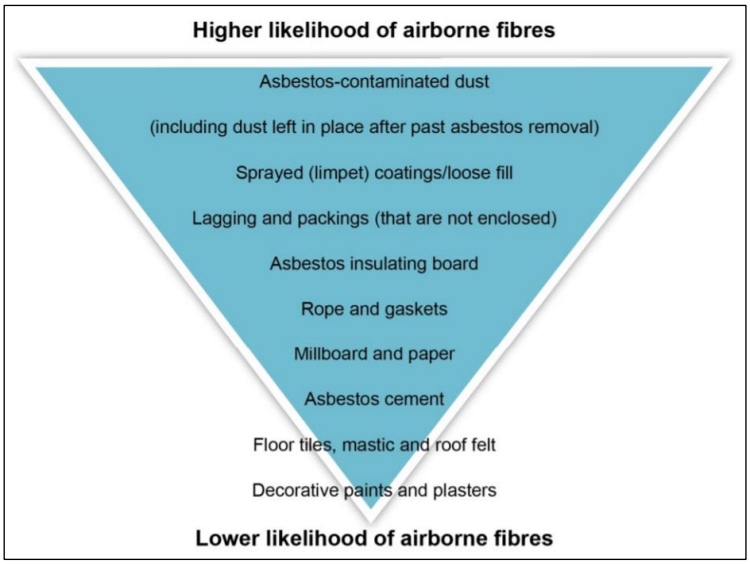

Figure 1 – source *Code of Practice: How to Manage and Control Asbestos in the Workplace*

2. An assessment of the likelihood of the asbestos or ACM being disturbed – this assessment took into consideration;
    - routine and non-routine activities conducted in the immediate area of the asbestos or ACM;
    - location of the asbestos or ACM;
    - accessibility of the asbestos or ACM;
    - quantity of asbestos or ACM;
    - number of persons occupying the immediate area of the asbestos or ACM;
    - frequency of use of the immediate area of the asbestos or ACM;
    - average time the immediate area of the asbestos or ACM is used; and
    - the potential for transport of respirable asbestos fibres by air movement.

The risk assessment conducted by OCTIEF makes use of the risk matrix in Figure 2 and Table 1 below;

		Consequence Rating	
		4 - Major	**5 - Severe**
Likelihood Rating	**5 - Almost Certain**	Extreme – 9	Extreme – 10
	4 - Likely	High – 8	Extreme – 9
	3 - Possible	High – 7	High – 8
	2 - Unlikely	Moderate – 6	High – 7
	1 - Rare	Moderate – 5	Moderate – 6

Figure 2 **–** Risk Matrix

Likelihood	**Almost Certain**	Typically includes 'partially sealed' / 'unsealed' ACM found in a 'poor' condition, AND is either accessible to building occupants on a regular basis OR has the potential to enter the air supply AND is likely to have already generated elevated levels (>0.01f/ml) of airborne asbestos.
	Likely	Typically includes 'unsealed' ACM found in a 'fair' condition or 'sealed' ACM found in a 'poor' condition, AND is either accessible to building occupants on a regular basis OR has the potential to enter the air supply AND is unlikely to generate elevated levels (>0.01f/ml) of airborne asbestos.
	Possible	Typically includes 'unsealed' ACM found in a 'good' condition or 'sealed' / 'partially sealed' ACM found in a 'fair' condition, AND is either accessible to building occupants on a regular basis OR has the potential to enter the air supply AND is unlikely to generate elevated levels (>0.01f/ml) of airborne asbestos.
	Unlikely	Typically includes 'unsealed' ACM found in a 'very good' condition or 'sealed' and "partially sealed' ACM found in a 'good' condition, has a low level of disturbance AND is not likely to generate measurable levels (<0.01f/ml) of airborne asbestos in its general state**.**
	Rare	Typically includes 'sealed' and 'partially sealed' ACM found in a 'very good' condition, has a low level of disturbance AND is not likely to generate measurable levels (<0.01f/ml) of airborne asbestos in its general state**.**
Consequence	**Severe**	Typically **Friable ACM** Can cause multiple fatalities or significant irreversible effects. Very serious long-term impairment of ecosystem function.
	Major	Typically **Non-friable ACM.** Can cause a single fatality or irreversible health effects or disabling illness to one or more persons. Serious long-term impairment of ecosystem function.

Table 1 – Risk Assessment Definitions

Risk ratings for all identified and presumed asbestos and ACM within the nominated building(s) and structure(s) located at the subject site have been recorded in the asbestos register compiled by OCTIEF.

As asbestos fibres are a known carcinogen, the associated risk rating of asbestos or ACM has been recorded as 'Moderate', 'High' , 'Extreme' or 'Unknown'.

Where the risk rating of asbestos or ACM has been recorded as 'High' or 'Extreme', control measures should be implemented to reduce the risk rating to 'Moderate' or to eliminate the risk.

The selection of a suitable management strategy to control the risk of exposure should be consistent with the hierarchy of control measures which ranks control measures from the highest level of protection and reliability to the lowest;

- Eliminate;
- Substitute;
- Isolate; and
- Implement engineering/administration controls.

For asbestos and ACM, examples of options include;

- Removal – opportunities to remove asbestos or ACM during refurbishment, renovation, repair and/or maintenance work should be considered wherever possible;
- Enclose/encapsulate/seal asbestos or ACM;
- Label identified and presumed ACM;
- Manage identified and presumed ACM – isolate and restrict access to in situ materials (e.g. implement a permit to work system), train building occupants accordingly; and
- Review identified and presumed ACM – conduct periodic re-audits to review the asbestos register when;
    - the asbestos management plan is reviewed;
    - further asbestos or ACM is identified;
    - asbestos is removed, disturbed, sealed or enclosed; or
    - refurbishment or demolition work is to be undertaken.

  As a minimum the asbestos register must be reviewed at least once every five years in line with *Code of Practice: How to Manage and Control Asbestos in the Workplace*.

The selection of the most appropriate control option, or a combination of options, requires consultation and coordination between the person with management or control of the workplace, and building occupants.

The choice of which option or combination of options to implement will depend on the best practice management, locally available options and cost. Note that cost should not be the deciding factor in choosing which option or combination of options to implement.

Once controls are implemented, all risk ratings of asbestos or ACM should be no higher than 'Moderate'.

Utilising this risk management process, ACM will never result in a risk rating of ‘Low’. This is due to the consequence of a single exposure to a measurable level of respirable airborne asbestos fibres (>0.01 f/ml) resulting in either fatality or irreversible health effect.

Recommended management strategies for all identified and presumed asbestos and ACM within the nominated building(s) and structure(s) located at the subject site have been recorded in the asbestos register compiled by OCTIEF.

7. GENERAL INFORMATION

A person with management or control of a workplace must ensure that all buildings and/or structures build prior to 31st December 2003 are inspected for the presence of asbestos and ACM. Where asbestos or ACM has been identified, they must ensure that all persons entering the building and/or structure are aware of the presence and location of the asbestos or ACM and ensure an asbestos management plan (AMP) and asbestos register are developed, reviewed and revised in accordance with the WHS Regulations.

A person conducting a business or undertaking (PCBU) must not carry out, direct or allow a worker to carry out work involving asbestos if that work involves manufacturing, supplying, transporting, storing, removing, using, installing, handling, treating, disposing of or disturbing asbestos or ACM, except in prescribed circumstances. The prohibition on the supply of asbestos also prohibits the sale of asbestos or ACM.

The final prohibition for asbestos in the workplace came into effect on 31st December 2003. The following prohibitions do not apply if any of the work involving asbestos is any of the following;

- Genuine research and analysis;
- Sampling and identification in accordance with the WHS Regulations;
- Maintenance of, or service work on, non-friable asbestos or ACM, fixed or installed before 31st December 2003, in accordance with the WHS Regulations;
- Removal or disposal of asbestos or ACM, including demolition, in accordance with the WHS regulations;
- Transport and disposal of asbestos and asbestos waste in accordance with jurisdictional legislation;
- Demonstrations, education or practical training in relation to asbestos or ACM;
- Management in accordance with the WHS Regulations of in situ asbestos that was installed or fixed before 31st December 2003;

A comprehensive list of exclusions to the prohibition can be found within the *Code of Practice: How to Manage and Control Asbestos in the Workplace*.

7.1 Legislative Requirements

The WHS Act and Regulations superseded the existing Occupational/Workplace Health and Safety Act and Regulations on 1st January 2012. The legislative requirements with regard to asbestos can be found in Chapter 8 of the WHS Regulations. Further information with regard to asbestos management in the workplace can be found in the following codes of practice approved under section 274 of the WHS Act:

- *Code of Practice: How to Manage and Control Asbestos in the Workplace*; and
- *Code of Practice: How to Safely Remove Asbestos*.

Approved codes of practice are practical guides to achieving the standard of health, safety and welfare required under the WHS Act and Regulations. They apply to any person who has a duty of care in the circumstances described in the code. Codes of practice are admissible in

court proceedings under the WHS Act and Regulations where they may be regarded as evidence of what is known about a hazard, risk or control and used to determine what is reasonably practical in the circumstances to which the code relates. Codes of practices, unlike the WHS Act and Regulations, are not mandatory and a duty holder may choose to use some other way to achieve compliance with the WHS Act and Regulations. However, alternative methods must provide equivalent or higher standards of work health and safety than those suggested in the code of practices.

Through the synthesis of information provided in the WHS Act, WHS Regulations, and approved codes of practice, the following mandatory requirements are now in force.

- A person with management or control of a workplace must ensure, so far as reasonably practical, that all asbestos or ACM at the workplace is identified by a competent person. A competent person means a person who has acquired through training, qualification or experience the knowledge and skills to carry out the task;
- Any samples from materials at the workplace which are to be analysed for asbestos must be done so by a laboratory which is NATA-accredited for the relevant test method(s);
- If the presence of asbestos or ACM at the workplace is identified or presumed it must be clearly indicated and, if reasonably practicable to do so, have a label affixed to it;
- A person with management or control of a workplace must ensure that an asbestos register is prepared for the workplace and kept up to date. The asbestos register must record any asbestos or ACM identified at the workplace or assumed to be present. The asbestos register must also identify where asbestos or ACM are known to not be present at the workplace;
- If the asbestos register outlines that asbestos or ACM were identified or assumed to be present at the workplace, the person with management or control of that workplace must ensure that a management plan accompanies the asbestos register. The AMP must be kept up to date and made readily accessible to workers, health and safety representatives, or persons conducting a business or undertaking at the workplace; and
- The asbestos register and AMP must be reviewed if further asbestos or ACM is identified or presumed to be present within the workplace; asbestos is removed, disturbed, sealed or enclosed at the workplace; the plan is no longer adequate for managing asbestos or ACM at the workplace; or a health and safety representative requests a review. In the absence of these events occurring the asbestos register and AMP must be reviewed no less than once every 5 years.

7.2 Asbestos

The related health aspects of exposure to airborne asbestos fibres have been well documented. The inhalation of asbestos fibres is known to cause mesothelioma, lung cancer and asbestosis and other respiratory diseases. Asbestos poses a risk to health by inhalation whenever asbestos fibres become airborne and people are exposed to these fibres. Accordingly, exposure should be prevented.

Malignant mesothelioma is a cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal. Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelium cells, potentially resulting in cancer. The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness. Mesothelioma was once rare, but its incidence is increasing throughout the industrial world as a result of past exposures to asbestos. Australia has the highest incidence rate in the world.

Lung cancer has been shown to be caused by all types of asbestos. The average latency period from first exposure to developing the disease ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage.

Asbestosis is a form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

Asbestos poses a risk to health by inhalation whenever respirable asbestos fibres become airborne. Airborne respirable fibre concentrations can be estimated using available data (for example, monitoring reports, data from scientific literature) or past experience (for example, monitoring reports) of the process in question. In cases of doubt, it may be necessary to confirm the estimates by measurement using the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003]*.

Exposure monitoring measures the levels of respirable fibres in the breathing zone of the worker while work is being undertaken. Exposure monitoring must be carried out by a competent person, who may include a licensed asbestos assessor or a person who has undertaken the endorsed unit of competency for licensed asbestos assessors. An occupational hygienist who has experience in asbestos exposure monitoring may also be used.

Where exposure monitoring is carried out, it is good practice to stop work and investigate the cause if the level of airborne asbestos in the breathing zone reaches half the exposure standard.

Although the need for exposure air monitoring will depend on the particular circumstances, the results may assist in assessing risks associated with asbestos.

Other forms of air monitoring that are relevant to asbestos work are discussed in more detail in the approved *Code of Practice: How to Safely Remove Asbestos*. These include;

- Control monitoring for ensuring that an enclosure or other controls used during asbestos removal are effective at preventing fibres from being found outside the work area; and
- Clearance monitoring to ensure that the work area is free of asbestos fibres prior to being certified for reoccupation.

The degree of respirable asbestos fibre released and subsequent exposure is in part dependent upon the matrix material binding the asbestos and its general condition.

There are six commercial varieties of asbestos which are currently regulated under the approved *Code of Practice: How to Manage and Control Asbestos in the Workplace*:

- **Actinolite** (Amphibole);
- **Amosite/Grunerite** (Amphibole) - commonly known as grey or brown asbestos;
- **Anthophyllite** (Amphibole);
- **Chrysotile** (Serpentine) - commonly known as white asbestos;
- **Crocidolite** (Amphibole) - commonly known as blue asbestos; and
- **Tremolite** (Amphibole);

8. MANAGING ASBESTOS AND ASBESTOS CONTAINING MATERIALS

The person with management or control of the workplace is responsible for implementing the planning, control and management measures outlined within this report. It is also their responsibility to ensure that the management plan including asbestos register is regularly reviewed in accordance with the relevant legislative requirements.

OCTIEF shall retain a digital copy of the document on file for the purpose of re-issue and re-auditing. It is the responsibility of the person with management or control of the workplace to contact the authors to attain and revise the file when necessary.

Section 429 of the WHS Regulation states that the person with management or control of the workplace must ensure that the asbestos management plan is readily accessible to;

- A worker who has carried out, carries out or intends to carry out work at the workplace;
- Health and safety representatives who represent workers that carry out or intend to carry out work at the workplace;
- A person conducting a business or undertaking who has carried out, carries out or intends to carry out work at the workplace; and
- A person conducting a business or undertaking, who has required, requires or intends to require work to be carried out at the workplace;

It is imperative that this document be kept at the workplace to ensure its accessibility.

Section 428 of the WHS Regulation states that if the person with management or control of a workplace plans to relinquish management or control (for instance, selling the workplace or the business or undertaking), they must ensure, so far as practicable, that a copy of the asbestos register is given to the person who is assuming management or control of the workplace.

8.1 Training

Section 445 of the WHS Regulations state that a person conducting a business or undertaking must ensure workers who they reasonably believe may be involved in asbestos removal work in the workplace of carrying out of asbestos-related work are trained in the identification, safe handling and suitable control measures for asbestos and ACM.

The required level of training is more general than that of a qualified asbestos removalist which required workers to undertake specific units of competency.

Topics include;

- Asbestos related health risks;
- Historical uses or likely presence of asbestos or ACM;
- Processes and safe work procedures to be followed to prevent exposure;
- Personal Protective Equipment (PPE) and Respiratory Protective Equipment (RPE); and
- Exposure standards and control levels for asbestos;

Section 39 of the WHS Regulations states a person conducting a business or undertaking must ensure that information, training, and instruction provided to a worker is suitable and adequate, having regard to;

- The nature of the work carried out by the worker;
- The nature of the risks associated with the work at the time the information, training or instruction is provided; and
- The control measures are implemented.

The person must, so far as is reasonably practicable, ensure the information, training and instruction is provided in a way that is readily understandable by any person to whom it is provided.

For more information relating to training courses available please contact OCTIEF directly.

8.2 Record Keeping

The person with management or control of the workplace should maintain detailed records of all activities relating to asbestos works which are undertaken within the subject site, in line with all current legislation and codes of practices. The records should include;

- Copies of the AMP and asbestos register, including updates and amendments;
- Permits to conduct works in restricted work areas;
- Induction records of contractors, visitors and employees noting the presence and location of the AMP and asbestos register for the subject site;
- Records of all asbestos related works, including maintenance and removal;
- Clearance certificates relating to asbestos works; and
- Air monitoring certificates of analysis relating to any asbestos works;

8.3 Warning Signs

Section 424 of the WHS Regulations states that a person with management or control of a workplace must ensure where reasonably practicable, that the presence of asbestos or ACM is indicated by a label. In areas where it is not practicable to label asbestos or ACM, warning signs should be installed.

The purpose of warning signs and labels are to advise all relevant people on site that asbestos or ACM has been identified or assumed to be present and that an AMP exists. They should be located in a position near or on a specified area where asbestos or ACM was identified or assumed to be present. All warning signs must be compliant with *AS1319 – Safety signs for the occupational environment*. Examples of warning signs and labels can be found in this AMP in *Appendix D – Example Warning Signs and Labels*.

The absence of a sign/label should not be taken to mean that an item or material does not contain asbestos. If in doubt consult the Asbestos Register or contact the subject site Manager and/or Safety Officer and arrange for a sample to be taken.

Should you require warning labels or signs, please do not hesitate to contact OCTIEF directly.

8.4 Permit to Work System

Areas in which asbestos or ACM has been confirmed or assumed to be present are classified as restricted work areas. All works which may disturb asbestos or ACM within these areas are prohibited unless the person with control or management of the workplace has issued a permit to work to the parties undertaking the works.

The permit to work will authorise the listed signatories of the parties undertaking the works to access the restricted work area. It must detail the task(s) to be performed, control measures and the conditions to be complied with during the access period. The purpose of the permit to work is to transfer responsibility for compliance with the WHS legislation and approved code of practices from the person with management or control of the workplace to the parties undertaking the works. On completion of the work, the listed signatories of the parties undertaking the works will relinquish the permit and return it to the person with management or control of the workplace. The person with management or control of the workplace is responsible for the supervision, enforcement and recording keeping of the permit to work system.

A permit to work template can be found in this AMP in *Appendix C – Example Permit to Work*.

8.5 High Risk Areas

Areas of potential high risk should not be touched or disturbed in any way. Expert advice or assistance should be sought from a suitably qualified asbestos removalist or assessor prior to any works being conducted within these areas. Such areas include but are not limited to any identified heater banks, damaged or fragmented ACM, fire doors, boiler and pipe lagging, sprayed on insulation and other areas containing friable asbestos or ACM. All potential high risk areas identified within the boundaries of the subject site are listed in the asbestos register. For more information relating to the management of these areas, please contact OCTIEF directly.

8.6 Safe Work Practices

The asbestos register and management plan must be consulted prior to undertaking any works such as refurbishment, maintenance, or demolition in order to determine if any asbestos or ACM is present in the proposed work areas. Safe work practices must be in place prior to commencing any asbestos work or asbestos related works.

Working with dry asbestos or ACM should be avoided wherever possible. Techniques that prevent or minimise the generation of airborne asbestos fibres must be employed at all times. Such techniques include but are not limited to the following;

- Wetting the asbestos or ACM with surfactants or wetting agents e.g. detergent water;
- The use of thickened substances, pastes or gels, including hair gel and shaving cream, to cover the surface of asbestos or ACM being worked on (these substances should be compatible with the conditions of use, including temperature, and should not pose a risk to health);
- The use of shadow vacuuming; and
- Performing the task in a controlled environment (for instance, a ventilated enclosure).

Control measures must be employed for all asbestos work or asbestos related work. The use of high-speed abrasive power and pneumatic tools is prohibited under the WHS Regulations, except where used with dust suppression/extraction controls. These controls include local exhaust ventilation (LEV) dust control hoods that attach to the tool and isolate the area being worked on from the environment, ensuring that dust is captured.

Examples of safe work practices can be found in this AMP in *Appendix B – Recommended Safe Working Procedures*.

8.7 Asbestos Removal

All asbestos removal works must be conducted by a licensed asbestos removalist unless specified otherwise in the WHS Regulations.

All Friable asbestos removal works must be performed by a Class A licensed asbestos removalist. All Friable asbestos or ACM must be removed as soon as reasonably practical, in accordance with the WHS Regulations and the approved *Code of Practice: How to Safely Remove Asbestos*. A Class A licensed asbestos removalist can remove any amount or quantity of friable and non-friable asbestos or ACM, and any asbestos contaminated dust (ACD).

Non-friable asbestos removal works that exceed 10m^2 must be performed by a Class B licensed asbestos removalist, in accordance with WHS Regulations and the approved *Code of Practice: How to Safely Remove Asbestos*. A Class B licensed asbestos removalist can also remove any ACD except that associated with friable asbestos removal works. Note: If determined that the non-friable material should be removed, it must be removed as soon as practical.

No license is required in order remove;

- up to 10m^2 of non-friable asbestos or ACM;
- ACD that is associated with the removal of less than 10m^2 of non-friable asbestos or ACM; and
- other minor ACD contaminations.

Other control measures to ensure that people are not exposed to airborne asbestos should only be implemented if it is not reasonably practicable to remove that asbestos. Examples of such control measures include sealing or encapsulating the asbestos or ACM.

Detailed information regarding asbestos removal can be found in the approved *Code of Practice: How to Safely Remove Asbestos*.

8.8 Asbestos Response Procedures

Asbestos response procedures may be required to be followed where existing ACM have been inadvertently disturbed through actions of staff, maintenance personnel, contractors, visitors, members of the public or damage by severe weather conditions (e.g. hail damage to a corrugated asbestos cement roof).

Where such incidences occur, the subject site Manager and/or Safety Officer shall be notified immediately. The immediate area shall be quarantined, with all access restricted.

It is recommended that expert advice be sought from a suitably qualified asbestos removalist or assessor prior to any works being conducted within these areas.

All such incidences are to be recorded, categorised and notified to the relevant positions in timely and efficient manner as per the sites own incident management framework.

8.9 Occupational Exposure Standards

Where occupational exposure to asbestos is likely to occur, exposure is not to exceed the National Exposure Standard (NES). Occupational exposure is measured using the *Membrane Filter Method*, by collecting a sample of air from the breathing zone of a person, over a minimum four hour period.

The current occupational exposure standards for asbestos are;

- Chrysotile (white) asbestos – 0.1 fibres per millilitre of air;
- Amosite (brown) asbestos – 0.1 fibres per millilitre of air;
- Crocidolite (blue) asbestos – 0.1 fibres per millilitre of air;
- Other forms of asbestos fibres – 0.1 fibres per millilitre of air; and
- Any mixture of fibre types or where the composition is unknown – 0.1 fibres per millilitre of air;

All precautions should be taken to completely minimise dust generation and appropriate PPE and RPE should be worn at all times when disturbing asbestos or ACM or entering a high risk area.

8.10 Air Monitoring for Asbestos Fibres

Air monitoring for asbestos fibres may be necessary during asbestos removal projects. Depending on the type of asbestos or ACM and the associated risk rating, there are different methods of removal that are required to be employed. This is in order to ensure that exposure to airborne asbestos fibres is minimised and controlled in such a way that airborne concentrations of asbestos fibres do not exceed the control levels and exposure standards. ‘Control levels’ are airborne asbestos fibre concentrations which, if exceeded, indicate there is a need to review current control measures or take other action. These control levels are occupational hygiene ‘best practice’, and are not health-based standards;

Control level	Control/Action
<0.01 fibres/ml	Continue with control measures
≥0.01 fibres/ml	Review control measures
≥0.02 fibres/ml	Stop removal work and find cause

9. LIMITATIONS

There is no guarantee, expressed or implied, that all asbestos and ACM has been identified or presumed to be present within the boundaries of the subject site. Areas where samples have not been taken and analysed, including samples which have been classified as 'similar to' other samples, and areas not accessed during the audit must be investigated further and all care and caution taken in the event of future project building work, including refurbishment, removal and/or demolition work.

All measurements and quantities mentioned in this report are approximations only and should not be relied on for asbestos removal tendering purposes.

Asbestos or ACM may be present in inaccessible areas. Inaccessible areas are areas that cannot be accessed during normal daily activities or routine maintenance. Examples of inaccessible areas that may contain asbestos or ACM include, but are not limited to;

- A cavity in a building that is completely (or almost completely) enclosed and suspected of containing asbestos (based on where asbestos is located elsewhere in the building) and access is only possible through destruction of part of the walls of the cavity;
- The inner lining of an old boiler pressure vessel (information on this type of vessel suggests it contains asbestos) and the inner lining is not accessible due to the design and operation of the boiler and access can only be via partial destruction of the outer layer;
- Vinyl tiles or cement based flooring that may contain asbestos, which have had a number of layers of non-ACM placed over them and secured, where the layers above it have been well secured and require some form of destruction in order to access the vinyl or cement based material that may contain asbestos;
- Enclosed riser shafts in multi-storey buildings containing cables that may be insulated with ACM;
- Underground services such as electrical conduits, water pipes, and firefighting pipelines may contain or be contracted from asbestos or ACM; and
- Air conditioning ducts that may contain asbestos gaskets or linings;

Unless otherwise mentioned in the asbestos register, electrical switchboards, electrical cabling, plant equipment/machinery, air conditioning units, boilers, pumps, transformers, generations and any other equipment or machinery not specifically mentioned which were 'live' at the time of the audit were not accessed or inspected for safety reasons.

Fire door cores were accessed only along the top edge of the door. No lock or door mechanisms were dismantled. If the door was fully enclosed or the edges beaded, the fire door is classed as inaccessible.

Subject sites which have undergone renovation and refurbishments throughout their lifetime have a large variety and range of potential asbestos or ACM. Representative samples from these potential asbestos or ACM are taken for identification purposes however without sampling each individual sheet, panel or area, the results of the sampling can only give an indication of the presence of asbestos. If unsure, the material must either be assumed to contain asbestos and be treated with the appropriate caution based on the level of risk, or a

sample should be taken and analysed. If it is assumed to contain asbestos, it is considered to be asbestos for all legal purposes.

The management and staff of OCTIEF Pty Ltd have taken every care in completing the information contained in this report. The interpretation of the scientific data contained in reports of this nature is often subject to professional judgement and it is possible that errors may occur.

In consequence of the often subjective nature of the scientific interpretation of data, OCTIEF Pty Ltd does not guarantee the completeness or accuracy of the information provided, and clients are advised they should not rely entirely upon this information when making commercial decisions as a result of information contained in this document.

Any opinion, statement, representation or advice given by us on behalf of OCTIEF Pty Ltd is given in good faith on the basis that OCTIEF Pty Ltd, its servants, employees and agents are not subject to any liability whatsoever (whether by reason of lack of due care and attention or otherwise) and the client releases and discharges OCTIEF Pty Ltd and its servants, agents or employees from all actions, suits claims, demands, causes of actions, costs and expenses, legal equitable under statute and otherwise and all other liabilities of any nature (whether or not the parties were or could have been aware of them) which the client may have; or but for this disclaimer, could or might have had against OCTIEF Pty Ltd and its servants, agents or employees in any way related to the information provided, or the circumstances recited in this disclaimer or allegations arising out of or in any way related to the information provided to the client by OCTIEF Pty Ltd.

The information provided is for the benefit and use of the client only and cannot be relied upon by any third party.

10. REFERENCES

QLD Government, *Code of Practice: How to Manage and Control Asbestos in the Workplace*

QLD Government, *Code of Practice: How to Safely Remove Asbestos*

National Occupational Health and Safety Commission (NOHSC), *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC:3003], NOHSC, Canberra, Australia

Australian Standard AS1319-1994 Safety signs for the occupational environment

Australian/New Zealand Standard 1715-2009 Selection, use and maintenance of respiratory protective equipment

Australian/New Zealand Standard 1716-2012 Respiratory protective devices

Australian Standard 4964-2004 Method for the qualitative identification of asbestos in bulk samples

Australian Standard ISO 31000:2018 – Risk management – Guidelines

Google Earth

QLD Government, *Work Health and Safety Act 2011*

QLD Government, *Work Health and Safety Regulation 2011*

APPENDIX A – LIST OF ACRONYMS & GLOSSARY OF TERMS

Asbestos fibre types

AMO	Amosite (Brown Grey Asbestos) fibres
CHR	Chrysotile (White Asbestos) fibres
CRO	Crocidolite (Blue Asbestos) fibres

Asbestos product/material types

AD	Adhesive
CB	Cement Based
FD	Fire Door
GB	Galbestos galvanized sheet/asbestos compound fixed to one side
GS	Gasket
IB	Insulation Board
LA	Lagging
LDB	Low Density Board
LF	Loose Fill
MF	Mastic/Filler
MI	Millboard
MA	Machinery
OTHER	Refer to Comments
NAD	No Asbestos Detected
PB	Polymer bound i.e. vinyl tiles, electrical switchboards etc.
SC	Spray Coating
TX	Textile – woven sheet, rope, insulation etc.
VS	Vinyl Sheeting (incl. Backing)

Accredited Laboratory: Defines a testing laboratory accredited by NATA (National Association of Testing Authorities, Australia).

ACM: Asbestos Containing Material (ACM) means any material, object, product or debris containing asbestos.

Air Monitoring: Refers to airborne asbestos air sampling to assist in assessing exposure and the effectiveness of control measures. This includes exposure monitoring, clearance monitoring and control monitoring.

AMO: Abbreviation within asbestos register for amosite (Brown/Grey Asbestos) fibres.

Asbestos: Defined as the fibrous form of mineral silicates belonging to the serpentine and amphibole groups of rock-forming minerals, including actinolite, amosite/grunerite (brown or grey asbestos), anthophyllite, crocidolite (blue asbestos), chrysotile (white asbestos), tremolite, or any mixture containing one or more of these.

Asbestosis: A form of lung disease (pneumoconiosis) directly caused by inhaling asbestos fibres, causing a scarring (fibrosis) of the lung tissue which decreases the ability of the lungs to transfer oxygen to the blood. The latency period of asbestosis is generally between 15 and 25 years.

Asbestos Removalist: Means a competent person who performs asbestos removal work.

Asbestos Removal Work: Means the removal of asbestos or ACM.

Asbestos Work Area: The immediate area in which work on ACM is taking place. The boundaries off the work area must be determined by a risk assessment.

Bonded Asbestos: Means asbestos or ACM in which the asbestos fibres are bound into a firm matrix (i.e. cementations or resinous).

CHR: Abbreviation within asbestos register for chrysotile (White Asbestos) fibres.

CRO: Abbreviation within asbestos register for crocidolite (Blue Asbestos) fibres.

Clearance Inspection: Refers to an inspection carried out by a competent person, to verify that an asbestos work area is safe to be returned to normal use after work involving the disturbance of ACM has taken place. A clearance inspection must include a visual inspection, and may also include clearance monitoring and/or settled dust sampling.

Clearance Monitoring: Air monitoring using static or positional samples to measure the level of airborne asbestos in an area following work on ACM. An area is cleared when the level of airborne asbestos fibres is measured as being below 0.01 fibres/mL.

Competent Person: Means a person who has acquired through training, qualification or experience the required knowledge, and skills to carry out a task.

Control Monitoring: Air monitoring using static or positional to measure the level of airborne asbestos fibres in an area during work on ACM. Control monitoring is designed to assist in

assessing the effectiveness of control measures. Its results are not representative of actual occupational exposures and should not be used for that purpose.

Friable Asbestos: Means asbestos or ACM which, when dry, is or may become crumbled, pulverised or reduced to powder by hand.

Condition: The physical state of the material in question.

Hazard: Refers to any matter, thing, process, or practice that may cause death, injury, illness or disease.

HEPA Vacuum Cleaner: Means a vacuum cleaner that is fitted with a High Efficiency Particulate Air (HEPA) Filter which complies with AS 4260 High efficiency particulate air (HEPA) filters – classification, construction and performance. A domestic vacuum cleaner is not suitable for use with asbestos.

Lung Cancer: This disease been shown to be caused by all types of asbestos. The average latency period of the disease, from the first exposure to asbestos, ranges from 20 to 30 years. Lung cancer symptoms are rarely felt until the disease has developed to an advanced stage.

Malignant Mesothelioma: A cancer of the outer covering of the lung (the pleura) or the abdominal cavity (the peritoneum). It is usually fatal. Mesothelioma is caused by the inhalation of needle-like asbestos fibres deep into the lungs where they can damage mesothelial cells, potentially resulting in cancer. The latency period is generally between 35 and 40 years, but it may be longer, and the disease is very difficult to detect prior to the onset of illness. Mesothelioma was once rare, but its incidence is (continued) increasing throughout the industrial world as a result of past exposures to asbestos. Australia has the highest incidence rate in the world.

Masonry: Concrete work, brickwork or stone work.

NAD: No asbestos or ACM detected.

NATA: National Association of Testing Authorities, Australia.

Non-friable (Asbestos): Material, not in its natural state, that is bonded by a cement matrix, vinyl, resin or other binding material.

Occupational Hygienist: A qualified and/or experience person with tertiary qualification in a science or occupational health related field. To work within the asbestos industry, Occupational Hygienists should be NATA Accredited, and must be experience in the assessment and control of asbestos, and other chemical, physical or biological hazards in the workplace.

Person Conducting a Business or Undertaking (PCBU): Means a person conducting a business or undertaking alone or with others, whether or not for profit or gain. A PCBU can be a sole trader (for example a self-employed person), a partnership, company, unincorporated association or government department of public authority (including municipal council). An elected member of a municipal council acting in that capacity if not a PCBU.

Permit to Work: A formal written authority to operate a planned procedure, which is designed to protect personnel working in hazardous areas or activities. Authority for a safe system of work**.**

Person with Management or Control of a Workplace: means a PCBU with management or control over the workplace.

Personal Protective Equipment (PPE): Means equipment and clothing that is used or worn by an individual person to protect them against, or minimize their exposure to, workplace risks. It includes items such as facemasks and respirators, coveralls, goggles, helmets, gloves and footwear.

Respirable Asbestos Fibres: Asbestos fibres less than 3 µm wide, more than 5 µm long with a width ratio of more 3:1.

Respiratory Protective Equipment (RPE): Equipment used to protect personnel from inhalation of asbestos and other hazardous or radioactive materials.

Risk: The likelihood and consequence of a hazard causing harm to a person or the environment.

Workplace: Is any place where work is, or is to be, performed by a worker; or a person conducting a business or undertaking.

APPENDIX B – RECOMMENDED SAFE WORKING PROCEDURES

Refer to the approved *Code of Practice: How to Manage and Control Asbestos in the Workplace* for current recommended safe working practises in the following;

- Safe work practice 1 – Drilling of asbestos containing material (ACM);
- Safe work practice 2 – Sealing, painting, coating and cleaning of asbestos cement products;
- Safe work practice 3 – Cleaning leaf litter from gutters of asbestos cement roofs;
- Safe work practice 4 – Replacing cabling in asbestos cement conduits or boxes;
- Safe work practice 5 – Working on electrical mounting boards (switchboards) containing asbestos;
- Safe work practice 6 – Inspection of asbestos friction materials;

Note – this is not an exhaustive list of safe working practices.

APPENDIX C – EXAMPLE PERMIT TO WORK

PERMIT TO WORK

VALID FROM _____Date / / TO _____ Date / /

DESCRIPTION OF RESTRICTED WORK AREA:

Reason for Access:

Asbestos Management Plan and Asbestos Register sited

Name: Signature:
Time: Date:

Safe Work Method Statement (SWMS) Ref #:

Job Safety Analysis (JSA) Ref #:

(Copies of SWMS & JSA must be attached to this Permit)

Warning Signs / Barriers Required:

Special Conditions:

PPE:

Health and Safety Representative(s) & Stakeholders advised:

ACKNOWLEDGMENT: I understand the above instructions and undertake to carry out all work in accordance with the requirements of the *Work Health and Safety Act and Regulations,* approved *Codes of Practice*s, current asbestos management plan and this permit to work. I have received instruction on Fire evacuation and Safety procedures.

Name of PCBU: **Signature:**

Time : **Date:** / /

AUTHORISATION: Access to this Restricted Work Area is authorised according to the conditions of this permit.
Person with control of management the workplace:
Signature:

Time **Date** / /

CANCELLATION: Satisfactory Completion of work is acknowledged. The workplace has been left in a clean and tidy condition.
Person with control of management of workplace:
Signature:

Time **Date** / /

APPENDIX D – EXAMPLE WARNING SIGNS AND LABELS