

# Operational Waste and Recycling Management Strategy

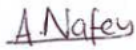
Space House Development  
London Borough of Camden (LBC)

SLQR Trustee No 1 Limited and SLQR No 2 Limited as  
Co Trustees for SLQR Unit Trust No 3

May 2019

## Quality information

Prepared by



Nafey Bin Afan  
Consultant

Checked by



Katherine Lees, Associate

Approved by



Katherine Lees, Associate

### Prepared for:

SLQR Trustee No 1 Limited and SLQR No 2 Limited as Co Trustees for SLQR Unit Trust No 3

### Prepared by:

Nafey Bin Afan  
Consultant

AECOM Limited  
St. George's House  
5 St. George's Road  
London SW19 4DR  
United Kingdom

T: +44 (207) 963 9800  
aecom.com

© 2019 AECOM Limited. All Rights Reserved.

This document has been prepared by AECOM Limited ("AECOM") for sole use of our client (the "Client") in accordance with generally accepted consultancy principles, the budget for fees and the terms of reference agreed between AECOM and the Client. Any information provided by third parties and referred to herein has not been checked or verified by AECOM, unless otherwise expressly stated in the document. No third party may rely upon this document without the prior and express written agreement of AECOM.

## Table of Contents

<b>1.</b>	<b>Executive Summary .....</b>	<b>1</b>
<b>2.</b>	<b>Introduction.....</b>	<b>3</b>
<b>3.</b>	<b>Legislation/Planning Policy .....</b>	<b>4</b>
	National Waste Legislation.....	4
	Regional Policy .....	6
	Local Policy.....	7
<b>4.</b>	<b>The Proposed Development .....</b>	<b>10</b>
<b>5.</b>	<b>Methodology .....</b>	<b>11</b>
<b>6.</b>	<b>Operational Waste and Recycling Management Strategy .....</b>	<b>12</b>
	Commercial Waste Arisings .....	12
	Storage Containers .....	13
	Commercial Waste Management and Storage Requirements .....	14
<b>7.</b>	<b>Waste and Recycling Storage Provision .....</b>	<b>21</b>
<b>8.</b>	<b>Waste and Recycling Collection Requirement.....</b>	<b>23</b>
<b>9.</b>	<b>Further Consideration .....</b>	<b>24</b>
	Building Research Establishment Environmental Assessment Method .....	24
<b>10.</b>	<b>Summary .....</b>	<b>25</b>
<b>11.</b>	<b>References .....</b>	<b>26</b>
	<b>Appendix A Waste Arisings .....</b>	<b>28</b>
	<b>Appendix B Swept Path Analysis .....</b>	<b>29</b>

## Figures

Figure 1 Location of Waste Store .....	14
Figure 2 Location of Compactors .....	15
Figure 3 Location of Lifts .....	15
Figure 4 Indicative Internal Waste Transfer Routes .....	16
Figure 5 Waste Store Layout.....	16
Figure 6 Location of Basement Lift (For Waste Transfer during collection) .....	17
Figure 7 Location of Ground Floor Lift (Used during collection) .....	18
Figure 8 Waste Bin Presentation Area .....	19
Figure 9 Collection Point / RCV Parking Area .....	20

## Tables

Table 1 London Plan Waste Policies .....	6
Table 2 Draft New London Plan Waste Management Policies .....	6
Table 3 North London Waste Authority (NLWA) Strategic Objectives .....	8
Table 4 Camden Local Plan Waste Policies .....	8
Table 5 Proposed Development Area Schedule .....	10
Table 6 Commercial Waste Arisings Methodology .....	11
Table 7 Example Lever Arm in-bin compactors .....	12
Table 8 Compacted Waste Arisings based on Twice Week Collection Frequency .....	13
Table 9 LBC Standard Bin Dimensions .....	13
Table 10 Storage Requirements.....	14
Table 11 RCV Dimension .....	23

# 1. Executive Summary

- 1.1 AECOM Infrastructure and Environment Limited (Ltd) (hereafter referred to as 'AECOM') has been appointed by SLQR Trustee No 1 Limited and SLQR No 2 Limited as Co Trustees for SLQR Unit Trust No 3 (hereafter referred to as the 'Applicant') to prepare an Operational Waste and Recycling Management Strategy (hereafter referred to as the 'Strategy') to for the proposed Space House development (hereafter referred to as the 'Proposed Development') located in the administrative boundary of London Borough of Camden (LBC).
- 1.2 The Applicant is seeking planning permission for
- "Removal of existing roof plant equipment at 1 Kemble Street and erection of a single storey facsimile floor plus one setback floor; removal of roof plant from 43-59 Kingsway and erection of a single storey setback extension; enclosure of the southern external stair at ground floor level on Kingsway with slimline glazing replacement windows and new glazing at ground floor level across the site; enclosing the redundant petrol filling station area with slimline glazing; façade cleaning; new landscaping and public realm works and internal alterations to both buildings in connection with their refurbishment and change of use from Class B1 offices to Class A1/A3 and flexible Class B1/B1 and events space (sui generis) at part ground and basement levels."*
- 1.3 The principal aim of this Strategy is to demonstrate how sustainable methods for waste and recycling management have been considered for the operational phase of the Proposed Development. Furthermore, with regards to waste and recycling management within the Proposed Development, this Strategy has the following aims:
- To contribute towards achieving current and long-term national, Greater London Authority (GLA), North London Waste Authority (NLWA) and LBC's targets for waste minimisation, recycling and re-use;
  - To comply with all applicable legal requirements for handling operational waste;
  - To achieve high standards of waste management performance, through giving due consideration to the waste generated during operation of the Proposed Development; and
  - To provide a convenient, clean and efficient waste management strategy that enhances the operation of the Proposed Development and promotes recycling.
- 1.4 Once the refurbishment and extensions are complete, the Proposed Development will provide approximately 35,430 m<sup>2</sup> Gross Internal Area (GIA) or 24,308 m<sup>2</sup> Net Internal Area (NIA) for commercial land uses including flexible retail units (A1/A3 land use), office space (B1 land use) and flexible B1/B1 and event space (sui generis). Please note that the area allocated to UKPN is assumed to be a non-waste generating space
- 1.5 The Proposed Development once complete and operational is anticipated to produce approximately 168,330 Litres (L) of waste from all commercial land uses per week, equating to approximately 1,324 tonnes per year (considering the following densities: mixed dry recyclables – 84 kg/m<sup>3</sup>, food waste – 395 kg/m<sup>3</sup>, glass waste – 2,500 kg/m<sup>3</sup> and residual waste - 100 kg/m<sup>3</sup>).
- 1.6 However, to effectively and efficiently manage space within the Proposed Development, the use of lever-arm in - bin compactors has been proposed (installed in the waste store) that will allow mixed dry recyclables (MDR) to be compacted at 2:1 and residual waste to be compacted at 3:1, whereas food and glass waste will not be compacted. Considering the compaction ratios and a twice – weekly collection frequency, the total waste required to be managed will equate to 45,496 L.
- 1.7 A single combined waste store has been designed in the basement level 2 of the Proposed Development that will allow sufficient space to hold bins to manage the compacted waste arisings from all the commercial elements of both blocks. On a daily basis (or as agreed) the building management team will collect waste from all the commercial units (that will provide sufficient space within their curtilage to hold waste in small bins) and carry this waste to the waste store via service lifts provided within the Tower and

Kingsway block, where this waste will be compacted and stored in separate bins (i.e. MDR, food, glass and residual waste bins).

- 1.8 At this stage, it has been proposed that a private contractor would be commissioned to undertake the collection of waste from the Proposed Development and is envisioned that the collection will take place after the working hours of all commercial units to avoid any disturbance to the users of the Proposed Development and to maintain the aesthetics of the Proposed Development.
- 1.9 Prior to the collection time (or as agreed), the building management team will transfer waste bins for the stream (i.e. either MDR, food, glass or residual waste) scheduled to be collected on the day to the waste presentation area located on the Ground Floor (i.e. within 10 m of the collection point). From this area, the collection operatives will drag the bins to the refuse collection vehicle (RCV) for emptying purpose. Once, these bins have been emptied the building management team will return them their respective waste stores.
- 1.10 These provisions will result in waste produced during operation of the Proposed Development being managed in accordance with The Waste (England and Wales) Regulations 2011 (as amended). Additionally, all waste infrastructure introduced to the Proposed Development will comply with GLA, LBC, British Standard Institute (BSI) 5906:2005 (Waste Management in Buildings Code of Practice) and Part H6 of the Building Regulations.

## 2. Introduction

- 2.1 This Operational Waste and Recycling Management Strategy (hereafter referred to as the 'Strategy') has been prepared by AECOM Infrastructure & Environment UK Ltd ('AECOM') on behalf of Seaforth Land Limited (Ltd) (SLQR Trustee No 1 Limited and SLQR No 2 Limited as Co Trustees for SLQR Unit Trust No 3) (hereafter referred to as the 'Applicant') for the proposed Space House development (hereafter referred to as the 'Proposed Development') located within the administrative boundary of London Borough of Camden (LBC).
- 2.2 This Strategy provides a review of the requirements placed upon the Proposed Development under legislation and implemented policy at all levels of government (i.e. national (England), district (Greater London Authority (GLA)), regional (North London Waste Authority (NLWA)) and local (LBC). Consideration has also been given to the requirements included in local standards, local planning policy and guidance documents (i.e. LBC Planning Guidance Document – "Design Storage and Collection of Recycling and Waste" ( Ref. 1)), British Standard Institute (BSI), Waste Management in Buildings, Code of Practice (BS 5906:2005) (Ref. 2) and Camden Planning Guidance (CPG) Transport (Ref. 3) so as to comply with relevant objectives and targets.
- 2.3 The methodology used to identify and estimate volumes of waste generated during operation of the Proposed Development is outlined in the Section 5 (Methodology) of this Strategy. Following this, the approach taken towards waste management within the Proposed Development is discussed. This includes a breakdown of the waste management process, including waste handling, storage area provision, and collection arrangements. All waste reduction measures are compliant with BS 5906:2005, the Waste (England and Wales) Regulations, 2011 (as amended) (Ref. 4) and Part H6 of the Building Regulations (2010) (incorporating all amendments) (Ref. 5) Document.
- 2.4 This Strategy has been written by AECOM, using information provided by Squire and Partners (hereafter referred to as the 'Architects'), (hereafter referred to as the 'Project Managers') and Caneparo Associates (hereafter referred to as the 'Transport Consultants').

## 3. Legislation/Planning Policy

3.1 A summary list of the legislation relevant to the management of operational waste is provided in this section:

### National Waste Legislation

- The Animal By-Products (England) Regulations 2009 (as amended 2015) (Ref. 6);
- Clean Neighbourhoods and Environment Act 2005 (as amended 2015) (Ref. 7);
- Control of Pollution Act (COPA) 1974 (as amended 1989) (Ref. 8);
- The Controlled Waste (England and Wales) Regulations 2012 (as amended 2012) (Ref. 9);
- The Environment Act 1995 (Ref. 10);
- Environmental Protection Act 1990 (EPA) (Ref. 11);
- The Landfill Tax Regulations 1996 (as amended 2017) (Ref. 12);
- The List of Wastes (England) Regulations (as amended 2005) (Ref. 13);
- The Packaging (Essential Requirements) Regulations 2015 (Ref. 14);
- The Pollution Prevention and Control (Fees) (Miscellaneous Amendments) Regulations 2017 (Ref. 15);
- The Producer Responsibility Obligations (Packaging Waste) Regulations 2007 (as amended 2017) (Ref. 16);
- The Hazardous Waste Regulations 2005 (as amended 2016) (Ref. 17);
- The Waste (England and Wales) Regulations 2014 (as amended);
- The Waste Batteries and Accumulators Regulations 2009 (as amended 2015) (Ref. 18);
- The Waste Electrical and Electronic Equipment (WEEE) Regulations 2015 (Ref. 19); and
- The Waste Management (England and Wales) Regulations 2006 (as amended 2007) (Ref. 20).

### National Planning Policy Framework (2019)

- 3.2 An update to the revised National Planning Policy Framework (NPPF) (Ref. 21) has been published in February 2019 that sets out the Government planning policies for England and how these are expected to be applied. This NPPF supersedes the previous NPPF published in July 2018 and March 2012.
- 3.3 The revised NPPF maintains the presumption in favour of sustainable development which should be delivered in accordance with three main objective areas: economic, social and environmental (Paragraph 8 of the Framework document). The revised NPPF aims to enable local people and their local authorities to produce their own distinctive local and neighbourhood plans, which should be interpreted and applied to meet the needs and priorities of their communities.
- 3.4 The environmental objective refers to the importance of waste management and resource efficiency. The NPPF should be read in conjunction with the National Planning Policy for Waste (2014) (Ref. 22) including the Waste Management Plan for England (2013) (Ref. 23) and Planning Practice Guidance (Ref. 24) which are discussed in the following sections of this Strategy.

### National Planning Policy for Waste (2014)

- 3.5 The National Planning Policy for Waste provides the planning framework to enable Local Authorities to put forward, through local waste management plans, strategies that identify sites and areas that are suitable for new or enhanced facilities to meet the waste management needs of their areas

### Waste Management Plan for England (2013)

- 3.6 The Waste Management Plan for England is a high-level document, which outlines the steps required to move towards a zero-waste economy, as part of the transition to a sustainable economy.



- 3.7 The Waste Management Plan fulfils the Waste Framework Directive (WFD) Article 28 mandatory requirements (Ref. 25), and other required content as set out in Schedule 1 to the Waste (England and Wales) Regulations 2011 as amended. The Waste Management Plan provides an analysis of current waste management practices in England and evaluates implementation of the objectives and provisions of the revised WFD.

## Planning Practice Guidance (2018)

- 3.8 The Planning Practice Guidance (PPG) comprises a web-based resource in support of the NPPF. There are two guidance documents that are relevant to waste, 'Design' (Ref. 26) and 'Waste' (Ref. 27).
- 3.9 The document entitled 'Design' states that carefully planned bin storage is particularly important and Local Authorities should make sure that each dwelling is carefully planned so that sufficient storage is provided, which is discretely designed and accessible. Storage should be allocated based on practices within the specific Local Authority (e.g. relating to recycling, food waste collection and landfilling).
- 3.10 The document entitled 'Waste' outlines the consideration local planning authorities should give towards waste management, both within Local Plans and with regards to the Waste Hierarchy. This includes guidance on considerations to be included within development planning applications:
- The promotion of the *"sound management of waste from any proposed development, such as encouraging internal management of waste where this is appropriate, or including a planning condition to encourage or require the developer to set out how waste arising from the development is to be dealt with"*;
  - *"Ensuring that collections of household and similar waste are organised so as to help towards achieving the higher levels of the Waste Hierarchy"*;
  - That steps are *"taken to ensure effective segregation of wastes at source including, as appropriate, the provision of waste sorting, storage, recovery and recycling facilities"*; and
  - That it will be useful for proposals that are likely to generate significant volumes of waste through the development or operational phases to include a waste audit. *"This audit should demonstrate that in both construction and operational phases of a proposed development, waste will be minimised as far as possible and that such waste as is generated will be managed in an appropriate manner in accordance with the Waste Hierarchy"*.

## A Green Future: Our 25 year Plan to Improve the Environment

- 3.11 The government published the 25 Year Plan to Improve the Environment (Ref. 28) in 2018. This plan sets out the government actions to help the natural world regain and retain good health. It aims to deliver cleaner air and water, protect threatened species and provide richer environment. One of the measures set out in this Plan to decrease pressure on the environment in by minimising the generation of waste.
- 3.12 This will be done by:
- "Working towards our ambition of zero avoidable waste by 2050; and
  - Meeting all existing waste targets – including those on landfill, reuse and recycling – and developing ambitious future targets and milestones".

## Our Waste, Our Resource: A Strategy for England

- 3.13 Within the 25 Year Environmental Plan, the Government pledged to leave the environment in a better condition for the next generation. To meet this commitment, the Strategy for England (2018) (Ref. 29) has been developed.
- 3.14 However, this Strategy doesn't provide any specific guidance or policy relevant to the management of construction waste.

## Regional Policy

### The London Plan, Spatial Development Strategy for Greater London (Consolidated with Alterations since 2011) (2016)

- 3.15 The London Plan (Ref. 30) outlines the Mayor's commitment to making better use of waste and its management, in an attempt to reduce London's impact on climate change, such as exploiting opportunities to utilise Energy from Waste (EfW). The London Plan describes waste as a valuable resource, which can be exploited for London's environmental, economic and social benefit.
- 3.16 The London Plan contains four policies which are relevant to the management of waste and are outlined in Table 1 of this Strategy.

**Table 1 London Plan Waste Policies**

Policy	Description
Policy 5.3 Sustainable Design and Construction	States that the highest standards of sustainable design and construction should be achieved in London to improve the environmental performance of new developments and to adapt to the effects of climate change over their lifetime. This should be achieved through a number of sustainable design principles, including minimising the generation of waste and maximising re-use and recycling
Policy 5.16 Waste Net Self-sufficiency	States that the Mayor will work with various stakeholders and authorities to manage as much of London's waste within London as practicable, working towards managing the equivalent of 100% of London's waste within London by 2026, whilst also working towards zero biodegradable or recyclable waste sent to landfill. This should be achieved by a number of ways, including minimising waste, encouraging the reuse of materials, exceeding recycling/composting levels in local authority collected waste (LACW) and commercial and industrial waste, improving London's net self-sufficiency, through reducing the proportion of waste exported from the capital over time, and working with neighbouring regional and district authorities to co-ordinate strategic waste management across the greater south east of England.

### The Draft New London Plan – Spatial Development Strategy for Greater London 2018

- 3.17 The Draft New London Plan – Spatial Development Strategy for Greater London (Ref. 31) was issued for consultation in December 2017 and the public consultation period ended in March 2018. The Draft New London Plan is not yet adopted and is undergoing examination. On this basis, the Draft New London Plan is a material consideration and it should carry limited weight when determining the planning application. The weight will increase overtime prior to adoption.
- 3.18 Like the adopted London Plan (2016), the draft London Plan outlines the Mayor's commitments towards a greener London by tackling climate change and moving towards a zero-carbon city by 2050. The draft London Plan also contains two policies that are relevant to construction waste and these are summarised in Table 2 of this Strategy.

**Table 2 Draft New London Plan Waste Management Policies**

Policy	Description
Draft Policy SI7 Reducing Waste and Supporting the Circular Economy	This policy states that waste reduction and reduction in the quantity of waste going for disposal from London can be achieved by promoting circular economy i.e. by encouraging

	the reuse of material and by using fewer resources in the production and distribution of products, by ensuring that zero biodegradable or recyclable waste is sent to landfill by 2026, by meeting the set recycling targets (i.e. 65% for municipal waste by 2030 and 95% for construction, demolition and excavation waste by 2020) and by designing developments that would provide adequate storage space to support collection of minimum six dry recyclables (card, paper, mixed plastics, metals, glass and food).
Draft Policy SI 18 Waste Capacity and New Waste Self Sufficiency	This policy indicates the Mayor's intent of sustainably managing London's waste within London by 2026. This can be achieved by identifying techniques/methods to reduce waste, in line with the principles of the Circular Economy and determining ways to manage waste that cannot be reduced. In addition to this, existing waste sites are to be safeguarded and their capacities optimised. Policy S19 "Safeguarded Waste Site" of the Draft London Plan 2017 details the Mayor's plan to safeguard waste sites.

## Mayor of London Environmental Strategy (2018)

- 3.19 The London Environment Strategy (Ref. 32) sets out a framework that identifies the stages to London becoming a zero-waste city. However, this Strategy focuses on the management of bio-degradable or recyclable waste and sets targets for waste sent to landfill and doesn't provide any specific policies related to the management of construction waste

## The Business Waste Management Strategy (2011)

- 3.20 In addition to the policies outlined in the London Plan, the Business Waste Management Strategy (Ref. 33) provides further guidance on the management of business waste. It sets out initiatives to help London businesses (including shops, restaurants and offices) save money and reduce harm to the environment, through better waste management practices. The strategy is aimed at encouraging waste reduction and promoting better re-use and recycling from commercial activities. It looks to improve the efficiency of resource management and reduce the financial and environmental impact of waste by managing as much as is practical within London's boundaries.

## The Municipal Waste Management Strategy (2011)

- 3.21 The Municipal Waste Management Strategy (Ref. 34) provides further guidance on the management of municipal waste, in addition to policies contained within the London Plan. The strategy sets six additional targets, which aim to reduce the amount of municipal waste generated by the capital and significantly increase recycling and composting performance. The strategy goes on to explain that municipal waste, which cannot be re-used or recycled, will be used to produce EfW in the most environmentally sensitive way possible.

## Local Policy

### North London Waste Plan (Regulation 19) - Proposed Submission (2019)

- 3.22 The seven North London Boroughs of Barking and Dagenham, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest are working together to produce the North London Waste Plan (NLWP) (Ref. 35). The NLWP has two main purposes:
- "To ensure there will be adequate provision of suitable land to accommodate waste management facilities of the right type, in the right place and at the right time up to 2035 to manage waste generated in North London; and

- To provide policies against which planning applications for waste developments will be assessed, alongside other relevant planning policies/guidance”.

3.23 Table 3 of this Strategy sets out the strategic objectives relevant to the management of waste.

**Table 3 North London Waste Authority (NLWA) Strategic Objectives**

Strategic Objective (SO)	Description
Draft SO 1	States that “to support the movement of North London’s waste as far up the waste hierarchy as practicable, to ensure environmental and economic benefits are maximised by utilising waste as a resource”.

## North London Waste Authority (NLWA) Joint Waste Strategy (2009)

3.24 In addition to the NLWP, the North London Joint Waste Strategy (NLJWS) (Ref. 36) provides the strategic framework for municipal waste management in North London from 2004 to 2020. The NLJWS sets out the targets for reducing, reusing and recovering a greater proportion of municipal waste generated within the NLWA and it also sets out the targets aimed at reducing the amount of waste sent to landfill for disposal. The NLJWS states its objectives as being:

- “To minimise the amount of municipal wastes arising;
- To maximise recycling and composting rates;
- To reduce greenhouse gases by disposing of less organic waste in landfill sites;
- To co-ordinate and continuously improve municipal wastes minimisation and management policies in North London;
- To manage municipal wastes in the most environmentally benign and economically efficient ways possible through the provision and co-ordination of appropriate wastes management facilities and services; and
- To ensure that services and information are fully accessible to all members of the community”.

## Camden Local Plan (2017)

3.25 The Camden Local Plan (Ref. 37) sets out the Council’s planning policies and replaces the Core Strategy and Development Policies planning document (adopted 2010). It ensures that Camden continues to have robust, effective and up-to-date planning policies that respond to changing circumstances. The Local Plan will cover the period from 2016-2031.

3.26 Table 4 of this Strategy outlines the policy relevant to the management of waste arisings from Camden

**Table 4 Camden Local Plan Waste Policies**

Policy	Description
Policy CC5 Waste	States that “The Council will seek to make Camden a low waste borough. We will: <ol style="list-style-type: none"> <li>aim to reduce the amount of waste produced in the borough and increase recycling and the reuse of materials to meet the London Plan targets of 50% of household waste recycled/composted by 2020 and aspiring to achieve 60% by 2031;</li> <li>deal with North London’s waste by working with our partner boroughs in North London to produce a Waste Plan, which will ensure that sufficient land is allocated to manage the amount of waste apportioned to the area in the London Plan;</li> <li>safeguard Camden’s existing waste site at Regis Road unless a suitable compensatory waste site is</li> </ol>

	<p><i>provided that replaces the maximum throughput achievable at the existing site; and</i></p> <p><i>d. make sure that developments include facilities for the storage and collection of waste and recycling."</i></p>
--	--

## Camden Planning Guidance (CPG) – “Design” (2018)

- 3.27 The aim of Camden Planning Guidance (CPG) – Design (Ref. 38) is to ensure that appropriate storage and collection arrangements for all types of wastes (e.g. recyclables, food waste, general waste and bulky waste) is provided in all new developments in Camden. It seeks to assist those involved in the design and management of buildings to best provide for the storage and transfer of segregated wastes to maximise the type and amount of waste that can be sent for recycling in order to meet the Council’s ambitious targets.

## Camden Planning Guidance (CPG) – “Transport” (2019)

- 3.28 The aim of Camden Planning Guidance (CPG) – Transport is to make sure that all transport measures that needs to be secured and /or provided before the development comes into use are.
- 3.29 Paragraph 4.51 of the guidance document refers to developments that have demonstrated a significant movement of goods or materials by road in the Transport Assessment will be expected to accommodate goods and service vehicles on site, this will also include waste collection vehicle should they require on-site access.

## 4. The Proposed Development

- 4.1 Once the refurbishment and extensions are complete, the Proposed Development will provide approximately 35,430 m<sup>2</sup> Gross Internal Area (GIA) or 24,308 m<sup>2</sup> Net Internal Area (NIA) for commercial land uses including flexible retail units (A1/A3 land use), office space (B1 land use) and flexible B1/B1 and event space (sui generis). Please note that the area allocated to UKPN is assumed to be a non-waste generating space. Table 5 of this Strategy sets out the land uses and their respective areas.

**Table 5 Proposed Development Area Schedule**

Location	Land Use Class	GIA (m <sup>2</sup> )	NIA (m <sup>2</sup> )
Basement Level 2	Flexible Class B1/B1 and events space (Sui Generis)	1,677	1,465
	Reception/Core/Plant/Goods (B1)*	1,818	-
	UKPN	328	-
Basement Level 1	Flexible Retail (A1/A3)	276	269
	Flexible Class B1/B1 and events space (Sui Generis)	275	249
	Cycle/carpark (B1)	736	-
	Reception/Core/Plant/Goods (B1)*	1,057	-
	UKPN	411	-
Tower Block (including Bridge)	Flexible Retail (A1/A3)	329	321
	Office (B1)	20,089	15,809
	Reception/Core/Plant/Goods (B1)*	431	-
	UKPN	336	-
Kingsway Block	Flexible Retail (A1/A3)	629	598
	Office (B1)	6,765	5,597
	Reception/Core/Plant/Goods (B1)*	226	-
	UKPN	47	-
<b>Total</b>		<b>35,430</b>	<b>24,308</b>

Please note that a 30:70 split has been assumed between A1 and A3 land uses as provided by the Architects.

\*It is assumed that 11 personnel would be deployed on the reception area (including security)

## 5. Methodology

- 5.1 LBC doesn't provide any guidance on the methodology to determine the waste arising from the commercial elements; hence for this purpose BS 5906:2005 will be used. However, BS 5906:2005 doesn't cover all commercial elements such as Sui Generis areas; hence for these areas a bespoke methodology has been adopted. It should be noted, that the methodology adopted to determine the waste arisings from Sui Generis might be updated during the detailed design stage.
- 5.2 Table 6 of this Strategy outlines the methodology adopted to determine the waste arisings and the subsequent storage requirements within this Strategy.

**Table 6 Commercial Waste Arisings Methodology**

Land Use Class	Methodology	Guidance Used	Waste Stream Split
Retail (A1)	10 L per m <sup>2</sup> of Sales Floor Area (SFA)* per week	BS 5906: 2005	MDR : Residual 50 : 50
Retail (A3)	75 L per Cover per week with 1 Cover calculated as 1 per 3 m <sup>2</sup> of NIA	BS 5906: 2005	MDR : Food : Residual 50 : 30 : 20
Office Space (B1)	50 L per Employee, with 1 employee covering 8 m <sup>2</sup> (NIA)	BS 5906: 2005	MDR : Residual 50 : 50
Flexible Class B1/B1 and events space (Sui Generis)	50 L per Employee, with 1 employee covering 8 m <sup>2</sup> (NIA)	Bespoke AECOM	MDR : Food : Residual : Glass 30 : 10 : 30 : 30
Reception (B1)	50 L per Employee***	BS 5906 : 2005	MDR : Residual 50 : 50

\*SFA is calculated as 2/3 of NIA (m<sup>2</sup>).

\*\* To consider for a worst-case scenario waste generated from the Sui Generis area has been based on the assumption of a B1 land use i.e. office space.

\*\*\* The number of employees on reception area has been provided by the Architects/Project Manager considering a worst-case scenario.





Please note, for all retail units and Sui Generis a seven-day working week has been assumed, whereas for office space a five-day working week has been assumed.

## 6. Operational Waste and Recycling Management Strategy

### Commercial Waste Arisings

- 6.1 As stated in paragraph 1.6 of this Strategy, to optimise the space and size of the waste stores, lever arm in-bin compaction units will be installed in the waste stores (examples outlined in Table 7 of this Strategy). These compaction units will allow compaction of MDR at 2:1 and residual waste at 3:1, however, food and glass waste will not be compacted.

**Table 7 Example Lever Arm in-bin compactors**

PAKAWASTE LF1100 Wheelie Bin Compactor	
	Height (m): 2.12
	Width (m): 1.16
	Depth (m): 1.15
	Pressing Force: Up to 3.5 tonnes
	Noise Level: 72 Decibels
	Cycle Time: 20 seconds
Tony Team TT1100E Bin Compactors	
	Height (m): 2.15
	Width (m): 1.66
	Depth (m): 1.54
	Pressing Force: 2.3 tonnes
	Cycle Time: 31 seconds
PAKAWASTE LF1100 Single Phase	
	Height (m): 1.905
	Width (m): 1.43
	Depth (m): 14.8
	Pressing Force: 2 tonnes
	Noise Level: less than 75 Decibels
Easi Recycling 1100L Bin Packer	
	Height (m): 2.105
	Width (m): 0.96
	Depth (m): 1.3
	Pressing Force: 4 tonnes
Please note that there are a range of different compaction units available on the market which could be used.	



- 6.2 Based on these compaction ratios and the methodology outlined in Table 6 of this Strategy, the estimated waste arisings (based on a twice weekly collection frequency) from the Proposed Development is provided in Table 8 of this Strategy. (For detailed waste calculations please see Appendix A of this Strategy).

**Table 8 Compacted Waste Arisings based on Twice Week Collection Frequency**


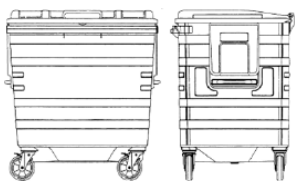
Land Use Class	NIA (m <sup>2</sup> )	MDR (L)	Food (L)	Glass (L)	Residual (L)	Total (L)
All	24,308	24,393	4,190	1,843	15,070	45,496

*For the flexible retail elements a 30:70 split has been assumed between A1 and A3 as advised by the architects. It should also be noted that the employees working in the reception area (i.e. approximately 11) have been included in the office space (B1) to consider a worst-case scenario.*

## Storage Containers

- 6.3 The storage requirements for waste arising from the operational phase of the Proposed Development is based on the following bins types:
- Usage of 1,100 L Euro Bins for the storage of MDR waste;
  - Usage of 1,100 L Euro Bins for the storage for Residual Waste;
  - Usage of 360 L Wheelie Bins for the storage of Food Waste; and
  - Usage of 360 L Wheelie Bins for the storage of Glass Waste
- 6.4 Examples of both 1,100 L Euro and 360 L Wheelie Bins are provided in Table 9 of this Strategy. These will be colour coded depending on the waste stream.

**Table 9 LBC Standard Bin Dimensions**

360 L	
	Capacity (L): 360
	Height (mm): 1,100*
	Length (mm): 620*
	Width (mm): 850*
1,100 L	
	Capacity (L): 1,100
	Height (mm): 1,410*
	Length (mm): 1,265*
	Width (mm): 980*
*Please note that dimensions vary between manufacturers	

# Commercial Waste Management and Storage Requirements

## Storage Requirements

6.5 Based on the waste arisings as outlined in Table 8 of this Strategy, the subsequent storage requirements are outlined in Table 10 of this Strategy.

**Table 10 Storage Requirements**

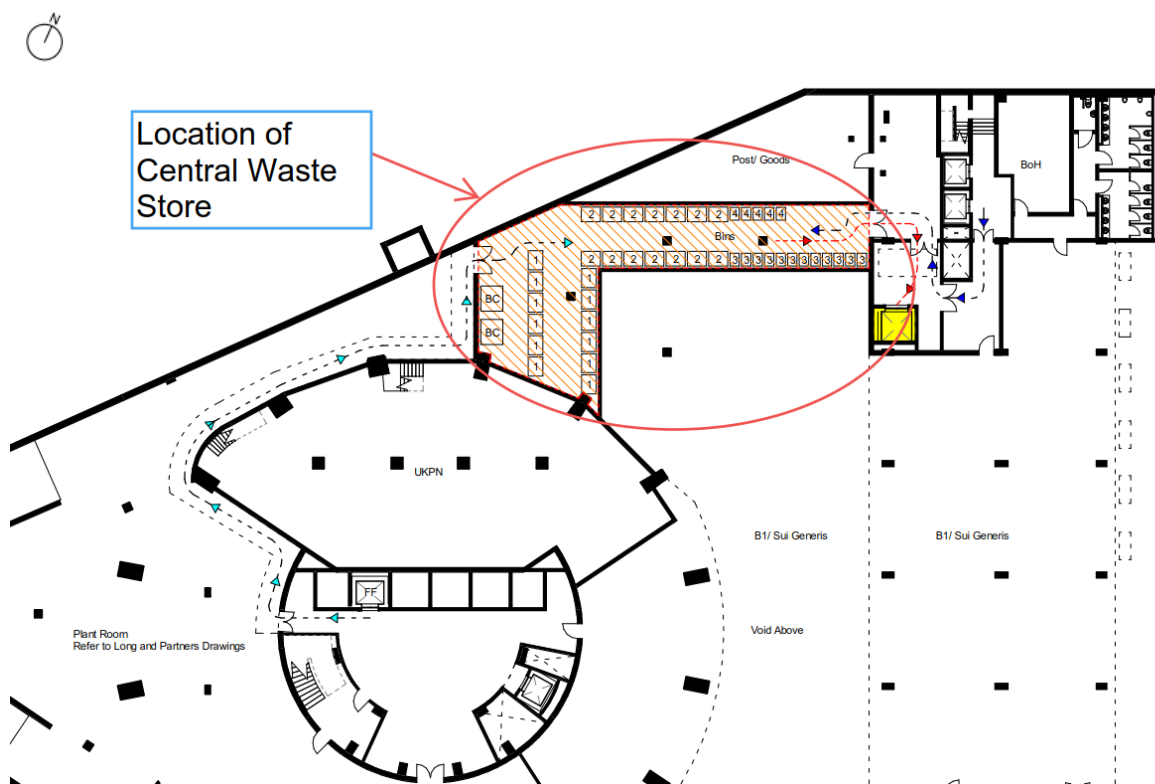
Land Use Class	NIA (m <sup>2</sup> )	MDR	Food	Glass	Residual	Total
All	24,308	22 x 1,100 L	12 x 360 L	5 x 360 L	14 x 1,100 L	36 x 1,100 L 17 x 360 L

*A 30:70 split has been assumed for the flexible retail elements between A1 and A3 as provided by the Architects. It should also be noted that the employees working in the reception area have been included in the office space (B1) to consider for the worst case scenario.*

## Commercial Waste Management

6.6 As stated in paragraph 1.7 of this Strategy, a central waste store has been designed on basement (level 2) of the Proposed Development (the location of the waste store is outlined in Figure 1 of this Strategy).

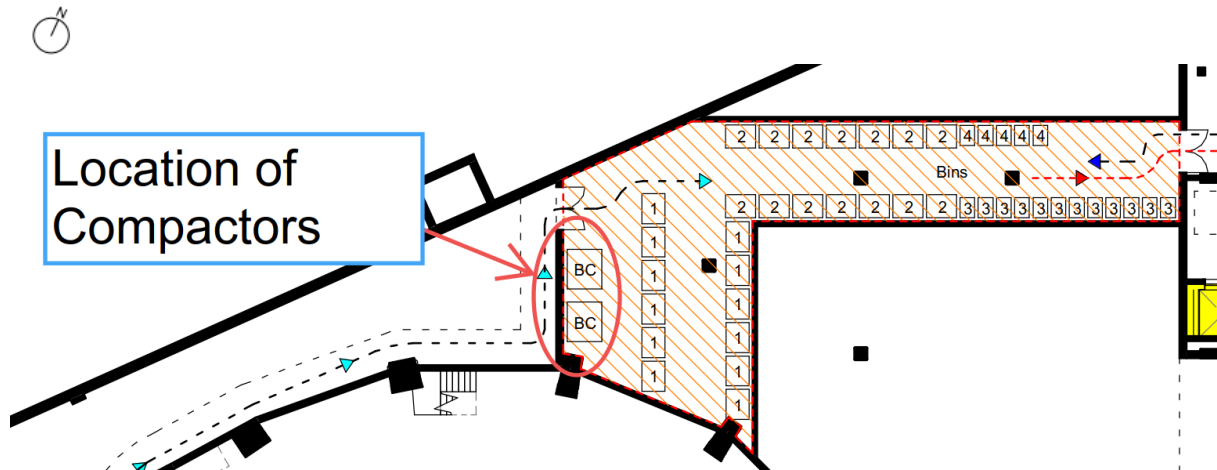
**Figure 1 Location of Waste Store**



Please note that Figure 1 is not drawn to scale

6.7 In order to effectively and efficiently manage space within the waste store, it is proposed that two in-bin level arm compactors will be installed in the central waste store (location of the compactors outlined in Figure 2 of this Strategy) allowing compaction ratios of 2:1 for MDR and 3:1 for residual waste; whereas food and glass waste will not be compacted.

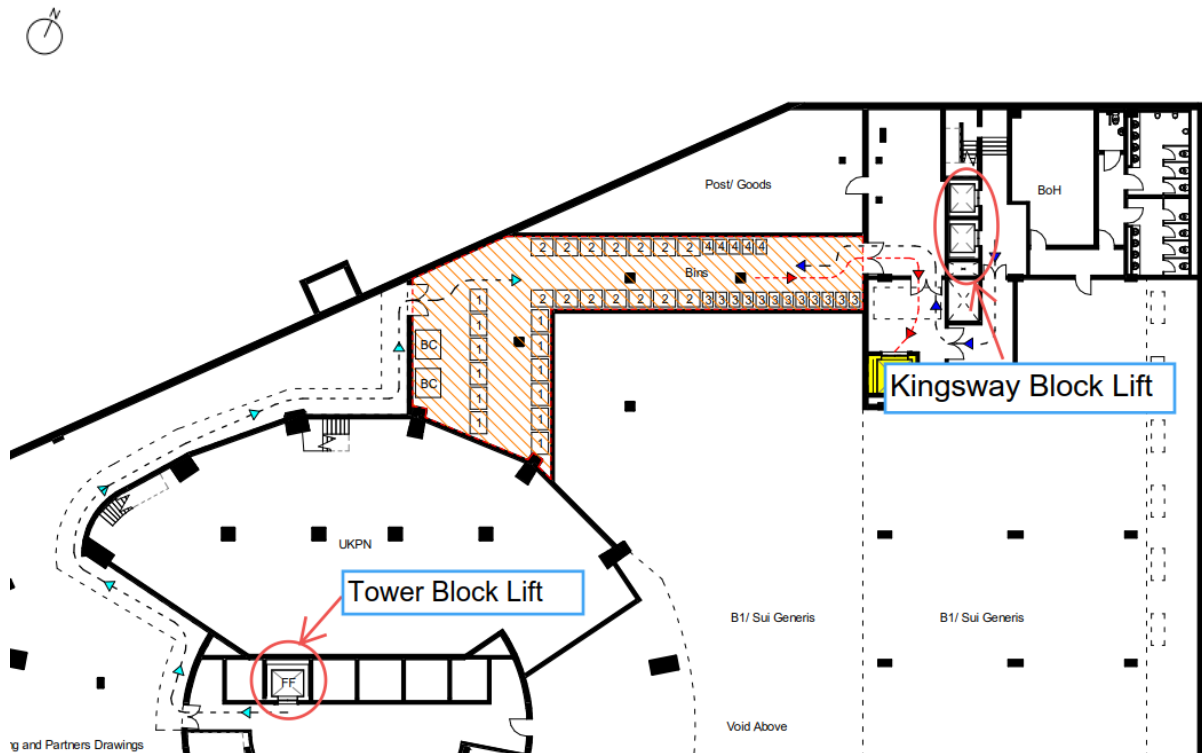
**Figure 2 Location of Compactors**



Please note that Figure 2 is not drawn to scale

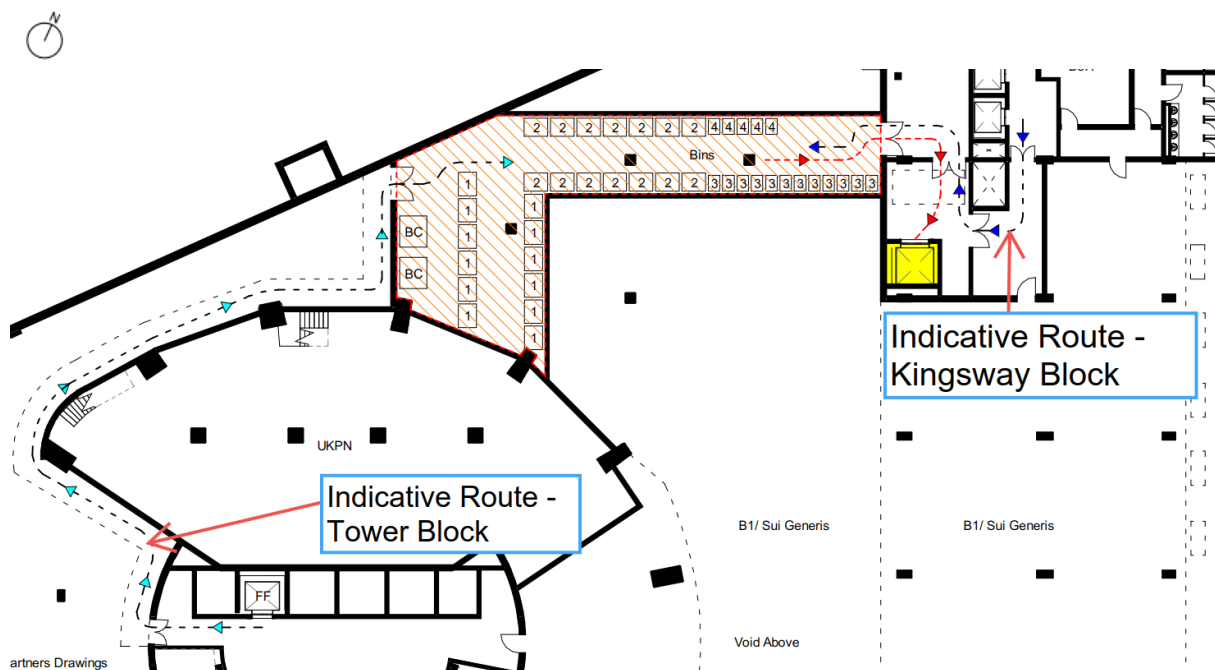
- 6.8 All commercial units have been designed to provide sufficient space within their curtilage to hold waste in small bins. On daily basis (or as agreed), the building management team will collect the waste from all commercial units within the Proposed Development and transfer this waste to the central waste store via service lifts located in both buildings (location of lifts outlined in Figure 3 of this Strategy and internal indicative waste transfer route outlined in Figure 4 of this Strategy), where it will be compacted (only MDR and residual waste) and stored in separate bins (i.e. MDR, food, glass and residual waste bins).

**Figure 3 Location of Lifts**



Please note that Figure 3 is not drawn to scale

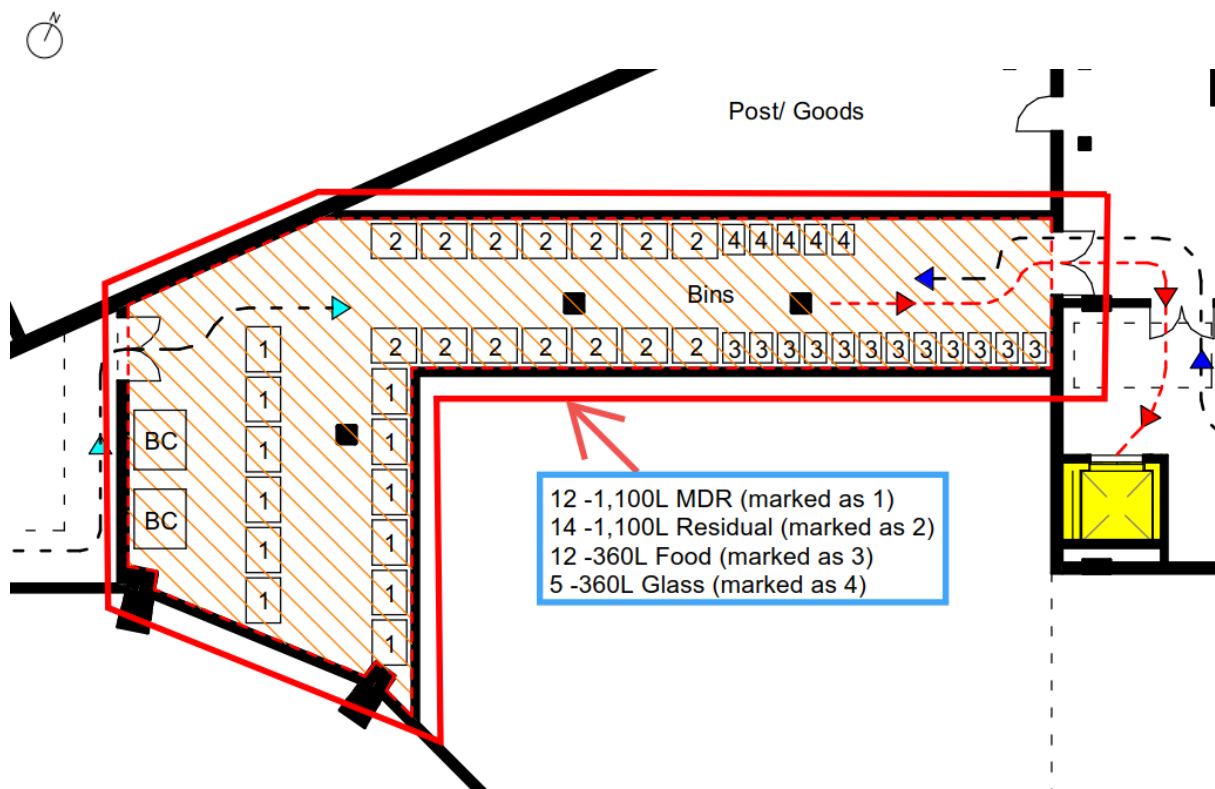
Figure 4 Indicative Internal Waste Transfer Routes



Please note that Figure 4 is not drawn to scale

6.9 The central waste store has been designed to provide sufficient capacity for holding bins based on a twice weekly collection frequency. Figure 5 of this Strategy outlines the layout of bins in the central waste store.

Figure 5 Waste Store Layout

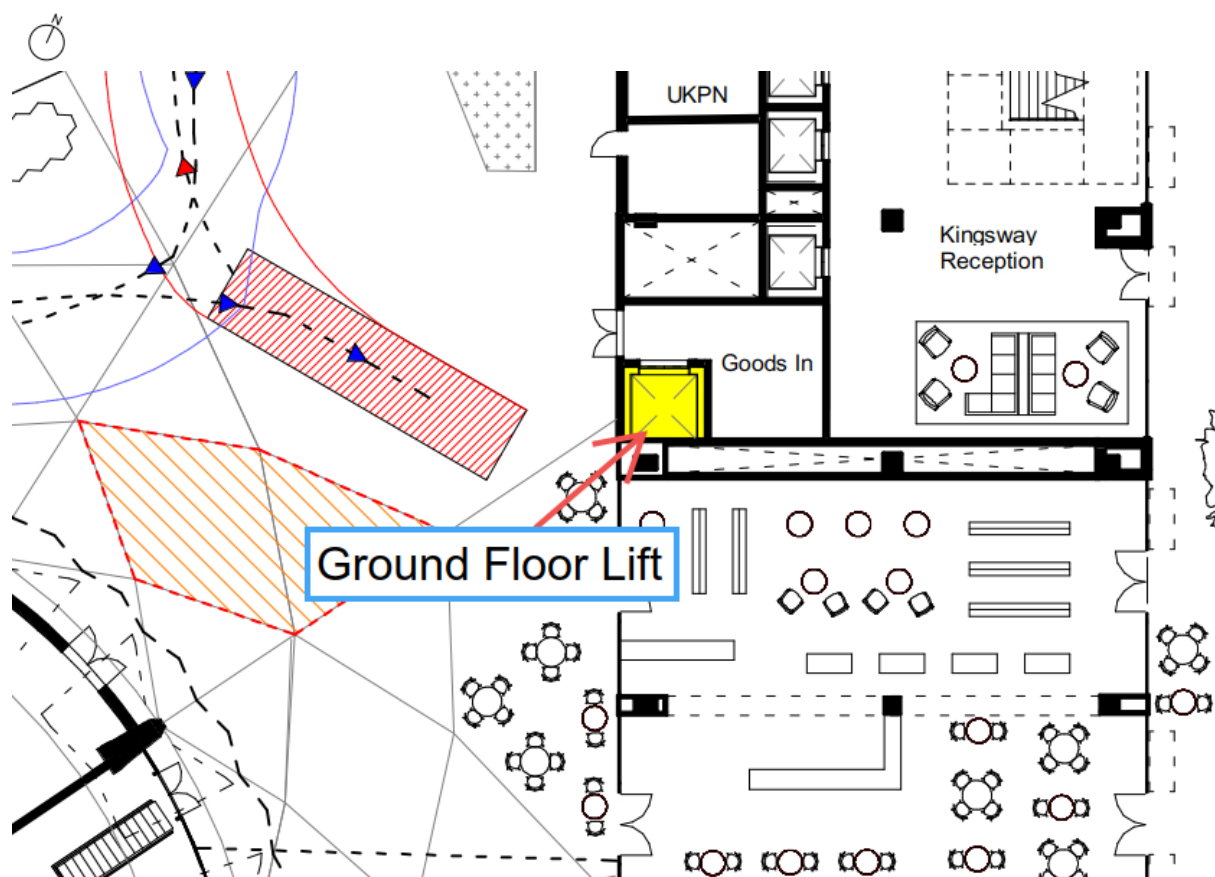


Please note that Figure 5 is not drawn to scale

- Figure 6 Location of Basement Lift (For Waste Transfer during collection)**

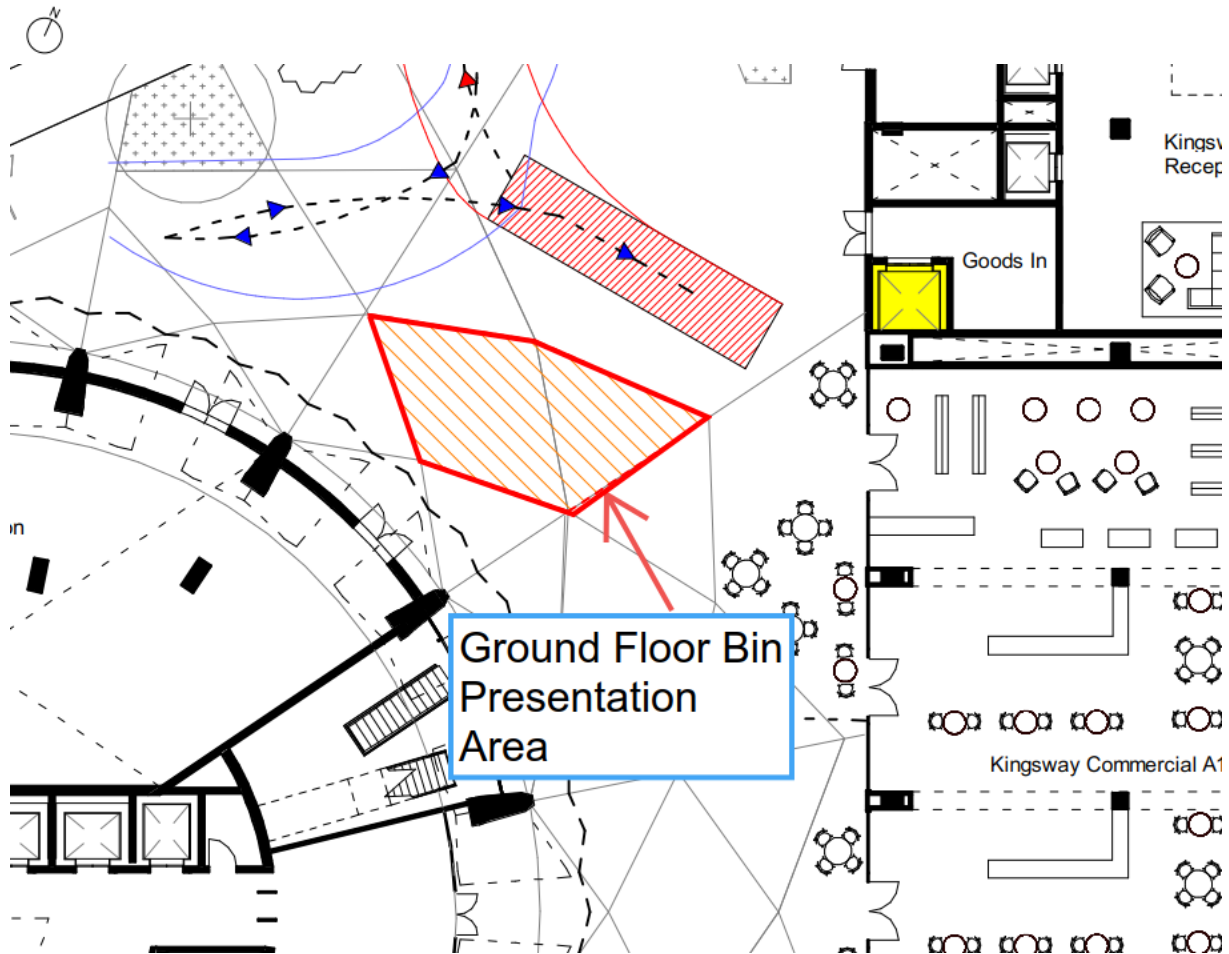


**Figure 7 Location of Ground Floor Lift (Used during collection)**



Please note that Figure 7 is not drawn to scale

**Figure 8 Waste Bin Presentation Area**

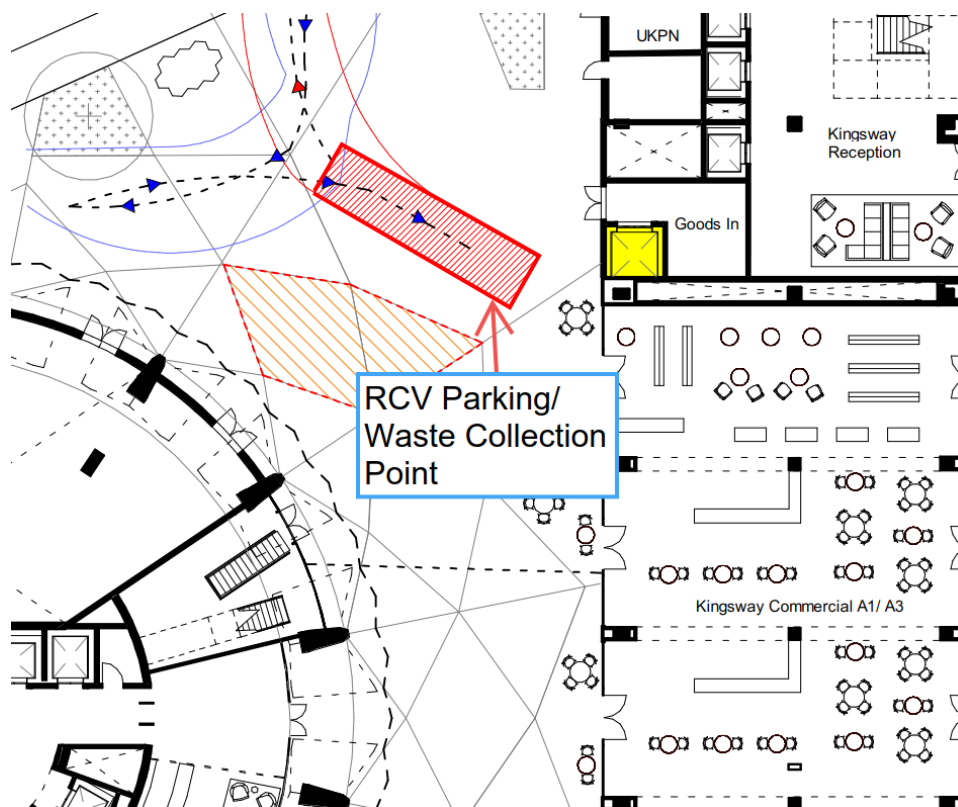


*Please note that Figure xx is not drawn to scale*

- 6.11 At this stage, it is envisioned that a private waste collection contractor will be commissioned to undertake the collection from the Proposed Development and is envisioned that the collection will take place outside of the working hours of all commercial units to avoid any disturbance to the users of the Proposed Development and to maintain the aesthetics of the Proposed Development. Hence, at the time of collection, the waste collection operatives will drag the bins from the bin presentation area to the collection point (location outlined in Figure 9 of this Strategy) that is located within 10 m distance, where the RCV will be parked. After emptying of the bins, the building management team will drag these bins back to central waste store.



**Figure 9 Collection Point / RCV Parking Area**



Please note that Figure 9 is not drawn to scale

## Maintenance and Fit-Out

- 6.12 Commercial tenants that require the use of a skip to undertake any future maintenance and fit out activities will be advised to contact the Local Authority to apply for the suspension of an on-street parking bay to place a skip to hold waste arising from these maintenance and fit out activities, however this will be subjected to approval from the Council on a case by case basis.
- 6.13 Once approved, the commercial tenants will make their own private arrangements for the delivery, management and collection of the skip.

## Unique Waste

- 6.14 There is likely to be a small component of the overall waste arisings from the Proposed Development that will comprise other waste streams, such as waste electrical and electronic equipment (WEEE), printer and toner cartridges and fluorescent light tubes. Building maintenance will also give rise to materials such as paints and waste lubricating oils that will require separate storage in dedicated sealed containers.
- 6.15 This type of waste is termed “unique” as it will not be produced on a regular basis and therefore its management will be on special arrangement with a registered waste handler for the specific waste that is produced. The waste store will provide space to store this type of waste along with other waste and separate arrangements will be made for the safe disposal of these waste streams, as covered by the Hazardous Waste (Amendment) Regulations 2016 and WEEE Regulations 2015. All waste management will have to comply with Environmental Protection Act 1990 and The Waste (England and Wales) (Amendment) Regulations 2014.



## 7. Waste and Recycling Storage Provision

- 7.1 In accordance with BS EN 840 (Ref. 40), as set out in BS 5906:2005, all waste containers within the Proposed Development will be stored under cover in specially designed waste storage room, which will be built to the same general standard for commercial premises. The walls and roofs of this store will be formed of non-combustible, robust, secure and impervious material, and have a fire resistance of one hour when tested in accordance with BS 476-21 - Fire tests on building materials and structures: Part 21 (Ref. 41), whilst the door of the store will be made of steel, and will have a fire resistance of 30 minutes when tested in accordance with BS 476-22 - Fire tests on building materials and structure: Part 22 (Ref. 42).
- 7.2 Further to these requirements, the Proposed Development will also comply with the guidance set out in LBC's "CPG – Design" and "Waste storage and arrangements for residential and commercial units", BS 5906:2005 and Part H6 of the Building Regulations (2010) (2015 Edition) (hereafter referred to as "Part H6") as provided below:

### Location

- Proposed Development will have collection areas at ground level within the site boundary;
- Bins within the Proposed Development will be stored and secured in a waste store and will not be accessible to the public footway to prevent the risk of fire, theft and hazard for pedestrians;
- Doors of the waste store within the Proposed Development will not open over the public footway or road as to not obstruct sight lines for pedestrians, drivers and cyclists;
- The waste store within the Proposed Development will not block any utility service points;
- The waste store within the Proposed Development will be designed and sited so as not to be prejudicial to health and local amenity; and
- Measures have been taken to minimise the visual impact of the waste store within the Proposed Development. Particular considerations have been given to listed buildings and buildings in a conservation area.

### Convenience

- Staff within the Proposed Development will not have to carry waste more than 30 metres from the commercial units.

### Screening or covering

- The waste store within the Proposed Development has been designed in line with British Standard BS 5906-2005 – Waste management in buildings; and
- Bin housings and foot locking ground structures will be installed around bins to support secure communal points for better waste presentation and provide communications holds for sticker labels or other information.

### Signage

- The waste store within the Proposed Development will be suitably lit and will be clearly designated by a suitable door or wall sign and, where appropriate, with floor markings.

### Accessibility

- The waste store within the Proposed Development is designed to be fully accessible and to comply with the Equality Act 2010. The waste store has been designed in line with BS 8300:2009 (Ref. 43) to meet the full range of needs of all people;
- The waste store is designed to provide a clear space of 150 mm between and around containers to allow their filling and emptying;

- The waste store is designed to be of adequate height to allow the lids of containers to be fully opened, with a minimum height of 2 m high for enclosures, compounds or storage rooms for communal containers; and
- The waste store within the Proposed Development is large enough to allow gangway access to all containers without needing to rearrange other bins within the space.

## Materials and finishing

- The floor and walls of the waste store within the Proposed Development will be constructed and finished in materials that are impervious and easy to clean;
- Where appropriate within the waste store of the Proposed Development, a trapped gully and water supply will be provided to make cleaning easier;
- Gullies for wash down facilities within the waste store will be positioned so as not to be in the track of container trolley wheels; and
- The doors of the waste store will have retainers to allow Eurobins or similar wheeled bins to pass easily through without damaging the doors.

## Locks

- The waste store within the Proposed Development will have internal unlocking mechanisms installed where doors self-lock; and
- Wheel foot locks and lid locking will be in place on all bins.

## Fire safety

- The waste store within the Proposed Development has been designed to comply with the fire safety guidance that requires all wheeled bins to be located within 6 metres or further from a building, unless the bins are in a purpose-built brick bin store which has a roof and fire doors. This is in line with BS 9999:2008 Code of practice for fire safety in the design, management and use of buildings (Ref. 44);
- Municipal waste is highly combustible, all designed building materials within the waste store of the Proposed Development will be fire retardant;
- Consideration has been taken to align with the fire strategy and fire plans and the design of the waste store has taken consideration for emergency access and egress routes; and
- The waste store will be fitted with fire doors, automatic fire detection and a sprinkler system and comply with the Regulatory Reform (Fire Safety) Order 2005 (Ref. 45).

## Ventilation and Lighting

- The waste store within the Proposed Development will have lighting and good ventilation to minimise odours;
- Permanent ventilators will be provided within the waste store, giving a total ventilation area of not less than 0.2 m<sup>2</sup>;
- The waste store will contain electrical lighting by means of sealed bulkhead fittings ( housings rated to IP65 in BS EN 60529:1992 (Ref. 46) for the purpose of cleaning down with hoses and inevitable splashing. Luminaires will be low energy light fittings or low energy lamp bulbs, controlled by proximity detection or a time delay button to prevent lights being left on; and
- Emergency lighting systems will be installed in the waste store and enclosed chambers.

## 8. Waste and Recycling Collection Requirement

8.1 In line with LBC's "CPG – Design" and "Waste storage and arrangements for residential and commercial units", BS 5906:2005 and Part H6 of the Building regulation guidance, the following collection requirements have been designed into the Proposed Development to comply with all mandatory waste storage requirements:

- The Proposed Development has been designed to accommodate vehicle access for the safe collection of commercial waste. This includes, adequate design of water drainage systems, lighting, parking allocation and management, vehicular access and egress, pedestrian and cyclist activity, and tree and leaf-fall management;
- Access roads, manhole covers, and gratings within the Proposed Development will be constructed to withstand a gross vehicle weight of 26 tonnes and axle loading of 11.5 tonnes;
- Access will be level from the bin presentation area to the agreed point of vehicle collection transfer;
- Where the tipping of bins occurs within the building's curtilage, consideration will be given to the lift height and tree cover, overhead structures or cables. A level hardstanding area or tipping bay will be clearly marked out on the plans (Figure 8) and communicated to the waste collection contractor once the Proposed Development is complete and operational;
- Bins will not be required to be moved further than 10 metres from the presentation point to the vehicle access and there will not be any steps or a steep gradient slope;
- Due consideration has been given to the provision of limiting vehicle reversing activity and designing of in-turning areas for collection vehicles within the development;
- Allowances of a least one metre either side has been included when considering the width of access roads and gateways;
- The collection vehicles will be able to enter and exit the development in forward direction; and
- The collection point for the bins as provided within the development will be reasonably accessible to the size of the waste collection vehicles as set out in Table 11 of this Strategy, which is demonstrated by the swept analysis in Appendix B.

**Table 11 RCV Dimension**

### Dimensions

Overall Length	12.100 m
Overall Width	2.490 m (3.090 m including buffers)
Overall Body Height	3.749 m
Min Body Ground Clearance	0.302 m
Track Width	2.490 m
Lock to Lock Time	4.00 s
Kerb to Kerb Turning Radius	11.250 m

## 9. Further Consideration

### Building Research Establishment Environmental Assessment Method

- 9.1 Building Research Establishment Environmental Assessment Method (BREEAM) provides assessment criteria for newly constructed developments, such as the Proposed Development, for a range of environmental factors, including waste. These assessment criteria are detailed within the BREEAM New Construction Non-Domestic Buildings Technical Manual (Ref. 47). With regards to waste arisings generated during the operational phase of the Proposed Development, one credit is available for meeting requirements of Wst 03 Operational. A BREEAM excellent rating is being targeted by the Proposed Development; hence this credit will assist in meeting this target.
- 9.2 In order to meet Wst 03 Operational, the following criteria must be complied with:
- Provision of dedicated storage space to cater for the segregation and storage of operational MDR waste volumes generated by the Proposed Development, it's occupants and activities;
  - The dedicated space must be:
    - Clearly labelled, to assist with segregation, storage and collection of the MDR waste streams;
    - Accessible to occupants/facilities operators (i.e. management teams) for the deposit of materials and collections by waste management contractors; and
    - Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volume of waste that will arise from daily/weekly operational activities and occupancy rates.
  - Where consistent generation in volume of the appropriate operational waste stream is likely to exist (i.e. large amounts of packaging or compostable waste), the following facilities are provided as part of the management strategy:
    - Static waste compactor(s) or baler(s) (paragraph 6.1 of this Strategy provides more information on the compactors); and
    - A water outlet adjacent to/within the facility for cleaning and hygiene purposes (where organic material is stored on-site).
- 9.3 It is understood that providing the storage requirements outlined within this Strategy are adhered to, it is considered that the Proposed Development will meet the Wst 03 Operational criteria.

## 10. Summary

- 10.1 The principal aim of this Strategy is to demonstrate how sustainable methods for waste and recycling management have been considered for the operational phase of the Proposed Development. Furthermore, with regards to waste and recycling management within the Proposed Development, this Strategy has the following aims:
- To contribute towards achieving current and long-term government, GLA, NLWA and LBC's targets for waste minimisation, recycling and re-use;
  - To comply with all applicable legal requirements for handling operational waste;
  - To achieve high standards of waste management performance, through giving due consideration to the waste generated during operation of the Proposed Development; and
  - To provide a convenient, clean and efficient waste management strategy that enhances the operation of the Proposed Development and promotes recycling.
- 10.2 Once the proposed refurbishment and extensions are complete, the Proposed Development will provide approximately 35,430 m<sup>2</sup> Gross Internal Area (GIA) or 24,308 m<sup>2</sup> Net Internal Area (NIA) for commercial land uses including flexible retail units (A1/A3 land use) and office space (B1 land use) flexible B1/B1 and event space (sui generis). Please note that the area allocated to UKPN is assumed to be a non-waste generating space
- 10.3 The Proposed Development once complete and operational is anticipated to produce approximately 168,330 L of waste from all commercial land uses per week, equating to approximately 1,324 tonnes per year (considering the following densities: MDR – 84 kg/m<sup>3</sup>, food waste – 395 kg/m<sup>3</sup>, glass waste – 2,500 kg/m<sup>3</sup> and residual waste - 100 kg/m<sup>3</sup>).
- 10.4 However, to effectively and efficiently manage space within the Proposed Development, the use of lever-arm in - bin compactors has been proposed (installed in the waste store) that will allow MDR to be compacted at 2:1 and residual waste to be compacted at 3:1, whereas food and glass waste will not be compacted. Considering the compaction ratios and a twice – weekly collection frequency, the total waste required to be managed will equate to 45,496 L.
- 10.5 A single combined waste store has been designed in the basement level 2 of the Proposed Development that will allow sufficient space to hold bins to manage the compacted waste arising from all the commercial elements of both blocks. On a daily basis (or as agreed) the building management team will collect waste from all the commercial units (that will provide sufficient space within their curtilage to hold waste in small bins) and carry this waste to the waste store via service lifts provided within the Tower and Kingsway block, where this waste will be compacted and stored in separate bins (i.e. MDR, food, glass and residual waste bins).
- 10.6 At this stage, it has been proposed that a private contractor would be commissioned to undertake the collection of waste from the Proposed Development and is envisioned that the collection will take place after the working hours of all commercial units to avoid any disturbance to the users of the Proposed Development and to maintain the aesthetics of the Proposed Development.
- 10.7 Prior to the collection time (or as agreed), the building management team will transfer waste bins for the stream (i.e. either MDR, food, glass or residual waste) scheduled to be collected on the day to the waste presentation area located on the Ground Floor (i.e. within 10 m of the collection point (location as outlined in ). From this area, the collection operatives will drag the bins to the RCV for emptying purpose. Once, these bins have been emptied the building management team will return them their respective waste stores.
- 10.8 These provisions will result in waste produced during operation of the Proposed Development being managed in accordance with The Waste (England and Wales) Regulations 2011 (as amended). Additionally, all waste infrastructure introduced to the Proposed Development will comply with guidance and policies of GLA, LBC, BSI 5906:2005 and Part H6 of the Building Regulations.

# 11. References

- Ref. 1 London Borough of Camden (LBC), (2018); Planning Guidance Document – “ Design Storage and Collection of Recycling and Waste”.
- Ref. 2 British Standards Institute (BSI), (2005); BS 5906:2005 Waste Management in Buildings, Code of Practice.
- Ref. 3 LBC, (2019); Planning Guidance Document - Transport
- Ref. 4 Her Majesty’s Stationary Office, (HMSO) (2003); The Waste (England and Wales) Regulations 2011 (as amended 2014).
- Ref. 5 Department for Communities and Local Government (DCLG), (2013); Building Regulations – Approved Document H: Drainage and Waste Disposal (Incorporating 2010, 2013, and 2015 amendments).
- Ref. 6 HMSO, (2015); The Animal By-Products (Enforcement) (Amendment) Regulations 2015
- Ref. 7 HMSO, (2015); Clean Neighbourhoods and Environment Act.
- Ref. 8 HMSO, (1989); Control of Pollution (Amendment) Act 1989.
- Ref. 9 HMSO, (2012); The Controlled Waste (England and Wales) (Amendment) Regulations 2012.
- Ref. 10 HMSO, (1995); Environment Act 1995.
- Ref. 11 HMSO, (1990); Environmental Protection Act 1990.
- Ref. 12 HMSO, (1996); The Landfill Tax (Amendment 2017) Regulations 1996.
- Ref. 13 HMSO, (2005); The List of Wastes (England) (Amendment) Regulations 2005.
- Ref. 14 HMSO, (2015); The Packaging (Essential Requirements) Regulations 2015.
- Ref. 15 HMSO, (2017); The Pollution Prevention and Control (Fees) (Miscellaneous Amendments) Regulations as amended.
- Ref. 16 HMSO, (2016); The Producer Responsibility Obligations (Packaging Waste) (Miscellaneous Amendments) Regulations 2017).
- Ref. 17 HMSO, (2005); The Hazardous Waste Regulations 2005 (as amended 2016).
- Ref. 18 HMSO, (2015); The Waste Batteries and Accumulators Regulations (Amendment) 2015.
- Ref. 19 HMSO, (2015); The Waste Electrical and Electronic Equipment (WEEE) (Amendment) Regulations (2015).
- Ref. 20 HMSO, (2007); The Waste Management (England and Wales) Regulations 2007.
- Ref. 21 Ministry of Housing, Communities and Local Government (MHCLG), (2019); National Planning Policy Framework (NPPF).
- Ref. 22 DCLG, (2014); National Planning Policy for Waste
- Ref. 23 Department for Environment, Food and Rural Affairs (Defra), (2013); Waste Management Plan for England 2013.
- Ref. 24 DCLG, (2018); National Planning Guidance
- Ref. 25 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and repealing certain Directives (Waste Framework Directive).
- Ref. 26 DCLG, (2014); National Planning Practice Guidance: Design [available online] <http://planningguidance.planningportal.gov.uk/blog/guidance/design/>
- Ref. 27 DCLG, (2018); National Planning Practice Guidance: Waste [available online] <http://planningguidance.planningportal.gov.uk/blog/guidance/waste/>
- Ref. 28 HMSO, (2018); A Green Future: Our 25 Year Plan to Improve the Environment
- Ref. 29 HMSO, (2018); Our Waste, Our Resources: A Strategy for England
- Ref. 30 Greater London Authority (GLA), (2016); The London Plan.
- Ref. 31 GLA, (2017); Draft New London Plan, Spatial Development Strategy for Greater London.
- Ref. 32 GLA, (2018); London Environment Strategy.
- Ref. 33 GLA, (2011); The Mayor’s Business Waste Management Strategy.

- Ref. 34 GLA, (2011); The Mayor's Municipal Waste Management Strategy.
- Ref. 35 North London Waste Authority (NLWA), (2019); North London Waste Plan Proposed Submission (Regulation 19).
- Ref. 36 NLWA, (2009); Joint Waste Strategy
- Ref. 37 LBC, (2017); Local Plan
- Ref. 38 LBC, (2018); Planning Guidance Document – Design
- Ref. 39 HMSO, (2002); Control of Substances Hazardous to Health Regulations 2002 as amended.
- Ref. 40 BSI, (2004); BS EN 840 Mobile Waste Containers.
- Ref. 41 BSI, (1987); BS 476-21, Fire tests on building materials and structures: Part 21.
- Ref. 42 BSI, (1987); BS 476-22, Fire tests on building materials and structures: Part 22.
- Ref. 43 BSI 8300:2009; Design of Buildings and their approaches to meet the needs of disabled people
- Ref. 44 BSI 9999:2008; Code of practices for fire safety in the design, management and use of buildings
- Ref. 45 BSI, (2005); Regulatory Reform (Fire Safety) Order, (2005).
- Ref. 46 BSI, (1992); BS EN 60529:1992, Specification for degrees of protection provided by enclosures (IP code).
- Ref. 47 Building Research Establishment Environment Assessment Method (BREEAM), (2011); BREEAM New Construction Non-Domestic Buildings Technical Manual.

# Appendix A Waste Arisings

## Un-Compacted Waste Arisings – Weekly Collection Frequency

Land Use	NIA (m <sup>2</sup> )	Working Capacity	MDR (L/W)	Food (L/W)	Glass (L/W)	Residual (L/W)	Total (L/W)
Flexible Retail (A1)*	356	238 Sales Floor Area	1,190	-	-	1,190	2,380
Flexible Retail (A3)	832	278 Covers	10,425	6,225	-	4,170	20,850
Office (B1)**	21,406	2,687 Employees	67,175	-	-	67,175	134,350
Flexible Class B1/B1 and events space (Sui Generis)	1,714	215 Employees	3,225	1,075	3,225	3,225	10,750
<b>Total</b>	<b>24,308</b>		<b>82,015</b>	<b>7,330</b>	<b>3,225</b>	<b>75,760</b>	<b>168,330</b>

\* 30:70 Split has been assumed between A1 and A3 as provided by the Architects

\*\* It is envisioned that approximately 11 employees will be working at the Reception area (including Security Guards) – this number has been added to the Office space (B1) for estimation of the waste arisings to consider a worst-case scenario

## Un-Compacted Waste Arisings – Twice Weekly Collection Frequency

Land Use	NIA (m <sup>2</sup> )	Working Capacity	MDR (L)	Food (L)	Glass (L)	Residual (L)	Total (L)
Flexible Retail (A1)*	356	238 Sales Floor Area	680	-	-	680	1,360
Flexible Retail (A3)	832	278 Covers	5,958	3,575	-	2,383	11,915
Office (B1)**	21,406	2,687 Employees	40,305	-	-	40,305	80,610
Flexible Class B1/B1 and events space (Sui Generis))	1,714	215 Employees	1,843	615	1,843	1,843	6,144
<b>Total</b>	<b>24,308</b>		<b>48,786</b>	<b>4,190</b>	<b>1,843</b>	<b>45,211</b>	<b>100,028</b>

\* 30:70 Split has been assumed between A1 and A3 as provided by the Architects

\*\* It is envisioned that approximately 11 employees will be working at the Reception area (including Security Guards) – this number has been added to the Office space (B1) for estimation of the waste arisings to consider a worst-case scenario



# Appendix B Swept Path Analysis

