Frasers Property Australia Pty Ltd

Central Park Block 11

Waste Management Plan

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Job number 232836-00

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1 Introduction

This Waste Management Plan (WMP) has been prepared on behalf of Frasers Broadway Pty Ltd to accompany a State Significant Development Application for a residential development known as Block 11 at Central Park, Chippendale.

The State Significant Development Application seeks approval for the redevelopment of Block 11 as a mixed use/residential building, with associated non-residential/retail uses located on lower levels of the building consistent with the Concept Plan.

1.1 Project description

The proposed building consists of between 12 and 14 storeys, containing 296 residential units, located above three levels of basement car parking with service area and storage for residents. The building consists of the following uses:

- Retail (general and food) – approximately 660 m^2 GFA
- Childcare Space – approximately 607 m^2 GFA
- Residential – 296 units.

The proposed scheme has been selected as a result of a competitive design process undertaken in accordance with the Concept Plan and Statement of Commitments.

1.2 Purpose of Waste Management Plan

This document addresses aspects of waste management relating to requirements of the SSDA under the NSW Environmental Planning and Assessment (EP&A) Act (1979), Director General Requirements (DGRS), and the project's Green Star objectives.

This 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. It may also assist with the development of a waste auditor report required as part of a Green Star submission.

The key purposes of the WMP are to:

- Address the waste management requirements for the proposal to a standard suitable for approval under Part 4 of 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.

1.3 Project context

Central Park is a sustainably designed and operated major residential development, located on land formerly occupied by the CUB Brewery at Chippendale, 2km to the south of the Sydney CBD.

The site sits next to the University of Technology Sydney, and near to the University of Sydney, Central Railway station and the CBD.

Block 11 is located along the southern side of the Central Park site (shown in Figure 1).

Figure 1: Site context plan of Block 11

2 Legislative requirements

2.1 NSW state legislation

2.1.1 The 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 is to encourage the most efficient use of resources, to reduce environmental harm, and to provide for the continual reduction in waste generation in line with the principles of ecologically sustainable development (ESD).

The WMP is a requirement for a new development in NSW and is written with reference to the NSW Waste Avoidance and Resource Recovery Strategy 2003, made under the Act.

The following hierarchy for managing waste, from most desirable to least desirable, meets the objects of the Act:

- Avoid unnecessary resource consumption;
- Recover resources (including reuse, reprocessing, recycling and energy recovery); and
- Dispose (as a last resort).

2.1.3 The 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 and demolition materials.

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

2.2 Council of the City of Sydney *Policy for Waste Minimisation in New Developments*, 2005

The Council of the City of Sydney *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). The CoS Waste Policy is the guiding document for many of the waste initiatives and requirements for the proposed adaptive reuse project.

The specific sections which pertain to the proposed development include:

- Section A – All developments;
- Section B – Residential Provisions; 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 required.

2.3 Green Star

A Green Star assessment is being sought for this development under the Green Building Council of Australia (GBCA) Green Star Multi Unit Residential v1 rating tool, under a requirement to achieve a 5 Star rating. Two submissions are required: a submission for a 'Design' Certified Rating; and a submission for an 'As Built' Certified Rating (in operation).

A number of the Green Star goals for this project relate to waste management in the areas of design, demolition/construction, and operation. These objectives are summarised below in Table 1.

This WMP has not been developed for use as the waste auditor report required as part of the future Green Star submission under MAT-1 (recycling waste storage), but will inform the development of such a report and will also inform the development of a Building User Guide (MAN-5) and a Construction Waste Management Plan to be prepared by the contractor (MAN-7).

Table 1: Environmentally sustainable objectives for waste management

Relevant Green Star Credit	Initiative	Target	Environmental Benefit	Requirements
Multi Unit Residential V1 MAN-5	Building User's Guide *Up to 1 point*	To encourage and recognise information management that enables building users to optimise the building's environmental performance – to include a materials and waste policy.	Reduces waste sent to landfill; responds to resource depletion.	Development of a Building User's guide, relevant for building management and residents, including a Materials and Waste Policy to address: • What can be recycled; • Where recycling storage areas are, and • Schedules for waste and recycling removal.
Multi Unit Residential V1 MAN-7	Waste Management (construction) *Up to 2 points*	To encourage and recognise management practices that minimise the amount of construction waste to landfill (at least 80% of all construction waste to be reused or recycled).	Reduces waste sent to landfill; responds to resource depletion.	Appointment of a Contractor to: • Develop a Waste Management Plan, retain waste records and submit quarterly reports to the building owner, and • Achieve a 60% (1 point) or 80% (2 points) rate of recycle or re-use for construction/ demolition waste.
Multi Unit Residential V1 MAT-1	Recycling Waste Storage *Up to 2 points*	To encourage and recognise the inclusion of storage space that facilitates the recycling of resources used within buildings to reduce waste going to landfill.	Reduces waste sent to landfill; responds to resource depletion.	Points are awarded for: • Provision of a dedicated storage area for waste recycling; • Convenience of recycling; • Waste chutes for recycling and general waste; • Compost facilities, and • Facilities for over-sized household items.

3 Waste management approach

3.1 Method for estimation of waste generation

Waste volumes for the proposed development have been estimated in order to determine waste storage and collection requirements.

Waste generation is calculated from the appropriate waste generation rate and according to number of units or total gross floor area (GFA), according to the intended occupancy type.

Relevant waste generation rates in this development relate to:

- Multi-unit residential;
- General retail; and
- Lobby/ lounge areas.

3.2 Waste generation rates

All waste generation estimates are based on the relevant waste generation rates provided in the CoS Waste Policy. The waste generation rates which are applicable to this development are shown below in Table 2.

Table 2: Applicable waste and recycling generation rates

Building space use	Applicable waste generation type	Waste generation rate	Co-mingled recycling generation rate
Commercial: retail and childcare[1]	Retail > 100 m^2	50 L / 100 m^2 / day	50 L / 100 m^2 / day
Commercial: food services[2]	Restaurant	10 L / 1.5m^2 / day	2 L / 1.5m^2 / day
	Takeaway	80 L/ 100 m^2/ day	Discretionary
Residential	Multi-unit residential	80 L / unit / week	40 L / unit / week
Lobby / lounge	Office[3]	10 L / 100 m^2 / day	10 L / 100 m^2 / day

The specific tenancy of the commercial area on the ground floor of the proposed development is not yet determined, but is likely to include general retail, a restaurant, and a childcare facility.

[1] As no specific waste generation rate is available for childcare premises, the 'retail > 100m^2' waste generation rate is used as a best estimate
[2] The exact nature of the food services tenants is yet to be resolved. As some of these are expected to be café style establishments, the waste generation rate has been estimated as: ¾ of GFA as restaurant, ¼ of GFA as takeway (limited food preparation undertaken onsite)
[3] As lobby/lounge is not associated with a waste generation rate in the City of Sydney Waste Policy, 'office' is estimated as most applicable waste rate

3.3 Method for estimation of waste storage and management requirements

Waste storage area requirements are calculated from the estimation of waste generation and bin compaction ratio, based upon the bin sizes within the CoS Waste Policy and from site waste contractors (Table 3).

Waste storage requirements and management practices for common waste storage areas are in accordance with the General, Space, Access and Amenity requirements detailed in Section A ('All Developments'), Section B ('Residential Provisions') and Section C ('Commercial Provisions') of the CoS Waste Policy.

Table 3: Waste bin capacity and area requirement

Bin Capacity (L)	Bin floor dimensions (m)	Bin GFA (m^2)
120	0.56 x 0.49	0.27
240	0.74 x 0.58	0.43
360	0.85 x 0.63	0.54
660	1.26 x 0.78	0.96
1100L	1.36 x 1.16	1.58

3.4 Assumptions and limitations

The findings of this WMP have been incorporated into the proposed building design order to meet requirements of the State Significant Development Application (SSDA).

It should be noted that the rates provided are best practice estimates using the CoS Waste Guidelines. Actual observed rate of waste generation will vary according to specific tenants and their behaviours.

All figures and calculations in this document are based upon the following supplied building design schedule and plans:

- *Frasers Property Australia – Central Park Block 11 Master development schedule* issued by FJMT on 30/10/14 via ACONEX transmission
- *Frasers Property Australia – Central Park Block 11 updated basement and Ground floor plans* issued by FJMT on 30/10/14 via ACONEX transmission

All waste facilities and equipment are required to be designed and constructed in accordance with City of Sydney requirements in the Waste Policy, the Building Code of Australia (BCA), and Australian standards.

4 Construction waste

4.1 Construction waste streams

Construction works for this development are to take place with consideration of the project's 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 at least 80% of waste is recycled or reused.

An overview of the major waste streams resulting from construction is provided below in Figure 2. Waste streams which are predicted to generate the greatest volume are highlighted in orange.

Further detail regarding construction waste management is provided below in sections 4.2 – 4.3.

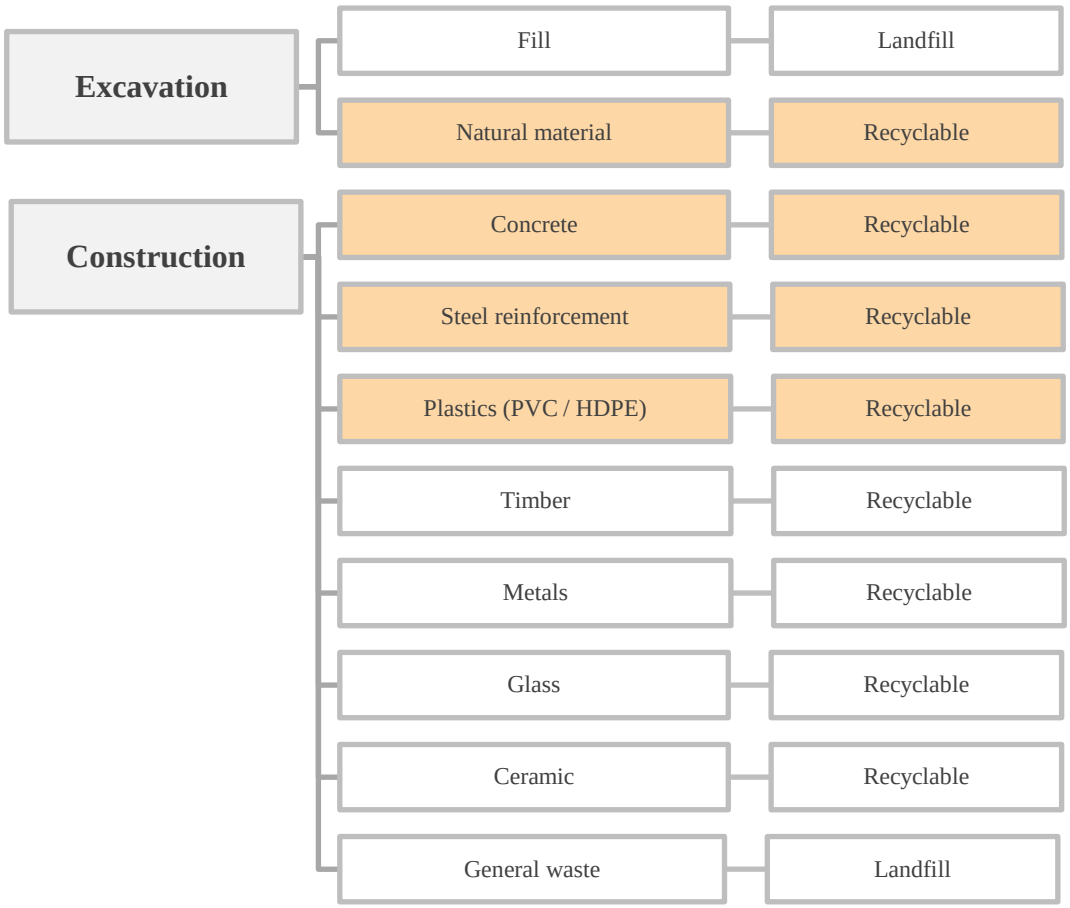

Figure 2: Excavation and construction waste streams

4.2 Construction waste management

Waste generation and management during excavation and construction phases is the responsibility of all on site, as it relates to materials procurement, handling, storage and use. Waste generated during construction will be reused and recycled as a priority, or disposed to landfill otherwise.

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

- Storage of building materials;
- Storage of demolition and construction waste;
- Sorting of demolition and construction waste; and
- Removal of demolition and construction waste for recycling, re-use or landfill.

A preliminary overview of site construction has allocated areas for construction materials and waste storage is to be resolved in the final version of this plan.

Construction waste management will be performed to meet the specific goals of the project 'principle led' Green Star pathway. Within the Management category of Green Star, the Waste Management (MAN-7) indicator addresses construction waste management and is worth a maximum of 2 points:

- **MAN-7**: **Construction Waste Management -** To encourage and recognise management practices that minimise the amount of construction waste to landfill (at least 80% of all construction waste to be reused or recycled to achieve 2 points).

As a requirement of MAN-7, the construction contractor will develop a Construction Waste Management Plan (CWMP) in order to ensure that construction waste is minimised and diverted from landfill where ever possible. The MAN-7 indicator is the only directly applicable Green Star indicator to be influenced by the Construction Waste Management Plan.

A construction waste tracking sheet is to be completed by the demolition contractor during this phase of the project, as provided in the CoS Waste Policy. This sheet is attached in Appendix B.

5 Operational waste estimate

5.1 Area schedule

This section provides an overview of gross floor areas (GFA) and occupancy for space uses within the proposed development which will contribute to waste generation.

Note that the area schedule shown in Table 4 applies only to areas that contribute to waste generation estimations. Additional details regarding floor plans and area schedules can be found in the relevant drawing sets prepared by FJMT for this Project Application.

Table 4: Waste generation area and occupancy schedule

Level	Retail: general	Retail: food services	Childcare centre	Lobby / admin	Residential
	GFA (m^2)	GFA (m^2)	GFA (m^2)	GFA (m^2)	No. of units
GF	330	330	0	240	13
Level 1	-	-	607	-	9
Level 2	-	-	-	-	20
Level 3	-	-	-	-	36
Level 4	-	-	-	-	36
Level 5	-	-	-	-	36
Level 6	-	-	-	-	36
Level 7	-	-	-	-	31
Level 8	-	-	-	-	28
Level 9	-	-	-	-	18
Level 10	-	-	-	-	9
Level 11	-	-	-	-	9
Level 12	-	-	-	-	9
Level 13	-	-	-	-	6
Total	**330**	**330**	**607**	**240**	**296**

5.2 Operational waste streams

The waste streams which will be generated during operation of the proposed development are identified below in Table 5.

Table 5: Operational waste streams

Waste Stream	Predominant Source	Destination
Mixed general waste	Entire building	Landfill
Co-mingle recycling	Entire building	Recycle
Cardboard and paper recycling	Commercial (retail)	Recycle
Organic waste	Food services (retail)	Organic collection/ treatment
Electronic waste	Entire building	Recycle
Hard rubbish	Entire building	Recycle / landfill

5.3 Waste generation estimations

Estimates of daily waste generation for the commercial and residential aspects of the development are summarised below in Table 6.

Table 6: Waste generation estimations

	Commercial	Residential	Childcare
Mixed general waste	1,881 L/day	3,383 L/day	337
Recycling	605 L/day	1,691 L/day	337
Organic waste	613 L/day	-	-

6 Residential waste facilities

The main waste facilities for **residential waste** from the proposed development are shown in Table 7, and outlined in further detail below.

Table 7: Waste storage components – residential waste

Component	No.	Description
Tenant waste rooms (upper floors)	32 (generally 3 on each floor)	Rooms to which residents deliver their waste and recycling. Each will host: • 1x landfill waste chute • 1x 240L recycling bin
Waste chutes	3	Landfill waste chutes to service the three 'cores' of the upper residential levels (Levels 1 – 13). The chutes feed from the tenant waste rooms and discharge into compactors located in Basement 1.
Compactors	3	3 compactors will receive the waste discharged via the 3 residential waste chutes. The compactors are to be located within dedicated compactor rooms in basement 1.
Central landfill waste storage rooms (Basement 1)	2	These rooms provide central storage for landfill waste prior to its collection. Two rooms (acting as two separate waste collection points) are provided rather than one to improve operational waste management due to the overall length of the building. • 1x room to host the waste from core 1 of the building prior to collection • 1x room to host the waste from cores 2 and 3 prior to collection
Central recycling waste storage rooms (Basement 1)	2	These rooms provide central storage for recycling prior to its collection. Two rooms (acting as two separate waste collection points) are provided rather than one to improve operational waste management due to the overall length of the building. • 1x room to host the recycling from core 1 of the building prior to collection • 1x room to host the recycling from cores 2 and 3 prior to collection

6.1 Tenant waste collection rooms

Each residential level will host three tenant waste collection area (one in each building core), which will include

- Access to the general waste chute via a hand loaded compartment;
- 1 x 240L MGB to collect co-mingle recycling (with 2 x 240L for comingled recycling on levels 3, 4, 5, 6, 7) and
- Space for temporary storage of larger recyclables such as flattened cardboard boxes.

6.2 Central waste storage

Due to the length of this building, two different central waste storage and collection points are provided in Basement 3. Each storage point will have a loading area suitable for unimpeded waste collection vehicle access and bin loading.

Storage provision for the central waste storage room is as follows:

CENTRAL WASTE STORAGE ROOMS:

1. **Basement 1 east: central waste storage and compactor room**

   This room will receive waste from the eastern core of the building (approximately 1/3 of waste) via the eastern waste chute. It will host:

   - 1 carousel compactor (4 x 1100L)
   - 4 x 1100L bins

   Total GFA: 34.4m^2

2. **Basement 1 west: central waste storage room**

   This room will receive waste from the central and western cores of the building (approximately 2/3 of waste); waste will not discharge directly into this room, but will discharge into compactors in separate rooms and bins will be then be transferred from the compactors to the central waste storage room prior to collection. It will host:

   - 1 carousel compactor (4 x 1100L)
   - 4 x 1100L bins

   Total GFA: 20.6m^2

6.3 Central recycling storage

As with waste storage, central recycling storage is divided into two rooms which service the western and eastern/ central ends of the building, to improve efficiency of space and operational waste management.

Storage provision for the central recycling storage room is as follows:

CENTRAL RECYCLING STORAGE ROOMS:

1. **Basement 1 east: central recycling waste room**

   This room will receive recycling bins rotated from upper floors on the eastern core of the building (approximately 1/3 of recycling). It will host:

   - 17 x 240L bins

   Total GFA: 17.2m^2

2. **Basement 1 west: central recycling storage room**

This room will receive recycling bins rotated from upper floors on the central and western cores of the building (approximately 2/3 of recycling). It will host:

- 34 x 240L bins

Total GFA: 24.5m^2

HARD RUBBISH:

3. Hard rubbish storage room

This room will provide a central storage area for hard rubbish from residential areas of the building.

Total GFA: 13.0m^2

7 Commercial waste storage facilities

The proposed development includes commercial space on the Ground Floor (retail and restaurant) and on Level 1 (childcare centre).

The main waste facilities for **commercial (retail) waste** from the proposed development will include:

Component	No.	Description
Central landfill waste storage room	1	This room will provide central storage for landfill waste prior to its collection from the loading dock. Landfill will be transferred to the room from the ground floor and level 1 via a waste chute system; the room will also host a carousel compactor.
Central recycling waste storage room	1	This room will provide central storage for recycling prior to its collection from the loading dock.
Waste chutes	1	Landfill waste chute to service the commercial areas of the building on the Ground Floor and level 1
Compactors	1	1 compactor will receive the waste discharged via the commercial waste chute

7.1 Central waste storage

Storage provision for the central waste storage room is as follows:

1. **Central waste storage room**

   This room will receive waste from commercial areas via a waste chute. It will host:

   - 1 carousel compactor (4 x 1100L)
   - 4 x 1100L bins (general waste)
   - 4 x 240L bins (organic waste)

   Total GFA: 28.4m^2

7.2 Central recycling storage

Storage provision for the central recycling storage room is as follows:

1. **Basement 1 west: central recycling storage room**

   This room will receive commercial recycling bins rotated from upper floors. It will host:

   - 22 x 240L bins (co-mingle recycling)
   - 1 x 1100L bin (paper and card recycling)

   Total GFA: 20.3 m^2

2. Hard rubbish storage room

This room will provide a central storage area for hard rubbish from commercial areas of the building.

Total GFA: 12.5m^2

8 Waste storage design

8.1 Signage

Recyclables and general waste will be stored in colour coded bins to ensure waste streams are not inadvertently mixed. 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.

8.2 General waste facilities design

All waste storage rooms will be designed according to the provisions stipulated by the CoS Waste Policy (Section A, All Developments – Construction). Provisions for this development are outlined in Table 8.

The vehicle dock located on the Ground Floor will have unimpeded access via O'Connor Street (via an internal road).

The distance between the central waste storage rooms and their respective collection points will not exceed 10 m.

Table 8: Waste storage design

Design aspect	Design provision
Floor	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 as approved by Sydney Water Corporation. 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 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	The waste storage rooms will be fitted with close fitting and self-closing doors which may be readily opened from within the room. A sign will be erected in a prominent position clearly stating that the doors must be kept closed at all times when not in use.
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.
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.

Design aspect	Design provision
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.
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.

8.3 Waste chute

General waste from residential and commercial areas of the building will be transported to the Ground Floor Central Storage Room via a waste chute system.

On each residential floor, the waste chute will be accessed by a dedicated compartment. The waste chutes will be loaded by residents using a hand-loading door. Signage will be positioned on each chute to ensure appropriate use.

A separate waste loading room or space will also be provided on each commercial floor.

Waste chute design specifications are provided below in Table 9. These are drawn from the CoS Waste Policy and additional technical specifications.

Table 9: Waste chute design

Design aspect	Design provision
Chute	Chutes, service openings and charging devices will be constructed of metal or other smooth faced, durable, fire resistant, impervious, non-corrosive material. Chutes will be cylindrical with adequate internal diameter. Chutes will be vertical without bends, off-sets or reduction in diameter Chute branches to charging devices will be capable of delivering the waste to the chute without using force. Chutes will terminate in the waste room and discharge the waste directly into a receptacle or waste compactor. A cut-off will be provided at or near the base of the chute to effectively close off the chute whilst the receptacle or compacting device is withdrawn. If the terminating end of the waste chute is to discharge into a compactor or skip at an angle, this angle shall not exceed 45º for a general waste chute.

Design aspect	Design provision
Charging devices	Charging devices will: • Be designed to close off the service opening in the chute when the device is opened for loading; • Automatically return to the closed position after use; • Permit free flow of waste into the chute; • Not project into the chute; • Permit easy cleaning of the device and connection between the service opening and the chute.
Service storage room	Service storage rooms will: • Be provided in convenient, well lighted and ventilated positions; • Be provided with a charging device in accordance with 1.7; • Not be less than one metre (1m) or more than one and one-half metres (1.5m) above the floor level; • Have an area of no more than one-half (1/2) the cross sectional area of the chute.
General	The floor below each charging device and service opening must be finished with a smooth impervious material with a minimum area of not less than one square metre ($1m^2$) situated centrally below the charging device. The chute, charging device and service opening will be capable of being easily cleaned. Chutes will be ventilated to ensure that air does not flow from the chute through any service opening.

9 Waste management

9.1 Waste management responsibilities

The major responsibilities associated with waste management are outlined below in Table 10. These responsibilities are separate for residential and commercial areas of the building.

All contracts with building managers, tenants and cleaners will clearly outline the waste management and collection system, and will clearly allocate waste management responsibilities.

Table 10: Waste management responsibilities

	Task	Responsibility
WASTE STORAGE AREAS	Cleaning of temporary and central waste storage areas, service lifts, transfer areas and collection areas.	Building management
	Rotation of full recycling bins on all residential levels with empty bins in the central recycling storage rooms (Basement 1).	Building management
	Removal of commercial recycling to the designated bins in the Commercial Waste Storage Room (Basement 1).	Commercial tenants
WASTE COMPACTION	Safety training for appropriate staff for use of waste compaction equipment.	Building management
	Procurement of servicing of waste compactor equipment to a frequency specified by the equipment manufacturer.	Building management
	Regular cleaning and servicing of waste compaction equipment.	Building management
SIGNAGE	Provision of signage in all communal waste collection and storage areas to demonstrate how to use the waste management system, and what materials are acceptable in recycling bins and chutes.	Building management
	Provision of prominently displayed signage identifying: • Waste and recycling storage areas; • Waste and recycling compartments	Building management
	Clear warning/ safety signage for compactor equipment and general restriction of access to compactor rooms	Building management
	Provision of clear labels on all waste and recycling receptacles to identify which materials may be placed in which bin / chute.	Building management
WASTE COLLECTION	Transfer of bins between the central waste storage areas and loading dock/ vehicle.	Waste collection contractor
	Return of waste bins to their appropriate storage areas after emptying into waste collection truck in the loading dock.	Building management

9.2 Logistical considerations

Particular considerations for management of different waste streams are summarised below in Table 11.

Table 11: Waste stream management considerations

Waste Stream	Source	Management considerations
Landfill waste	Residential	General waste will be transferred from the upper levels to basement 1 residential compactor rooms via the residential waste chutes. Waste compactors which manage waste from the western and central cores of the building are not located in the western central waste storage room, therefore bins need to be manually transferred from the compactor rooms to this room prior to collection.
	Commercial	Landfill waste will be transferred from the upper levels to the commercial central waste storage room via the general waste chute.
Organic ('wet') waste	Residential	Residents will have access (if they desire) to on-site composting facilities or a collection service for organic waste. The location of any composting equipment will be resolved in detailed design.
	Commercial	Organic waste generated by tenants may be collected in dedicated organic waste bins and transferred to the central commercial waste storage room in basement 1 for collection. The room will be adequately chilled with air conditioning to mitigate any putrescence prior to collection.
Co-mingle recycling	Residential	Co-mingle recycling from residents on upper levels will be collected on each floor in 240L MGBs. Each bin will be emptied when full (every 2-3 days depending on the floor) on a rotation system with empty bins in the central waste storage room, via the service lift.
	Lobby / lounge	Waste from the lobby/lounge area is to be moved nightly to bins in the central waste storage rooms (basement 1) by cleaners.
	Commercial	Co-mingle waste will be manually transferred by commercial tenants to the central waste storage room in basement 1 to await collection.
Cardboard and paper recycling	Commercial	Cardboard and paper recycling will be collected separately wherever possible and transferred to dedicated recycling bins in the central commercial waste storage room.
Electronic waste	Residential	Residents will be offered access to electronic waste receptacles in common areas. Electronic waste will then be transferred to a receptacle within the Main Garbage Room area by building management. Larger electronic waste, such as televisions and other equipment, will be collected by building management and placed in in the hard rubbish storage compartment within the central waste storage room.
	Commercial	Small electronic waste will be transferred by commercial tenants to a receptacle within the

Waste Stream	Source	Management considerations
	(retail)	commercial central waste storage area. Larger electronic waste, such as televisions and other equipment, should be transferred to a dedicated hard rubbish storage area in the central waste storage room and scheduled for collection.
Hard rubbish	All areas	Hard rubbish is to be moved by building management or commercial tenants to the designated hard rubbish storage compartments in basement 1. Building management/ commercial tenants will then schedule collection as necessary.

9.3 Waste compaction

Three 4 x 1100L bin carousel compactors will be located in the three residential core compactor rooms. The compactor will receive the mixed general waste discharged via the general waste chute from residential levels.

One 4 x 1100L compactor will also be located in the central commercial waste storage room to receive waste from commercial floors (ground floor and level 1).

The compactor equipment will only be accessed by specified building management staff with suitable training and safety induction. All necessary safety induction training, childproofing and safety signage for access and use of the compactor equipment will be provided by building management.

All compactor equipment will be located in a locked and secured area, to be accessible only by trained management staff and licenced contractors.

The waste compactors will be serviced as necessary, to a schedule determined by the equipment manufacturer.

10 Waste collection

10.1 Waste collection frequency

Waste collection frequencies are summarised below in Table 12 (residential waste waste) and Table 13 (commercial waste).

Waste collection services for each waste stream will be provided by appropriate licenced contractors. Written evidence will be provided and held on site at all times of a valid and current contractor with a licenced collector for waste and recycling collection and disposal.

Waste collection arrangements for the proposed development are described below.

Table 12: Waste collection summary: residential waste

Waste Stream	Collection Frequency	Licenced Collector
General waste	2x per week (every 3 – 4 days)	Council
Co-mingle recycling	1 x per week	Council
Electronic waste	Collection monthly or as necessary	E-waste collector
Hard rubbish	Collection scheduled as necessary	Council / private waste contractor (as necessary)

Table 13: Waste collection summary: commercial waste

Waste Stream	Collection Frequency Ground floor central waste storage (temporary)	Licenced Collector
General waste[4]	3x per week (every 2 – 3 days)	Private contractor
Organic waste	Daily	Private contractor
Cardboard/ paper recycling	1 x per week	Private contractor
Co-mingle recycling	2 x per week (every 3 – 4 days)	Private contractor
Electronic waste	Collection scheduled as necessary	E-waste collector
Hard rubbish	Collection scheduled as necessary	Council / private waste contractor (as necessary)

[4] Collection frequencies for commercial waste are based on the assumption that some commercial tenants (including childcare) will only be operational 5 days per week

10.2 Waste collection arrangements

10.2.1 Residential waste

Residential waste bins will be transferred from the two central storage areas directly to the collection vehicle by waste contractors. Empty bins will be transferred room the loading areas back to central storage by building management.

10.2.2 Commercial waste

Commercial waste bins will be transferred from the central storage area to the loading dock by waste contractors upon collection. Empty bins will be transferred room the loading dock back to central storage by building management.

10.3 Waste contractor vehicle access

The route for waste contractor access to the loading dock is from O'Connor Street (via an internal road). Access will at no time cause the flow of traffic on O'Connor Street to be blocked.

The residential vehicle access will be required to make two stops inside the basement at the two separate residential central waste storage areas.

Vehicle access to the basement has been designed according to a waste collection vehicle with specifications summarised in Table 14 below.

Table 14: Waste Collection Vehicle Space Requirements – Rear Lift Truck[5]

Vehicle Specification	Measurement
Overall length	9.54 m
Travel height	3.4 m
Working height	3.8 – 4m
Ceiling height	4.2 m
Typical width	2.6 m
Turning circle diameter	18.0 m

[5] Specifications for length, width, height, working height, and turning circle diameter sourced from Veolia Environment Services Ltd. and the CoS Waste Policy.

10.4 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:** The waste management and central storage areas will not be visible from the exterior of the building.
- **Noise:** significant noise-generating waste management equipment will not be utilised in this development. The compactor equipment utilised will generate minimal noise, and will be located in an area containing adequate acoustic insulation. Production of 'offensive noise,' as defined under the *Protection of the Environment Operations Act 1997*, will be avoided.
- **Odour**: 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.

  General and organic waste will be collected daily, which will minimise putrescence.

  Adequate mechanical ventilation and regular collection of waste will eliminate the risk of odour to building inhabitants and neighbours.

11 Next steps

This WMP forms a framework to implement best practice for waste management 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.

If 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 demolition, construction, and the transport and destinations of these materials;
2. Inform the development of a building user guide (MAN-5), waste auditor report (MAT-1), and Construction Waste Management Plan (MAN-7) associated with a future Green Star submission;
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

Building plans

01 PLAN Basement 1
1:250

0 2.5 5 10m

GENERAL NOTES

- ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH THE WORK
- ALL LEVELS RELATIVE TO 'AUSTRALIAN HEIGHT DATUM'
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY

LEGEND

	Accessible
CS	Car Share
CW	Carwash Bay / Service…
CC	Child Care
	Class 1A
M	Motorcycle-Non Resident
	Motorcycle-Resident
R	Retail
R	Retail/ Accesible
SV	Service Vehicle
SC	Small Car

REV.	DATE	DESCRIPTION	BY
01	24/10/2014	ISSUED FOR SSDA APPROVAL	FJMT

CLIENT

Frasers Broadway

FRASERS PROPERTY

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PROJECT
Central Park Block 11
O'Connor Street, Chippendale
Sydney
Frasers Broadway

TITLE
PLANS
Basement Level 01

SCALE 1:250 @ A1	DRAWN FJMT	PROJECT CODE	
DATE 24/10/2014	APPROVED SB	**FB11**	
SHEET NO. **SSDA-11-212**		REVISION **01**	

WHEN PRINTED AT 50% ON A3 THE SCALE IS 1:500

Issued for Approval

Appendix B

Details of waste management form - Construction phase

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					