THE GOODSYARD

Operational Waste Management Strategy

September 2019

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Hammerson

PREFACE

This is an Operational Waste Strategy (OWS) prepared by Trium Environmental.

It is submitted in relation to amendments ("Proposed Amendments") that are being made to the planning applications and applications for listed building consent (the "Applications") for the redevelopment of Bishopsgate Goodsyard. The Applications as amended by the Proposed Amendments form the "Revised Scheme".

On 21st July 2014 Bishopsgate Goodsyard Regeneration Limited (the "Applicant") submitted the Applications to the London Borough of Hackney and the London Borough of Tower Hamlets (the "Boroughs").

On 23rd September 2015 the then Mayor of London directed that he would act as local planning authority for the purposes of determining the Applications.

On 12th April 2016 the then Mayor deferred the determination of the Applications to allow the Applicant to address the issues raised in the Stage III Report.

The Applicant has carefully reviewed the issues raised in the Stage III Report and has liaised closely with the Mayor of London, the Boroughs and other stakeholders and consultees and is now submitting amendments to the Applications to address their feedback.

In broad terms, the Applicant is making the following Proposed Amendments to the Applications:

Plot 1 (Formerly Plots A and B)

The Proposed Amendments maintain the height of the building and the type of uses, as currently proposed and retains the bridging over the London Overground box. The building massing is proposed to be revised to include setbacks at the upper levels as a result of feedback from the GLA and the Boroughs to address the relationship with adjacent buildings.

Plot 2 (Formerly Plots F and G)

The Proposed Amendments replace the two tallest residential buildings with a commercial building with retail at the ground floor. The building would extend up to 17 - 29 storeys and would be the tallest building proposed. This building is being submitted with all matters in detail.

The reduction in height of Plot 2 means that no part of the scheme is now visible in views from the South Bastion of Tower Bridge.

Plot 3 (Formerly Plot K)

The Proposed Amendments maintain the height and footprint of the building and the type of uses, as currently proposed. The Proposed Amendments address design comments in respect of the treatment to Phoenix Street and the listed Oriel Wall along Commercial Street.

Plot 4 (Formerly Plot C)

The Proposed Amendments maintain the uses within this building and comprise retail at ground floor with residential above. The height of the building is proposed to be reduced to 19 storeys.

Plot 5 (Formerly Plot D)

The Proposed Amendments maintain the uses within this building and comprise retail at ground floor with residential above. The height of the building is proposed to be reduced to between 6 -13 storeys.

Plot 6 (Formerly Plot E)

The Proposed Amendments change the use of this building to a cultural type use with retail use. The height of the building is proposed to be reduced to up to 6 storeys in order to address comments raised by the GLA in respect of daylight and sunlight impacts along Sclater Street and the massing in the north-east part of the site.

Plots 7, (Formerly Plots H, I, J), 8A, 8B, 8C, 10 and 11 (the Pavillion)

The Proposed Amendments maintain the mix of retail uses within the Oriel as well as the potential for Class D1/D2 uses within the Braithwaite arches with public open space above, as currently proposed (Plot 7). Plot 8 introduces hotel and residential uses with access at ground floor level within a 25 storey building to the west of Braithwaite Street, plus 4 storey buildings on top of the existing arches. The Proposed Amendments introduce residential within Plot 10 with retail at ground floor. The Proposed Amendments introduce retail use within a single storey building in Plot 11.

Public Open Space

The overall amount of public space as part of the Proposed Amendments would increase at platform level, including an area of consolidated open space at the eastern end of the platform.

The Proposed Amendments, and the rationale for them, are explained fully in the Planning Statement prepared by DP9 Ltd.

The Proposed Amendments to the Applications have required some changes to be made to the Operational Waste Management Strategy and other documentation originally submitted with the Applications. Rather than issuing tracked changed documents, the Applicant has issued this revised Operational Waste Strategy which replaces in its entirety that submitted previously.

EXECUTIVE SUMMARY

This Operational Waste Management Strategy (the 'Strategy') has been prepared on behalf of Bishopsgate Goodsyard Regeneration Ltd, the 'Applicant', who is seeking to obtain a part outline and part detailed (full) planning permission (forming a 'hybrid' planning application) for a comprehensive mixed-use redevelopment (hereinafter referred to as 'the Revised Scheme').

The Revised Scheme sits within the land formerly known as 'Bishopsgate Goods Yard' in Shoreditch, London (the 'site'). The Site is partly located within the London Borough of Hackney (LBH) and the London Borough of Tower Hamlets (LBTH).

The Site is approximately 4.4 ha and is centred at Ordnance Survey (OS) National Grid Reference (NGR) TQ 33618 82233. The Site has been in a derelict state since a fire in December 1964 and demolition of buildings on-site in 2004. In 2010 the Shoreditch High Street Rail Station opened in the centre of the site, serving the East London Line (London Overground) between Highbury & Islington and several stations south of the River Thames.

The west of the Site currently comprises a small pop-up retail mark (known as 'Boxpark'), the centre of the Site comprises sports pitches, and the south of the Site comprises arches and a viaduct. The majority of the Site is vacant and overgrown with scrub-like vegetation and several low value trees. Aside from the Shoreditch High Street Rail Station building and associated elevated London Overground rail line, there are currently no other permanent buildings on the Site.

This Strategy provides an overview of how waste and recycling generated from the residential and non-residential elements of the Revised Scheme will be managed during its' operation; the Strategy discusses the flow of waste from waste generator (i.e. residents/tenants) through to storage and collection. The Strategy outlines how the Revised Scheme has been designed to be sustainable and 'forward-thinking' in its' approach to waste and recycling, whilst remaining 'workable' during the operation of the Revised Scheme.

In total, the Revised Scheme is anticipated to generate approximately 715,500L of waste per week: 102,000L from residential uses, and 613,500L from non-residential uses. This equates to approximately 7,813 tonnes of waste per year generated as a result of the operational uses associated with the Revised Scheme.

It should be noted that references in this Strategy to 'application' should be taken to read 'applications' reflecting the fact that two identical planning applications were originally submitted – one to the LBH and one to the LBTH with each borough tasked with determining consent for the extent of the Revised Scheme that fell within each respective area. The applications were then called in by The Mayor to act as the local planning authority in September 2015. Therefore, references to 'planning permission; should be taken to read 'planning permissions' given that two planning permissions will be required for the Proposed Amendments to proceed in its entirety.

Residential Waste

Residential waste and recycling storage requirements were calculated in accordance with LBTH calculation methodologies, as the residential uses are located within the LBTH part of the Site only; no residential uses are located within the LBH. Sufficient waste storage has been provided within the Revised Scheme for the storage of residential waste and recycling. Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.

Residential waste stores will contain sufficient waste storage for one weeks' worth of waste for food, residual (i.e. general) and recyclable waste streams. The store will be easily accessible to all residents, and the bins inside the store will be appropriately laid out to be completely accessible to residents.

Appropriate servicing arrangements have been made for the collection of residential waste by the LBTH waste collection vehicle.

Bulky waste storage will also be available to residents of each residential plot.

Non-Residential Waste

The Revised Scheme provides a mix of non-residential use classes: A1-A5; B1; C1; D1; D2; and Sui Generis. These use classes have been spread throughout the plots, and are located within both the LBH and the LBTH parts of the Site.

Waste generated from these uses has been calculated using British Standards 5906:2005 and LBTH methodology (given that the LBTH provide a more conservative methodology, and thus present a worst-case approach to waste storage requirements). The non-residential waste storage calculation methodology splits the waste arisings into three waste streams: recyclable, residual, and food waste (plot and use-class dependant). Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.

Storage Requirements have predominantly been based on a twice-weekly or daily collection frequency (plot and use-class dependant).

Summary

The Strategy has been designed in accordance with relevant requirements: LBTH and LBH guidance, British Standard 5906 2005 (Waste Management in Buildings Code of Practice) and Part H6 of the Building Regulations 2017.

1.1 INTRODUCTION

1.1.1 This Operational Waste Management Strategy (the 'Strategy') has been prepared on behalf of Bishopsgate Goodsyard Regeneration Ltd, the 'Applicant', who is seeking to obtain a part outline and part detailed (full) planning permission (forming a 'hybrid' planning application) for a comprehensive mixed-use redevelopment (hereinafter referred to as 'the Revised Scheme').

1.1.2 The Revised Scheme sits within the land formerly known as 'Bishopsgate Goods Yard' in Shoreditch, London (the 'Site'). The site is partly located within the London Borough of Hackney (LBH) and the London Borough of Tower Hamlets (LBTH).

1.1.3 This Strategy provides an overview of how the Revised Scheme has been designed so as to consider the flow of waste through the development, from waste generator (i.e. residents/tenants) through to storage and collection, in a sustainable manner during its operation. The Strategy has been designed in accordance with relevant requirements: LBTH and LBH guidance, British Standard 5906 2005 (Waste Management in Buildings Code of Practice) and Part H6 of the Building Regulations 2017.

1.1.4 Table 1.1 introduces this Strategy, by providing key information and considerations taken into account during the preparation of the document. It should be highlighted that the full planning policy context relevant to this Strategy has been presented within Appendix 1.

Site Description

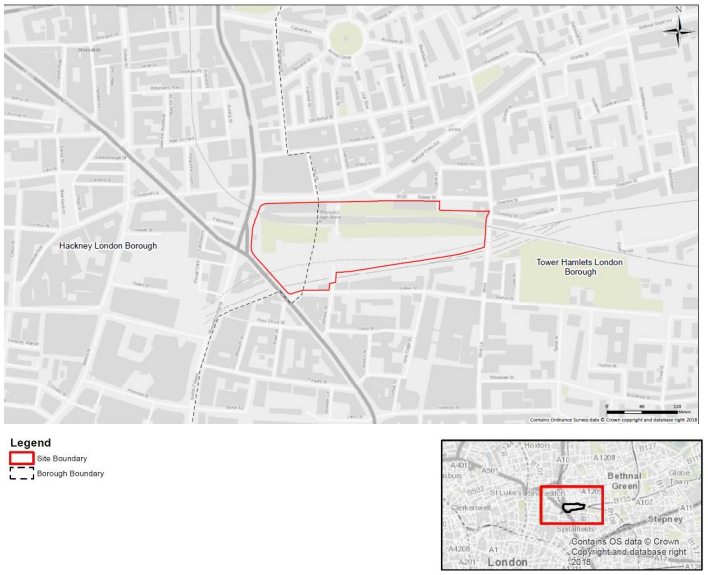
1.1.5 The site is approximately 4.4 ha and is centred at Ordnance Survey (OS) National Grid Reference (NGR) TQ 33618 82233. The site has been in a derelict state since a fire in December 1964 and demolition of buildings on-site in 2004. In 2010 the Shoreditch High Street Rail Station opened in the centre of the site, serving the East London Line (London Overground) between Highbury & Islington and several stations south of the River Thames.

1.1.6 The site is bounded by transportation infrastructure in the form of road and rail. The site is bounded by the A1209 Bethnal Green Road and Sclater Street to the north, Brick Lane to the east and the A10 Shoreditch High Street to the west. The Great Eastern Main Line and West Anglia Main Line railways from Liverpool Street station form most of the southern boundary of the site, with the A1202 Commercial Street to the southwest. Wheeler Street / Braithwaite Street run north/south through the centre of the site. Aside from the Shoreditch High Street Rail Station building and associated elevated London Overground rail line, there are currently no other permanent buildings on the site. As of December 2011, there are several temporary 'recycled metal shipping containers' used as a pop-up retail mall known as the 'Boxpark'.

1.1.7 Through the centre of the site in a west/east orientation are multiple games pitches, including eight 'five-a-side' football pitches operated by Powerleague Fives Ltd. The southern section of the site including the listed arches and viaduct is vacant and overgrown with scrub-like vegetation and several low value trees.

1.1.8 The site location is presented in Figure 1.1

Figure 1.1 Site Location



The Revised Scheme

1.1.9 The Revised Scheme comprises comprehensive redevelopment of the site which will include the provision of up to 139,023 m^2 Gross External Area (GEA) of commercial floorspace (B1 use), up to 19,547 m^2 GEA of retail floorspace (A1, A2, A3 and A5 to A5 use) the provision of up to 500 residential homes and the provision for up to a 150 room hotel and public realm.

1.1.10 Figures 1.2 and 1.3 presents the location of Plots 1 to 10 of the Revised Scheme.

Fig. 1.2 Revised Scheme Layout at ground level

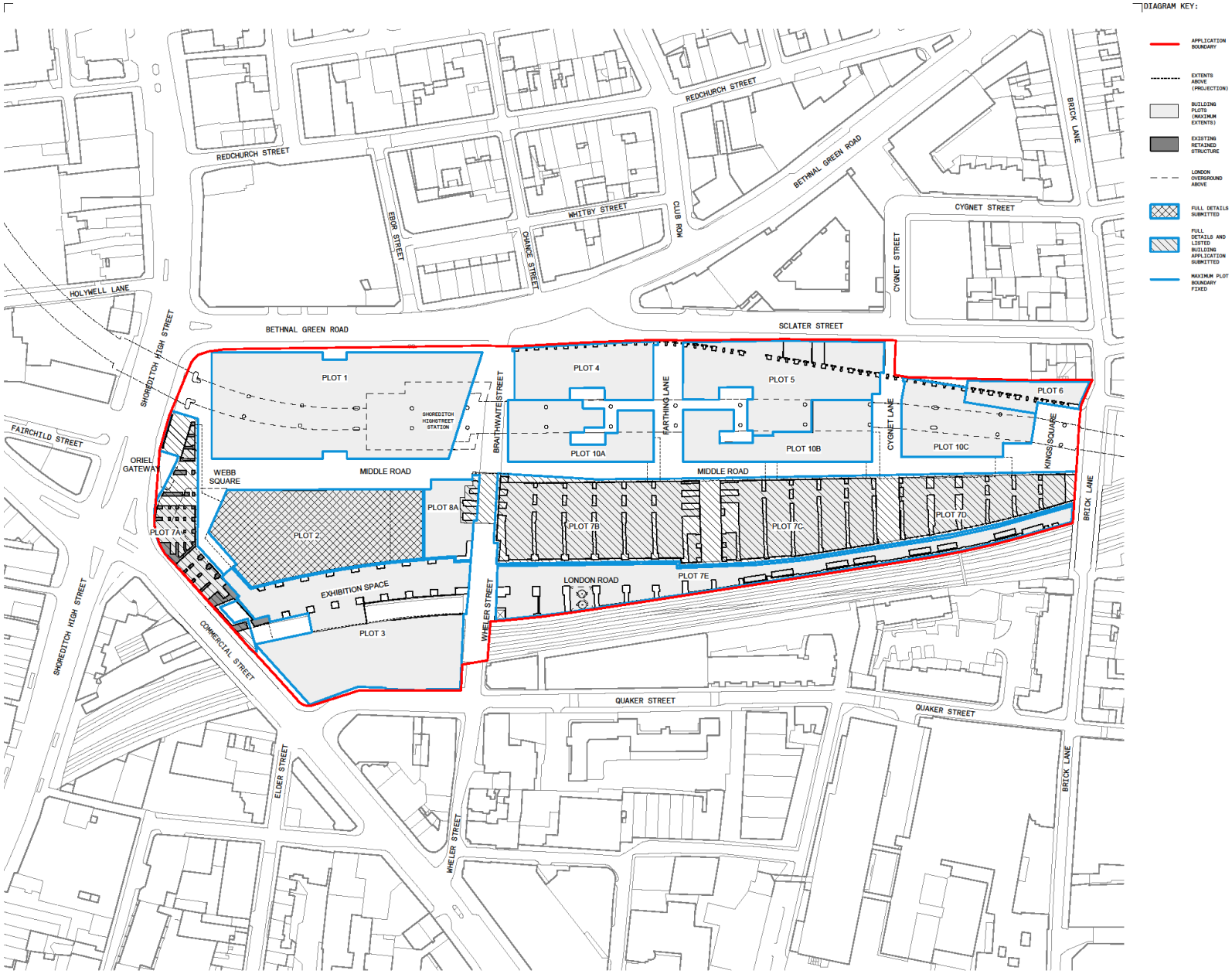


Fig. 1.3 Revised Scheme Layout at platform level

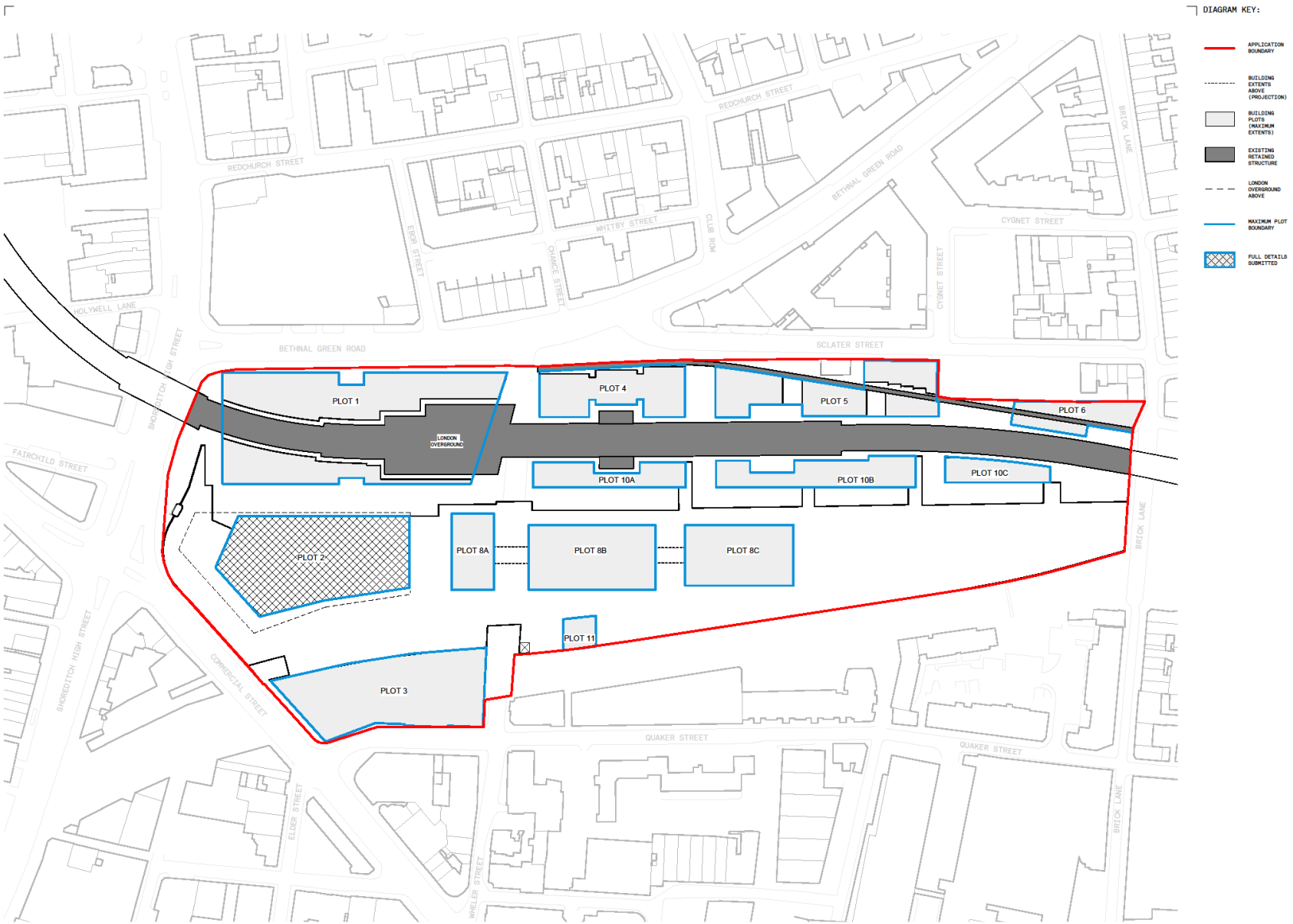


Table 1.1 Key Information Associated with this Operational Waste Management Strategy

	Operational Waste Management Strategy
AUTHOR	Trium Environmental Consulting LLP
SUPPORTING APPENDIX	Appendix 1: Planning Policy Context Appendix 2: Waste Calculations Appendix 3: Waste Storage and Collection Requirements Appendix 4: Waste Streams - Definitions and Responsibilities Appendix 5: Example Waste Bin Dimensions Appendix 6: Refuse Vehicle Tracking
KEY CONSIDERATIONS	The key considerations of this Strategy comprise: • A review of waste and recycling related legislation, policy and guidance documents, of relevance to the Revised Scheme; • A discussion on the methodology used to determine anticipated waste quantities generated during the operation of the Revised Scheme, based on the accommodation schedule (i.e. number of residential units broken down by unit type) and non-residential areas. The anticipated waste arisings determine the waste storage provisions required for the residential and non-residential elements of the Revised Scheme; and • An overview of the strategy for management waste and recycling anticipated to be generated during the operation of the Revised Scheme. From waste generator (i.e. future residents / future non-residential tenants etc. of the Revised Scheme) through to waste storage and waste collection.
KEY LEGISLATION	• The Environment Act 1995 • The Environmental Permitting (England and Wales) (Amendment) Regulations 2018 • The Waste (England and Wales) (Amendment) Regulations 2014 • The Waste Management (Miscellaneous Provisions) (England and Wales) Regulations 2007 • Clean Neighbourhoods and Environment Act 2005 (Commencement No.6 and Saving) Order 2015 • Control of Pollution (Amendment) Act (COPA) 1989 • The Controlled Waste (England and Wales) (Amendment) Regulations 2012 • Environmental Protection Act 1990 (EPA) • The Environmental Protection (Duty of Care) (England) (Amendment) Regulations 2003; • Government Review of Waste Policy (2011) • The Hazardous Waste (England and Wales) (Amendment) Regulations 2016 • The Landfill Tax (Amendment) Regulations 2017 • The List of Wastes (England) (Amendment) Regulations 2005 • The Packaging (Essential Requirements) Regulations 2015 • The Pollution Prevention and Control Act 1999 • The Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 2017 • The Waste Electrical and Electronic Equipment (WEEE) (Amendment) Regulations 2017
KEY NATIONAL PLANNING POLICY	• The National Planning Policy Framework (NPPF) (2019) • Planning Practice Guidance (PPG) (2015) • Waste Management Plan for England (2013) • National Planning Policy for Waste (2014)
KEY REGIONAL PLANNING POLICY	• The London Plan (2016). Policies of relevance to this Strategy include: o Policy 5.3 Sustainable Design and Construction o Policy 5.16 Waste Self-Sufficiency o Policy 5.17 Waste Capacity o Policy 5.18 Construction, Excavation and Demolition Waste o Policy 5.19 Hazardous Waste • The London Plan – Consultation Draft (2017), Policies of relevance to this Strategy include: o Policy SI7 Reducing Waste and Supporting the Circular Economy o Policy SI8 Waste Capacity and Net Waste Self Sufficiency o SI9 Safeguarded Waste Sites o SI10 Aggregates • The Business Waste Management Strategy (2011) • The Greater London Authority's Sustainable Design and Construction, Supplementary Planning Guidance (2014) • The Municipal Waste Management Strategy (2011)
KEY LOCAL PLANNING POLICY	• Bishopsgate Goods Yard Interim Planning Guidance (2009) • North London Waste Authority, North London Joint Waste Strategy (2009) • North London Waste Authority, North London Waste Plan, Proposed Submission Version (2011) • North London Waste Authority, North London Waste Prevention Plan (2016) • North London Waste Plan (2019) Proposed Submission (Regulation 19) January 2019. • LBH Core Strategy (2010) Development Plan Document 2025. • LBH Revised Scheme Management Local Plan, Publication Version (2013) • South Shoreditch Supplementary Planning Document (2006) • London Borough of Tower Hamlets (2011): Waste Evidence Base Report Update. • London Borough of Tower Hamlets Draft Local Plan 2031: Managing Growth and Sharing the Benefits (2018), Policies of relevance to this Strategy include: o Policy S.MW1: Managing Our Waste o Policy D.MW2: New and Enhanced Waste Facilities o Policy D.MW3: Waste Collection Facilities in New Development o Appendix 4: Waste Collection Standards • London Borough of Tower Hamlets Local Plan: Core Strategy (2010) Policies of relevance to this Strategy include: o SO14 Dealing with Waste o SP05 – how to implement SO14 • London Borough of Tower Hamlets Managing Development Document (MDD) (2013), policies of relevance to this Strategy include: o Policy DM14 Managing Waste
OTHER RELEVANT STANDARDS & GUIDANCE	• British Standard 5906 2005 5906 2005 (Waste Management in Buildings Code of Practice) • Part H6 of the Building Regulations 2017

2.1 METHODOLOGY

2.1.1 Whilst various aspects of the Revised Scheme are in outline form, a large amount of information is available for these elements (i.e. fixed parameters the maximum and minimum amount of development proposed for each land use and development plot). Consequently, the same calculation methods for determining waste arisings have been applied to both the detailed and outline components. It is expected that storage requirements calculated for the outline components will be sufficient to accommodate waste arisings generated by the Revised Scheme under a full occupancy scenario. However, as these elements will be submitted in outline form, they are subject to change as the design evolves and, consequently, further details regarding specific waste composition and estimated quantities for these elements will be provided through revisions to this Strategy at a later stage, if required, as the proposals develop.

Residential Waste

2.1.2 Both minimum and maximum parameters have been considered for the outline components. However, for the purpose of the waste and recycling strategy, maximum parameters have been used for the residential land uses of the operational phase of the outline components, so as to provide a worst-case approach. This approach also allows for greater flexibility within the Revised Scheme to accommodate any changes in design sensitivity between maximum and minimum parameters.

2.1.3 As the residential uses fall within the buildings located within the LBTH part of the site only, guidance presented within the Tower Hamlets Local Plan 2031 (October 2017) was used to calculate waste arising from the residential units, assuming full occupancy (Table 2.1):

Table 2.1 LBTH Weekly Residential Waste Storage Capacity

	Minimum capacity per week (L)			
No. Bedrooms	**Residual Waste**	**Recyclable Waste**	**Food waste**	**Total**
1	70	60	23	153
2	120	90	23	233
3	165	120	23	308
4	215	160	23	398

2.1.4 Table 2.2 below presents the Revised Scheme residential unit mix, which were used in conjunction with Table 2.2 to calculate the Revised Scheme residential waste generation.

Table 2.2 Revised Scheme Residential Unit Mix

	Plot 4	Plot 5 (inc chapel)	Plot 5 (Victorian Building)	Plot 8a	Plot 10
1 bed/studio	62	38		116	59
2 bed	46	21	2	22	47
3 bed	31	21			21
4 bed	5	2			7
Total	144	82	2	138	134

Bulky Waste

2.1.5 Bulky waste items are large items which cannot be disposed of via normal means, with residual, recyclable or food waste bins. Examples of bulky waste items include white goods (e.g. fridges, freezers), sofas and beds (for a full list of waste stream definitions and responsibilities, see Appendix 4 of this Strategy).

2.1.6 Each household within the LBTH is entitled to two free collections per year – with up to five items taken away per collection by the LBTH's Clean team.

2.1.7 Best practice guidance recommends that 7.5m^2 bulky waste space should be provided for every 50-75 residential units, with a minimum bulky waste storage space of 7.5m^2. Double doors must be provided for entry and exit into and from this store (to effectively deposit bulky waste items).

Non-residential Elements

2.1.8 For the outline non-residential elements associated with the Revised Scheme, illustrative parameters have been used when calculating waste arisings and storage requirements. The use of the maximum parameters of the outline plots in this instance would result in a significant over provision and invalidate the waste strategy, whereas this approach provides a more realistic estimate of waste storage requirements. This is still considered a conservative approach as all flexible retail within the outline plots has been assessed as A3 use class to provide the worst-case scenario (A3 use class generates the largest quantities of waste).

2.1.9 After comparing guidance provided by both boroughs for commercial waste generation, LBTH provide the most conservative methodology for calculating waste arisings generated by non-residential use classes, when compared to that provided by the LBH. As such, LBTH methodology has been used, where provided, to calculate non-residential waste quantities, so as to provide a worst-case assumption. BS 5906:2005 guidance, which broadly corresponds with guidance provided by the LBH, has been used where LBTH guidance has not been provided for specific use classes (e.g. use class D1).

2.1.10 A 50:50 split between recyclable waste and residual (i.e. general) waste has been applied to the retail, hotel, leisure and office use classes.

2.1.11 However, for the restaurant/café facilities for detailed plots (A3 use class), food waste has also been calculated separately based on the following percentages; 50% recyclable waste, 30% organic food waste and 20% residual waste.

2.1.12 Table 2.3 of this Strategy outlines the non-residential waste calculation methodology. It should be highlighted that a daily collection frequency for all plots has been assumed, with the exception of Plot 7, which is split into individual small retail units, for which a twice weekly collection frequency has been assumed. These assumptions are presented in Table 2.3.

Table 2.3 Non-Residential Calculation Methodologies

Non-Residential Use Classes Proposed	Assumptions / Notes	Calculation Methodology	Waste Stream Split
A1-A5 Retail	For outline plots: Calculated as use class A3 (Restaurant), to provide a worst-case	75L per cover, with one cover per 3m^2 net internal area (NIA)	50:50 split between recyclable and residual waste
	For detailed plots: Split 50:50 between retail and restaurant use classes, to provide a reasonable worst-case assumption	50% total area: 75L per cover, with one cover per 3m^2 net internal area (NIA) 50% total area: 10 litres (L) waste per Sales Floor Area (SFA), with SFA being two-thirds of the NIA	For detailed plots: 50% recyclable waste, 30% organic food waste and 20% residual waste For outline plots: 50:50 split between mixed dry recyclables and residual waste
A1, A1+, A3 Retail/Restaurant	For detailed plots: Split 50:50 between retail and restaurant use classes, to provide a reasonable worst-case assumption	50% total area: 75L per cover, with one cover per 3m^2 net internal area (NIA) 50% total area: 10 litres (L) waste per Sales Floor Area (SFA), with SFA being two-thirds of the NIA	For detailed plots: 50% recyclable waste, 30% organic food waste and 20% residual waste For outline plots: 50:50 split between recyclable and residual waste
A3 Restaurant		75L per cover, with one cover per 3m^2 net internal area (NIA)	50:50 split between mixed dry recyclable and residual waste
B1 Office		2,600L per 1000m^2.	50:50 split between recyclable and residual waste
C1 Hotel Standard		250L per bedroom	50:50 split between recyclable and residual waste
C1 Hotel Premium		350L per bedroom	50:50 split between recyclable and residual waste
D1 Non-residential Institutions (e.g. clinics, health centre, creches)		5L per m^2 floor area	50:50 split between recyclable and residual waste
D2 Assembly and Leisure		5L per m^2 floor area	50:50 split between recyclable and residual waste
Sui Generis		5L per m^2 floor area	50:50 split between recyclable and residual waste

Table 2.4 Non-Residential Floor Area Breakdown and Waste Storage Assumptions

Plot	Use Class	Floor Area		Waste Storage Assumptions
		m^2 NIA	m^2 GIA	
Plot 1	Retail A1-A5	821	838	Daily collection frequency with the compaction of residual waste at a 2:1 compaction ratio
	Office B1	40,887	50,856	
Plot 2	Retail A1-A5		2,158	DETAILED Daily collection frequency. With compaction of residual waste at a 2:1 compaction ratio
	Office B1	47,176	62,861	
Plot 3	Retail A1-A5	2,218	2,293	Daily collection frequency
	Office B1	11,564	13,990	
	Exhibition D2	1,648	1,648	
Plot 4	Retail A1-A5		557	Daily collection frequency
Plot 5 (including chapel)	Retail A1-A5	569	595.9	Daily collection frequency
	Non-Residential Institutions D1	222	315	
Plot 5 (Weaver's Cottages)	Retail A1-A5		40.8	Daily collection frequency
	Office B1	366	366	
Plot 5 (Victorian Building)	Retail A1-A5	84.7	87.8	Daily collection frequency
Plot 6	Non-Residential Institutions D2	1,528	2,056	Daily collection frequency
Plot 7 (Oriel, Braithwaite Arches, London Road and Kiosks)	Retail A1, A1+, A3	5,744	5,804	DETAILED Twice weekly collection frequency
	Non-Residential Institutions D2	390	390	
Plot 8	Retail A1-A5	1,777	2,436	Daily collection frequency
	Hotel Standard	108 rooms		
	Hotel Premium	16 rooms		
Plot 9	Retail A1, A1+, A3	159	159	Twice weekly collection frequency
Plot 10	Restaurant A3	2,555	3,234	Daily collection frequency
	Sui Generis		202	

3.1 WASTE MANAGEMENT STRATEGY

3.1.1 The following paragraphs provide the waste storage requirements calculated for the residential and non-residential elements of the Revised Scheme. The calculations undertaken to obtain these values are presented within Appendix 2 of this Strategy. As discussed above, the maximum parameters have been used in the calculation of residential storage requirements, whereas the illustrative values have been used in the calculation of the non-residential elements seeking outline permission, and detailed areas for the non-residential elements seeking detailed permission.

3.1.2 Following this, a description of waste handling, storage, management and collection techniques to be employed by the Revised Scheme for residential waste arisings is provided.

3.1.3 All residential and non-residential waste stores have been designed as per guidance provided within LBTH and LBH guidance, Part H6 Building Regulations and British Standards 2005:5906 (see Appendix 3 for full list of design considerations, and Appendix 5 for a list of standard bin dimensions, which are referenced within the following sections of this Strategy).

3.1.4 Appendix 3 also outlines the waste servicing requirements, including the dimensions of waste collection vehicles that have undergone swept path analysis, in order to aid in the development of servicing arrangements and to confirm the viability of the final arrangements as per the final design proposals. Swept-path analysis diagrams are presented within Appendix 6 of this Strategy.

3.1.5 The LBTH will be responsible for the collection of the residential waste arisings; private waste collection contracts will be arranged for the collection of non-residential waste.

Residential Waste: Storage Provisions

3.1.5.1 Table 3.1 details the waste storage requirements based on the methodology discussed. These requirements have been incorporated into the design of the waste stores, and the waste storage provisions within the Revised Scheme correlate with that of Table 3.1 below.

Table 3.1 Residential Waste Storage Requirements

	Plot 4	Plot 5 (inc chapel)	Plot 5 (Victorian Bldg)	Plot 8a	Plot 10
Recyclable Waste	11 x 1,100L bins	7 x 1,100L bins	1 x 240L bins	8 x 1,100L bins	11 x 1,100L bins
Residual Waste	15 x 1,100L bins	8 x 1,100L bins	1 x 240L bins	10 x 1,100L bins	14 x 1,100L bins
Food Waste	14 x 240L bins	8 x 240L bins	1 x 240L bins	13 x 240L bins	13 x 240L bins

Residential Waste: Strategy

3.1.5.2 The residential waste stores for Plots 4, 5 (excluding the Victorian Building), Plot 8a and Plot 10A to 10C are presented within Figure 4.1.1 to Figure 4.1.5 below. The residents will transport their waste from their residential units to the allocated residential waste store via lifts provided, which are located adjacent/in close proximity to the stores. All residential waste

stores are located at ground level, with the exception of the residential waste store provided for Plot 8A, which is located at level 5 (i.e. the 'podium' level).

3.1.6 The waste stores will comprise sufficient storage (in line with Table 3.1) for residential recyclable, residual and food waste. The bins corresponding to the separate waste streams will be clearly marked for residents, to avoid cross-contamination of waste streams.

3.1.7 At the day and time of collection, the internal waste management team will move the waste bins to the collection points (presented on Figures 3.1 to 3.3 below), which are all within 10m of the LBTH waste collection points. The internal management team will aid the LBTH waste collection operatives with the waste collection, and once collected, the internal management team will transport the waste bins back to their respective waste stores.

3.1.8 For the Victorian Building within Plot 5, sufficient waste storage for residential waste has been provided. As this building is being refurbished the location of the waste store is subject to the constraints of the existing building. The waste store provisions will be located to the exterior of the property. Servicing by the LBTH will be 'on-street', as per existing servicing arrangements.

3.1.9 Bulky waste storage space has been provided for all residents. The allocation of the space is as follows (see Figure 3.1 to 3.3):

- Plot 4: 18m^2;
- Plot 5 (excluding Victorian Building): 9m^2;
- Plot 8a: 14.9m^2; and
- Plot 10: 22m^2.

3.1.10 For plots 4, 8a and 10, when residents have need of the bulky waste store the internal management team will aid the residents in relocating their waste to the allocated stores. The bulky waste store within Plot 5 will be accessible to the internal management team only, who will transfer residents bulky waste items to the allocated store when necessary.

3.1.11 When necessary, the internal management team will arrange for the collection of bulky waste items by the LBTH.

Figure 3.1 Plot 4 and 10A Waste Stores

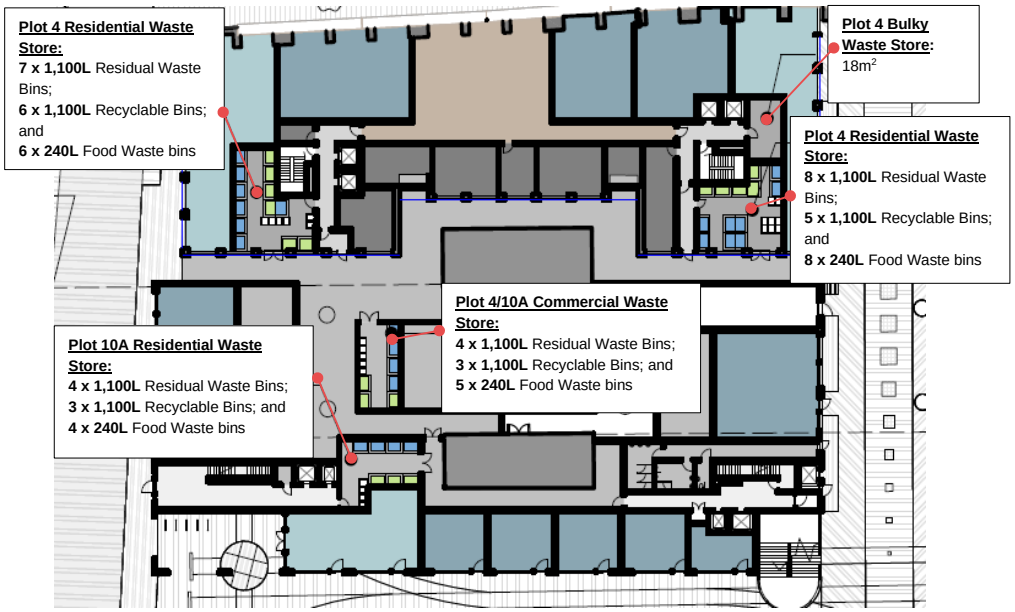


Figure 3.2 Plot 10B and Plot 5 Waste Stores

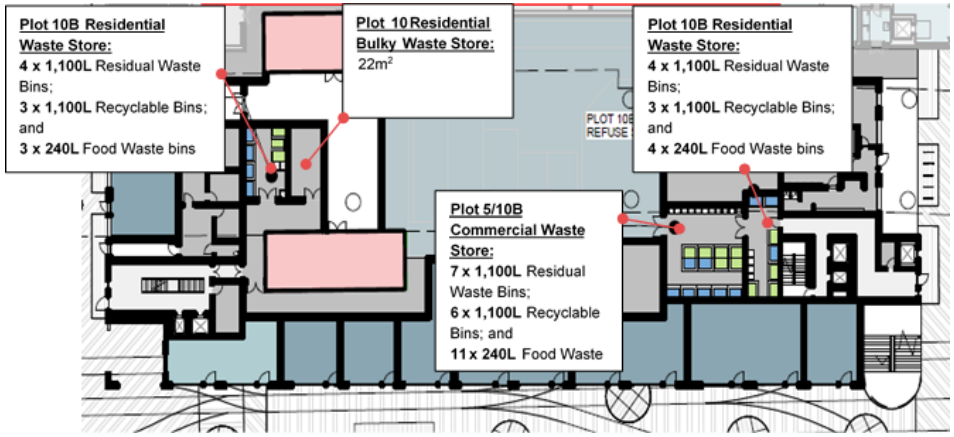


Figure 3.3 Plot 6 and Plot 10C Waste Stores

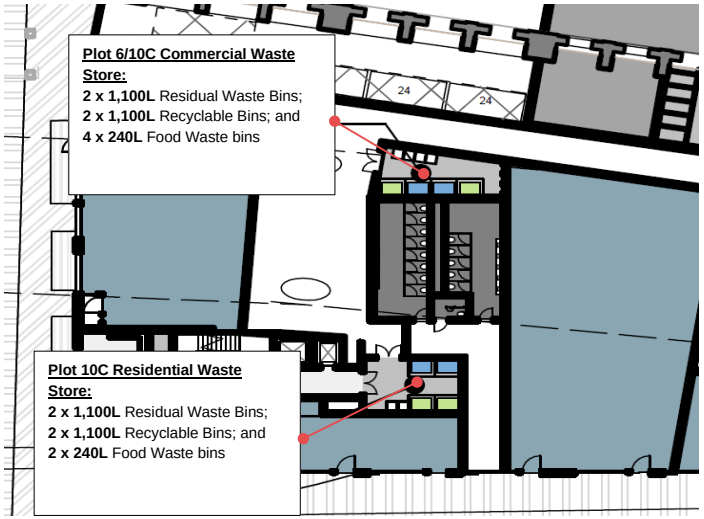


Figure 3.4 Plot 5 Residential Waste Stores

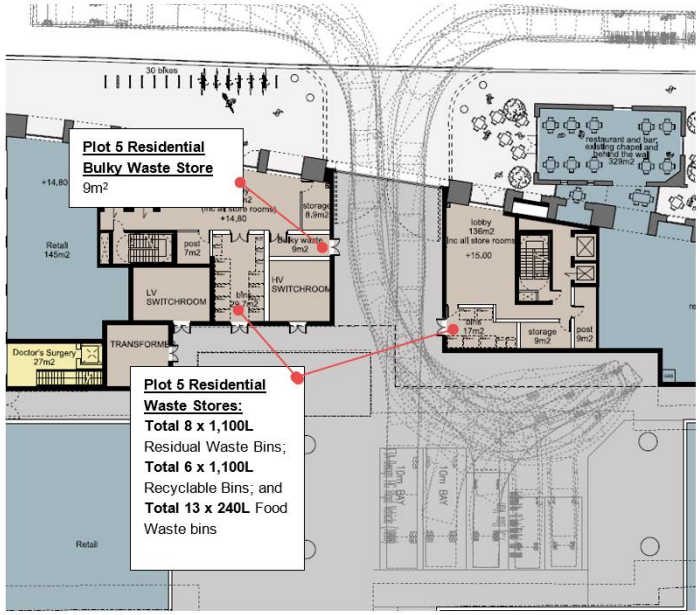


Figure 3.5 Plot 8A Level 5 Residential Waste Store

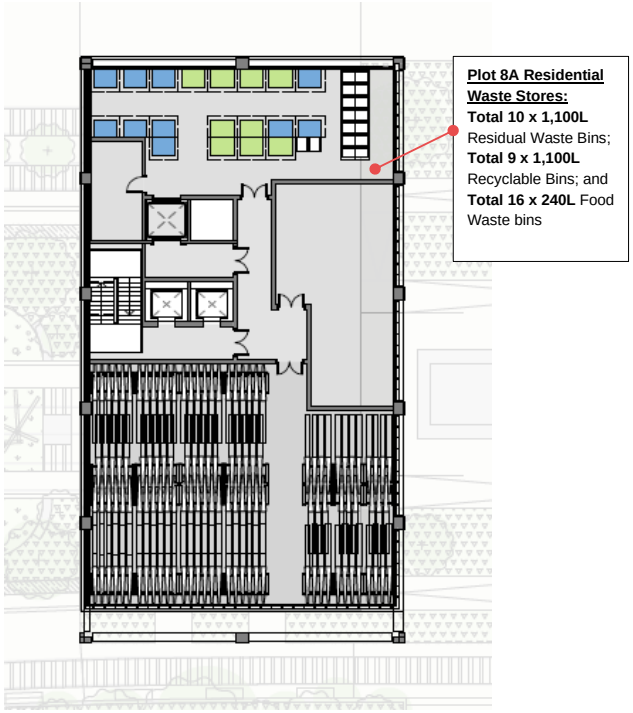


Figure 3.6 Ground Level Servicing

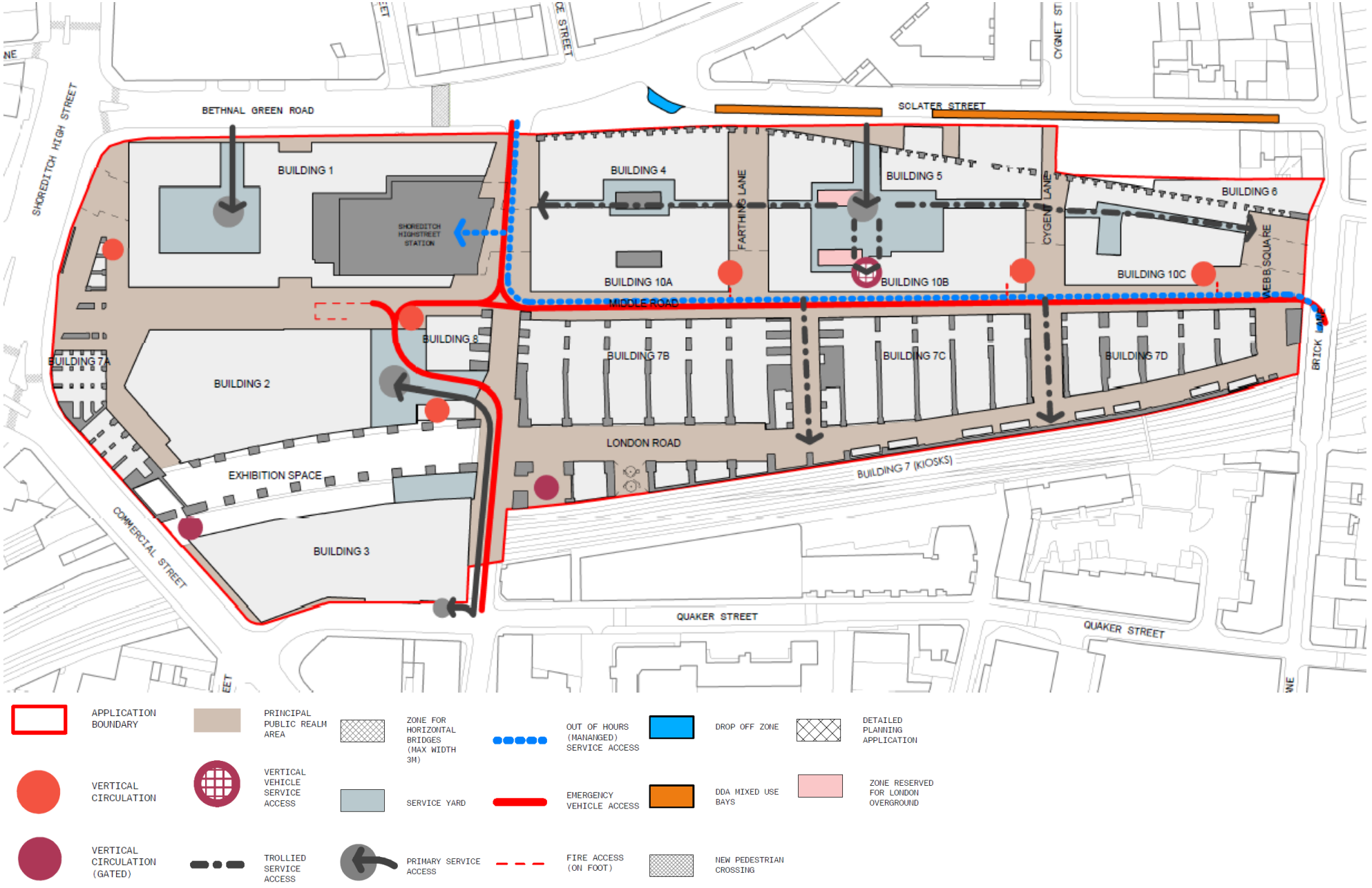
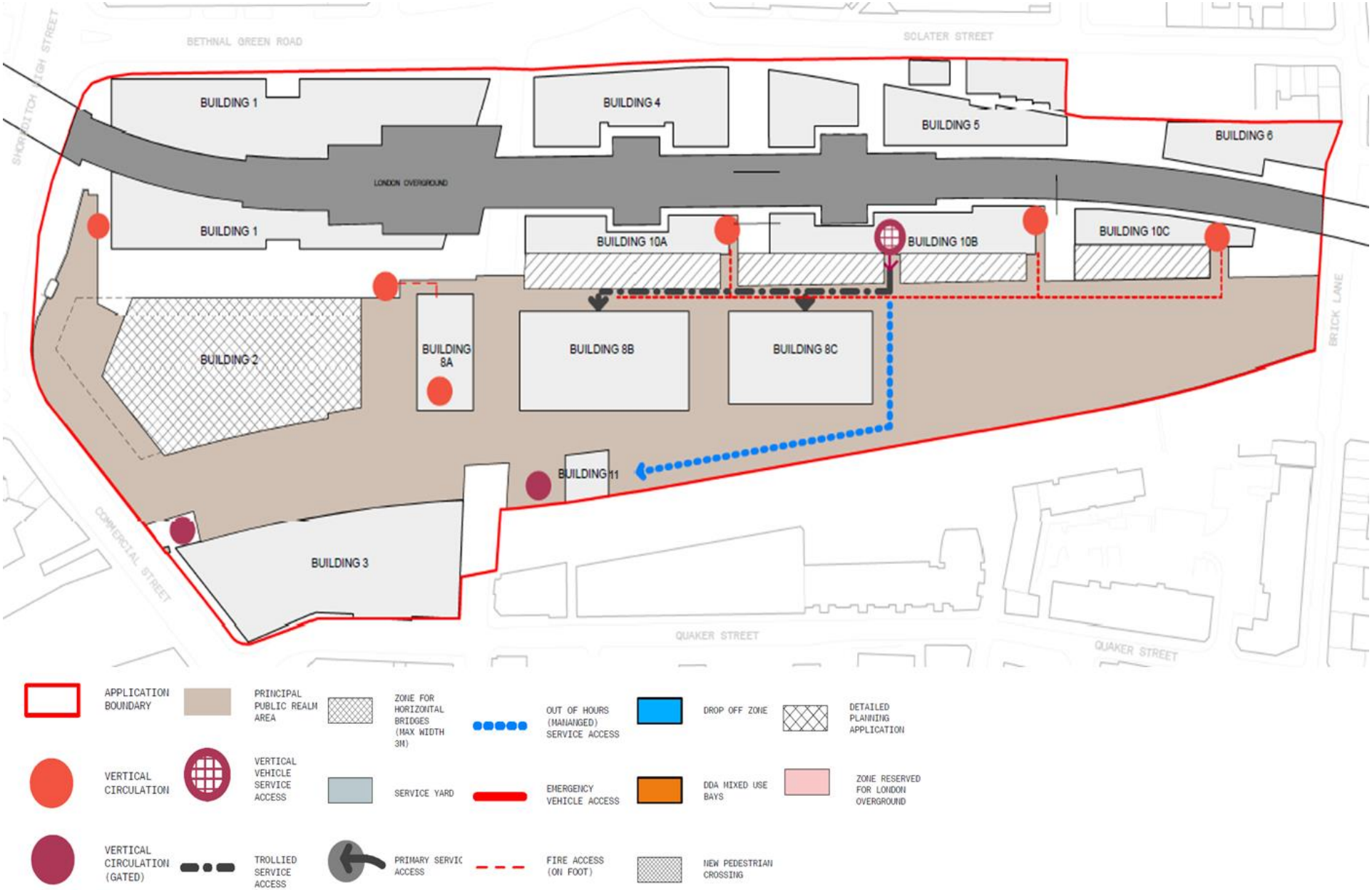


Figure 3.7 Podium Level



Non-Residential Waste – Storage Provisions

3.1.12 Table 3.2 details the waste storage requirements based on the methodology discussed. These requirements have been incorporated into the design of the waste stores, and the waste storage provisions within the Revised Scheme correlate with that of Table 3.2 below.

Table 3.2 Non-residential Waste Storage Provisions

	Recyclable Waste	Residual Waste	Food Waste	Notes
Plot 1	15 x 1,100L bins	8 x 1,100L bins	N/A	1 x lever arm compactor unit also provided, for the compaction of residual waste
Plot 2*	16 x 1,100L bins (office uses) 5 x 1,100L (retail uses)	1 x 27m³ compactor unit (office uses) 3 x 1,100L uses (retail uses)	6 x 240L (retail uses)	Daily collection frequency
Plot 3	12 x 1,100L bins	12 x 1,100L bins	N/A	Daily collection frequency
Plot 4	2 x 1,100L bins	2 x 1,100L bins	N/A	Daily collection frequency
Plot 5	3 x 1,100L bins	3 x 1,100L bins	N/A	Daily collection frequency
Plot 6	1 x 1,100L bins	1 x 1,100L bins	N/A	Daily collection frequency
Plot 8a	1 x 1,100L bins	1 x 1,100L bins	N/A	Daily collection frequency
Plot 8b	5 x 1,100L bins	5 x 1,100L bins	N/A	Daily collection frequency
Plot 8c	4 x 1,100L bins	4 x 1,100L bins	N/A	Daily collection frequency
Plot 9	1 x 1,100L bins	1 x 1,100L bins	N/A	Twice weekly collection frequency
Plot 10	6 x 1,100L bins	3 x 1,100L bins	16 x 240L bins	

Plot 7

3.1.13 Plot 7 comprises a large number of small individual retail units, which individually generate a small quantity of waste. Each individual unit will provide sufficient storage for the waste generated.

Non-Residential Waste – Storage Provisions

Plot 1

3.1.14 The retail and office waste will be stored in the waste store located off the main service yard (see Figure 3.10 – 3.13 below).

Figure 3.10 Plot 1 Non-Residential Waste Store Location

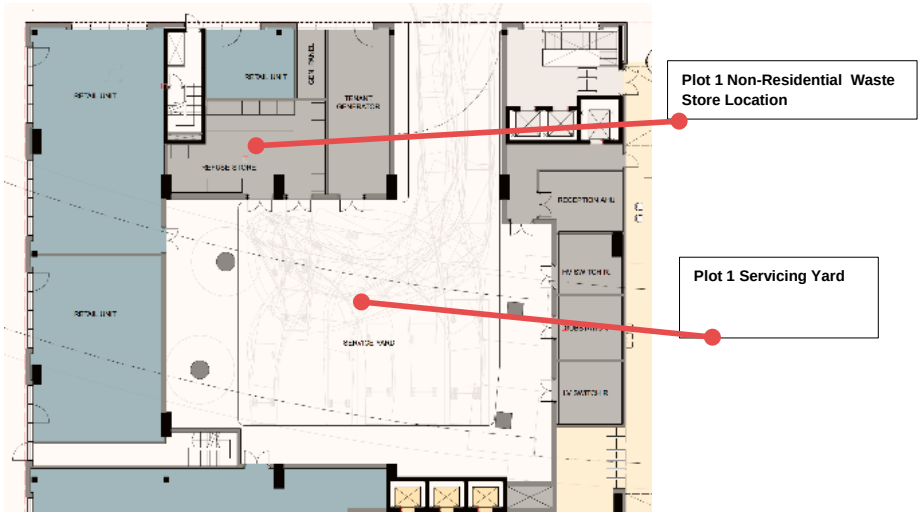
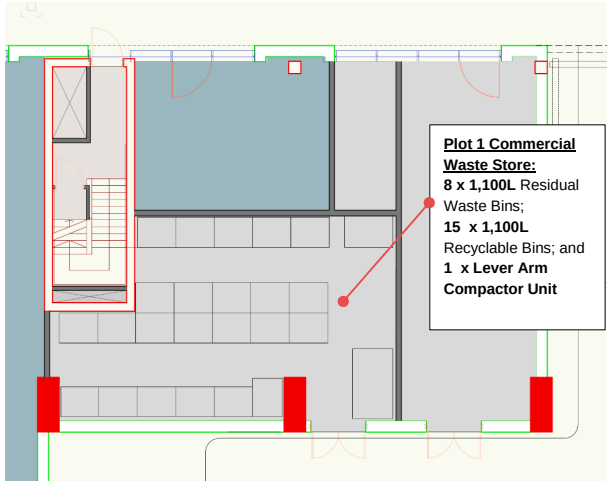


Figure 3.11 Plot 1 Non-Residential Waste Store



3.1.15 The waste arising from the office uses will be brought to the waste store via the service lifts on a daily basis. The tenants of the retail uses with direct access to the service yard will transport the waste to the main waste store on a daily basis.

3.1.16 The retail uses in the southern and eastern portion of the building have limited access to the service yard; the retail uses have no direct access to the service yard, and are a significant walking distance from the waste store. As such, internal management team will transport the waste from these retail uses to the waste store via an electric tow trucks, example dimensions of which are presented within Table 3.3 below.

3.1.17 The residual waste will be compacted at a 2:1 ratio using a lever arm compactor unit (dimensions of which are presented within Table 3.3 below). The recyclable waste will not undergo compaction.

3.1.18 Plot 1 waste will be collected directly from the waste store on a daily basis.

Figure 3.12 Example Electric Tow Truck Dimensions

Example Electric Tow Truck Dimensions	
	Height: 1.85m (including operator height)
	Width: 1m
	Length: 1.93m
	Towload Capacity: up to 8,000kg
	Maximum Speed: 8-14 kilometres per hour
	*please note that dimensions and model style vary between manufacturer

Figure 3.13 Example Lever Arm Compactor Unit Dimensions

Easi Recycling 1,100L Bin Packer	
	Height: 2.1m
	Width: 0.96m
	Depth: 1.3m
	Pressing Force: 4 tonnes
	please note that dimensions and model style vary between manufacturer

Plot 2

3.1.19 Recyclable waste generated by the office uses will be stored within the basement level waste store. Residual waste generated by the office uses will be stored within a 27m^3 compactor unit located at ground level and compacted at a 2:1 ratio (see Figure 3.14).

Figure 3.14 Plot 2 Non-Residential Ground Floor Waste Compactor and Collection Area

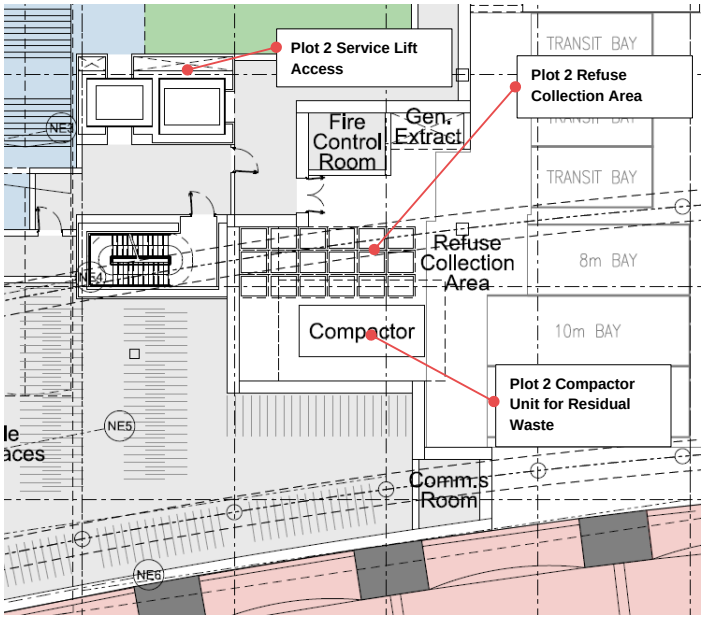
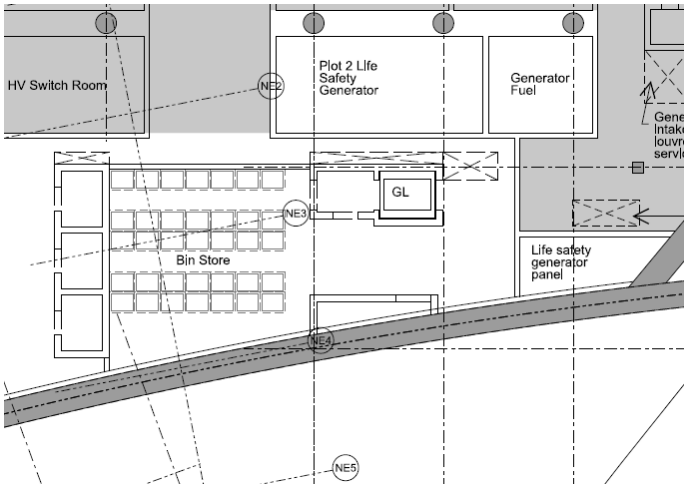


Figure 3.15 Plot 2 Basement Level Waste Store



3.1.20 The recyclable, residual and food waste generated by the retail uses will be stored within the individual units.

3.1.21 For the office uses, at the time of collection the recyclable waste bins will be brought up from the basement level waste store to the ground level temporary collection area (see Figure 3.14) by the internal management team, awaiting collection. Once collected, the recyclable bins will be transported back to the basement level waste store. The residual waste stored in the compactor will also be collected on a daily basis. The compactor unit bay and collection area has been sized appropriately (according to LBH and Veolia guidance (see Table 3.3 below)

Table 3.3 27m^3 Compactor Unit Container and Service Bay Sizing (as per LBH Guidance)

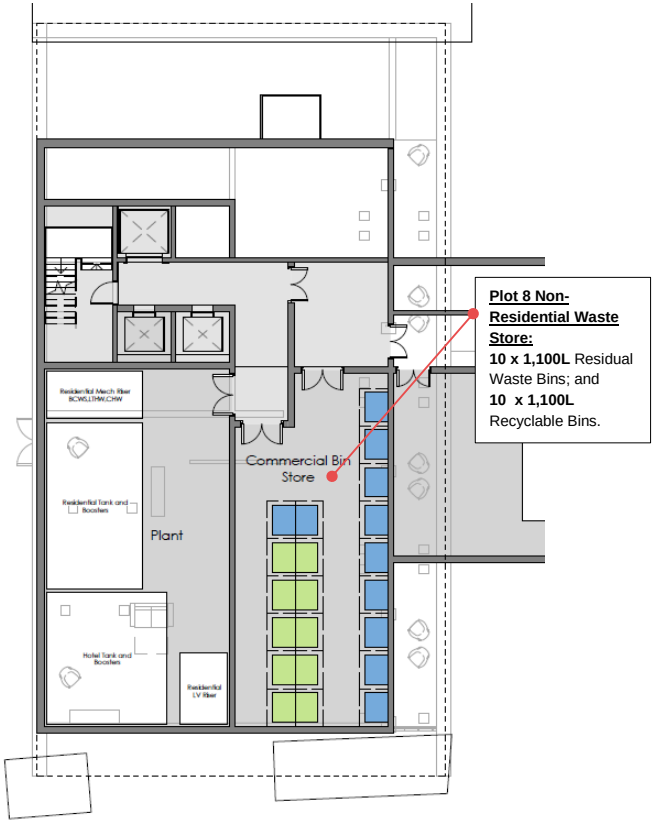
	Container	Service Bay
Width	2.5m	5.0m
Length	6.2m	8.2m
Height	2.8m	6.0m

3.1.22 The retail waste within Plot 2 will also be collected on a daily basis. Collections will be arranged so that they don't coincide with those of the office uses.

Plots 3 – 6 and 8 - 10.

3.1.23 Non-residential waste will be stored within the waste stores highlighted in Figure 4.1.12 and 4.1.13 below (for Plots 3 and 8), and Figures 4.1.1 – 4.1.4 above (for Remaining Plots). Sufficient waste storage provisions have been provided as per Table 4.1.2 above. The waste will be collected on a daily basis from waste collection points (see Figure 4.1.6)

Figure 3.16 Plot 8 Non-Residential Waste Store



Plot 7

3.1.24 As discussed above, Plot 7 comprises a number of small retail units, which individually generate very small quantities of waste. As such, waste will be stored within the individual retail units. The waste be collected on a daily basis via private waste collection, from the collection points marked on Figure .3.16 above.

3.3 FURTHER CONSIDERATIONS

3.3.1 Building Research Establishment Environmental Assessment Method (BREEAM)

3.3.2 BREEAM is a sustainability assessment method for new development, and assesses a development's environmental, social and economic sustainability performance, using standards developed by the Building Research Establishment (BRE).

3.3.3 The new 2018 BREEAM Assessment Criteria for Operational Waste (Wst 03) are as follows:

"Operational waste

1. Provide a dedicated space for the segregation and storage of operational recyclable waste generated. The space is:

1.a Clearly labelled, to assist with segregation, storage and collection of the recyclable waste streams

1.b Accessible to building occupants or facilities operators for the deposit of materials and collections by waste management contractors

1.c Of a capacity appropriate to the building type, size, number of units (if relevant) and predicted volumes of waste that will arise from daily or weekly operational activities and occupancy rates.

2. For consistent and large amounts of operational waste generated, provide:

2.a Static waste compactors or balers; situated in a service area or dedicated waste management space

2.b Vessels for composting suitable organic waste OR adequate spaces for storing segregated food waste and compostable organic material for collection and delivery to an alternative composting facility

2.c A water outlet provided adjacent to or within the facility for cleaning and hygiene purposes where organic waste is to be stored or composted on site.

Additionally, for multi-residential buildings with self-contained dwellings or bedsits only

4 Provide three internal storage containers for each dwelling or bedsit with:

4.a A minimum total capacity of 30 litres

4.b No individual container smaller than 7 litres

4.c All containers in a dedicated non-obstructive position

4.d Storage containers for recycling in addition to non-recyclable waste storage.

5 Provide home composting facilities and a home composting information leaflet within the kitchen area or communal space for each self-contained dwelling or bedsit.

Additionally, for multi-residential buildings with individual bedrooms and communal facilities only

6 Meet criteria 4.a and 4.b for self-contained dwellings or bedsits for every six bedrooms.

7 Locate recyclable storage in a dedicated, unobstructive position in communal kitchens or other appropriate communal space.

8 Provide home composting facilities and a home composting information leaflet within the kitchen area or communal space.

9 Provide a minimum of 10 litres of internal storage for compostable waste."

3.3.4 The Revised Scheme has been designed with the BREEAM guidance in mind.

4.1.1 This Strategy has been prepared in support of the planning application for the Revised Scheme and provides an overview of how waste and recycling generated from the residential and non-residential elements of the Revised Scheme will be managed during its' operation.

4.1.2 In total, the Revised Scheme is anticipated to generate approximately 715,500L of waste per week: 102,000L from residential uses, and 613,500L from non-residential uses. This equates to approximately 7,813 tonnes of waste per year generated as a result of the operational uses associated with the Revised Scheme.

4.1.3 Residential Waste

4.1.4 Sufficient waste storage has been provided within the Revised Scheme for the storage of residential waste and recycling. Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.

4.1.5 Residential waste stores will contain sufficient waste storage for one weeks' worth of waste for food, residual (i.e. general) and recyclable waste streams. The store will be easily accessible to all residents, and the bins inside the store will be appropriately laid out to be completely accessible to residents.

4.1.6 Appropriate servicing arrangements have been made for the collection of residential waste by the LBTH waste collection vehicle.

4.1.7 Bulky waste storage will also be available to residents of each residential plot.

Non-Residential Waste

4.1.8 The Revised Scheme provides a mix of non-residential use classes:

4.1.9 Waste generated from these uses has been calculated using British Standards 5906:2005 and LBTH methodology. The non-residential waste storage calculation methodology splits the waste arisings into three waste streams: recyclable, residual, and food waste (plot and use-class dependant). Recyclable and residual (i.e. general) waste will be stored in 1,100L bins, and food waste will be stored in 240L bins.

4.1.10 Storage Requirements have predominantly been based on a twice-weekly or daily collection frequency (plot and use-class dependant).

Summary

4.1.11 The Strategy has been designed in accordance with relevant requirements: LBTH and LBH guidance, British Standard 5906 2005 (Waste Management in Buildings Code of Practice) and Part H6 of the Building Regulations 2017.

APPENDIX 1 PLANNING POLICY CONTEXT

Appendix - Key Legislation, Policy and Guidance Considerations

National Planning Policy

National Planning Policy Framework (2019)

The National Planning Policy Framework[1] sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Planning law requires that applications for planning permission be determined in accordance with the development plan, unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in preparing the development plan, and is a material consideration in planning decisions. Planning policies and decisions must also reflect relevant international obligations and statutory requirements.

Planning Practice Guidance (PPG) (2015)

The PPG provides a web-based resource list of documents in support of the NPPF[2]. There are two guidance Documents that are found to be relevant to waste. These include Design and Waste.

'The document entitled 'Design'[3] revised in 2014 states that carefully planned bin storage is particularly important. The Local Authority should ensure 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 Local Authority (e.g. recycling, food waste collection and landfilling).

The document titled 'Waste'[4] revised in 2015 outlines the consideration local planning authorities towards waste management both within Local Plans and with regards to the Waste Hierarchy. This includes guidance on considerations to be included within development applications:

- The promotion of the "sound management of waste from any proposed development, such as encouraging on-site 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".

Government Review of Waste Policy (2011)

In order to ensure that the UK is on the path towards a 'zero waste' economy, a review of all waste policy in England was undertaken by the Department for Environment, Food and Rural Affairs (Defra) in 2011[5]. The review found that waste management has made significant progress over the last ten years with regards to diverting waste from landfill and increasing levels of recycling. However, it also identified a number of challenges, most notably ensuring waste prevention wherever possible and increasing recycling of waste for both households and businesses. The review also highlighted the need to deliver environmental benefits, support economic growth and ensure a more sustainable approach to the use of materials whilst improving waste services.

Waste Management Plan for England (2013)

The Waste Management Plan for England[6] has been devised as a high-level document which is non-site specific. As such, it provides an analysis of current waste management practices in England, and evaluates implementation of the objectives and provisions of the revised Waste Framework Directive (WFD).

National Planning Policy for Waste (2014)

The National Planning Policy for Waste[7] provides the planning framework to enable Local Authorities to put forward, through local waste management plans, strategies that identify sites and areas suitable for new or enhanced facilities to meet the waste management needs of their areas. Non-waste developments include any development whose end function is not directly related to waste, waste developments include: landfills; waste disposal; waste treatment; waste recycling plants; and Household Waste Recycling Centres (HWRCs). Should the end function of the development in question have an alternative end function to that of the previously listed 'waste' developments, then it is to be considered a non-waste development. The National Planning Policy for Waste states that when determining planning applications for non-waste developments, Local Authorities should ensure that:

- "the likely impact of proposed, non-waste related developments on existing waste management facilities, and on-sites and areas allocated for waste management, is acceptable and does not prejudice the implementation of the Waste Hierarchy and/or the efficient operation of such facilities";
- "new, non-waste developments make sufficient provision for waste management and promote good design to secure the integration of waste management facilities with the rest of the development and, in less developed areas, with the local landscape. This includes providing adequate storage facilities at residential premises, for example, by ensuring that there is sufficient and discrete provision for bins, to facilitate a high quality, comprehensive and frequent household collection service"; and
- "the handling of waste arising from the construction and operation of development maximises reuse/recovery opportunities, and minimises off-site disposal."

Regional Planning Policy

The London Plan (2016)

The London Plan[8] outlines the Mayors commitments to effectively managing waste. The London plan outline five major policies

Table 1.1 The London Plan Waste Management 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 reuse and recycling.

[1] *Department for Communities and Local Government (DCLG) (2019): National Planning Policy Framework.*
[2] *DCLG (2014) National Planning Practice Guidance*
[3] *DCLG (2014) National Planning Practice Guidance: Design Available Online [https://www.gov.uk/guidance/Design#design--overview]*
[4] *DCLG (2014) National Planning Practice Guidance: Waste Available Online [https://www.gov.uk/guidance/waste#waste--overview]*
[5] *Department for Environment, Food, and Rural Affairs (Defra), (2011); Government Review of Waste Policy in England 2011*
[6] *Defra, (2013); Waste Management Plan for England 2013*
[7] *Defra, (2014); National Planning Policy for Waste*
[8] *GLA (2016); The London Plan, The Spatial Development Strategy for London Consolidation with Alterations since 2011*

Policy 5.16 Waste 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.
Policy 5.17 Waste Capacity	States the need to increase the waste processing capacity in London and that all new developments should have suitable waste and recycling storage facilities.
Policy 5.18 Construction, Excavation and Demolition Waste	States that waste should be removed form construction sites and materials should be transported to the site, by water or rail transport wherever that is practical
Policy 5.19 Hazardous waste	States that there is a capacity gap for dealing with London's hazardous waste and identifies the need for hazardous waste treatment sites.
Policy 5.20 Aggregates	States that there will be encouragement to reuse and recycle of construction, demolition and excavation waste within London and sets the target of 95% recycling/re-use of construction, demolition and excavation waste by 2020 and 80% recycling of that waste as aggregates by 2020.

Within the London Plan, all London Boroughs are se appointment for waste they should manage within their Borough. The London Plan also states that Boroughs may collaborate by pooling their apportionment requirements. Provided the aggregated total apportionment figure is met, it is not necessary for Boroughs to meet both the municipal and commercial/industrial waste apportionment figures individually.

Additionally, the London Plan recommends that for Boroughs' whose waste planning functions may go to adjoining Mayoral Development Corporations (MDCs), the responsibility for meeting waste apportionment targets should be shared. Consequently, paragraph 5.80 of the London Plan states that where an MDC exists or is established within a Borough the MDC will cooperate with the Borough to ensure that the Borough's apportionment requirements are met. It should be noted that both the LBTH and the LBH are within an MDC, the London Legacy Development Corporation (LLDC) and that a current LBTH representative sits on the LLDC Board, as well as a member of the LBH. It is therefore expected that the LBTH and the LBH will be able to successfully co-operate with the MDC upon apportionment of waste management targets.

Furthermore, the LBH is a member of the North London Waste Authority (NLWA), which comprises the London Boroughs of Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest. It is anticipated that members from others Boroughs within the NLWA will soon have members on the LLDC board. It is therefore envisioned that when the MDCs are apportioned waste targets, the NLWA will effectively co-operate with the MDC in the management of these targets.

The Draft New London Plan (2017)

The Draft New London Plan[9] is a new London Plan has been prepared to replace the previous plan. The polices in the Plan have been developed to ensure consistency with national policies. Policies regarding waste have been updated and are found in Table 2.

Table 2.1 The draft New London Plan Waste Management Policies

Policy	Description
Policy SI7 Reducing waste and supporting the Circular Economy	States the need to minimise and avoid waste through the reuse of materials and using fewer resources in the production and distribution of products. States that recycling targets must be met regarding construction, demolition and excavation waste. Ensuring that developments have adequate and accessible storage to support recyclables.
Policy SI8 Waste capacity and net waste self-sufficiency	States that waste needs to be managed sustainably, reduced in line with principles of the circular economy and how waste processing capacity needs to increase in London. Waste

[9] *GLA (2017) The London Plan, The Spatial Development Strategy for Greater London (Draft for Public consultation)*

	should be reduced in line with the principles of the Circular Economy. Contain proposals to effectively deal with CD&E waste on site and minimise export to landfill.
Policy SI9 Safeguarded waste sites	States that existing waste sites should be safeguarded and retained in waste management use. Waste plans should be adopted before considering the loss of waste sites and this should only be supported where appropriate.
Policy SI10 Aggregates	States that environmental impact of aggregates should be reduced by the re-use and recycle of construction, demolition and excavation waste within London and the use of sustainable modes of importing aggregates.

In July 2018 the draft New London Plan was updated with Minor suggested changes[10] which included the following:

- Change to Policy SI7 Point A4b where construction, demolition and excavation waste is targeted to be 95% recycled. In the minor suggested changes (July 2018) the policy now discards excavation waste and states that that 95% of only construction and demolition waste should be recycled. Paragraph 9.7.4a later outlines that there are elements of excavation waste that are extremely difficult to recycle where this occurs circular economy statements are intended to cover the construction phase of the development.
- In addition to SI7 paragraph 9.7.3.A which states that modelling suggests that if London achieves its reduction and recycling goals, set out in SI7, there will be sufficient energy from waste capacity to manage London's non-recyclable waste once the new Edmonton and Beddington Lane facilities are operational. Paragraph 9.8.6 adds that boroughs with a surplus of waste sites should offer to share these sites to those boroughs facing a shortfall in capacity before considering site release.
- Policy S18 states in paragraph 9.8.1 that the term net self-sufficiency is meant to apply to all waste streams although there is the exception of excavation waste as it is challenging for London to apply self-sufficiency to this waste stream.
- Policy SI10 has removed the target of recycling/re-use of construction, demolition and excavation waste by 95% by 2020 and recycling 50% of that waste as aggregates by 2020. There are also changes within this policy to aggregate but these are not relevant to the Proposed Development.

The Greater London Authority's Sustainable Design and Construction, Supplementary Planning Guidance (2014)

The Greater London Authority (GLA) Sustainable Design and Construction Supplementary Planning Guidance (SPG)[11] provides additional guidance on Policy 5.3 Sustainable Design and Construction, as well as a range of other policies, of the London Plan. As such the SPG Provides further details and best practice on how to achieve the various targets described by policies of the London Plan in the most efficient and effective way.

Section 2.7 'Materials and Waste' of the SPG provides guidance on how waste materials generated by the demolition phase of new developments can be managed within the construction phase through application of the Waste Hierarchy. Section 2.7 of the SPG also provides guidance in order to ensure developments contain sufficient space for the storage of recyclables, organic material and waste. The SPG further states that 95% of construction, demolition and excavation (CD&E) waste should be recycled or re-used by 2020, with 80% recycled as aggregates.

The Business Waste Management Strategy (2011)

In addition to the policies outlined in the over-arching London Plan, the Business Waste Management Strategy[12] provides further policy guidance on the management of business waste. It sets out initiatives

[10] *GLA (2018); Draft new London Plan showing Minor Suggested Changes*
[11] *GLA (2014); Sustainable Design and Construction Supplementary Planning Guidance (SPG)*
[12] *GLA, (2011); The Mayors Business Waste Management Strategy*

to help many different 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 effect of waste by managing as much as is practical within the London boundaries.

The Municipal Waste Management Strategy (2011)

The Municipal Waste Management Strategy[13] provides further policy guidance on the management of municipal waste, in addition to policies contained within the overarching 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 onto explain that municipal waste, which cannot be re-used or recycled, will be used to produce energy from waste (EfW) in the most environmentally sensitive way possible. Targets include:

- Achieve zero municipal waste direct to landfill by 2025
- Reduce household waste by 20% per household
- Increase the amount of municipal waste reused or repaired by 10,000 tonnes a year in 2031
- Recycle or compost 60% of municipal waste by 2031
- Reduce GHG emissions through the management of municipal waste
- To generate as much energy as practicable from London's organic and non-recycled waste in a way that no more polluting in carbon terms than the energy source it is replacing.

Local Planning Policy

Bishopsgate Goods Yard Interim Planning Guidance (2009)

The Bishopsgate Goods Yard Interim Planning Guidance was adopted by both the LBH and LBTH in 2009[14]. With regards to waste, the guidance document states that future redevelopment of Bishopsgate Goods Yard should *"…include a site-wide waste strategy, prepared by the developer and agreed with the local authorities."*

London Borough of Hackney Planning Policy and Guidance

North London Waste Authority, North London Joint Waste Strategy (2009)

The NLWA and its seven constituent Borough's are working together to identify new waste management facilities capable of managing waste generated in North London, as per the targets of the London Plan. The North London Joint Waste Strategy (NLJWS)[15] provides the strategic framework for municipal waste management in North London from 2004 through to 2020. The NLJWS sets out the targets for reducing, reusing and recovering a greater proportion of municipal waste generated within the NLWA, in addition to targets aimed at reducing the amount of waste sent to landfill for disposal. The NLJWS includes the following objectives:

- "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."

North London Waste Authority, North London Waste Plan, Proposed Submission Version (2011)

To achieve the targets of the London Plan, the seven Boroughs' of the NLWA are developing a North London Waste Plan (NLWP)[16]. This document will act to set out the planning framework for waste management within the NLWA through to 2027. As part of the NLWP, all existing North London waste management facilities will be safeguarded; further to this, the NLPW also identifies and allocates key sites for waste management within North London between 2012 and 2027 (i.e. a 15 year period). During August 2012 it was decided that the then current NLWP was not legally compliant because it did not meet the 'duty to co-operate' requirements; as such preparation of a new NLWP began during early 2013.
Consultation on a new NLWP ran from 19 April 2013 until 31 July 2013. Following this period, adoption of the draft NLWP is expected in winter 2016.

North London Waste Authority, North London Waste Prevention Plan (2016)

The North London Waste Prevention Plan (NLWPP)[17] 2016-2018 details how waste prevention objectives outlined by the North London Joint Waste Strategy (NLJWS) will be met. The NLWPP is a spatial planning document that provides a series of short to medium term actions aimed at minimising the amount of waste generated by north London through a sustainable and detailed programme of waste prevention activities. The NLWPP identifies food waste as a main area for reduction along with upcycling and reuse of furniture.

LBH Core Strategy (2010)

The LBH Local Development Framework (LDF) Core Strategy[18] is the primary and strategic document in the LDF and sets out the long term spatial vision and strategic objectives for future development in the Borough.

With regards to waste, the Core Strategy highlights the need for waste management within the Borough to move away from reliance upon landfill and towards more sustainable options. In accordance with the Core Strategy, the LBH are required to look into possible locations for waste facilities within the Borough which can be used to handle and process different types of waste collected.

The Core Strategy states that these new facilities *"…should be provided in large estate regeneration projects and future growth areas"* and that there may also be need to *"…locate waste transfer facilities throughout the Borough"*. In addition, sites which encompass transport methods for moving waste materials other than roads will be given priority over those that rely solely on the road network; this is in order to ensure a sustainable approach is taken with regards to transporting waste within the LBH.

In accordance with Core Strategy Policy 32: Waste, new development in the LBH must support the objectives of sustainable waste management. Such measures include minimising waste during design and construction of new developments and incorporating well designed waste storage facilities for

[13] *GLA (2011); The Mayor's Municipal Waste Management Strategy*
[14] *GLA, London Borough of Hackney (LBH & London Borough of Tower Hamlets (LBTH), (2009); Bishopsgate Goods Yard Interim Planning Guidance.*
[15] *North London Waste Authority (NLWA) (2009); North London Joint Waste Strategy.*
[16] *NLWA (2011); North London Waste Plan, Proposed Submission Version.*
[17] *North London Waste Authority (NLWA), (2016); North London Joint Waste Strategy*
[18] *LBH (2010); Local Development Framework (LDF) Core Strategy*

recyclables and residual (i.e. non-recyclable) waste into developments so as to encourage recycling, composting and reuse. The LBH must work with partners in the NLWA in producing the NLWP and identifying new locations suitable for waste management facilities. The safeguarding of existing waste sites whilst maximising their facilitation is also a requirement of Core Policy 32: Waste.

LBH Proposed Development Management Local Plan, Publication Version (2013)

The Proposed Development Management Local Plan (DMLP)[19] contains development policies which build upon those included in the Core Strategy. As such, the DMLP is used alongside the Core Strategy, the London Plan and various Supplementary Planning Documents to provide the basis for determining planning applications within the LBH. The proposed DMLP is currently under review by an independent planning inspector who will determine whether the DMLP is legally compliant and if it can be formally adopted.

With regards to waste management, proposed Policy DM1 – High Quality Design states that all developments, including alterations and extensions, must include provision for waste and recycling storage facilities on-site. In addition, the proposed DMLP details two potential sites deemed suitable for new waste management facilities, in accordance with objectives.

South Shoreditch Supplementary Planning Document (2006)

The South Shoreditch Supplementary Planning Document SSSPD)[20] sets out a 10 year vision for South Shoreditch and is a material planning consideration for the area.

In terms of waste management, the SSSPD states that new developments require provision for appropriately sized areas for waste and recycling storage. Measures must also be designed to meet the recycling targets of the LBH.

London Borough of Tower Hamlets Planning Policy and Guidance

London Borough of Tower Hamlets Draft Local Plan 2031: Managing Growth and Sharing the Benefits (2018)

The Local Plan for LBTH is a key strategic document that will set out the future policies for the long-term development of Tower Hamlets until 2031. Once adopted, it will supersede the existing policies set out in the Core Strategy (2010) and Development Management Document (2013).

With regards to waste policies of relevance to this include: Policy S.MW1: Managing Our Waste, Policy D.MW2: New and Enhanced Waste Facilities, Policy D.MW3: Waste Collection Facilities in New Development, Appendix 4: Waste Collection Standards.

LBTH Core Strategy (2010)

The LBTH Core Strategy[21] sets out the spatial strategy of the Borough through to 2025 and outlines the broad areas and principles where development should be delivered. In this respect, the Core Strategy sets out the ambitious long-term spatial vision for the Borough. Sitting alongside the LBTH. Managing Development Document Development Plan Document (MDD DPD)[22], the LBTH Core Strategy forms part of the LBTH Local Plan.

With regards to waste, strategic objective SO14 states that LBTH will *"…plan for and manage the borough's waste efficiently, safely and sustainably, by minimising the amount of waste produced, maximising recycling, and managing non-recyclable waste using treatment methods other than landfill."* Further to SO14, strategic policy SP05 discusses how the LBTH will achieve SO14 and its objectives for the Borough.

[19] *LBH, (2013); LDF Proposed Development Management Local Plan, Publication Version.*
[20] *LBH (2006); South Shoreditch Supplementary Planning Document*
[21] *LBTH (2010); Core Strategy*
[22] *LBTH (2013); Managing Development Document, Development Plan Document*

LBTH Managing Development Document (MDD) (2013)

The LBTH MDD DPD provides the planning policies and site allocations needed to achieve the long-term vision of the Borough, as set out by the LBTH Core Strategy. As such, the MDD DPD builds upon the spatial objectives and strategic policies of the Core Strategy and is the planning tool used to guide development within the Borough.

With regards to waste, policy DM14 Managing Waste states that to meet requirements of the London Plan and implement SP04 of the Core Strategy, the LBTH needs to identify how waste apportionment targets will be met and how any new development will manage waste it generates. As part of Policy DM14, the safeguarding of existing waste sites is discussed, as well as the need to provide additional waste management facilities within the Borough.

Draft Waste Management Strategy for London Borough of Tower Hamlets (LBTH) (MDD) (2013)

The draft Waste Management Strategy for LBTH[23] guides the way waste is managed within the LBTH during the period 2003 to 2018. The strategy discusses how waste is currently managed within the Borough, objectives for sustainably managing waste in the future and actions needed to meet these objectives. It is intended that the strategy run until 2016, during which time it will be reviewed.

The strategy states a waste recovery target (including recycling and composting) for the Borough of 67% by 2015/16 in relation to municipal waste. For commercial and industrial (C&I) waste, a waste recovery target of 50% was set in 2005/06; no further targets have been set for this waste stream.

Other Relevant Legislation

- Clean Neighbourhoods and Environment Act 2005[24];
- Control of Pollution (Amendment) Act (COPA) 1989[25];
- The Environment Act 1995[26];
- Environmental Protection Act 1990 (EPA)[27];
- The Animal By-Products (Enforcement) (England) Regulations 2013[28];
- The Controlled Waste (England and Wales) (Amendment) Regulations 2012[29];
- The Environmental Permitting (England and Wales) (Amendment) Regulations 2015[30];
- The Environmental Protection (Duty of Care) (England) (Amendment) Regulations 2003[31];
- The Hazardous Waste (England and Wales) (Amendment) Regulations 2009[32];
- The List of Wastes (England) (Amendment) Regulations 2005[33];
- The Packaging (Essential Requirements) (Amendment) Regulations 2013[34];
- The Producer Responsibility Obligations (Packaging Waste) (Amendment) Regulations 2014[35];

[23] *LBTH (2003) Draft Waste Management Strategy for LBTH*
[24] *Her Majesty's Stationery Office (HMSO), (2005); Clean Neighbourhoods and Environment Act 2005.*
[25] *HMSO, (1989); Control of Pollution (Amendment) Act (COPA) 1989.*
[26] *The Environment Agency, (1995); Environment Act 1995.*
[27] *HMSO, (1990); Environmental Protection Act (EPA) 1990.*
[28] *HMSO, (2011); The Animal By-Products (Enforcement) Regulations 2013.*
[29] *HMSO, (2012); The Controlled Waste (England and Wales) (Amendment) Regulations 2012.*
[30] *HMSO, (2013); The Environmental Permitting (England and Wales) (Amendment) Regulations 2015.*
[31] *HMSO, (2003); The Environmental Protection (Duty of Care) (England) (Amendment) Regulations 2003.*
[32] *HMSO, (2009); The Hazardous Waste (England and Wales) (Amendment) Regulations 2009.*
[33] *HMSO, (2005); The List of Wastes (England) (Amendment) Regulations 2005.*
[34] *HMSO, (2013); The Packaging (Essential Requirements) (Amendments) Regulations 2013.*
[35] *HMSO, (2013); The Producer Responsibility Obligations (Packing Waste) (Amendment) Regulations 2014.*

- The Waste Batteries and Accumulators Regulations 2009[36];
- The Waste Electrical and Electronic Equipment (WEEE) Regulations 2013[37];
- The Waste (England and Wales) (Amendment) Regulations 2014[38]; and
- The Waste Management (England and Wales) (Amendment) Regulations 2006[39].

[36] *HMSO, (2009); The Waste Batteries and Accumulators Regulations 2009.*
[37] *HMSO, (2010); The Waste Electrical and Electronic Equipment (WEEE) Regulations 2013.*
[38] *HMSO, (2012): The Waste (England and Wales) (Amendment) Regulations 2014.*
[39] *HMSO, (2006); The Waste Management (England and Wales) Regulations 2006.*

APPENDIX 2 WASTE CALCULATIONS

NON-RESIDENTIAL WASTE

Operational Waste Calculations Methodology

Non-Residential Use Classes Proposed	Assumptions / Notes	Calculation Methodology	Waste Stream Split
A1-A5 Retail	For outline plots: Calculated as use class A3 (Restaurant), to provide a worst-case	75L per cover, with one cover per 3m^2 net internal area (NIA)	50:50 split between recyclable and residual waste
	For detailed plots: Split 50:50 between retail and restaurant use classes, to provide a reasonable worst-case assumption	50% total area: 75L per cover, with one cover per 3m^2 net internal area (NIA) 50% total area: 10 litres (L) waste per Sales Floor Area (SFA), with SFA being two-thirds of the NIA	For detailed plots: 50% recyclable waste, 30% organic food waste and 20% residual waste For outline plots: 50:50 split between mixed dry recyclables and residual waste
A1, A1+, A3 Retail/Restaurant	For detailed plots: Split 50:50 between retail and restaurant use classes, to provide a reasonable worst-case assumption	50% total area: 75L per cover, with one cover per 3m^2 net internal area (NIA) 50% total area: 10 litres (L) waste per Sales Floor Area (SFA), with SFA being two-thirds of the NIA	For detailed plots: 50% recyclable waste, 30% organic food waste and 20% residual waste For outline plots: 50:50 split between recyclable and residual waste
A3 Restaurant		75L per cover, with one cover per 3m^2 net internal area (NIA)	50:50 split between mixed dry recyclable and residual waste
B1 Office		2,600L per 1000m^2.	50:50 split between recyclable and residual waste
C1 Hotel Standard		250L per bedroom	50:50 split between recyclable and residual waste
C1 Hotel Premium		350L per bedroom	50:50 split between recyclable and residual waste
D1 Non-residential Institutions (e.g. clinics, health centre, creches)		5L per m^2 floor area	50:50 split between recyclable and residual waste
D2 Assembly and Leisure		5L per m^2 floor area	50:50 split between recyclable and residual waste
Sui Generis		5L per m^2 floor area	50:50 split between recyclable and residual waste

BGGY:
Non-residential Waste

Use Class		Plot 1 - Retail Base			Plot 2 DETAILED			Plot 3 - Retail Base			Plot 4			Plot 5 (including chapel)			Plot 5 (Weavers Cotages)			Plot 5 (Victorian Building)		
		NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA
1. FLOOR AREAS																						
Retail	A1-A5	811	828	934	2157.5	2157.5	2349.6	2213	2287	2464		555.4	584.9	568.58	595.88	679.6		40.8	37.5	84.7	87.8	111.7
Retail	A1, A1+, A3																					
Resturant	A3																					
Office	B1	35925	44685	47086	47,176.20	62861.1	66929.9	9846	11913	12663							366.4	470	521			
Hotel Standard	C1																					
Hotel Premium	C1																					
Non-resi	D1													169.2	208.9	240.4						
Exhibition	D2							1648	1648													
Sui Gen	SG																					
	Total	**36736**	**45513**	**48020**	**49333.7**	**65018.6**	**69279.5**	**13707**	**15848**	**15127**	**0**	**555.4**	**584.9**	**737.78**	**804.78**	**920**	**366.4**	**510.8**	**558.5**	**84.7**	**87.8**	**111.7**
2. WEEKLY WASTE ARISINGS (Litres)																						
Weekly Waste Arisings																						
Retail	A1-A5	20275			7119.75	50% A1		55325				13885		14214.5			1020			2117.5		
Retail	A1, A1+, A3																					
Resturant	A3				26968.75	50% A3																
Office	B1	93405			122658.12			25599.6									952.64					
Hotel Standard	C1																					
Hotel Premium	C1																					
Non-resi	D1													1044.5								
Exhibition	D2							8240														
Sui Gen	SG																					
		113,680	0	0	156,747			89,165				13,885										
	TOTAL	**113,680**			**156,747**			**89,165**				**13,885**		**15,259**			**1,973**			**2,118**		

3. WEEKLY WASTE ARISINGS (Litres) BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste)																						
		Rec	General	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food
Retail	A1-A5	10,138	10,138		17,044	11,931	5,113	27,663	27,663		6,943	6,943		7,107	7,107		510	510		1,059	1,059	
Retail	A1, A1+, A3																					
Resturant	A3																					
Office	B1	46,703	46,703		61,329	61,329		12,800	12,800								476	476				
Hotel Standard	C1																					
Hotel Premium	C1																					
Non-resi	D1													522	522							
Exhibition	D2							4,120	4,120													
Sui Gen	SG																					
Total		**56,840**	**56,840**	**0**	**78,373**	**73,260**	**5,113**	**44,582**	**44,582**	**0**	**6,943**	**6,943**	**0**	**7,630**	**7,630**	**0**	**986**	**986**	**0**	**1,059**	**1,059**	**0**

4. TOTAL (use classes grouped) WASTE BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste) INTO DAILY / TWICE WEEKLY WASTE ARISINGS (Litres)																						
		Rec	General	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food
Daily		16,240	16,240		22,392	20,931	1,461	12,738	12,738		1,984	1,984		2,180	2,180		282	282		303	303	
Twice Weekly		32,480	32,480		44,785	41,863	2,922	25,476	25,476		3,967	3,967		4,360	4,360		564	564		605	605	
Notes: for daily, an additional days' waste arisings has been added, to factor in to the storage requirements, in order to account for missed collections due to adverse weather conditions / bank holidays / strike action																						
SUM: Using the weekly (7 days) waste arisings as calculated in section above. For daily: divide by 7 (days) x 2 (days) (as per notes above); for twice weekly: divide by 7 (days) x 4 (days)																						

5. TOTAL (use classes grouped) DAILY AND TWICE WEEKLY WASTE STORAGE REQUIREMENTS BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste); Rec and General Waste Receptacles: 1,100L Bins; and Food Waste Receptacles: 240L																						
		Rec	General	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food
Daily		15 x 1,100L Bins	15 x 1,100L Bins		21 x 1,100L Bins	19 x 1,100L Bins	6 x 240L Bins	12 x 1,100L Bins	12 x 1,100L Bins		2 x 1,100L Bins	2 x 1,100L Bins		2 x 1,100L Bins	2 x 1,100L Bins		1 x 240L Bins	1 x 240L Bin		1 x 240L Bins	1 x 240L Bin	
Twice Weekly		30 x 1,100L Bins	30 x 1,100L Bins		41 x 1,100L Bins	38 x 1,100L Bins	12 x 240L Bins	23 x 1,100L Bins	23 x 1,100L Bins		4 x 1,100L Bins	4 x 1,100L Bins		4 x 1,100L Bins	4 x 1,100L Bins		3 x 240L Bin	3 x 240L Bin		3 x 240L Bin	3 x 240L Bin	
					OR: Compactor option, see waste strategy																	
Notes: Rounding: if, when summed, the answer has decimals digits up to .29, round down to the nearest whole number (e.g. 5.13 will be rounded down to 5); if, when summed, the answer has decimal digits equal to or more than .30, round up to the nearest whole number (e.g. 5.78 will be rounded up to 6).																						
SUM: Using the calculated daily/twice weekly waste arisings in the section above, determine how many 1,100L bins (or bins of other sizes) are required. Generally, dividing number by 1,100 (using rounding rule notes in notes above). Where other size of bins have been identified, and used in the calculation, these have been identified by way of an asterix.																						

TOTAL DAILY COLLECTION		30 x 1,100L bins			40 x 1,100L bins; and 6 x 240L food waste bins			24 x 1,100L bins			4 x 1,100L bins			4 x 1,100L bins			2 x 240L bins			2 x 240L bins		
TOTAL TWICE WKLY COLLECTION		60 x 1,100L bins			79 x 1,100L bins; 12 x 240L food waste bins			46 x 1,100L bins			8 x 1,100L bins			8 x 1,100L bins			6 x 240L bins			6 x 240L bins		

Plot 6			Plot 7A (oriel)			Plot 7B,C&D (Braithwaite Arches)			Plot 7E (London Rd & Kiosks)			Plot 8a			Plot 8b			Plot 8c			
NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA
												180	180	202	880	1165	1228	545	870	910	
			334.5	393.67	406.5	5303	5055	5087	354	354	384										159.2
												16	rooms		42	rooms		50	rooms		
												2	rooms		14	rooms			rooms		
1133	1524	1765																			
									390	390	390										
1133	**1524**	**1765**	**334.5**	**393.67**	**406.5**	**5303**	**5055**	**5087**	**744**	**744**	**774**	**198**	**180**	**202**	**936**	**1165**	**1228**	**595**	**870**	**910**	**159.2**
												4500			22000			13625			
			5285.1			83787.4			5593.2												3980
												4000			10500			12500			
												700			4900						
	7620																				
										1950											
	7,620		**5,285**			**83,787**			**7,543**			**4,700**			**37,400**			**26,125**			**3,980**
rec	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**
															11,000	11,000		6,813	6,813		
			2,643	1,850	793	41,894	29,326	12,568	2,797	1,958	839										1,990
												2,000	2,000		5,250	5,250		6,250	6,250		
												350	350		2,450	2,450					
3,810	3,810																				
									975	975											
3,810	**3,810**	**0**	**2,643**	**1,850**	**793**	**41,894**	**29,326**	**12,568**	**3,772**	**2,933**	**839**	**2,350**	**2,350**	**0**	**18,700**	**18,700**	**0**	**13,063**	**13,063**	**0**	**1,990**
rec	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**
1,089	1,089		755	529	227	11,970	8,379	3,591	1,078	838	240	671	671		5,343	5,343		3,732	3,732		569
2,177	2,177		1,510	1,057	453	23,939	16,757	7,182	2,155	1,676	479	1,343	1,343		10,686	10,686		7,464	7,464		1,137
Bins																					
rec	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**
1 x 1,100L Bin	1 x 1,100L Bin		1 x 1,100L Bin	2 x 240L Bins	1 x 240L Bins	11 x 1,100L Bins	8 x 1,100L Bins	15 x 240L Bins	1 x 1,100L Bins	1 x 1,100L Bins	1 x 240L Bins	1 x 1,100L Bin	1 x 1,100L Bin		5 x 1,100L Bins	5 x 1,100L Bins		4 x 1,100L Bins	4 x 1,100L Bins		1 x 1,100L Bin
2 x 1,100L Bins	2 x 1,100L Bins		2 x 1,100L Bins	1 x 1,100L Bins	2 x 240L Bins	22 x 1,100L Bins	15 x 1,100L Bins	30 x 240L Bins	2 x 1,100L Bins	1 x 1,100L Bins	2 x 240L Bins	1 x 1,100L Bin	1 x 1,100L Bin		10 x 1,100L Bins	10 x 1,100L Bins		7 x 1,100L Bins	7 x 1,100L Bins		1 x 1,100L Bin
2 x 1,100L bins			1 x 1,100L bins 3 x 240L bins			19 x 1,100L bins 15 x 240L bins			2 x 1,100L bins 1 x 240L bins			2 x 1,100L bins			10 x 1,100L bins			8 x 1,100L bins			2 x
4 x 1,100L bins			3 x 1,100L bins 2 x 240L bins			37 x 1,100L bins 30 x 240L bins			3 x 1,100L bins 2 x 240L bins			2 x 1,100L bins			20 x 1,100L bins			14 x 1,100L bins			2 x

Plot 9		Plot 10				
GIA	GEA	NIA	GIA	GEA		
159.2	170					
		1744	2229	2457		
			136.2	145.2		
159.2	**170**	**1744**	**2365.2**	**2602.2**		

		43600				
			681			
		44,281			**TOTAL**	**613,547**

Gen	**Food**	**Rec**	**Gen**	**Food**
1,990				
		21,800	8,720	13,080
		341	341	
1,990	**0**	**22,141**	**9,061**	**13,080**

Gen	**Food**	**Rec**	**Gen**	**Food**
569		6,326	2,589	3,737
1,137		12,652	5,177	7,474

Gen	**Food**	**Rec**	**Gen**	**Food**
1 x 1,100L Bin		6 x 1,100L Bins	3 x 1,100L Bins	16 x 240L Bins
1 x 1,100L Bin		12 x 1,100L Bins	5 x 1,100L Bins	31 x 240L Bins

1,100L bins			9 x 1,100L bins 16 x 240L bins	
1,100L bins			17 x 1,100L bins 31 x 240L bins	

BGGY: LBTH ONLY
Non-residential

Use Class		Plot 4 NIA	Plot 4 GIA	Plot 4 GEA	Plot 5 (including chapel) NIA	Plot 5 (including chapel) GIA	Plot 5 (including chapel) GEA	Plot 5 (Weavers Cotages) NIA	Plot 5 (Weavers Cotages) GIA	Plot 5 (Weavers Cotages) GEA	Plot 5 (Victorian Building) NIA	Plot 5 (Victorian Building) GIA	Plot 5 (Victorian Building) GEA	Plot 6 NIA	Plot 6 GIA	Plot 6 GEA	Plot 7A (oriel) NIA	Plot 7A (oriel) GIA
1. FLOOR AREAS																			
Retail	A1-A5		555.4	584.9	568.58	595.88	679.59		40.8	37.5	84.7	87.8	111.7						
Retail	A1, A1+, A3																334.5	393.67	
Resturant	A3																		
Office	B1							366.4	470	521									
Hotel Standard	C1																		
Hotel Premium	C1																		
Non-resi	D1				169.2	208.9	240.4												
Exhibition	D2													1133	1524	1765			
Sui Gen	SG																		
	Total	0	555.4	584.9	737.78	804.78	919.99	366.4	510.8	558.5	84.7	87.8	111.7	1133	1524	1765	334.5	393.67	
2. WEEKLY WASTE ARISINGS (Litres)																			
Weekly Waste Arisings																			
Retail	A1-A5		13885		14214.5			1020			2117.5								
Retail	A1, A1+, A3																5285.1		
Resturant	A3																		
Office	B1							952.64											
Hotel Standard	C1																		
Hotel Premium	C1																		
Non-resi	D1				1044.5														
Exhibition	D2														7620				
Sui Gen	SG																		
			13,885																
	TOTAL		13,885		15,259			1,973			2,118				7,620		5,285		

3. WEEKLY WASTE ARISINGS (Litres) BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste)																			
		Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	rec	Gen	Food	Rec	Gen	
Retail	A1-A5	6,943	6,943		7,107	7,107		510	510		1,059	1,059							
Retail	A1, A1+, A3																2,643	1,850	
Resturant	A3																		
Office	B1							476	476										
Hotel Standard	C1																		
Hotel Premium	C1																		
Non-resi	D1				522	522													
Exhibition	D2													3,810	3,810				
Sui Gen	SG																		
Total		6,943	6,943	0	7,630	7,630	0	986	986	0	1,059	1,059	0	3,810	3,810	0	2,643	1,850	

4. TOTAL (use classes grouped) WASTE BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste) INTO DAILY / TWICE WEEKLY WASTE ARISINGS (Litres)																			
		Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	rec	Gen	Food	Rec	Gen	
Daily		1,984	1,984		2,180	2,180		282	282		303	303		1,089	1,089		755	529	
Twice Weekly		3,967	3,967		4,360	4,360		564	564		605	605		2,177	2,177		1,510	1,057	
Notes: for daily, an additional days' waste arisings has been added, to factor in to the storage requirements, in order to account for missed collections due to adverse weather conditions /																			
SUM: Using the weekly (7 days) waste arisings as calculated in section above. For daily: divide by 7 (days) x 2 (days) (as per notes above); for twice weekly: divide by 7 (days) x 4 (days																			

5. TOTAL (use classes grouped) DAILY AND TWICE WEEKLY WASTE STORAGE REQUIREMENTS BROKEN DOWN BY WASTE STREAM (Recyclable (Rec); General; and Food Waste); Rec and General Waste Receptacles: 1,100L Bins; and Food Waste Receptacles: 240l																			
		Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	Rec	Gen	Food	rec	Gen	Food	Rec	Gen	
Daily		2 x 1,100L Bins	2 x 1,100L Bins		2 x 1,100L Bins	2 x 1,100L Bins		1 x 240L Bins	1 x 240L Bin		1 x 240L Bins	1 x 240L Bin		1 x 1,100L Bin	1 x 1,100L Bin		1 x 1,100L Bin	2 x 240L Bins	
Twice Weekly		4 x 1,100L Bins	4 x 1,100L Bins		4 x 1,100L Bins	4 x 1,100L Bins		3 x 240L Bin	3 x 240L Bin		3 x 240L Bin	3 x 240L Bin		2 x 1,100L Bins	2 x 1,100L Bins		2 x 1,100L Bins	1 x 1,100L Bins	
Notes: Rounding: if, when summed, the answer has decimals digits up to .29, round down to the nearest whole number (e.g. 5.13 will be rounded down to 5); if, when summed, the answer has decimal digits equal to or more than .30, round up to the nearest whole number (e.g. 5.78 will be rounded up to 6).																			
SUM: Using the calculated daily/twice weekly waste arisings in the section above, determine how many 1,100L bins (or bins of other sizes) are required. Generally, dividing number by 1,100 (using rounding rule notes in notes above). Where other size of bins have been identified, and used in the calculation, these have been identified by way of an asteri																			

	Plot 4	Plot 5 (including chapel)	Plot 5 (Weavers Cotages)	Plot 5 (Victorian Building)	Plot 6	Plot 7A (oriel)
TOTAL DAILY COLLECTION	4 x 1,100L bins	4 x 1,100L bins	2 x 240L bins	2 x 240L bins	2 x 1,100L bins	1 x 1,100L bins 3 x 240L bins
TOTAL TWICE WKLY COLLECTION	8 x 1,100L bins	8 x 1,100L bins	6 x 240L bins	6 x 240L bins	4 x 1,100L bins	3 x 1,100L bins 2 x 240L bins

	Plot 7B,C&D (Braithwaite Arches)			Plot 7E (London Rd & Kiosks)			Plot 8a			Plot 8b			Plot 8c			Plot 9			
GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA	GIA	GEA	NIA
							180	180	202	880	1165	1228	545	870	910				
406.5	5303	5055	5087	354	354	384										159.2	159.2	170	
																			1744
							16	rooms		42	rooms		50	rooms					
							2	rooms		14	rooms			rooms					
				390	390	390													
406.5	**5303**	**5055**	**5087**	**744**	**744**	**774**	**198**	**180**	**202**	**936**	**1165**	**1228**	**595**	**870**	**910**	**159.2**	**159.2**	**170**	**1744**
							4500			22000			13625						
	83787.4			5593.2												3980			
																			43600
							4000			10500			12500						
							700			4900									
					1950														
	83,787			**7,543**			**4,700**			**37,400**			**26,125**			**3,980**			**44,281**
Food	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**
										11,000	11,000		6,813	6,813					
793	41,894	29,326	12,568	2,797	1,958	839										1,990	1,990		
																			21,800
							2,000	2,000		5,250	5,250		6,250	6,250					
							350	350		2,450	2,450								
				975	975														341
793	**41,894**	**29,326**	**12,568**	**3,772**	**2,933**	**839**	**2,350**	**2,350**	**0**	**18,700**	**18,700**	**0**	**13,063**	**13,063**	**0**	**1,990**	**1,990**	**0**	**22,141**
Food	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**
227	11,970	8,379	3,591	1,078	838	240	671	671		5,343	5,343		3,732	3,732		569	569		6,326
453	23,939	16,757	7,182	2,155	1,676	479	1,343	1,343		10,686	10,686		7,464	7,464		1,137	1,137		12,652
L Bins																			
Food	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Foo**	**Rec**	**Gen**	**Food**	**Rec**	**Gen**	**Food**	**Rec**
1 x 240L Bins	11 x 1,100L Bins	8 x 1,100L Bins	15 x 240L Bins	1 x 1,100L Bins	1 x 1,100L Bins	1 x 240L Bins	1 x 1,100L Bin	1 x 1,100L Bin		5 x 1,100L Bins	5 x 1,100L Bins		4 x 1,100L Bins	4 x 1,100L Bins		1 x 1,100L Bin	1 x 1,100L Bin		6 x 1,100L Bins
2 x 240L Bins	22 x 1,100L Bins	15 x 1,100L Bins	30 x 240L Bins	2 x 1,100L Bins	1 x 1,100L Bins	2 x 240L Bins	1 x 1,100L Bin	1 x 1,100L Bin		10 x 1,100L Bins	10 x 1,100L Bins		7 x 1,100L Bins	7 x 1,100L Bins		1 x 1,100L Bin	1 x 1,100L Bin		12 x 1,100L Bins
	19 x 1,100L bins 15 x 240L bins			2 x 1,100L bins 1 x 240L bins			2 x 1,100L bins			10 x 1,100L bins			8 x 1,100L bins			2 x 1,100L bins			
	37 x 1,100L bins 30 x 240L bins			3 x 1,100L bins 2 x 240L bins			2 x 1,100L bins			20 x 1,100L bins			14 x 1,100L bins			2 x 1,100L bins			

Plot 10

GIA	GEA		
2229	2457		
136.2	145.2		
2365.2	**2602.2**		

681			
		TOTAL	**253,956**

Gen	Food
8,720	13,080
341	
9,061	**13,080**

Gen	Food
2,589	3,737
5,177	7,474

Gen	Food
3 x 1,100L Bins	16 x 240L Bins
5 x 1,100L Bins	31 x 240L Bins

9 x 1,100L bins	
16 x 240L bins	
17 x 1,100L bins	
31 x 240L bins	

1. Tower Hamlets Residential Waste Calculations Methodology

	Minimum capacity per week			
No. Bedrooms	Residual Waste	Recyclable Waste	Food Waste	Total
1	70	60	23	153
2	20	90	23	233
3	165	120	23	308
4	215	160	23	398

2. Proposed Development Residential Unit Mix

	Plot 4	Plot 5 (inc	Plot 5 (Victori	Plot 8a	Plot 10	Total
1 bed	62	38		116	59	275
2 bed	46	21	2	22	47	138
3 bed	31	21			21	73
4 bed	5	2			7	14
Total	144	82	2	138	134	500

3. Residential weekly waste arisings (litres) (broken down per plot by waste stream

		1 bed	2 bed	3 bed	4 bed	Total
Plot 4	Residual	4340	5520	5115	1075	16050
	Recycling	3720	4140	3720	800	12380
	Food	1426	1058	713	115	3312
						31742
Plot 5 inc chapel	Residual	2660	2520	3465	430	9075
	Recycling	2280	1890	2520	320	7010
	Food	874	483	483	46	1886
						17971
Plot 5 Victorian bldg	Residual		240			240
	Recycling		180			180
	Food		46			46
						466
Plot 8a	Residual	8120	2640			10760
	Recycling	6960	1980			8940
	Food	2668	506			3174
						22874
Plot 10	Residual	4130	5640	3465	1505	14740
	Recycling	3540	4230	2520	1120	11410
	Food	1357	1081	483	161	3082
						29232

4. Residential Waste Storage Requirements

		Recycling (1,100L bins unless otherwise stated)	Residual (1,100L bins unless otherwise stated)	Food (all 240L bins)
Plot 4		11	15	14
Plot 5 inc chapel		7	8	8
Plot 5 Victorian bldg		1 x 240L	1 X 240L	1
Plot 8a		8	10	13
Plot 10		11	14	13

APPENDIX 3A WASTE STORAGE REQUIREMENTS

5.1.4 The proposed residential and non-residential waste storage areas will adhere to the measures detailed in these documents (note, to avoid repetition, any overlap between guidance within documents has not be reiterated).

5.1.5 Part H6:

5.1.5.1 Waste storage areas will be:

- Designed and sited so as not to be detrimental to health and local amenity;
- Designed with separate containers for the various waste streams being separated and collected (i.e. the separate waste streams being collected should be stored in separate containers, and should not be co-mingled);
- Sited so that the containers can be taken to the collection point without being taken through a building;
- Sited to be accessible for use by people in the building and of ready access for removal to the collection point specified by the waste collection authority (in this instance the LBTH, for residential waste collections);
- Sited so that the distance householders are required to carry refuse will not exceed a horizontal distance of 30 metres (m) (excluding any vertical distance from lift movements);
- Sited so as not to interfere with pedestrian or vehicle access to buildings;
- Designed to provide a clear space of 150 millimetres (mm) between and around containers to allow their filling and emptying;
- Permanently ventilated at the top and bottom and will have a paved impervious floor;
- Of adequate height to allow the lids of containers to be fully opened, with a minimum height of 2m high for enclosures, compounds or storage rooms for communal containers; and
- Designed to provide provision for washing down and draining the floor into a system suitable for receiving a polluted effluent. Gullies will incorporate a trap which maintains a seal, even during prolonged periods of disuse.

5.1.6 British Standards5906:2005:

- All containers for waste, including recyclable material, will be easily accessible to both the occupier and waste collector;
- Waste stores have been designed and located in such a way as to limit potential noise disturbance to residents;
- Storage areas for waste and recyclable material will be clearly designated for this use only, by a suitable door or wall sign and, where appropriate, with floor markings;
- Waste storage rooms will include areas for instructional signage detailing correct use of the facilities;
- The entrance of the waste storage room will be free from steps and projections;
- Where the area is to be enclosed in a roofed building, adequate ventilation will be provided;
- Waste storage rooms will contain electrical lighting by means of sealed, waterproof bulkhead fittings, which will need to be able to withstand cleaning down from hoses. Luminaires should be low energy light fittings or low energy lamp bulbs (with proximity detection or a time delay button to prevent lights being left on); and
- Gullies for wash down facilities have been positioned so as not to be in the track of container trolley wheels.

5.1.7 BS 476-21

- The walls and roofs of these stores will be formed of non-combustible, robust, secure and impervious material and have a fire resistance of one hour when tested

5.1.8 BS 476-22

- The door of the stores will be made of steel or have a fire resistance of 30 minutes when tested.

5.1.9 LBTH:

- Wash down and drainage facilities will be provided to facilitate required hygiene standards;
- Containers for recyclables will be colour coated RAL 4008 (signal violet) or a very similar colour;
- All containers for individual properties will conform to British Standard BS EN 840
- There must be at least 150mm clearance between each bin and the enclosure must have a minimum height of 1200mm.;
- The maintenance of bin stores, paths and roadways is the responsibility of the managing agent, landlord, residents' board or equivalent, with the exception of council-owned containers; and
- Residential and non-residential waste stores will be separate.

5.1.10 LBH

- If waste containers are to be transported to ground level by a lift, it must be large enough to accommodate a person as well as at least one waste container. In large schemes it will need to be big enough for more than one container. The lift doors and adjacent corridors must be big enough for waste containers to be moved around easily;
- Every commercial units have their own independent waste and recycling separate from residential bin stores;
- Storage will be designed to be accessible for disabled people, as specified in BS 8300:2009;
- Any businesses producing cooking oil, raw meat and fish waste products will include suitable separate storage provision for them and arrange for them to be collected by specialist waste carriers.

5.1.11 Other Considerations: Maintenance and fit-out

- Sufficient space should be provided within the Revised Scheme for the storage of waste for future maintenance and fit out activities.

5.1.12 Bulky Waste

- Best practice guidance recommends that 7.5m2 bulky waste space should be provided for every 50-75 residential units, with a minimum bulky waste storage space of 7.5m^2. Double doors will be provided for entry and exit into and from this store (to be able to effectively deposit bulky waste items).

APPENDIX 3B WASTE COLLECTION REQUIREMENTS

5.1.13 In line with BS 5906:2005, Part H6 and LBTH guidance, the following waste collection requirements have been designed into the Revised Scheme in order to comply:

5.1.14 Part H6

- The collection point will be reasonably accessible to the size of the waste collection vehicles typically used by the waste collection authority:

Table 5.1.1: LBTH Refuse Vehicle Collection Dimensions

Dimensions	Measurements
Length	11 metres
Width	2.5 metres
Height	3.5 metres – although some vehicles also have an overhead exhaust stack.
Height with bin lift in operation	3.7 metres
Turning Circle (Diameter)	17.5 metres (Overall)
Maximum Weight	17.5 tonnes
Payload	10 tonnes

Table 5.1.2: LBH Refuse Vehicle Collection Dimensions

Dimensions	Measurements
Length	11 metres
Width	2.65 metres
Height	3.6 metres
Turning Circle (Diameter)	23 metres

Table 5.1.3: Roll-on Roll-off Skip Compactor Refuse Vehicle Dimensions (for the 27m^3 Compactor Unit located within Plot 2)

Dimensions	Measurements
Length	11m
Working Length (vehicle and skip)	16.5m
Width	2.5m
Height - Travelling	4.3m (min height required 5.0m)
Height - Working	5.5m (min height required 6.0m)
Kerb Turning Circle (Diameter)	21.4m diameter
Swept Circle	22.8m diameter

5.1.15 BS 5906:2005

- All paths used to transport bins from the storage area to the collection point will be free from kerbs or steps, have a solid foundation and be finished with a smooth, continuous finish; and
- Vehicles will enter and exit the Revised Scheme (to leave or re-join the highway) in a forward direction.

5.1.16 LBTH

- All roads will be suitable for taking a refuse collection truck with a maximum payload of vehicles;
- The paths between the storage facility and the collection point must be a minimum width of 1.5 metres;
- Doors to bin stores where collections are directly off the highway should either have sliding doors or doors opening inwards;
- Where access is required across a public highway, suitable drop kerb crossovers should be provided. Where parking spaces are in existence, arrangements should be made with us to enable a bin with dimensions of 1700 x 1200mm to be wheeled between the parked vehicles;
- All roads and approaches to buildings or refuse storage areas should be level unless the slope falls away from the storage area at a gradient no steeper than 1:12 and a suitable cross-over will be constructed over any public footway;
- Vehicles should not be expected to reverse. If this is unavoidable, then the maximum reversing distance should be 20 metres;
- Waste collection operatives should not be required to transport bins more than 10m in total to the collection vehicle; and
- Collection points should be at street level and within 10m of the nearest stopping point for refuse collection vehicles.

5.1.17 LBH

- Access roads, manhole covers and gratings will be constructed to withstand a gross vehicle weight of 26 tonnes and axle loading of 11.5 tonnes. There will be dropped kerbs at all collection points;
- Appropriate measures must be incorporated into any scheme to control unauthorised parking of vehicles that would prevent access by the collection vehicle and employees;
- Collection vehicles should not be required to reverse more than 12 metres (differs from that requested by the LBTH above); and
- Adequate headroom beneath trees, overhanging buildings or overhead lines will be provided.

APPENDIX 4 WASTE STREAMS: DEFINITIONS AND RESPONSIBILITIES

Table 5.1.4: Waste Streams and Responsibilities

Waste Stream	Description	Responsibility
Mixed Municipal Waste (20 03 01[1])	The definition of municipal waste as described in the Landfill Directive includes both household waste and that from other sources which is similar in nature and composition, which will include a significant proportion of waste generated by businesses and not collected by Local Authorities.	In the Revised Scheme, the residential municipal waste will be collected by the LBTH; the waste associated with the hotel uses will be collected by a private waste contractor; and it is currently unknown who will collect the waste arising from the retail unit, - either a private waste contractor, or the LBTH who offer a business waste collection service.
Bulky Waste (20 03 07)	Bulky waste or bulky refuse is a technical term taken from waste management to describe waste types that are too large to be accepted by the regular waste collection. Bulky waste items include furniture, electrical appliances such as white goods, bicycles, rugs, garden furniture and other portable household items.	The LBTH offer a free removal service for bulky items like fridges cookers and unusable furniture. This service is for residential properties only. For larger quantities of waste or commercial waste collections the LBTH commercial waste service should be contacted, or it should be arranged to be collected by a private contractor.
Biodegradable Waste (20 02 01)	Biodegradable waste includes any organic matter in waste which can be broken down into carbon dioxide, water, methane or simple organic molecules by micro-organisms and other living things using composting, aerobic digestion, anaerobic digestion or similar processes.	For residential properties, food waste and garden waste will be collected by the LBTH. For commercial premises, hotel related biodegradable waste will be collected by a private waste contractor. It is currently unknown who will collect the biodegradable waste arising from the retail unit, - either a private waste contractor, or the LBTH who offer a business waste collection service.
Biodegradable kitchen and canteen waste (20 01 08) / Food Waste	Waste arising from food stuffs e.g. vegetable peel, tea-bags	For residential properties, food waste will be collected by the LBTH. For commercial premises, hotel related food waste will be collected by a private waste contractor. It is currently unknown who will collect the biodegradable food waste arising from the retail unit, - either a private waste contractor, or the LBTH who offer a business waste collection service.
Construction, excavation and demolition wastes (category 17 of the List of Wastes)	Construction, excavation and demolition waste arises from activities such as the construction of buildings and civil infrastructure, total or partial demolition of buildings and civil infrastructure, road planning and maintenance.	Household derived material is the responsibility of LBTH although there is no statutory requirement to collect it. Where a collection is provided, a charge may be levied.

[1] List of Waste (LoW) EWC Code

Wastes from Electrical and Electronic Equipment (16 02)	There are ten broad categories of WEEE namely: Large household appliances e.g. fridges, cookers, microwaves, washing machines and dishwashers Small household appliances e.g. vacuum cleaners, irons, toasters and clocks IT and telecommunications equipment – e.g. personal computers, copying equipment, telephones and pocket calculators Consumer equipment e.g. radios, televisions, hi-fi equipment, camcorders ad musical instruments Lighting equipment e.g. straight and compact fluorescent tubes and high intensity discharge lamps Electrical and electronic tools – e.g. drills, saws and sewing machines, electric lawnmowers Toys, leisure and sports equipment e.g. electric trains, games consoles and running machines Medical devices e.g. (non infected) dialysis machines, analysers, medical freezers and cardiology equipment Monitoring and control equipment e .g. smoke detectors, thermostats and heating regulators Automatic dispensers e.g. hot drinks dispensers and money dispensers	Household and commercial derived material is the responsibility of the producer. However, councils normally arrange for collection for which a charge may be levied. The LBTH offers a bulky waste collection for certain white goods (see bulky waste description above). Car batteries can be recycled at Northumberland Wharf Reuse and Recycling Centre. Household batteries can be recycled in special recycling containers located throughout the LBTH (details of which are available on the LBTH's website) Unwanted electrical appliances including items like computer monitors, printers, fax machines, hair dryers, digital watches, electronic toys can be taken to Northumberland Wharf Reuse and Recycling Centre.

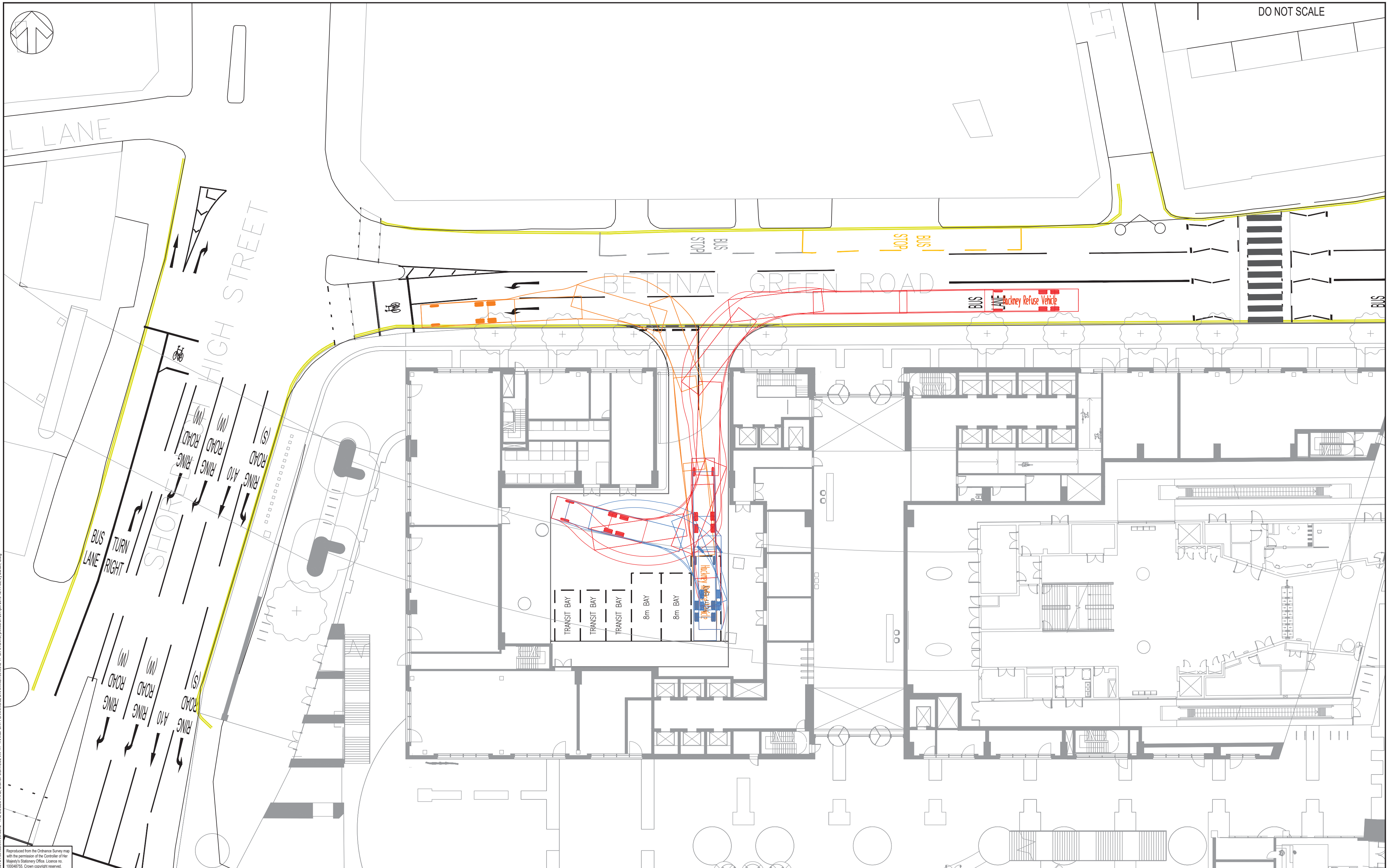
Waste packaging; absorbents, wiping cloths, filter materials and protective clothing not otherwise specified (15 01 waste code)	'Packaging' is any material used to hold, protect, handle, deliver and present goods. This includes packaging for raw materials right through to finished goods to be sold or being sold. For example, pallets, boxes, bags, tape for wrapping, rolls, tubes and clothes hangers sold as part of the clothing item.	Packaging should be separated out into recyclable and non-recyclable waste, and disposed of in the corresponding bin.
Hazardous Waste	Waste is generally considered hazardous if it (or the material or substances it contains) are harmful to humans or the environment. Examples of hazardous waste include: asbestos chemicals, eg brake fluid or print toner batteries solvents pesticides oils (except edible ones), eg car oil equipment containing ozone depleting substances, eg fridges hazardous waste containers	Waste such as asbestos, chemicals, petrol and pesticides should not be disposed of through the usual household or business waste collections. The Corporation of London provide a collection service on behalf of the LBTH. The Corporation of London collect small quantities of asbestos and hazardous chemicals, for example pesticides, petrol, paraffin, diesel, creosote and paint strippers. There is usually no cost for the first collection (depending on the amount of waste), but subsequent collections will be chargeable depending on the amount and type of material.
Garden Waste	Organic waste generated from gardening activities, including bark, grass, weeds, leaves, hedge	The LBTH offer a garden waste collection service.

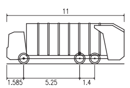
	clippings and dead flowers and plants.	
Mixed Dry Recyclable Waste	Dry recyclables is waste that is free from contaminants such as construction, food or garden waste. Leaving clean materials such as paper, cardboard, plastic bottles, drinks cans and glass bottles to be sorted and recycled.	The LBTH will collect residential dry recyclable waste. Business mixed dry recyclable waste is the responsibility of the producer, and can either be collected via a private waste contractor or via the LBTH, who offer a business waste collection service.

APPENDIX 5 EXAMPLE WASTE BIN DIMENSIONS

	Capacity in litres	Height (cm)	Width (cm)	Depth (cm)
	140	106	48	54
	240	107	58	74
	360	110	62	88
	660	133	126	77
	770	137	126	79
	1,100	139	137	107
	1,280	147	138	108

APPENDIX 6 REFUSE VEHICLE TRACKING





Hackney Refuse Vehicle	
Overall Length	11.000m
Overall Width	2.650m
Overall Body Height	3.814m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Wall to Wall Turning Radius	11.500m

REV	DATE	BY	DESCRIPTION	CHK	APP
B	29/04/2019	CRJB	UPDATED ARCHITECTS LAYOUT	CB	AT
A	06/03/2019	MR	FIRST ISSUE	AT	AT

DRAWING STATUS: S0 - WORK IN PROGRESS

WSP House
70 Chancery Lane
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wsp.com

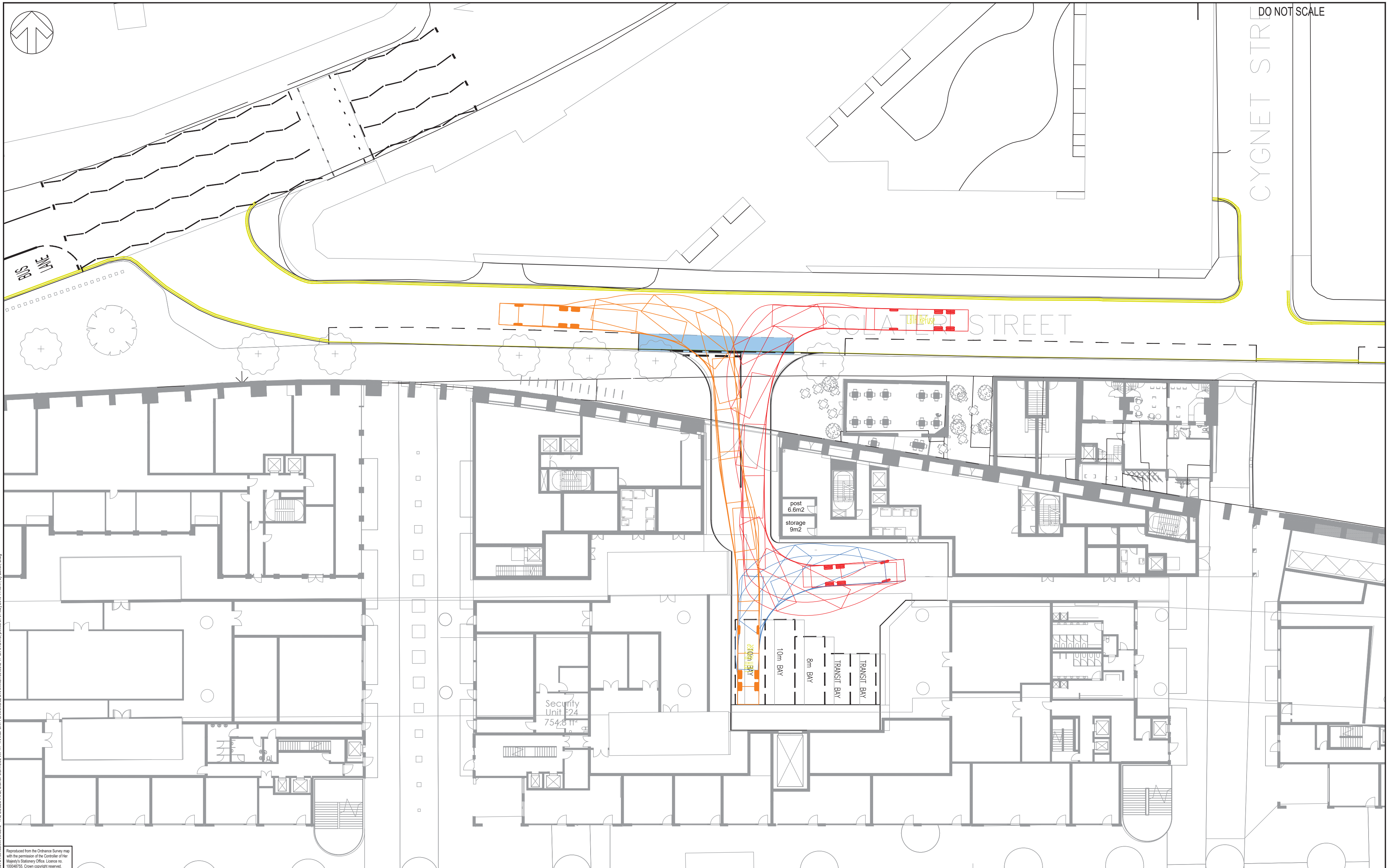
CLIENT: BGYR

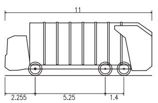
ARCHITECT: FAULKNERBROWNS ARCHITECTS

PROJECT: THE GOODSYARD, BISHOPSGATE

TITLE: PROPOSED REFUSE COLLECTION SWEPT PATH ANALYSIS SHEET 1 OF 2

SCALE @ A1: 1:500	CHECKED: AT	APPROVED: AT
PROJECT No: 70040342	DESIGNED: / DRAWN: MR	DATE: April 19
DRAWING No: 70040342-TP-SK-31		REV: B





LBTH Refuse	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height	4.000m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.750m

REV	DATE	BY	DESCRIPTION	CHK	APP
B	01/05/2019	CRJB	UPDATED ARCHITECTS LAYOUT & VEHICLE UPDATED	CB	AT
A	06/03/2019	MR	FIRST ISSUE	AT	AT

DRAWING STATUS: S0 - WORK IN PROGRESS

WSP House
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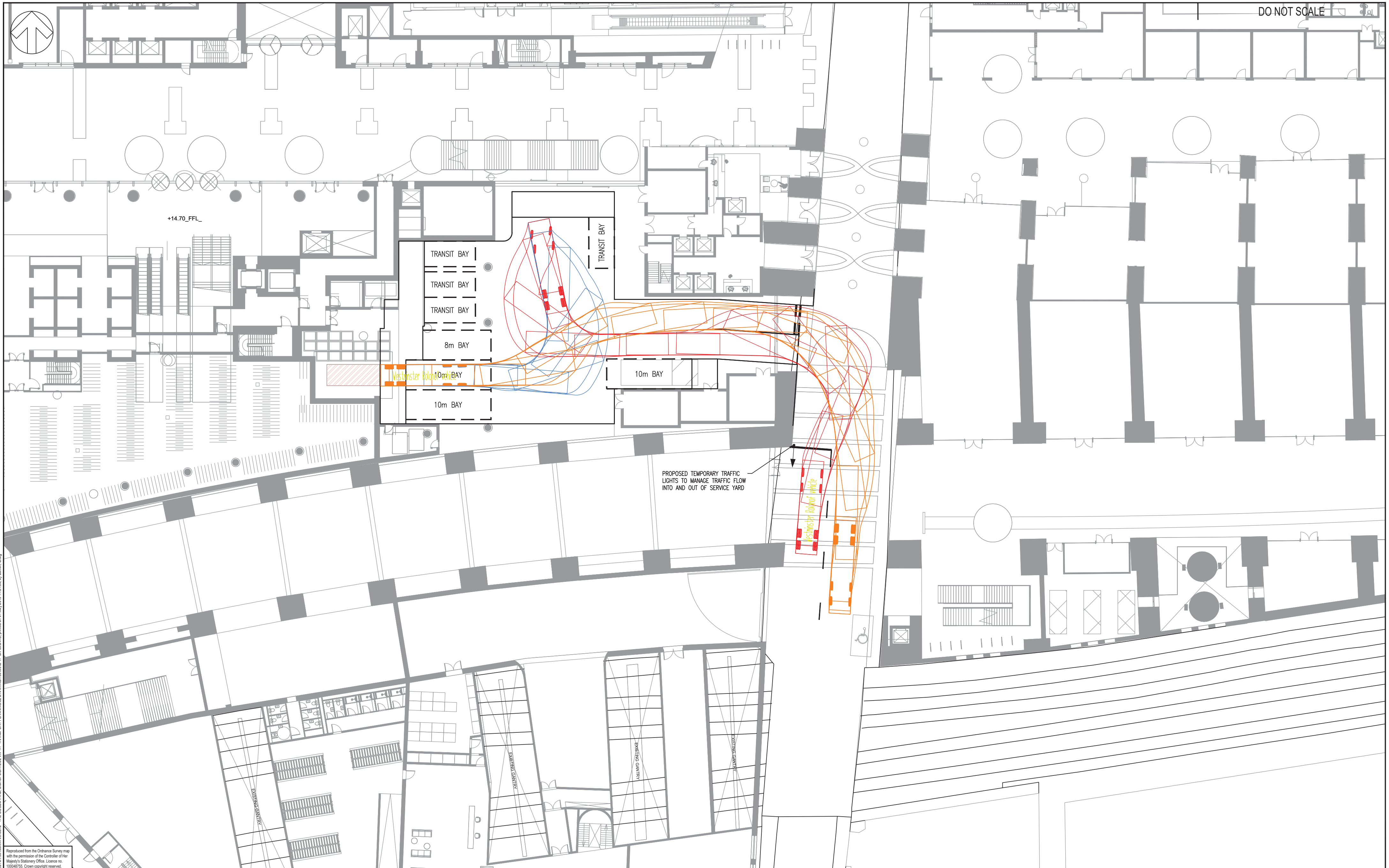
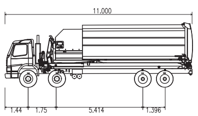
ARCHITECT: FAULKNERBROWNS ARCHITECTS

PROJECT: THE GOODSYARD, BISHOPSGATE

TITLE: PROPOSED REFUSE COLLECTION SWEPT PATH ANALYSIS SHEET 2 OF 2

SCALE @ A1: 1:500	CHECKED: AT		APPROVED: AT
PROJECT No: 70040342	DESIGNED:	DRAWN: MR	DATE: April 19
DRAWING No: 70040342-TP-SK-31			REV: B





Westminster Rolonof vehicle	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height (With Compactor)	4.300m
Min Body Ground Clearance	0.568m
Track Width	2.500m
Lock to Lock Time	6.00s
Wall to Wall Turning Radius	11.400m

REV	DATE	BY	DESCRIPTION	CHK	APP
B	01/05/2019	CRJB	UPDATED ARCHITECTS LAYOUT & VEHICLE UPDATED	GB	AT
A	05/04/2019	MR	FIRST ISSUE	AT	AT

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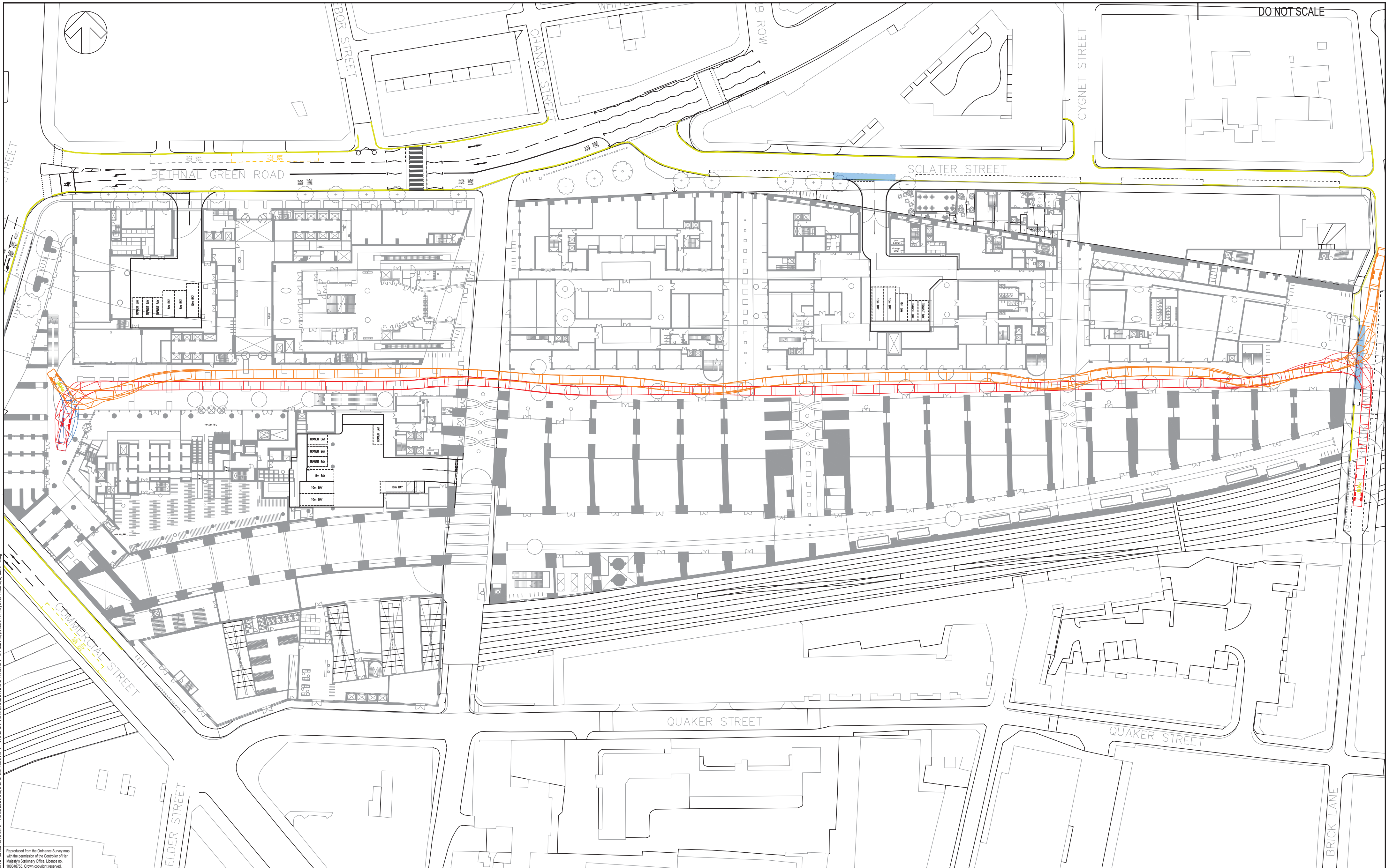
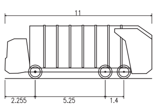
ARCHITECT: FAULKNERBROWNS ARCHITECTS

PROJECT: THE GOODSYARD, BISHOPSGATE

TITLE: PROPOSED REFUSE COLLECTION SWEPT PATH ANALYSIS

SCALE @ A1: 1:500	CHECKED: AT		APPROVED: AT
PROJECT No: 70040342	DESIGNED:	DRAWN: MR	DATE: April 19
DRAWING No: 70040342-TP-SK-35			REV: B





LBTH Refuse	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height	4.000m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.750m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	01/05/2019	CRJB	FIRST ISSUE	CB	AT

DRAWING STATUS: S0 - WORK IN PROGRESS

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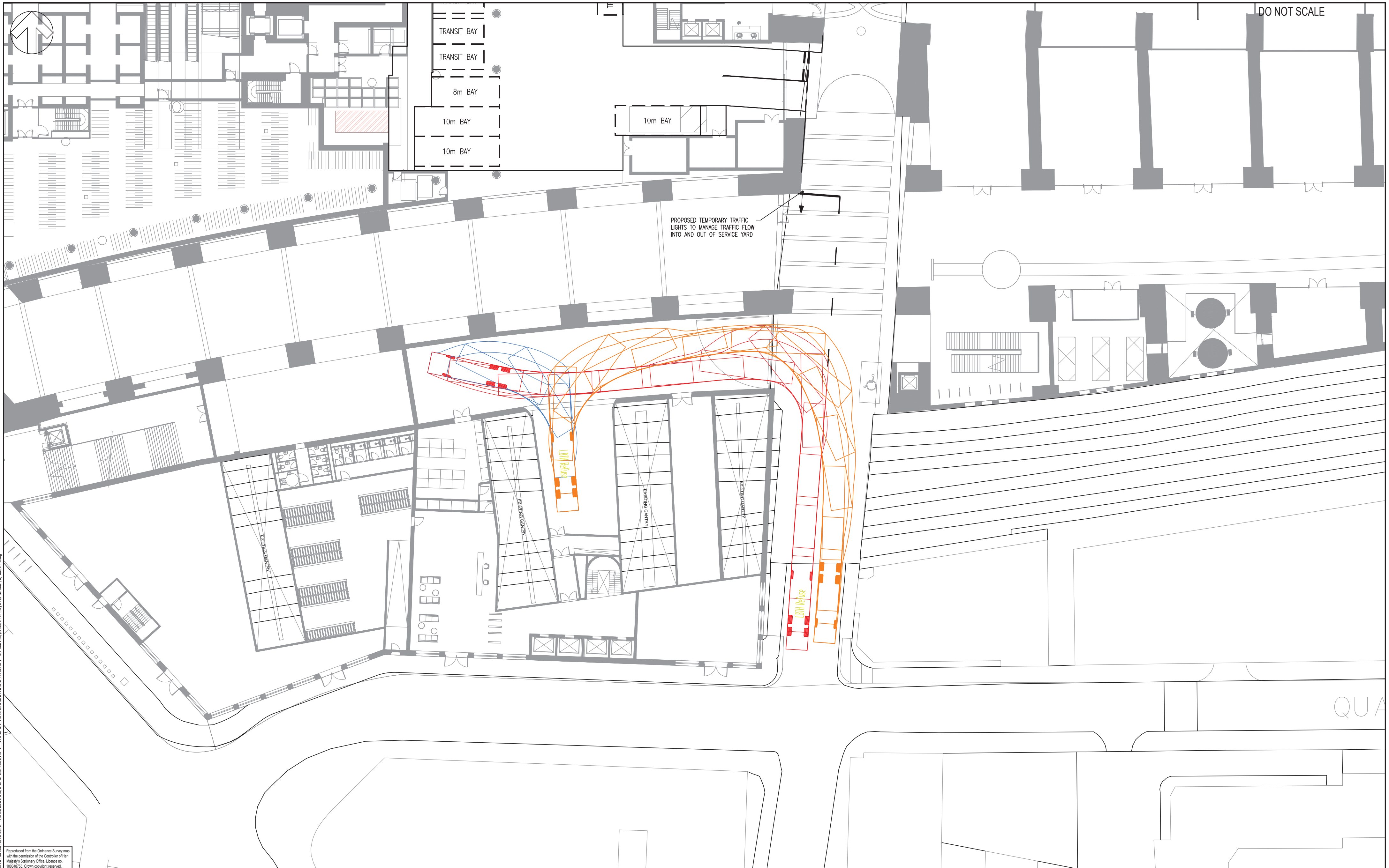
PROJECT: THE GOODSYARD, BISHOPSGATE

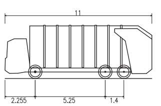
TITLE: MIDDLE ROAD REFUSE COLLECTION SWEPT PATH ANALYSIS

SCALE @ A1:	CHECKED:		APPROVED:
1:500	AT		AT
PROJECT No: 70040342	DESIGNED:	DRAWN: MR	DATE: May 19

DRAWING No: 70040342-TP-SK-42 REV: A

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\700403XX\70040342 - THE GOODSYARD, BISHOPSGATE\02 WIP\TP TRANSPORT PLANNING\02 DRAWING\70040342-TP-SK-42.DWG, printed on 01 May 2019 11:58:12, by Burton, Craig





LBTH Refuse	
Overall Length	11.000m
Overall Width	2.500m
Overall Body Height	4.000m
Min Body Ground Clearance	0.366m
Track Width	2.450m
Lock to Lock Time	4.00s
Kerb to Kerb Turning Radius	8.750m

REV	DATE	BY	DESCRIPTION	CHK	APP
A	01/05/2019	CRJB	FIRST ISSUE	GB	AT

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CLIENT: BGYR

ARCHITECT: FAULKNERBROWNS ARCHITECTS

PROJECT: THE GOODSYARD, BISHOPSGATE

TITLE: QUAKER STREET REFUSE COLLECTION SWEPT PATH ANALYSIS

SCALE @ A1:	CHECKED:		APPROVED:
1:500	AT		AT
PROJECT No:	DESIGNED:	DRAWN:	DATE:
70040342		MR	May 19

DRAWING No: 70040342-TP-SK-43 REV: A

File name \\UK.WSPGROUP.COM\CENTRAL DATA\PROJECTS\700403XX\70040342 - THE GOODSYARD, BISHOPSGATE\02 WIP\TP TRANSPORT PLANNING\02 DRAWING\70040342-TP-SK-43.DWG, printed on 01 May 2019 12:16:37, by Burton, Craig

ballymore.

Hammerson