ABERFELDY VILLAGE (PHASE A)

OUTLINE SITE WASTE MANAGEMENT PLAN

PROJECT NO. 4060/1100 DOC NO. D013

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Velocity Transport Planning Ltd

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VELOCITY
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Notes

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1 INTRODUCTION

1.1 INTRODUCTION

1.1.1 Velocity Transport Planning has been commissioned by Aberfeldy Village LLP (hereafter to referred as 'the Applicant') to prepare an Outline Site Waste Management Plan (SWMP) for the detailed application of Aberfeldy Village Phase A (hereafter referred to as the 'Proposed Development') which is part of a hybrid planning application that includes a wider masterplan area.

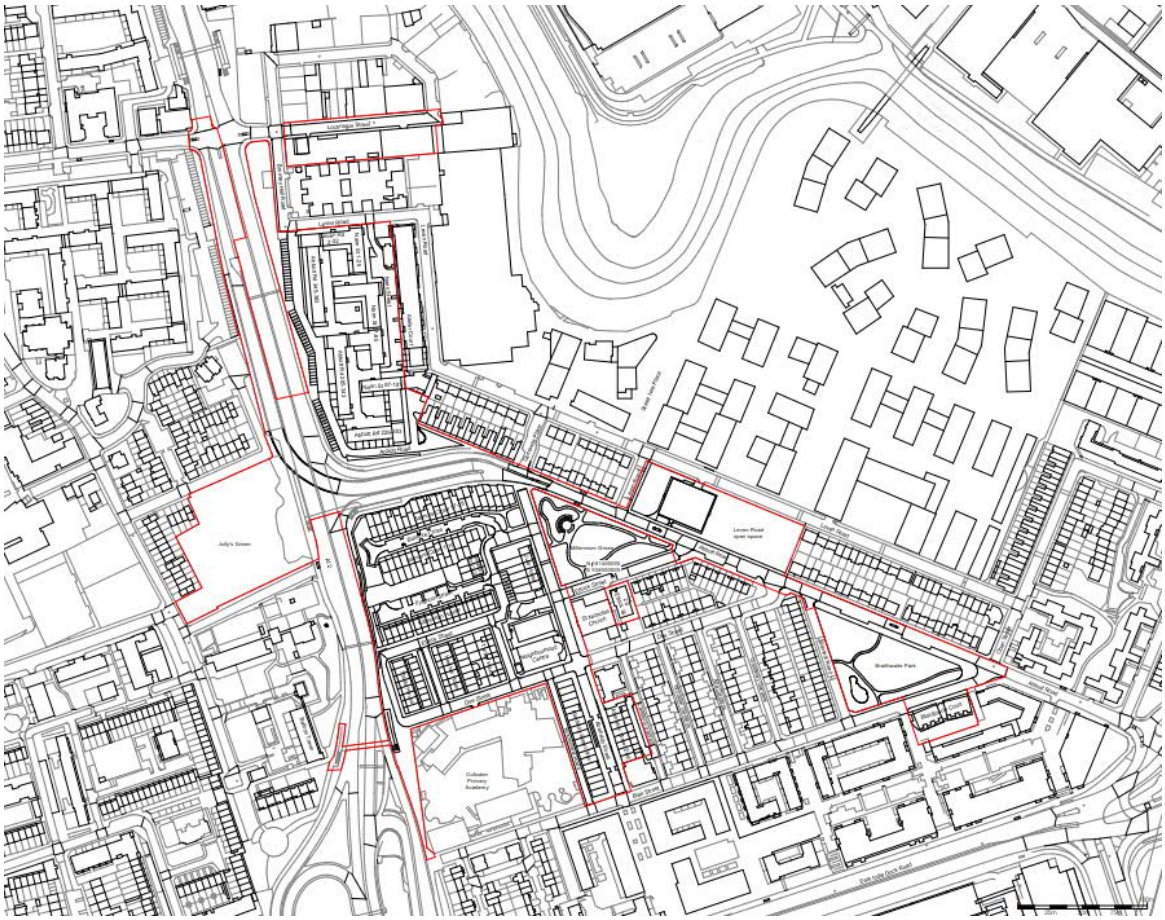
1.1.2 This Outline SWMP details how overarching waste management processes and practices will be undertaken during the demolition, site preparation, and construction phases of the Proposed Development.

1.2 SITE LOCATION

1.2.1 The Proposed Development is located in Poplar, within the administrative boundary of the London Borough of Tower Hamlets (LBTH).

1.2.2 The site location and extent of the hybrid planning application are shown in Figure 1-1 below.

Figure 1-1 Site Location



1.3 EXISTING SITES

1.3.1 The existing sites within the Proposed Development include four sites of residential, commercial and community use buildings, as well as one vacant plot.

1.3.2 Figure 1-2 below shows the extent of Phase A of the Aberfeldy Village masterplan.

Figure 1-2 Aberfeldy Village Phase A

1.3.3 The buildings and hard landscaped areas due for demolition are as follows:

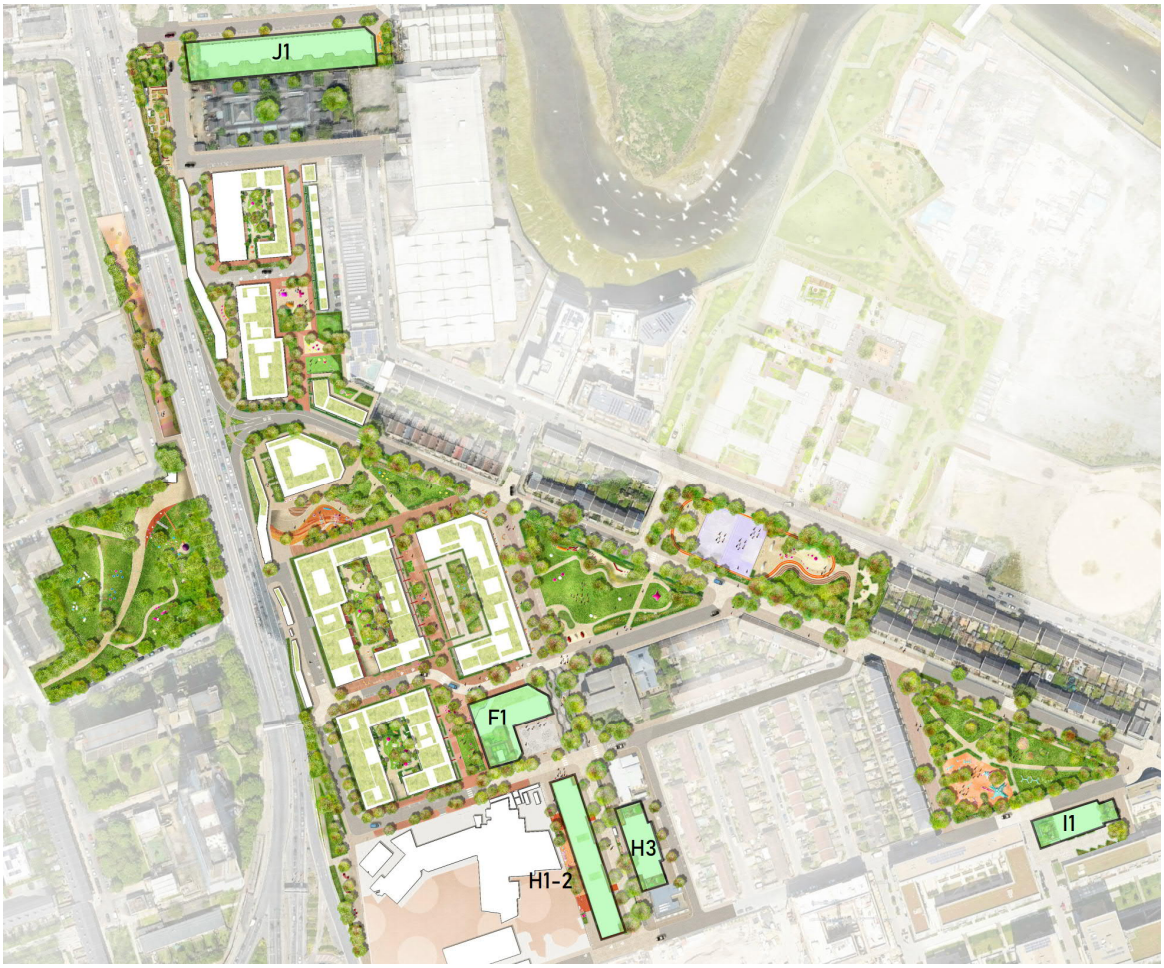
- Blairgowrie Court;
- Aberfeldy Street West;
- Aberfeldy Street East;
- Aberfeldy Neighbourhood Centre; and
- Lochnagar Street.

1.4 PROPOSED DEVELOPMENT

1.4.1 The Proposed Development includes five plots of predominantly residential buildings, with commercial and community uses at ground level.

1.4.2 Figure 1-3 below shows the locations of Phase A within the masterplan.

Figure 1-3 Proposed Development Phase A



1.5 DOCUMENT STRUCTURE

1.5.1 This report is set out in the following sections:

- Section 2: Demolition and Excavation Waste;
- Section 3: Construction Waste; and
- Section 4: Summary and Conclusion.

2 DEMOLITION AND EXCAVATION WASTE

2.1 INTRODUCTION

2.1.1 This section outlines the estimated waste anticipated to be generated by the existing structures on the site of the Proposed Development during the demolition and excavation phases.

2.1.2 All estimates should be considered indicative and will require updating by the relevant contractors upon appointment on site.

2.2 ESTIMATION OF DEMOLITION AND EXCAVATION WASTE

DEMOLITION WASTE

2.2.1 The following section has been informed by the Pre-Demolition Audit completed in September 2022 by Velocity Transport Planning.

2.2.2 Table 2-1 below shows the estimated weight of materials generated by the demolition process.

Table 2-1 Summary of Demolition Waste Generated

Material	Tonnes	% By Weight
Glass	122.40	0.29
Mixed Metals	3,017.32	7.13
Mixed Plastics	13.20	0.03
Tiles & Ceramics	16.90	0.04
Wood / Timber	23.84	0.06
Concrete / Binders	25,018.45	59.15
Bricks	12,342.52	29.18
Gypsum	681.39	1.61
Insulation	6.21	0.01
Carpets / Vinyl / Flooring	40.90	0.10
Electricals and Electronics	31.69	0.07
Asphalt	983.25	2.32
Mixed	-	0.00
Total	42,298.07	

2.2.3 Two Key Demolition Products (KDPs) were identified by the Pre-Demolition Audit, as follows:

- Inert Materials; and
- Metals.

2.2.4 The predominant KDP on site has been identified as inert materials, which are a group of materials that are handled and processed in the same manner during demolition and subsequent processing.

2.2.5 The inert materials generated by the demolition process are located within the following elements on site:

- Structural building frame;
- Internal walls;

- External walls; and
- Areas of hard landscaping.

2.2.6 Table 2-2 below summarises the details of the inert materials present on site, including tonnage and reclamation or recycling rate.

Table 2-2 Inert Demolition Waste

Material	EWC Code	Tonnage	Recommended Processing (%)	
			Reclamation	Recycling
Bricks	17 01 02	12,343	0	100
Tiles and Ceramics	17 01 03	16.9	0	100
Concrete / Hardcore	17 01 07	25,018	0	100
Asphalt	17 03 02	983	0	100
Total		38,361	0	100

2.2.7 The second KDP on site has been identified as metals, with use across all structures for a number of purposes.

2.2.8 The metal generated by the demolition process are located within the following elements on site:

- Structural building frame;
- Mechanical and Electrical Plant (MEP);
- Balconies;
- Doors and windows;
- Walls;
- Lifts and stairs;
- Roof; and
- Pipes and ducting.

2.2.9 Table 2-3 below summarises the details of the secondary KDP on site, including tonnage and reclamation or recycling rate.

Table 2-3 Mixed Metals Demolition Waste

Material	EWC Code	Tonnage	Recommended Processing (%)	
			Reclamation	Recycling
Mixed Metals	17 04 07	3,017	0	100

EXCAVATION WASTE

2.2.10 Following demolition of the existing structures, and removal of the hard landscaping, excavation will be required to facilitate the structural requirements of the Proposed Development.

2.2.11 The Proposed Developed includes no basement levels; the excavation works, and the quantity of material removed is associated only with the foundations.

CAPPING LAYER

2.2.12 It is assumed the capping layer will be removed during the demolition works.

MADE GROUND

2.2.13 Following the removal of the concrete/tarmac hardstanding areas the existing site levels will need to be levelled and further reduced preparation for the foundation works.

2.2.14 It is assumed that this depth will be approximately 100mm across the total area of the building footprints (approximately 6,170m^2) which equates to circa 617m^3 of made ground.

2.2.15 Applying an industry standard bulking factor of 1.2 to this volume equates to approximately 740m^3 of excavated material.

PILE ARISINGS AND FOUNDATIONS

2.2.16 The proposed structural plans identify that the foundations comprise a ground floor suspended slab supported on pile caps for each block.

2.2.17 Table 2-4 below summarises the volume of concrete required for the structural proposals for each plot, including the pile caps, ground beams, piles, and slabs.

Table 2-4 Structural Proposals

Plot	Volume (m^3)
F	3,548
H	5,749
I	2,784
J	2,851
Total	14,932

2.2.18 Applying an industry standard bulking factor of 1.2 to the total volume equates to approximately 17,918m^3 excavated material.

2.2.19 It is anticipated that this volume of material will decrease as the structural proposals are refined during the later design stages.

2.3 MANAGEMENT OF DEMOLITION AND EXCAVATION WASTE

2.3.1 Waste arising from site clearance, primary infrastructure and earthworks is expected to comprise rubble, concrete, road planings from existing hard-standings, gravel, and clay material.

2.3.2 It is proposed that the excavated concrete and tarmac from the capping layer is crushed on site for reuse as secondary aggregate. It should be noted that any potential re-use of materials should be undertaken under a Materials Management Plan in line with the CL:AIRE Code of Practice.

2.3.3 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another local development site, recycled into secondary aggregate or sent for disposal at appropriately licensed facilities (these are expected to be inert waste landfill sites).

2.3.4 For the purpose of this exercise, it is assumed that all made ground will be unsuitable for reuse on site and will be removed from site. This can be reviewed in more detail once sufficient on-site investigation and associated material testing has been conducted. All loads removed on site would be transferred to appropriately licenced facilities for reuse or recycling.

2.3.5 Any contaminated material found that requires removal from the site will be collected by suitable waste carriers and sent for disposal at appropriately licensed waste facilities.

2.3.6 Table 2-5 below details the estimated number of vehicles required to remove the material generated during the site clearance and excavation phases.

Table 2-5 Excavation Material Generation and Vehicle Movements

On-Site Activity	Reused On-Site	Material Removed from Site	Volume of Material (m^3)	Number of Vehicle Loads Required **
Levelling of site and removal of made ground	No *	Yes	740	74
Pile Cap / Pile Arisings	No *	Yes	17,918	1,792
		Total	18,658	1,866

** Until chemical and physical properties are established through appropriate testing methods, it is assumed all excavated material is unsuitable for reuse on site.*

*** Assumes 10m^3 volume HGVs*

3 CONSTRUCTION WASTE

3.1 CONSIDERATE CONSTRUCTORS SCHEME

3.1.1 It is expected that the Principal Contractor(s), once appointed, will register their site with the 'Considerate Constructors Scheme'. This is a national initiative, set up by the construction industry. Sites that register with the Scheme sign up and are monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements.

3.1.2 The Scheme is concerned about any area of construction activity that may have a direct or indirect impact on the image of the industry as a whole. The main areas of concern fall into three categories: the environment, the workforce, and the general public. Waste management is a key area of focus and on-site considerations may include:

- How waste is avoided, reduced, reused, and/or recycled;
- Whether there is a Waste Management Plan/Strategy and how this is monitored; and
- The type of feedback received (if any) as to how much waste on-site is diverted from landfill.

3.1.3 It is expected that registered construction sites work in an environmentally conscious, sustainable manner.

3.2 SITE WASTE MANAGEMENT PLAN

3.2.1 As part of a drive to cut red tape, the Government revoked the requirement for Site Waste Management Plans (SWMPs) for construction projects costing over £300,000 as of 1 December 2013 and they are no longer statutory.

3.2.2 However, SWMPs remain good practice during construction and allow waste credits to be achieved under certification schemes such as BREEAM; one will be prepared by the Principal Contractor(s) once appointed, post planning consent.

3.3 ESTIMATED CONSTRUCTION WASTE

3.3.1 During each stage of the construction process there is the potential to generate waste from a variety of means, including the over-ordering or on-site damage of raw materials and construction process waste, such as material off-cuts, packaging, and chemical residues.

3.3.2 Opportunities for minimising construction waste are discussed in this section, considering issues such as reducing waste through selection of more sustainable raw materials and the implementation of effective on-site waste management practices.

3.3.3 The Greater London Authority (GLA) has produced data based on all Circular Economy Statements submitted up to and including January 2022 in the calculation of construction waste arisings at the design of a new development. The construction waste arisings metric measures tonnes of waste/m^2 of floor area.

3.3.4 Table 3-1 shows the relevant metric for the Proposed Development, chosen as the median value for the range.

Table 3-1 Environmental Performance Indicators

Project Type	Tonnes/m² GIA
Residential / Commercial / Community	0.093
Source: GLA London Plan Guidance: Circular Economy Statements (Issued March 2022)	

3.3.5 Table 3-2 shows the estimated construction waste arisings for all elements of the Proposed Development, based on indicative GIA and applicable GLA metric.

Table 3-2 Estimated Construction Waste Arisings

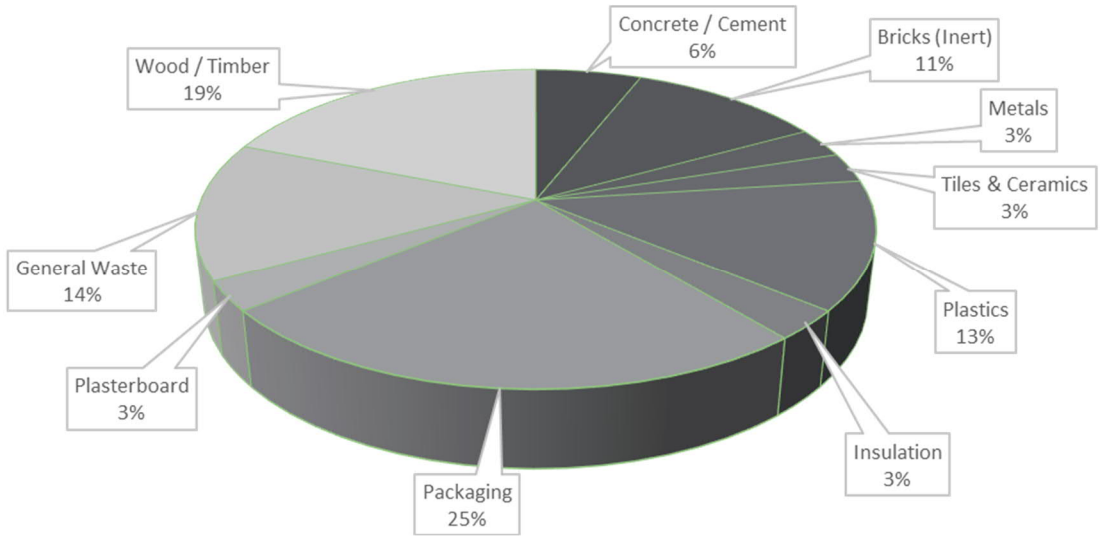
Use	GIA (m²)	Construction Waste Arisings (Tonnes per m²)	Construction Waste (Tonnes)
Residential	19,663.99	0.093	1,829
Non-Residential	1,489.7		139
Total	21,153.69	-	1,967

3.3.6 It is estimated that approximately 1,967 tonnes of waste may arise from the construction phase of the Proposed Development.

3.3.7 It should be noted that the estimated total figure also does not include waste from infrastructure development, such as utilities and pavements, which will add to the total construction waste volume. This is due to the fact that infrastructure development cannot be easily calculated using benchmarking data; and the BRE have no applicable information on this area of construction.

3.3.8 Figure 3-1 illustrates the estimated composition of construction waste arisings for the Proposed Development, based on data from UK construction projects of a similar nature.

Figure 3-1 Estimated Construction Waste Composition (Source: SmartWaste)



3.3.9 Table 3-3 shows the typical recovery rate of construction materials.

Table 3-3 Recovery Rate of Construction Materials

Material	Standard recovery * %	Good practice recovery * (quick win) %	Best practice recovery * %
Timber	57	90	95
Metals	95	100	100
Plasterboard	30	90	95
Packaging	60	85	95
Ceramics	75	85	100
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	95
Electrical equipment	Limited information	70 **	95
Furniture	0-15	25	50
Insulation	12	50	95
Cement	Limited information	75	95
Liquids and oils	100	100	100
Hazardous	50	Limited information ***	Limited information ***

** Proposed waste management actions 'reuse' and 'recycling' are forms of waste recovery.*

*** This is a required recovery target for the type of waste electrical and electronic equipment (WEEE) likely to be produced from construction sites, e.g. Lighting (the WEEE regulations).*

**** This cannot be 100% as most hazardous waste streams (e.g. Asbestos) must be landfilled.*

3.3.10 Table 3-4 shows the type and volume of waste generated during construction based on the percentages provided in Figure 3-1.

3.3.11 The *Best Practice Recovery* values in Table 3-3 were used to determine the percentage recovered from the construction materials.

Table 3-4 Type and Volume of Waste to be Generated During Construction

Material	Estimated Quantity (Tonnes)		
	Total	Recovered	Disposal
Concrete / Cement	118	118	-
Bricks (Inert)	216	216	-
Metals	59	59	-
Tiles & Ceramics	59	59	-
Plastics	256	243	13
Insulation	59	56	3
Packaging	492	467	25
Plasterboard	59	56	3
Miscellaneous	275	262	13
Wood/Timber	374	355	19
Total	1,967	1,891	76

3.3.12 It is assumed that where it is not possible to reuse or recycle construction waste, contractors will use disposal routes that divert material from landfill, such as Energy from Waste (EfW), Refuse Derived Fuel (RDF) or Solid Recovered Fuel (SRF).

3.3.13 It should be noted that typical hazardous materials from construction sites that fall within the Hazardous Waste Regulations include:

- Treated wood, glass, plastic (alone or in mixture) containing dangerous substances;
- Bituminous mixture containing coal tar and other dangerous substances;
- Metals containing oil, coal tar and other dangerous substances;
- Cables containing oil, coal tar and other dangerous substance;
- Rubble or hardcore containing dangerous substances;
- Soil, stones and dredging spoil containing dangerous substances;
- Gypsum materials such as plasterboard containing hazardous materials;
- Unused or unset cement;
- Paints and varnishes containing organic solvents or other dangerous substances;
- Paint or varnish remover;
- Adhesives and sealants containing organic solvent or other dangerous substances; and
- Empty packaging contaminated with residues of dangerous substances e.g. paint cans.

3.3.14 Hazardous waste materials will be stored in secure bunded compounds in appropriate containers which are clearly labelled to identify their hazardous properties and are accompanied by the appropriate assessment sheets.

3.3.15 Any fuels, oils and chemicals that are used will be stored in appropriate containers within secure bunded compounds in accordance with good site practice and regulatory guidelines and located away from sensitive receptors.

SUSTAINABLE SELECTION OF CONSTRUCTION MATERIALS

3.3.16 A sustainable materials selection strategy will be prepared prior to the construction of the Proposed Development. Measures will be taken, such as face-to-face 'toolbox talks' and provision of clear operational instructions, to ensure that contractors are committed to the operation of good practice measures on-site with emphasis on continual improvement and identifying appropriate opportunities to reduce waste, promote recycling and use recyclable materials. The ordering of appropriate, minimum amounts of building materials will be part of the materials selection strategy. Prefabricated materials will also be used wherever possible, for example CLT will be used in the construction of the three storey townhouses.

SETTING TARGETS FOR REDUCING CONSTRUCTION WASTE

3.3.17 Appropriate targets and objectives will be set in relation to the minimisation, reuse, and recycling of any waste materials during earth works and construction. This will ensure that a clear action plan is generated for the management of specified types and quantities of materials identified for each of the construction stages. These targets will be agreed at the inaugural meeting between the Principal Contractors, the contractors and LBTH.

3.3.18 To ensure that the system of waste prevention, minimisation, reuse and recycling is effective, consideration will be given to the setting of on-site waste targets and a suitable programme of monitoring at regular intervals to focus upon:

- Quantifying raw material wastage;

- Quantifying the generation of each waste stream;
- Any improvements in current working practices;
- Methods by which the waste streams are being handled and stored; and
- The available waste disposal routes used, e.g. landfills, waste transfer stations.

3.3.19 The Principal Contractors will be responsible for the setting and review of waste targets from the outset of the development process to ensure that high standards are maintained with the emphasis being on continual improvement. Specific waste quantification and monitoring will assist in determining the success of waste management initiatives employed on each construction site and progress against these targets should be relayed back to the appropriate stakeholders.

ACHIEVING REDUCTIONS IN CONSTRUCTION WASTE - PROMOTION OF BEST PRACTICE

3.3.20 As part of the encouragement of on-site best practice, there will also be a need to ensure that suppliers of raw materials to the Proposed Development are committed to reducing any surplus packaging associated with the supply of any raw materials. This includes the reduction of plastics (i.e. shrink wrap and bubble wrap), cardboard and wooden pallets. This may involve improved procurement and consultation with selected suppliers regarding commitments to waste minimisation, recycling, and the emphasis on continual improvement in environmental performance.

3.3.21 Table 3-5 below summarises the most important mitigation measures to minimise the potential waste of on-site materials during construction. It is important to note, however, that not all construction materials will be provided by local suppliers.

Table 3-5 Measures to Reduce Waste of On-Site Construction Materials

Ordering	Delivery
Avoid: • Over-ordering (order 'just in time') • Ordering standard lengths rather than lengths required • Ordering for delivery at the wrong time (update programme regularly)	Avoid: • Damage during unloading • Delivery to inappropriate areas of the site • Accepting incorrect deliveries, specification or quantity
Storage	**Handling**
Avoid: • Damage to materials from incorrect storage • Loss, theft or vandalism through secure storage and on-site security	Avoid: • Damage or spillage through incorrect or repetitive handling

3.3.22 Where practicable, waste streams that have the potential to be reused on-site or transported off-site for recycling will need to be segregated. Although every effort will be made to retain all suitable materials on-site, it is possible that some of these materials cannot be reused or recycled during the construction process. In these situations, the Site Managers will work to identify a nearby Transfer Station or suitably licensed facility in order for material to be redistributed as fill on other suitable sites. This represents the most sustainable alternative to landfill disposal.

CONSTRUCTION MATERIALS AND WASTE STORAGE

3.3.23 Emphasis will be placed on the provision of appropriate storage conditions for raw materials and key waste streams relating to each development. This will include the segregation of material for reuse or recycling on-site. Where this is not practicable, materials will be segregated for off-site recycling.

3.3.24 The location of the waste storage areas will be clearly labelled, identifying the materials that can be received. Provisions that will be made include:

- Temporary offices and work compounds on-site will retain all details relating to the waste strategy for the site, health and safety and monitoring and reporting details;
- Storage areas for raw materials and assembly areas for construction components will be located away from sensitive receptors;
- Clearly identified containers for segregated waste streams for reuse and recycling; and
- Dedicated skips will be provided for any construction waste that requires off-site disposal.

3.3.25 In addition, the provision of effective and secure storage areas for construction materials is important to ensure that potential loss of material from damage, vandalism or theft is avoided. These measures will be supported by ensuring well-timed deliveries to the site, providing on-site security, and installing temporary site security fencing.

3.3.26 Implementation of good practice measures in terms of on-site storage and security practices will assist in reducing unnecessary wastage of material and ensure that high standards are maintained throughout the development process.

MANAGING TRANSPORT AND TRAFFIC IMPACTS FROM CONSTRUCTION

3.3.27 The logistics associated with construction waste are affected by a wide range of factors. The quantity and types of waste materials generated will fluctuate during the construction phases and the resulting number of waste collections will be dictated by a range of variables, including the amount of storage space for waste, the capacity of waste containers used, the materials segregated for recycling and whether any on-site processes are used for reducing the volume of waste (compactors / balers / shredders etc.).

3.3.28 The Principal Contractors will be expected to provide construction waste logistics forecasts, which will be discussed with waste contractors and LBTH following appointment of relevant parties.

3.3.29 The impact of traffic associated with the movement of construction and waste materials on surrounding neighbourhoods and the local road network will be minimised by a combination of factors. These include reducing the need to import / export materials; and minimising off-site removal of waste to landfill. Dedicated haulage routes will be agreed with LBTH to minimise disturbance to local communities.

4 SUMMARY & CONCLUSION

4.1 SUMMARY

SITE PREPARATION AND EARTHWORKS

4.1.1 Waste arising from site clearance, primary infrastructure and earthworks is expected to comprise topsoil, rubble, concrete, and road planings from existing hard-standings, gravel, and clay material.

4.1.2 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another local development site, recycled into secondary aggregate or sent for disposal at appropriately licensed facilities.

4.1.3 Any contaminated material found that requires removal from the site will be collected by suitable waste carriers and sent for disposal at appropriately licensed waste facilities.

CONSTRUCTION WASTE

4.1.4 During each stage of the construction process there is the potential to generate waste from a variety of means, including the over-ordering or on-site damage of raw materials and construction process waste, such as material off-cuts, packaging, and chemical residues.

4.1.5 Construction waste has been estimated using data provided by the GLA within their Circular Economy guidance. The construction waste arisings metric measures tonnes of waste/m^2 of floor area.

4.1.6 Where it is not possible to reuse or recycle construction waste, contractors will be expected to seek disposal routes that divert material from landfill, such as Energy from Waste (EfW), as Refuse Derived Fuel (RDF) or Solid Recovered Fuel (SRF).

4.1.7 Hazardous waste materials will be stored in secure bunded compounds in appropriate containers which are clearly labelled to identify their hazardous properties and are accompanied by the appropriate assessment sheets.

4.1.8 Any fuels, oils and chemicals that are used will be stored in appropriate containers within secure bunded compounds in accordance with good site practice and regulatory guidelines and located away from sensitive receptors.

4.1.9 Appropriate targets and objectives will be set in relation to the minimisation, reuse, and recycling of any waste materials during earth works and construction. This will ensure that a clear action plan is generated for the management of specified types and quantities of materials identified for each of the construction stages. These targets will be agreed at the inaugural meeting between the Principal Contractors, the contractors and LBTH.

4.1.10 The Principal Contractors will be responsible for the setting and review of waste targets from the outset of the development process to ensure that high standards are maintained with the emphasis being on continual improvement. Specific waste quantification and monitoring will assist in determining the success of waste management initiatives employed on each construction site and progress against these targets should be relayed back to the appropriate stakeholders.

4.1.11 Emphasis will be placed on the provision of appropriate storage conditions for raw materials and key waste streams relating to each development. This will include the segregation of material for reuse or recycling on-site. Where this is not practicable, materials will be segregated for off-site recycling.

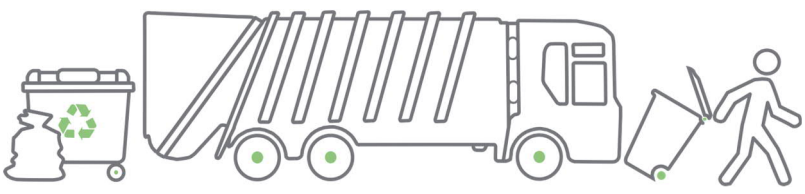
4.1.12 The Principal Contractors will be expected to provide construction waste logistics forecasts, which will be discussed with waste contractors and LBTH following appointment of relevant parties.

4.1.13 The impact of traffic associated with the movement of construction and waste materials on surrounding neighbourhoods and the local road network will be minimised by a combination of factors. These include reducing the need to import / export materials; and minimising off-site removal of waste to landfill. Dedicated haulage routes will be agreed with LBTH to minimise disturbance to local communities.

CONCLUSION

4.1.14 This Outline SWMP has considered the need to lessen the overall impact of waste generation through recycling of materials from the construction phase of the Proposed Development.

4.1.15 The proposals set out in this strategy meet the requirements of relevant waste policy and follow applicable guidance.



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