CRANBROOK SCHOOL
STAGE 2 REDEVELOPMENT
5 VICTORIA AVENUE, BELLEVUE HILL

CONSTRUCTION WASTE MANAGEMENT PLAN

21 October 2019

RICHARD CROOKES
CONSTRUCTIONS

Delivering Certainty

Contents

Revision

Rev Date	Revision Description	PM's Initials (i.e. acceptance of changes)
21/10/19	Original Issues	

1 Introduction

This Construction Waste Management Plan forms part of the Project Management Pan for Cranbrook Redevelopment

1.1 Purpose of the Plan

Richard Crookes Constructions (RCC) recognises the importance of promoting building design and construction techniques which minimise waste and provides an efficient recycle procedure for all waste material.

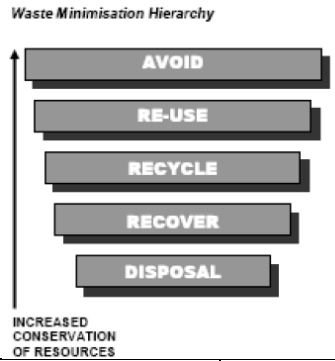
The purpose of this plan is to outline processes for:

- Objectives and Targets;
- Operational Controls;
- Recording, Monitoring Corrective Action; and,
- Reporting.

2 RCC Objectives and Targets

RCC's overall objective is to achieve a minimum of (80%) for recycled waste (by weight) generated by the Project.

The Operational Controls implemented to achieve this include:

Operational Controls		Method of Recording
General	Identify any hazardous and toxic materials (e.g. asbestos) and comply with WorkCover requirements. Develop project Waste Management Plan Try not to over-order on materials (initial waste avoidance). Communicate housekeeping & litter reduction rules with subcontractors during contract letting and site inductions.	Hazardous substance survey Waste Records Inductions
Implement the waste hierarchy – avoid, reuse, recycle and lastly disposal to landfill.		
		
Demolition Plan	Demolition disposal for concrete, bricks, plasterboard, timber, tiles, PVC, metal, paper & cardboard, glass, appliance, carpet, vegetation, soil – to Recycled Facility Asbestos ACM to be removed by a licenced contractor (up to 30 June 2007 >200m2, 1 July 2007 > 50m3, from 1 Jan 2008 > 10m2 of bonded asbestos) & managed in accordance with WHS Act & Regulation 2012 and EPA requirements.	Monthly Waste Report Disposal dockets

Operational Controls		Method of Recording
	Lead paints & dusts will be removed using we sanding and vacuum techniques (cleaners which comply with AS/NZS 3544 Industrial vacuum cleaners for particulates hazardous to health). Waste will be contained within sealed plastic bags for disposal. Clean up with a wet mop.	
Consider recycling reprocessing	Where practicable: Timber for reuse or mulching Aluminium wall frames – reprocess Plasterboard – recycled or use as soil improvers Steel – reprocess Toughened Glass – reprocess Carpet & underlay – reprocess & mulch mats	Monthly Waste Report
Product Stewardship	Investigate returning waste to the supplier? (e.g. plasterboard, packaging)	Contract/ Supply agreem'ts
Putrescibles Waste	Putrescible waste is to be contained in bins and collected by licenced contractor for disposal	Invoices
Contaminated Soils	Contaminated soils will be excavated and classified in accordance with EPA guidelines "Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes" (June 2004) – www.environment.nsw.gov.au/waste/envguidlns/index.htm.	RAP Reports Test Reports Waste Records Disposal Dockets
Virgin Excavated Natural Materials (VEMN)	VENM excavated from site with suitable compaction qualities will be beneficially re-used on other construction sites whenever possible. Disposal to landfill will be the last option. No fill will be received on site that does not comply with EPA guidelines i.e. Contamination limits appropriate to the development.	Test Reports Waste Records Disposal Dockets
Acid Sulphate Soils (ASS)	Potential for acid sulphate soils ASS will be assessed based on the sites proximity to low-lying coastal areas e.g. coastal plains, wetlands and mangroves where the surface elevation is less than five metres above mean sea level. If suspected, consultant to prepare Acid Sulphate Soil Management Plan (ASSMP). Excavation and neutralisation to be supervised by consultants as per ASSMP.	ASSMP Test Reports Product delivery (lime) dockets Site Plans
Monitoring	Bin(s) with heavy lids shall be provided for putrescibles waste Daily inspections shall be carried out to ensure the worksite is litter free.	Env. Inspection Checklist
Reporting	Waste reports/management plans indicate estimated waste min (80%) of accumulated totals for the project.	Monthly Reports
Non-Compliance	Generation of water pollution and/or air pollution from onsite waste storage Inappropriate/illegal off-site disposal of waste materials Asbestos & CCA treated timber contamination of recoverable waste stream thereby requiring landfill disposal.	Env. Inspection Checklist Incident Report, NCRS
Emergency Response	No specific requirements associated with waste management Scenarios such as spill, fires, explosions covered by the project emergency response plans.	Incident Report

2.1 Estimated Waste Quantities: Use This to Estimate the Waste Quantities

Source Blacktown Council Waste Not Development Control Plan (internet, http://www.blacktown.nsw.gov.au/planning-anddevelopment/waste-not-overview/waste-not-overview_home.cfm, 2007).

Block of Flats (per 1000 m2)			
Waste Type	**Conversion Factor**	**Demolition (t)**	**Construction (t)**
Excavated Material	1.8 t/m3	na	na
Concrete (incl. Blocks)	2.4 t/m3	813	813
Bricks	1.0 t/m3	655	655
Timber Gyprock	Timber 0.5 t/m^3 Gyprock: 0.75 t/m3	22	22
Steel	2 -4 t/m3	9	9

Factory (per 1000 m2)			
Waste Type	**Conversion (t to m3)**	**Demolition (t)**	**Construction (t)**
Excavated Material	1.8 t/m3	na	na
Concrete	2.4 t/m3	448	0.25
Bricks	1.0 t/m3	205	2.10
Timber Gyprock	Timber 0.5 t/m33 Gyprock: 0.75 t/m3	4	1.65
Steel	2 -4 t/m3	23	0.45
Roof Tiles	0.75 t/m3	na	4.80
Other	0.05 t/m3	?	0.60

Office Block (per 1000 m2)			
Waste Type	**Conversion (t to m3)**	**Demolition (t)**	**Construction (t)**
Excavated Material	1.8 t/m3	7,410	5.10
Concrete	2.4 t/m3	1,485	18.80
Bricks	1.0 t/m3	124	8.50
Timber Gyprock	Timber 0.5 t/m33 Gyprock: 0.75 t/m3	29	8.60

3 Reporting

Greenstar:

The Project Green Star Administrator will be responsible for collecting monthly waste reports (Form 18.1) or utilising the waste subcontractor reporting format and issuing them to the Project Manager.

These reports will measure the weight of waste generated of material by classification, total weight of waste, percentage by weight recycled and percentage by weight to landfill.

General waste reporting:

Nominated member of the project team will be responsible for collecting monthly waste reports and issuing them to the Project Manager and Client Representative.

These reports will measure the weight of waste generated of material by classification, total weight of waste, percentage by weight recycled and percentage by weight to landfill.

4 Estimated Quantities

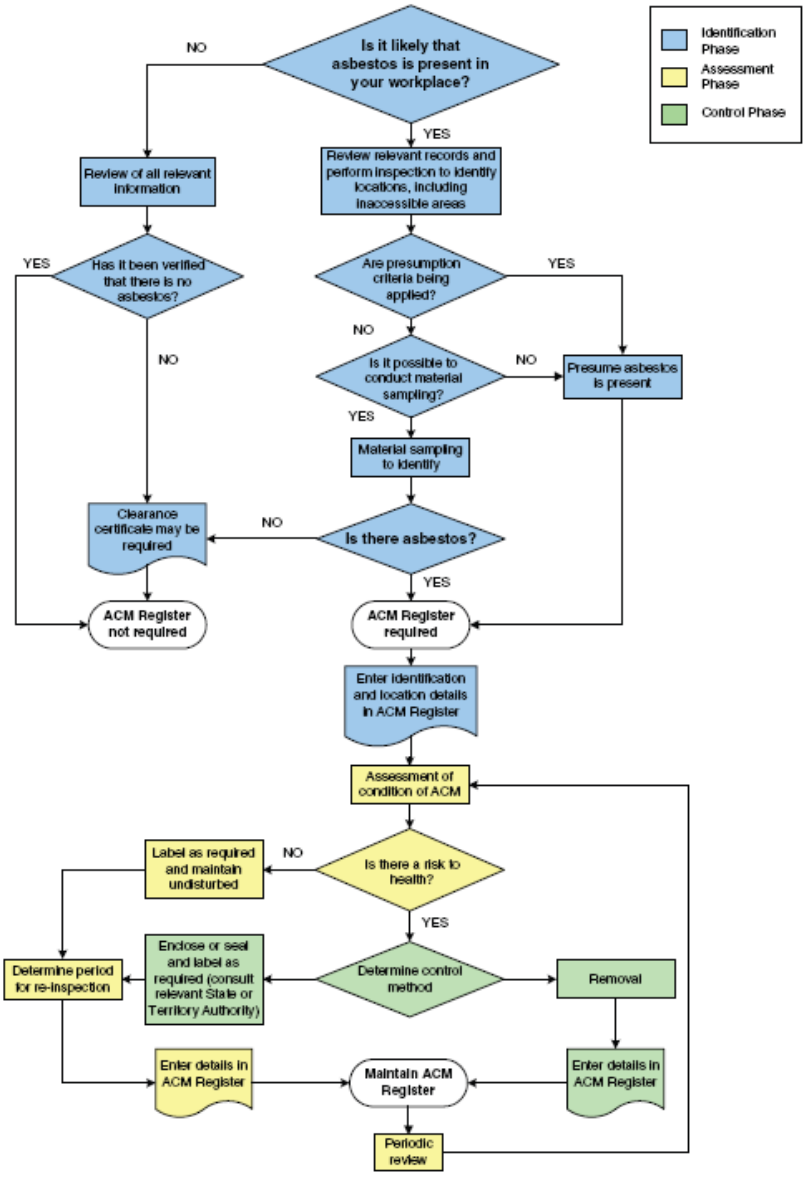
The Waste management plan – Construction chart (Form 18.2b) is an estimate of the core waste streams that will be removed from the Cranbrook School. Project waste to be removed will be assessed for the Reuse & recycling content and the Disposal to landfill.

5 Hazardous Materials

5.1 General Principles

The RCC's principles of asbestos management have been adapted from general principles published in the Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)]. These principles are summarised below:

- Consideration should be given to the removal of ACM during any renovations, refurbishments or maintenance work in preference to other control measures such as encapsulation, enclosure and sealing.
- The WHS Regulation requires all ACM within the construction area to be labelled. (Refer 6.3 Labelling)
- Where ACM is identified or presumed, the locations and type of ACM are to be recorded in the ACM Register located within the Asbestos management plan folder.
- A risk assessment must be performed on all identified or presumed ACM.
- Control measures must be established to prevent exposure to airborne asbestos fibres and should take into account the results of risk assessments conducted for the identified or presumed ACM.
- All workers and contractors on site etc. must be advised of the ACM Register at time of induction, and as requested, permitted access to the register for their review
- Only competent persons should undertake the identification of ACM.
- All workers and contractors on site where ACM are present or presumed to be present, and all other persons who may be exposed to ACM as a result of being on the premises, must be provided with full information on the occupational health and safety consequences of exposure to asbestos and appropriate control measures. The provision of this information should be recorded.
- Reasonable steps must be taken to identify all possible locations of ACM within the site.
- Once a risk assessment has been completed and controls established, a SWMS is to be developed and submitted to RCC'S site management team for approval



Reference *Code of Practice for the Control and Management of Asbestos in Workplaces (NOHSC 2018 [2005])*

5.2 Control of Asbestos Hazards

As part of the asbestos survey or subsequent resurvey, a 'Competent Person' is required to assess the risk posed by the ACM by completing a Risk Assessment; this will determine what, if any, control measures may be required. Generally, there are four control options available to select:

- Leave in-situ and manage
- Seal / encapsulate
- Enclose / isolate
- Remove

The controls are to be appropriate to the risk of the ACM in question. The following information should be used as a guideline when determining the correct control measure for management of the ACM risks.

If the ACM is friable, and there is a risk to health from exposure, it should be removed.

If the ACM is bonded and in a stable condition, encapsulation may be appropriate if the ACM is unsealed. Encapsulation is not necessarily required if the ACM is unsealed but it does provide another "barrier" to the potential release of asbestos fibre as well as prolonging the lifespan of the material by providing protection against UV and environmental elements etc.

ACM that are bonded, stable and sealed, which are unlikely to be disturbed during normal activities, can be left in-situ and managed, but need to be recorded in the ACM Register.

ACM within the works zone must be removed prior to the commencement of demolition, partial demolition, renovation or refurbishment if they are likely to be disturbed by those works. This is in accordance with the NOHSC Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002 (2005)].

5.3 Removal of ACM

5.3.1 Licensed Contractors

ACM falls into two broad categories (bonded and friable) and the category the ACM falls under will determine how the ACM is removed. If the ACM is classified as friable (e.g. sprayed limpet, pipe lagging, millboard insulation, vinyl sheet floor coverings with asbestos backing material, etc.) it is necessary to engage a contractor who holds a current AS-A class license for friable asbestos removal. The holder of an AS-A licence is also permitted to removed Bonded ACM

If the ACM is classified as bonded ACM (e.g. asbestos cement wall linings, Super Six roof sheeting, vinyl floor tiles, Zelemite electrical boards, etc.) the ACM may be removed by the contractor who holds a current AS-B licence for bonded asbestos removal. The holder of an AS-B licence is not permitted to remove friable ACM.

5.3.2 WorkCover – Notification

For Bonded ACM, in quantities greater than 10m^2, requiring a licensed contractor (AS-B) to complete the removal works, a WorkCover Notification is required to be lodged by the Licensed Contractor.

The Notification is required to be lodged a minimum of seven (7) working days prior to starting the removal works. WorkCover will review the application and return the first two pages, stamped with an official WorkCover approval. No works are to proceed prior to the receipt of the Notification.

RCC will require a copy of the WorkCover stamped 'Notification' prior to issuing an RCC Asbestos removal permit.

5.3.3 WorkCover – Permit

For all Friable removal works, regardless of quantity, a suitably licensed contractor (AS-A) must apply to WorkCover for a Permit prior to removal works progressing.

The Permit application is required to be lodged a minimum of seven (7) working days prior to starting the removal works. WorkCover will review the application and return the first two pages stamped with an official WorkCover approval and, issue a separate numbered Permit. No works are to proceed prior to the receipt of the permit.

RCC will require a copy of the WorkCover 'Permit' and the application form prior to issuing an RCC Asbestos removal permit.

5.3.4 Airborne Fibre Monitoring

Airborne fibre monitoring must be conducted during and after the removal of all friable ACM by an independent competent person. For Bonded ACM, air monitoring is conducted as part of the clearance certificate (where required) or as requested by RCC, client or Hygienist. Air monitoring is conducted during the removal works to check the effectiveness of control measures implemented by the contractor (e.g. isolating the removal work area with a sealed, airtight enclosure fitted with negative air generating units, etc.).

Air monitoring is also conducted after the ACM has been completely removed and the work area has passed a satisfactory visual inspection to determine whether the area is safe to reoccupy by unprotected persons.

5.3.5 Clearance Certificates

For all Friable ACM removal works or, as requested by the client or RCC for Bonded works, before an area can be re-occupied post asbestos removal, a clearance inspection must be carried out. The clearance inspection must be undertaken by an independent competent person only and a clearance certificate must be obtained from that competent person. Clearance monitoring is a mandatory requirement for all friable asbestos removal works and is recommended for bonded ACM removal works particularly when the bonded ACM is located internally or near sensitive receptors.

The complete removal of all ACM must be verified with a written clearance certificate which must include details of a satisfactory clearance inspection conducted by the independent competent person. If clearance air monitoring has been conducted, the results of the clearance monitoring must be included as part of the clearance certificate as well.

5.3.6 Waste

All asbestos waste shall be disposed of at an approved landfill disposal site by licensed contractors, and in accordance with the requirements of The Legislation. Transport and disposal of asbestos waste shall be carried out only in a manner that will prevent the liberation of asbestos fibres in to the atmosphere.

To achieve "final completion" of an asbestos removal activity, RCC require verification that the asbestos waste has been transported and disposed of in accordance with State/Territory legislative requirements. A copy of the EPA Waste Tracking document is the required documentation for disposal, and a copy of the necessary License for carrying out this removal and disposal is the required documentation for transportation.

5.4 Record Keeping

RCC shall maintain detailed records of all activities relating to asbestos works which have been undertaken on site. The records kept should include:

- Copies of all asbestos survey/audit reports, including updates and amendments. (RCC ACM Registers)
- Copies of all WorkCover notifications and permits
- Risk Assessments and SWMS documents.
- RCC Asbestos removal permits
- RCC Air Monitoring and Clearance certificate records
- Records pertaining to the informing of employees/contractors about the presence of asbestos on site, and those employees have been appropriately trained in safe work procedures and practices.
- Clearance certificates indicating areas are safe to reoccupy after asbestos abatement works; and

- Airborne fibre monitoring results
- Previous versions of the asbestos register

All documentation is to be retained in the one file structure under the heading of Asbestos Management. All asbestos related records and documents are to be retained for a period of 30 years.

5.5 Labelling

Current State and Territory legislation specify the requirements for some form of labelling in buildings. [NOHSC: 2018(2005)] states all in-situ ACM's should be labelled where practicable. The words 'should' and 'practicable' in the Code of Practice allow some flexibility in the approach to labelling. Similar flexibility is allowed under State and Territory workplace health and safety legislation.

RCC has advised that individual labelling of ACM is to be determined by a Competent Person usually nominated by the client however may not be necessary in every instance.

All friable and high risk asbestos situations, as well as any location containing ACM's where regular maintenance or repair work is likely to be carried must be labelled.

In locations where ACM has been identified within close proximity to the work area, but not required to be removed or disturbed, should be labelled or sign posted warning of 'Asbestos containing material, do not disturb' or in wording similar.

Ref: WHS Regulation, Chapter 8, Asbestos- Clause 469

An asbestos removalist must ensure that:

a) Signs alerting persons to the presence of asbestos are placed to indicate where the asbestos removal work is being carried out, and

b) Barricades are erected to delineate the asbestos removal area.

5.6 Warning Signs

All site areas which are known or suspected to contain ACM's shall have a warning sign at every main entry into the area indicating that an asbestos register exists for the site and a point of contact must be contacted before undertaking any works.

The warning sign must be clearly visible from all directions leading onto the area.

5.7 Safe Work Practices

Prior to commencing any works on RCC sites, such as demolition, refurbishment, maintenance or installation of new equipment, the asbestos register must be consulted to determine if any ACM are present which may be disturbed. This ACM must be removed before commencement of the work. If unknown materials, or undocumented materials suspected of containing asbestos are encountered during building works, stop work and follow the Incident response procedures shown in figure 7.0.

If a project is likely to impinge upon ACM the principal contractor (RCC) must assess the requirement for a licensed asbestos removalist to perform the asbestos removal work. A WorkCover permit / Notification may be required as part of an RCC, Asbestos Permit to work, prior to the asbestos removal work commencing.

5.7.1 Maintenance Procedures

Maintenance tasks that may impact on ACM are to be performed under controlled conditions to prevent the distribution of airborne asbestos fibres. [NOHSC: 2018(2005)] has procedures for certain maintenance tasks and these must be followed. These maintenance tasks include:

- The drilling of asbestos containing materials
- Sealing, painting, coating of asbestos cement products
- Cleaning leaf litter from the gutters of asbestos cement roofs
- Replacing cabling in asbestos cement conduits or boxes
- Working on electrical mounting boards (switchboards) containing asbestos

5.7.2 Tools and Equipment

Tools and equipment to be used for asbestos removal jobs are required to minimise the generation of airborne asbestos fibres. High-speed abrasive power or pneumatic tools such as angle grinders, sander, saws and high speed drills must never be used. Hand tools are preferred over power tools.

At the end of the removal work, all tools should be:

- Decontaminated (i.e. fully dismantled and cleaned under controlled conditions as described in the Code, or
- Disposed of in sealed containers similar to that for disposal of the ACM waste product.

Vacuum cleaners used for asbestos cleaning must comply with:

- AS 3544-1988 (Industrial Vacuum Cleaners for Particulates Hazardous to Health) and
- AS4260-1997 High Efficiency Particulate Air Filters (HEPA) - Classification, construction and performance.

5.7.3 RCC Asbestos Removal Permit

An RCC Asbestos Removal Permit form must be completed for any work on ACM.

Before being issued with an Asbestos Removal Permit, individuals will be required to peruse the RCC Asbestos Management Plan and the Asbestos Register. Where practicable, contractors should be made aware of the requirements of the plan prior to tendering to ensure they allow for such requirements when quoting.

The Asbestos Removal Permit is designed to ensure appropriate work practices are employed when working with ACM. The Asbestos Removal Permit will document what ACM's are to be removed, encapsulated or otherwise protected, prior to the contracted works proceeding. The Asbestos Removal Permit will also check other requirements such as the need for barricading and airborne fibre monitoring.

The Demolisher or asbestos removal contractor will be responsible to ensure that their workers are aware of their responsibilities and abide by the requirements of the permit.

RCC's Site Manager or HSE Coordinator shall be advised immediately of any incidents of non-compliance with the RCC Asbestos Management plan or the Code

APPENDIX F - CONSTRUCTION SOIL & WATER MANAGEMENT SUB-PLAN