

Central Park Joint Venture 2
Central Park
Block 1 Waste Management Plan

205466

Final | 3 July 2014

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number

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1 Introduction

1.1 Purpose of Waste Management Plan

Block 1 is part of the mixed-use development proposed at the Frasers Central Park site in Chippendale, Sydney NSW. The WMP identifies waste sources during demolition, construction and operation and proposes measures to manage waste in a way that satisfies all legislative requirements.

This Waste Management Plan (WMP) has been developed in support of the State Significant Development Application (SSDA) for the residential tower Block 1 of Central Park. 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), the City of Sydney *Policy for Waste Minimisation in New Developments* and the project's principle-led Green Star pathway.

This WMP identifies waste sources and proposes management measures for the project design, construction and operation. This WMP is provided in a format that can assist with the completion of a Waste Management Plan, which will be required by the contractor prior to the construction of the development.

The key purposes of the Waste Management Plan 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
- Develop management requirements for construction and operation.

A plan detailing the basement layout and operational waste storage areas proposed is included as Appendix A.

1.2 Project description

The Frasers Central Park project will be a sustainably designed and operated mixed use development on the site formerly occupied by the Carlton and United Breweries (CUB) at Chippendale, approximately 2 km to the south of the Sydney CBD. The site represents a significant addition to the urban environment in this location, located close by to the University of Sydney, existing residential and commercial zones, the Central Railway station and the CBD.

Block 1 is proposed as a 18 storey tower, predominantly residential with some retail areas on the ground level. Block 1 will include 281 residential units above a 5-level basement car park. Approximately 1098 m² of retail area is proposed on the ground floor. Block 1 is located on the corner of Broadway and Chippendale Way on the east side of Block 4N Commercial building.

This WMP applies to Block 1 only. However it is noted that the basement and waste handling / collection locations are located below Block 4N as part of the combined Block 1+4N basement.

1.3 Assumptions and Limitations

The principles outlined in this WMP will be incorporated into the building design and submitted with the state significant development application (SSDA) for Block 1.

All figures and calculations are based on building layouts and building schedule as contained on documents for Block 1:

- Foster and Partners As indicated 11/12/13 *Block 1 + 4N Basement 01 PA-A1-1758 Revision 0*
- Foster and Partners *A-SK-0522 B1 Level 04 (05/06/14)*
- *Central park Precinct Block 1, GFA Spreadsheet and Apartment Typology Mix (received 15/06/14)*

Waste generation estimations have been made using industry estimates and devised from the waste estimation tables contained within City of Sydney's *Policy for Waste Minimisation in New Developments 2005 (CoS Waste Policy)*.

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.

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 Waste Management Plan 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 area to meet their 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 in their waste contracts provisions 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 the Waste Management Plan where required.

2.3 Green Star Pathway

The principles of the 5 Star Green Star rating systems are a key goal for the Central Park Concept Plan. However, the space use of the proposed building (Class 3) does not meet the eligibility criteria under any of the current Green Star tools, as demonstrated by a formal notification from the Green Building Council of Australia (GBCA).

In the absence of an appropriate rating tool and in order to meet the requirements of the approved concept plan (as amended), an Ecologically Sustainable Design (ESD) approach has been developed specifically for this development, following a 5 Star Green Star 'principle led' pathway. The pathway has been developed using the Green Star Multi Unit Residential v1 Tool.

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.

Table 1: Environmentally sustainable objectives for waste management

Relevant Green Star Credit	Initiative	Target	Environmental Benefit	Strategy
Multi Unit Residential V1 MAN5	Building User's Guide	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: <ul style="list-style-type: none"> • What can be recycled; • Where recycling storage areas are; and • Schedules for waste and recycling removal.
Multi Unit Residential V1 MAN7	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).	Reduces waste sent to landfill; responds to resource depletion.	Appointment of a Contractor that will develop a Waste Management Plan (WMP) in order to ensure that construction waste is minimised and diverted from landfill, where ever possible.
Multi Unit Residential V1 MAT1	Recycling Waste Storage	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.	A waste consultant will provide an assessment of the required recycling waste storage area (refer to Section 4 of this WMP) to accommodate cardboard, glass, plastics, metals, used cooking oil and organic compost material; and the access requirements of <i>Policy for Waste Minimisation in New Developments</i> (Council of the City of Sydney, 2005).
Multi Unit Residential V1 MAT 3	Operational waste management	To encourage and recognise designs that prolong the useful life of existing products and materials and encourage uptake of products with recycled content.	Reduces waste sent to landfill; responds to resource depletion.	At least 1% of the project's overall contract value is to be represented by: <ul style="list-style-type: none"> • Re-used materials/products; or • Products/materials with a post-consumer recycled content of at least 20%.

3 Construction Waste

3.1 Construction waste streams

Construction works for this development are to take place with consideration of a ‘principle led’ Green Star pathway goals, 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 1. Waste streams which are predicted to be generated in the greatest volume are highlighted in orange.

Further detail regarding construction and demolition waste management is provided below in Section 3.2.

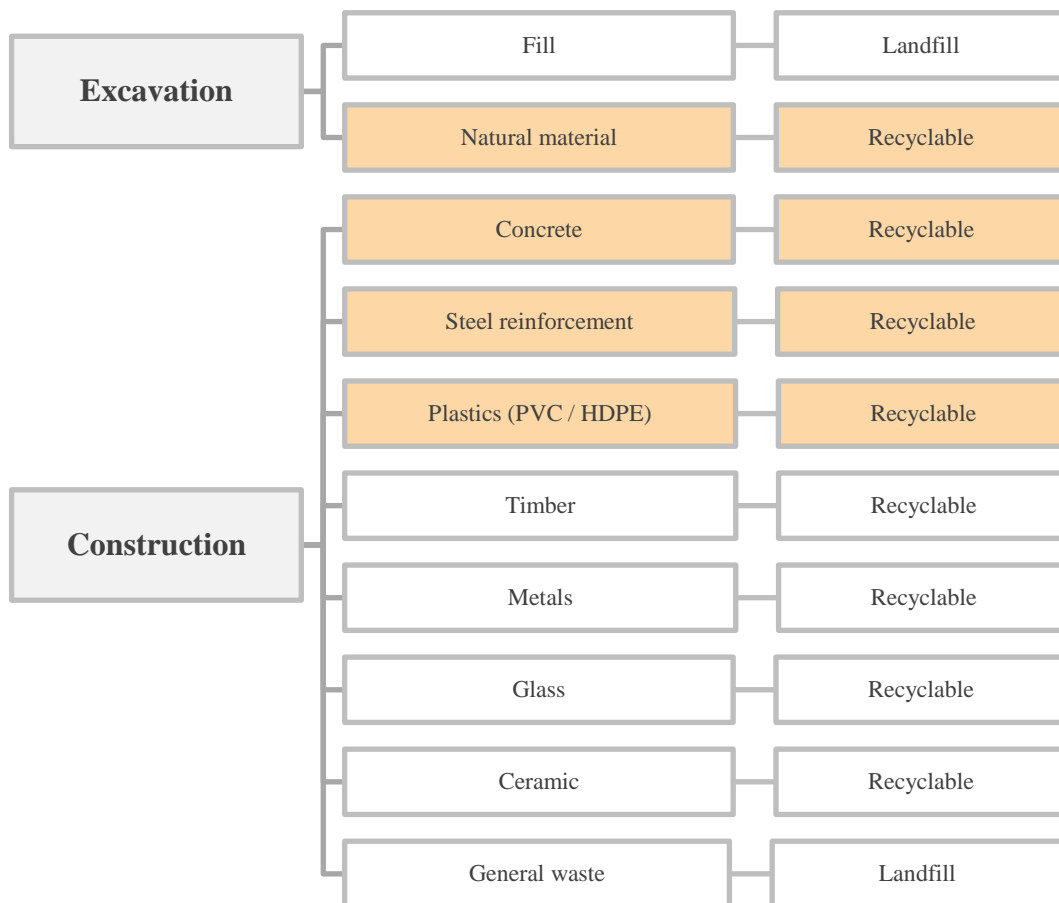


Figure 1: Excavation and construction waste streams

3.2 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.

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 possible 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 and should be included as part of the Construction Waste Management Plan.

3.3 Construction vehicle access

During excavation and construction phases, vehicle access will be provisioned along the length of the Southern end of the site. Vehicle access would as follows:

- **Gate 1:** Primary access and egress point, located on the southwest end of the site with access from Abercrombie St;
- **Gate 2:** Secondary access and egress point, located on the southeast end of the site with access from Central Park Avenue;

Traffic controllers will be in place to manage vehicle movements at all times.

Further details of construction access and methodology would be determined as part of the Construction Waste Management Plan

3.4 Construction waste management measures

Waste collection during construction is expected to be simpler than during demolition due to the staged nature of construction and the use of known quantities of uncontaminated materials. The majority of recyclable material that could be recovered during construction is likely to be off cuts and discards of glass, piping, timber, steel, flooring, tiles and plasterboard and packaging waste such as cardboard and plastics.

The main goal in construction will be to reduce the total volume of waste produced, which is to be achieved by effective materials procurement, management and supply.

Project managers, engineers, builders and subcontractors will play a key role in achieving on-site waste reduction targets on a day-to-day basis.

The following waste management measures will be implemented during construction:

- Waste that cannot be reused or recycled will be disposed in a licensed landfill;
- All documentation of materials disposed, including landfill receipts, contracts and waste plans, will be kept and maintained;
- Appropriate storage arrangements will be established to protect products from damage due weathering or moisture;
- Prefabricated materials such as frames and trusses will be purchased where possible;
- Materials will be delivered by suppliers only when needed. This reduces the opportunity for waste through error in estimates. It also permits orders to be made from on-site measurements rather than from drawings, and it provides for any modifications that the client may request;
- Packaging will be minimised for materials and supplies;
- Arrangements will be made with recycling contractors to provide clearly marked bins for material separation;
- Sub-contractors will be made aware of the placement of the bins and their responsibility to separate materials;
- Litter management will be implemented on site to reduce air borne litter and litter entering the storm water system.

4 Operational Waste

4.1 Area schedule

This section provides an overview of gross floor areas (GFA) for space uses within the proposed development which contribute to waste generation. These areas have been used in developing estimates of operational waste.

Note that the area schedule shown in Table 2 applies only to areas that potentially contribute to waste generation estimations. For details of entire building GFA, please refer to the plans in Appendix A.

Table 2: Waste generation area schedule

Level	Gym	Retail	Residential Lobby	Residential	
	GFA (m ²)	GFA (m ²)	GFA (m ²)	GFA (m ²)	No Units
Ground floor	-	1098	226	-	-
Level 1	-	-	-	-	-
Level 2	189	-	-	1330	16
Level 3	-	-	-	1186	12
Level 4	-	-	-	1462	18
Level 5	-	-	-	1462	18
Level 6	-	-	-	1462	18
Level 7	-	-	-	1462	18
Level 8	-	-	-	1462	18
Level 9	-	-	-	1462	18
Level 10	-	-	-	1462	18
Level 11	-	-	-	1462	18
Level 12	-	-	-	1462	18
Level 13	-	-	-	1462	18
Level 14	-	-	-	1462	18
Level 15	-	-	-	1462	18
Level 16	-	-	-	1079	14
Level 17	-	-	-	1035	14
Level 18	-	-	-	767	9
Total	189	1098	226	24,454	281

4.2 Operational waste streams

The waste streams which will be generated during operation of the proposed development are identified below in Table 3.

Table 3: Operational waste streams

Waste Stream	Predominant Source	Destination
Mixed landfill waste	Entire building	Landfill
Organic ('wet') waste	Potentially collected from residential	Recycle / organics treatment
Co-mingle recycling	Entire building	Recycle
Cardboard and paper recycling	Entire building	Recycle
Electronic waste	Entire building	Recycle
Hard rubbish	Entire building	Recycle / landfill

4.3 Waste generation estimations

Waste generation rates have been estimated in accordance with City of Sydney Waste Policy. Estimates of daily waste generation for each operational section of the development are summarised below in Table 4.

Waste volumes for Block 1 have been estimated in order to determine the waste storage area and waste storage bins required in the common basement.

It should be noted that the rates provided are best practice estimates.

Table 4: Waste generation estimations

	Mixed landfill waste (L/day)	Co-mingle recycling (L/day)
Retail (Ground floor)	549	549
Gym (Level 2)	95	95
Residential (Levels 2 - 18)	3211	1606
TOTAL	3,855 L / day	2,249 L /day

As shown in the above table, occupants in residential apartments in Block 1 are expected to generate approximately:

- 3,211 L of general waste per day.
- 1,606 L of recyclables per day.

The retail areas and ancillary residential uses (eg gym) are expected to generate approximately

- 644 L of general waste per day
- 644 L of recyclables per day.

Additional sorting of residential comingled recyclables would be done at source (into paper and cardboard and Non paper and cardboard recyclables).

4.4 Waste storage

4.4.1 Basement

The following table outlines a suggested method for waste storage within the proposed basement waste storage areas. The location of each of the waste storage rooms is provided in Appendix A.

The waste storage area required is calculated based on the plan area bin sizes provided in the CoS Waste Policy.

Table 5: Bin sizes

Bin Capacity (L)	Plan Area Bin (m ²)
240	0.43
660	0.96
1000	1.58
1500	1.62
3000	3.96

The storage areas available in Block 1 are expected to be adequate as shown in Table 6.

Table 6: Waste storage estimations

Room name	Area	Waste to be stored (L)	Storage bins required (L)	Plan area required ⁱ
Commercial bin room	56 m ²	Retail general waste	6 x 240 L	15 m ²
		Retail recyclables	6 x 240 L	
Residential holding bin room and Bulk storage	60 m ²	Residential recyclables	18 x 240 L 2 x 240 L (organic)	30 m ²
Bulky goods store room	10m ²	Bulky goods	NA	10-15m ²
Bin room 5	56 m ²	Residential general waste	4 x 660 L multi bin compactor 8 x 660 L bins	22 m ²

ⁱApproximate minimum area required equals plan area of required bins x 2 with some allowance for compaction equipment and is based on waste removal once every 3 days (res) and every 2 days (retail). Standard bin sizes are given in Section 5.1. Compaction (2:1) of residential general waste is assumed. Additional space may be needed for outlet of waste chute, additional equipment, movement of bins (dependent on room layout) and spare bins if necessary.

Basement plans including the location of waste storage rooms of Block 1 are included within Appendix A.

4.4.2 Tower levels

A temporary waste storage area capable of housing one days waste (general waste and recyclables) will be provided on each floor of the building (equivalent to 1 x 240 L general waste bin, 1 x 240 L comingled recyclables bin and a paper and cardboard crate for each residential floor). Day to day operation of tower levels would not include storage of general waste as the waste chute would be in operation.

4.5 Waste Management

The General, Space, Access and Amenity requirements detailed in Section A (All Developments) and Section D (Mixed Use Developments) in the CoS Waste Policy have been followed in determining waste management and storage requirements for the common basement. Green Star requirements on waste management and waste storage have also been addressed (see Section 4.2.1).

The major responsibilities associated with waste management are outlined below in Table 7. These responsibilities will be implemented separately for each section of the building where they fall under separate management.

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 7: 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
	Removal of waste and recyclables from the temporary waste storage area on the retail waste storage compartments to central waste storage room.	Building management
	Ensuring retail and accommodation waste areas are securely segregated.	Building management
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; and Safety signage for compaction equipment.	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 collection point	Waste collection contractor
	Transfer of bins from the collection point to the waste collection truck.	Waste collection contractor

	Return of bins to waste storage room immediately after emptying into waste collection truck.	Waste collection contractor
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Waste storage has been planned so that residential waste and retail wastes are stored separately. Also wherever possible recyclables and general waste are planned to be stored in separate rooms to ensure waste streams are not inadvertently mixed.

The location of waste storage rooms and waste chutes are highlighted on the basement plan in Appendix A.

The following waste management measures will be adopted for the common basement:

- Residential floors each have one general waste chute (see Appendix A). Occupants will place their general waste down these chutes enabling waste to be collected in waste storage rooms within the basement;
- Occupants will place their recyclables within recycling bins provided within storage areas on each floor. Adequate storage areas for short term storage of recyclables on each floor will be provided. These recyclables will be collected by building management and transported via goods lift to the basement recyclables waste rooms each day;
- Waste will be stored in combinations of 240L and 660L bins;
- Residential waste collection is assumed to be by council collection and will be removed every 3 days.
- Retail waste collection is assumed once to be by private contractor and will be removed once every 2 days
- The responsibility for cleaning the waste storage area and waste chutes will be on the building manager;
- Removal of recyclables from floors of Block 1 to the waste storage rooms is the responsibility of building management;
- Labelling of the bins will be the responsibility of the building manager. This includes adequate signage identifying the waste and recycling area, and instructions outlining how to use the waste management system and what materials are acceptable for recycling;
- Day to day operation of compaction equipment is the responsibility of building management;
- Transfer of bins from the storage area to the collection truck will be carried out by building management. After emptying the bins building management will return them to the waste storage room within the premises;
- Labelling of the bins will be the responsibility of the building manager. This includes adequate signage identifying the waste and recycling area, and instructions outlining how to use the waste management system and what materials are acceptable for recycling;

- If truck access is limited, loading dock areas have provision for some bins to be moved here by building management (for a short period) prior to collection by waste contractors.

4.5.1 Waste collection arrangements

Retail waste - (B1 central waste storage room)

A private waste contractor will collect all waste from retail waste rooms via basement access. Once emptied, bins will be returned to their designated place in the central waste storage room by building management.

Residential waste - (B1 central waste rooms)

Council collection or a private waste contractor will collect all waste from residential waste rooms via basement access. Bins will be emptied into a suitable waste truck.

The waste chute will be closed while bin removal takes place.

4.5.2 Waste collection frequency

Waste collection frequencies are summarised below in Table 8.

Waste collection services for each waste stream will be provided by appropriate licenced contractors or council in the case of residential. 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 8: Waste collection summary: retail waste

Waste Stream	Collection Frequency Retail - Ground floor central waste storage	Collection Frequency Residential - Basement central waste storage
Landfill waste	Collection every 2 days	Collection every 3 days
Organic waste	TBC	TBC
Cardboard/ paper recycling	Collection every four days (2x per week)	Collection every four days (2x per week)
Co-mingle recycling	Collection every 2 days	Collection every 3 days
Electronic waste	Collection monthly	Collection monthly
Hard rubbish	Collection scheduled as necessary	Collection scheduled as necessary
Waste cooking oil	Collection scheduled as necessary ¹	Collection scheduled as necessary

¹ Collection frequency to be determined by building management and a licenced collector, based upon specific needs of tenanted cafés and restaurants

4.6 Waste Storage 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 9.

The central waste storage rooms located on the Level B1 (refer Appendix A) of the proposed development will have unimpeded access to the waste truck collection areas, with a path free of ramps or slopes. The distance between the central waste storage rooms and their respective collection points will not exceed 10 m.

Waste refrigeration will not be required.

Table 9: 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.
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

Design aspect	Design provision
	appropriate safety signage. The different recycling and waste bins will be clearly identified and signed appropriately.
Visual	The waste management and central storage areas will not be visible from the exterior of the building. 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 and enhance environmental outcomes. Any putrescible waste awaiting collection will be stored in a Council approved container with permanently tight fitting lids and smooth, washable internal surfaces.
Noise	Significant noise-generating waste management equipment will not be utilised in this development. The carousel compactor equipment utilised will generate minimal noise, and is located in a segregated basement area. Production of 'offensive noise,' as defined under the Protection of the Environment Operations Act 1997, will be avoided.
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.

Sizing of recyclables storage for residential is required to meet the requirements of Mat 1 'Recycling Waste Storage' in the Green Star Multi unit Residential (v1). The Block 1 basement includes provision for green waste bins in the recycling room. Composting facilities are not proposed onsite.

A bulky waste (oversized household item room) is also to be provided in the basement.

The sizing of waste storage rooms for Block 1 are found to be adequate. The location of the waste storage rooms are shown within the building plans in Appendix A.

4.6.1 Compactor

A multi-bin carousel compactor is designed to be used for residential waste arriving via a waste chute. The carousel can contain up to 8x240L bins, or lesser combinations of larger bins can be used (up to 1500L).

A carousel compactor with 4 x 660L waste bins is proposed to service the general waste chute (requiring 11.2m² in approximate floor area).

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.

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

4.6.2 Waste chute

General waste from all residential floors in the building will be transported to Bin room 5 (refer Appendix A) in the basement via a waste chute.

The waste chute access on each floor will be loaded by residents via a hand-loading door. Each waste chute access will be provisioned with signage on each floor in order to ensure appropriate use.

Waste chute design specifications are provided below in Table 10. These are drawn from the CoS Waste Policy and additional technical specifications.

Table 10: Waste chute design

Design aspect	Design provision
Chute	<p>Chutes, service openings and charging devices will be constructed of metal or other smooth faced, durable, fire resistant, impervious, non-corrosive material.</p> <p>Chutes will be cylindrical with adequate internal diameter (at least 600mm).</p> <p>Chutes will be vertical without bends, off-sets or reduction in diameter*</p> <p>Chute branches to charging devices will be capable of delivering the waste to the chute without using force.</p> <p>Chutes will terminate in the waste room and discharge the waste directly into a receptacle or waste compactor.</p> <p>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.</p> <p>If the terminating end of the waste chute is to discharge into a compactor or skip at an angle, this angle shall not exceed 22.5° for a recycling chute or 45° for a general waste chute.</p>
Charging devices	<p>Charging devices will:</p> <ul style="list-style-type: none"> • 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	<p>Service storage rooms will:</p> <ul style="list-style-type: none"> • 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	<p>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 (1m²) situated centrally below the charging device.</p> <p>The chute, charging device and service opening will be capable of being easily cleaned.</p> <p>Chutes will be ventilated to ensure that air does not flow from the chute through any service opening.</p>

*We note that a slight offset in waste chutes (if necessary) is not seen a design issue for waste chute operation.

5 Next steps

This Waste Management Plan forms a framework to implement best practice for waste management across all design and planning stages. The waste management approach aligns with the proposed principle led Green Star ESD pathway for the project, in order to enhance outcomes for waste minimisation, reuse and recycling.

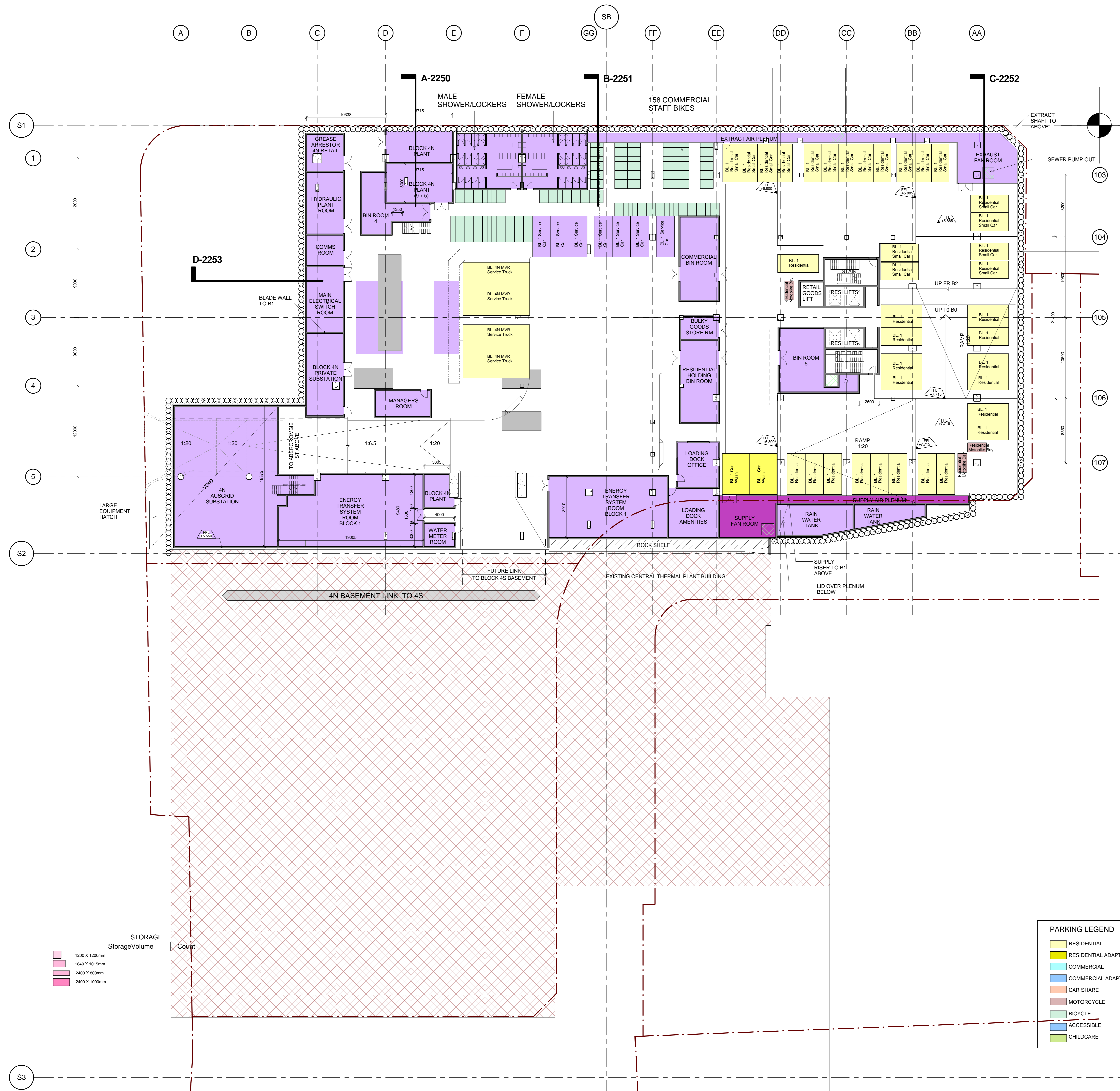
Further detail regarding the exact arrangement and placement of waste chutes and skip bins will be resolved during the next stage of detailed design.

If planning approval is granted for the proposed development, this Waste Management Plan 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. Ensure that detailed design and fit-out of the building is consistent with best practice standards and plans for waste management; and
3. Inform all plans and procedures for operational waste management.

Appendix A

Basement waste storage and
typical floor plan



STORAGE	
Storage Volume	Count
1200 x 1200mm	
1840 x 1015mm	
2400 x 800mm	
2400 x 1500mm	

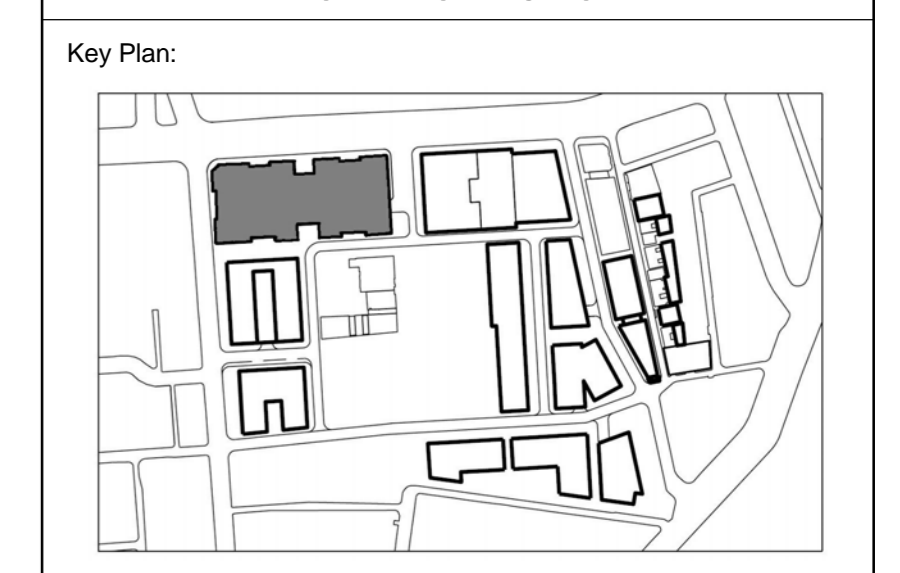
PARKING LEGEND	OTHER AREAS
RESIDENTIAL	SERVICES
RESIDENTIAL ADAPTABLE	
COMMERCIAL	
COMMERCIAL ADAPTABLE	
CAR SHARE	
MOTORCYCLE	
BICYCLE	
ACCESSIBLE	
CHILDCARE	

1 BASEMENT LEVEL B1 PLAN
1 : 200

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	
[Symbol]	Concept Plan development boundary
[Symbol]	PA Boundary

Rev.	Date:	Reason For Issue:	CHK:
For Information			



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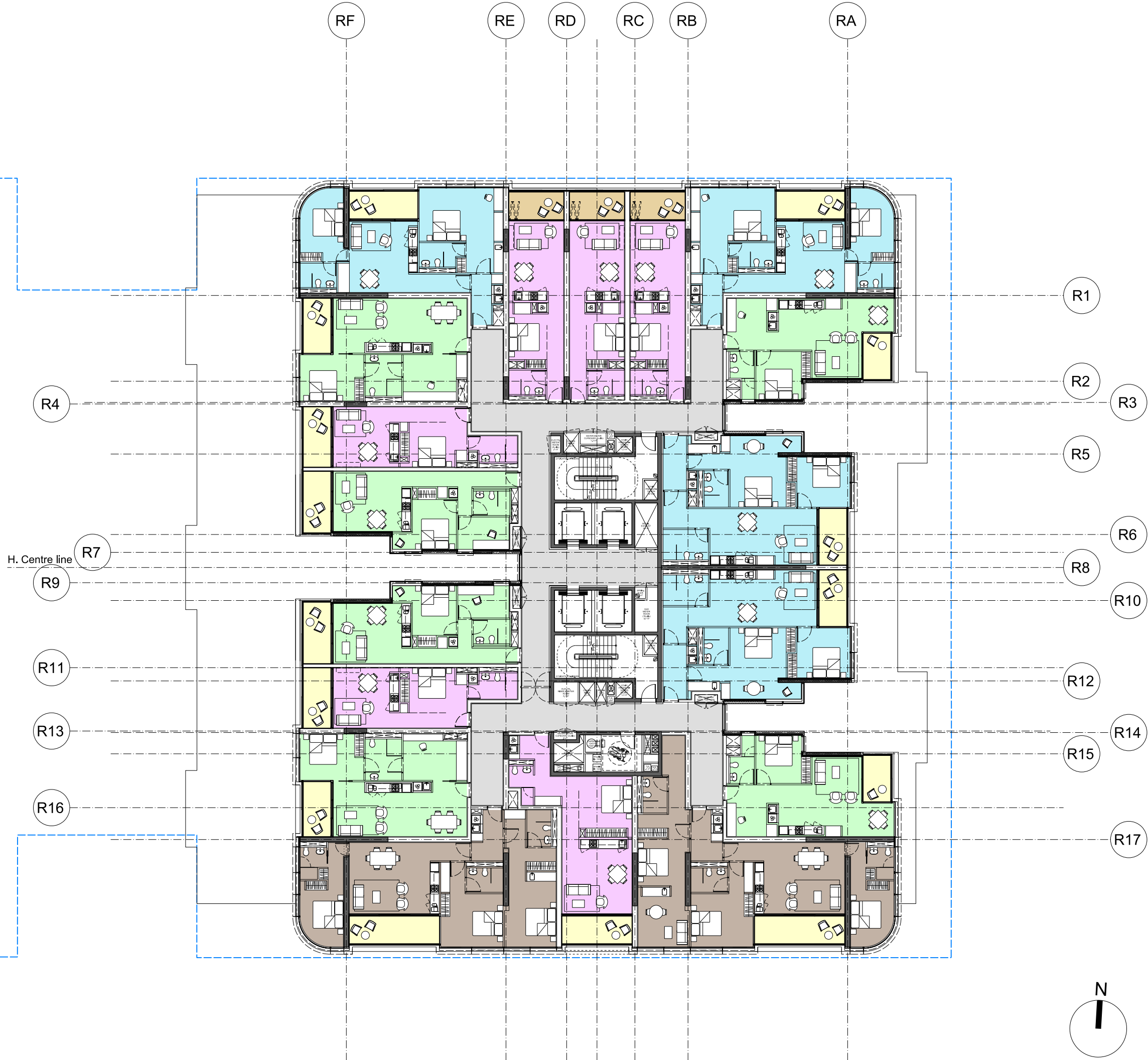
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Title
BLOCK 1+4N
BASEMENT 01

Project No. 212028	Scale @ A0 As indicated	Date: 11/12/13	Drawn By: PTW
Number PA-A1-1758	Revision: 0		



Appendix B

Details of waste management
form – demolition and
construction phase

Details of waste management – demolition phase

MATERIALS ON-SITE			DESTINATION		
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	DISPOSAL - 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					

Details of waste management – construction phase

MATERIALS ON-SITE			DESTINATION		
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	DISPOSAL - 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					