Operational Waste Management Strategy

Belgrove House, Belgrove Street, London, WC1H 8AA

August 2020

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Client Name:	Access Self Storage Limited
Document Reference:	WIE17232-100-R-1-2-2-OWMS
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Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

Issue	Date	Prepared by	Checked by	Approved by
Final	August 2020	Sarah Owen	Matt Mehegan	Sarah Owen Associate Director

Comments

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We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

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1. Introduction

1.1 The Brief

Waterman Infrastructure & Environment Ltd (Waterman) was instructed by Access Self Storage Limited (the Applicant) to prepare an operational waste management strategy (OWMS) for the proposed redevelopment of Belgrove House, Belgrove Street, London WC1H 8AA. Belgrove House lies in the London Borough of Camden (LBC).

1.2 The Development

The Applicant proposes the redevelopment of Belgrove House as a part 5 part 10 storey building plus 2 basement levels for use as office and research and laboratory floorspace incorporating café and flexible retail and office floorspace, an auditorium and a new step free entrance to Kings Cross LUL station in place of the two tube boxes on Euston Road together with terraces at fourth and fifth floor levels, servicing, cycle storage and facilities, refuse storage and other ancillary and associated works.

Specifically:

- office accommodation on levels 4 – 9 (6,698m^2 NIA[1]);
- laboratory space on levels 1 – 3 (6,694m^2 NIA) ;
- laboratory support space in basement (915m^2 NIA);
- event space on lower ground floor (auditorium) and ground floor (entrance lobby to include exhibition, main lobby and café open to the public) (2,111m^2 NIA); and
- retail space on ground floor and lower ground floor (hot food takeaway) (452m^2 in total for both floors).

1.3 Report Scope

This report explains how waste will be stored, managed, and collected once the development is complete. It outlines the quantities and types of waste that are predicted to arise.

1.4 Exclusions and Limitations

The benefit of this report is made to Access Self Storage Limited.

Waterman has endeavoured to assess all information provided to it during this work but makes no guarantees or warranties as to the accuracy or completeness of this information.

The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at the site.

[1] NIA = net internal area.

2. Waste Management Standards and Requirements

The following standards and requirements have been considered.

2.1 The Building Regulations 2010, Approved Document H: Drainage and Waste Disposal[2]

Approved Document H is a practical guidance document. It sets out the requirements of Schedule 1 and Regulation 7 of the Building Regulations 2010 (SI 2010/2214) for England and Wales.

Requirement H6, *"Solid Waste Storage"*, specifies that:

"(1) Adequate provision shall be made for storage of solid waste.

(2) Adequate means of access shall be provided:

(a) for people in the building to the place of storage; and

(b) from the place of storage to a collection point […]"

Requirement H6 stipulates that waste storage should be:

- designed and sited so as not to be prejudicial to health or local amenity;
- sized to accommodate the requirements of the waste collection authority in terms of container numbers and types;
- readily accessible by building users and waste collection operatives; and
- sited so that the distance residents are required to carry waste does not exceed 30m (excluding vertical distance).

2.2 British Standard 5906:2005, Waste Management in Buildings – Code of Practice[3]

This British Standard is a Code of Practice for methods of storage, collection, segregation for recycling and recovery, and on-site treatment of waste from residential and non-residential buildings and healthcare establishments. It is applicable to new buildings, refurbishments and conversions of residential and non-residential buildings, including but not limited to retail and offices. It expands upon the legal requirements set out in The Building Regulations 2010, Approved Document H, H6 as above.

BS5906:2005 advises that:

"Designers should consider:

- *easy and safe access for waste producers, including older persons or persons with disabilities;*
- *easy and safe access for collectors and collection vehicles;*
- *location and space (including avoidance of opportunity to cause nuisance or injury); …*
- *special requirements (e.g. separate storage and collection provisions for healthcare waste and bulky waste)."*

2.3 Building Research Establishment Environmental Assessment Method

The Building Research Establishment Environmental Assessment Method (BREEAM) process evaluates the procurement, design, construction and operation of a development against targets that are based on performance benchmarks. It is applicable to non-domestic buildings only – for this scheme therefore it applies to all areas.

[2] Building Regulations 2010, Drainage and Waste Disposal – H6 Solid Waste Storage – page 53 *"Solid Waste Storage: The Requirement"*.
[3] British Standard BS5906:2005: Waste management in buildings – Code of practice, December 2005 Revision, Committee reference B/508/1.

The scheme is being assessed under BREEAM New Construction Non-Domestic Buildings 2018. The Applicant is targeting a BREEAM rating of "Outstanding".

The BREEAM technical manual for new construction of non-domestic buildings[4] provides guidance for allocating waste storage provision for undetermined uses. It recommends the following provisions for recyclable wastes as a minimum:

- at least 2m^2 per 1,000m^2 of net floor area for buildings < 5,000m^2;
- a minimum of 10m^2 for buildings ≥ 5,000m^2;
- an additional 2m^2 per 1,000m^2 of net floor area where catering is provided (with an additional minimum of 10m^2 for buildings ≥ 5,000m^2).

The net floor area should be rounded up to the nearest 1,000m^2. We recommend a similar allocation is made for residual waste (albeit minus the additional provision required for catering).

2.4 London Borough of Camden

2.4.1 Waste and Recycling Storage and Collection Guidance

LBC provides guidance in two documents

- "CPG Design"[5]; and
- "Waste storage and arrangements for residential and commercial units"[6].

The documents help support local planning policy, including policy CC5 Waste, and apply to:

- new commercial and residential development;
- adaptations to existing buildings that significantly change the amount of floor space and on-site waste;
- other changes in activities that require planning permission and significantly change the amount of waste generated on-site.

Relevant considerations and requirements include that:

- commercial development must provide storage space for recyclable and non-recyclable (residual) waste;
- provision should be made for food waste collections;
- occupants should not have to carry waste more than 30m from their premises to any storage area;
- waste collection crews and caretakers should not have to:
  - carry waste sacks more than 15 metres;
  - carry bins or move wheeled bins (up to 360 litres) more than 10 metres;
  - move wheeled bins larger than 360 litres more than 10 metres;
  - manually navigate flights or steps or steep slopes or marked changes in level, or have to cross a main road, dual road or cycle pathway when transferring waste;
- developers should ensure that all storage areas and systems are designed to meet current waste and recycling targets as a minimum, and are sufficiently flexible to meet more ambitious future targets.

The guidance also provides advice as to the content of a commercial waste management strategy.

[4] Technical Manual SD5078: BREEAM UK New Construction 2018 1.2.
[5] Camden Planning Guidance, Design, March 2019.
[6] Waste storage and arrangements for residential and commercial units, (Supporting document for planning guidance CPG1 DESIGN Storage and collection of recycling and waste, LBC Environment Service technical guidance for recycling and waste

Internal design

We note that the proposal is not for residential development. However, it would be reasonable to assume that office and laboratory staff will be provided with facilities to prepare drinks and food. Therefore, it will be worth taking the spirt of LBC's internal design advise into account, namely, that:

- kitchen areas should have segregated recycling and refuse bins; and
- provision should be made for the separate collection of food waste.

2.5 Recycling Targets

The LBC guidance requires waste management provisions are designed to enable recycling targets to be met. For this development the targets below are relevant.

2.5.1 Draft London Plan (December 2019 "intend to publish")

The new London Plan is close to becoming adopted policy. Policy SI 7 "reducing waste and supporting the circular economy" is relevant. The policy seeks to "ensure that there is zero biodegradable or recyclable waste to landfill by 2026" and that a municipal waste recycling target of 65% is met or exceeded by 2030 (municipal waste includes commercial and industrial waste types that are similar to household wastes). The policy aims to be achieved by collaboration between the Mayor, waste planning authorities and industry.

2.5.2 London Environment Strategy (May 2018)

The London Environment Strategy Table 2 states a minimum recycling rate for business waste of 75% (to be achieved by 2030). The strategy states it is necessary for this rate to be achieved in order to enable compliance with the municipal waste recycling target of 65% (by 2030) set in the London Plan.

3. Operational Waste Management Strategy

3.1 Overview

The life sciences sector facility will be the predominant use. A minor retail use (potentially hot food takeaway as existing) will be present on the ground and lower ground levels. There will be space shared with the public at ground and lower ground levels, including: café; exhibition space and auditorium. In terms of managing waste arising from the building:

- the retail unit will manage its own waste;
- all other waste will fall to be managed by the life sciences sector user.

The laboratory activity (being a discrete purpose within life sciences sector use) has set out its specific requirements for the building. These include the space required to store a range of waste types arising from the laboratory use. A daily waste collection is assumed. Bulk non-hazardous wastes (e.g. packaging waste, clean container glass) are likely to arise and will be stored in bulk bins in the basement. Specialist laboratory wastes will be packaged and held in the basement.

Waste generated by the office use, and from flexible event space, will be held in appropriately sized bulk bins and wheelie bins stored at lower ground level.

All wastes arising from the life sciences sector facility will be brought to a loading bay at ground level for removal. This loading bay is for exclusive use of the life sciences sector user.

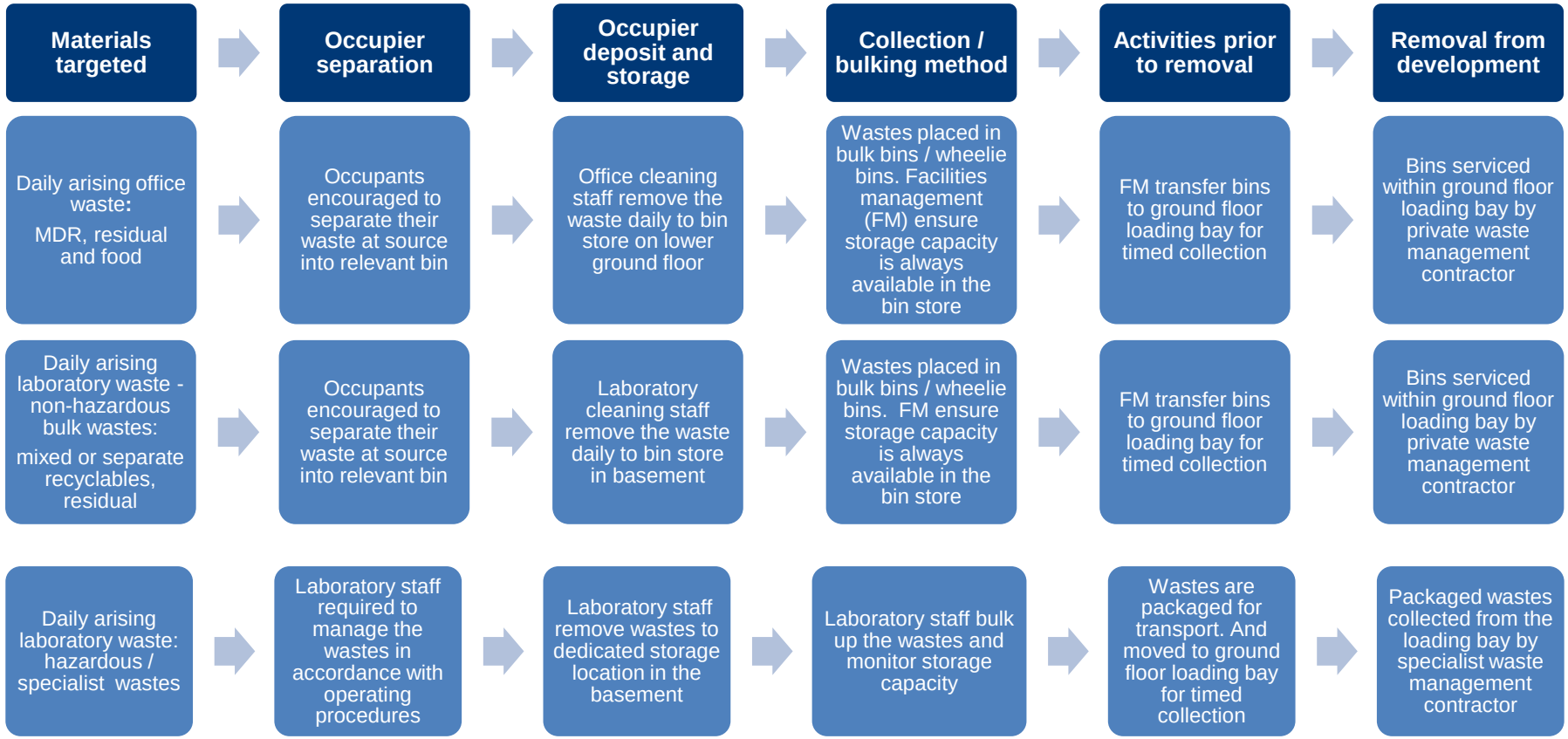
The existing fast food use currently stores its waste in bins on the street. Following redevelopment, a dedicated bin store will be provided within the footprint of the building. It will be directly accessible from within the building. For the purposes of collection, it will be accessible from the street.

The development includes the provision of soft landscaping on terraces and between the double-skinned façade. A specialist contractor will be employed to manage the vegetation, and as part of their works, will remove green wastes arising. Therefore, green waste is not considered further in this strategy.

The strategy is summarised in Figures 1 and 2 below.

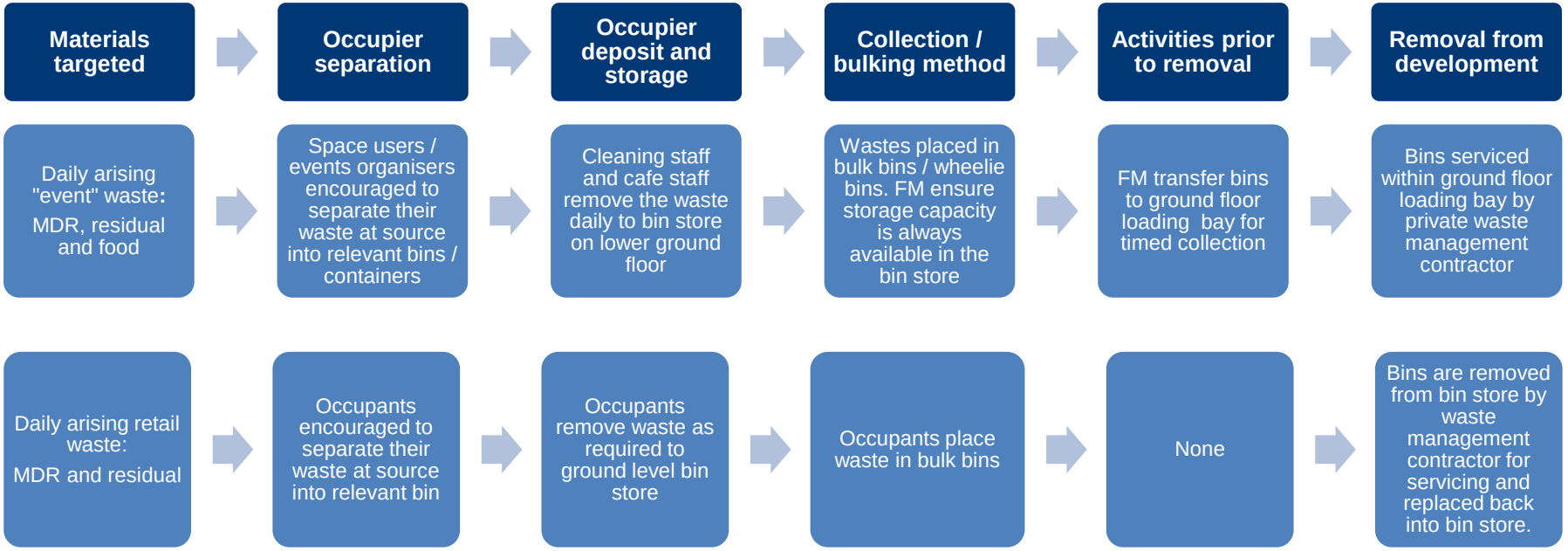
Plans of ground level, lower ground level and basement prepared by the scheme architects, Allford Hall Monaghan Morris (AHMM), are included in Appendix A along with extracts from the Design and Access Statement.

Figure 1: OWMS process flow diagram - laboratory and office wastes[7]



[7] Diagram headings adapted from the London Waste and Recycling Board (2015) template recycling and waste management strategy for new build flats.

Figure 2: OWMS process flow diagram - event and retail wastes



3.2 Waste Storage Requirements

The basis for the waste storage requirements is set out in Table 1 below.

Table 1: Assessment method

Use	Estimation method
Office	British Standard 5906:2005 – volume arising per employee [50 L] per week x number of employees. No. of employees assumed one per 10m^2 (medium density, based on Employment Density Guide 2015[8]). Adjusted for assumed daily collection (Monday – Friday, storage provided for two days waste).
Event space / café / entrance lobby	Given the flexibility around the proposed use of these spaces, the BREEAM[9] guidance for allocating recyclable waste storage provision for undetermined uses is proposed: • at least 2m^2 per 1,000m^2 of net floor area for buildings < 5,000m^2; • a minimum of 10m^2 for buildings ≥ 5,000m^2; • an additional 2m^2 per 1,000m^2 of net floor area where catering is provided (and an additional minimum of 10m^2 for buildings ≥ 5,000m^2). The net floor area is rounded up to the nearest 1,000m^2. For residual waste a similar allocation is recommended.
Laboratory support	The user has confirmed its space requirements including for laboratory waste handling and storage to the architect. Daily collection of wastes assumed.
Retail (hot food takeaway)	Assume waste storage and collection arrangements remain as existing, however calculation for a generic retail use also prepared.
Retail (generic use)	British Standard 5906:2005[10] – volume arising per m^2 [10 L] per week x floor space (weekly arisings). Adjust for daily collection (Monday – Sunday, storage provided for two days waste).

The calculations behind the office and generic retail unit waste storage capacity conclusions are included in Appendix B. The resulting waste storage requirements are set out in Table 2.

[8] Homes & Communities Agency, *"Employment Density Guide",* third edition dated November 2015
[9] Technical Manual SD5078: BREEAM UK New Construction 2018 1.2.
[10] British Standard BS5906:2005: Waste management in buildings – Code of practice, December 2005 Revision, Committee reference B/508/1

Table 2: Waste storage requirements

Use	Net internal area (NIA) (m^2)	Estimation method	Subsequent storage requirements
Office	6,698	British Standard – daily collection	12No. 1,280 L bulk bins (split between residual waste and mixed dry recyclable (MDR) waste or separated recyclables) Space for 2No. 240L food waste bins is also recommended
Event space / entrance lobby	2,111	BREEAM	Allocate space: • recyclable storage 6m^2 • plus additional 2m^2 for catering waste[11] • plus a further 6m^2 for residual waste = 14m^2
Laboratory support	See discussion below		
Fast food (existing)	452	As existing	
Retail (generic use)	452	British Standard – daily collection	2No. 1,100 L bulk bins

Laboratory waste storage requirements

The user has provided details as to its space requirements for its research and development laboratory activities. Including the space required for waste handling and storage. The space has been allocated within the basement.

3.3 Waste Storage Locations and Layouts

Basement

The basement is to be used for a variety of laboratory support functions including the storage of waste. The layout of the space will be determined by the life sciences sector user's specific requirements and will be established later in the design process. Bulk bins will be used for the storage of non-hazardous wastes such as packaging waste and residual waste. Specialist laboratory wastes will also be stored in the basement in containers appropriate to the volume and nature of the specific wastes.

The basement storage space has a relatively straight access route to the lifts connecting to the ground level loading bay.

Lower ground floor

Office waste and event waste will be stored in two bin stores on lower ground level. The stores have been sized and laid out with ease of use in mind.

Space for a total of 16No. 1,280L bulk bins is provided for office waste, compared to the 12No. bins calculated as required with daily collections of waste. The specific mix of bins will be determined by the life sciences sector user. And are anticipated to allow for the separate collection of recyclable wastes, either as mixed recyclable wastes, or with further segregation for example into paper / card with other recyclables mixed (e.g. drinks cans and plastic bottles). Space is also allocated for 2No. 240L wheelie bins for food waste. The bin store is considered ample for the size of the development.

[11] The café (catering waste producer) amounts to less than 1,000m^2.

The space for event waste storage has been shown – the size of bins and waste types to be stored will be determined by the use of the space. Residual and mixed dry recyclable wastes are assumed along with food waste and glass waste depending on the nature of the catering offer.

Given the distance from the furthest part of the bin store to the lifts is in excess of 10m, space for a bin tow has been allocated to reduce manual handling risks. The bin rooms have relatively straight route access to the lifts connecting to the ground floor loading bay.

Ground floor loading bay

The ground floor loading bay has space for bulk bins to be held temporarily (just in time) for collection. The bins shown on the plan are therefore not additional to the bins shown in the stores at lower ground and basement levels.

Ground floor retail unit bin store

A bin store is proposed within the footprint of the retail unit. It is large enough to hold 2No. 1,100L bulk bins. Which is considered sufficient to store waste arising from the retail unit.

3.4 Waste Collection

The loading bay at ground level is for the sole use of the life sciences sector user. It will be used throughout the day to receive goods and equipment (inwards) and for the despatch of wastes (outwards). The life sciences sector user will operate an advanced booking in system to ensure space is available for vehicles needing to attend the site and so the relevant bins are brought to the loading bay in time for servicing. Vehicular swept path analysis is shown in the Design and Access Statement extract included in Appendix A. For further details including swept path analysis for a large refuse collection vehicle undertaken by the project transport consultant TTP Consulting, please refer to the Transport Assessment submitted as part of the planning application.

Retail unit

The retail tenant's waste management contractor will have direct access to the bin store. The contractor will wheel the bins out for servicing and replace in the store once emptied.

3.5 Meeting Policy Aims

Policy is setting increasingly stringent recycling targets. Of relevance to this scheme is the London Environment Strategy target of 75% of waste to be recycled by 2030. A traditional bulk bin / wheeled bin solution is proposed. It enables the occupant to adjust the mix of bins to match increased recycling rates. And respond to statutory or other requirements to further source segregate materials. Specifically for, example with regard to this scheme, to deal with office waste and event waste. The bin store at lower ground level has ample space to adjust the number and mix of bins / waste streams in the future.

Caution should be exercised in applying these recycling targets to the laboratory waste. Some such wastes may require disposal or incineration with energy recovery for example. Rather than a recycling option being appropriate. It is reasonable to assume the life sciences sector user will take into account the waste hierarchy when making decisions about offsite waste management solutions for its waste.

APPENDICES

A. Plans and Drawings

Technical summary of servicing strategy extracted from Design and Access Statement prepared by AHMM

AHMM Basement Floor Plan – Proposed (drawing reference 17002PA(00)_P098 P01)

AHMM Lower Ground Floor Plan – Proposed (drawing reference 17002PA(00)_P099 P01)

AHMM Ground Floor Plan – Proposed (drawing reference 17002PA(00)_P100 P01)

8.0 Technical Summary

8.5 Servicing Strategy

Goods/Deliveries/Access

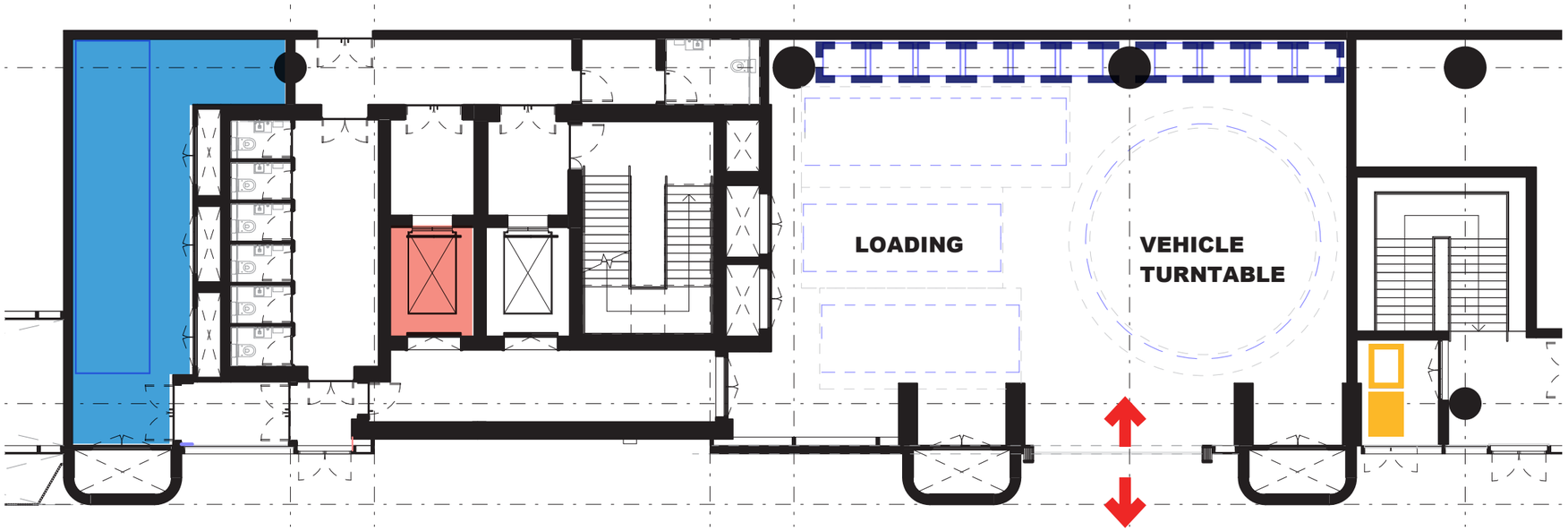
The development provides an on site loading area for the office building, which is accessed from Crestfield Street. The service area provides three loading bays, two for light vans and one for vehicles up to 8 metres in length, which is considered to be the largest vehicle that will need to access the site. The service area will have a turntable to enable large vehicle to be turned on site so that they can enter and exit the service area in forward gear. Waste will be transferred to a ground floor holding area on the day of collection where it will be collected from a refuse vehicle stopping on site.

Waste Management Strategy

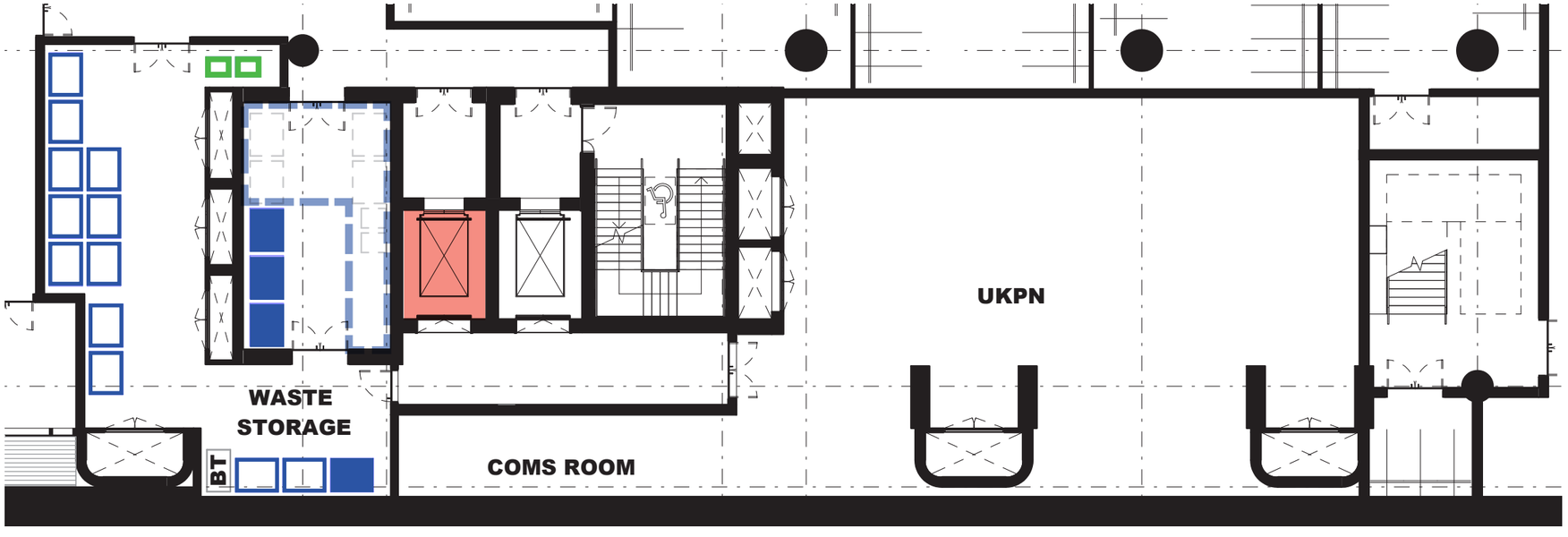
A daily waste collection is assumed. Bulk non-hazardous wastes (e.g. packaging waste, clean container glass) are likely to arise and will be stored in bulk bins in the lower ground. Specialist laboratory wastes will be packaged and held in the basement. All wastes arising from the life sciences sector facility will be brought to a loading bay on ground level for removal. This loading bay is for exclusive use of the life sciences sector user.

Retail Waste Management Strategy

The retail unit on ground floor will have its own dedicated bin store within the footprint of the building. It will be accessible from the street. So enabling direct servicing of bins from within the building. This is a significant improvement as the existing restaurant currently stores its bins on the street.



Ground Floor Plan



Lower Ground Floor Plan

Loading Bay Entrance

14m2 for Event Waste

Waste/Servicing Lift

Temporary Bin Space

Tenant- Nitrogen Tank

240L Wheeled Bin - Office

Recyclable Waste

1,280L Bulk Bin - Office

Residual Waste

Recyclable Waste

1,000L Bulk Bin - Retail

Residual Waste

Recyclable Waste

8.0 Technical Summary

8.5 Servicing Strategy

Specialist Life-sciences Requirement
The laboratory activity (being a discrete purpose within life sciences sector use) has set out its specific requirements for the building. These include the space required to store a range of waste types arising from the laboratory.

Basement Floor Plan

Loading Bay Entrance

Tenant Storage/Packaging Area

8.0 Technical Summary

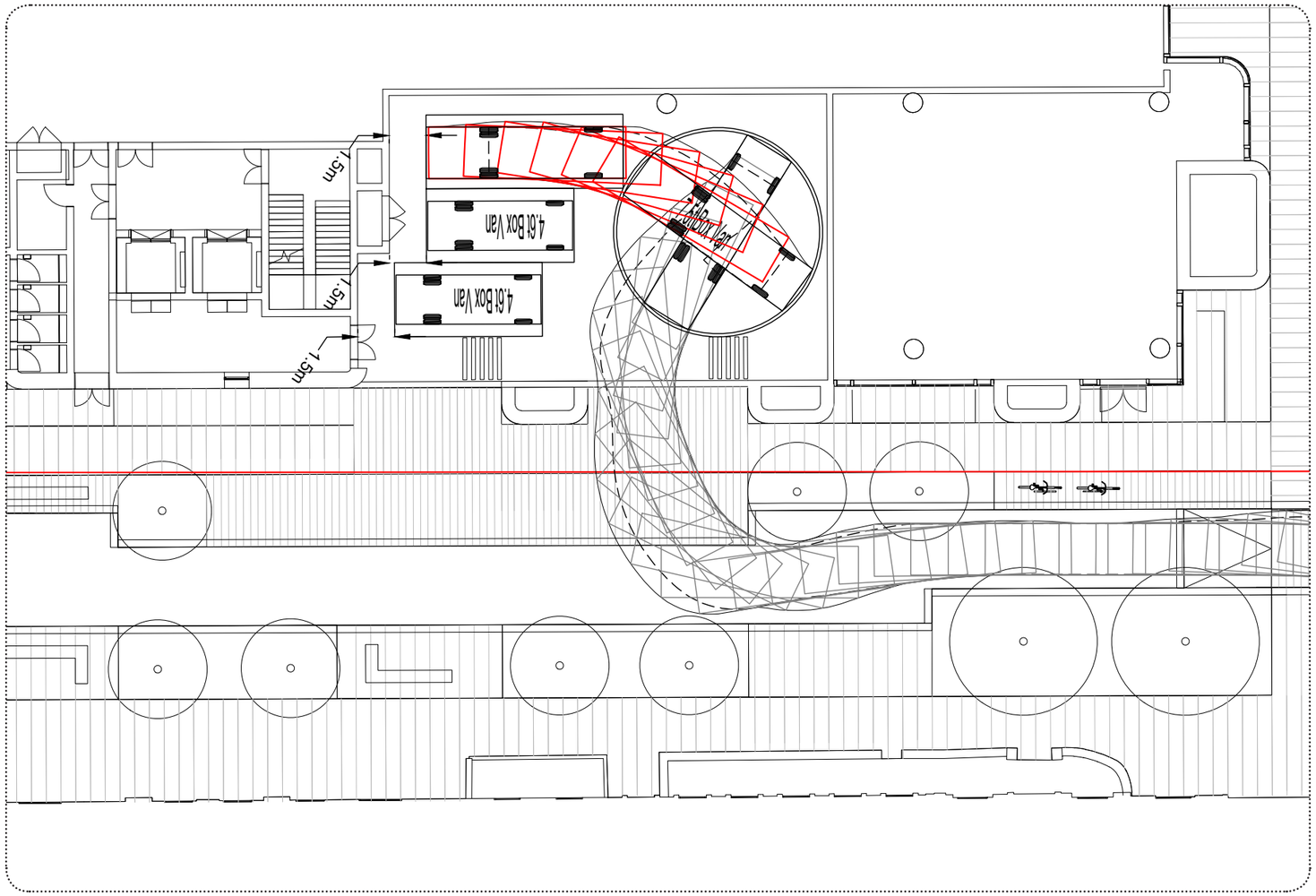
8.5 Servicing Strategy

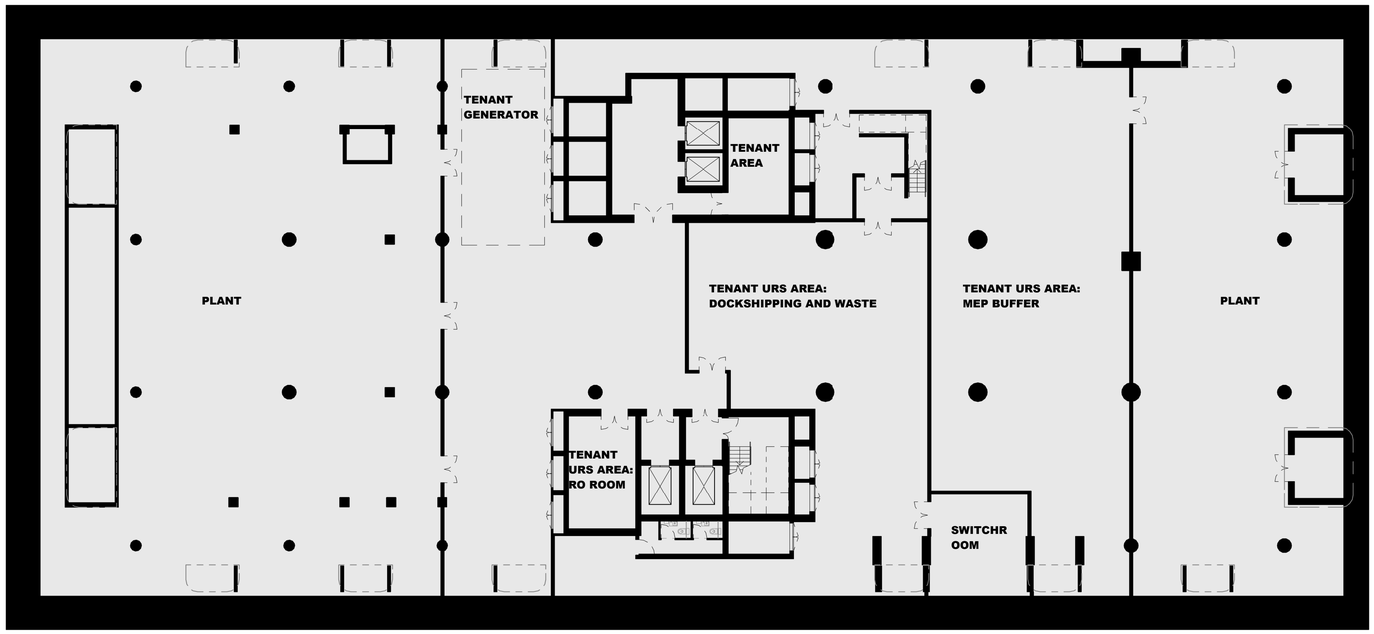
Delivery Strategy
It is estimated that the office could receive 57 deliveries over a 12 hour period, with 5 made using HGVs, 37 LGVs and 17 motorcycles. These deliveries would be made via the service area accessed from Belgrove Street. The service area provides three unloading bays, of which one can accommodate vehicles up to 8 metres in length, the largest HGV that is anticipated would need to visit the development.

Delivery vehicles would be met on site and staff on hand to receive goods from vehicles in the service area. As such, most vehicles should be able to enter the service area, unload and leave the site in a few minutes. However, for assessment purposes, if a 15 minute duration were allowed for each delivery vehicle, each loading bay has the potential capacity to accommodate 4 deliveries per hour meaning that the yard could accommodate 144 delivery vehicles over the course of a day.

Detail provided by the proposed tenant of the building indicates that laboratory floor space would generate fewer servicing and delivery trips than office floor space. It is therefore considered that the proposed service area has ample capacity to accommodate the level of delivery and service vehicle activity anticipated. The site will operate in accordance with the submitted Delivery and Servicing Plan, which contains a range of measures to minimise the level of delivery and servicing activity and it can take place in a safe and efficient manner.

The public realm proposals provide two new on street loading bays, one on Belgrove Street and one on Crestfield Street. These facilities have been designed to accommodate the level of delivery and servicing activity recorded by traffic survey.





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Plant/Ancillary

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PROJECT MANAGER:	
STRUCTURAL ENGINEER:	AKTII
MECHANICAL ENGINEER:	ATELIER TEN
COST CONSULTANT:	ALINEA
FACADE CONSULTANT:	FMDC
LANDSCAPE CONSULTANT:	BHSLA
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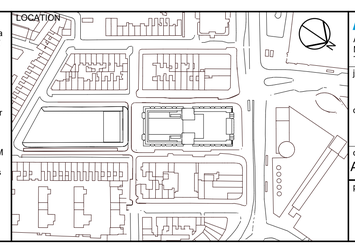

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job title
17002 BELGROVE HOUSE

drawing title / location
BASEMENT FLOOR PLAN - PROPOSED

drawn by	checked	scale	status
Author	HN	1 : 200@A1	INFORMATION

project	zone	source	classification	drawing no.	revision
17002	P	A	(00)_P098	P	01

0 1 5 10 m

- Auditorium
- Plant/Ancillary
- Retail
- TFL

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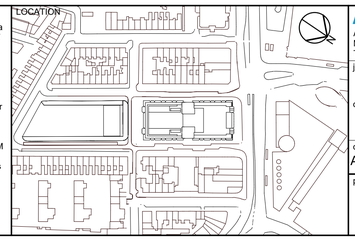

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job title
17002 BELGROVE HOUSE

drawing title / location
LOWER GROUND FLOOR PLAN - PROPOSED

drawn by	checked	scale	status
Author	HN	1 : 200@A1	INFORMATION

project	zone	source	classification	drawing no.	revision
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- Lobby
- Plant/Ancillary
- Retail
- TFL

REV	DATE	DESCRIPTION
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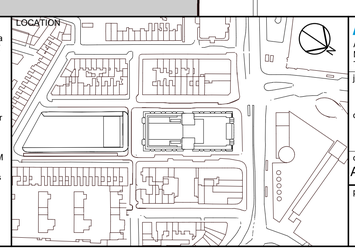
LOCATION



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job title
17002 BELGROVE HOUSE

drawing title / location
GROUND FLOOR PLAN - PROPOSED

drawn by	checked	scale	status
Author	HN	1 : 200@A1	INFORMATION

project	zone	source	classification	drawing no.	revision
17002	P	A	(00)_P100		P01

B. Waste Storage Capacity Calculations

Office Waste Storage Capacity Calculations

BS5906:2005 method:

- Assumes weekly collection
- Assumes 50 litres per employee per week

Assumptions:

- Assume 10m^2 per employee (medium density listed in Employment Density Guide 2015)
- Assumes 1,280 litre bulk bins used
- Assume waste will arise over Monday to Friday and there will be daily collection of wastes
- Allow for two days-worth of waste to be stored

GIA (m^2)	BS equation	No. of employees	Weekly waste arisings (litres)	1,280 litre bin equivalent	
				No.	rounded
6,698	volume arising per employee [50 l] x number of employees	669.8	33,490	26.16	27

To adjust for daily collection: (27 bins / 5) x 2 = 12No. 1,280 litre bulk bins

Generic Retail Use Waste Storage Capacity Calculations

BS5906:2005 method:

- Assumes weekly collection
- Assumes 10 litres per m^2 per week

Assumptions:

- Assumes 1,100 litre bulk bins used
- Assume waste will arise over Monday to Sunday and there will be daily collection of wastes
- Allow for two days-worth of waste to be stored

GIA (m^2)	BS equation	Weekly waste arisings (litres)	1,100 litre bin equivalent	
			No.	rounded
452	volume arising per m^2 [10 l] x floor space	4,520.00	4.109	5

To adjust for daily collection: (5 bins / 7) x 2 = 2No. 1,100 litre bulk bins (rounded up)

UK and Ireland Office Locations