

Appendix B - ARCP



140 Gladstone St, Fyshwick ACT 2609
PO Box 112, Fyshwick ACT 2609
P: 02 6239 5656 F: 02 6239 5669
E: fibreid@robsonenviro.com.au
W: www.robsonenviro.com.au

**Asbestos Removal Control Plan (ARCP)
Removal of Asbestos Containing Materials (ACM)
All Building & Site Materials and Contaminated
Soil**

**25 Bradfield Street
Downer
ACT 2602**

December 2012 (Revised 18 January 2013)



Prepared for: Asset Management Branch
Community Services Directorate,
ACT Government

7692_ARCP_25 Bradfield St Downer_20130118.docx

CONTENTS

1	Introduction	4
2	Scope	4
3	Regulatory Requirements	4
4	Stages of Work (6).....	5
5	Contractor Responsibilities & Sub-Contractor Documents	11
6	Other trades.....	13
7	Personal & Respiratory Protective Equipment (PPE & RPE)	13
8	Temporary Utilities.....	14
9	Asbestos Removal & Disposal.....	14
9.1	Dust Suppression.....	14
9.2	Disposal Method	15
9.3	Decontamination Method	15
10	Inspections & Standard of Cleanliness.....	15
11	Final Clearance Certification & Completion Criteria	16
12	Barriers and Warning Signs	16
13	Asbestos & Materials Store & Handling	17
14	Occupational Hygiene	17
15	Fibre Levels	18
16	SITE INDUCTION	18
17	INSURANCES	18
18	SITE AND SAFETY MEETINGS.....	18
19	DEFINITIONS	19

20	ISOLATION OF SERVICES	19
21	LIGHTING AND POWER WITHIN REMOVAL AND WORK AREAS.....	20
22	HEPA FILTER.....	20
23	SECURITY	20
24	WASTE CONTAINER DECONTAMINATION & DUMPING	20
25	FIRE PRECAUTIONS	20
26	WARNING SIGNS	20

1 Introduction

This document forms the Asbestos Removal Control Plan (ARCP) for the safe removal of asbestos containing materials (ACM) from 25 Bradfield Street, Downer, ACT 2602.

2 Scope

A licensed ACT Class A Asbestos Removalist (the Contractor) will be employed to carry out the asbestos removal works. The Contractor must provide all labour, equipment, material, supervision and sub-contracting for the safe removal and disposal of all asbestos containing material (ACM) as specified in the Tender Documents. The removal works will have to be conducted in six (6) stages.

Robson Environmental Pty Ltd will undertake all airborne fibre monitoring, inspections, sample analyses and provide clearance certification on satisfactory completion of all phases of the asbestos abatement work and will be responsible for;

- Approval of all submittals by the Asbestos Removal Contractor.
- Conducting all inspections at the project site, as required.
- Monitoring job site performance and progress.
- Performing all background, leak, and clearance air testing throughout the course of the project.
- Submitting a final report to the Client that will include all documents, logs, charts, photographs, test results and clearance certificates pertaining to the project.
- A final visual inspection undertaken by a Robson Environmental Pty Ltd, ACT Licensed Class A Asbestos Assessor upon removal completion.

A head contractor will appointed to project manage the works.

3 Regulatory Requirements

The following legislation shall be used in the compilation of the tender documents and only suitably licensed and experienced personnel shall be employed to undertake the asbestos removal works. The Contractor shall ensure that an experienced Supervisor is on site at all times throughout the duration of removal works. All works must be carried out in accordance with the latest edition/amendment of the following;

- Code of Practice for the Safe Removal of Asbestos, 2nd Edition [NOHSC: 2002(2005)].
- Code of Practice for the Management and Control of Asbestos in Workplaces, 2nd Edition [NOHSC: 2018(2005)].
- Guidance Note on the Membrane Filter Method for estimating airborne asbestos fibres, 2nd Edition [NOHSC: 3003(2005)].

- Dangerous Substances Act 2004
- Work Health & Safety Act 2011
- Work Health & Safety Regulations 2011
- Environment Protection Act 1997
- Building Act 2004
- Construction Occupations (Licensing) Act 2004
- Dangerous Substances (General) Regulations 2004

Any contractor/sub contractor working on this site must have undergone asbestos awareness training before being allowed on site.

4 Stages of Work (6)

The remediation works will require everything within the wooden fence and front heras fencing to be removed as asbestos waste, including all plants bushes, shrubs and 300mm of soil. The original house will be deconstructed as friable asbestos waste and the garage and extension along with garden items be removed as bonded waste and be staged in the following order:

Stage 1 – Site Set Up

- Air monitoring to be done daily by Robson's during all stages.
- Photographs and video to be done by Robson's during all stages.
- Ensure correct signage is displayed on the secure fencing.
- Disconnect utilities (power, water, gas etc) to property. Permit to work to be issued to the removal contractor prior to work commencing. (ActewAGL) are being engaged to disconnect power and install a temporary power board
- Remove solar panels, solar panel inverter, front car port awning and TV aerial (to be recovered and given to previous tenant). To be cleaned by an asbestos removalist and issued a clearance certificate by Robson's before leaving site.
- Install temporary facilities and asbestos waste skips.
- Install temporary toilets and lunchroom facilities.
- Provide a site traffic management plan.

Stage 2 – Removal of Bonded Asbestos - Prep Work

- Air monitoring to be done daily (Robson).
- Set up hygiene/decontamination unit(s).
- Ensure skip facilities are on site for bonded and friable waste.
- Seal all external and internal cavities.
- Remove garage, house extension, pergola, air con and water heater as asbestos bonded waste to facilitate scaffold erection.

- Erect scaffold around the house and over the roof with a protective tarp, working platform to be in line with guttering.
- Erect framework for enclosure (200 micron sheeting bubble) on scaffold.
- Erect enclosure (bubble) and fit Negative Pressure Units (NPU's) (consult with Robson on number of units and positions for maximum effect), all NPU's to have HEPA filters and pre-filters checked and in date test and tag certificates.
- Smoke test carried out by Robson.

Stage 3 – Removal Work – Attic Space

- Remove roof tiles.
- Remove and clean solar panel frame, Robson's to issue clearance certificate and the frame given to previous tenant.
- Remove asbestos verge undercloaking
- Remove all insulation, air conditioning systems and ductwork from roof space.
- Remove any fixture that does not form part of the roof truss or ceiling.
- Vacuum (fitted with HEPA filter) and clean every surface in the roof space, include wall cavities
- Remove eaves.
- Dispose of all as asbestos waste.
- Robson to carry out a clearance inspection.
- Scanning electron microscopy testing to be conducted on the roof truss and brick work to establish if asbestos fibres are present.
- PVA (paint) spray & clearance air monitoring.

Stage 4 – Removal Work – Inside House

- Remove all stud wall linings inside the house.
- Remove and dispose of carpets.
- Remove and dispose of ceilings.
- Clean and vacuum all the exposed timber studs, noggin's and brick work.
- Robson to carry out a clearance inspection
- Scanning electron microscopy testing may be conducted on the exposed timber and brick work.
- PVA (paint) spray & clearance air monitoring.

Stage 5 – Removal Work – House Sub-Floor

- Remove timber floor.
- Remove all asbestos debris and packers.
- Remove up to 50mm of soil. A further 250mm to be removed once house has been demolished.

- Clean and vacuum all the exposed timber and brick work.
- Robson to carry out a clearance inspection.
- Scanning electron microscopy testing may be conducted on the exposed timber and brick work.

Stage 6 – Removal and Reinstatement Work – Demolition and Site Remediation

- Demolish all timber and masonry materials and dispose of as contaminated waste.
- Once the house has been removed from site, everything within the wooden fence and front heras fencing is to be removed as asbestos waste, including all plants bushes, shrubs and 300mm of soil.
- The soil will have to be scrapped back and stockpiled 5 metres away from neighbours fencing before the removal process can commence.
- Any stockpiling of soil on site must be kept damp and covered with 200 micron thick plastic and weighted down to withstand stormy weather.
- A filled in, in ground pool has been identified in the rear garden and the soil in this area must be excavated to virgin excavated natural material (VENM).
- Soil to be tested as per WA Guidelines and remediated as required.
- All documentation to be submitted to the ACT EPA for review.
- A minimum of 300mm certificated clean soil to be brought in and land scaped into the garden.

Stage 6 Detail

Investigation: The assessment of the surface soil will commence following the removal of the 300mm of soil. The rationale for undertaking the assessment after the demolition is completed is to ensure that any potential contamination of the residential block, due to the demolition process, is captured.

Sampling, analysis and reporting of the surface soil will be undertaken by Robson Environmental Pty Ltd in accordance with the ACT Environmental Protection Unit (EPU).

The procedure for the excavation and earth moving works associated with site rehabilitation and validation works will be dependent on findings of the site assessment.

All assessment of material for the purposes of disposal must be in accordance with the technical aspects of the ACT EPA endorsed Western Australia (WA) Department of Health (DOH) "Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia" May 2009;

Asbestos contaminated material will be taken to an ACT waste facility licensed to receive asbestos impacted soil.

The following Procedure provides the specific details to be implemented during the excavation and transfer of asbestos impacted soil.

This Procedure should be read in conjunction with the following documents;

- Robson Environmental Safe Work Method Statement
- Asbestos Removal Contractor's Asbestos Removal Control Plan (ARCP)
- ACT EPA - Information sheet 5 -- requirements for the transport and disposal of asbestos contaminated wastes.

General Items

Note A: Prior to the commencement of any subterranean works approved contractors must be engaged to determine the existence and location of all underground services.

- I The general required PPE will be hard hats, high-viz clothing, glasses, protective boots and gloves.
- II Further PPE will include P2 disposable masks and coveralls worn by plant operators and ground personnel associated with soil disturbance works. The coveralls will be a single use only item and will be discarded at the end of each working shift as contaminated waste.
- III The solid waste truck drivers will remain in their vehicle at all times with the windows of the truck closed at all times. As truck drivers will not be entering or exiting their vehicle, they will not be required to wear coveralls or dust masks.
- IV Airborne fibre monitoring to the National Association of Testing Authority (NATA) requirements will be carried out in the truck(s) and PPE requirements will be re-assessed by the Class A Asbestos Assessor on the basis of the fibre concentration results.
- V The excavation, handling, and management of all soils containing ACM will be carried out by an ACT licensed Class A asbestos removalist. The licensed asbestos removalist will be on site at all times as it is presumed that ACM is present.
- VI Static airborne fibre monitoring to the National Association of Testing Authority (NATA) requirements will also be undertaken proximal to the excavation works and on the perimeter fence. A fenced exclusion zone will be in place either side of each stage of the works. An appropriately sized temporary fenced exclusion zone will be erected for the truck to be positioned at a safe distance from each site of landscaping and roadworks for the safe handling of the solid waste from the excavation.
- VII Apart from perimeter static air sampling, additional air monitoring will be performed in the excavation machinery and transport vehicles.
- VIII Water spray/misting will be used as required to minimise dust generation.
- IX Based on the minimal quantity of soil to be removed the asbestos removalist will utilise a bucket, sponge, spray bottles and rags to address decontamination requirements during the landscaping and roadworks.
- X The area would be appropriately signed and barriered to prevent access and potential exposure.

- XI Robson Environmental will undertake all air monitoring and visual inspections as required.
- XII A Clearance Certificate would be generated following satisfactory monitoring results and visual inspection.

Process Control

- I If the operator is using a machine with an enclosed cabin he will ensure that the windows and doors of the machine (having an air conditioned cabin utilising a high efficiency particulate air (HEPA) filter), is kept closed at all times whilst in the excavation area – Site PPE will be as per General Items. **Machine operators will wear a P2 disposable mask and disposable overalls on machinery not equipped with a cabin.**
- II Each stage of works will commence following a satisfactory inspection including conformance to the necessary controls as documented. Sufficient water will be on site at all times to ensure adequate dust control is achieved, where required. Robson Environmental will maintain an ongoing assessment during all stages of works.
- III Excavation will continue to completion and Robson Environmental will continually inspect the site of the works. All soil, building material and rubble will be disposed of as ACM impacted soil to the ACT licensed facility.
- IV If asbestos impacts to soil are identified any assessment at the site shall be undertaken in accordance with the technical aspects of the ACT EPA endorsed Western Australia (WA) Department of Health (DOH) *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* May 2009.
- V The transport and disposal of impacted material will be in accordance with ACT EPA Information Sheet 5 (attached).
- VI All care will be taken when loading trucks to prevent the leaking of any material. The truck will be inspected and cleaned where required by the Class A Asbestos Removalist before leaving site to ensure ACM or debris is not present on external areas of the truck.
- VII Every load leaving site will be accompanied by the required transport certificate and a N120 sticker to identify the nature of the loads content.
- VIII A clearance certificate for the area, if impacted, will be forwarded to all concerned parties and to the EPU for its records at the completion of site works.
- IX All disposal and transport of asbestos impacted material must be undertaken in accordance with ACT EPA Information Sheet 5 and a clearance certificate for the

area will be forwarded to the EPU for its records at the completion of works at the site. Material from the site can be disposed as asbestos waste to West Belconnen Tip without EPU approval however no other material is to be disposed or reused off-site without EPU approval.

5 Contractor Responsibilities & Sub-Contractor Documents

The Contractor represents that the Contractor (the asbestos removal sub-contractor) and its employees are experts in asbestos removal with full knowledge of, and compliance with, all applicable national, state, and local rules, regulations, and guidelines governing asbestos removal as well as state-of-the-art removal techniques.

The Contractor must furnish all permits, labour, material, services, insurance, tools, equipment, and notifications in accordance with national, state and local and all other applicable agencies to complete removal of ACM.

The Contractor must attend a pre-start meeting to be held at a mutually agreeable time and date. Attending this meeting will be the Client, Project Manager, Project Supervisor (Robson Environmental), Contractor and/or Contractor's Representative and Contract Supervisor. All pre-start submittals by the Contractor will be reviewed at this meeting. The Contractor must be prepared to discuss and submit plans or documentation for:

- Detailed site specific Safe Work Method Statement (SWMS) describing how the Contractor intends to comply with the requirements of this document
- Sequence and schedule of work and completion dates
- Assigned responsibilities for removal works including nominated Supervisor
- Emergency procedures
- Preparation of work area and Working Enclosures
- Preparation of boundaries, including the type and extent of isolation required and the location of any signs and barriers
- Post warning signs and fencing tape in and around the Work Area and restrict access to work area to personnel approved by the Contractor or Project Manager
- Personal protective equipment (PPE) to be used, including respiratory protective equipment (RPE)
- Decontamination procedures: of tools and equipment, personal decontamination and the decontamination of non-disposable personal protective equipment (PPE) and respiratory protective equipment (RPE)
- Respiratory Protection Program including evidence of respiratory protection training and face fit certification.
- Handling and disposal procedures for ACM
- Methods for removing the ACM

- Asbestos removal equipment (Negative pressure units (NPU), spray equipment, asbestos vacuum cleaners, cutting tools, etc)
- Abatement methods and procedures
- Ensure Removal Area is placed under a pressure differential of at least minus 0.02 inches of water column, with respect to outside areas, before disturbance of asbestos-containing materials
- Provide suitable air moving and exhaust equipment, including but not limited to: a method for maintaining pressure differential of 0.02 inches of water column inside containment than outside
- Methods of disposing of asbestos wastes, including details on the disposal of protective clothing and equipment
- Final decontamination and cleanup procedures
- Project Manger's safety requirements
- Any site specific Client requirements

There will be a final walk-through of the building and discussion of plans, anticipated problems, and areas of special concern. (Conducted on 18 January 2013).

Upon receipt of notification to proceed with a specific project by the Client, the Contractor must file all notices to the applicable regulatory agencies, and obtain all required permits to perform the asbestos abatement. The Contractor must submit to the Project Manger confirmation that notifications have been sent to the applicable regulatory agencies, as well as a copy of the notification of asbestos abatement. Upon commencement of work, the Contractor must complete the project within the time specified by the Project Manger.

The Contractor must ensure that adequate safety precautions are implemented to protect workers from injury due to movement of vehicles and during the removal of building infrastructure, plant and equipment. The Contractor must maintain compliance with the requirements of the "*Code of Practice for the Safe Removal of Asbestos 2nd Edition [NOHSC 2002(2005)]*" and to ensure that the highest degree of Occupational Health and Safety is achieved at all times to the Project Manager's satisfaction.

The Contractor must have a licensed and competent Supervisor in attendance at all times, from mobilisation to completion. Failure to have a Supervisor present shall result in termination of all asbestos abatement activities for the remainder of the day, or until an accredited Supervisor is again present. The Contractor shall not begin work until an accredited Supervisor is present, and shall cease all work when the Supervisor leaves the work site.

The Contractor must secure all entrances to the Work Area and doors/gates locked with combination/security lock(s). The combination/key(s) will be given to Project Manager and the Client's Security Representative.

Should the Contractor fail or be unable to execute the contract and complete the work for any reason, then the Contractor shall be penalised in accordance with agreements stated in contract documents.

The Project Manager and/or the Project Supervisor retains the right to stop work for any breach of specified procedures, including but not limited to airborne fibre levels exceeding 0.01 fibres /mL outside the Removal Area.

6 Other trades

If other trades are required during the works the removal contractor is to provide and maintain appropriate respirators and protective clothing for their use to ensure a safe working environment. The removal contractor is required to instruct the other trades in the safe use of Personal Protective Equipment (PPE) to the Project Manager's satisfaction when they are required to work in an asbestos contaminated area.

7 Personal & Respiratory Protective Equipment (PPE & RPE)

RPE should comply with AS/NZS 1716-2003 Respiratory Protective Devices and be selected, used and maintained in accordance with AS/NZS 1715-1994 Selection, Use and Maintenance of Respiratory Protective Devices.

They must always be worn under the coverall fitted hoods. Face pieces should be cleaned and disinfected. All personnel in the designated work area must as a minimum wear the following PPE:

- **Respirator: A full-face positive pressure P3 respirator must be worn by each person in the friable Removal Area during disturbance/removal of Friable ACM and ensure that the wearer has a respirator face fit certificate. No personnel will be allowed on site with facial hair that does not fit inside of the respirator. A P3 half mask or P2 disposable face mask can be used for removal of the bonded waste.**

Disposable coveralls with fitted hoods and cuffs should be worn. Coveralls with open pockets and/or velcro fastenings should not be used, because these features can be contaminated and are difficult to decontaminate. Fitted hoods should always be worn over the straps of respirators and loose cuffs should be sealed with tape. Disposable coveralls rated type 5/6, category 3 (prEN ISO 13982-1) or equivalent would meet this standard.

Laced boots should be avoided as they can be difficult to clean and asbestos dust can gather in the laces and eyelets. Laceless boots such as gumboots are preferred where practicable. If boot covers are worn, they should be of a type that has anti-slip soles to reduce the risk of slipping.

Safety footwear must be decontaminated before being removed from the asbestos work area or sealed in double bags, the exterior of which is decontaminated, for use only on the next asbestos maintenance task. Alternatively, work boots that cannot be effectively decontaminated should be disposed of as asbestos waste at the end of the work.

The use of protective gloves should be determined by a risk assessment. If significant amounts of asbestos fibres may be present, disposable gloves should be worn. Protective gloves can be unsuitable if dexterity is required. Personal decontamination including hand and fingernail washing should be carried out each time workers leave the asbestos work area and at the completion of asbestos maintenance and service work. Any gloves used must be disposed of as asbestos waste.

- **Coveralls, Boots & Gloves:** Non-skid soles, steel capped boots and disposable full-body coveralls as per the *Code of Practice for the Safe Removal of Asbestos, 2nd Edition* [NOHSC: 2002(2005)].

8 Temporary Utilities

The Contractor shall provide and maintain temporary connections to the existing water supply and electrical utilities for the use of water and power for lighting, equipment or services in order for the work to be conducted.

- Water and electricity shall be provided free of charge, with the Asbestos Removal contractor providing all temporary connections for its distribution and removal of the same after completion of the work.
- Temporary site shed(s) and facilities, positioned within the compound, are being provided by the Project Manager.

9 Asbestos Removal & Disposal

All materials are to be stored and securely locked only in designated areas. Contractors are only to use entrances and areas designated by the Project Manager.

9.1 Dust Suppression

- The Contractor shall maintain effective dust control throughout the works. Due to the amount of loose asbestos, effective dust control must be attained using a sufficient number of Negative Air Units. Robson Environmental will supervise smoke testing of all Removal Areas to check the integrity of the enclosure before commencement of any removal works.
- Water shall be available on-site at all times to assist in dust suppression during the removal works.
- Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters must not be used.

9.2 Disposal Method

- A Chain of Custody for each load must be initiated. The Chain of Custody form must be signed by the asbestos removal company, transport company, and waste disposal facility.

9.3 Decontamination Method

- Wet decontamination facilities must be employed throughout the friable ACM removal works, for both personnel and equipment/waste decontamination.
- Clean protective equipment and clothing by damp-wiping or using a vacuum cleaner equipped with a HEPA-filtered exhaust in the asbestos removal area. Do not use dry-sweeping or compressed air to clean up or remove dust or materials from clothing.
- The Contractor must remove all asbestos-contaminated materials including disposable coveralls, cleaning rags, and plastic sheets from the Removal Area as contaminated waste. Contaminated materials must be properly wetted and packaged in sealed leak-tight containers with approved labels, identifying the contents as asbestos materials. Wet asbestos waste shall be placed into labelled leak-tight wrappings or containers according to industry standards or better.

10 Inspections & Standard of Cleanliness

The Contractor shall make all work areas available to inspection at all times. Inspections of the work area will be made by a Robson Environmental Class A Asbestos Assessor at scheduled intervals during the course of the project. Each work area will be inspected by the Project Manager accompanied by the Contractor and/or Contractor's Supervisor. It is the Contractor's responsibility to ensure that:

- The Removal Area is initially cleaned and properly prepared for removal of ACM.
- ACM are being properly removed and disposed of.
- The Contractor's employees are properly protected.
- All ACM have been removed and disposed in accordance with the procedures contained in this specification and the Client's instructions.

The inspections will confirm that these conditions have been met. It is the sole responsibility of the Contractor to correct any subsequent discoveries of inadequate initial cleaning, preparation, work procedures, or remaining ACM encountered after an inspection, regardless of the outcome of such an inspection.

Robson Environmental may inspect all materials from the Removal Area that are being disposed of as non-ACM.

11 Final Clearance Certification & Completion Criteria

A final visual inspection will be made after all the Contractor's materials have been removed from the Removal Area and all removal, encapsulation, disposal, and related work is completed. The Working Enclosure must be well lit for inspection. Insufficient lighting may result in delay of the final visual inspection.

All plastic sheeting must be removed from the Removal Area, with the exception of critical barriers, and transit air lock and/or decontamination unit. HEPA-filtered exhaust units must remain operational, and pressure differential maintained until final clearance is obtained.

All stripped or cleaned surfaces must be sprayed with pva after satisfactory Clearance Inspection to seal in microscopic asbestos fibres.

If the area(s) fail to meet a satisfactory standard of cleanliness, the area shall be re-cleaned by the Contractor. Repeated cleaning shall be required until an acceptable standard is achieved.

After Clearance Inspection and Clearance Air Monitoring have been completed, the Project Manager will advise the Contractor of the test results.

When the results of Clearance Monitoring give values of airborne asbestos in excess of the recommended clearance standard, the Contractor must re-clean the Removal Area. Final clearance monitoring testing shall then be repeated at the Contractor's expense.

When a Removal Area fails either the inspection or the final air testing, the area must be re-cleaned, re-inspected and re-tested. The sequence of re-cleaning and re-testing shall continue until the area passes the clearance inspection and the clearance air test.

When a Removal Area has passed or failed the clearance air test, the Contractor will be informed immediately.

12 Barriers and Warning Signs

Barriers must be erected and access controlled into the work area and signage erected as per the *Code of Practice for the Safe Removal of Asbestos, 2nd Edition* [NOHSC: 2002(2005)] must be posted at all possible points of entry to the asbestos removal work areas.

- The ACM work area shall be restricted to authorised, trained personnel wearing the appropriate PPE identified in Section 7. The removal area must be cordoned off and an exclusion zone of 5 metres (where practicable) must be designated around the perimeter of the removal area.

13 Asbestos & Materials Store & Handling

All materials are to be stored only in areas designated. Contractors are only to use entrances and areas designated by the Project Manager. Respirators and disposable work overalls must be removed before workers leave the contractor's area.

- To prevent any interference with the work activity, do not allow asbestos waste to accumulate in the work area. Remove asbestos waste from the work area at the end of each work shift, or more frequently when required.

14 Occupational Hygiene

Robson Environmental will monitor all aspects of the asbestos removal and provide visual inspections and airborne fibre monitoring, where required, during the asbestos removal programme and provide written clearance certification on satisfactory completion of the project. Air monitoring must be conducted at all times during the site set up and removal programme. Air monitoring is carried out:

- To confirm that an appropriate level of personal protection has been chosen
- To check the effectiveness of dust suppression methods
- To provide data for employee exposure records
- To check that an area is suitable for re-occupation on completion of asbestos work

Robson Environmental will provide Background Sampling, Leak (enclosure check) Sampling and Clearance Sampling.

- **Background Sampling:** to establish the respirable fibre concentrations before any activity which may lead to airborne asbestos contamination, to ensure that the risk is not being increased as a result of the activity.
- **Leak (enclosure check) Sampling:** performed outside the Removal Area whilst asbestos work is in progress to check that the environmental control systems are adequate. Also, to verify that the works are properly contained and that asbestos fibres are not being released into adjacent areas.
- **Clearance Sampling:** to check that the airborne fibre levels in the asbestos work area are below the clearance level indicator (the limit of quantification 0.01 f/mL) before removal of the asbestos work enclosure and reoccupation of the area.

15 Fibre Levels

The Contractor is responsible to ensure that the maximum fibre levels throughout the contract period do not exceed the *NOHCS:2002 (2005)* recommended Control Level of 0.01 f/mL.

If airborne fibre levels are measured at or exceeding the recommended Control Level, the Class A Asbestos Assessor will instruct the Contractor to take the following action:

Control Level Airborne fibres/mL	Action
< 0.01 f/mL	Continue with control measures
≥ 0.01 f/mL	Review control measures
≥ 0.02 f/mL	Stop removal work and find the cause and remediate

16 SITE INDUCTION

All asbestos removal personnel and nominated sub-contractors must attend a **Site Induction** before commencing work on site.

17 INSURANCES

Upon notification of award of contract, the Contractor must submit to the Project Manager the following documents:

- A copy of the Contractor's Licences.
- A certificate of insurance issued by the Contractor's insurance carrier, which indicates that the Contractor holds an asbestos risk insurance policy (including any of their sub-contractors involved in the project) on an occurrence basis for an amount not less than \$20,000,000.
- A certificate of insurance issued by the Contractor's insurance carrier, which indicates that, the Contractor holds Unlimited Worker's compensation insurance.

18 SITE AND SAFETY MEETINGS

The Contractor will be required to attend Site and Safety meetings during the course of the project as required by the Project Manager.

19 DEFINITIONS

Background samples	Air monitoring undertaken in a building known to contain asbestos based materials before an asbestos removal programme to establish ambient airborne fibre levels.
Work Area	Area adjacent to the Removal Area from which the general public are restricted but protective clothing and respirators are not normally required.
Removal Area	The physical barrier which is erected around the ACM to seal and minimise leakage, so that, as far as possible, asbestos dust and waste arising from the work are prevented from spreading to the surrounding environment. Anyone working inside an enclosure must wear suitable protective clothing and respiratory protective equipment (RPE), and must thoroughly decontaminate themselves on leaving the enclosure. Enclosures may either make use of parts of the existing building structure and/or be self-supporting temporary structures built around the asbestos working area. The enclosure should be designed and constructed so that asbestos materials are not disturbed until it is complete. If some disturbance is unavoidable, it should be kept to a minimum, and exposed people provided with adequate and suitable personal protective equipment.
Occupied Area	Area in the vicinity of a Work Area to which the general public have unrestricted access

20 ISOLATION OF SERVICES

The Project Manager is to ensure that the utilities (electricity, gas, water and air-conditioning system) are isolated and any shut down of electric power is done safely and by competent persons. The Project Manager is to provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electric code requirements. Residual current devices (RCDS) must be used at all temporary power sources within the work area. All modifications to the electrical power systems must be carried out by a licensed electrician.

The Contractor is also required to coordinate with all other trades during the contract period.

To ensure a safe working environment, the Contractor is required to provide and maintain appropriate respirators and protective clothing for the use of other trades. The Contractor is required to instruct other trades in the safe use of PPE to the Project Supervisor's satisfaction when they are required to work in an asbestos contaminated area.

21 LIGHTING AND POWER WITHIN REMOVAL AND WORK AREAS

The Contractor is to ensure that all lighting and power is safe and switched off at the power board at the completion of each shift. All lights shall be of a type and design, which will ensure that contact with plastic sheeting, does not cause ignition. At the completion of each shift, a designated person shall be responsible for ensuring all lights and power (excluding that to Negative Air Units) is turned off at the power board. The person's name shall be given in writing to the Project Manager before the commencement of each shift. A Log Book must be kept detailing all system tests and the name of the person undertaking the test or system shutdown.

22 HEPA FILTER

High Efficiency Particulate Air (HEPA) filter vacuum cleaners must only be used on site. Negative Pressure Units (NPU) must be fitted with HEPA filters and properly maintained throughout the works. The NPUs will be tested before being used on site by Robson Environmental.

23 SECURITY

The Contractor is to ensure that the work and removal areas are secured to prevent accidental or deliberate entry by unauthorised persons. At the completion of each day's work, the work and removal areas are to be locked. A copy of each key used to secure these areas must be issued to the Project Manager.

24 WASTE CONTAINER DECONTAMINATION & DUMPING

All asbestos waste shall be placed into labelled plastic bags and/or containers as per [NOHSC: 2002(2005)]. All asbestos waste is to be stored and securely locked only in designated areas.

All asbestos and contaminated waste is to be adequately contained prior to leaving the site. A letter of receipt to show the appropriate dumping of the contaminated materials must be provided from the waste disposal facility.

25 FIRE PRECAUTIONS

A fire extinguisher suitable for all types of fires likely to be encountered shall be kept within the removal area. All personnel shall be informed in the correct use of the fire extinguisher. The names of all persons trained in the use of the fire control equipment must be noted in the Log Book.

26 WARNING SIGNS

Signage as described by *Code of Practice for the Safe Removal of Asbestos 2nd Edition* [NOHSC: 2002(2005)] shall be posted at all possible points of entry to the asbestos removal site.

Appendix A – ACT EPA - Information sheet 5 – requirements for the transport and disposal of asbestos contaminated wastes.



Information sheet 5 – Requirements for the transport and disposal of asbestos contaminated wastes*

The provisions below apply to any activity that involves the transportation, collection, storage, or disposal of any type of asbestos waste, regardless of whether the activity is required to be licensed.

Transportation requirements for asbestos waste are

- Any type of asbestos waste must not be transported unless it is conveyed in a covered leak proof vehicle so as to prevent any spillage or dispersal of the waste
- If asbestos waste that is in the form of stabilised asbestos waste in bonded matrix is to be transported and the waste is not stored in a bag in accordance with the requirements for collection and storage (see below), the waste must be wetted before it is transported
- Any vehicle used to transport any type of asbestos waste must be cleaned before leaving the landfill site at which the waste is disposed of, so as to ensure that all residual asbestos waste is removed from the vehicle

Collection and storage requirements for asbestos waste are

- Asbestos waste that is in the form of asbestos fibre and dust waste must be covered in such a manner as to prevent the emission of any dust
- Asbestos waste that is in the form of asbestos fibre and dust waste must not be collected and stored except in accordance with the following procedures
 - the waste must be collected and stored in impermeable bags,
 - each bag must be made of heavy duty low density polyethylene of at least 0.2mm thickness and have dimensions of no more than 1.2 metre in height and 0.9 metre in width,
 - each bag must be sealed in accordance with the NOHSC Code of Practice for the Safe Removal Of Asbestos 2nd Edition guidelines, and contain no more than 25kg of waste, and
 - each bag must be marked with the words "CAUTION ASBESTOS" in letters that are of not less than 40mm and that comply with Australian Standard AS 1319 – Safety Signs for the Occupational Environment

- if asbestos waste in any form is stored in a bag, the following procedures must be followed:
 - the bag must be placed in a leak proof container that is used only for the purposes of storing asbestos waste,
 - the container must be marked with the words "DANGER ASBESTOS WASTE ONLY – AVOID CREATING DUST" in letters that are of not less than 50mm and that comply with Australian Standard referred to in paragraph above, and
 - the container must have a close fitting sealed cover so as to prevent any spillage or dispersal of the waste.

- Asbestos waste in any form must not be stored except in accordance with the following procedures:
 - the waste must be stored in a secure area so as to prevent entry by unauthorised persons and to prevent the risk of environmental harm, and
 - the waste must, if it is practicable to do so, be stored separately from other types of waste.

- if asbestos waste that is in the form of stabilised asbestos waste in bonded matrix is stored otherwise than in a bag (as detailed above), the following procedures must be followed

- if it is practicable to do so, the waste must be wetted so as to prevent the emission of any dust,
- in wetting the asbestos waste, care must be taken to ensure that the wetting process does not cause any emission of dust or lead to any discharge of polluted water, and
- the waste must be kept covered at all times

Disposal requirements for asbestos waste are as follows

- Asbestos waste in any form must be disposed of only at a landfill site that may lawfully receive the waste
- Disposal of asbestos waste in any form must be by way of burial
- Before disposal of the asbestos waste, arrangements must be made with the occupier of the landfill site for the purposes of ensuring that the asbestos waste will be covered



- initially to a depth of at least 0.5 metre, and
- finally to a depth of at least 1 metre (in the case of stabilised asbestos waste in bonded matrix) or 3 metres (in the case of asbestos fibre and dust waste) beneath the planned final land surface of the landfill site
- The asbestos waste must
 - be disposed of in accordance with the arrangements in the paragraph above, and
 - be buried to the initial depth on the same day it is received at the landfill site
- In disposing of asbestos waste in any form at a landfill site, the waste must:
 - be unloaded in such a manner as to avoid the creation of dust;
 - not be compacted before it is covered, and
 - not come into contact with any earthmoving equipment at any time.

This Information Sheet prohibits the use of asbestos waste in any form as road making material

For more information contact the Environment Protection Authority by calling Canberra Connect on 13 22 81.

* Information reproduced in part from the Environmental Guidelines Assessment, Classification & Management of Liquid & Non liquid Wastes, Storage, Handling, transporting and disposal of asbestos wastes. NSW EPA