Harbour Control Tower Demoltion

Waste Management Plan

Prepared by
Liberty Industrial Pty Ltd
for
Barangaroo Delivery Authority (BDA)

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000	09.02.2016	TS	First Issue
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1 PURPOSE

Liberty Industrial (the company) is committed to the promotion of waste avoidance and reduction, resource recovery and efficiency actions. This aim is achieved through conserving the environment, recycling demolition waste and using recycled products on all of our projects where practicable, aiming to achieve over 95% recycling by weight.

The purpose of this Waste Management Plan is to:

- Identify the types and quantities of waste that would be generated during the undertaking, and the areas in which waste will be stored prior to removal;
- Outline standards and performance measures for dealing with this waste;
- Outline a detailed description of how this waste would be reused, recycled and, if necessary, appropriately treated and disposed of in accordance with New South Wales Environmental Protection Authority (NSW EPA) guidelines on the management of regulated wastes;
- Outline a description of how the effectiveness of these actions and measures would be monitored over time; and
- Outline a description of what procedures would be followed to ensure compliance if any non-compliance is detected;

2 SCOPE

To ensure that all site waste is managed in a lawful and responsible manner meeting targets and objectives along with contract requirements and expectations for the project.

3 REFERENCES

- Contaminated Land Management Act 1997;
- Dangerous Goods (Road and Rail Transport) Act 2008;
- Environmentally Hazardous Chemicals Act 1985;
- Ozone Protection Act 1989;
- Waste Avoidance and Resource Recovery Act 2001;
- Protection of the Environment Operations (Waste) Regulation 2005.
- Work, Health and Safety Act 2011 (NSW)
- Work, Health and Safety Regulation 2011 (NSW);
- How to safely remove asbestos: Code of practice
- Liberty Industrial Management System

4 WASTE REMOVAL PLANT

The works will be carried out using the following plant:

- Brokk 1.6t excavators;
- Skid steer loader;
- 12t Excavator;
- Hydraulic hammer, grab, shears, and bucket attachments;
- XL Platform:
- Fuel Trailer;

Once asbestos materials have been removed from site, the Harbour Control Tower will be progressively reduced, with the metal and concrete components extracted and stockpiled separately from the general demolition waste materials to maximise recycling.

Prior to commencing demolition of the concrete tower, plinth and ground slab, the surrounding area will be cleaned of other materials to avoid contaminating the clean concrete.

The concrete/brick rubble will be progressively loaded into trucks/bins for recycling.

5 WASTE TYPES AND QUANTITIES

Material	Estimated Quantity Produced / Used (tonnes)	Recyclable (Yes/No)	Estimated Quantity Recycled	% Recycled	Disposal Facility
Concrete	1500	Y	1500	100%	Metropolitan Demolition
Ferrous / Non-Ferrous	<5	Y	100	100%	To be exported/Sold
Asbestos	<1	N	0	0%	Veolia Horsley Park
General Waste	50	N	0	0%	Veolia Horsley Park

5.1 RECYCLING TARGETS

Liberty Industrial intends to recycle greater than 95% of all wastes generated on the Harbour Control Tower Demolition Project.

6 STANDARDS AND PERFORMANCE MEASURES

In order to achieve the waste avoidance and minimisation objectives (95%) recycle rate, Liberty Industrial follows the following hierarchy of waste management principles in all aspects of operations:

Avoid	unnecessary resource consumption
Reduce	waste generation and disposal
Re-use	waste resources without further manufacturing
Recycle	waste resources to make the same or different products
Recover	waste resources, including the recovery of energy
Treat	waste before disposal, including reducing the hazardous nature of waste
Dispose	of waste only if there is no viable alternative

The company uses a Waste Tracking System to record waste types, quantities and disposal methods for all waste streams in the form of a spreadsheet, **Form-123 Waste Register**. This spreadsheet records the disposals and contains the following information:

- Tracking of each waste stream;
- Dates of waste disposal;
- Transport information (contractor, rego, truck etc.);
- Licensed facility accepting the waste;
- Records of Waste Transport Certificates;
- Disposal weights of all waste streams, including cumulative total of each waste stream;
- Percentage Recycling Rate;
- Monthly, Quarterly and Yearly analysis of waste quantities and movements;
- Provide corrective actions to rectify any accidental spillage of waste;

This record keeping demonstrates a step towards better waste management, as it allows for the establishment of standard waste levels. Records of waste quantities allow the Project Manager to assess the performance of the undertaking in line with the above waste management principles to avoid and minimise waste to landfill.

7 WASTE MANAGEMENT

7.1 MONITORING AND MEASUREMENT

The company will monitor the site waste and record all waste movements from site utilising the waste register as the tracking medium. Waste tracking audits will be undertaken to ensure that the licensed waste removalist take the waste to a lawful facility.

7.2 REPORTING REQUIREMENTS

Waste Register Reports will be produced quarterly and include the following details:

- audits and inspections;
- corrective actions;
- training and awareness;
- waste disposal;
- recycled materials;

7.3 WASTE TRACKING SYSTEM PROCEDURE

7.3.1 Objective

The objective of the Waste Tracking System (WTS) is to account for the relocation and/or disposal of all waste material, in addition to any recyclable material removed from site. Asbestos containing materials will be managed separately and removed from site packaged pursuant to the “How to Safely Remove Asbestos Code of Practice”.

The responsibility for recording, maintaining and reporting of this rests with the site Project Manager.

7.3.2 Controls

The Waste Tracking System (WTS) will be used to manage and monitor the movement of waste.

The WTS will:

- Record and document the transfer of each waste load using a waste tracking dockets;
- Retain dockets to validate the final destination of all hazardous and nonhazardous waste;
- Document the off-site disposal of waste material using the docket system and the appropriate environmental permits for removal of controlled waste from the site pursuant to the Protection of the Environment Operations (Waste) Regulation 2005. A copy of these dockets will be given to the client with 24hours of receivership.

7.3.3 Actions

The following actions will be used to effectively manage the movement of waste material across and out of the site:

- An initial site induction for all worker(s) involved with the movement and relocation of the waste. They will be informed of the site/location of waste and transport routes to be used;
- A General Waste Register will be used to identify the source of the waste, vehicle registration, time, check of load, landfill destination and volume of waste;

- A NSW EPA permit must be obtained prior to removal for wastes classified as tractable. The form will be in duplicate with the original retained by the landfill operator and the duplicate retained by the transport driver, once signed as received by the landfill operator;

7.4 INTERNAL WASTE HANDLING PROCEDURE

7.4.1 Objective

As part of the demolition works, site waste will be sorted into waste streams to avoid contamination of the various waste.

Concrete and demolition waste from the works will be loaded into bins or taken directly off-site for disposal. The objective of this procedure is to ensure the transportation and handling of all waste material within the project area is undertaken in a safe and lawful manner.

7.4.2 Controls

This procedure will be used to control the following tasks and items:

- Regulate the transfer of waste within the project area;
- Identify location of stockpiles;
- Rate of placement of waste based on compliance to air quality, noise and vibration criteria;

7.4.3 Actions

The following actions are to be used for managing the stockpiling of waste.

Excavation

In the event that work has to be undertaken below grade the follow shall apply:

- Penetration and Break-in Permit must be issued before a surface penetration occurs;
- All waste material is to be removed in a damp condition to reduce the potential for dust generation and adverse air quality as per the requirements of the Environmental Management Plan;
- Waste material is to be placed directly into trucks for immediate transfer to the temporary stockpile;
- Plant operating in the exclusion zone is to be thoroughly cleaned with a high-pressure hose at a dedicated wash down area prior to leaving the zone.

Ref: ***FRM-031 Incident Report***

FRM-014 Work Permit

FRM-036 Excavation, Penetration and Break-in Permit

Transportation

- All loads are to be wet down with a fine water spray to prevent dust emissions prior to leaving the exclusion zone;
- Trucks are to be escorted into the site for loading and escorted offsite;
- A speed limit of 10kph will apply to all traffic.
- Loads are to be covered prior to the trucks leaving site.

7.4.4 Monitoring and reporting

Monitoring and reporting will include:

- Accidents involving the spillage of waste material from trucks and the corrective action undertaken using an Incident Report form;
- Earthmoving and traffic accidents are to be reported verbally (radio communication) and in writing directly to the Site Supervisor immediately following the incident; and
- Routine random checks will be undertaken by the Project Manager of waste handling practices to ensure conformance to this procedure;

Ref: ***FRM-031 Incident Report***

7.5 OFF-SITE WASTE DISPOSAL PROCEDURE

7.5.1 Objective

The objective of this procedure is to ensure that all waste material is transported off-site to a lawful appropriate class of landfill in a safe and environmentally responsible and lawful manner.

7.5.2 Controls

This procedure will be used to control the following tasks and items:

- Characterisation of the material for class of landfill;
- Movement of material off-site; and
- Transport route to landfill;

7.5.3 Actions

The following actions will be followed for managing the off-site disposal of any waste material:

- Material will be transported off-site once approval has been provided by the landfill operator;
- If required, application for a waste transport certificate to be approved by the NSW EPA;
- All movement of material offsite is to be recorded using the General Waste Register;
- Trucks are to be roadworthy and operated in accordance with transport regulations;
- Two-way radios or mobile phone to be provided in all trucks in case of emergency;

- All truck loads are to be covered with tarpaulins prior to leaving the site to prevent dust emissions whilst in transit as per consent condition D4;
- All truck loads are to be within legal weight limits;
- Trucks to exit site utilising the Traffic Management Plan;
- Off-site transport routes will be decided upon prior to any loads being removed from site; and
- The road condition at the entrance/exit to the work site will be monitored continuously and swept/washed as necessary;

Ref: ***Traffic Management Plan***

7.5.4 Monitoring and reporting

Monitoring and reporting will include:

- Accidents involving the spillage of material from trucks and the corrective action undertaken is to be reported in an Incident Report form;
- Traffic accidents are to be reported to the Police, and verbally to the Project Manager immediately following the incident; and
- Routine random checks will be undertaken by the company Supervisor to ensure the loads are secure and conform to this procedure;
- Waste traceability in place will be reported to the client on a monthly basis as part of the Monthly Report.

7.6 SURFACE RUNOFF MANAGEMENT PROCEDURE

7.6.1 Objective

The objective of this procedure is to prevent contaminated waste runoff from entering Sydney Harbour. As water sprays will be used on concrete rubble during the pulverising process, the runoff from this activity must be managed as the waste water flows into the sites existing drains. The water will then be directed to the harbour via Gross Pollutant Traps (GPT).

Only small amounts of water are expected to be captured from the misting sprays used for dust suppression. This water will gather at the base of the tower where it can be pH tested. If the run-off water is deemed to be at an acceptable level then the water will be pumped into the storm-water drain. If the water is not to an acceptable standard then the water will be pumped into an IBC and disposed of off-site.

In the event of heavy rain we envision that the runoff water will flow into the stormwater drains. The site will not have contaminates on the concrete surface so any run-off will be contaminate free. However, if any contaminants are present they will be collected in the GPT. The stormwater drains will be covered in a geofabric material which will also assist in filtering contaminates from any waste water.

7.6.2 Actions

The following actions are to be followed for managing surface runoff from waste material:

- All stormwater inlets servicing the project area are to be covered with a geofabric lining to filter water prior to it leaving site through storm-water drains;

7.6.3 Monitoring and reporting

Monitoring and reporting will include:

- Routine random checks will be undertaken by the Site Supervisor of the stormwater system and any bunding to ensure conformance to this procedure; and
- pH testing of runoff water will be conducted on an incremental basis once concrete pulverising begins to ensure water alkalinity is within acceptable limits. Testing will occur fortnightly unless deemed unnecessary by former test results.
- In the event that water is required to be taken offsite, waste tracking documentation will be implemented.
- In the event that water alkalinity does not fall within the acceptable limits as per the NSW EPA guidelines then waste water will be taken offsite.
- Should there be any uncontrolled surface runoff or uncontained erosion of waste, the incident and any corrective action undertaken is to be reported and recorded in the QSE Management System.