BUROHAPPOLD ENGINEERING

TFL Landholdings at Northwood

Operational Waste Management Strategy

034233

16 October 2015

Revision 00

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Revision	Description	Issued by	Date	Checked
00	Operational Waste Management Strategy for Northwood, Green Lane	Fergus Anderson	16/10/15	James Hobson / Gerry Prodohl

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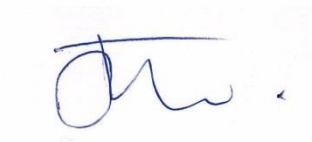
author	**Fergus Anderson**
date	**16.10.15**
approved	**James Hobson**
signature	
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Contents

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1 Introduction

An Outline Operational Waste Management Strategy (OWMS) is required to support the planning application for the proposed development at Northwood in the London Borough of Hillingdon (LBH).

The site is located on the junction of Green Lane (B469) and Eastbury Road within the London Borough of Hillingdon (LBH). The site comprises land north and south of Green Lane including part of the highway. The area of land north of Green Lane comprises a parade of single storey retail units located over the railway bridge with a two storey adjoining unit on the Corner of Eastbury Road. The northern part of the site is bounded by the Eastbury Surgery to the north; Green Lane to the south; Eastbury Road to the east and the retail units on the bridge to the west.

The site is 1.91ha. The majority of the site lies south of Green Lane, in Northwood and comprises the existing underground station and a mix of A-Class uses, residential flats, a light industrial use, dental practice and area of surface car parking. The southern part of the site is bounded by Green Lane to the north; the London Underground compound to the south; the railway line to the east; and the rear boundaries of the Northwood Central Club, St John's United Reformed Church and residential properties fronting Hallowell Road to the west.

This document forms the OWMS for all zones and for both residential and commercial waste streams. The document outlines how waste within the development will be managed.

The management of solid waste is an important element to consider as buildings are designed. Planning for future operational waste management ensures that a building will be able to operate efficiently and sustainably while minimising the impacts on the designed requirements of building performance and site users. Good waste management will be essential to ensure safe operational practice throughout the development. The waste management strategy must ensure that the Facilities Management (FM) teams can collect, store, recycle, re-use and dispose of waste quickly and efficiently and in a discreet manner in line with the waste hierarchy as shown in **Figure 1.** Waste management operations will be in a discrete location to ensure that they do not interfere with the day to day operations.

Figure 1.1: The Waste Hierarchy

01 Minimise the amount of waste produced and avoid producing waste in the first instance

02 Re-use items as many times as possible

03 Recycle what you can once you have re-used it and it is no longer able to be used or is no longer needed

04 Turn waste materials into a new product where possible i.e. the generation of waste from energy

05 Dispose of what is unable to be recovered in a responsible way

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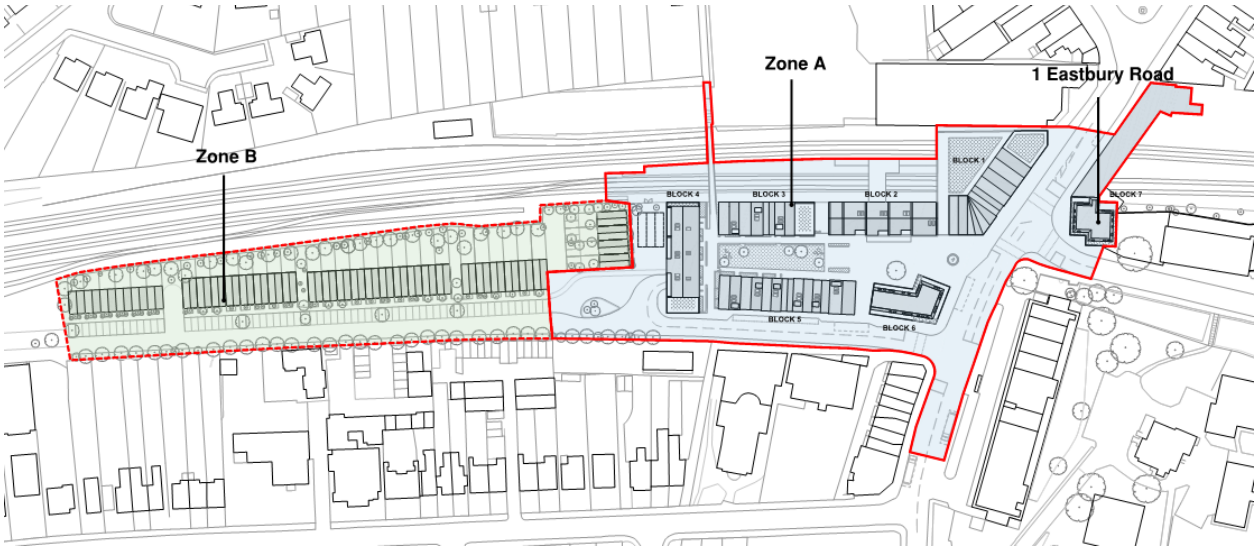
The proposed development comprises of three key zones. The zones and the land use are outlined in **Table 1.1** below. **Figure 1.2** provides an overview of the illustrative masterplan.

Table 1.1 : Summary of zones and land uses

Zone	Land Use
B	Town houses.
A (Block 7, 1 Eastbury Road)	Retail at ground floor with residential above.
A	Residential, retail and station.

Figure 1.2 : Masterplan zones



In summary, the aims of the Operational Waste Management Strategy are to:

- provide an outline estimate of anticipated waste generation for the zones;
- provide guidance on waste management to ensure that adequate spatial provision for clean, hygienic and efficient storage and collection of waste is incorporated into the design. This is essential to the successful operation and aesthetics of these buildings;
- enable the residents and FM teams to collect, store, recycle, re-use and dispose of the different types of waste quickly, sustainably and efficiently and in a discreet manner;
- ensure national and local targets as well as any other client waste management aims and aspirations (which are outlined in full in **Appendix A**) are met; and
- ensure that waste management practices are efficient and improve productivity whilst championing environmental protection principles.

The report is separated into three separate sections; these three sections provide an overview of the above for each zone within the masterplan. Operational waste produced within the station building will be independently managed; the station will contain local waste storage facilities which when full or on agreed collection days will be collected from the central waste store at the east of Zone A (refer to Section 2.3).

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2 Operational Waste Management Strategy - Zone A (blocks 1 – 6)

2.1 Anticipated waste generation

In order to determine spatial requirements for waste in Zones A (blocks 1 - 6), outline waste generation and Eurobin numbers have been generated. This has been based on the drawings (A 1323 GA 2002 C), and a number of waste metrics and operational assumptions which are outlined below;

- a generation rate of 90 litres per week for residential waste in the 84 units in accordance with BS 5906:2005;
- a generation rate of 10 litres per week per m^2 (Gross Internal Area (GIA)) for commercial waste. This has been designed to a worst case scenario to accommodate resilience in the proposed development due to uncertainty of commercial land use types. This has been based on a food and beverage outlet and GIA;
- total footprint of a 1100 L Eurobin of 2.27 m^2 (including 150mm per side to allow for movement and servicing);
- total footprint of a 120 L Eurobin of 0.66 m^2 (including 150 mm per side to allow for movement and servicing);
- an addition of 5 m^2 space to allow for bulky storage in each block and a total of 15 m^2 in the central storage area; and
- the area provided will be of suitable layout to facilitate effective waste management.

Table 2.1 : Anticipated residential waste generation for Zones A (blocks 1 – 6)

							Waste generation (litres per week)	
	Unit numbers						Residual	Mixed recyclables
Blocks	1 bed	2 bed	3 bed	4 bed	Number of units	Waste generation (litres per week)	60%	40%
1	3	9	1	1	14	2,380	1,428	952
2	0	11	0	0	11	1,870	1,122	748
3	4	11	0	0	15	2,270	1,362	908
4	11	6	0	1	18	2,430	1,458	972
5	8	8	0	0	16	2,160	1,296	864
6	0	9	1	1	11	2,080	1,248	832

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							Waste generation (litres per week)	
	Unit numbers						Residual	Mixed recyclables
Blocks	1 bed	2 bed	3 bed	4 bed	Number of units	Waste generation (litres per week)	60%	40%
Total	26	54	2	3	85	13,190	7,914	5,276

Outline waste generation calculations estimate that approximately 13,190 litres per week will be generated from the residential development. Zones A comprises of both residential and retail land uses; waste generation forecasts for retail uses are outlined below in **Table 2.2**. Commercial waste generation has been based on a worst case scenario floor area of 1,500 m^2 to accommodate resilience in the proposed development.

Table 2.2 : Anticipated commercial waste generation for Zone A (blocks 1 – 6)

			Waste generation (litres per week)		
			Organics	Mixed recyclables	Residual
Zones	GIA (m2)	Waste generation (l/week)	20%	50%	30%
Total	1500	15,000	3,000	7,500	4,500

Outline waste generation calculations estimate that approximately 15,000 litres per week from all commercial land uses in the masterplan is likely to be generated; 90% of commercial land use is in Zone A (blocks 1 – 6) which is equivalent to 13,500 litres per week. As outlined above this has been based on GIA rather than NIA to build in resilience to the proposed development due to uncertainties. Total waste generation, based on both commercial and residential land uses in Zone A (blocks 1 – 6), is equivalent to 26,690 litres per week.

2.2 Waste segregation and outline bin numbers

In residential flats waste will be segregated into two waste streams; residual and mixed recyclables as shown in **Figure 2.1**. Commercial waste will be segregated into three waste streams; organic, mixed recyclable and residual as illustrated in **Figure 2.2**.

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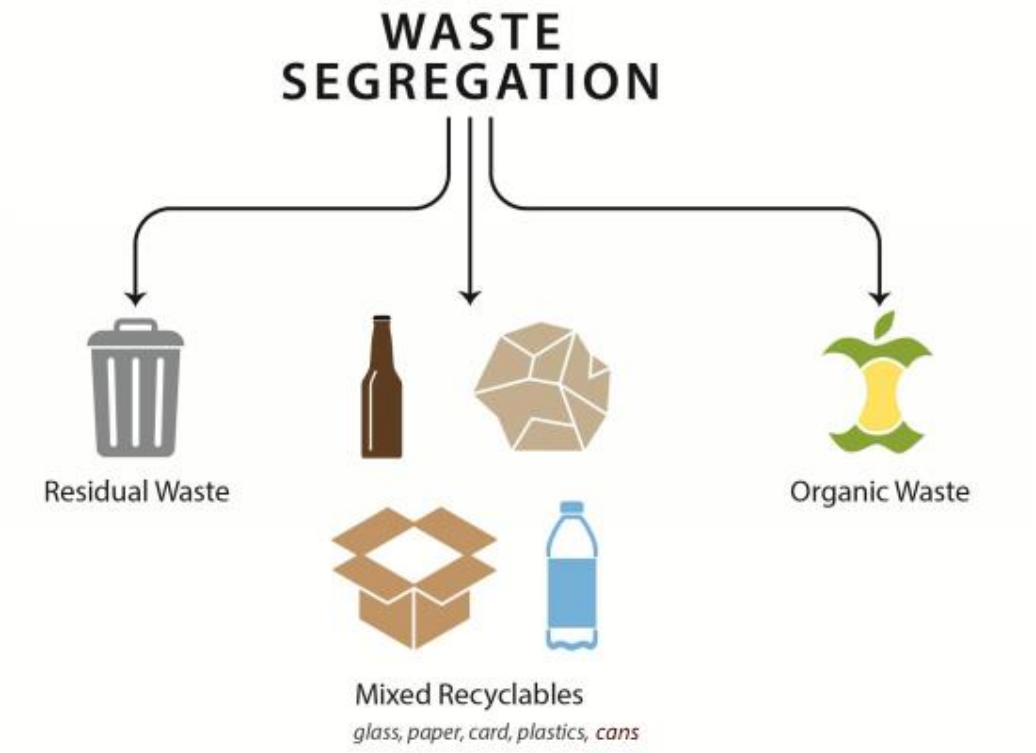
Figure 2.1 : Segregation of waste and recyclables, Zone A Residential

Figure 2.2 : Segregation of waste and recyclables, Zone A commercial



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The waste generation estimates for the residential and commercial land uses have been used to calculate the likely number of Eurobins that will be required; this is presented in **Tables 2.4** and **2.5**. This has been calculated based on an anticipated collection frequency of once a week for residential waste, and three times per week for commercial waste.

Table 2.3 : Required Eurobin numbers for residential waste in Zone A based on weekly collection

	Eurobin numbers per week	
	Residual	**Mixed recyclables**
Size of required Eurobins	**1100L**	**1100L**
No. of required Eurobins	7	5

Table 2.4 : Required Eurobin numbers for commercial waste in Zone A based on three times weekly collection

	EuroBin numbers per week		
	Residual	**Mixed recyclables**	**Organic**
Size of required Eurobins	**1100L**	**1100L**	**240L**
No. of required Eurobins	2	2	4

2.3 Operational waste management procedures

In Zone A (blocks 1 – 6) the following waste management procedures have been agreed with LBH;

- bags will be taken by residents to a communal Eurobin store at ground level of each residential core and placed in the appropriate Eurobins. Communal bin stores in residential cores have been sized to be able to hold a minimum of one residual and one mixed recyclable Eurobin;
- commercial units are provided with intermediate storage spaces at ground floor also. These are sized to accommodate the number of Eurobins outlined in **Table 2.4** but can accommodate additional space on the basis of a worst case scenario. Subject to understanding future occupancies a detailed strategy will be submitted to the Local Planning Authority (LPA);
- on collection days, the Facilities Management (FM) team will transport the Eurobins from commercial and residential stores to a central bin store at the east of the site as illustrated in **Figure 2.4**;
- waste stores in the residential cores and commercial areas have been located to ensure that residents and staff do not need to travel in excess of this 30m to dispose of their waste (excluding vertical distances);
- it is proposed that an electric vehicle (EV) or other towing support is provided to support the FM team in moving Eurobins from the residential cores and commercial waste store to the central bin store;

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- this room is located at a distance of less than 10m from Central Way; the local authority or their appointed waste contractors will access the room from Central Way and will service all the required Eurobins. The route from the communal bin stores to the road is free from steps and a drop curb will be provided at the collection point; and
- the central bin store has been sized to accommodate a full weeks' worth of residential waste as well as one of the three weekly commercial collections.

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Figure 2.4 : Waste flow maps for Zone A, blocks 1 to 7 (please refer to GA in Appendix B)

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3 Operational Waste Management Strategy - Zone B

3.1 Anticipated waste generation

In order to determine spatial requirements for waste management associated with the townhouses located south of the site, outline waste generation and Eurobin numbers have been calculated on the basis of industry best practice and standards as outlined below. This has been based on the FPA drawings (A 1323 GA 0501) and a number of assumptions which are outlined below.

Waste generations and spatial requirements have been estimated on the basis of the following assumptions;

- a worst case scenario of four beds per house;
- a generation rate of 70 litres per bed per week plus 30 litres per unit for residential waste from town houses (e.g. for a four bed town house this would equate to 310 litres);
- total footprint of a 1100 L Eurobin of 2.27 m^2 (including 150 mm per side to allow for movement and servicing);
- total footprint of a 120 L Eurobin of 0.66 m^2 (including 150 mm per side to allow for movement and servicing);
- an addition of 5 m^2 space to allow for bulky storage in each block and a total of 15 m^2 in the central storage area; and
- the area provided will be of suitable layout to facilitate effective waste management.

Table 3.1 : Anticipated residential waste generation for Zone B town houses

			Waste generation (litres per week per unit)		
			Residual	Mixed recyclables	Organics
Block	**Number of units**	**Waste generation (litres per week)**	**50%**	**40%**	**10%**
Total	34	10,540	155	124	31

Outline waste generation calculations estimate that approximately 10,540 litres per week from the town houses will be generated. This is based on a worst case scenario that all 34 town houses consist of four bedrooms.

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3.2 Waste segregation and outline bin numbers

Waste will be segregated into three key waste streams as outlined in **Figure 3.1**; residual, mixed recyclables and organic waste. Grass cuttings and garden waste will arise, this however will be collected as and when required on an ad-hoc basis.

Figure 3.1 : Segregation of waste and recyclables

The waste generation estimates for the town houses have been used to calculate the likely number of Eurobins required as shown in **Table 3.2**. This has been calculated based on an anticipated collection frequency of once a week for residential waste including mixed recyclables, residual waste and organics. Other waste streams such as garden waste will be collected at less frequent intervals as and when they are required.

Table 3.2 : Required bin numbers per town house in Zone B based on once weekly collection

	Eurobin numbers per week per unit			
	Residual	**Mixed recyclables**	**Organics**	**Garden waste**
Size of required receptacles	**Black bag**	**White bag**	**23L caddie**	**Heavy duty canvas bag**
No. of required receptacles	n/a	n/a	2	n/a

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3.3 Operational waste management procedures

For the 34 townhouses the following approach to waste management is likely to be taken, however further details will be submitted as part of any Reserved Matters Application. The outline approach is;

- residents separate waste into four streams (residual, mixed recycling organic waste and garden waste) within their homes;
- on collection days, waste bags (black for residual, white for recycling and heavy-duty canvas bags for garden waste) are taken to the kerb for collection on the appropriate day and at an appropriate time. This is illustrated in **Figure 3.2**, there is no limit to the number of bags that can be collected;
- the refuse collection team will collect waste from the kerb side, a turning head has been provided to enable this to occur;
- residents in the town houses situated adjacent to the turning circle will be expected to segregate waste as above and then move this on collection days from their residencies to the designated refuse collection point as illustrated in **Figure 3.2** (this has been agreed with LBH Highways Department); and
- where waste is being collected from the kerb side, drop curbs will be provided at frequent intervals.

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Figure 3.2 : Waste collection arrangements for Zone B town houses (refer to Appendix C for GA)

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4 Operational Waste Management Strategy – Zone A (block 7)

4.1 Anticipated waste generation

In order to determine spatial requirements for waste in the 8 units in Zone A, block 7 (1 Eastbury Road), outline waste generation and Eurobin numbers have been generated. This has been based on the FPA drawings (A 1323 GA 2002 C).

Waste generations and spatial requirements have been estimated on the basis of the following assumptions;

- a generation rate of 90 litres per week for residential waste in the 84 units in accordance with BS 5906:2005;
- a generation rate of 10 litres per m^2 week for commercial waste. This has designed to a worst case scenario to accommodate resilience in the proposed development due to uncertainty of commercial land use types. This has been based on a food and beverage outlet;
- total footprint of a 1100 L Eurobin of 2.27 m^2 (including 150 mm per side to allow for movement and servicing);
- total footprint of a 120 L Eurobin of 0.66 m^2 (including 150 mm per side to allow for movement and servicing);
- an addition of 5 m^2 space to allow for bulky storage in each block and a total of 15 m^2 in the central storage area; and
- the area provided will be of suitable layout to facilitate effective waste management.

Table 4.1 : Anticipated residential waste generation for 1 Eastbury Road

					Waste generation (litres per week)	
	Unit numbers				Residual	Mixed recyclables
Blocks	1 bed	2 bed	Number of units	Waste generation (litres per week)	60%	40%
7	6	2	8	940	564	376

Outline waste generation calculations estimate that approximately 940 litres per week from the residential flats will be generated. Commercial floor space will account for 10% of the overall commercial allocation in the proposed scheme; the anticipated waste generation from commercial land uses in this area is 0.8 litres.

4.2 Waste segregation and outline bin numbers

Waste will be segregated into two key waste streams within flats as outlined in **Figure 4.1**. **Figure 4.2** outlines waste segregations in commercial land uses.

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Figure 4.1 : Segregation of waste and recyclables in Zone A (Block 7) residential

Figure 4.2 : Segregation of waste and recyclables in Zone A (Block 7) commercial

The waste generation estimates for the apartments have been used to estimate the likely number of Eurobins that will be required within the buildings, shown in **Table 4.2**. This has been calculated based on an anticipated collection frequency once a week collection for residential waste. One Eurobin for each waste stream (240 L organic, 1100 L residual and 1100 L mixed recyclable) will be provided for commercial land uses.

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Table 4.2 : Anticipated residential and commercial bin requirements for Zone A (block 7)

	Eurobin numbers per week		
	Residual	**Mixed recyclables**	**Organic**
Size of required Eurobins	**1100 L**	**1100 L**	**240 L**
No. of required Eurobins (residential)	1	1	n/a
No. of required Eurobins (commercial)	1	1	1

4.3 Operational waste management procedures

The following operational waste management procedures have been proposed for the residential flats in Zone E;

- residents separate waste into up to two waste streams (black bag for residual, white bag for recycling), when waste bags are full residents will move these to the central waste room (see **Figure 10**) at ground level via the lift or stairwell;
- retailers operating in the commercial space will separate waste into three waste streams, when bins are full retailers will be responsible for transporting waste to the central bin store at ground floor;
- the central bin store holds both commercial and residential waste, Eurobins will be clearly labelled to enable users to clearly identify which Eurobin is for residential and commercial waste streams and for the particular type of waste (e.g. residual, recyclable or organic). Where a shared bin store for residential and commercial is not acceptable, commercial units will transport waste to the large commercial bin store at the north of the site, this waste will then be collected as per Section 2.3;
- on collection days, the FM team will move waste from the central waste store to the kerb for collection on the appropriate day and at an appropriate time. This is illustrated in **Figures 4.3;** and
- the refuse collection team will collect waste from the kerb side.

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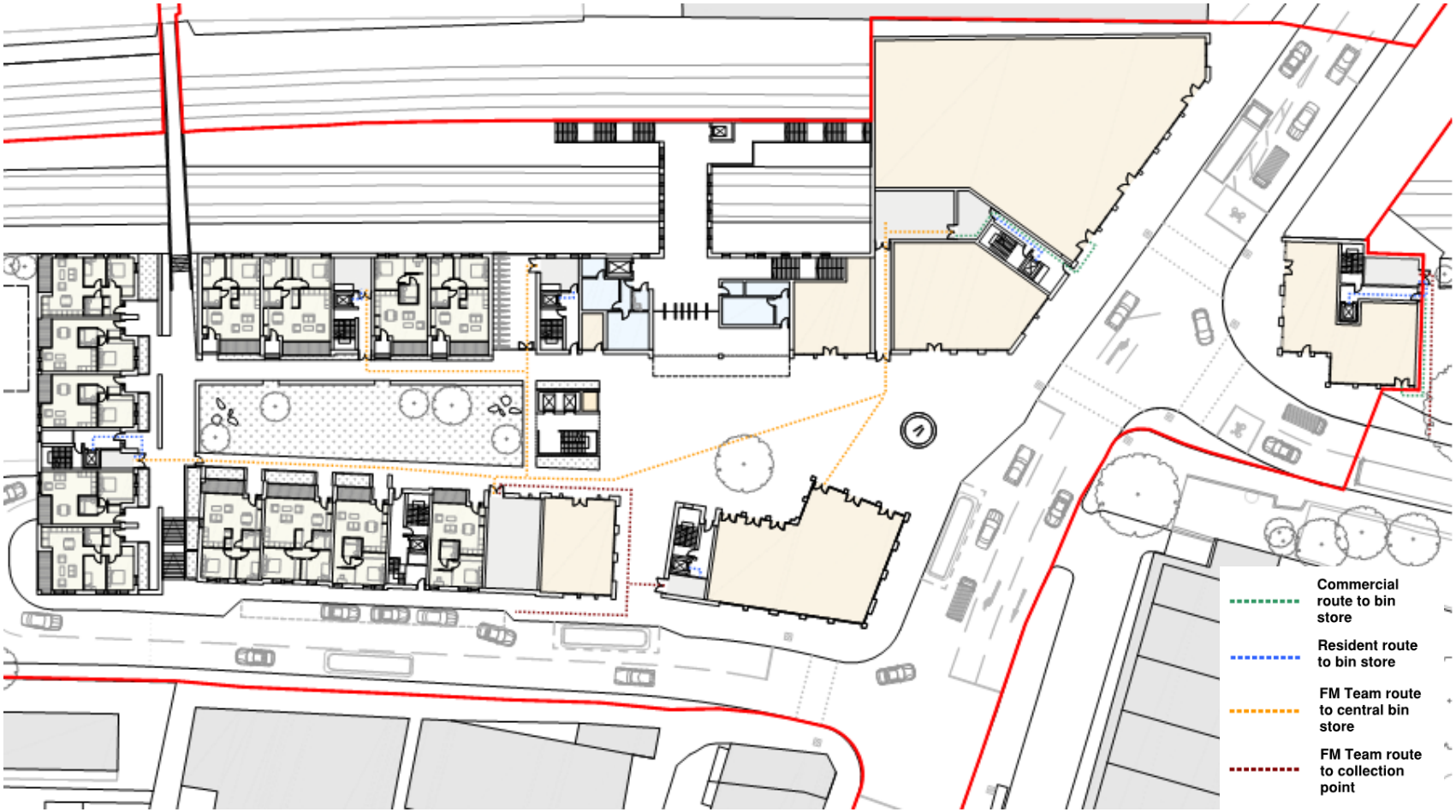
Figure 4.3 : Internal waste management arrangements (refer to Appendix B for full size drawing)



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5 Conclusion

Productive and efficient waste management practice is required within the residential and commercial land uses to ensure waste is managed in a way that ensures waste management operations are discreet and hygienic.

Outline waste generation calculations estimate that approximately 39,670 litres per week will be generated for all land uses. Of this 15,000 litres is commercial and 24,670 residential.

Waste will be segregated at source, where practicable into the following two main streams as a minimum: in town houses and commercial land uses organic waste and grass cuttings will further be segregated where applicable in line with the waste hierarchy.

A detailed strategy for Zone B will be dealt with in more detail at the reserved matters stage, however it is considered the outline strategy presents a practical solution to the treatment of operational waste.

This strategy has been agreed to by LBH Highways team.

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Appendix A – Waste Management Practice and Policy

Information on the relevant national and local waste management practice and policy is provided below. There is a large amount of national policy and guidance for residential developments. Little LBH guidance for commercial waste is available. Existing guidance provides comprehensive and detailed storage and collection requirements for new developments within the borough although the focus is on residential developments. However, the guidance provides direction to ensure good practice and effective and efficient waste management.

National Policy

Government Review of Waste Policy 2011

Prioritises efforts to manage waste in line with the waste hierarchy and reduce the carbon effect of waste. This document also encourages waste prevention and re-use, supporting greater efficiency and initiatives which reward and recognises individuals who reduce, re-use and recycle their waste. It also sets out plans to work with councils to increase the frequency and quality of rubbish collections and make it easier to recycle.

Hazardous Waste (England and Wales) (Amendment) Regulations 2009 SI 507

The Hazardous Waste Regulations, which came into force in 2005 provide requirements for controlling and tracking the movement of hazardous waste and bans mixing different types of hazardous waste.

The Waste Strategy for England 2007 (WS2007)

The Department of Environment Food and Rural Affairs (DEFRA) in 2009 updated the published WS2007. There is a focus primarily on Municipal Solid Waste (MSW), as well as making provision for the future creation of recycling / recovery targets for Commercial & Industrial (C&I) waste.

The Waste (England and Wales) (Amended) Regulations 2012

These regulations came into force 29 March 2011. The regulations implement the revised Waste Framework Directive and require businesses to confirm that they have applied the waste management hierarchy when transferring waste. They introduce a two-tier system for waste carrier and broker registration along with a new concept of waste dealer. They also exclude some categories of waste from waste controls and include a small number of radioactive materials.

Making Space for Waste, A Practical Guide for Developers and Local Authorities, June 2010

This document was designed to allow developers to follow a step by step process when considering the design of waste facilities in new developments.

Local Policy

The London Plan 2013 (Sustainable Design and Construction Supplementary Planning Guidance April 2014)

Describes an integrated economic, social environmental and transport framework for the development of London over the next 20 to 25 years. The plan sets out to improve the environment and tackle climate change by reducing CO_2 emissions and improving London's recycling performance and waste management. The plan provides updated guidance on designing out waste in buildings during the early stages of a project and on the importance of sufficient and well-designed storage for recyclables, organic and residual waste and the implementation of the waste hierarchy.

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The Mayor's Municipal Waste Management Strategy 2011

This document sets out the Mayor's policies and proposals for reducing the amount of municipal waste produced, increasing the amount of waste re-used, recycled or composted, and generating low carbon energy from waste remaining. This strategy also sets out how the Mayor, through the London Waste and Recycling Board, will help develop waste management infrastructure in London. Broadly, the key targets are for zero waste to landfill, a reduction in household waste generation rates of 20%, increased recycling rates to 60% and the generation of energy from waste where appropriate. The Mayor's targets are for London as a whole, placing no specific requirements on individual waste authorities to achieve them.

The Mayor's Business Waste Management Strategy 2011

Sets out initiatives to help London's business (from shops, restaurants, office buildings, manufacturers to construction companies) to save money and reduce harm to the environment through better waste management. Of specific relevance here are the Mayor's proposals to ensure buildings provide suitable storage and access for the management of waste. Additionally, the Mayor will be supporting planning guidance to engage developers, architects and designers in looking for ways to design out waste at source and improve the overall resource efficiency of buildings and infrastructure projects.

London Borough of Hillingdon

The London Borough of Hillingdon's (LBH) *Design and Accessibility Statement SPD* (supplementary planning document) includes some guidance on the provision of waste facilities within new developments, however the document is relatively old (2006). We therefore contacted Lynn Lewis, Waste Officer at LBH to confirm their requirements. She has said that road access and pedestrian parking cause the majority of their problems with waste management and that their requirements are:

- bin stores for flats must be within 10 metres of the road;
- no parking spaces are to be positioned in front of bin store, and ideally a hashed box; and
- there must be no steps or kerbs from bin store to the road and if there is a ramp it should be of a gradient no more than 1:20.

LBH provides weekly collection of rubbish, recycling, garden waste and organic waste, for households; no bins are provided for residual and recyclable waste from residential town houses as waste bags are used. Commercial waste collections are charged by LBH.

Other good practice

The following principles are collated from Greater London Authority guidance and our professional experience on other similar projects.

Waste storage rooms for the temporary storage of waste

The following principles are relevant to the proposed apartment blocks and commercial facilities, if appropriate:

- commercial waste must be separated from domestic waste;
- waste storage rooms must have adequate lighting, artificial or natural;

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- floor surface must be easily cleaned. Walls must be constructed and finished in materials that are impervious and easily kept clean. Where appropriate, a trapped gully and water supply should be provided to facilitate washing down;
- rubber buffer/bump strips should be placed around the edge at bin height to prevent damage caused when using the bins;
- door must have the facility to held open during collection;
- Storage areas should be in a position that is easily accessible for the occupants and the collection crew – 10-15m to collection point (LBH have confirmed 10m to the road);
- doorways should provide at least 1.5m clearance
- where possible, waste storage rooms should use double doors. Doors should not open inwards. When appropriate, sliding doors may be used;
- waste containers must not be stacked and additional 150mm per side for bin handling should be allowed for;
- waste storage rooms should be provided with a minimum of 2m head clearance ;
- waste storage rooms require ventilation to comply with Part B Regulations and BS1703. which should be $0.2m^2$ of free air or six air changes/hr; and

Waste routes

- residents should not be required to travel a distance of more than 30m to the waste storage rooms;
- when travel distances are more than 150m, the facilities management staff should make use of electrical vehicles/tow tractors (if parking spaces are available) or electric tug devices to move bins around.

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Appendix B Waste flow map, Zone A (blocks 1 – 7)

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NOTES

Fletcher Priest Architects is a Limited Liability Partnership registered in England and Wales (OC336568) at the below address. ≡ this drawing is to be read in conjunction with the design risk assesment prepared by fpa. ≡ this drawing is to be read in conjunction with other drawings and specification produced by fpa and other members of the design team. ≡ all dimensions are in millimeters unless otherwise stated. ≡ do not scale this drawing. ≡ any discrepancies in dimensions are to be reported to the architect. ≡ all information subject to detail site survey.

KEY

TfL Ownership Boundary (32,092.5m²)

Site Boundary (19,108m²)

Refuse collection vehicle route

Resident route to holding area

Refuse team collection route from holding area

Residential refuse

REV	DESCRIPTION	BY	CHK	DATE
A	GA FREEZE	AH	LR	16.10.15
-	DRAFT ISSUE	AH	LR	25.09.15

FOR INFORMATION

NORTH

TRANSPORT FOR LONDON
NORTHWOOD

05 SITE
Location Plan
Proposed

DRAWING NUMBER / REVISION
A 1323 GA 0501 A

SCALE
1:750 @A1 / 1:1500 @A3

DATE / DRAWN BY / CHECKED BY
31.07.2015 AH / LR

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Appendix C Waste flow map, Zone B

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KEY:

- Site Boundary
- Residential
- Retail
- Station
- Single Parking
- Car Stackers
- Disabled Parking
- Cycle Store
- Refuse Store

- **Commercial route to bin store**
- **Resident route to bin store**
- **FM Team route to central bin store**
- **FM Team route to collection point**
- **Commercial bin store**
- **Residential bin store**
- **Central bin store**

REV	DESCRIPTION	BY	CHK	DATE
C	GA FREEZE	AH	LR	22.10.15
B	GA FREEZE	AH	LR	16.10.15
A	GA FREEZE	AH	LR	09.10.15
.	DRAFT ISSUE	AH	LR	25.09.15

FOR INFORMATION

NORTH

TRANSPORT FOR LONDON
NORTHWOOD

20 GA PLANS
Zone A Blocks 1-7
Ground Floor Plan

DRAWING NUMBER / REVISION
A 1323 GA 2002 C

SCALE
1:250 @A1 / 1:500 @A3

DATE / DRAWN BY / CHECKED BY
31.07.2015 AH / LR

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