Macquarie Capital

Metro Martin Place

Stage 1 Amending DA - Waste Management Plan

CSWSMP-MAC-SMA-WS-REP-999901

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1 Introduction

1.1 Introduction

This report supports a State Significant Development (SSD) Development Application (DA) submitted to the Minister for Planning (Minister) pursuant to Part 4 of *the Environmental Planning and Assessment Act 1979* (EP&A Act) on behalf of Macquarie Corporate Holdings Pty Limited (Macquarie), who is seeking to create a world class transport and employment precinct at Martin Place, Sydney.

The SSD DA seeks approval for an amended Concept Proposal (otherwise known as a Stage 1 DA) relating to the Martin Place Metro Station Precinct ('the Precinct'). An existing development consent (SSD 17_8351) for a Concept Proposal is in place for the Precinct, which approved the concept for two Over Station Development (OSD) commercial towers above the northern (North Site) and southern (South Site) entrances of Martin Place Metro Station. The Concept Proposal approved building envelopes, land uses, Gross Floor Areas (GFA) and Design Guidelines with which the detailed design (otherwise known as a Stage 2 DA) must be consistent.

This Stage 1 Amending DA is a concept development application made under Section 4.22 of the EP&A Act. It seeks to align the approved South Site building envelope with the new planning controls established for the precinct as a result of a site specific amendment to Sydney LEP 2012. The new controls permit greater building height (over a portion of the South Site only) and additional floor space (North Site and South Site).

Whilst the approved Concept Proposal related to the entire Precinct, this Amending DA relates principally to the building envelope of the **South Site**, in terms of amending the approved height and floor space.

This application does not seek approval for elements of the Martin Place Station Precinct which relate to Stage 2 of the Sydney Metro infrastructure project, which is subject to a separate Critical State Significant Infrastructure (CSSI) approval. These include:

- Demolition of buildings on the North Site and South Site;
- Construction of rail infrastructure, including station platforms and concourses;
- Ground level public domain works; and
- Station related elements in the podium of the North Site and South Site building.

The approved Stage 1 Concept Proposal approved conceptual OSD areas in the approved Martin Place Station Structure, above and below ground level, which are classified as SSD as they relate principally to the OSD. These components are within the Metro CSSI approved station envelope that will contain some OSD

elements not approved in the CSSI consent. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure. This Amending DA does not propose to modify this.

Accordingly, this report 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.

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.

1.2 Context

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 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 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). Work is well underway under this approval, including demolition of buildings at Martin Place.

The OSD development is subject to separate applications to be lodged under the relevant provisions of the EP&A Act.

1.3 Site Description

The Sydney Metro Martin Place Station 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).

This Stage 1 Amending DA relates principally to the building envelope of the South Site, being land at 39 – 49 Martin Place, Sydney (refer to **Figure 1**).

Figure 1 – Aerial Photo of the North and South Site of the Martin Place Metro Station Precinct

1.4 Background

Sydney Metro Stage 2 Approval (SSI 15_7400)

On 9 January 2017, the Minister approved Stage 2 of the Sydney Metro project, involving the construction and operation of a metro rail line between Chatswood and Sydenham, including the construction of a tunnel under Sydney Harbour, links with the existing rail network, seven metro stations (including a station at Martin Place), and associated ancillary infrastructure. The project approves the demolition of existing buildings at Martin Place, excavation and construction of the new station (above and below ground) along with construction of below and above ground structural and other components of the future OSD, although the fit-out and use of such areas are the subject of separate development approval processes.

Modification 3 to the Sydney Metro consent, approved 22 March 2018, enabled the inclusion of Macquarie-owned land at 50 Martin Place and 9-19 Elizabeth Street within the Martin Place Station footprint, and other associated changes (including retention of existing MLC pedestrian link).

Planning Proposal (PP_2017_SYDNE_007_00) – Amendment to Sydney LEP 2012

The Planning Proposal (PP_2017_SYDNE_007_00) sought to amend the development standards applying to the Sydney Metro Martin Place Station Precinct through the inclusion of a site-specific provision in the Sydney LEP 2012. This site-specific provision reduced the portion of the South Site that was subject to a 55 metre height limit from 25 metres from the boundary to Martin Place, to 8 metres, and applies the Hyde Park North Sun Access Plane to the remainder of the South Site, forming the height limit of the tower. It also permitted a revised FSR of 22:1 on the South Site and 18.5:1 on the North Site (resulting in a combined permissible overall GFA of 153,141m^2). These amendments were gazetted within Sydney LEP 2012 and reflect the new planning controls applying to the precinct.

Concept Proposal (SSD 17_8351)

On 22 March 2018, the Minister approved a Concept Proposal (SSD 17_8351) for the Precinct. The Concept Proposal established the planning and development framework through which to assess the detailed Stage 2 applications.

The approved Concept Proposal specifically encompassed:

- building envelopes for OSD towers on the North Site and South Site (see **Figure 3**) comprising:
    - 28+ storey building on the South Site, with a 25m setback to Martin Place above 55m in height, and a 40+ storey building on the North Site.
    - Concept approval to integrate the North Site with the existing/retained 50 Martin Place building (the former Government Savings Bank of NSW).
- predominantly commercial land uses on both sites, comprising office, business and retail premises;
- a maximum total GFA of 125,437m^2 across both sites;

- consolidated Design Guidelines to guide the built form and design of the future development.
- a framework for achieving design excellence.
- strategies for utilities and services provision, managing drainage and flooding, and achieving ecological sustainable development.
- conceptual OSD areas in the approved Martin Place Metro Station structure, above and below ground level[1].

The Concept Proposal was prepared and determined prior to the site specific Sydney LEP 2012 amendment being gazetted and was developed based on the height development standards that applied to the South Site at the time. As a result, the approved Concept Proposal allows for a tower on the South Site that is now inconsistent with the building envelope envisaged through the Sydney LEP 2012.

Figure 2 – North Site and South Site Approved OSD Building Envelopes

1.5 Overview of the Proposed Development

The Stage 1 Amending DA seeks approval for an amended Concept Proposal for the Martin Place Metro Station Precinct, specifically a larger building envelope

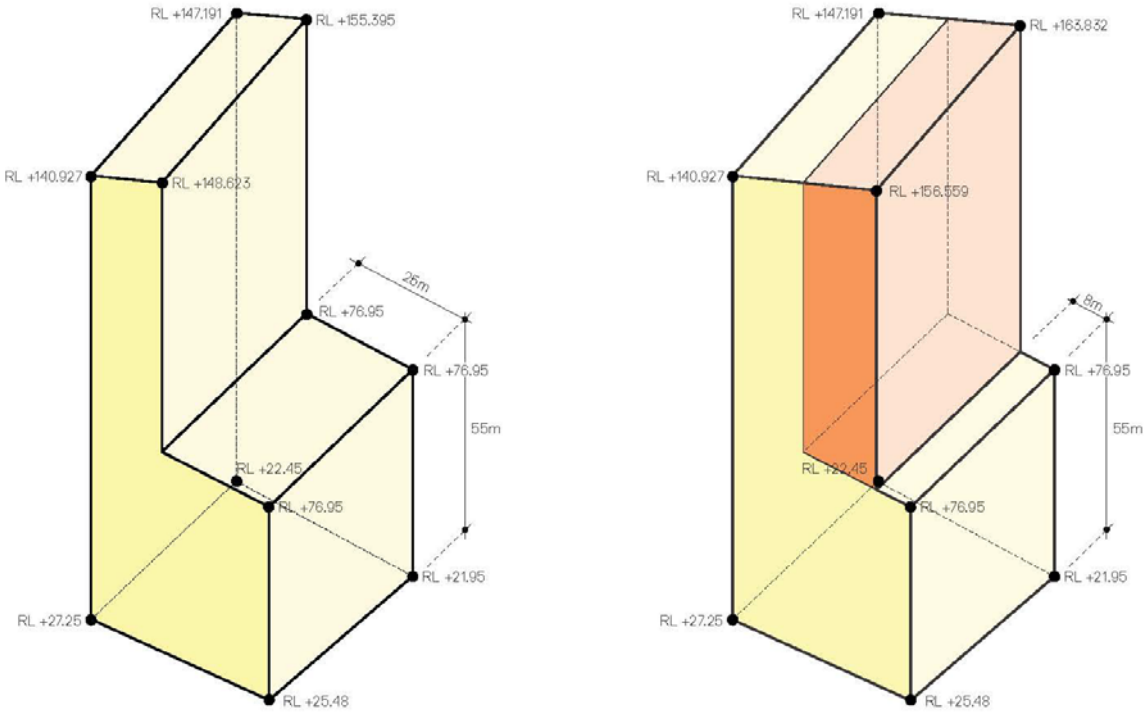
[1] *Refers to those components within the Metro CSSI approved station envelope that will contain some OSD elements not approved in the CSSI consent. Those elements include the end of trip facilities, office entries, office space and retail areas, along with other office/retail plant and back of house requirements that are associated with the proposed OSD and not the rail infrastructure.*

for the South Site compared to the building envelope approved by the Minister through SSD 17_8351. The amended South Tower envelope will reflect a building envelope that aligns with the new controls applying to the precinct under Sydney LEP 2012, including increased height and FSR limits. It is proposed to amend the South Tower building envelope, through:

- a tower setback to Martin Place of 8 metres above the 55m podium height (reduced from 25 metres as approved within the Concept Proposal);
- a tower height that is consistent with the Hyde Park North Sun Access Plane beyond the 8m setback to Martin Place (constituting a generally taller tower than approved within Concept Proposal); and
- an increase in GFA/FSR for the South Site from approximately 23,700m^2 (12.5:1) up to approximately 41,700m^2 (22:1) - inclusive of all CSSI Station components.

Figure 3 below illustrates these proposed amendments to the South Site building envelope.

It is proposed that a condition be imposed on the Stage 1 Amending DA development consent pursuant to Section 4.17(1)(b) of the EP&A Act, requiring the modification of the original consent (SSD 17_8351) upon the commencement of the Stage 1 Amending DA Consent, in accordance with the procedures under Clause 97 of the *Environment Planning and Assessment Regulation 2000* (EP&A Regulation). This condition would address any inconsistency between the approved Concept Proposal and the Stage 1 Amending DA (and any subsequent detailed consents, i.e. the Stage 2 South Site DA).



Approved South Site Building Envelope *Proposed Amended South Site OSD Envelope (aligning with site specific amendment to Sydney LEP 2012)*

Figure 3 – Relationship between the approved and proposed amended South Site building envelope

1.6 Planning Approvals Strategy

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

Submitted separately to this SSD DA are detailed proposals for the South Site (Stage 2 South Site DA) and North Site (Stage 2 North Site DA), which follow the approval of the Concept Proposal for the Precinct under Section 4.22 of the EP&A Act (formerly Section 83B). The Stage 2 detailed DA for the South Tower includes a design which is consistent with the envelope envisaged with this subject Stage 1 Amending DA and where it must only be determined following approval of the subject Stage 1 Amending DA.

Figure 4 below is a diagrammatic representation of the suite of key planning applications undertaken or proposed by Macquarie and their relationship to the subject application (the subject of this report).

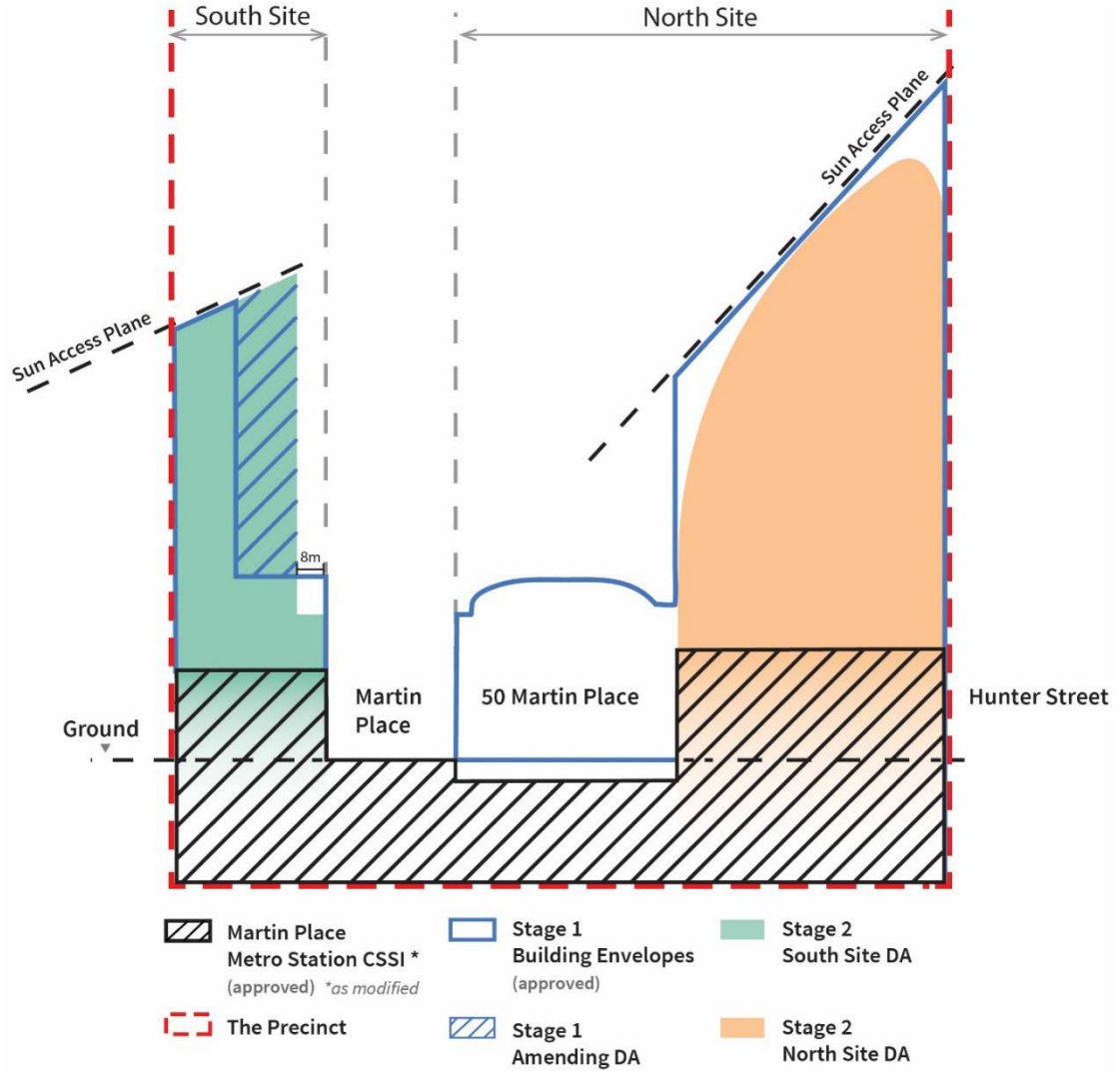


Figure 4 – Relationship of key planning applications to the **Stage 1 Amending DA** (this application)

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 follows:

The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the *EP&A Regulation 2000*. Provide these as part of the EIS rather than as separate documents.

In addition, the EIS must include the following:

- Waste management plan (where relevant).

The following document is also relevant to the preparation of the waste management plan:

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

1.7 Assumptions and Limitations

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.

2 Policy and Legislation

2.1.1 *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.

2.1.2 *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.

2.1.3 *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.

2.1.4 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.

2.1.5 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.

3 Construction

3.1 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 6. Waste streams which are predicted to generate the greatest volume are highlighted in orange.

3.2 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.

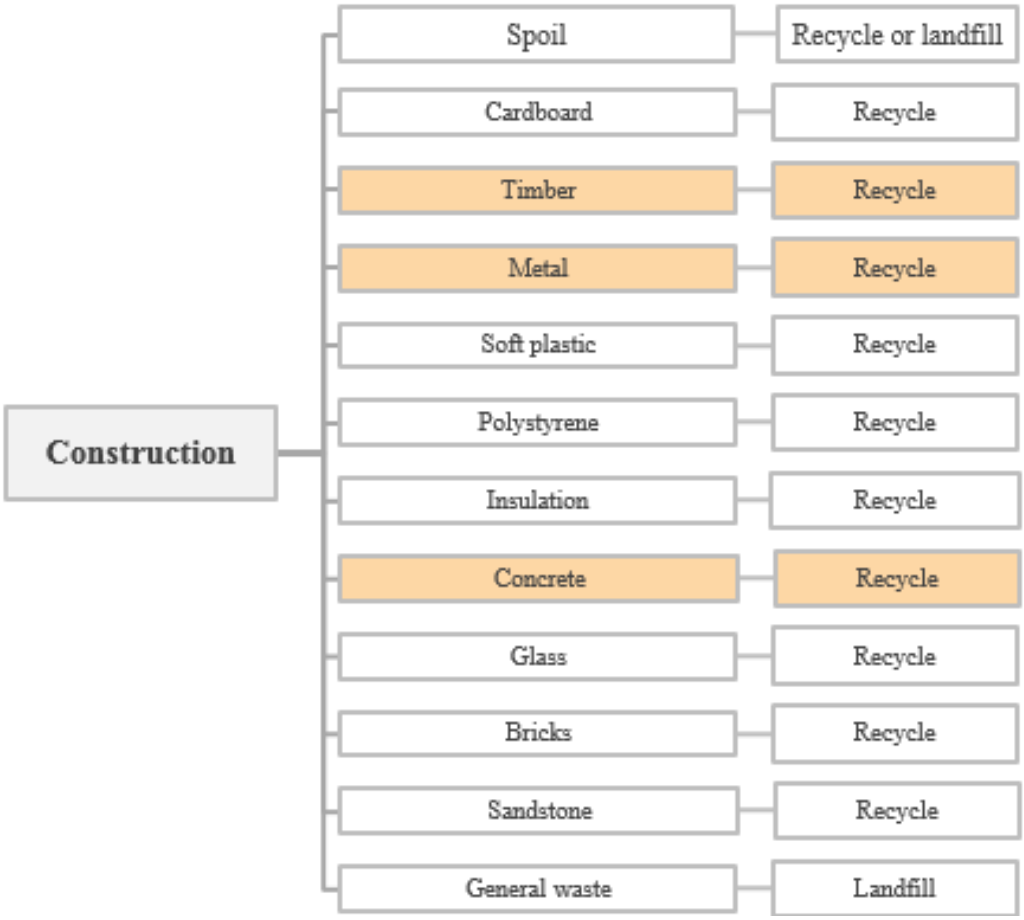


Figure 1 Overview of expected construction waste streams, with the highest volume streams highlighted in orange.

4 North & South Towers

4.1 Operation

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

4.1.1 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.

4.1.2 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.

4.2 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)	Takeaway	80 L / 100 m^2 / day	120 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
Auditorium	Showroom	40 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.

4.3 Volumes

Indicative estimates of the waste segregation and daily waste generation for North and South Towers are summarised below in Table 4.

The following assumptions have been made:

- 30% of all waste by volume is organic waste for food retail, showrooms and offices[3].
- 16% of all waste by volume is organic waste for non-food retail[4].
- 50% of all organic waste is captured in all organic waste bins (i.e. a capture rate of 50% for organic waste) with the remainder entering the general waste stream.[4]
- 89% of all co-mingled recycling comprises paper and card for non-food retail and showrooms. [4]
- 51% of all co-mingled recycling comprises paper and card for food retail. [4]
- 96% of all co-mingled recycling comprises paper and card for offices. [4]
- A split of 75% food and beverage based retail and 25% non-food and beverage based retail[6] for potential variations in the retail mix.

[3] This assumption is based on professional experience and recent audit data collected from commercial and retail spaces within the Sydney metro area.
[4] Based on Encycle (2013) A Study into commercial & industrial (C&I) waste and recycling in Australia by industry division
[6] 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

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 (incl. auditorium)[7]	6,480	2,975	1,144	525	273	131	6,472	3,369
Retail	828	1,539	132	246	602	1,113	756	1,406
Total	**7,308**	**4,514**	**1,276**	**771**	**875**	**1,244**	**7,228**	**4,775**

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

4.3.1 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	Waste contractors collect waste from loading zone in waste collection vehicles. Collection vehicles will drive underground from Castlereagh Street before driving onto the service
Retail	Bins / receptacles as needed in shared spaces	Retail staff			
Back of house	Bins / receptacles as	Cleaners / facilities			

beverage retail until the retail mix can be confirmed. The retail mix will directly impact the size of the waste storage area.

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

Space use	Local disposal	Transfer to central waste storage room	Storage facilities	Transfer to collection point	Collection point
	needed in shared spaces	management (using trolleys)		adjacent to loading dock.	vehicle turning circle.
Terrace	Bins / receptacles as needed in shared spaces	Cleaners (using trolleys)			

4.3.2 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	14 x 660L general waste receptacles	9 x 660L general waste receptacles	
	General waste (from the station)	5 x 120L general waste receptacles	N/A	
Recycling storage	Co-mingled	2 x 660L recycling receptacles	3 x 660L recycling receptacles	
	Co-mingled (from the station)	5 x 120L recycling receptacles	N/A	
	Paper/card	4 x 660L recycling receptacles	3 x 660L recycling receptacles	
	Organic waste	6 x 240L recycling receptacle	5 x 240L recycling receptacle	
Hard waste storage	Bulky items and segregated cardboard	Caged section	Caged section	
	E-waste	Small receptacle	Small receptacle	
Equipment	Cardboard	1 x Baler	1 x Baler	
Equipment	General/recycling	**Bin wash down area**	**Bin wash down area**	
Equipment	General/recycling	**Weighing scales**	**Weighing scales**	
		Total	**North Tower**	**75 m^2**
			South Tower	**61 m^2**

A bin scaling factor of 1.5 has been applied to account for compliance in receptacle manoeuvrability and accessibility. A paper and card compaction ratio of 1:4 has been assumed. The indicative waste storage rooms in both North and South Towers will be adequate for storing all waste generated by the Tower envelopes.

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.

4.3.3 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 7.

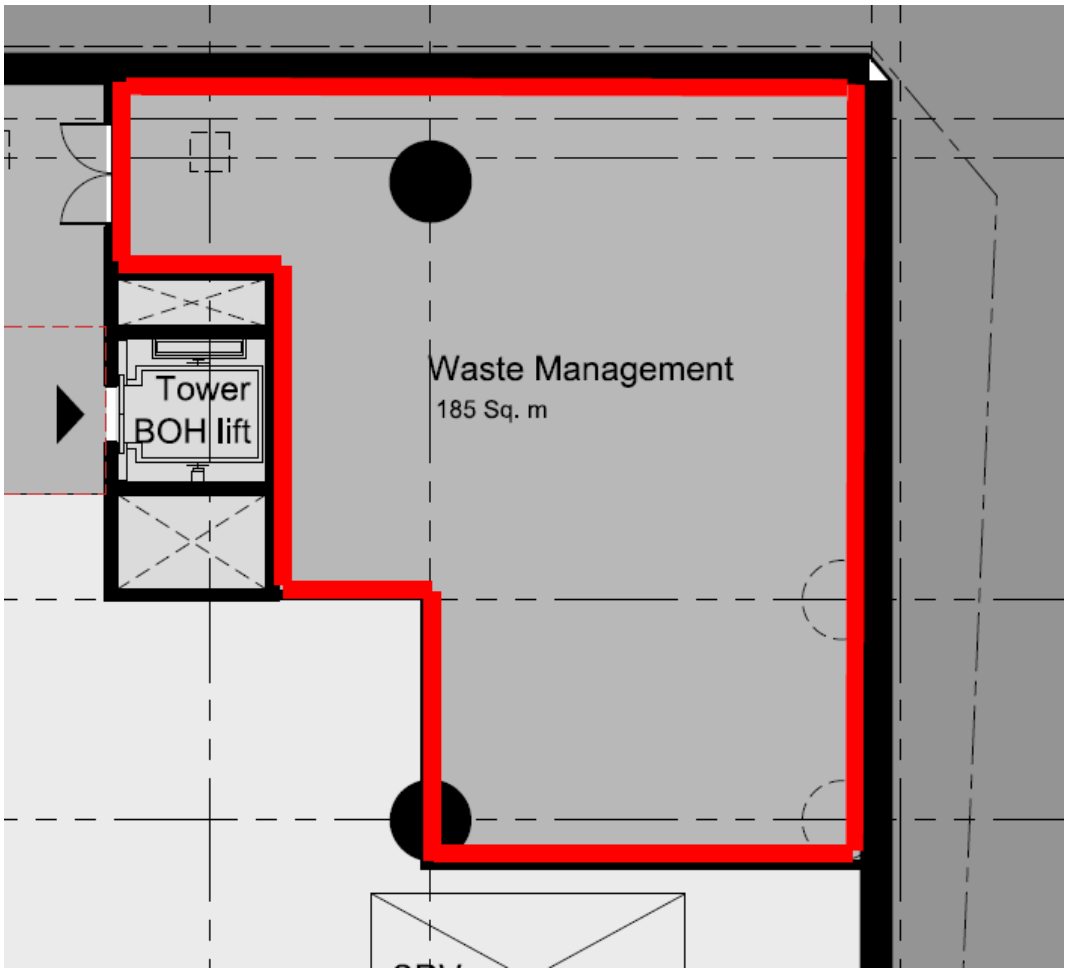


Figure 2 Indicative location of North Tower waste storage rooms.

The proposed central waste storage room for the South Tower will be located on the Lower Ground level as illustrated in Figure 8.

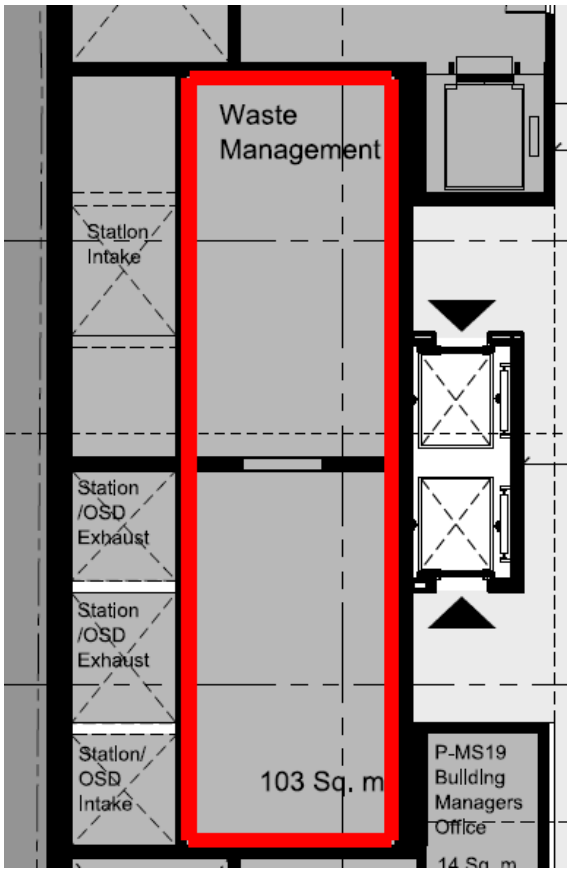


Figure 3 Indicative location of South Tower waste storage room

4.3.4 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.

4.3.5 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[8] 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

[8] 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.[9]
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 a mechanical exhaust ventilation system exhausting at a rate of 5L/s.m2 floor area, with a minimum rate of 100L/s min.
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.

4.3.6 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

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

removal from this site is difficult due to location or long trading hours. Production of offensive noise will be avoided.

- **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.

4.3.7 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 240L is 10 metres.

Frequency

Collection frequency assumptions are as follows:

- Collection of general waste, co-mingled recycling, paper/cardboard recycling, and organic waste 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

5 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					