

Plan Of Management – Circular Metals Gladesville

50-52 Buffalo Road, Gladesville February 2023

CONTENTS

CONTENTS	1
Introduction	1
Site Operations Manager	3
Accepted Waste Type	4
General Waste Handling Process	5
Procedure for Assessing Incoming Loads	7
Management and Storage of Acceptable Waste	8
Unacceptable Waste Handling Procedure	10
Personal Protective Equipment (PPE)	13
Training and Review	15
Future Amendments to Plan of Management	16
Mitigation Measures	17

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INTRODUCTION

The proposed use of the Site at 50-52 Buffalo Road, Gladesville is as a 'waste or resource transfer station'. This Plan of management has been prepared to accompany a Designated Development Application currently under assessment with Ryde Council for 'waste or resource transfer station' that will be responsible for:

 Receiving, consolidating and onforwarding of approximately 25,000 tons of scrap metal per annum. The subject site has capacity to accommodate up to 500 tonnes per week, which equates to 2,060 tonnes per month and 25,000 tonnes per year.

The proposed use seeks consent for the receipt of scrap metals, including ferrous, non-ferrous, electronic waste (E-waste), (limited amount of) whitegoods and batteries to be transported by small vehicles, rigid trucks and the occasional semi-trailer.

No special, liquid, hazardous, restricted solid waste or general solid waste (putrescible), as defined in the Protection of the Environment Operations Act 1997 (NSW) or the EPA's Waste Classification Guidelines Part 1: Classifying Waste (2014), will be accepted at the facility.

Product is received by cars, utes and small trucks at the facility according to metal types and unloaded inside the enclosed transfer station building, placed into allocated bays (i.e. steel, aluminum, copper, brass) and then loaded onto trucks for distribution for processing.

Steel and aluminum scraps will be transferred to resource recovery facilities that are lawfully capable of accepting that material for processing.

Circular Metals Gladesville utilise an environmentally friendly approach and seek to recycle as much material as possible to avoid unnecessarily contributing to landfills.

This is consistent with the 'Waste Less, Recycle More' strategy put out by the EPA.

In particular, the 'Waste Less, Recycle More' initiative seeks to:

- "Encourage local communities to think directly about waste avoidance, recycling, littering and illegal dumping;
- Deliver conveniently located, value-for money waste infrastructure to make it easier for households and business to do the right thing."

The recommendations from the 'Waste Less, Recycle More' initiative included the following:

"General recycling:

- Reinforce and reward existing positive behaviours, the focus on correcting misconceptions.
- Provide a strong (or stronger) reason to act to encourage and convince those who are either sceptical
 or misinformed of the benefits.
- Use a 'persuasion-based social marketing campaign to influence attitudes and reinforce positive behaviours to ensure they continue."

"Problem waste:

- Highlight the existing facilities and services for correctly disposing of less common household, renovation and chemical waste.
- Consider that many people dispose of these materials infrequently, so information must be available as needed."

In accordance with the 'Waste Less, Recycle More' initiative, Circular Metals Gladesville adopts eco-friendly methods to process and recycle waste received. Further, Circular Metals Gladesville is located in a prime location to service the wide range of clients seeking a local, convenient and friendly waste transfer station. The location in Gladesville incentivises the public to 'do the right thing' when it comes to recycling and disposing of their waste.

The purpose of this Plan of Management is to:

- a. Identify the waste types accepted at the Site;
- b. Identify the waste types that are not accepted at the Site;
- c. Describe the general waste handling process;
- d. Describe the plan of management for each waste stream received at the Site;
- e. Describe the plan of management for dealing with unacceptable waste on Site;
- f. Identify the Personal Protection Equipment to be worn;
- g. Identify the training requirements for Circular Metals Gladesville staff; and
- h. Identify the requirements for review of this Plan of Management.

SITE OPERATIONS MANAGER

<u>Table 1</u> identifies the Site Operations Managers responsible for the implementation of this Plan of Management.

In particular, Site Operations Managers are responsible for:

- Implementing the procedures identified in this Plan of Management;
- Ensuring all staff are trained in accordance with this Plan of Management;
- Ensuring that training is updated annually and records of training are kept;
- Ensuring that all staff wear appropriate Personal Protection Equipment when handling waste at all times; and
- Ensuring that loads of unacceptable waste are rejected.

All questions should be directed to the Site Operations Manager.

Table 1: Site Operations Manager contact details

Name	Title	Contact No.
David Simonian	General Manager	0437975414

ACCEPTED WASTE TYPE

Circular Metals Gladesville accept metals.

The following waste types that are received at Circular Metals Gladesville include:

- Ferrous and non-ferrous scrap metals,
- Electronic waste (E-waste),
- Whitegoods (limited amount of),
- Lead Acid Batteries.

Table 2 outlines the types of waste which is proposed to be accepted at the facility, and which is sought as part of the designated development application.

Table 2: Waste Streams and Quantity

Type of Material	Processing or Storage	Location on Site for Storage	Bins on Site or Stacked	Volume Per Annum Tonnes	Maximum Daily Volume Tonnes	Maximum Weekly Tonnes
Ferrous Steel	Storage	Refer plans	Stacked	20,000	80	400
Copper	Storage	Refer plans	Bins	1,000	4	20
Brass	Storage	Refer plans	Bins	250	1	5
Aluminium	Storage	Refer plans	Stacked	2,000	10	50
Zinc	Storage	Refer plans	Bins	150	0.6	3
Lead	Storage	Refer plans	Bins	75	0.3	1.5
Stainless Steel	Storage	Refer plans	Bins	1,000	4	20
E Waste	Storage	Refer to plans	Bins	500		
Batteries	Storage	Refer plans	Pallets Bunded	250	0.1	0.5
Total				25,000	100	500

There will be no importation of organic materials, food, household liquids, asbestos, chemicals, hazardous materials, building waste or concrete.

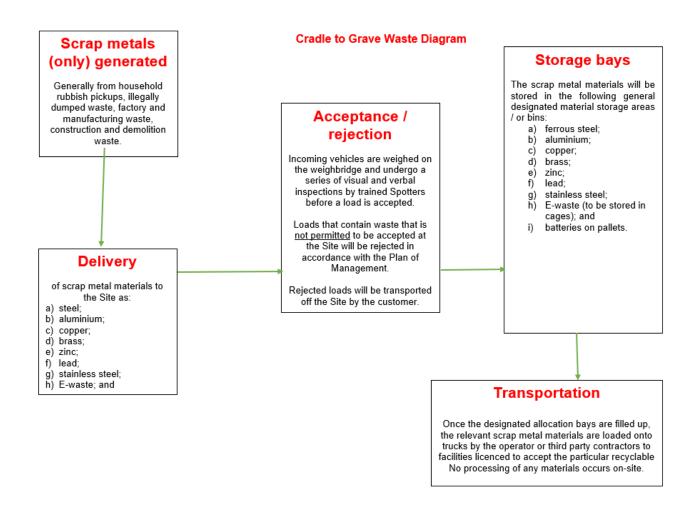
These waste streams typically arrive from small vehicles, rigid trucks and the occasional semi-trailer.

No special, liquid, hazardous, restricted solid waste or general solid waste (putrescible), as defined in the Protection of the Environment Operations Act 1997 (NSW) or the EPA's Waste Classification Guidelines Part 1: Classifying Waste (2014), will be accepted at the facility.

GENERAL WASTE HANDLING PROCESS

1.1 General Cradle to Grave Operations

The following highlights the cradle to grave waste processing at the facility as proposed.



5

1.2 Operational Details

- The hours of operation for the Site are from 7am 6pm Monday to Friday, and 8am 3pm Saturday.
- Scrap metals delivered by metal types only will be unloaded inside the transfer station, placed into
 allocated bays (i.e. steel, aluminium, copper, brass etc), and then reloaded (by metal types only) onto
 semi trailers and trucks for distribution, meaning that it which will then transport the loads off site to
 appropriately licensed facilities for shredding and remelting.
- Steel, aluminum scraps, copper scraps and other non-ferrous scraps will be transferred to resource recovery facilities that are lawfully capable of accepting that material for processing.
- Other non-ferrous scraps will be sold in smaller quantities to specialised recyclers.
- There will be no shredding, oxy cutting or grinding works proposed as part of the resource recovery
 transfer station use. Scrap metals are simply unloaded, placed into collection bays and then when there
 is enough product, reloaded onto trucks for distribution and transportation to other facilities for
 processing. The site will operate as a collection facility for metal/wastes.
- All doors will be closed before commencement of materials sorting and loading or unloading.
- All employees are required to wear appropriate Personal Protection Equipment (PPE) when handling any waste. PPE includes; safety boots, gloves, high visibility clothing and ear protection (ear-plugs).

1.3 Weighbridge Ingress and Egress

- Clear access to the weighbridge will be provided at all times to allow ingress and egress from the site.
- The proposed car parking on site is for staff only, so when they arrive early in the day they will park their vehicles until when they exit in the evenings. Therefore, no conflict with the weighbridge operation is likely to occur as the car parking is not available to the public visiting to the site.
- When the public do visit in cars for drop off of materials they will go directly onto the weighbridge and be directed to the relevant building for unloading of materials. They will not be able to park their cars at any time.

1.4 Machinery Operated on Site

The facility will have the following machinery permanently operating on site:

- 1 x excavator
- 1 x front end loader
- 2 x forklifts

PROCEDURE FOR ASSESSING INCOMING LOADS

The process of assessing incoming is described step by step below.

Step	Process
1	The truck enters the site, is visually checked and weighed on the weighbridge
2	The truck enters the rear building and occupies the loading area, the doors are then shut and the truck is unloaded. To ensure that doors will remain closed, each door will be fitted with electric quick doors. In the event of a power failure, the site manager will be responsible for manually closing each door as required.
3	The doors to the building are opened and the truck leaves, via the weighbridge. The doors are then closed again.
4	All doors will be closed before commencement of materials sorting. The material unloaded is sorted in the building and placed into defined stockpiles based on the metal type. Spotters are Circular Metals employees who are to be fully trained in accordance with this Plan of Management and in the identification of acceptable and unacceptable waste types at the facility.
	If the waste is assessed by the Spotter as unacceptable, the Spotter will follow steps outlined in the following section of the POM.
5	Once sufficient material of a particular metal is stored, it is collected and transferred to a lawfully licensed processing centre, using the same process as for deliveries.
6	A similar process occurs for small vehicles in the front building, with the scrap metal then transferred by forklift to the rear building to be sorted.

Receipt of Large Items on Site

The maximum size of items is 2 tonne or 4m long to ensure they can be loaded to trucks. Any materials larger are not accepted at site.

MANAGEMENT AND STORAGE OF ACCEPTABLE WASTE

The subject site has capacity to accommodate up to 500 tonnes per week, which equates to 2,060 tonnes per month and 25,000 tonnes per year.

The scrap metals brought to the site will be stored as follows:

Ferrous Steel

and

Non Ferrous

- 1) Aluminium
- 2) Copper
- 3) Brass
- 4) Zinc
- 5) Lead
- 6) Stainless Steel

Each type of waste is stored on Site for recovery/recycling and is stockpiled/stored separately.

The Ferrous (Steel) and aluminium streams will be stored in bays. The metals will then be baled and stacked in bays inside the warehouse building.

The smaller metal products will be stored in bins, drums and pallets on-site stored within the warehouse building.

Batteries

The batteries collected and stored will be Lead / Acid only stored in a bunded area separate from other materials.

No Lithium batteries will be brought to the site. The batteries will be kept on pallets within the building and with a maximum of 5 pallets at a time. A maximum of 200 batteries will be stored on-site.

E Waste

E waste is removed by hand when it is identified and will be stored in cages. Maximum 5 tonnes at any time. The E waste is <u>not Hazardous</u> and will be limited to products such as computers, printers, photocopiers, televisions and & sound systems. Circular metals do not pull part items of e-waste in order to remove any parts, battery or metals. Items are left whole and completely intact and sent to licenced third parties for resource recovery recycling.

Whitegoods

Whitegoods will be stockpiled in a separate bin. No dismantling of white goods is to occur on site.

Disposal Arrangements

- Steel, aluminium scraps, copper scraps and other non-ferrous scraps will be transferred to resource recovery facilities that are lawfully capable of accepting that material for processing.
- Other non-ferrous scraps will be sold in smaller quantities to specialised recyclers. This occurs by arrangements when on site storage is nearing capacity.
- Scrap metals are simply unloaded, placed into collection bays and then when there is enough product, reloaded onto trucks for distribution and transportation to other licensed facilities for processing. The site will operate as a collection facility for metal/wastes.
- E waste is sent to licensed third parties for resource recovery recycling. This occurs by arrangements when on site storage is nearing capacity.

UNACCEPTABLE WASTE HANDLING PROCEDURE

Unacceptable waste types

Circular Metals Gladesville does not accept asbestos, toxic waste, hazardous waste, liquid waste or medical waste (unacceptable waste) at the Site.

All Circular Metals Gladesville employees are trained in accordance with this Plan of Management and are therefore deemed to be qualified "Spotters" of unacceptable waste.

As such, it is the responsibility of all Circular Metals Gladesville employees to identify and address unacceptable waste on Site appropriately and as soon as possible.

Any questions should be directed to a Site Operations Manager.

In the event that unacceptable waste arrives on Site, Circular Metals Gladesville will employ the procedures detailed in below to ensure that the unacceptable waste is safely and efficiently handled.

If hazardous wastes are detected they're not accepted, and the customer is told to remove them from site. The facilities website contains a list of wastes not accepted and as considered as hazardous.

All waste types, other than those identified on Page 8 of this POM, are considered unacceptable wastes for the facility.

Unacceptable waste identified after vehicle weighed in and before vehicle unloaded

The following steps outline the process to be followed when a Spotter identifies that unacceptable waste has arrived on Site after vehicle weighed in but before vehicle unloaded.

- 1. The load will be rejected.
- 2. The driver will not be permitted to unload the vehicle.
- 3. Spotter will mark the docket as a "Rejected Load".
- 4. The Spotter will take photos of the docket, the vehicle registration and the waste (only if possible).
- 5. The Spotter will record the load in the Rejected Load Register.
- 6. The Spotter will ask the customer to sign the docket marked as a rejected load.
- 7. Spotter will inform Site Operations Manager who is responsible for notifying the customer.
- 8. The driver will be directed to exit the Facility.

Note: At any time, the Spotter may request the assistance of another employee or Site Operations Manager.

Unacceptable hazardous waste identified by Spotter prior to unloading of skip bin or vehicle but it would be unsafe to attempt to return it to the customer

The following steps outline the process to be followed when a Spotter identifies that hazardous waste has arrived on Site prior to unloading of skip bin or vehicle but it would be unsafe to attempt to return it to the customer.

- 1. Spotter will immediately contact a Site Operations Manager.
- 2. If the waste is contained within a bin, the bin will be sealed, labelled and stored in a segregated area to be transported to a facility licensed to take that waste as soon as practicable.
- 3. Spotter will inform Site Operations Manager who is responsible for notifying the customer.

If hazardous wastes are detected they're not accepted, and the customer is told to remove them from site. The facilities website contains a list of wastes not accepted and as considered as hazardous.

Unacceptable waste identified after waste is unloaded (e.g. green waste, tyres, discrete bags of food)

The following steps outline the process to be followed when unacceptable waste is identified after waste is unloaded (e.g. green waste, tyres, discrete bags of food).

- 1. Where possible, the waste will be separated out from the load in a safe manner.
- 2. The waste will be placed in a secure, designated bin/cage/area (as appropriate) that is labeled and segregated from other waste. These segregated bins/cages/areas will be emptied as often as possible.
- 3. The remainder of the load will be accepted.
- 4. The driver will be issued with a warning about the acceptable waste types.
- 5. Where the unacceptable waste is unable to be segregated from other waste in the load or where the unacceptable waste is too voluminous to be able to segregated, the Spotter will use their discretion (and that of Site Operations Manager where required) to decide whether to partially accept or reject the load (e.g. loads will be rejected where the load is overwhelmingly odorous or where the unacceptable waste is too voluminous and mixed in the load).
- 6. Spotter will inform Site Operations Manager who is responsible for notifying the customer.

Unacceptable hazardous and/or contaminated waste identified after waste is unloaded (e.g. asbestos, chemical, food, clinical)

The following steps outline the process to be followed when unacceptable hazardous and/or contaminated waste is identified after waste is unloaded (e.g. asbestos, chemical, food, clinical, floc).

- 1. The Spotter will ensure the safety of all people on site by handling the waste in the safest way possible.
- 2. Where the waste is identified as asbestos the load must be wet down immediately and isolated from other waste. All employees dealing with the load must be wearing the appropriate PPE at all times.
- 3. Where it is safe to do so, the load will be reloaded onto the vehicle.
- 4. The load will be classified as rejected.
- 5. Spotter will mark the docket as a "Rejected Load".
- 6. The Spotter will take photos of the docket, the vehicle registration and the waste.
- 7. The Spotter will record the load in the Rejected Load Register.
- 8. The Spotter will ask the customer to sign the docket marked as a rejected load.
- 9. The driver will be directed to exit the Facility.
- 10. Where it is not possible to reload the waste onto the vehicle safely, the waste will be treated by Circular Metals Gladesville staff in the safest way possible.
- 11. Where the waste is contaminated with asbestos, after following step 2, the waste will be placed into a lined bin that will be sealed upon completion. The bin will be quarantined in a clearly marked "Quarantine Area" of the site. The bin will then be transported to a licensed facility as soon as practicable.
- 12. Spotter will inform Site Operations Manager who is responsible for notifying the customer.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

All Circular Metals Gladesville employees will be trained in accordance with the following instructions to minimise the risk of harm.

- 1. Direct handling of any materials will be avoided unless every component can be readily identified as safe to handle.
- 2. Waste material is only to be handled when wearing and using appropriate PPE including gloves, high visibility clothing and safety boots. Circular Metals Gladesville employees also have access to earplugs, dust masks and eye protection.
- 3. Material that falls into the category of 'UNKNOWN' is to be treated as **high risk**, and the following steps will be followed:
 - a. Avoid handling by hand.
 - b. All protective clothing is to be worn MINIMUM requirements are:
 - i. Heavy sole footwear,
 - ii. One piece long sleeve overalls,
 - iii. Full face shield,
 - iv. Heavy leather gloves with liner, and
 - v. If required, a disposal outer covering with hood.
- 4. If contamination or sharps are identified the Site Operations Manager is to be present during cleaning or handling of the material.
- 5. Where practical, material is to be removed at arm's length by the use of shovels, scrapers and other mechanical means approved by the Site Operations Manager.
- 6. If sharps are found and they cannot be practically removed with a mechanical aid or tool:
 - Pick up the sharp with TONGS (NEVER WITH YOUR HANDS) by the blunt end, away from the needle point.
 - If the plastic cap is nearby DO NOT try to recap it.
 - Place the sharp in a strong screw top plastic container or custom-made yellow needle disposal container if available.
 - Always take the container to the sharp. Avoid unnecessary handling.
 - Never hold the container whilst disposing of the sharp.
 - Make sure the container is sealed tightly.
 - Arrange for disposal through the Site Operations Manager.

- 7. No person is to be directed to work in any manner other than described in this work instruction unless the Site Operations Manager is satisfied the area is clear.
- 8. Should any person be accidentally pricked by a sharp, the following steps are to be taken.
 - a. Where possible, retain the sharp that caused the injury.
 - b. Gently squeeze the wound until it bleeds.
 - c. Wash the infected area with soap and water.
 - d. Apply antiseptic and a Band-Aid.
 - e. Contact the Company Doctor (refer to Office for the number).

TRAINING AND REVIEW

All Circular Metals Gladesville employees will be trained in accordance with this Plan of Management. Circular Metals Gladesville will keep a record of training that is undertaken.

Training will be updated at least annually for every employee.

This Plan of Management will be reviewed and updated annually, or when required.

FUTURE AMENDMENTS TO PLAN OF MANAGEMENT

Upon adoption of this Plan of Management, any future amendment of the Plan of Management is to be provided to City of Ryde Council in writing, to seek written approval from Council that the proposed amendments are acceptable and in accordance with any relevant development consent for the site.

MITIGATION MEASURES

ENVIRONMENTAL ISSUE	MITGATION AND MANAGEMENT MEASURES
Design and Appearance and Visual	 Regular maintenance to the landscaped areas will be undertaken by the Site operators to ensure the visual appearance of the Site is maintained. The general appearance of the buildings and its surrounding hardstand will be maintained on a regular basis by the Site operators. Regular site maintenance should occur to ensure all product is stored in the appropriate storage stockpiles within the buildings. Regular watering of new planting within first 12 months from planting. The implementation of irrigation systems for garden beds should be considered.
Waste Management	 A Plan of Management (POM) should be prepared for the site prior to the issue of an occupation certificate that includes the following: Identifies site managers responsibilities; Outlines accepted materials; Outlines the general materials handling and operational process; Procedures for assessing incoming loads; Procedures for unloading of acceptable materials; Procedures for unacceptable materials including those identified after vehicle is unloaded; Personal Protective Equipment; Training and review. Mitigation measures for the site. All customers are advised that only scrap metals, including ferrous, nonferrous, electronic waste, (limited amount of) whitegoods and batteries are accepted on Site; All bins containing unacceptable material on Site, should be labeled to ensure workers are aware of their contents; All invoices bear the message no 'materials other than scrap metals, including ferrous, non-ferrous, electronic waste, (limited amount of) whitegoods and batteries waste are accepted on Site'.
Traffic and Transport	 The Site will be maintained in perpetuity to ensure internal vehicle circulation allows for vehicles to access and leave the Site in a forward direction. Vehicle movements will be restricted to core hours of operation to minimise impacts on surrounding residential occupier's amenity. The internal configuration of the car park be designed and maintained in accordance with AS 2890.1 (2004), AS2890.2 (2018) and AS 2890.6 (2009). Loading and unloading of vehicles is only to occur on site. In the event of future construction in relation to this application, or any future development application for the Site, it is recommended that the detailed construction traffic management plan that has been provided by Traffix to manage and mitigate any potential traffic conflicts associated with construction both on and off the Site be implemented.

7

The truck routes that have been allocated based on the size of vehicles to ensure vehicles can negotiate the intersections to and from the site within the TAIA at Appendix F shall be adopted and provided to regular drivers to and from the site. Waste collection for the subject site and all truck loading and unloading is to be undertaken onsite. Air Quality and Activities to be assessed during adverse weather conditions and modified as Odour required (e.g. cease activity where reasonable levels of dust cannot be maintained using the available means). Weather forecast to be checked prior to undertaking material handling or processing. Engines of on-site vehicles and plant to be switched off when not in use. Vehicles and plant are to be fitted with pollution reduction devices where practicable. Vehicles are to be maintained and serviced according to manufacturer's specifications. Visual monitoring of activities is to be undertaken to identify dust generation. Stockpiles Store material is designed bays Hauling Activities Regularly inspect haul roads and maintain surfaces to remove potholes or depressions Driveways and hardstand areas to be swept/cleaned regularly as required etc. Vehicle traffic is to be restricted to designated routes. Speed limits are to be enforced. Vehicle loads are to be covered when travelling off-site. Incident Complaints Management Record all air/ dust incidents. Complaints are logged and investigated. It is anticipated that the Project would develop a suitable Operational Environmental Management Plan for the site. The Operational Environmental Management Plan would include a specific chapter which outlines the measures to manage dust emissions at the site and include aspects such as key performance indicators, response mechanisms, and complaints management. Noise <u>Operations</u> Mechanical equipment is to have a sound power level of 80 dBA or less and are to be reviewed once final selections can be obtained in detailed design phase; Scheduling of semi-trailer and rigid trucks is such that there can only be one vehicle entering or leaving the site within a 15-minute period; Idling of vehicles and movements in general should be minimised as much as practicable. Forklifts are to be fitted with "quaker" or broadband reversing alarms; Closing the openings to the facility building during loading/unloading activities.

 A complaints register should be maintained onsite and be overseen by the site manager.

<u>Construction Noise - Mitigation and Management Measures:</u> General

- Introduce best-practice general mitigation measures in the workplace which are aimed at reducing the acoustic impact onto the nearest affected receivers.
- Issue project updates to stakeholders, discussing overviews of current and upcoming works. Advanced warning of potential disruptions can be included. Content and length to be determined on a project-by-project basis.
- Implement a management system which includes procedures for receiving and addressing complaints from affected stakeholders.
- Individual letters or phone calls to notify stakeholders that noise levels are likely to exceed noise objectives. Alternatively, contractor could visit stakeholders individually in order to brief them on the noise impact and the mitigation measures that will be implemented.
- Offer provided to stakeholders subjected to an ongoing impact. The offer could include movie tickets, meal vouchers, gift cards or equivalent measures.
- Contractor to consider alternative construction options that achieve compliance with relevant criteria. Alternative option to be determined on a case-by-case basis. It is recommended that the selection of the alternative option should also be determined by considering the assessment of on-site measurements (refer to Verification Monitoring above).
- For plant items which are static it is recommended that, in the event exceedances are being measured due to operation of the plant item, an acoustic enclosure/screen is constructed to reduce impacts. These systems can be constructed from Fibre Cement (FC) sheeting or, if airflow is required, acoustic attenuators or louvres.
- Compliance with AS 2436-2010 "Guide to Noise and Vibration Control on Construction, Demolition and Maintenance Sites" sets out numerous practical recommendations to assist in mitigating construction noise emissions.
- Toolbox meetings should be undertaken with all contractors commencing works on the site
- All plant and equipment are to be maintained such that they are in good working order.
- Avoiding the use of portable radios, public address systems or other methods
 of site communication that may unnecessarily impact upon nearby sensitive
 receivers.
- Construction traffic accessing the site including the movements of heavy vehicles are required to comply with the projects Conditions of Consent and will be detailed in the sites Construction Management Plan.
- Attended noise level measurements of typical demolition and ground works
 activities should be undertaken at site. Attended construction noise surveys of
 the site and surrounding impacts on neighbours should be undertaken during
 the following as a minimum:
 - i. Start of Demolition
 - ii. Commencement of any rock breaking or sawing on the site.
 - iii. In response to any ongoing complaints received from neighbours.

General Construction activities are not expected to exceed project vibration limits detailed in the project Acoustic Report.

Vibration Mitigation

Construction

- Any vibration generating plant and equipment is to be in areas within the site to lower the vibration impacts.
- Investigate the feasibility of rescheduling the hours of operation of major vibration generating plant and equipment.
- Use lower vibration generating items of construction plant and equipment; that is, smaller capacity plant.
- Minimise conducting vibration generating works consecutively in the same area (if applicable).
- Undertake the removal of concrete within the building using saw cutting or pulverising where possible.
- To confirm vibration magnitudes are within the expected levels the following attended vibration measurements are required: a. Short term attended vibration measurements – Attended short term vibration measurement of activities with the potential to generate maximum vibration to be undertaken on commencement at the site, including the following:
 - i. Measurements to be undertaken at a representative location from the activity being conducted with a similar distance to the potentially affected receiver.
 - ii. Activities with the potential to generate the greatest magnitudes of vibration include:
 - iii. Hydraulic hammering of concrete slabs.
 - iv. Hydraulic hammering during ground works within rock.

Demolition

- Hydraulic Hammering Separation to the neighbouring buildings is to be established prior to hammering of the existing building structures and maintained at all times during demolition.
- Materials and Equipment Movement Ensure no contact with the neighbouring building structures occur during materials movement or equipment movements.
- Removal of concrete structures The removal of concrete structures within the building is to be undertaken using saw cutting or pulverising where possible.

Excavation

Removal of Rock - Where possible remove rock from the required excavation
using ripping and the like. When the use of hydraulic hammers are required to
remove rock during excavation a saw cut is required to be undertaken at the
perimeter of the excavation prior to commencement of hydraulic hammering of
rock.

Water Quality Management

Erosion and Sediment Transport

- Provide environmental controls in accordance with a site Erosion and Sediment Control Plan (ESCP), to be developed as part of the Construction Environmental Management Plan (CEMP).
- Minimum requirements for the ESCP will include:
 - Sediment fencing on the downslope perimeter of all disturbed areas
 - A construction entry/exit to reduce wheel tracking of dirt onto the road
- Monitor the condition of Buffalo Road and if necessary arrange sweeping to remove accumulated dirt
- The site CEMP will include an ESCP that will detail requirements for erosion and sediment controls during construction.

Construction Site Spills

- Storage of chemicals in accordance with Australian Standards
- Storage of hydrocarbon fuels within bunded storage areas, or self-bunding tanks
- A Spill Response Plan, including emergency response and EPA notification procedures
- Concrete agitators must not wash-out water to the stormwater system or discharge into Careening Bay.
- Requirements for the storage and use of hydrocarbon fuels and other chemicals on site will be documented in the CEMP.
- The CEMP will also include requirements for spill management and reporting.

Operational phase – runoff water quality

- A stormwater treatment train is proposed which will meet the pollutant retention requirements of City of Ryde. This system is described in the Soil and Water Report prepared by SLR Consulting (Section 6) at Appendix F.
- Discharges to sewer (sewage from site facilities and washdown water from inside buildings) will be managed in accordance with the requirements of Sydney Water.
- If excessive dirt becomes evident across driveway or hardstand areas then these should be cleaned by washdown to the first flush system (during dry weather). Site operational management procedures should include periodic inspection of the driveways (weekly initially for first 6 months of operation and then relaxing to monthly if the need for washing down is not evident).
- Water quality should be monitored monthly (during rainfall events) during the first 12 months to allow evaluation of the efficacy of the proposed water treatment train along with site management measures. Analytes should include TSS, TN, TP and full metal suite. If there are exceedances of the ANZECC 2000 Guidelines then these should be investigated and a report submitted to City of Ryde Council and the NSW EPA. It is recommended that this requirement be a condition of planning consent.
- Water quality sampling for monitoring purposes would be taken at the site discharge it located in the south west corner of the site.
- The water quality devices proposed require regular inspection and maintenance as recommended by the supplier. Inspection and maintenance

	requirements will be documented in the Operational Management Plan for the facility.
	 Flooding All wastes will be stored under roof and should not be inundated by flooding in a 1% AEP event. Since the proposal does not include storage of any wastes which generate leachate when inundated, no additional mitigation measures are proposed. It is also recommended that the large roller doors on either side of the metal shed be closed by staff during a flood event to prevent the ingress of floodwaters. Habitable areas of the front building are to be provided with freeboard of 0.5m above the flood levels.
Hazards - Fire	 Dry powder fire extinguishers shall be readily accessible by staff within the site to facilitate immediate response by site personnel following identification of a fire. Operators shall be trained in the use of site fire extinguishers. A site emergency response plan and emergency services information booklet shall be prepared for the site to fully document the emergency scenarios and the appropriate responses to those emergency scenarios. A detailed pressure loss calculation shall be prepared for the most disadvantaged hydrant to demonstrate compliance with AS 2419.1-2017. The pressure loss calculation shall be incorporated into the fire risk assessment. A fire equipment layout drawing shall be prepared for the site, indicating all fire controls (extinguishers, hydrants, hose reels, etc.). Site containment shall be reviewed to ensure appropriate capacity is available for potentially contaminated fire water.
Greenhouse Gas Emissions	Machinery will be regularly tested and maintained so that emissions are as clean and minimal in quantity as possible.
Geotechnical	 The weighbridge excavations may require rock excavation if they are deeper than the rock depths of 1.5m on the north-western side of the site, though rock is not expected on the south-eastern side. Excavation will be mostly carried through variable soils and possibly sandstone bedrock of variable strengths. Hence, most of the soils and weathered sandstone are expected to be excavated with buckets of large excavators, perhaps assisted by ripping tynes. If rock in the low to medium strength range is encountered it will require the use of rock breaker equipment. Rock breakers may transmit vibrations through the rock mass that could affect adjoining buildings. Vibration effects on adjoining structures must be considered. The weighbridge excavations will be close to the site boundaries and it is recommended to have full depth support by shoring pile walls or where possible, by cutting the sides to a batter slope. Support may be required even in the excavation through the sandstone due to its interlayered nature of very low and low strength rock.

The most competent foundation for the proposed buildings is the bedrock. It is recommended footings be founded uniformly into the sandstone. The residual clavs are considered to be moderately reactive, i.e. similar to Class M clays in AS2870-2011 though the site classification varies from one part to another and is not really applicable to industrial buildings. The presence of the deep uncontrolled fill of varying compaction and thickness is considered unsuitable as a foundation stratum, based on the test borehole information. We consider this existing material to be 'uncontrolled' fill. Because of this fill, that part of the site as seen is considered to be Class P ('problem') in accordance with AS2870-2011. The fill is deemed unsuitable as a bearing stratum for footings and is considered a 'moderate to high risk' (of poor performance) as a supporting subgrade under slabs and external pavements (note that some of the pavements have already suffered cracking damage). Essentially, there are two options for the engineering design: suspend the building, including its floor slabs, on a system of pile footings founded within the bedrock, or, alternatively, excavate and replace the fill with engineered, controlled fill that can then support the slab on grade (and if desired, footings as well, albeit with a low allowable bearing pressure of 100kPa). A waste classification will need to be assigned to any soil excavated from the site prior to offsite disposal. In this respect, and in regards to contamination, reference should be made to the JK Environments report. All concrete pavements should be underlain by a layer of good quality roadbase (equivalent to TfNSW Specification 3051 for DGB20) at least 100mm in thickness and compacted to 98% of Modified Maximum Dry Density. Concrete payements should have joints designed to transfer shear but not bending force Prior to demolition, earthworks or excavation commencing, detailed dilapidation reports should be compiled on neighbouring buildings that fall within the zone of influence of the excavation, which is defined by a distance back from the excavation perimeter of twice the depth of the excavation. The respective owners should be asked to confirm that the dilapidation reports represent a fair record of actual conditions. These reports should be carefully reviewed prior to excavation commencing to ensure that appropriate equipment is used. Prior to commencement of construction consideration should be given to the findings in JK Geotechnical Report for the site by the builder, and civil and structural engineers. Ecologically Prepare and Implementation of an Operational Environmental Management Sustainable Plan Development Contamination A suitably qualified/licensed contractor is to carry out an 'emu pick' to remove all visible FCF from the surface of the site. A surface clearance for asbestos is then to be issued by a Licensed Asbestos Assessor (LAA). This is to occur as soon as possible; Prepare and implement a RAP. Validate the implementation of the RAP and provide a validation report on completion of remediation.

 In the event that contamination is managed on site, long-term EMP must also be prepared.