Frasers Property Australia Pty Ltd

Central Park Block 4N

Waste Management Plan

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Job number 232836-00

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Appendices

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 4N at Central Park, Chippendale.

Block 4N – State Significant Development

The State Significant Development Application seeks approval for the redevelopment of Block 4N as a mixed use building, with associated non-residential/retail uses located on ground floor, consistent with the Concept Plan. Specifically, the proposal includes the following uses:

- Residential – 3,518 m^2 located on levels 11 to 16 consisting of 48 permanent residential apartments
- Retail – 236 m^2 located on the ground level with frontage to Central Park Ave
- Hotel – 13,986 m^2 located from ground to level 18 – approximately 283 hotel rooms
- Commercial – 6,146 m^2 located on levels 5 to 10
- Childcare Centre (shell space) – 1,080m^2 located on level 3 and 4.
- Existing Australia Hotel and Terraces (Heritage Pub and Terraces) – 789 m^2.

The proposal has a total GFA of 25,755 m^2 of which 22,237 m^2 is to be used for non-residential purposes and 3,518 m^2 is to be used for residential purposes in accordance with the Concept Plan as recently modified (MP 06_0171 MOD9).

Hotel facilities, including concierge, storage, swimming pool, spa, gym, conference facilities, will be located within the building. The hotel swimming pool, spa and gym will also be made available to permanent residents. Separate entries and lobbies are proposed to the commercial office, childcare, hotel and permanent residential.

The existing Australia Hotel and adjoining Abercrombie Street terraces will be retained, with the design creating a publicly accessible courtyard behind the terraces, accessible from Broadway and Abercrombie Street.

1.1 Purpose of Waste Management Statement

This document addresses aspects of waste management relating to requirements of the SSDA under the NSW Environmental Planning and Assessment (EP&A) Act (1979) and the Secretary's Environmental Assessment Requirements. (SEARs).

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.

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 Project location

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

Block 4N is located along the western side of the Central Park site (shown in Figure 1). The site sits on the corner of Abercrombie Street and and Broadway, adjacent to Block 4S Student accommodation and Block 1. For the purpose of the approval and the Waste Management Plan, Block 4N includes the existing Australia Hotel and terraces.

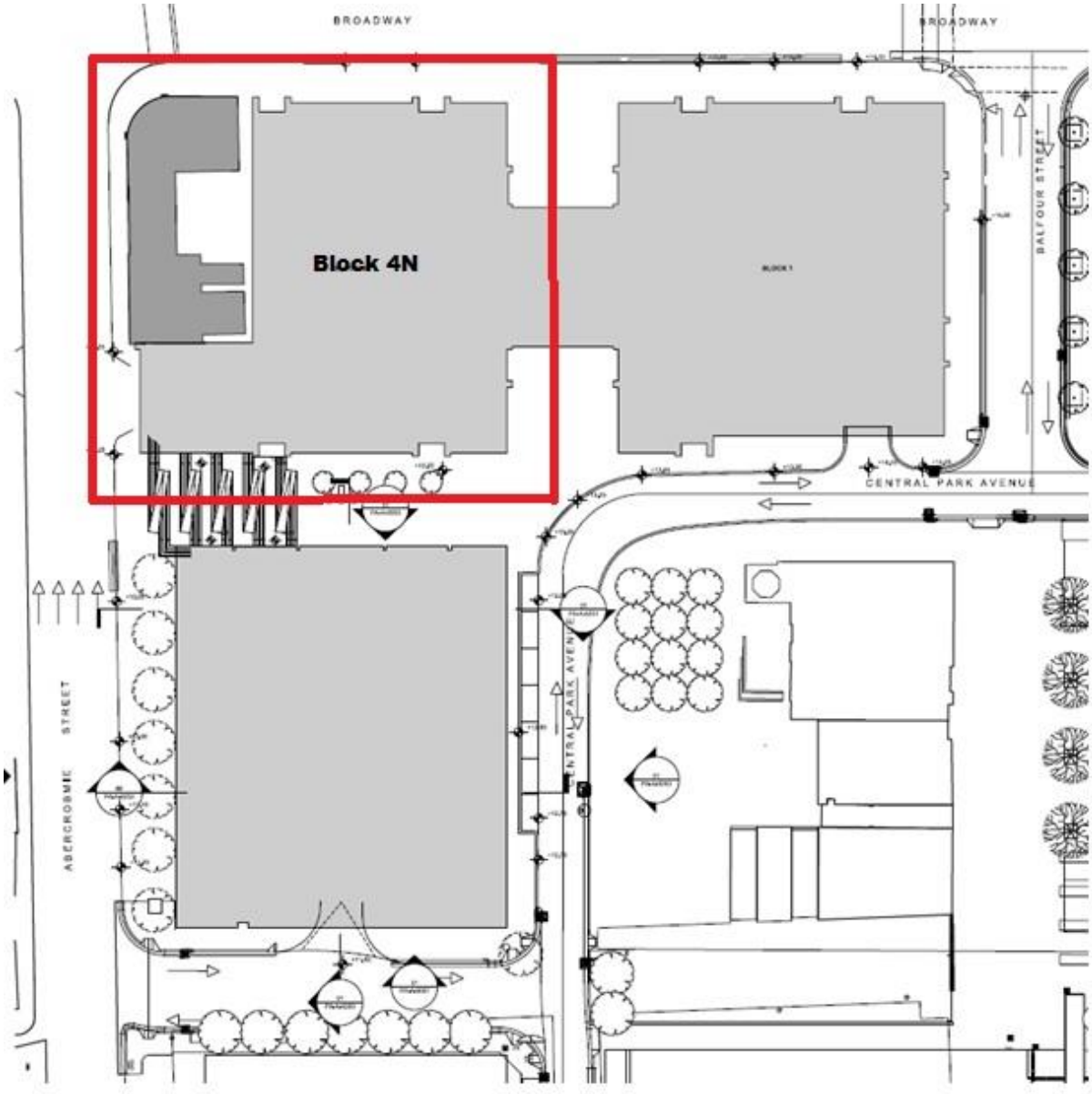


Figure 1: Site context plan

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

Block 4N being a mixed use building does not meet the eligibility criteria of the 3 GBCA tools being Office, Mulit-unit residential and Retail Centre. To demonstrate the building meets the high level of environmentally sustainable design performance expected of a building with a 5 star Green Star rating, a Green Star 'Principles led' approach has been followed. Further details of this approach are found in the ESD report.

A number of Green Star goals can be applied in relation to waste management. 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;
- Hotel accommodation
- Commercial office
- General retail
- Childcare centre
- Hotel accommodation
- Restaurant / Bar 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
Retail and childcare[1]	Retail > 100 m^2	50 L / 100 m^2 / day	50 L / 100 m^2 / day
Restaurant and bar areas	Restaurant	10 L / 1.5m^2 / day	2 L / 1.5m^2 / day
	Bar	80 L/ 100 m^2/ day	Discretionary
Hotel	Accommodation	5 L/bed /day	Discretionary
Residential	Multi-unit residential	80 L / unit / week	40 L / unit / week
Commercial office	Office	10 L / 100 m^2 / day	10 L / 100 m^2 / day

[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

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:

- *Foster and Partners – Frasers Broadway – Central park Block 4N Area Schedule 2094, updated 16/10/14*
- *Foster and Partners / PTW Architects, Block 1 + 4N Basement plans Received 16/10/14*

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.

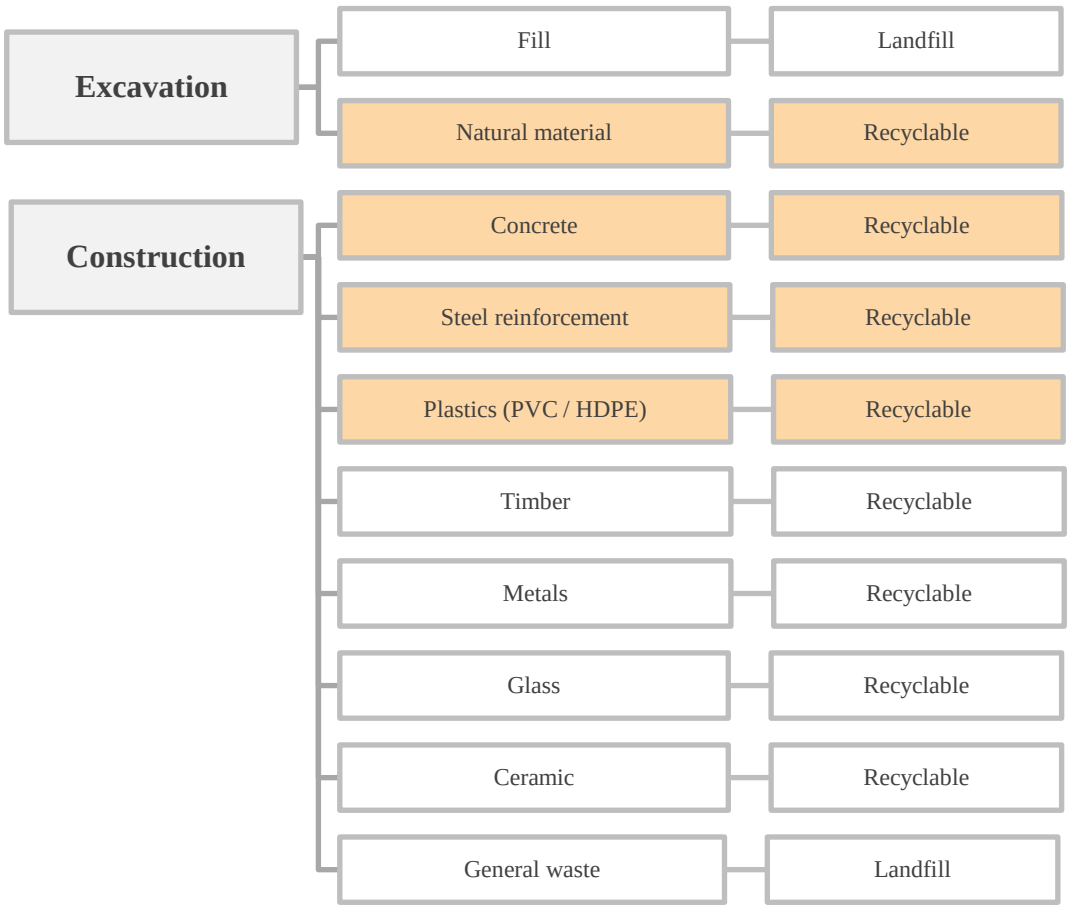


Figure 2: Excavation and construction waste streams

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.

4.3 Construction vehicle access

Details for construction vehicle access are to be resolved in the Construction Environmental Management Plan or similar.

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 Foster and Partners for this Development Application.

Table 4: Waste generation area and occupancy schedule

Usage	**Commercial**	**Residential**	**Hotel**	**Retail - general**	**Childcare**	**Restaurant / Bar**
	GFA (m^2)	No. of apartments	No of rooms	GFA (m^2)	GFA (m2)	GFA (m2)
Total	**6,146**	**48**	**283**	**236**	**1,080**	**789**

5.2 Waste generation estimations

Estimates of total daily waste generation for the main uses of the development are summarised below in Table 5.

Table 5: Waste generation estimations

Usage	**Commercial**	**Residential**	**Hotel**	**Retail - general**	**Childcare**	**Restaurant / Bar**
Mixed general waste (L/day)	**615**	**549**	**1,748**	**118**	**540**	**395**
Recycling (L/day)	**615**	**274**	**100**	**118**	**540**	**395**

6 Residential waste

The main waste facilities for **residential waste** from the proposed development are shown in Table 6, and outlined in further detail below.

Table 6: Waste storage components – residential waste

Component	No.	Description
Tenant waste rooms (Level 11 – Level 16)	6 (1 on each residential floor)	Rooms to which residents deliver their waste and recycling. Each will host: • Access to landfill waste chute • 1x 240L comingled recycling bin • Space for cardboard / paper recycling
Waste chutes	1	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	1	A rotary compactor will receive the waste discharged via the residential waste chute. The compactor is to be located within the dedicated compactor room in basement 1.

6.1 General waste

A central waste storage room will house Residential general waste (labelled as **Res Waste**). This room will host:

- 1 x rotary compactor (4 x 660L)
- 1 x waste chute outlet
- 4 x 660L bins

All general waste bins will be moved to a holding room, labelled as **Residential Holding Bin Room** on Appendix A, by building management prior to waste collection.

The **Bulky Goods Store Room** (13 m^2) will host hard rubbish from residential areas of the building, combined with Block 1.

6.2 Recycling

A central waste storage room will house Residential recyclables (labelled as **Res Recycling**). This room will host:

- 10 x 240L bins (comingled recycling)
- 1 x 240 L bins (paper and card recycling)
- 4 x 660 L bins (General waste bins as necessary prior to collection).

7 Hotel and Bar / Restaurant waste

7.1 Hotel waste

The main waste facilities for Hotel waste from the proposed development are shown in Table 6, and outlined in further detail below.

Table 7: Waste storage components – Hotel waste

Component	No.	Description
Hotel waste compartment (All hotel levels)	All hotel levels	Areas where building management can deliver waste and recycling. Each will host: • Access to general waste chute • 60L or 120L comingled recycling bin
Waste chutes	1	General waste chute to service the hotel levels.
Compactors	1	A rotary compactor will receive the waste discharged via the hotel waste chute. The compactor is to be located within the dedicated compactor room in basement 1.

A central waste storage room for Hotel waste (labelled as **Hotel Waste and Laundry**) will receive hotel general waste via a waste chute. Recyclables will be moved manually from each hotel level to recycling bins in the basement each day. This room will host:

- 4 x 660L bin rotary compactor
- 8 x 660L bins (general waste)
- 4 x 240L bins comingled recycling
- Laundry facilities

Total GFA of this room is approximately 91 m^2.

This room will be segregated to allow for general waste, recyclables and laundry facilities to be kept separate.

7.2 Bar / Restaurant waste

The **Bar and Restaurant Waste** room (refer Appendix A) will receive general waste and recyclables form the Australia Hotel located on the corner of Abercrombie Street and Broadway. This waste will be manually moved to this storage room by building management prior to collection. The room will host approximately:

- 7 x 240 L bins (general waste)
- 6 x 240 L bins (co-mingle recycling)
- 1 x 240 L bin (paper and card recycling)
- Bulky waste storage for the Australia Hotel

Total GFA of this room is approximately 57 m^2.

8 Retail waste

A central waste storage room will house Retail general waste and recyclables (labelled as **4N & BL1 Retail Bin Room**). This room will host:

- 4 x 240 L bins (general waste)
- 4 x 240L bins (comingled recycling)
- 2 x 240 L bins (paper and card recycling)
- 1 x 1100 L paper and cardboard baler (from commercial)
- Bulky waste.

Total GFA of this room is approximately 35 m^2.

9 Commercial waste

A central waste storage room will house Commercial general waste and recyclables (labelled as **4N Commercial Bin Room**). This room will host:

- 12 x 240 L bins (general waste)
- 7 x 240L bins (comingled recycling)

Total GFA of this room is approximately 17.5 m^2.

Both general waste and recyclables will be manually removed from each of the six commercial levels to the basement waste storage room each day.

A 1100L paper and cardboard baler is required for commercial paper and cardboard, and due to space issues, this would be housed in the adjacent **4N & BL1 Retail Bin Room.**

The **Bulky Goods Store Room** (approximately 14 m^2) will host hard rubbish from commercial areas of the building.

10 Childcare waste

A central waste storage room for Childcare general waste (labelled as **Childcare Waste**) will receive Childcare general waste. This room will host:

- 10 x 240 L bins (general waste)

A central waste storage room for Childcare recyclables (labelled as **Childcare Storage**) will receive recyclables and bulky waste. This room will host:

- 6 x 240L bins (comingled recycling)
- 2 x 240 L bins (paper and card recycling)
- - Bulky waste

Total GFA of this room is approximately 17 m^2.

11 Waste storage design

11.1 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.

11.2 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.

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.
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.

Design aspect	Design provision
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.

11.3 Waste chutes

General waste from residential and hotel areas of the building will be transported to the relevant basement waste storage rooms 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 hotel 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.
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;

Design aspect	Design provision
	• 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.

12 Waste management

12.1 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, Retail and Childcare 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

12.2 Other considerations

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

Table 11: Waste stream management considerations

Waste Stream	Source	Management considerations
Organic ('wet') waste	Residential	Residents may have access (if they desire) to on-site composting facilities or a collection service for organic waste. The potential location of any organic waste equipment will be resolved in detailed design.
	Commercial Childcare Retail	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.
Cardboard and paper recycling	Commercial	Cardboard and paper recycling will be collected separately wherever possible and transferred to dedicated paper and cardboard baler in the basement
Electronic waste	Residential	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 basement.
	Commercial and retail	Small electronic waste will be transferred by commercial and retail tenants to a receptacle within the 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.
Bulky waste	All areas	Bulky waste is to be moved by building management or commercial tenants to designated bulky waste storage compartments in basement 1. Building management/ commercial tenants will then schedule collection as necessary.

12.3 Waste compaction

Two rotary compactors will be located in the level 1 basement in the Hotel and Residential waste rooms. Each of the compactors will receive mixed general waste discharged via a general waste chute for each of the residential and hotel uses.

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.

13 Waste collection

13.1 Waste collection frequency

Waste collection frequencies are summarised below in Table 12. These frequencies have been used for waste storage calculations throughout this report.

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

Use	General waste	Recycling
Commercial	2 x per week (every 3 – 4 days)	2 x per week (every 3 – 4 days)
Retail, Childcare, Bar / Restaurant	2 x per week (every 3 – 4 days)	2 x per week (every 3 – 4 days)
Hotel	2 x per week (every 3 – 4 days)	1 x per week
Residential	1 x per week	1 x per week
Electronic waste	Collection scheduled as necessary	
Hard rubbish	Collection scheduled as necessary	

13.2 Waste collection arrangements

All waste bins will be transferred from the central waste storage areas to the loading dock or directly to waste collection vehicles by waste contractors. Empty bins will be transferred back to central waste storage areas by building management.

13.3 Waste contractor vehicle access

The route for waste contractor access to the loading dock is from Abercrombie Street. Access will at no time cause the flow of traffic on Abercrombie Street to be blocked.

Waste vehicles will be required to make multiple stops inside the basement to service all of the waste storage areas.

Vehicle access to the basement has been designed according to a waste collection vehicle with specifications summarised in Table 13 below.

Table 13: Waste Collection Vehicle Space Requirements – Rear Lift Truck[2]

Vehicle Specification	Measurement
Overall length	9.54 m
Travel height	3.4 m
Working height	3.6 – 4m
Ceiling height	4 m
Typical width	2.6 m
Turning circle diameter	18.0 m

13.4 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.

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

14 Next steps

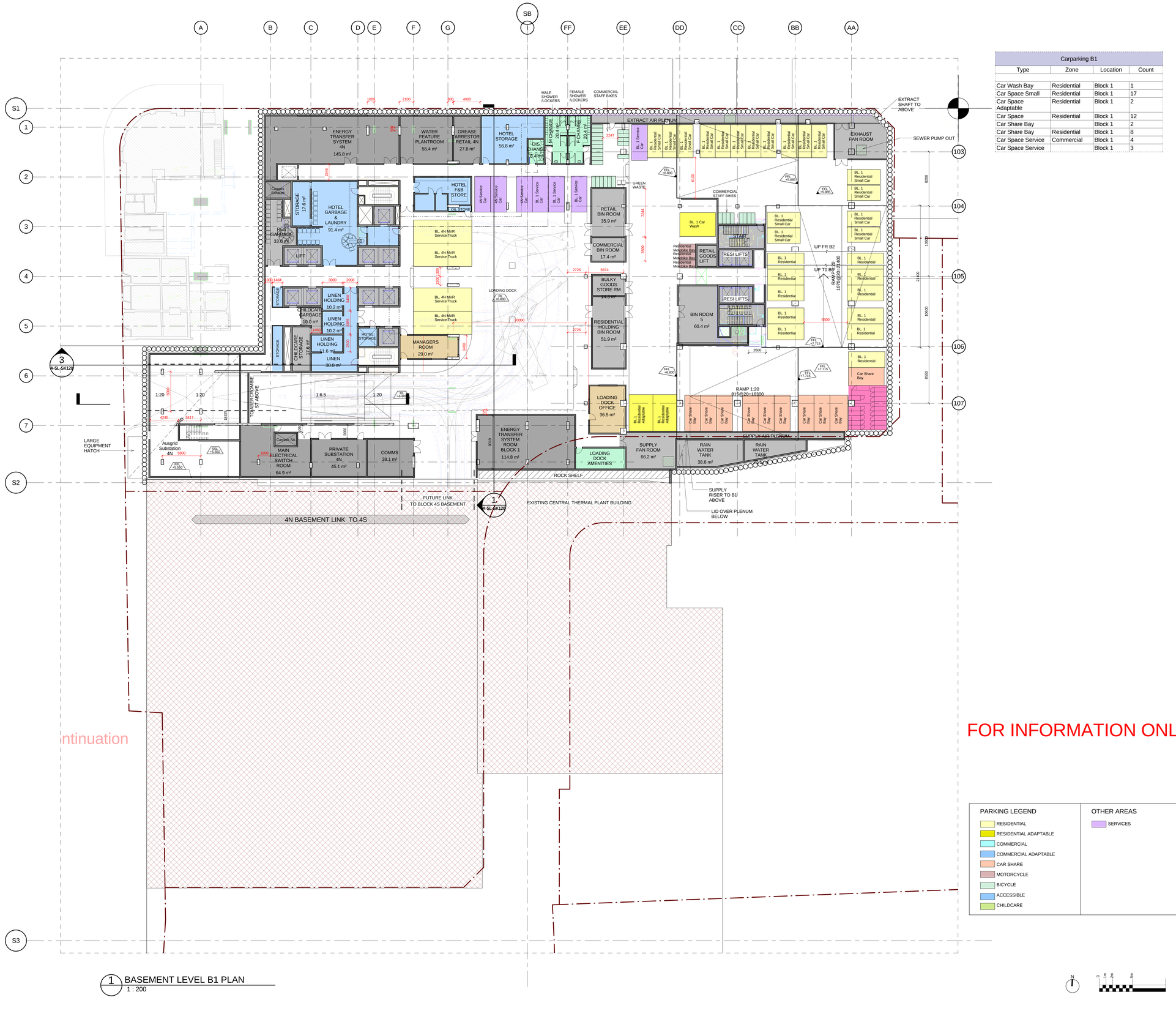
This WMP forms a framework to implement best practice for waste management across all design and planning stages. The waste management approach supports the Green Star requirement for the project to enhance outcomes for waste minimisation, reuse and recycling.

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



Carparking B1			
Type	Zone	Location	Count
Car Wash Bay	Residential	Block 1	1
Car Space Small	Residential	Block 1	17
Car Space Adaptable	Residential	Block 1	2
Car Space	Residential	Block 1	12
Car Share Bay		Block 1	2
Car Share Bay	Residential	Block 1	8
Car Space Service	Commercial	Block 1	4
Car Space Service		Block 1	3

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FOR INFORMATION ONLY

PARKING LEGEND	OTHER AREAS
RESIDENTIAL	SERVICES
RESIDENTIAL ADAPTABLE	
COMMERCIAL	
COMMERCIAL ADAPTABLE	
CAR SHARE	
MOTORCYCLE	
BICYCLE	
ACCESSIBLE	
CHILDCARE	

1 BASEMENT LEVEL B1 PLAN
1 : 200

N

0 5 10 15 20 25

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work.
4. Foster + Partners shall be notified in writing of any discrepancies.
5. Any areas indicated on this sheet are approximate and indicative only.

Key

	Concept Plan development boundary
	PA Boundary

Rev:	Date:	Reason For Issue:	Chk:

For Information

Key Plan:

FRASERS PROPERTY

Project: Frasers Broadway
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Client: Frasers Broadway
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Local Collaborating Architect:

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Title
BLOCK 1+4N
BASEMENT 01

Project No.	Scale @ A0	Date:	Drawn By:
212028	As indicated	11/12/13	PTW

Number: PA-A4-1758
Revision: 0

24/09/2014 4:52:13 PM

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					