PADDINGTON GREEN
POLICE STATION

Operational Waste Management Plan

Operational Waste Management Plan–
November 2022 - GLA0711

NOVEMBER 2022

Berkeley
Designed for life

ARUP

Berkeley Homes (Urban Renaissance) Limited

Paddington Green Police Station

Operational Waste Management Plan

Reference: PGPS OWMP

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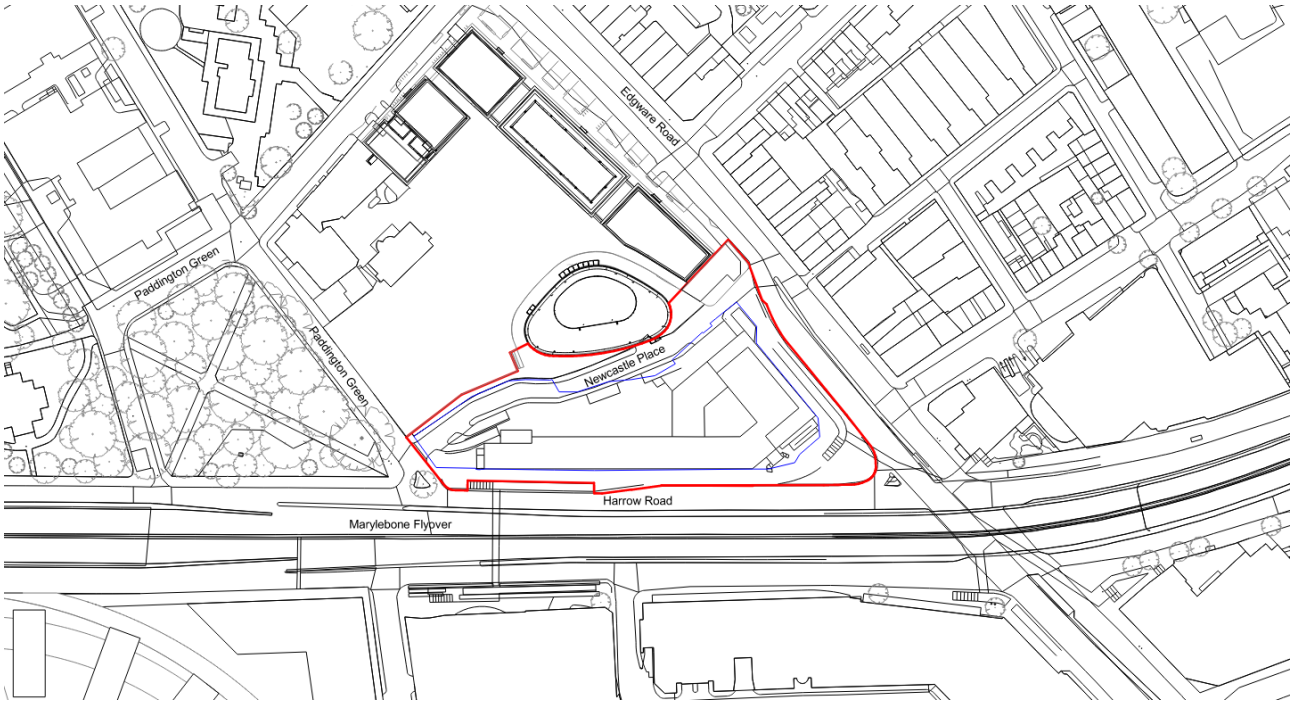
1. Introduction

1.1 Background

This Operational Waste Management Plan (OWMP) has been prepared by Ove Arup & Partners Ltd. ('Arup') on behalf of the applicant, Berkley Homes (Urban Renaissance) Limited, in relation to the proposed redevelopment of the site at Paddington Green Police Station (PGPS) in the City of Westminster. The local planning authority for the site is Westminster City Council (WCC).

The location of the site in relation to its wider surroundings is shown in Figure 1.

Figure 1: Site location



1.2 Reference publications

The following planning policy and best practice guidance documents have been considered when developing this WMP:

National policy documents:

- Revised National Planning Policy Framework, 2021;
- The Waste (England and Wales) Regulations, 2011;
- DEFRA Government Review of Waste Policy in England, 2011; and
- BS5906 Waste Management in Buildings – Code of Practice, 2005.

Regional policy documents:

- The London Plan, 2021;
- The Mayor's Transport Strategy, 2018;
- Fleet Operator Recognition Scheme (FORS); and

- TfL's Delivery and Servicing Plan Guidance, 2020.

Key local policy:

- Westminster's City Plan 2019-2040;
- Westminster Recycling and Waste Storage Requirements, 2021; and
- Westminster City Council's Draft Local Implementation Plan Three (LIP3) Delivery Plan, 2019/20 to 2021/22.

1.3 Scope

This OWMP will include the following key elements:

- The segregation of waste streams and how to dispose of them;
- Expected waste generation and storage requirements;
- Collection points and frequency; and
- The various responsibilities of FM team and future occupants.

1.4 Area schedule

The proposed area schedule is set out in Table 1 and the residential unit mix in Table 2.

Table 1: Area schedule

Area schedule		
Land use	**GIA (m^2)**	**NIA (m^2)**
Flexible Commercial (Class E)	1,079	1,000
Community Unit (Class F2)	133	122
Residential (C3)	59,068	43,024
Total	**60,280**	**44,146**

Table 2: Residential unit mix

Residential unit mix						
	MH	**1 Bed**	**2 Bed**	**3 Bed**	**4 Bed**	**Total**
Private	22	77	139	93	6	**337**
Social rent	0	11	50	46	2	**109**
Intermediate	13	59	38	0	0	**110**
Total	**35**	**147**	**227**	**139**	**8**	**556**

2. Waste Generation and Storage

2.1 Waste Storage Requirements

The requirements for waste storage and management are as follows:

- Where waste is not stored at surface level a goods lift must be provided to bring containers and bales to surface level for collection;
- A temporary storage area must be provided adjacent to the collection point;
- All waste containers will be accessible to the waste collector with unimpeded access to each individual container;
- The waste collector will not be required to pull full containers more than 10m to the collection vehicle;
- Containers will be stored or presented within 10 metres of vehicle access with unhindered access to each individual bin;
- A minimum clear space of 150 mm will be allowed between containers;
- The waste room walls will be constructed of, or lined with, hard impervious material with a smooth finish suitable for washing down. The floor will not be less than 100 mm thick, and formed of hard impervious material with a smooth finish, and there will not be steps and projections at the entrance;
- Drainage and hose-down facilities will be provided to allow cleansing of waste storage rooms;
- Waste collection vehicles will not be required to reverse more than 12 metres;
- Access roads for waste vehicles will have a minimum clear width of 3.5 metres, the gradient will not exceed 1:12; and
- The ground between the storage location for bulk bins and the loading position will be level, smooth, hard surfaced and provide a drop kerb should a container be required to be brought to ground level. The ground may have a maximum gradient of 1:14 if the ground slopes down towards the collection vehicle.

These relate to the requirements set out in 'BS5906:2005 Waste management in buildings' and WCC document 'Recycling and Waste Storage Requirements'.

2.2 Residential waste generation and storage

2.2.1 Assumptions

Waste generation and storage requirements have been calculated in accordance with WCC guidance, supplemented by the British Standard for Waste Management in Buildings - Code of practice (BS5906:2005). This assessment has been based on the following key assumptions:

- Residential waste, 30% residual waste and 60% recyclable (and 10% food waste). 30L of residual waste storage and 60L of MDR waste storage (combining three streams: 20L paper & card, 20L glass and 20L other recyclable waste such as plastic and metal, as agreed with WCC Waste Planning and Resource Management Project Officer) plus 10 litre food waste storage will be provided per bedroom.
- Storage of recyclable waste is equal to 60% of residential waste output;
- Storage of residual waste is equal to 30% of residential waste output;
- Residual waste will be stored in 1100 litre bins;
- MDR will be stored in 1100 litre bins;
- Food Waste will be stored in 140 litre bins; and

- Weekly collections will be undertaken by WCC.

2.2.2 Micro-recycling facility

In accordance with the WCC document 'Recycling and Waste Storage Requirements', the site is defined as a large-scale residential development and thus will include a micro-recycling facility. This is to maximise recycling capability and improve the quality of the recyclable materials for further reprocessing. The facility will include bins for: small electrical appliances, books for reuse/ recycling, mixed textiles, mixed paper and card, plastic bottles cartons and food tins and drink cans, and mixed recycling – mixed paper and card, food tins and drink cans, plastic bottles, glass bottles and jars.

The facility will include storage space for a minimum of four 1280L eurobins to provide a small multi-material recycling centre and will be located within the B2 level of the site. Additional measures will be taken to prevent contamination in the mixed recycling bins, such as locking the lids on mixed recycling bins to prevent people putting rubbish bags in them and contaminating the mixed recycling.

2.3 Residential waste generation

Based on the area schedule the total sitewide estimated residential waste generation is 108.5m^3 per week as shown in Table 3.

Table 3: Overall sitewide residential weekly waste generation

Overall sitewide– Residential waste generation (m^3) per week					
Waste Stream		**Affordable**		**Private**	**Total**
		Social Rent	**Intermediate**		
Residual		7.7	4.4	20.4	**32.6**
MDR	Paper & card	5.1	3.0	13.6	**21.7**
	Glass	5.1	3.0	13.6	**21.7**
	Plastic & metal	5.1	3.0	13.6	**21.7**
Food		2.6	1.5	6.8	**10.9**
Total		**25.6**	**14.9**	**68.0**	**108.56**

The estimated waste generation for each block is detailed below in Table 4, Table 5 and Table 6.

2.3.1 Block I waste generation

Table 4: Block I residential weekly waste generation

Block I – Residential waste generation (m^3)					
Waste Stream		**Affordable**		**Private**	**Total**
		Social	**Intermediate**		
Residual		-	-	8.3	**8.3**
MDR	Paper & card	-	-	5.5	**5.5**
	Glass	-	-	5.5	**5.5**
	Plastic & metal	-	-	5.5	**5.5**
Food		-	-	2.8	**2.8**
Total		**-**	**-**	**27.6**	**27.6**

2.3.2 Block J waste generation

Table 5: Block J residential weekly waste generation

Block J – Residential waste generation (m^3)					
Waste Stream		**Affordable**		**Private**	**Total**
		Social	**Intermediate**		
Residual		7.2	-	-	**7.2**
MDR	Paper & card	4.8	-	-	**4.8**
	Glass	4.8	-	-	**4.8**
	Plastic & metal	4.8	-	-	**4.8**
Food		2.4	-	-	**2.4**
Total		**24.0**	**-**	**-**	**24.0**

2.3.3 Block K waste generation

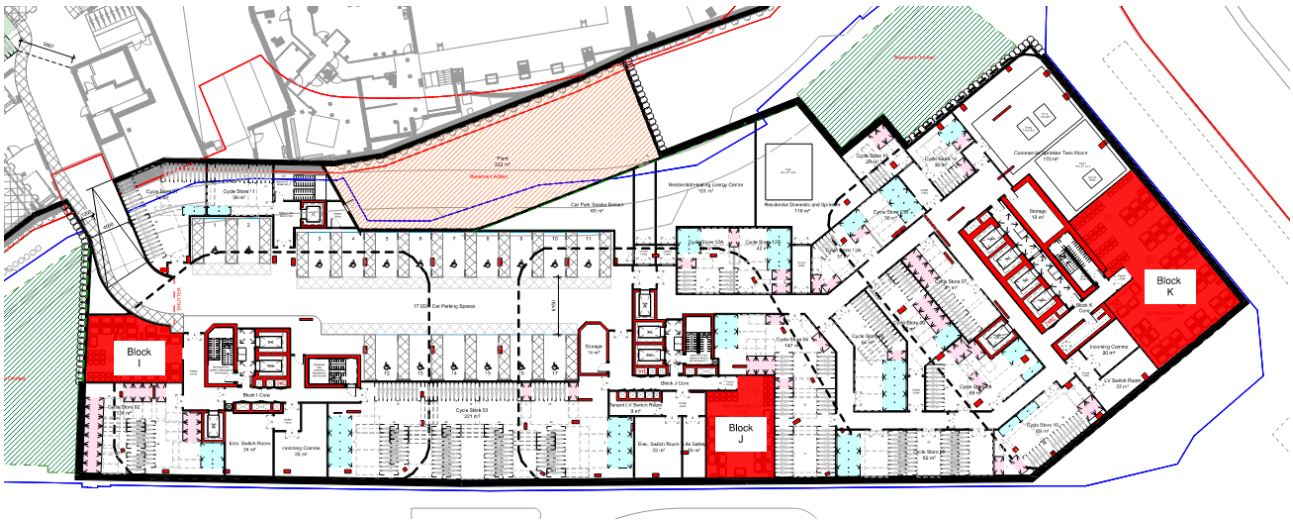
Table 6: Block K residential weekly waste generation

Block K – Residential waste generation (m^3)					
Waste Stream		**Affordable**		**Private**	**Total**
		Social	**Intermediate**		
Residual		0.5	4.4	12.0	**17.0**
MDR	Paper & card	0.3	3.0	8.1	**11.4**
	Glass	0.3	3.0	8.1	**11.4**
	Plastic & metal	0.3	3.0	8.1	**11,.4**
Food		0.2	1.5	1.5	**3.1**
Total		**1.6**	**14.9**	**37.8**	**54.3**

2.4 Residential waste storage

There are 3 residential waste stores, one for each block, located at the B1 adjacent to the towers' cores, as shown in Figure 2. There is also a refuse holding area for waste presentation located on level B2.

Figure 2: B1 bin store locations



The Table 7, Table 8 and Table 9 below sets out the storage facilities required to accommodate the residential waste from each block.

2.4.1 Block I waste storage

The block I residential waste storage equipment and waste store layout are shown below in Table 7 and Figure 3.

Table 7: Block I residential waste storage equipment

Block I – waste storage equipment					
Waste Type	**Waste (L)**	**Waste Container**			
		Description	**Volume (m^3)**	**Number Required**	**Area Required**
Residual	8.28	1,100 litre bin	1.1	8	28.40
MDR	16.56	1,100 litre bin	1.1	16	56.80
Food Waste	2.76	140 litre bin	0.14	20	20.00
Total	**27.60**	**-**	**-**	**44**	**105.20**

To store the required containers and baler, a residential waste store sized at 105.20m^2 would be required to hold the following:

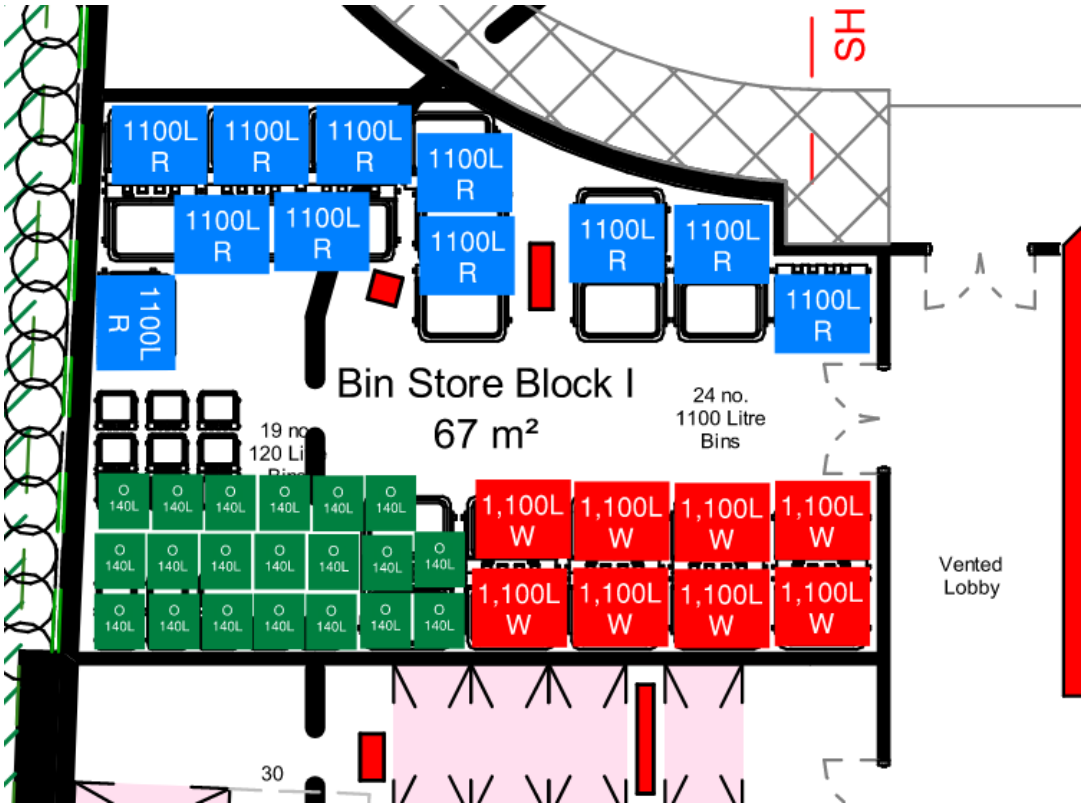
- 8 No. 1,100 litre eurobin for residual waste (W);
- 16 No. 1,100 litre eurobin for MDR (R) - circulating 5 bins between B1 and B2 level;
- 20 No. 140 litre wheelie bin for organic (food) waste (O).

A waste storage area is currently provided within the basement B1 level which accommodates the storage equipment sufficiently. Once full, 5 1,100 litre MDR bins at B1 will be circulated with 5 empty bins at B2 level hold all MDR waste.

The waste store will require 2.4m clear headroom and the Facilities Management (FM) team will be responsible for the wash-down and cleaning of the waste store, providing spill kits where necessary.

The layout of the block I residential waste store, which is located on level B1, is shown in Figure 3.

Figure 3: Block I residential waste store layout



2.4.2 Block J waste storage

The block J residential waste storage equipment and waste store layout are shown below in Table 8 and Figure 4.

Table 8: Block J residential waste storage equipment

Block J – Waste storage equipment					
Waste Type	**Waste (L)**	**Waste Container**			
		Description	**Volume (m^3)**	**Number Required**	**Area Required**
Residual	7.20	1,100 litre bin	1.1	7	24.85
MDR	14.40	1,100 litre bin	1.1	14	49.70
Food Waste	2.40	140 litre bin	0.14	18	18.00
Total	**24.00**	**-**	**-**	**39**	**92.55**

To store the required containers and baler, a residential waste store sized at 92.55m^2 would be required to hold the following:

- 7 No. 1,100 litre eurobin for residual waste (W);
- 14 No. 1,100 litre eurobin for MDR (R);
- 18 No. 140 litre wheelie bin for organic (food) waste (O).

A waste storage area is currently provided within the basement B1 level which accommodates the storage equipment sufficiently.

The waste store will require 2.4m clear headroom and the Facilities Management (FM) team will be responsible for the wash-down and cleaning of the waste store, providing spill kits where necessary.

The layout of the block J residential waste store, which is located on level B1, is shown in Figure 4.

Figure 4: Block J residential waste store layout

2.4.3 Block K waste storage

The block K residential waste storage equipment and waste store layout are shown below in Table 9 and Figure 5.

Table 9: Block K residential waste storage equipment

Block K – Waste storage equipment					
Waste Type	**Waste (L)**	**Waste Container**			
		Description	**Volume (m^3)**	**Number Required**	**Area Required**
Residual	17.07	1,100 litre bin	1.1	16	56.80
MDR	34.14	1,100 litre bin	1.1	32	113.60
Food Waste	5.69	140 litre bin	0.14	41	41.00
Total	**56.90**	-	-	**89**	**211.40**

To store the required containers, bale, a residential waste store sized at 211.40m^2 would be required to hold the following:

- 16 No. 1,100 litre eurobin for residual waste (W);
- 32 No. 1,100 litre eurobin for MDR (R)- circulating 4 bins between B1 and B2 level;
- 41 No. 140 litre wheelie bin for organic (food) waste (O).

A waste storage area is currently provided within the basement B1 level which accommodates the storage equipment sufficiently. Once full, 4 1,100 litre MDR bins at B1 will be circulated with 4 empty bins at B2 level hold all MDR waste.

The waste store will require 2.4m clear headroom and the Facilities Management (FM) team will be responsible for the wash-down and cleaning of the waste store, providing spill kits where necessary.

The layout of the block K residential waste store, which is located on level B1, is shown in Figure 5.

Figure 5: Block K residential waste store layout

2.5 Residential waste process

Within blocks I and J waste will be taken by the private residents to their respective block's residential waste store using the lifts and internal service corridors.

Block K will use a chute (designed as per BS 1703:2005) to transport all of the waste vertically; Residual waste, MDR and food waste will all be disposed using the chute. The chute includes tri-separation controls which will be clearly marked to segregate each waste stream. The chute will feature integrated CCTV to police its use ensuring residents are using it correctly.

When the bins are full they will be transferred by the FM team from the respective block's bin stores to the B2 refuse holding area for temporary storage. Prior to collection time the bins will be transferred to the refuse truck collection zone. The FM team will use a pedestrian tow tractor to assist transferring the bins from the refuse holding area to the refuse truck collection zone. Following collection, empty bins will be returned to the respective block waste stores. This routing for this process is shown in Figure 6 to Figure 15.

2.5.1 Block I residential waste route

Figure 6: Block I upper floors waste movement

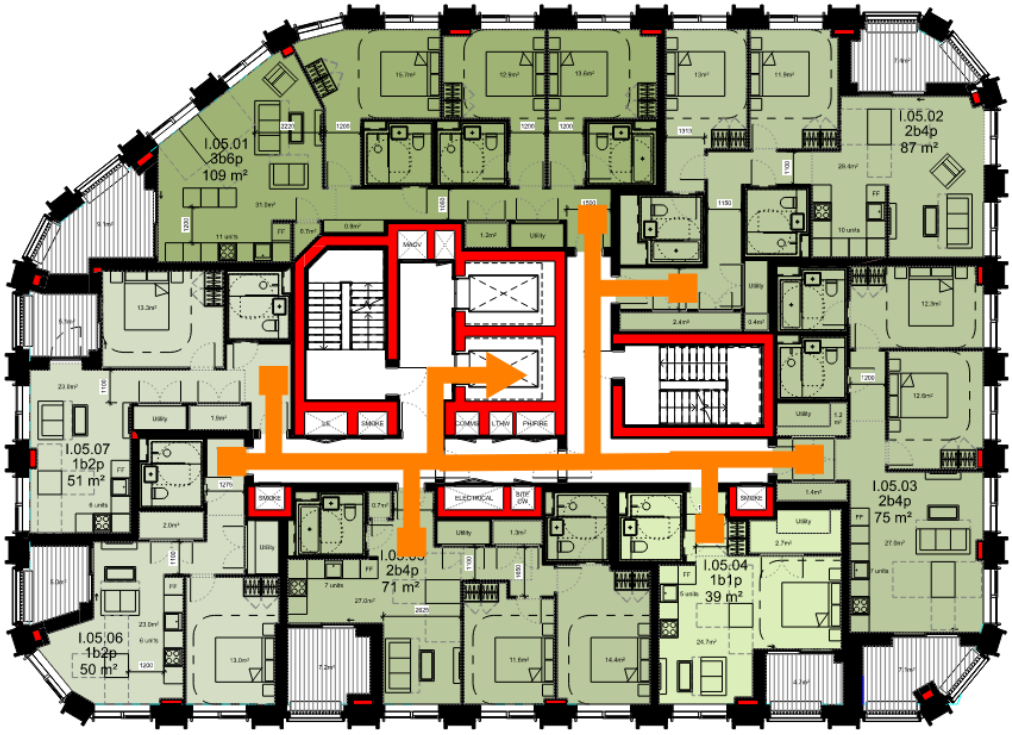


Figure 7: Block I B1 waste movement

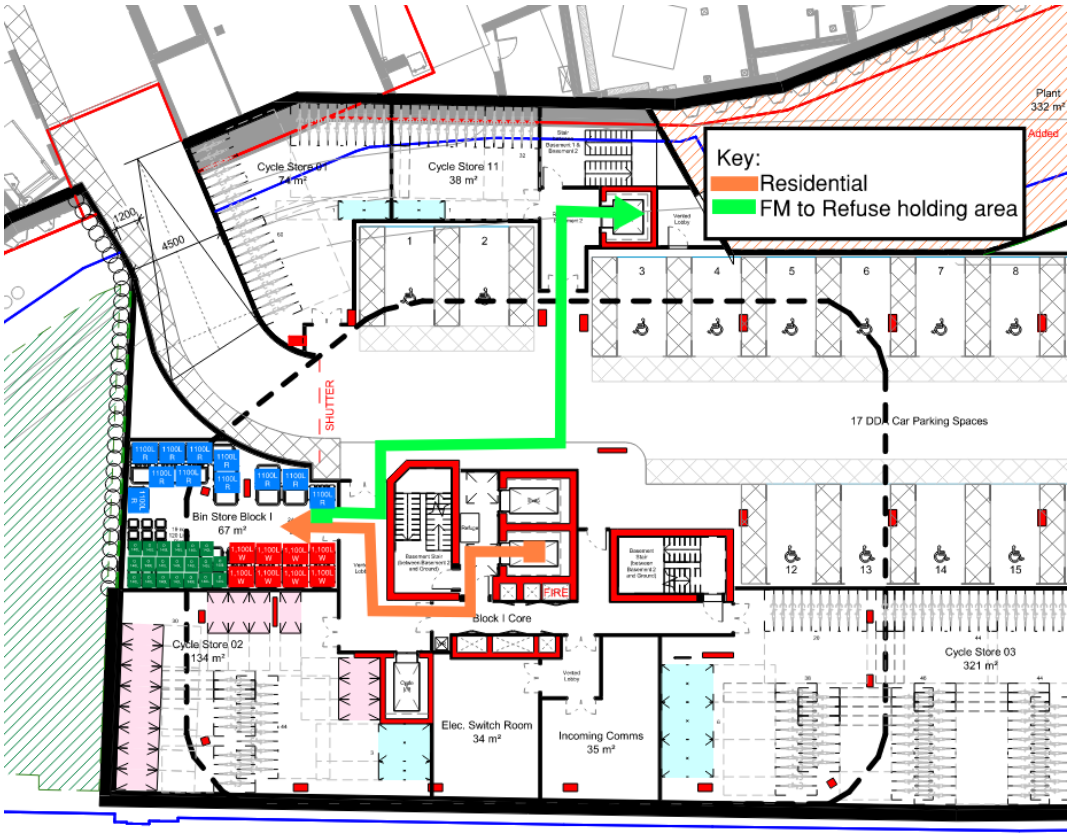
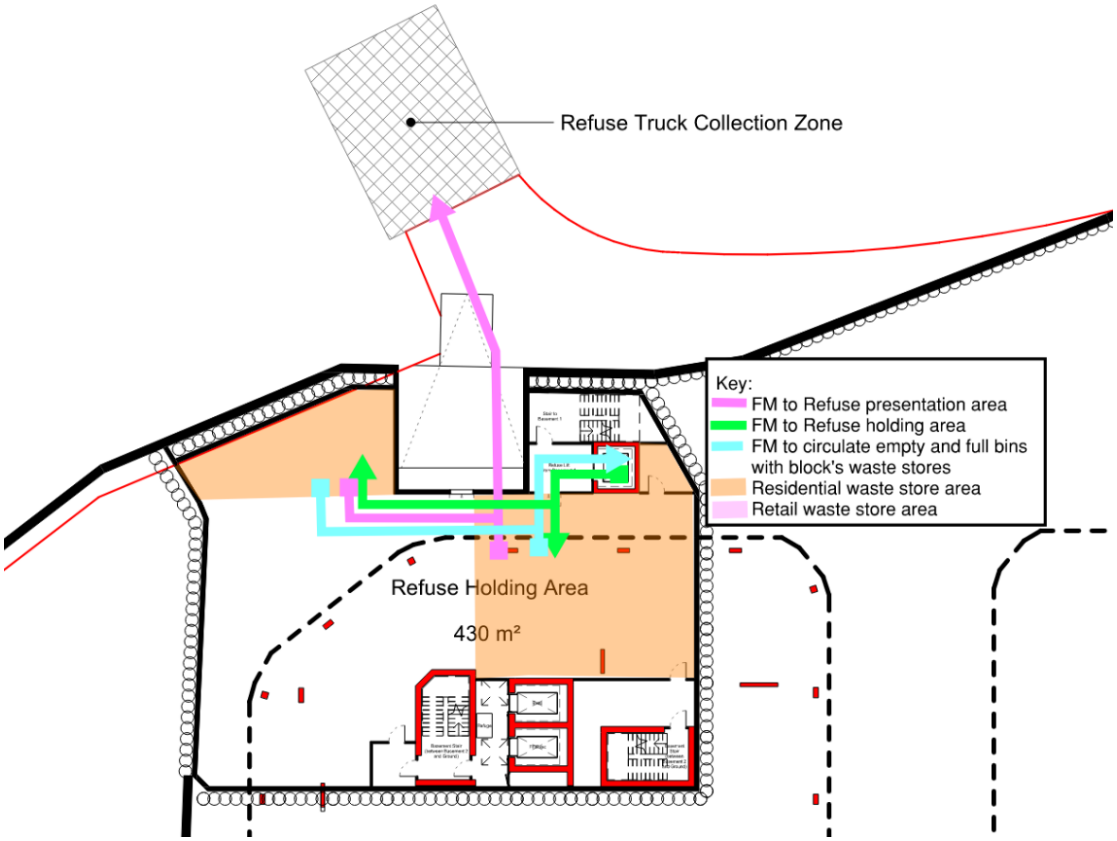


Figure 8: Block I B2 waste movement



2.5.2 Block J residential waste route

Figure 9: Block J upper floors waste movement

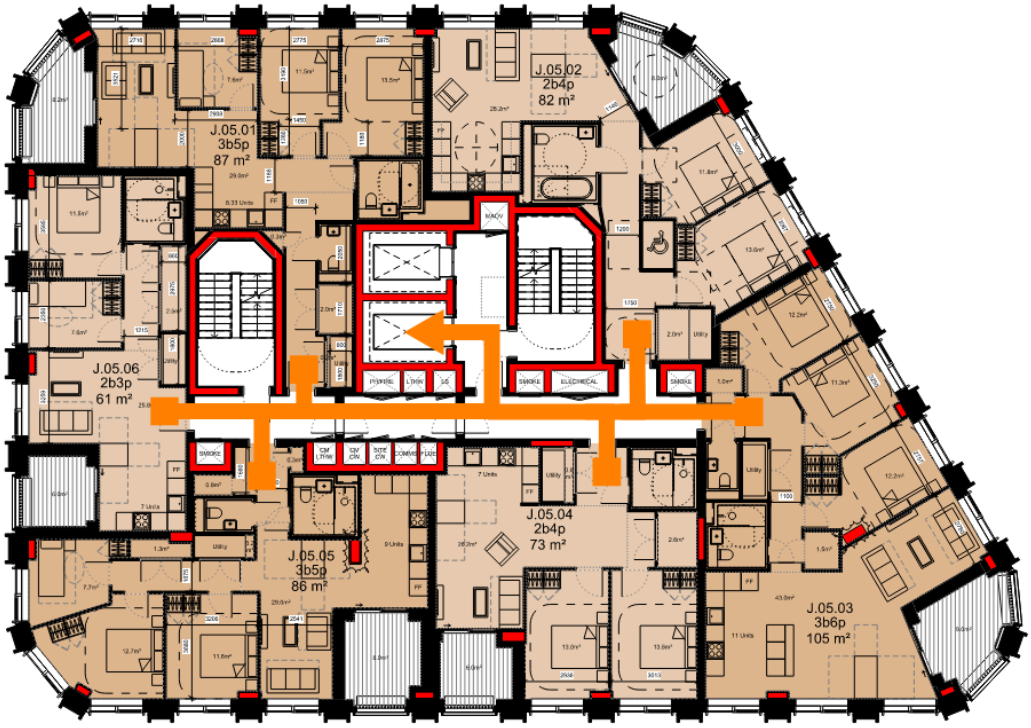


Figure 10: Block J B1 waste movement

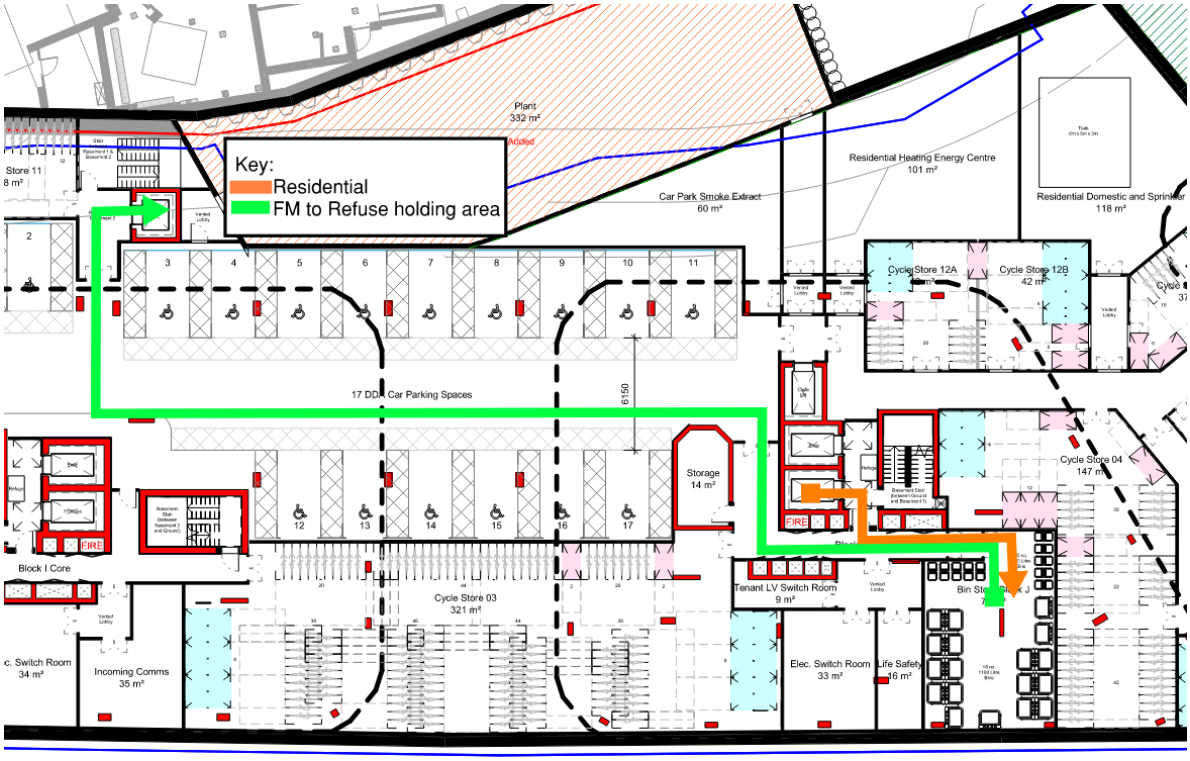
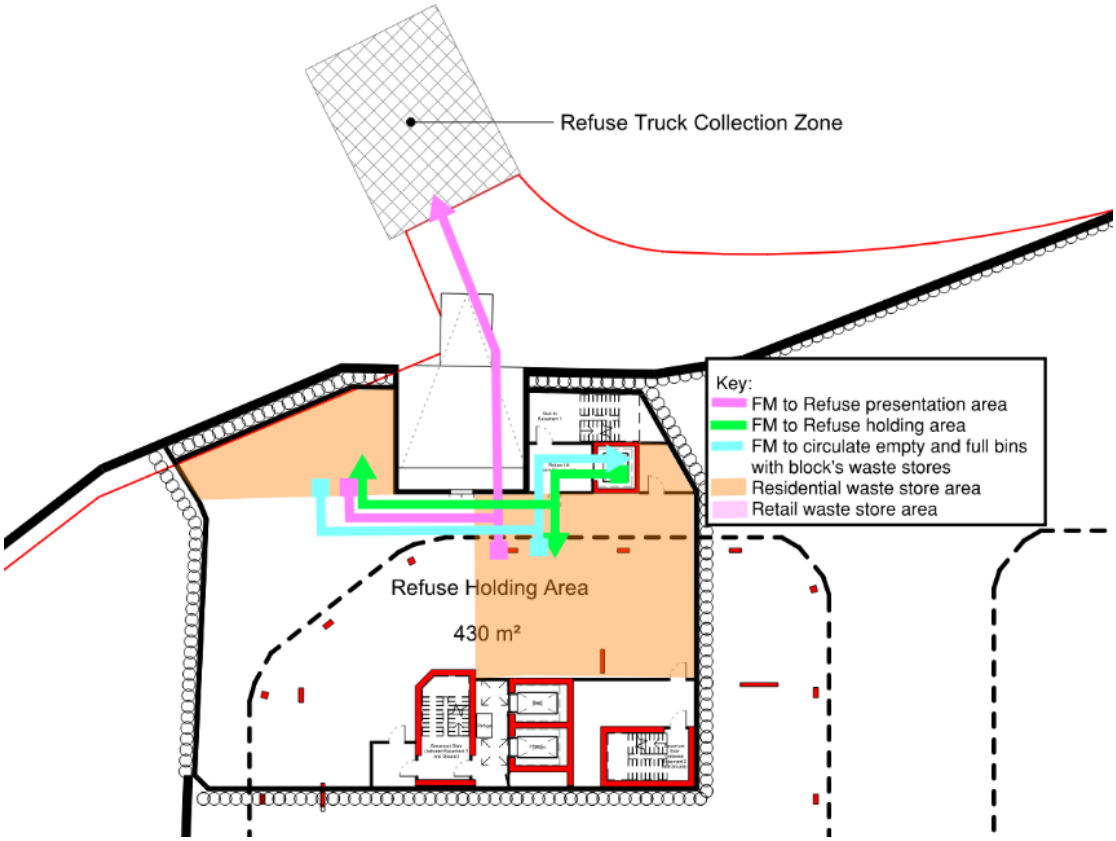


Figure 11: Block J B2 waste movement



2.5.3 Block K residential waste route

Figure 12: Block K upper floor waste movements: residual, paper & cardboard and plastic

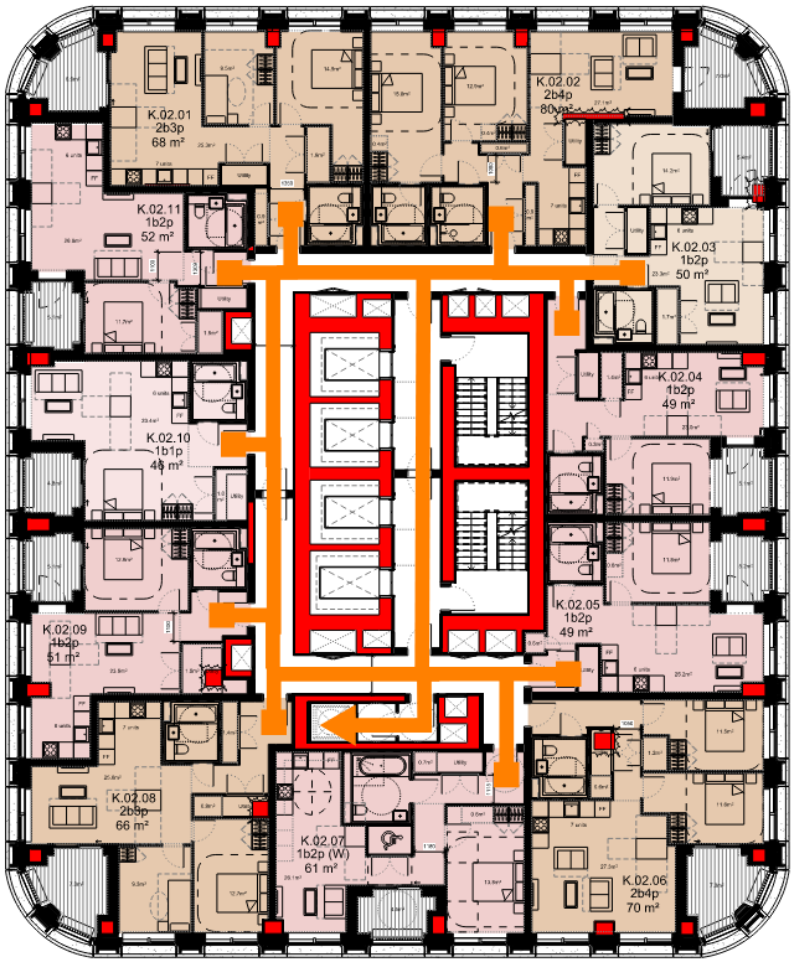


Figure 13: Block K B1 waste movement: residual, paper & cardboard and plastic

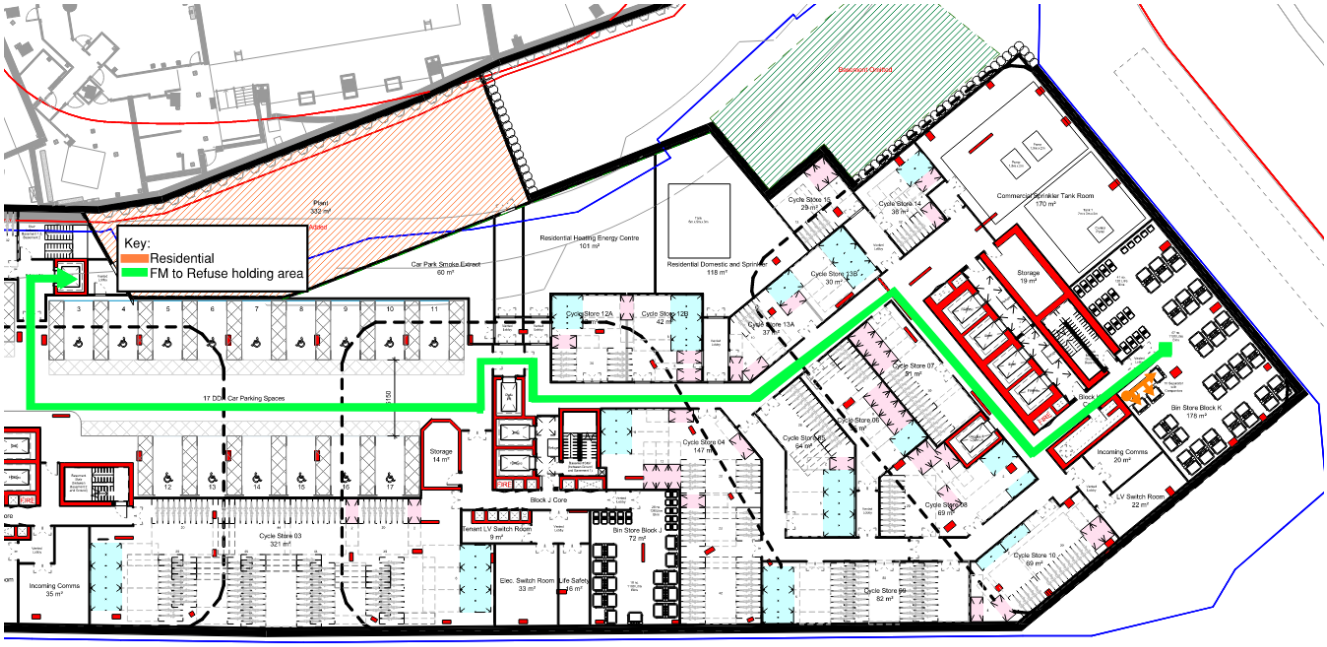


Figure 14: Block K B2 waste movement

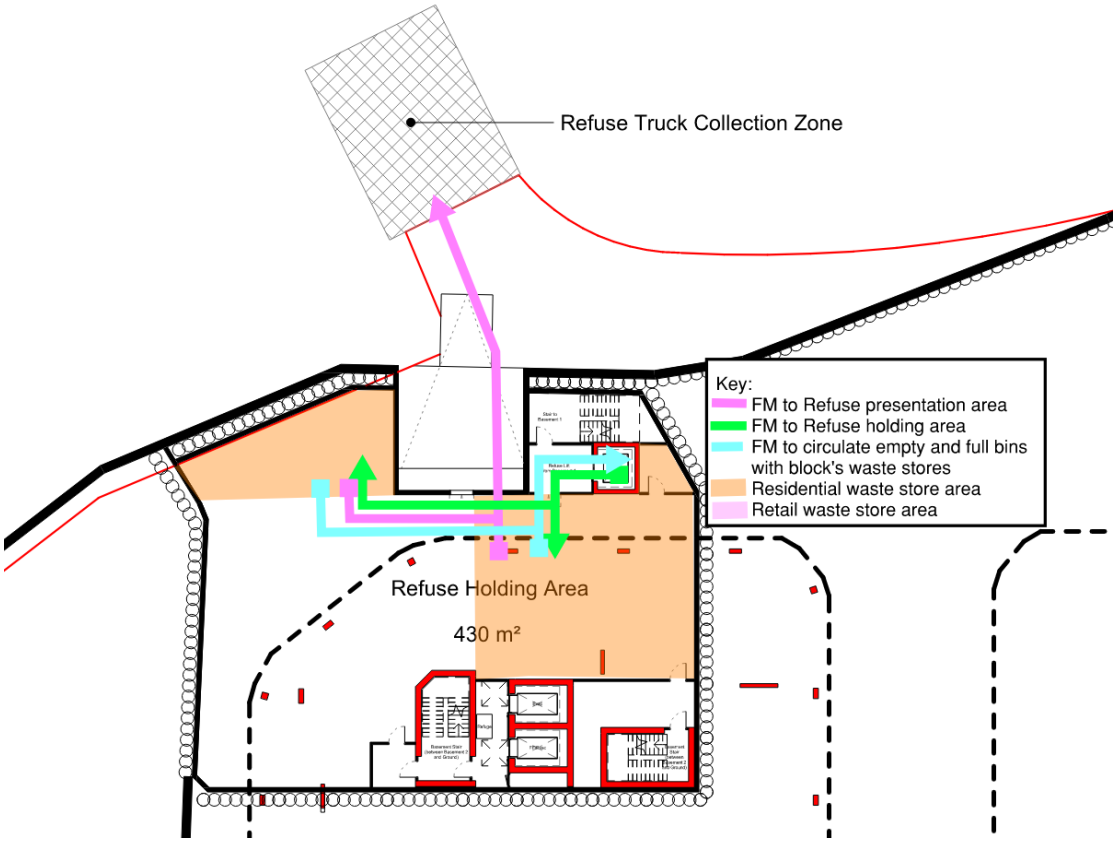
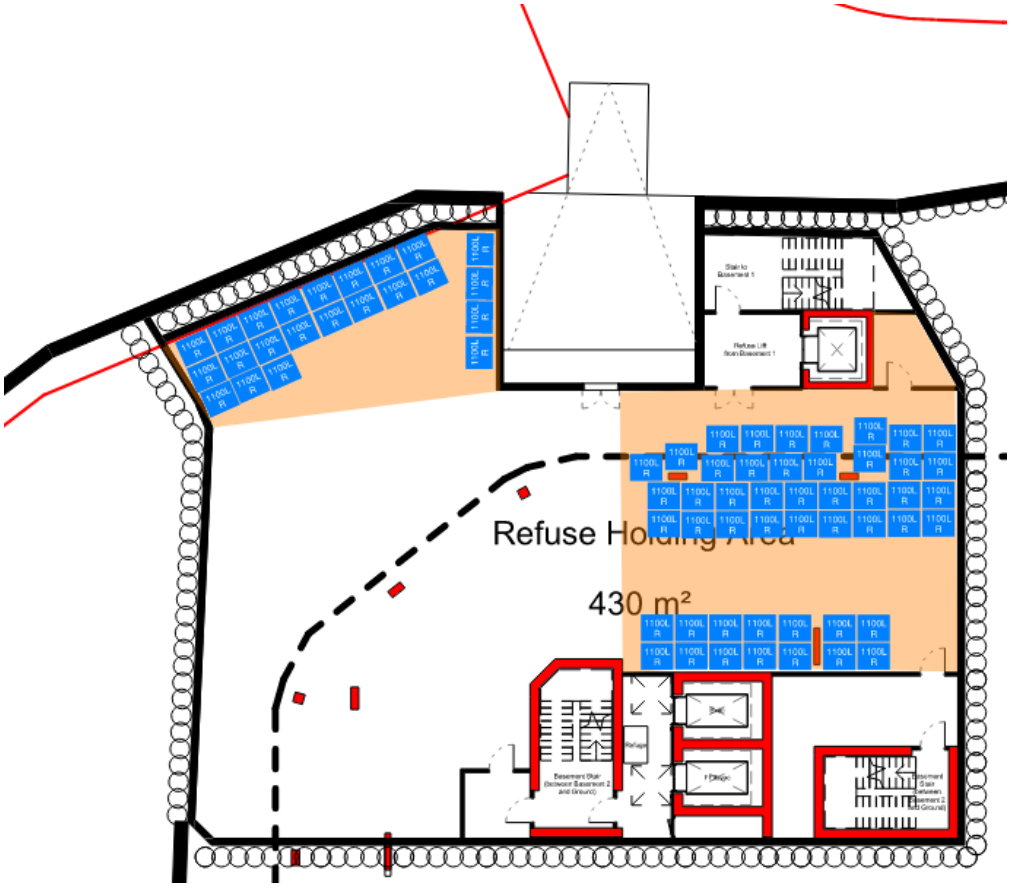


Figure 15: B2 residential waste presentation area (showing recycling presentation only)



2.6 Commercial waste generation and storage

2.6.1 Assumptions

Waste generation and storage requirements have been calculated in accordance with WCC guidance, supplemented by the British Standard for Waste Management in Buildings - Code of practice (BS5906:2005). This assessment has been based on the following key assumptions:

- 4,000 litres of waste per 1,000m^2 gross floor space is generated over 3 days;
- Two days of waste storage has been provided for all waste streams in the waste room;
- A 50/50 split A1/A3 retail;
- As per 'Recycling and Waste Storage Requirements' the assumed waste splits are as follows:
  - Retail: 30% residual and 70% recyclable (50% paper, 5% cardboard, 5% plastic and 10% food waste).
- Residual waste will be stored in 1,100 litre bins;
- Paper, cardboard and plastics will be stored in 660 litre bins;
- Other mixed dry recycling will be stored in 660 litre bins;
- Food Waste will be stored in 140 litre bins;
- Retail waste can be collected daily by either WCC or any nominated private waste contractor; and
- Retail waste will be stored loose with no compaction nor bailing.

2.7 Commercial waste generation

Based on the areas schedule the estimated two-day commercial waste generation is 6.38m^3 as shown in Table 10.

The estimated two-day waste generation is presented in Table 10.

Table 10: Commercial Two-day waste generation

PGPS Commercial - Two day waste generation (m^3)			
Waste Stream	**A1 Retail (m^3)**	**A3 Restaurant & Café (m^3)**	**Total (m^3)**
Residual	0.18	2.94	**3.12**
Paper	0.40	0.00	**0.40**
Cardboard	0.59	0.25	**0.83**
Plastic	0.19	0.15	**0.34**
Aluminium	0.00	0.15	**0.15**
Glass	0.04	0.25	**0.29**
Food Waste	0.07	1.18	**1.25**
Total	**1.47**	**4.91**	**6.38**

2.8 Internal Waste Disposal

2.8.1 General waste

Non-recoverable waste streams will be colour coded and clearly labelled to help waste producers and the FM team responsible for transferring the waste to the waste room to ensure that they place waste in the correct storage units.

Any waste related signage must use the iconography and style developed by WRAP for continuity with any WCC communications.

2.8.2 Dry recyclables

Dry recyclables will be segregated from other waste. Bins and bags will be colour coded and clearly labelled to help waste producers and the FM team responsible for transferring the waste to the waste room to ensure all recyclable waste is placed in the correct waste storage units.

Any waste related signage must use the iconography and style developed by WRAP for continuity with any WCC communications.

2.8.3 Specialist waste stream disposal

2.8.3.1 Waste Electrical and Electronic Equipment (WEEE)

WEEE and other specialist waste are to be stored, alongside bulky waste, in an allocated area and will be collected by the producer was per the Waste Electrical and Electronic Equipment Directive is the European Community Directive 2012/19/EU.

2.8.3.2 Confidential Paper Waste

Confidential waste must be collected in secure bins located around the buildings. To be fully compliant with the Data Protection Act, a written contract with a certified confidential waste company is required. This waste stream will be collected in situ by a specialist contractor and shredded and disposed of off-site.

2.8.3.3 Batteries

Batteries will be collected in pots (separate for lithium and alkaline types) located by the photocopiers, which will be periodically collected by the FM team for storage in the general waste store prior to collection by a waste contractor.

The terminals of lithium batteries will require covering with an insulating, non-conductive material e.g. using electrical tape, to prevent the risk of fire. The FM team will ensure this is completed, though staff disposing of the batteries will be expected to complete this where possible.

2.8.3.4 Photocopier cartridges

Photocopier and printer cartridges will be collected in boxes located by the photocopiers, which will be periodically collected by the FM team for storage prior to collection by a waste contractor.

2.8.3.5 LED Fluorescent Tubes and Light Bulbs

A specific request should be sent to the FM team for the collection of fluorescent tubes and light bulb waste. Upon collection, the FM team will take it to the general waste store prior to collection by a waste contractor. This waste will then be stored in the same area of the waste room as the WEE and bulky waste.

Waste streams such as florescent tubes and batteries will be required to be collected by a licensed specialist contractor as they are designated as hazardous waste. The FM team will be required to register the site for a Hazardous Waste Licence to permit this waste to be collected safely and reprocessed.

2.9 Commercial waste storage

Table 11 sets out the storage facilities required to accommodate two days' worth of waste. All retail units will store their waste within their unit demise. Each day at the end of the retail unit's operation the respective unit's staff will transfer the waste to the B2 level waste store in trolleys or roll cages via the cycle lifts in each block for presentation and collection.

The commercial two waste storage equipment and waste store layout are shown below in Table 11 and Figure 16.

Table 11: PGPS commercial waste storage requirements

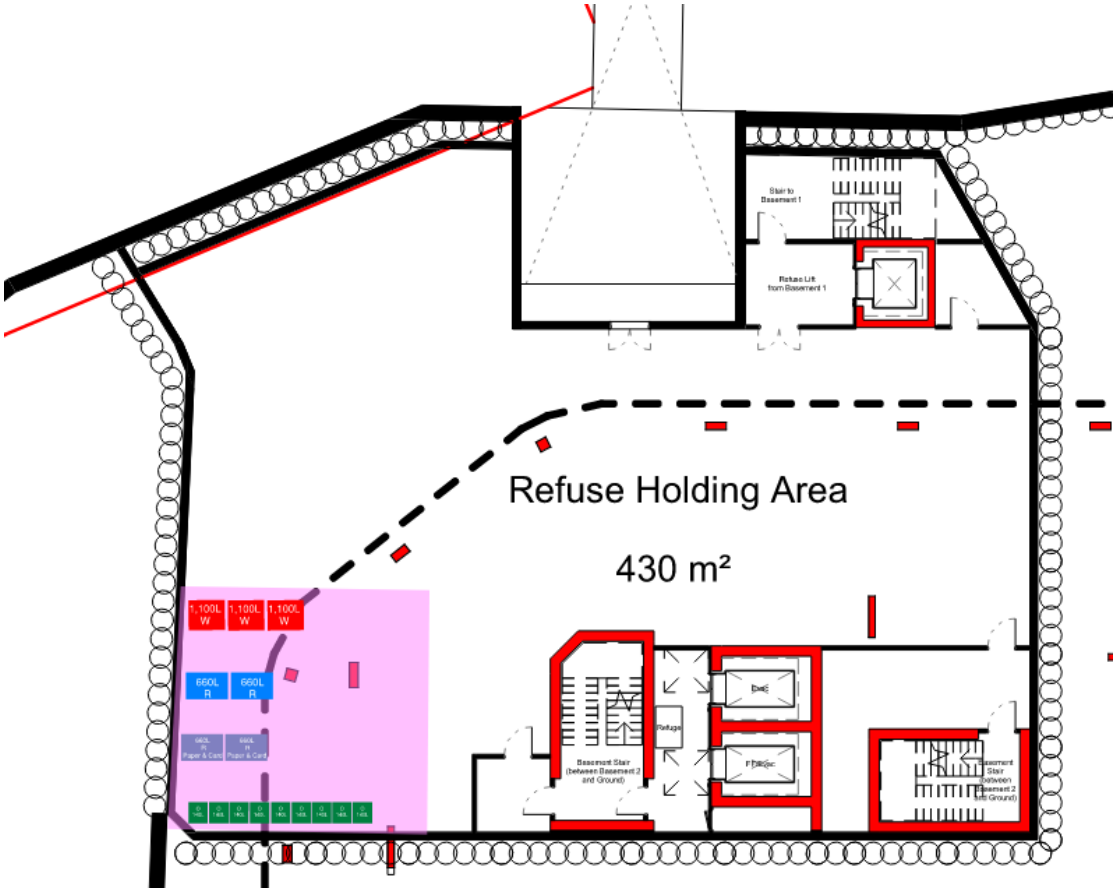
PGPS Commercial - Two day commercial waste storage						
Waste Type	**Un-compacted Waste (m3)**	**Waste Container**				
		Description	**Volume (m3)**	**Number Required**	**Area (m2)**	**Space required**
Residual	3.12	1,100 litre bin	1.1	3	3.55	**10.65**
Paper and Cardboard	1.23	660 litre bin	0.66	2	2	**4.00**
Mixed Dry Recycling	0.78	660 litre bin	0.66	2	2	**4.00**
Food Waste	1.25	140 litre bin	0.14	9	1	**9.00**
Total	**6.38**	-	-	**16**	-	**27.65**

To store the required containers, compactor and baler, a waste store for commercial sized at 27.65m^2 would be required to hold the following:

- 3 No. 1,100 litre eurobin for residual waste (W);
- 2 No. 660 litre eurobin for paper and cardboard (R);
- 2 No. 660 litre eurobin for mixed dry recyclables (R); and
- 9 No. 140 litre wheelie bin for organic (food) waste (O).

The waste store will require 2m clear headroom and the Facilities Management (FM) team will be responsible for the wash-down and cleaning of the waste store, providing spill kits where necessary.

Figure 16: Retail refuse holding area



2.10 Commercial waste process

The FM team will be responsible for communicating with commercial tenants on the requirements for transferring waste and recycling to the storage facility, including the requirements for bulky and non-standard waste. The waste store and individual zones within the store shall be clearly labelled at all times.

As above, all retail units will store their waste within their unit demise, each day at the end of the retail unit's operation the respective unit's staff will transfer the waste to the B2 level waste store in trolleys or roll cages via the cycle lift for presentation and collection. Commercial tenants must be aware of and follow their responsibilities under the waste duty of care: Code of Practice (2016) . This process is shown in Figure 17 to Figure 19.

Figure 17: Ground floor commercial waste movement

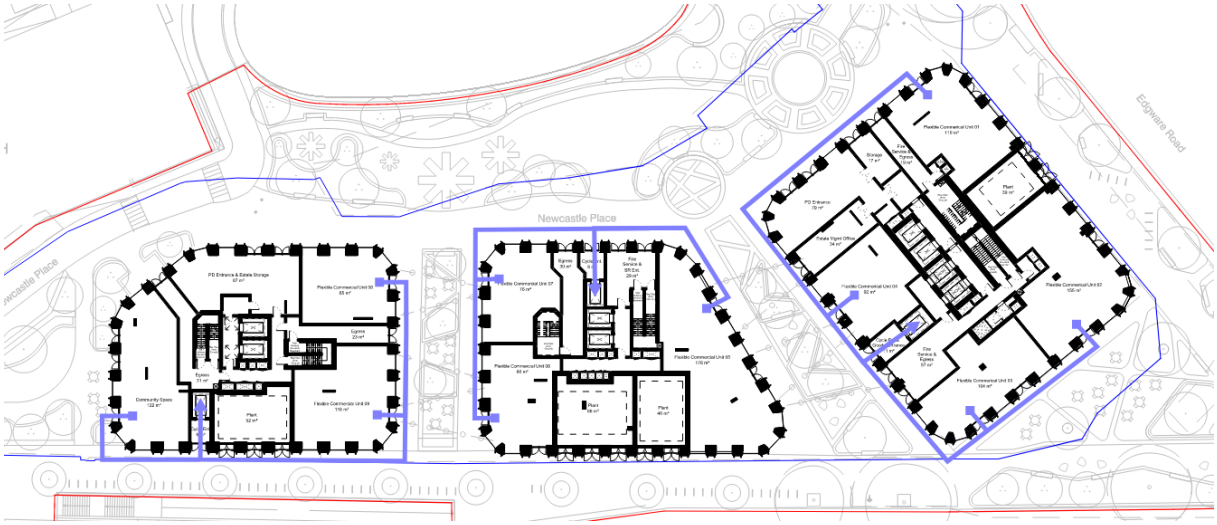


Figure 18: B1 commercial waste movement

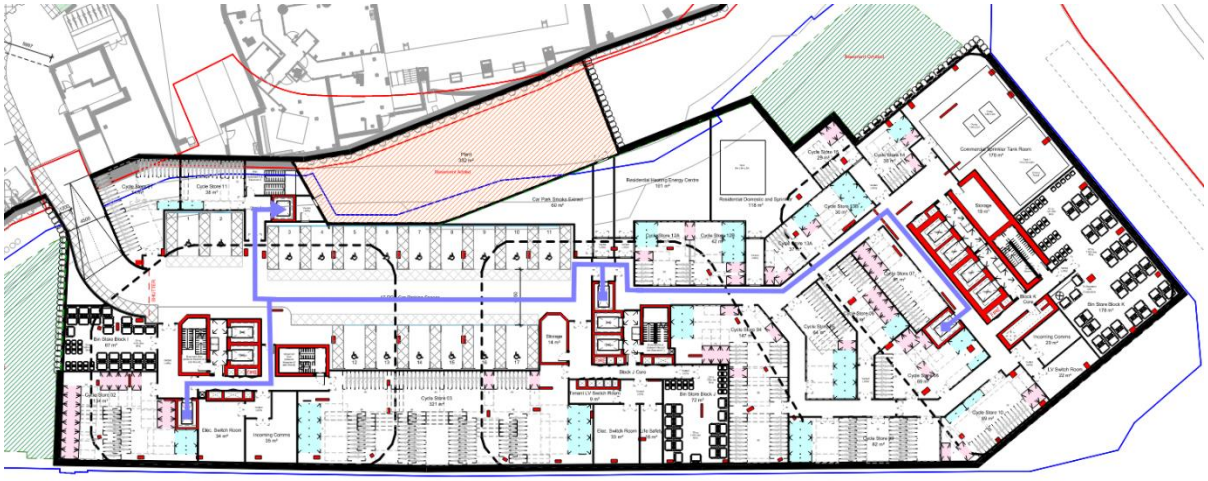
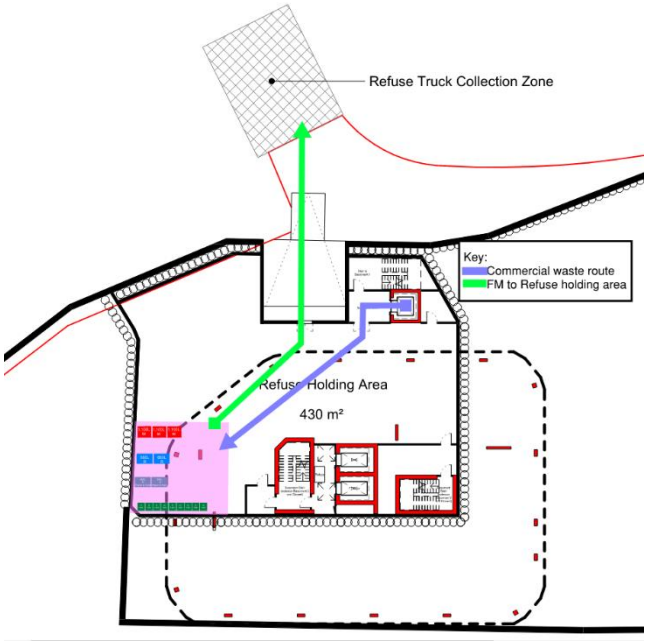


Figure 19: B2 commercial waste movement



2.11 Waste Collection

Prior to collection time, the FM Team will move full bins from the waste presentation area at level B2 to the refuse truck collection zone as per the existing situation. The floor surface between the waste store and the collection point will be suitable to drag bins to and from the presentation area (see section 2.1).

Waste collections will be undertaken by a nominated waste contractor. Collections are usually out of hours between, 05:00 and 08:00 and after closing, between 19:00 and 22:00.

Where the distance between the waste store and the waste collection point is more than 10m the FM will manage waste collections and rotate any full and empty containers. There will be a smooth transfer for the presentation, tipping, and the bins will be removed immediately and transferred back to the storage room.

As it is proposed to present full waste bins, issues associated with fly tipping will be minimised as members of the public will not have general access to the waste bins.

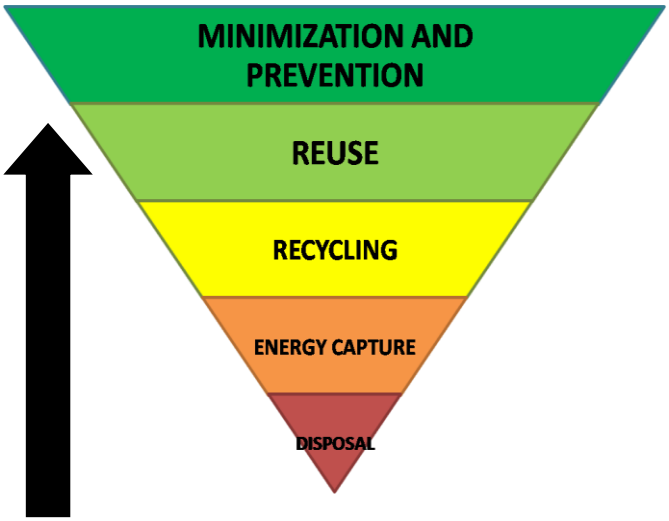
In the event of a missed collection, full waste bins will be returned to the waste store. Storage has been provided to accommodate two days' waste generation, therefore, missing a single waste collection will not have a detrimental impact on waste storage.

3. Waste reduction interventions

This section presents initiatives to encourage environmental thinking to reuse, recycle and reduce waste through the building's supply chain.

When considering waste reduction methods, the waste hierarchy pyramid provides a useful guide to the order in which waste reduction measures should be considered, from most effective to the least effective as shown in Figure 20.

Figure 20: Waste hierarchy



Preventing the generation of waste is considered the most effective way of improving recycling rates, followed by reuse of materials and then moving into recycling, recover and, eventually, disposal in landfill.

3.1 Packaging

The FM team should endeavour to collaborate with suppliers that display green initiatives when packing items including:

- Downsizing packaging;
- Using "green" packaging materials;
- Promoting recycling and reuse programs;
- Cooperating with vendor to standardise packaging;
- Encouraging and adopting returnable packaging methods;
- Minimising material uses and time to unpack;
- Using a recyclable pallet system; and
- Saving energy in warehouses throughout the supply chain.

3.2 Supply chain

The building management should provide a purchasing strategy that encourages green logistics, including:

- Using alternative fuelled vehicles;
- Grouping orders together, rather than in smaller batches;
- Collaborating with other tenants to consolidate loads; and

- Optimising reverse logistics to collect used products and packaging from customers for recycling, returning packaging and products to suppliers for reuse, and requiring suppliers to collect their packaging materials.

3.3 Behaviour change

To encourage pro-environmental behaviour and drive environmental performance, the tenant should address both the physical and the psychological environment. The goal should be to create an environment that guides decision making, and helps people act out those decisions. Some examples on how this could be achieved are as follows:

- Collect data to understand users' experience of waste infrastructure and its effect on their behaviour;
- Reduce the amount of packaging, and increase the percentage of recyclable packaging;
- Redesign signage to make bins for different streams distinct;
- Update labelling to be uniform;
- Locate bins for different streams where they are most needed (e.g. on walking routes); and
- Remove bins not consistent with design.

4. Operational waste management plan review

The success of the strategy as detailed above will be closely monitored by the building manager and the facilities team.

Feedback will be provided as a minimum on a monthly basis and as and when required where immediate action is required and dealt with in accordance to this strategy.

The strategy will be updated and amended as appropriate to ensure the development is within the perimeters of what is deemed necessary to maintain a clean and safe environment all year round.

An annual review will be provided to WCC at their written request to confirm the success of the strategy and any amendments that may have been required to the original document based on lessons learned. Any changes or deviations to the agreed WMP will be made by submission of a change request to planning at WCC. Amendments will be shown in an appendix to the WMP, under version control.