H Demolition Work Plan

Metropolitan
DEMOLITIONS GROUP

Demolition Work Plan (DWP)

Orora Papermill

Building 7

Project No: MD1664

For

Amcor

Details	Title	Name	Signature	Date
Prepared By:	Project Engineer	**Sean Ryan**		
Reviewed By:	Site Supervisor	**John Emmanuel Giannikouris**		
Approved By:	Project Mgr.	**Nick Giannikouris**		

Contents

DWP - Revision Control

This DWP issue number	Date Issued	Amended Page(s)	Action / Amendment Description	Approved By
00	29/8/17	NA	Draft	Nick Giannikouris
01	30/8/17	NA	Created	Nick Giannikouris

DWP - Review

Date Reviewed	Reviewed By	Was Revision Required (Record Section Numbers where changes occurred)

DWP Controlled Document Distribution

Issued To	Name & Organisation	Date	Issued by
Site Supervisor	MDG	30/8/17	Nick Giannikouris

1. Introduction

1.1 General

This Demolition Work Plan (DWP) has been developed by Metropolitan Demolitions Pty Ltd and sets out the method of demolition to be adopted for the Orora Papermill during the course of contractual works and meet Client/Contractual/legal and other requirements. Metropolitan Demolitions Pty Ltd forms part of a group of companies known as Metropolitan Demolitions Group (MDG). For simplicity any reference to Metropolitan Demolitions Pty Ltd will be referred to as MDG in this document.

1.2 Document Design

This Project DWP has been developed to meet the requirements of:

- *Work Health and Safety Regulation 2011 (NSW) Part 4.6, 6.3 and 8.6*
- *Code of Practice: Demolition Work 2016 (SafeWork, NSW)*
- *AS 2601:2001 Demolition of structures*
- MDGs QSE Management System requirements

1.3 Supporting Documents

This DWP is to be read in conjunction with the Safety Management Plan (SMP) and Environmental Management Plan (EMP) and / or other plans developed for the project. These developed plans are considered to be the overarching documents to manage and control foreseeable work health and safety risks, environmental risks and meet legislative requirements for the project. Other supporting documents that may be used during the project include:

- Asbestos Management Plan
- Emergency Response Plan
- Asbestos Control Plan

1.4 Client Requirements

This DWP takes into consideration the Client's requirements for implementation through such documents/processes as:

- e.g. Hot Works Permit, Fire Impairment Form etc., noting modification where required of MDG IMS procedures, this Plan content or forms.
- Where no client specifications are required record – "No Client Specifications detailed for this project".

2. Project Information

2.1 Details

Client Details:	Is the client the Principal Contractor	☐ Yes ☐ No
Company Name:	Orora Ltd	
ABN:	55 004 275 165	
Address:	1891 Botany Road, Matraville NSW	
Phone:	+61 2 9695 3434	
Fax:		
Email:	Jacob.chretien@ororagroup.com	
Client Contact Name:	Jacob Chretien	
Client Contact Phone Number:	+61 407 258 677	
Demolition Contractor Details:	Is the contractor the Principal Contractor	☐ Yes ☐ No
Company Name:	Metropolitan Demolitions Pty Ltd	
ABN:	67 099 769 052	
Address:	Level 1, 396 Princes Highway, St Peters, NSW 2044	
Postal Address:	Po Box 154, St Peters, NSW 2044	
Phone:	02 9519 3099	
Fax:	02 9516 2746	
Email:	info@metrodemo.com.au	
Project Specifics:		
Project Name:	Orora Botany Building 7	
Project Address (Location):	1891 Botany Rd, Matraville NSW 2036	
Start Date:	21/8/2017	Completion Date: TBA
Peak number of people on site:	25	
Project Contacts:		
Project Manager:		
Name:	Nick Giannikouris	
Phone Number:	Mobile: 0417 789 656	Office: 02 9519 3099
Email:	nick@metrodemo.com.au	
Competent Person On Site:		
Supervisor 1 – Name:	John Emmanuel Giannikouris	
Phone Number:	0418 877 775	
Supervisor 2 – Name:		
Phone Number		
Project Engineer/WHS Person:		
Name:	Sean Ryan	
Phone Number:	0450 006 381	
Other		

2.2 Project Scope of Works

All works will be completed in accordance with *Code of Practice: Demolition Work (SafeWork, NSW) and AS2601: The demolition of structures* and shall meet legislative requirements contained in the *Work Health and Safety Act 2011 (NSW)* and *Work Health and Safety Regulation 2011 (NSW)*.

Works consist of demolition of Building 7 to existing ground slab level. Plinths on the ground to be removed so as to not cause any trip hazards. All pits and voids must be filled with clean demolition rubble to make the slab area safe.

Buildings to be demolished are

- B7 paper machine and all associated plant and equipment.
- All pipes, tanks, cables, cable trays support, instruments, valves, transformers, switchboards and all other items that are located in the areas designated to be demolished
- Demolition of ancillary plant and associated services and structures attached to the B7 building and adjacent B7 buildings.

It is to be demolished in two parts. First been the northern end of the structure. This is to allow movement around the rear of the site to allow for the construction of a barrier wall between the structure and the residents behind.

Once demolished a sound/dust proof barrier for the residents to the rear of the site will be installed. This is to be constructed of shipping containers which will be provided by the client. This shipping containers will be filled with sandstone for the lower level container and the one sitting immediately above. The remaining two will be empty. They will be stacked 4 containers high and sitting on the already installed slabs with locking fixtures. Any gabs between containers will be sealed.

Following on from the completion of the sound/dust barrier the remaining of the structure will be demolished.

2.3 Project Site Aerial Photograph

3. Investigation

An investigation of the structures to be demolished and surrounding environment has been undertaken in accordance with the *Code of Practice: Demolition Work (SafeWork, NSW) and AS2601: The demolition of structures*. The observations from this investigation is broken up into three (3) sections 'Investigation of Structures', 'Investigation of Site', and 'Investigation of Services' and is recorded below.

3.1 Investigation of Structures

3.1.1 Description of Structures

The structure is that of a warehouse structure of concrete and brick with industrial machinery occupying the internal floorspace. The building has been decommissioned due to a fire a few

years back and so has damage to the roof where it is open and damaged in parts. There is glass windows to the building and some timber constructed office spaces. The internals of the building have heavy industrial machines associated with a papermill.

3.1.2 Structural System

The structure of the building is a brick façade building. It has concrete columns and slabs. Some internal office spaces have been constructed of timber. Internally there is industrial machinery occupying the floor spaces. Mainly of metal construction. The roof is steel truss with cladding. It is open to the element in places due to a fire that happened some years back.

3.1.3 Hazardous Materials

Hazardous materials have been identified in a previous report provided by the Client however were non-destructive in nature and should NOT be viewed as complete – Refer **Appendix A**.

A full destructive hazardous materials investigation is currently being undertaken and this DWP will be updated with the new report when it is made available.

No strip out, demolition or other work that has the possibility of disturbing any asbestos containing materials is to commence until a sign off in the affected area is received prior to commencing.

The hazardous materials removal will be undertaken by ATS. The licensed asbestos removal contractor will take possession of various areas throughout site setting up containment walls, sheeting, negative air equipment, decontamination units and other controls (where required). Areas will be demarcated, for persons requiring access contact the MDG Site Supervisor who will liaise with the Asbestos Removal Site Supervisor to organise appropriate measures. Do not under any circumstances enter an asbestos exclusion zone, tamper with warning signage or tamper with their equipment. Air monitoring will be undertaken daily throughout the structure, in site sheds and to the perimeter of the site. The results of monitoring will be posted daily in site sheds. The location of temporary and localised asbestos removal zones will be tool boxed talked daily.

A clearance certificate will be obtained by a qualified Occupational Hygienist prior to demolition.

In the case of encountering unidentified asbestos, work will stop in that area and ATS will seal the area and make safe. A hygienist will be notified and their advice sought, sampling and identification of the suspect material may be undertaken. ATS will otherwise remove the asbestos in accordance with the ATS Asbestos Removal Control Plan which will be amended if necessary to cover the unexpected find. This unexpected find will then be included in the clearance certificate document issued by A hygienist and provide a clearance certificate for the same.

3.1.4 Height of Structures and Distance to Boundaries

Commercial building with internal mechanical machines.

It is a closed site and away from the main working area of the Orora papermill. It has residents behind which will have a container sound/visual barrier erected.

3.2 Investigation of Site

3.2.1 Description of Site

No heritage listed structures have been identified on site.

All neighbouring buildings are to remain operational throughout the demolition process. MDG works must not in any way hinder the operation of these surrounding buildings.

3.2.2 Underground Structures

No underground structures identified.

There will be pits and voids exposed from demolition which will be filled with rubble material.

3.2.3 Retaining Structures

There is no retaining walls to the structure.

3.2.4 Hazardous Chemicals / Dangerous Goods Storage or Dumps

No major hazardous chemicals or dangerous goods (e.g. munitions, chemical storage systems, underground storage tanks, compressed gas cylinders, fire retardant cylinders, medical gases, dumps of noxious or toxic or hazardous substances, etc.) have been identified on site or have been communicated by the Client.

Work involving removal of hazardous chemicals / dangerous goods is not in MDGs scope of works and is the responsibility of the Principal Contractor to remove unexpected findings of hazardous chemicals / dangerous goods on site.

In the event of encountering any unexpected findings of hazardous chemicals / dangerous goods, the following is to apply before work commences in the immediate area:

1. Work in the immediate area will stop
2. The Site Supervisor will be notified of the find
3. The Site Supervisor will notify the Project Manager
4. The Project Manager will notified the Principal Contractor
5. The Principal Contractor will organise the safe removal of the substance (which may necessitate the engagement of specialist contractors), work will not recommence in the area until the Principal Contractor has given approval

3.2.5 General Condition of Land and Structures on Adjoining Sites

The buildings, paths, roadways and other items surrounding the site are in sound structural condition. MDG do not anticipate any physical impacts on the surrounding structures.

Care will be taken to minimise impacts on adjoining sites and structures. Various methods will be employed to minimise the disruption to the surrounding buildings or adjoin sites and structures.

3.3 Investigation of Services

3.3.1 Services to be disconnected

All services shall be disconnected / made safe prior to commencement of demolition work. A sign-off on services will be received by AMCOR prior to the commencement of any demolition works.

For early works prior to full disconnection of power, areas will be isolated and a sign off on the power in those areas received. For some minor demolition in localised areas where it is clearly evident that there is no power services going to be disturbed (e.g. removal or demolition of ceiling grids, furniture and fixings that do not contain power) the demolition may occur without a signoff.

For complex structures that involve many operational 'live' Client critical services (pressurised piping systems, other water/chemical/steam/air systems, electrical, communication, gas, etc.) requiring identification, relocation and decommissioning or isolation by the Client (and where MDG is the Principal Contractor). The following form may be used to assist MDG in obtaining required signoffs ***Request to Client for Service Id, Decommission & Approval to Remove*** form.

Where fire sprinkler systems are unable to be isolated due to Client operational needs, care shall be taken during works to prevent disruption to this service.

Refer Service Disconnection Signoffs - **Appendix B**.

3.3.2 Services to be maintained

Water and temporary power will be used during the course of demolition works. Some emergency access lighting will be installed and temporary power boards will be used to provide task lighting in the darker areas of the structures. Power will also be used by the Asbestos Removal Contractor to run vacuums, decontamination units (where required), negative air units and lighting within their enclosures.

Water will be used for dust suppression and in the decontamination unit showers (where required).

Where material and personal material hoists are installed 3 Phase power will be supplied to them.

3.4 Hazard Investigation / Identification

The following key hazards associated with demolition work have been identified:

- Unplanned structural collapse
- Falls from one level to another
- Falling objects
- The location above and underground essential services, including the supply of gas, water, sewerage, telecommunications, electricity, chemicals, fuel and refrigerant in pipes or lines
- Exposure to hazardous chemicals – these may be present in demolished material or in the ground where demolition work is to be carried out (contaminated sites)
- Hazardous noise from plant
- The proximity of the building or structure being demolished to other buildings or structures

Each of the above risks has been investigated and control measures outlined in the Safe Work Method Statement (SWMS) developed for demolition and associated works. Refer SMP and EMP for more details.

3.5 No-Go Areas for Machine's

The following areas are no-go areas for machinery unless an engineer's approval is sought first:

1. All suspended slabs
2. The high side of any retaining walls from the edge of the wall, back a distance equal to the height of the wall
3. On top of any underground structures including fuel tanks and the like. Note: where the walls of underground structures are retaining walls, they should be treated in accordance with the above point

4. Demolition Exclusion Zone

The demolition Exclusion Zone will encompass the entire site with the exception of the site amenity areas (and access ways to and from), which will be deemed construction zones.

All personnel on the Principals contractor site have to be inducted into their system. In addition, all personnel not inducted by MDG will be required to visit the site office and not enter the demolition site until they have been inducted and signed on the Site Sign-In Register or brought on site with the permission of the MDG Site Supervisor under the supervision of an inducted person and have signed in the Site Visitors Register.

As well as the whole demolition site being a demolition zone, various area inside site will be demarcated with chain wire fencing and signs 'Warning Drop Zone, Do Not Enter', Jersey curbs, steel plates and other engineering barricades will also be used in the Drop Zones. The locations of these Drop Zones are also marked up on an Exclusion Zone Plan. The location of smaller temporary localised Drop Zones will be tool box talked daily and detailed in the demolition site sign on location.

All Exclusion Zones, Asbestos Removal Zones and Drop Zones will be properly demarcated.

No unauthorised persons shall be permitted into the demolition work area. All personnel and visitors will follow Site Personnel and Visitor Registration Procedure.

5. Details of Demolition

5.1 Sequence

Work will follow the sequence below. Amended to this sequence may occur to suit. For more detail see separate Demolition Program.

1. Receive Handover of Site and sign off services
2. Site induction
3. Demarcate site and define Exclusion Zones
4. Install Environmental Controls
5. Practical Removal of Hazardous Materials
6. Soft strip structure
7. Erect scaffold and protection
8. Erect shipping container wall
9. Mechanical Demolition
10. Remove rubble and rubbish from site
11. Handover
12. Demobilisation

More details on the sequence and flow of the work including durations see the separate Demolition Program and updated monthly programs.

Note: Where temporary works are necessary (propping, scaffolding needles and the like) the following sequence MUST be adhered to, prior to the use of the temporary works item:

1. Design

2. Specialist Engineer Sign Off on Design
3. Installation
4. Inspection and Certification (engaged specialist Engineer)
5. Use

5.2 Detailed Work Method

5.2.1 Receive Handover of Site and Sign-off on Services

Demolition will begin only when the site has been officially handed over and a sign off on services has been received by the appropriate service providers for appropriate areas.

5.2.2 Site Induction

A site induction is to be held before any work commences on site. The site induction includes the following:

- Induction into this DWP, other plans and SWMS
- Induction into the Principal Contractors Work Health and Safety Management Plan/system
- Induction into the Clients Work Health and Safety Management Plan/system (where required)

5.2.3 Demarcate Site and Define Exclusion Zones

The entire site will be fenced with 1.8m chain wire fencing. Other areas of site may be demarcated as hazard removal areas, exclusion or Drop Zones. The access gate will be closed during demolition works and manned during load out.

Site notices to be displayed in a prominent position are:

- Unauthorised entry prohibited
- Warning Demolition in Progress
- Warning Asbestos Removal
- Mandatory PPE information signage
- MDG Site Supervisor in charge of works
- 24 hour site emergency contact number

5.2.4 Install Environmental Controls

MDG is a responsible demolition contractor and will endeavour to ensure the unimpeded operation of the surrounding sites throughout our works. Particular importance will be placed on sensitive receivers and close proximity to adjacent buildings. MDG will endeavour to do everything reasonably practicable to make what is by nature a noisy and disruptive process as quiet and dust free as possible. A summary of the key environmental methods that will be used on site include:

- **Sediment Control**
    - Leaving all hardstands in place until the very end of the project. All truck movements will be on hardstand
    - Installing sediment settling and filtration system in the sumps of building to collect and filter sediment prior to it being released into the storm water system. Prior to

releasing any water into the storm water a testing system will be put in place. Water is likely to be umped offsite with silt socks in place. It is the preference of the client that water is directed to the stormwater.

- A mechanical vacuum type street sweeper is to be employed wherever sediment or dust becomes an issue on the external roadways and on the internal hardstand on site. It is expected that initially there will be not much need for the sweeper however towards the peak load out period of the project the sweeper may need to return to site daily. The need for the sweeper will be assessed on a daily basis with input from interested parties and stakeholders.
- All drains will be covered in a Geotech material, with Geotech lined hay bales placed up stream of the flow to these drains. All fencing to the perimeter of site will be lined with shade cloth

- **Noise Management**

Demolition is a noisy process, however many measures can be taken to minimise this noise. MDG believe that with the following noise reduction measures when implemented will minimise noise disruption to the surrounding buildings:

- Demolition will be undertaken by as large as possible machines as they are far less obtrusive than the rapid crescendo of smaller machines.
- External walls of each floor will be left in place until the very last stage of each floors demolition. The walls act as a sound barrier shielding the neighbourhood buildings from much of the noise generated by machines on that floor.
- At least two decks of scaffolding will be lined with Metro Mesh to the full height of the perimeter of building providing a noise dampening measure.
- Drop Zones will be located to ensure minimum noise from their operation
- Material that generates a lot of noise when removed via Drop Zone (large steel members, etc.) will be craned off the structure
- The base of drop zones will be covered with 500mm of rubble prior to their use
- A 3m high 'A Class' hoarding that will be erected to the perimeter of the demolition site will greatly reduce ground level noise from escaping the confines of site.

- **Dust Control**

Demolition of brick and concrete can generate excessive amounts of dust however through the following dust suppression measures MDG anticipate the dust leaving the confines of the building being demolished will be kept below a level that adversely affects the surrounding billings and site:

- Installing a minimum of 2 water points (with 3 outlets on each point) or as needed on every level of the building with booster pumps used to achieve sufficient water pressure at the top levels of the building (as required).
- Each machine used in the demolition process will be accompanied by a labourer with a water hose to ensure water is available on each separate demolition face and provide adequate dust suppression. Water runoff will be minimised.

H Demolition Work Plan

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Email:	Jacob.chretien@ororagroup.com	
Client Contact Name:	Jacob Chretien	
Client Contact Phone Number:	+61 407 258 677	
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For early works prior to full disconnection of power, areas will be isolated and a sign off on the power in those areas received. For some minor demolition in localised areas where it is clearly evident that there is no power services going to be disturbed (e.g. removal or demolition of ceiling grids, furniture and fixings that do not contain power) the demolition may occur without a signoff.

For complex structures that involve many operational 'live' Client critical services (pressurised piping systems, other water/chemical/steam/air systems, electrical, communication, gas, etc.) requiring identification, relocation and decommissioning or isolation by the Client (and where MDG is the Principal Contractor). The following form may be used to assist MDG in obtaining required signoffs ***Request to Client for Service Id, Decommission & Approval to Remove*** form.

Where fire sprinkler systems are unable to be isolated due to Client operational needs, care shall be taken during works to prevent disruption to this service.

Refer Service Disconnection Signoffs - **Appendix B**.

3.3.2 Services to be maintained

Water and temporary power will be used during the course of demolition works. Some emergency access lighting will be installed and temporary power boards will be used to provide task lighting in the darker areas of the structures. Power will also be used by the Asbestos Removal Contractor to run vacuums, decontamination units (where required), negative air units and lighting within their enclosures.

Water will be used for dust suppression and in the decontamination unit showers (where required).

Where material and personal material hoists are installed 3 Phase power will be supplied to them.

3.4 Hazard Investigation / Identification

The following key hazards associated with demolition work have been identified:

- Unplanned structural collapse
- Falls from one level to another
- Falling objects
- The location above and underground essential services, including the supply of gas, water, sewerage, telecommunications, electricity, chemicals, fuel and refrigerant in pipes or lines
- Exposure to hazardous chemicals – these may be present in demolished material or in the ground where demolition work is to be carried out (contaminated sites)
- Hazardous noise from plant
- The proximity of the building or structure being demolished to other buildings or structures

Each of the above risks has been investigated and control measures outlined in the Safe Work Method Statement (SWMS) developed for demolition and associated works. Refer SMP and EMP for more details.

3.5 No-Go Areas for Machine's

The following areas are no-go areas for machinery unless an engineer's approval is sought first:

1. All suspended slabs
2. The high side of any retaining walls from the edge of the wall, back a distance equal to the height of the wall
3. On top of any underground structures including fuel tanks and the like. Note: where the walls of underground structures are retaining walls, they should be treated in accordance with the above point

4. Demolition Exclusion Zone

The demolition Exclusion Zone will encompass the entire site with the exception of the site amenity areas (and access ways to and from), which will be deemed construction zones.

All personnel on the Principals contractor site have to be inducted into their system. In addition, all personnel not inducted by MDG will be required to visit the site office and not enter the demolition site until they have been inducted and signed on the Site Sign-In Register or brought on site with the permission of the MDG Site Supervisor under the supervision of an inducted person and have signed in the Site Visitors Register.

As well as the whole demolition site being a demolition zone, various area inside site will be demarcated with chain wire fencing and signs 'Warning Drop Zone, Do Not Enter', Jersey curbs, steel plates and other engineering barricades will also be used in the Drop Zones. The locations of these Drop Zones are also marked up on an Exclusion Zone Plan. The location of smaller temporary localised Drop Zones will be tool box talked daily and detailed in the demolition site sign on location.

All Exclusion Zones, Asbestos Removal Zones and Drop Zones will be properly demarcated.

No unauthorised persons shall be permitted into the demolition work area. All personnel and visitors will follow Site Personnel and Visitor Registration Procedure.

5. Details of Demolition

5.1 Sequence

Work will follow the sequence below. Amended to this sequence may occur to suit. For more detail see separate Demolition Program.

1. Receive Handover of Site and sign off services
2. Site induction
3. Demarcate site and define Exclusion Zones
4. Install Environmental Controls
5. Practical Removal of Hazardous Materials
6. Soft strip structure
7. Erect scaffold and protection
8. Erect shipping container wall
9. Mechanical Demolition
10. Remove rubble and rubbish from site
11. Handover
12. Demobilisation

More details on the sequence and flow of the work including durations see the separate Demolition Program and updated monthly programs.

Note: Where temporary works are necessary (propping, scaffolding needles and the like) the following sequence MUST be adhered to, prior to the use of the temporary works item:

1. Design

2. Specialist Engineer Sign Off on Design
3. Installation
4. Inspection and Certification (engaged specialist Engineer)
5. Use

5.2 Detailed Work Method

5.2.1 Receive Handover of Site and Sign-off on Services

Demolition will begin only when the site has been officially handed over and a sign off on services has been received by the appropriate service providers for appropriate areas.

5.2.2 Site Induction

A site induction is to be held before any work commences on site. The site induction includes the following:

- Induction into this DWP, other plans and SWMS
- Induction into the Principal Contractors Work Health and Safety Management Plan/system
- Induction into the Clients Work Health and Safety Management Plan/system (where required)

5.2.3 Demarcate Site and Define Exclusion Zones

The entire site will be fenced with 1.8m chain wire fencing. Other areas of site may be demarcated as hazard removal areas, exclusion or Drop Zones. The access gate will be closed during demolition works and manned during load out.

Site notices to be displayed in a prominent position are:

- Unauthorised entry prohibited
- Warning Demolition in Progress
- Warning Asbestos Removal
- Mandatory PPE information signage
- MDG Site Supervisor in charge of works
- 24 hour site emergency contact number

5.2.4 Install Environmental Controls

MDG is a responsible demolition contractor and will endeavour to ensure the unimpeded operation of the surrounding sites throughout our works. Particular importance will be placed on sensitive receivers and close proximity to adjacent buildings. MDG will endeavour to do everything reasonably practicable to make what is by nature a noisy and disruptive process as quiet and dust free as possible. A summary of the key environmental methods that will be used on site include:

- **Sediment Control**
    - Leaving all hardstands in place until the very end of the project. All truck movements will be on hardstand
    - Installing sediment settling and filtration system in the sumps of building to collect and filter sediment prior to it being released into the storm water system. Prior to

releasing any water into the storm water a testing system will be put in place. Water is likely to be umped offsite with silt socks in place. It is the preference of the client that water is directed to the stormwater.

- A mechanical vacuum type street sweeper is to be employed wherever sediment or dust becomes an issue on the external roadways and on the internal hardstand on site. It is expected that initially there will be not much need for the sweeper however towards the peak load out period of the project the sweeper may need to return to site daily. The need for the sweeper will be assessed on a daily basis with input from interested parties and stakeholders.
- All drains will be covered in a Geotech material, with Geotech lined hay bales placed up stream of the flow to these drains. All fencing to the perimeter of site will be lined with shade cloth

- **Noise Management**

Demolition is a noisy process, however many measures can be taken to minimise this noise. MDG believe that with the following noise reduction measures when implemented will minimise noise disruption to the surrounding buildings:

- Demolition will be undertaken by as large as possible machines as they are far less obtrusive than the rapid crescendo of smaller machines.
- External walls of each floor will be left in place until the very last stage of each floors demolition. The walls act as a sound barrier shielding the neighbourhood buildings from much of the noise generated by machines on that floor.
- At least two decks of scaffolding will be lined with Metro Mesh to the full height of the perimeter of building providing a noise dampening measure.
- Drop Zones will be located to ensure minimum noise from their operation
- Material that generates a lot of noise when removed via Drop Zone (large steel members, etc.) will be craned off the structure
- The base of drop zones will be covered with 500mm of rubble prior to their use
- A 3m high 'A Class' hoarding that will be erected to the perimeter of the demolition site will greatly reduce ground level noise from escaping the confines of site.

- **Dust Control**

Demolition of brick and concrete can generate excessive amounts of dust however through the following dust suppression measures MDG anticipate the dust leaving the confines of the building being demolished will be kept below a level that adversely affects the surrounding billings and site:

- Installing a minimum of 2 water points (with 3 outlets on each point) or as needed on every level of the building with booster pumps used to achieve sufficient water pressure at the top levels of the building (as required).
- Each machine used in the demolition process will be accompanied by a labourer with a water hose to ensure water is available on each separate demolition face and provide adequate dust suppression. Water runoff will be minimised.

- All scaffolding will be lined with Metro Mesh which reduces the wind over the active demolition faces and the possibility of dust permeating through the scaffolding screen
- Material will be saturated prior to being removed via the Drop Zone
- During load out of material, material will be wet down to minimise dust being generated
- The 3m high 'A Class' hoarding will be erected reducing ground level dust from escaping the confines of the site

- **Vibration Management**

  Vibration on this site will emanate from the excavator mounted hydraulic hammers used in the process of breaking down the concrete and brick structure into rubble and also from items reaching the base of the Drop Zone. The following measures will ensure that disruptive vibration will not travel beyond or site:

  - Physical links from structure being demolished to adjoining buildings and structures will be demolished (e.g. overhead walkway etc.)
  - Physical separation will be done by saw cutting a slice of the slab
  - Breakup of slabs, beams and columns into smaller pieces of rubble to reduce vibrations being felt from Drop Zone operation
  - Structural steel and large heavy objects will be craned off site
  - Covering of the base of Drop Zone with 500mm of rubble prior to use.

- **Truck Movements**
  - Providing traffic controllers to control pedestrian and vehicular traffic
  - Ensure trucks are covered prior to leaving site
  - Providing drivers information on access, routes and site conditions and sensitive receivers
  - Space allocated for trucks within hoardings

Refer ***Environmental Management Plan*** (EMP) for full details.

5.2.5 Practical Removal of Hazardous Materials

The management of asbestos on site will be conducted in accordance with the Safety Management Plan (SMP) and Asbestos Management Plan (AMP) developed for the project.

Where hazardous materials removal is to be undertaken an Asbestos Removal Control Plan is to be developed by the ATS including specific SWMS for the activity. The Asbestos Removal Control Plan is to incorporate the requirements of the Asbestos Management Plan (AMP).

Hazardous materials removal work will be conducted in accordance with the *Work Health and Safety Regulations 2011 (NSW)* and the *Code of Practice: How to safely remove asbestos.*

The hazardous materials removal will be undertaken by ATS in all areas of site prior to demolition in those particular areas. A clearance certificate will be obtained by a qualified Occupational Hygienist prior to demolition.

Refer ***Asbestos Management Plan*** and (ARC) Asbestos Removal Control Plan and SWMSs for further details on the asbestos removal and associated risks analysis.

5.2.6 Soft Strip Structures

The structures will be stripped-out by hand and appropriate hand tolls where required, prior to mechanical stripping in appropriate areas. No heavy machines will be placed in the areas highlighted in Section 4(1).

Bounded material such as non-loading bearing walls, partitions, and doors that may not be removed by machines will be removed by a combination of hand, picks, crow bars, and other associated tools, and stockpiled in the building or a secure area of site for load out by machines.

5.2.7 Erect Scaffold and Protection

The structure will be scaffolded with heavy duty 5 board demolition scaffolding covered with chain and shade). 3m high 'A Class' hoardings will be erected to the perimeter by the Principal Contractor.

See SWMS provided by scaffolders for further details on the scaffolding erection and associated risk analysis.

When undergoing demolition of a slab, 2 levels of scaffold below will be fitted with carpet and plywood to stop rubble falling through them. Alternatively an exclusion zone will be set up for all the below floors and scaffolds preventing personnel from gaining access to beneath the scaffolds.

During demolition the scaffolding is always to remain at least 2m higher than the top floor being demolished.

5.2.8 Erect Shipping Container Wall

A Shipping container wall will be erected to the rear of the site to protect the neighbouring from sound and visual impact of the site. This container wall will be 4 containers high and supplied by the client and installed by metropolitan. It will have sandstone in the lower two containers to weigh it down. Concrete footings with lock nuts are to be installed by the client to lock these containers in place. There will be put in place with a container forklift and loaded with sandstone onsite with a skid steer.

5.2.9 Mechanical Demolition

Mechanical demolition will be by hydraulic excavator. 5, 12 and 20 tonne hydraulic excavators with shear, pulveriser, hammer and bucket attachments. These machines will be on suspended slabs and transported from one level to the next via ramps. An engineer's approval will be sought regarding the size of machine that can be put on any particular slab. The engineer's directions in regard to loads on each slab, back propping to the slabs and sequence of demolition will be followed and are included in this document as **Appendix C**.

Hydraulic excavators with shear attachments will cut down steel elements of structure in sections. Hydraulic excavators with hammer / pulveriser attachments will break up brick walls and concrete slabs of the structures in sections.

A watcher will work with plant and equipment operators at all times.

Water will be maintained at the face of demolition for dust suppression where required.

During demolition the floor area under the excavators and the bay area's being demolished will be closed off with warnings signs, ATF fence panels and existing wall's. No plant or personnel will be allowed in these areas.

Shear wall that is on the perimeter of the building will be demolished in the following sequence:

1. Excavator will punch a vertical line in the wall, leaving steel reinforcement intact
2. The excavator will then make a horizontal line at the base of the wall keeping the steel reinforcement intact. Leaving 300mm concrete between the vertical cut and the start of the horizontal cut
3. A worker will then cut the back steel reinforcement in the horizontal line and all the steel reinforcement in the vertical line
4. The machine will then fold the wall inside the building

The pulling in of perimeter beams will be done in the following sequence:

1. An excavator will hammer both ends of the beam leaving steel reinforcing intact
2. Chains will be attached to the beam at one end
3. All steel reinforcement will be oxy cut at the chained end and the only top reinforcement will be cut on the other end
4. The chained end will be towed in and placed on the slab
5. The remaining bottom steel will be oxy cut
6. The remaining end will fall onto some rubble or steel to cushion the impact on the slab
7. The beam can then be safely dragged in by the excavator

Removal of double story walls will be carried out in the following sequence:

1. Excavator will punch a vertical line in the top of the wall, leaving steel reinforcement intact
2. The excavator will then make horizontal line mid height of the wall keeping the steel reinforcement intact. Leaving 300mm concrete between the vertical cut and the start of the horizontal cut
3. A worker will then cut the back steel reinforcement in the horizontal line and all the steel reinforcement in the vertical line
4. The machine will then hammer the folded in wall
5. The procedure for removing perimeter shear walls will then be followed for the lower segment of the wall

Mechanical demolition of lower structure from ground level will be by hydraulic excavator. 20, 30 and 40 tonne hydraulic excavators with shear, pulveriser hammer and bucket attachments. None of these machines will be placed on suspended slabs. All buildings and structure can be reached from the ground.

5.2.10 Remove Rubbish and Rubble from Site

Both strip out material and load out from floors being demolished, will be removed via Skidsteer. Demolition rubble will be removed from the floor below the one being demolished. The Skidsteer will transport the rubble to the Drop Zones and drop it over the edge. The Skidsteer operator will

need to stay in constant communication with the excavator machines above to coordinate between demolition and load out crews. The Skidsteer operator will also need to stay in constant communication with the machine loading out from the Drop Zone at ground level to ensure when material is being dropped into the Drop Zone the base of the Drop Zone is evacuated.

The reinforced concrete up stand to the edge of the Drop Zone is to be left in place to ensure there is no possibility of the Skidsteer travelling over the edge of the building. The Skidsteer will lift the material over this up stand and tip through the opening.

An excavator operating at ground level (Drop Zone) will remove the rubble from the Drop Zone and load trucks. The area this machine is working in will be clearly demarcated and posted as a Drop Zone and is also out of bounds for all personnel unless under the express permission of the operator of the load out machine who will be in constant contact with the operators on the roof and other demolition crews using the Drop Zone via 2 way radio.

Concrete jersey curbs, steel columns and steel plates will be installed at the base of the Drop Zone to ensure material does not escape the confines of the demarcated area.

Demolished material will be separated and stock piled ready for load out.

A combination of hydraulic excavator with grapple attachments or bucket and/or Skidsteer with grapple attachments will load out demolished material into appropriate bins for transportation to an EPA approved tipping or recycling facility.

Water will be maintained on stockpiles at all times for dust suppression.

Care shall be taken to watch for pedestrians when entering and leaving site.

Approved Traffic Control Plan will be adhered to at all times. All trucks will follow the truck route and guidelines on entering and exiting the site.

A MDG RTA tickets traffic controller will assist trucks for site access and egress when required.

5.2.11 Handover Site to Client Representative

Where areas are to be progressively handed back to the Client or Principal Contractor the ***Project Area Handover Form*** is to be used and a copy provided to the Client.

On practical completion of works, a site meeting with the Clients representative and MDG will occur. MDG will hand over the site following the completion of all activities on the scope of works.

5.2.12 Demobilise from Site

The site demobilisation will take place following the site handover to Clients representative. Truck floats will take plat off site, the mobile amenities (where used) will be towed off site and the site fencing dismantled (where installed by MDG) and carted off site.

6. Permits by Authorities

All relevant permits required by authorities will be sought and displayed on-site at all times. These permits include but are not limited to (refer **Appendix D**):

- SafeWork NSW Permit for demolition
- SafeWork NSW Permit for asbestos removal

- Council approval for temporary footpath closures (if necessary)
- Council approval for Hoardings and laybacks (if necessary)

7. Personnel Qualifications

All personnel onsite shall hold a General Construction Induction Card (White Card).

The Site Supervisor shall be a SafeWork NSW recognised Demolition Class A (unrestricted) Competent Person with considerable expertise in the demolition of similar structures.

All plant will be operated by SafeWork NSW ticketed and experienced personnel.

MDG is committed to ensuring ongoing Work Health and Safety compliance. All personnel will be site inducted prior to commencement of work on-site.

8. Notes:

- During mechanical demolition, a competent observer will work with the operator at all times
- An RTA ticketed traffic controller will assist trucks accessing and egressing the site
- The structure is to be demolished in a controlled manner
- MDG will maintain a competent SafeWork NSW recognised person on site at all times
- Each day a daily toolbox talk and checklist will be conducted by a site foreman and is to be read in conjunction with this DWP and the task specific SWMSs
- Personnel will sign off daily toolbox talks prior to proceeding to the work face
- All MDG personnel will hold a General Construction Induction Card (White Card) and will wear appropriate PPE
- Site specific SWMS and DWP can be altered in the Tool Box Talks, by altering the actual documents and by creating new SWMS on the blank forms provided. These changes will be outlines in a toolbox talk and orally if the competent person on site identifies additional risks. Further revisions of the documents will be issued as soon as practicable.

9. Forms

- Request to Client for Service ID, Decommission & Approval to Remove F-QSE-024.A
- Project Area Handover Form F-QSE-003.H

Appendix A – Hazardous Materials Survey / Register

Appendix B – Service Disconnection Signoffs

Appendix C – Engineer Certificates and Instructions

Appendix D – Permits by Authorities

Copy of demolition permit to be placed on noticeboard

www.elton.com.au