Macquarie Capital

Sydney Metro Martin Place Station

Stage 1 SSDA Report - Waste Management Plan

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Contents

1 Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Minister for Planning pursuant to Part 4 of *the Environmental Planning and Assessment Act 1979* (EP&A Act).

Macquarie Corporate Holdings Pty Limited (Macquarie) is seeking to create a World Class Transport and Employment Precinct at Martin Place, Sydney.

The application seeks Stage 1 approval for the establishment of building envelopes, maximum Gross Floor Areas and design parameters for two predominantly commercial office Over Station Development (OSD) towers, located above the site of the future Martin Place Metro Station (part of the NSW Government's Sydney Metro project).

This document addresses aspects of waste management relating to requirements of the SSD application under the City of Sydney Policy for Waste Minimisation in New Developments, the Secretary's Environmental Assessment Requirements (SEARs), and the project's Green Star objectives.

This Waste Management Plan (WMP) identifies waste sources and proposes management measures for the project design, construction and operation. The format of this document can assist with the completion of a Construction Waste Management Plan (CWMP), which will be required by the contractor prior to the construction of the development.

2 Overview

The New South Wales (NSW) Government is implementing Sydney's Rail Future (Transport for NSW, 2012), a plan to transform and modernise Sydney's rail network so that it can grow with the city's population and meet the needs of customers in the future.

Sydney Metro is a new standalone rail network identified in Sydney's Rail Future. The Sydney Metro network consists of Sydney Metro Northwest (Stage 1) and Sydney Metro City & Southwest (Stage 2).

Stage 2 of the Metro entails the construction and operation of a new Metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and eventually onto to Bankstown through the conversion of the existing line to Metro standards. The project also involves the delivery of seven (7) new Metro stations, including Martin Place.

This step-change piece of public transport infrastructure once complete will have the capacity for 30 trains an hour (one every two minutes) through the CBD in each direction catering for an extra 100,000 customers per hour across the Sydney CBD rail lines.

On 9 January 2017 the Minister for Planning approved the Stage 2 (Chatswood to Sydenham) Metro application lodged by Transport for NSW (TfNSW) as a Critical State Significant Infrastructure (CSSI) project (reference SSI 15_7400).

TfNSW is also making provision for future Over Station Development (OSD) on the land it has acquired for the Stage 2 Sydney Metro project, including land acquired for the purposes of delivering Martin Place Station. The OSD development is subject to separate applications to be lodged under the relevant provisions of the EP&A Act.

An Unsolicited Proposal submission has been lodged by Macquarie to the NSW Government for the delivery of a single fully integrated station/OSD solution for the new Sydney Metro Martin Place Station.

2.1 Project context

The Sydney Metro Martin Place Station Precinct (the Precinct) project relates to the following properties (refer to Figure 1):

- 50 Martin Place, 9 – 19 Elizabeth Street, 8 – 12 Castlereagh Street, 5 Elizabeth Street, 7 Elizabeth Street, and 55 Hunter Street (North Site);
- 39 – 49 Martin Place (South Site); and
- Martin Place (that part bound by Elizabeth Street and Castlereagh Street).

The land the subject of this application relates only to the North and South Site (refer to Figure 2). Each site will accommodate one OSD tower above the future Sydney Metro Martin Place Station (representing the northern and southern

entries/gateways to the Sydney Metro station). The land acquired for the Sydney Metro Martin Place Station is the same as for the Macquarie proposal, except that the Macquarie proposal includes the two properties north of Martin Place owned by Macquarie, namely 50 Martin Place and 9-19 Elizabeth Street.

Both the North and South Sites are regular in shape and have area of approximately 6,022m^2 and 1,897m^2 respectively, totalling 7,919m^2.

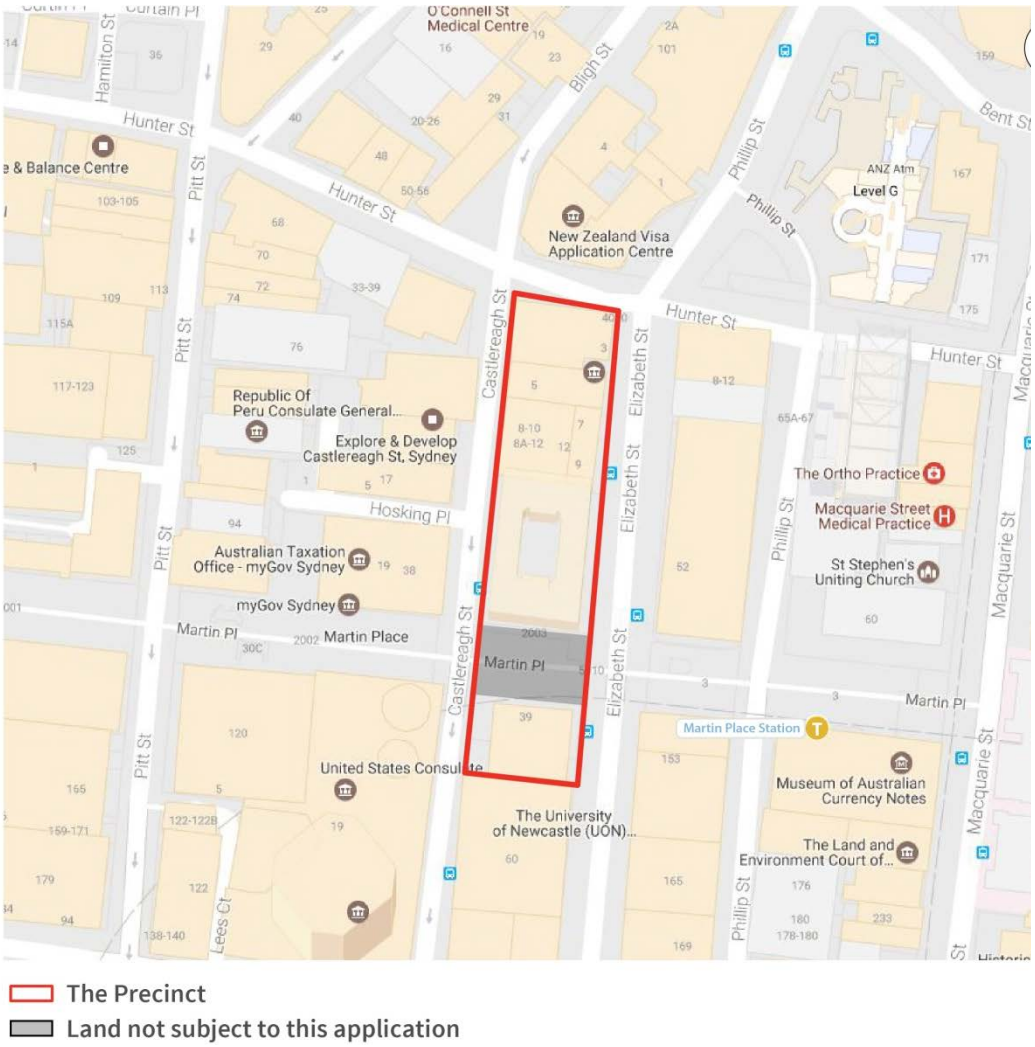

Figure 1 Location map of the Precinct.

Source: Google Maps and JBA

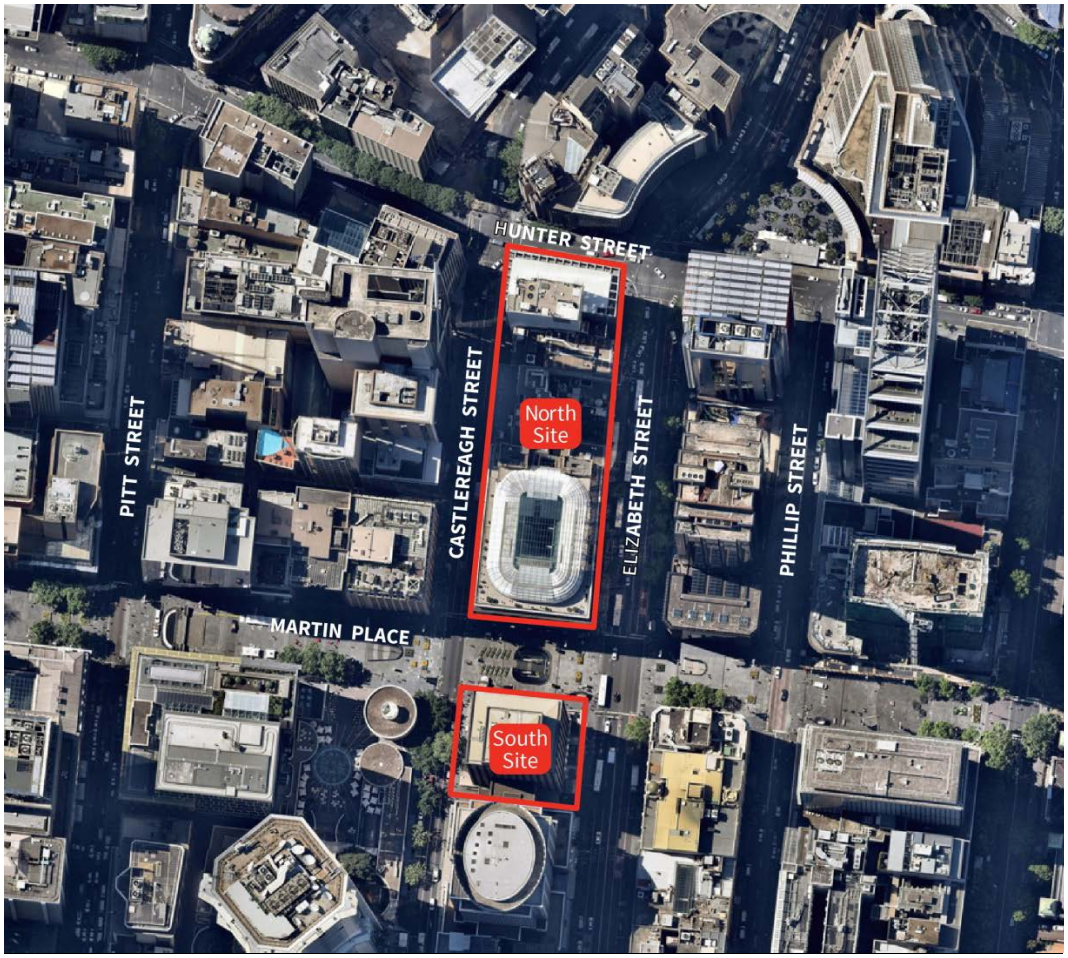

Figure 2 Aerial photo of the North and South site

Located close to the centre of the Sydney CBD, the Precinct comprises of the entire City block bounded by Hunter Street, Elizabeth Street, Martin Place and Castlereagh Street; that portion of Martin Place located between Elizabeth Street and Castlereagh Street and the northern most property in the block bounded by Martin Place, Elizabeth Street, Castlereagh Street, and King Street. Together it constitutes an above ground site area of approximately 9,400 square metres, with a dimension from north to south of approximately 210 metres and from east to west of approximately 45 metres. It incorporates a significant portion of one of Sydney's most revered public spaces – Martin Place.

Martin Place is recognised as one of Central Sydney's great public, civic and commemorative spaces, as well as being a historically valued commercial and finance location of Sydney's CBD. Martin Place and a large number of buildings on, or in close proximity to, Martin Place are identified as heritage items, either as items of National, State or Local significance. Number 50 Martin Place, which forms part of the Macquarie North Site, is one of these major heritage items.

There has been a number of redevelopment and refurbishment proposals in recent years along Martin Place to improve existing assets and recapture their premium commercial status (e.g. 5 Martin Place, 50 Martin Place, 20 Martin Place, upgrades of the MLC Centre, and 60 Martin Place). The City of Sydney Council

has also identified a need to reinvigorate Martin Place and upgrade the public spaces.

The surrounding locality is characterised by a variety of built forms and architectural styles, with many of the buildings, including those of relatively recent years, not complying with the current planning controls with respect to building heights, setbacks and street wall heights.

In terms of land use the area is characterised by a predominance of office uses, with some ground floor retailing, cafés, or restaurants and hotels (most notably the Westin and the Wentworth) to support its primary business centre function.

2.2 Proposed development

The proposal by Macquarie is unique and innovative in aligning the aspirations for public transport, civic amenity and the long-term sustainability of Sydney as a financial centre. This will be achieved through a development designed to maximise the opportunities for an improved Metro Station, integration of the existing and new public transport infrastructure, integration of that infrastructure with modern commercial office towers and world class retailing, along with rejuvenating and complimenting some of Sydney's most revered public spaces, and substantially improving station access and connectivity.

More specifically the development will comprise a concept proposal (under section 83B of the EP&A Act) for the OSD for the North and South Sites. It will be designed as a fully integrated Station and OSD project that, subject to approval, will be built and delivered as one integrated project for opening at the same time as the Sydney Metro is commissioned.

The concept proposal establishes the vision and planning and development framework which will be the basis for the consent authority to assess future detailed development proposals (Stage 2 DAs).

The North Site

The Concept Proposal for the North Site is for a new 40+ storey, predominately commercial office building. The proposal seeks to integrate with the existing 50 Martin Place building, supporting large commercial floor plates. No connections to 50 Martin Place are proposed for the basement levels of that building, including the level of the significant heritage Safe Deposit Vault.

The South Site

The Concept Proposal for the South Site is for a new 28+ storey predominately commercial office building.

The detailed design of the OSD is still in its preliminary stages. Critically it requires an integrated design approach to be adopted between the commercial OSD components classified as SSD, and the Station components, which are classified as CSSI and have already been approved. This is to ensure:

- all the operational needs of the Metro Station are accommodated in accordance with TfNSW requirements and the structural and other requirements of the OSD are accommodated within the Station building beneath, in what is essentially one building; and
- a cohesive public domain and built form outcome is achieved for Sydney.

In this regard, OSD uses and structural elements are located within the below ground and lower podium levels, as conceptually approved under the CSSI consent for the Martin Place Station.

The Staged DA will seek consent for, amongst other things, land uses, gross floor area, building envelopes, and vehicle access arrangements.

A more detailed and comprehensive description of the proposal is contained in the Environmental Impact Statement (EIS) prepared by JBA.

2.3 Planning approvals strategy

The *State Environmental Planning Policy (State and Regional Development) 2011* (SEPP SRD) identifies development which is declared to be State Significant. Under Schedule 1 and Clause 19(2) of SEPP SRD, development within a railway corridor or associated with railway infrastructure that has a capital investment value of more than $30 million and involves commercial premises is declared to be State Significant Development (SSD) for the purposes of the EP&A Act.

The proposed development (involving commercial development that is both located within a rail corridor and associated with rail infrastructure) is therefore SSD.

Pursuant to Section 83B of the EP&A Act a Staged DA may be made setting out concept proposals for the development of a site (including setting out detailed proposals for the first stage of development), and for which detailed proposals for separate parts of the site are to be the subject of subsequent DAs. This SSD DA is a staged development application made under Section 83B of the EP&A Act.

A detailed development application(s) (Stage 2 DAs) will accordingly follow, seeking approval for the detailed design and construction of all or specific aspects of the proposal in accordance with the approved staged development application. Submitted separately to this SSD DA are applications to modify the CSSI approval together with a Planning Proposal relating to the North Site (FSR only) and South Site (height and FSR).

For clarity, **Figure 3** below is a diagrammatic representation of the suite of applications proposed by Macquarie, to show the relationship of the SSD DA (the subject of this report) to the Planning Proposal and the Martin Place Metro CSSI.

The Department of Planning and Environment have provided Secretary's Environmental Assessment Requirements (SEARs) to the applicant for the

preparation of an Environmental Impact Statement for the proposed development. This report has been prepared having regard to the SEARs as relevant.

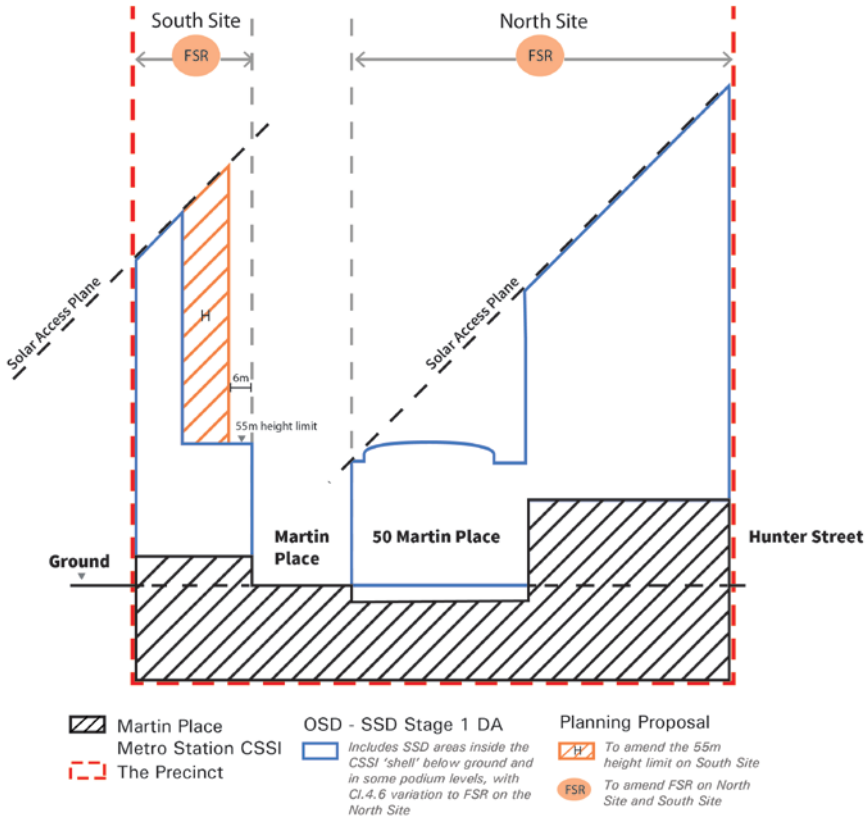

Figure 3 Relationship of planning applications.

Source: JBA

2.4 Purpose of waste management plan

The key purposes of the WMP are to:

- Address the waste management requirements for the proposal to a standard suitable for approval under the EP&A Act;
- Provide guidance for the project in waste minimisation from construction activities;
- Increase economic feasibility of the project through effective waste separation, recycling and re-use measures; and
- Identify waste management requirements for construction and operation.

2.5 Assumptions and limitations

All central waste storage areas outlined in this report have been observed to be compliant with the advice in this report, and the relevant legislation and policy upon issue (03/05/2017).

It should be noted that the rates provided are best practice estimates using the CoS Waste Policy that have been cross-referenced with currently observed waste generation rates. Actual rates of waste generation will vary according to specific commercial tenants and their behaviours.

3 Policy and legislation

3.1.1 *Secretary's Environmental Assessment Requirements* (SEARs)

According to the final SEARs issued 21 April 2017, an SSD application requires an EIS that addresses the relevant planning provisions, goals and strategic planning objectives, relevant to waste:

- City of Sydney Policy for Waste Minimisation in New Developments 2005.

Additionally, the EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *EP&A Regulation 2000*. For waste management, a waste strategy is required as part of the EIS.

This WMP responds to the requirements outlined in the SEARs.

3.1.2 *Protection of the Environment Operations Act*, 1997

The *Protection of the Environment Operations Act* 1997 covers the requirements for waste generators in terms of storage and correct disposal of waste. The Act establishes the waste generator as having responsibility for the correct management of waste, including final disposal.

3.1.3 *Waste Avoidance and Resource Recovery Act*, 2001

Due to concerns about waste management practices and increasing volumes of waste, the NSW government introduced the *Waste Avoidance and Resource Recovery Act* 2001, superseding the Waste Minimisation and Management Act 1995 following its five year review.

The object of the *Waste Avoidance and Resource Recovery Act* are as follows:

(a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development (ESD),

(b) to ensure that resource management options are considered against a hierarchy of the following order:

i. avoidance of unnecessary resource consumption,

ii. resource recovery (including reuse, reprocessing, recycling and energy recovery),

iii. disposal

(c) to provide for the continual reduction in waste generation

(d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,

(e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste,

(f) to ensure the efficient funding of waste and resource management planning, programs and service delivery,

(g) to achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,

(h) to assist in the achievement of the objectives of the *Protection of the Environment Operations Act 1997*.

A WMP is a requirement for new developments in NSW and must be written with reference to the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*, made under the Act.

3.1.4 *NSW Waste Reduction and Purchasing Policy*, 2007 (WRAPP)

The *NSW Waste Reduction and Purchasing Policy* (WRAPP) requires all state government agencies and state owned corporations to develop and implement a WRAPP plan to reduce waste in four scheduled waste sources:

- Paper products;
- Office equipment and components;
- Vegetation material; and
- Construction materials.

WRAPP is not directly applicable to the project, but has been used as a guiding document for waste initiatives.

3.1.5 Council of the City of Sydney Policy for *Waste Minimisation in New Developments*

City of Sydney Council's *Policy for Waste Minimisation in New Developments* ('CoS Waste Policy') was developed in 2005 in support of the *NSW Waste Avoidance and Resource Recovery Strategy* (2003, now superseded by the 2014-21 Strategy). The CoS Waste Policy is the guiding document for many of the waste initiatives and requirements for the proposed development.

The specific sections which pertain to the proposed development include:

- Section A – All developments; and
- Section C – Commercial Provisions.

Key requirements of the CoS Waste Policy include:

- All commercial premises must have a dedicated and enclosed waste and recycling storage area which has adequate storage to meet generation rates;

- All businesses must have written evidence, held on site, of a valid and current contract with a licensed collector for waste and recycling collection and disposal; and,
- All businesses are encouraged to include provisions within waste contracts that allow for the collection and recycling of significant waste streams.

Numerous other requirements are specified within the Waste Policy. These have been addressed throughout this WMP where applicable.

3.1.6 Green Star

A Green Star assessment is being sought for this development under the Green Building Council of Australia (GBCA) Green Star Design and As Built v1.1 tool rating tool. The waste management facilities and procedures set out in this WMP align with the requirements of Credit 8A – Operational Waste. The performance pathway relevant to the development at SMMPS is the Specialist Pathway. Table 1 outlines the requirements of Credit 8A.

Table 1 Performance pathway: Specialist Plan Green Star credit overview

Option 8A	Criteria	Requirements
Performance Pathway: Specialist Plan	1 point is available where a waste professional specialist prepares and implements an Operational Waste Management Plan (OWMP) for the project in accordance with best practice approaches and this is reflected in the building's design.	• Identify the site boundary, the waste streams relevant to the project, and the individual roles responsible for delivering and reviewing the OWMP; • Set diversion from landfill targets and/or targets for reducing total materials generation (general waste materials and recyclable/reusable materials), as well as monitoring and measurement procedures for waste and recycling streams by weight. • Outline methods for encouraging the separation of waste streams, such as bins, storage areas or recycling facilities in public areas as required. • Identify storage areas for all waste streams and outline best practice safety and access requirements for their collection. • Identify safe methods for vehicle access and transfer of waste; and • Incorporate a review process to assess the success of the OWMP and make improvements, based on operational experience.

In addition to a 6-star Green Star Design and As Built v1.1 rating, SMMPS is seeking the following outcomes as a minimum:

- Building Code of Australia – compliance with the requirements of Section J Energy Efficiency (mandatory);
- The Property Council of Australia requirements of a Grade A Building;
- A minimum 5 Star NABERS Base Building Energy Rating; and
- A minimum 2.5 Star NABERS Water Rating.

4 Construction

4.1 Waste streams

Construction works for this development are to take place with consideration of the project's potential Green Star pathway objectives, particularly in regards to use of recycled building materials and recycling of construction waste streams. The primary goal for waste management in the construction phase is to ensure of waste is recycled or reused where possible. The target rate for construction waste diversion to landfill will be resolved once the Green Star pathway for this project has been finalised.

An overview of the major waste streams resulting from construction is provided below in Figure 4. Waste streams which are predicted to generate the greatest volume are highlighted in orange.

4.2 Management

Waste generation and management during the construction phase will be the responsibility of the Principal Contractor and is to be handled in accordance with the approved Construction Waste Management Plan as it relates to materials procurement, handling, storage, and use. Waste generated during construction will be reused and recycled as a priority, and only disposed to landfill when unavoidable.

During construction, suitable areas on site (or off site, if necessary), will be allocated which provide adequate space and access for:

- Separated storage of building materials,
- Separated storage of construction waste,
- Separated sorting of construction waste, and
- Removal of construction waste for recycling, re-use or landfill.

Waste that is unable to be reused or recycled will be disposed of offsite at an EPA-approved waste management facility following classification. Details of waste types, volumes and destinations will be recorded in recording and tracking schedules. Prior to transporting waste materials to offsite facilities, it will be verified that the transporter and facility is licensed to handle the material it is designated to carry.

Construction waste tracking sheets are to be completed by all contractors, as provided in Appendix A.

As a requirement of Green Star, the construction contractor will develop a CWMP in order to ensure that construction waste is minimised and diverted from landfill where possible.

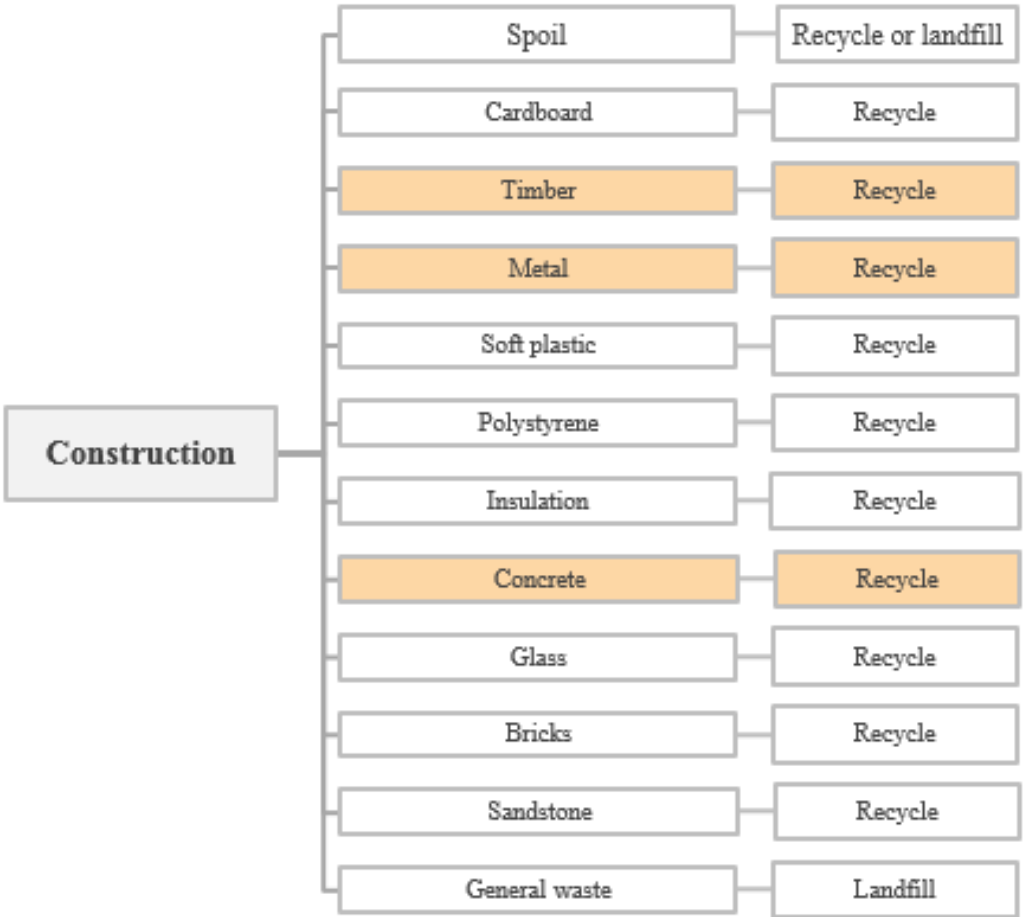

Figure 4 Overview of expected construction waste streams, with the highest volume streams highlighted in orange.

5 North & South Towers

5.1 Operation

This section includes an overview of waste streams nominated for segregation and their estimated volumes.

5.1.1 Waste streams

The waste streams that will be generated during operation of the proposed development at the SSD site are identified below in Table 2.

Table 2 Waste generation streams per operational area

Waste streams	Operational area
General waste	Entire building
Food and garden organics	Commercial, retail, green spaces
Paper and cardboard	Entire building
Co-mingled	Entire building
Hard / bulky items	Entire building
Electronic waste	Commercial
Liquid waste	Retail
Sanitary waste	Commercial, retail

The retail spaces at SMMPS are yet to be confirmed, and therefore it is difficult to ascertain the composition of the bins and whether Macquarie will need to account for a high volume of food or non-food waste in the retail spaces. This will be assessed as part of future staged applications.

5.1.2 Waste generation

Daily waste volumes for the North and South Towers have been estimated in order to determine waste storage and collection requirements. Waste generation is calculated from the appropriate CoS waste generation rate and the gross floor area (GFA), according to the intended occupancy type, for example non-food retail, office, terrace, etc.

Daily waste volumes are based on the assumption that waste will be collected five times a week, as per the current arrangement.

5.2 Rates

For all commercial tenancies in the North and South Towers, CoS Waste Policy generation rates in conjunction with the total GFA have been used to calculate daily waste volumes. The volumes produced by the waste model were then cross-referenced with actual waste collection data provided by the waste service provider to ensure the model had provided accurate estimations.

Table 3 identifies the appropriate generation rates for all spaces within the North and South Towers.

Table 3 Generation types for each space use in North and South Tower

Building space use	Applicable waste generation type	General waste generation rate	Recycling generation rate
Commercial / office / terrace	Offices	10 L / 100 m^2 / day	10 L / 100 m^2 / day
Retail (food and beverage)	Cafes[1]	215 L / 100 m^2 / day	130 L / 100 m^2 / day
Retail (non-food and beverage)	Generic non-food retail	55 L / 100 m^2 / day	70 L / 100 m^2 / day
Lobby / back of house	Offices	10 L / 100m^2 / day	10 L / 100m^2 / day

The storage, loading and service areas of the buildings have been assumed to not generate any waste.

5.3 Volumes

Indicative estimates of the waste segregation and daily waste generation for North and South Towers are summarised below in Table 4. We have used a hypothetical split of 75% food and beverage based retail and 25% non-food and beverage based retail[2]. This hypothetical ratio has been used to allow for potential variations in the retail mix.

Table 4 Estimated waste generation (volume)

Source	Waste and recycling volumes (L/day)							
	General waste		Food and organic waste		Co-mingled recycling		Paper and card recycling	
	North Tower	South Tower	North Tower	South Tower	North Tower	South Tower	North Tower	South Tower
Office[3]	3555	1658	889	415	345	155	8875	3991
Retail	5572	1728	2342	654	985	676	1296	889
Total	**9127 L**	**3386 L**	**3231 L**	**1069 L**	**1330 L**	**831 L**	**10,171 L**	**4480 L**

Please note that waste estimates have not been provided for other waste streams (e.g. hard / bulky waste, e-waste, cooking oil, sanitary waste etc.) due to their anticipated small volumes and a lack of metrics available. Further, waste

[1] 75% of the allocated retail spaces have been classified as 'cafes' to represent food and beverage retail, and 25% of the allocated retail spaces have been assumed to be general non-food and beverage retail until the retail mix can be confirmed. The retail mix will directly impact the size of the waste storage area.

[2] Following consultation with Titanium retail consultants, Tim Atkins advised the retail split would likely be 70% food and beverage retail in the South Tower and 60% food and beverage retail in the North Tower.

[3] Waste generation figures for 'office' includes all commercial, lobby, back of house, and terrace spaces.

generation will be clarified as part of future staged applications for the detailed design of over station development.

5.3.1 Management system

A Waste Management System (WMS) will be developed which will identify the reticulation from the point of disposal to the central waste room and collection point.

In addition, the responsibilities associated with waste management are outlined below. All contracts with building managers, tenants and cleaners should clearly outline the waste management and collection system for allocating waste management responsibilities.

Table 5 Indicative operational waste management system

Space use	Local disposal	Transfer to central waste storage room	Storage facilities	Transfer to collection point	Collection point
Commercial / office	Bins / receptacles as needed in shared spaces	Cleaners (using trolleys)	Central waste storage room for general waste, hard/bulky waste, and recycling.	Nominated cleaning staff/facilities management transfer waste receptacles from central waste room, to temporary holding alcove adjacent to loading dock.	Waste contractors collect waste from loading zone in waste collection vehicles. Collection vehicles will drive underground from Castlereagh Street before driving onto the service vehicle turning circle.
Retail	Bins / receptacles as needed in shared spaces	Retail staff			
Back of house	Bins / receptacles as needed in shared spaces	Cleaners / facilities management (using trolleys)			
Terrace	Bins / receptacles as needed in shared spaces	Cleaners (using trolleys)			

5.3.2 Storage

Waste storage area requirements are calculated from the total volume of weekly waste generation, collection frequencies, and Australian Standard mobile garbage bin sizes.

All waste storage rooms will be designed according to the provisions stipulated by the CoS Waste Guidelines (Section A, General and Reference B: Bin Bay/Bin Room Construction). All waste storage areas and bins will be provided with clear labels and directions for use in order to maximise appropriate separation of waste streams.

The recommended waste storage room requirements are outlined in Table 6 below.

Table 6 Recommended area requirements for central waste and recycling storage at North and South Tower

Component	Waste stream	Bin Requirements		Area requirements
		North Tower	South Tower	
General waste storage	General waste	11 x 1100L general waste receptacles	4 x 1100L general waste receptacles	
Recycling storage	Co-mingled	2 x 1100L recycling receptacles	2 x 1100L recycling receptacles	
	Paper/card	11 x 1100L recycling receptacles	5 x 1100L recycling receptacles	
	Cooking oil	1 x 300L receptacle	1 x 300L receptacle	
	Food and garden organics	20 x 240L recycling receptacle (at 50% capacity due to weight limits)	7 x 240L recycling receptacle (at 50% capacity due to weight limits)	
Hard waste storage	Bulky items	Caged section	Caged section	
	E-waste	Small receptacle	Small receptacle	
		Total	**North Tower**	**165m^2**
			South Tower	**95 m^2**

A bin scaling factor of 1.5 has been applied to account for compliance in receptacle manoeuvrability and accessibility. The indicative waste storage rooms in both North and South Towers will be adequate for storing all waste generated by the Tower envelopes. There will be no local waste storage rooms on each level.

It should be noted that this stated area is subject to change depending on the final retail mix, the future detailed design of over station development and whether or not Macquarie choose to add cardboard and soft plastic balers.

5.3.3 Location

The central waste storage room will be located away from public access to minimise visual, odour, and safety impacts. The indicative central waste storage room in the North tower is currently located on B1 Upper Concourse, as illustrated below in Figure 5.

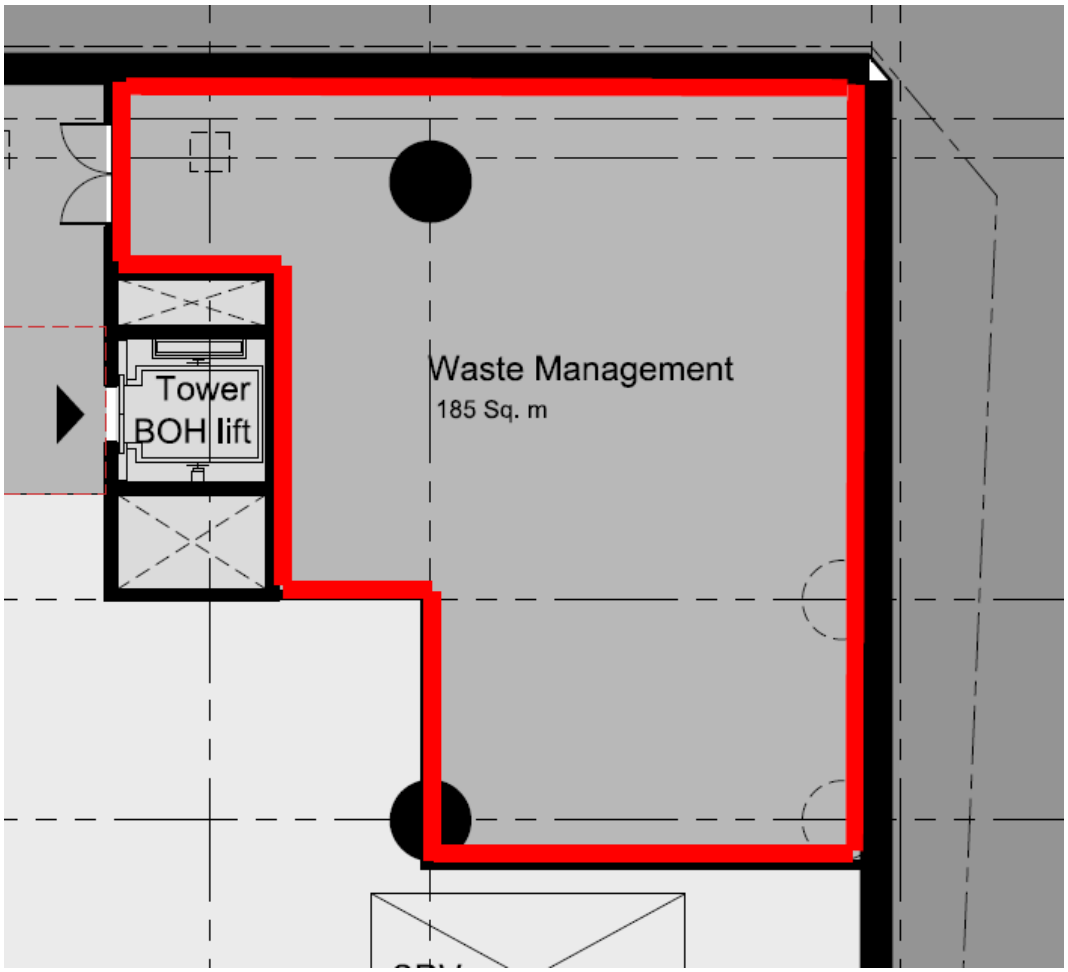

Figure 5 Indicative location of North Tower waste storage rooms.

The proposed central waste storage room for the South Tower will be located on the Lower Ground level as illustrated in Figure 6.

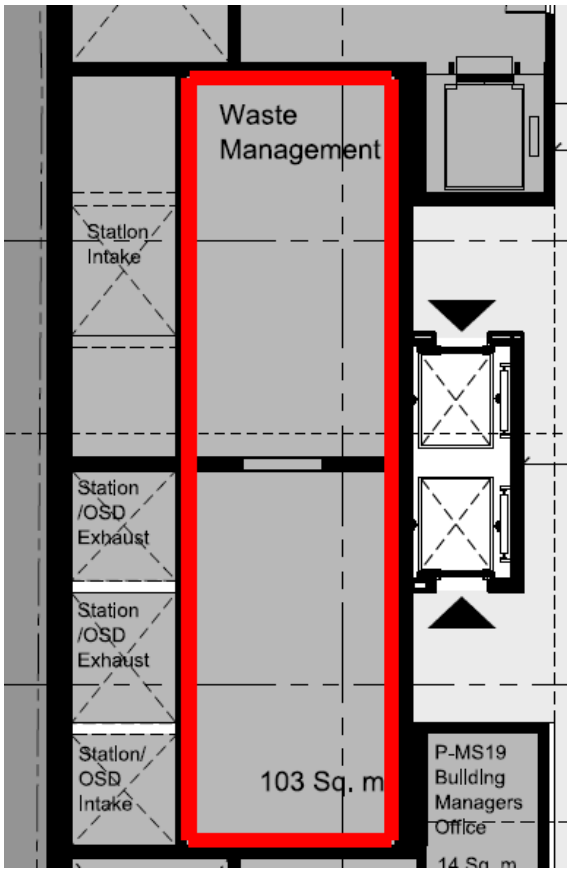

Figure 6 Indicative location of South Tower waste storage room

5.3.4 Signage

Signage will be provided in all waste disposal, storage and collection areas demonstrating how to use the waste management system, including what materials are acceptable in each recycling bins. All waste streams will be stored in clearly labelled, colour coded bins as appropriate to ensure that waste streams are not inadvertently mixed.

The standard colours of each bin are outlined in Table 7, as per the CoS Waste Guidelines. These measures are necessary in order to encourage the appropriate separation of waste streams and the recovery of resources.

Table 7 Standard bin colours

Bin	Colour
General waste	Red lid and dark green body
Co-mingled recycling	Yellow lid and dark green body
Paper / card recycling	Blue lid and blue body
Food organics	Maroon lid and dark green body

In addition, clear Occupation Health and Safety (OHS) signage must be provided as appropriate. In particular, appropriate OHS must be provided within each waste and recycling room.

5.3.5 Design

The central waste storage room will be designed generally according to the provisions stipulated by the CoS Waste Guidelines (Section A, General and Section C, Commercial).

The central waste storage room must be located in a position that is convenient for both users and waste contractors. The access pathway for wheeling bins between a central waste storage point and a collection point must be free of steps or kerbs. The distance between the central waste storage room and its respective collection points will not exceed 20 m and must not exceed grade of 1 in 12.

Table 8 below provides a summary of design requirements relating to the waste storage facilities.

Table 8 Waste storage design

Design aspect	Design provision
General	All waste management facilities will be compliant with the Building Code of Australia (BCA) and all relevant Australian Standards. The waste management system and storage areas will not be visible from the exterior of the building.
Surfaces	The floors of the waste storage rooms will be constructed of concrete of at least 75mm thickness and graded and drained to the sewerage system. The floors will be finished to a smooth, even surface, and covered at their intersection with walls and plinths. A ramp to the doorway will be provided if necessary.
Structure	The walls, ceilings and floors of the storage rooms will be finished with a light colour. The walls of the waste storage rooms will be constructed of approved solid impervious material and will be cement rendered internally[4] to a smooth even surface coved at all intersections. The storage area will be constructed and finished to prevent absorption of liquids and odours, and will be easily cleanable.
Doors	A close-fitting and self-closing door or gate operable from within the room must be fitted to all waste and recycling storage areas (rooms or bin bays). Doors/gates to the waste storage rooms must provide a minimum clearance of 1,200mm. At least one door or gate to the waste and recycling storage area must have sufficient dimensions to allow the entry and exit of waste containers of a capacity nominated for the development. Lightweight roller shutter-type doors or grilles should be considered for access to waste and recycling storage areas, as these do not impact on the available storage space. If these types of doors or grilles are used, the requirement for a

[4] Use of other equivalent surfacing such as off form concrete to be confirmed with Council during consultation

Design aspect	Design provision
	close-fitting and self-closing door remains, so that waste collectors can access the waste storage area other than through the roller door or grille.
Water	Hot and cold water will be provided to the waste storage rooms. Water will be mixed through a centralised mixing valve with hose cock.[5]
Lighting	Adequate lighting will be provided for all rooms, controllable from a switch located both outside and inside the room. Lighting will ensure safe access to the area at night. Automatic light sensors may be installed for ease of manual handling during transfer of bins.
Pest control	The waste storage rooms, areas and containers will be constructed in a manner as to prevent the entry of vermin.
Ventilation	The waste storage rooms will be supplied with an approved system of mechanical exhaust ventilation.
Safety	Smoke detectors will be fitted in accordance with AS1670 Automatic Fire Detection and Alarm Systems and connected to the fire prevention system of the building. The waste compactors will be fully fire proofed and child proofed. Only trained building management and waste contracting staff will have access to compactor equipment. All equipment will be protected from theft and vandalism.
Signage	Signs will be provided to demonstrate how to use the waste management system (including segregation of wastes for recycling, use of waste compactor), as well as appropriate safety signage. The different recycling and waste bins will be clearly identified and signed appropriately.
Refrigeration	Council may require waste storage to be refrigerated if sufficiently large quantities of food waste are generated on site and waste removal from this site is difficult due to location or long trading hours. Where a waste room is refrigerated the temperature must be maintained at or below at or below 50°C with all refrigeration equipment installed with sufficient space for cleaning.

5.3.6 Amenity

The management systems and constructed elements of this development will be designed and installed so as to enhance outcomes for building amenity. Any potential for noise and odour to arise will be minimised. Specifically:

- **Visual aspects:** Any facet of the waste management system that is visible from outside the building must be in keeping with the dominant design of the remainder of the development.
- **Noise:** The potential for noise must be minimised. Significant noise-generating waste management equipment will not be utilised in this development. However, Council may require waste storage to be refrigerated if sufficiently large quantities of food waste are generated on site and waste removal from this site is difficult due to location or long trading hours. Production of offensive noise will be avoided.

[5] It is expected that separate hot and cold water controls will be required. Detail to be developed with selected cleaning method and system.

- **Odour:** The potential for odour must be minimised. Any putrescible waste awaiting collection will be stored in a Council approved container with permanently tight fitting lids and smooth, washable internal surfaces. All waste storage areas will be fitted with mechanical vertical ventilation systems. Adequate mechanical ventilation and regular collection of waste will eliminate the risk of odour to building inhabitants and neighbours.

5.3.7 Collection

Location and access

The indicative central room for storing waste and recycling in the North Tower is located below ground. The indicative room for storing waste and recycling in the South Tower is located on the Lower Ground Level. Both these locations will be accessed from Castlereagh St. These positions are convenient for staff and facilities management. Prior to collection, nominated staff/management will move waste and recycling receptacles from the central waste storage room to the temporary storage area adjacent to the loading dock, to await collection.

Waste receptacles will be temporarily held in an alcove opposite the loading zone. Collection vehicles will be able to access the loading zone by driving directly onto the driveway from Castlereagh Street. The waste receptacles will be located within 10 metres from the loading zone.

The nominated collection point where the waste loading operations occur will be on a level surface away from slopes or vehicle ramps. In addition to this, the path where the waste contractor will transport the bins from the central waste storage room to the collection vehicle should be free of steps, kerbs and other uneven surfaces. The maximum distance for the waste contractor to transport mobile garbage bins larger than 660L is 20 metres.

Frequency

Collection frequency assumptions are as follows:

- Collection of general waste, co-mingled recycling, paper/cardboard recycling, and food and garden organics is to occur 5 x per week (every working day)
- Collection of other waste streams (e.g. hard / bulky waste, e-waste, cooking oil etc.) would be less frequent, and arranged as required.

Collection frequency of hazardous waste and sanitary waste will be at the discretion of the separate waste service providers collecting and treating these waste streams, and can be arranged with facilities management as required.

Note: Waste collection frequencies can be adjusted once the building is in operation and actual waste generation rates can be observed.

Collection vehicle

The route for waste contractor access to the indicative internal loading zone is Castlereagh Street. Access will at no time cause the flow of traffic on Castlereagh Street to be blocked.

The indicative loading zones in the North and South Towers will cater for the size of the waste service provider collection vehicles. Vehicle access to the basement will be designed according to a waste collection vehicle specifications outlined in the CoS Waste Policy, included in Table 9 below.

Table 9 Rear loading collection vehicle for MGBs

Vehicle Specification	Measurement
Length overall	8.8 m
Width overall	2.6 m
Operational height	4 m
Travel height	3.8 m
Weight (payload)	26 tonnes
Turning circle	18.0 m

6 Next steps

The proposed tower envelopes have the capability to comply with Council, State and other requirements.

This WMP forms a framework to implement ambitious waste management measures across all design and planning stages. The waste management approach supports the Green Star requirement for the project to enhance outcomes for waste minimisation, reuse and recycling.

Once planning approval is granted for the proposed development, this WMP will:

1. Inform the development of a detailed Waste Policy Design Compliance Certificate for the Construction Certificate application, which is to include details regarding disposal and recycling of different materials expected from construction, and the transport and destinations of these materials.
2. Inform the development of the relevant Green Star credit requirements
3. Ensure that detailed design and fit-out of the building is consistent with best practice standards and plans for waste management, and
4. Inform all plans and procedures for operational waste management

Appendix A

Tracking forms

Details of waste management – construction phase

MATERIALS ON-SITE			DESTINATION		
			REUSE AND RECYCLING		DISPOSAL
Type of materials	Est. Vol. (m^3)	Est. Wt. (t)	ON-SITE - specify proposed reuse or on-site recycling methods	OFF-SITE - specify contractor and recycling outlet	- specify contractor and landfill site
Excavated Materials					
Garden Organics					
Bricks					
Tiles					
Concrete					
Timber – please specify					
Plasterboard					
Metals					
Other waste eg. ceramic tiles, paints, PVC tubing, cardboard, fittings					

Details of waste management – demolition phase

MATERIALS ON-SITE			DESTINATION		
			REUSE AND RECYCLING		DISPOSAL
Type of materials	Est. Vol. (m^3)	Est. Wt. (t)	ON-SITE - specify proposed reuse or on-site recycling methods	OFF-SITE - specify contractor and recycling outlet	- specify contractor and landfill site
Excavated Materials					
Garden Organics					
Bricks					
Tiles					
Concrete					
Timber – please specify					
Plasterboard					
Metals					
Asbestos					
Other waste eg. ceramic tiles, paints, PVC tubing, cardboard, fittings					