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LODDON GARDEN VILLAGE

Waste Management Report

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1 INTRODUCTION

1.1 Background

1.1.1 This Waste Management Report has been prepared as a technical appendix to support the Environmental Statement for the Proposed Development at land at Loddon Garden Village, Wokingham (the "Site"). The Site is a large area of land to the west of Wokingham, between the villages of Shinfield, Arborfield and Sindlesham. It is located outside of the Green Belt and includes the University of Reading's Thames Valley Science and Innovation Park (TVSP). The Site is on land designated as a Strategic Development Location (SDL) in the emerging Wokingham Borough Local Plan update for a sustainable urban extension known as Loddon Garden Village (LGV).

1.2 Purpose of the Report

1.2.1 The purpose of the Waste Management Report is to set out the waste minimisation measures that will be implemented during the phases of the Proposed Development to comply with relevant waste legalisation and promote sustainable waste management practices on site.

1.2.2 The Waste Management Report will act as tool to establish estimates of how much waste is anticipated to be generated during the construction phase (covering construction, demolition and excavation waste) and provide an initial indication as to whether materials and waste streams have the potential to be reused, recycled, recovered or disposed of based on information available at this stage.

1.2.3 The report considers the type and volume of wastes that will be generated through the construction of the Proposed Development. It also considers likely operational wastes associated with the completed development. In particular, this Plan sets out:

- What types of waste will be generated;
- The potential quantity of waste produced; and
- How the waste will be managed – will it be reduced, reused or recycled.

1.3 Project Overview

Description of Works

1.3.1 The description of the development for the planning application is as follows:

Application for the phased development of a new community at Loddon Garden Village, comprising, in outline:

- *up to 2,800 residential units to include up to 100 custom and self-build plots;*
- *primary schools (up to 3 forms of entry) to include early years provision and 1 secondary school (up to 12 forms of entry);*
- *one District Centre, to incorporate up to 11,000m2 of Class E (Commercial, Business and Service, to include a including food store of around 2,500m2), and Class F (Local Community and Learning);*
- *one Local Centre; to incorporate up to 2,400m2 of Class E;*
- *a Sports Hub to include sports pitches and pavilion space;*

- *up to 4,250m2 of further Class E, Class F and sui generis development to include commercial, health care and public house;*
- *comprehensive green infrastructure including a Country Park, landscaping and public open space, and ecological enhancement measures;*
- *20 gypsy and traveller pitches;*
- *comprehensive drainage and flood alleviation measures to include Sustainable Urban Drainage Systems (SUDS) and engineering measures within Loddon Valley for the River Loddon;*
- *internal road network including spine road with pedestrian and cycle connections and associated supporting infrastructure;*
- *new and modified public rights of way;*
- *associated utilities, infrastructure, and engineering works, including the undergrounding of overhead lines;*
- *Ground reprofiling to accommodate infrastructure, flood alleviation and development parcels;*
- *Up to 0.5ha of land adjoining St Bartholomew's church for use as cemetery;*
- *Electricity substation (up to 1.5ha)*

All matters reserved other than access, incorporating:

- *a new pedestrian, cycle and vehicular access to Lower Earley Way via a new 4th arm to the Meldreth Way roundabout;*
- *a new pedestrian, cycle and vehicular bridge over the M4;*
- *a new pedestrian, cycle and vehicular bridge over the River Loddon;*
- *a new vehicular access to the A327 Reading Road, via a new arm to the Observer Way roundabout;*
- *a new pedestrian, cycle and vehicular access to Thames Valley Science Park;*
- *an initial phase of internal roads with associated drainage, landscape and engineering works and ground reprofiling, between the A327 and the south eastern boundary of the Site.*

Application includes full permission for the change of use of 40.4 hectares of agricultural land to Suitable Alternative Natural Greenspace (SANG), 18.35 hectares of SANG link, and provision of Biodiversity Net Gain measures, the demolition and clearance of 20,809 m2 of buildings and structures at the Centre for Dairy Research (CEDAR) and at Hall Farm, the demolition of 3 existing dwellings on Carter's Hill Lane, and the retention of specified buildings at Hall Farm.

1.3.2 The Site is approximately 396.6 hectares (ha) in size and is largely rural in character. The majority of the Site is comprised of farmland, along with semi-natural and amenity grassland, copses and woodland, and associated buildings. The Proposed Development requires the demolition of 14 existing buildings.

Programme

1.3.3 Construction is due to begin in 2027, however a detailed programme has not yet been produced.

1.3.4 In order to identify the volume of waste generated by the Proposed Development, the construction programme is divided into its key stages as each stage of the development has the potential to generate significant volumes of waste.

1.3.5 The key programme stages that are likely to generate wastes include:

- site clearance, including demolition and excavation;
- primary infrastructure (roads, service connection drainage);
- residential, educational and neighbourhood centre development;
- traveller pitches;
- electricity substation;
- area for self-build developments; and
- landscaping works.

1.3.6 The operational phase of the development has also been reviewed, utilising typical waste estimates and types from residential properties, schools and retail, leisure, sports, cultural, health and service facilities.

2 REGULATORY FRAMEWORK AND GUIDANCE

2.1 Definition of Waste

2.1.1 The definition of waste is important because the classification of substances as a waste is the basis for the application of regulatory controls to protect the environment and human health

2.1.2 For the purpose of this document, the definition of '*waste*' is taken from Article 3(1) of the revised European Waste Framework Directive (2008/98/EC), which states that waste is '*any substance or object which the holder discards, intends to discard or is required to discard*'.

2.1.3 '*Discard*' includes the recovery and recycling of a subject or object as well as its disposal. The decision on whether something is discarded must take account of all the circumstances (for example, the nature of the material, how it was produced and how it will be used) and have regard to the aims of the European Waste Framework Directive (2008/98/EC), which is '*the protection of human health and the environment against harmful effects caused by the collection, transport, treatment, storage and tipping of waste*'.

2.1.4 This definition is still applicable in the UK and was not amended as part of the Waste (Miscellaneous Amendments) (EU Exit) Regulations 2019.

2.2 Legislative Framework

Environmental Protection Act 1990

2.2.1 The Environmental Protection Act 1990 is the primary legislation governing waste management in the UK. Under Section 34, all parties involved that produce, import, carry, keeps, treats, or disposes of waste have a legal duty of care to ensure it is managed safely and avoid causing harm to the environment. This legislation provides the framework for the Waste Duty of Care Code of Practice (2018) and the Environmental Permitting (England and Wales) Regulations 2016.

Environment Act 2021

2.2.2 The Environment Act 2021 acts as a framework of environmental protection in the UK, and aims to improve air and water quality, biodiversity and waste reduction. The Act strengthens waste management policy through Extended Producer Responsibility, Deposit Return Schemes, Mandatory Food Waste Collection, Consistency in Recycling and Waste Crime Enforcement. These reforms aim to reduce environmental harm, promote sustainable resource use and ensure waste is managed more efficiently and transparently.

Hazardous Waste (England and Wales) Regulations 2005 (as amended).

2.2.3 Hazardous Waste (England and Wales) Regulations 2005 (as amended) set out the requirements for controlling and tracking the movement of hazardous waste and bans the mixing of different types of waste. Under the Regulations 'mixing' includes mixing of different categories of hazardous waste, non-hazardous wastes or any other substance or material.

Landfill Directive (1999/31/EC)

2.2.4 The Landfill Directive requires reductions in the quantity of biodegradable waste that is landfilled and encourages diversion of non-recyclable and non-usable waste to other methods of treatment.

38. The Landfill Directive remains in place within the UK, following the UK's departure from the European Union.

Waste (Circular Economy) (Amendment) Regulations 2020

2.2.5 The Waste (Circular Economy) (Amendment) Regulations 2020 amends legislation that transposed waste-related EU Directives (including the Waste Framework Directive 2008/98/EU) and makes the legislative changes required to transpose the 2020 Circular Economy Package (CEP) measures. The CEP identifies steps for the reduction of waste and establishes a long-term plan for waste management and recycling.

Waste (England and Wales) Regulations 2011

2.2.6 The core principles of the Waste Framework Directive (WFD) (2008/98/EC) have been retained and placed into law under the Waste (England and Wales) Regulations 2011. Aiming to continue to shape UK policy around waste reduction, recycling and sustainable material use whilst maintaining protection of human health and the environment.

2.2.7 Greater emphasis on the waste hierarchy to encourage more waste prevention, re-use and recycling, and obligations under duty of care to consider the waste hierarchy, such as a declaration on transfer notes and hazardous waste Consignment Notes (CN). The regulations also place duties on collections of waste to collect four key materials separately from general waste (paper, metal, plastic and glass).

2.3 National Policy

National Planning Policy Framework

2.3.1 The National Planning Policy Framework (NPPF) was published in 2012 and most recently updated in 2024 (Ministry of Housing, Communities and Local Government, 2024). The NPPF sets out the Government's planning policies for England.

2.3.2 One of the overarching objectives of sustainable development (as described in the NPPF) is to:

"*to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy" (paragraph 8(c) of the NPPF*)."

2.3.3 In addition, with respect to materials and minerals waste, the NPPF states:

"*so far as practicable, take account of the contribution that substitute or secondary and recycled materials and minerals waste would make to the supply of materials, before considering extraction of primary materials, whilst aiming to source minerals supplies indigenously" (paragraph 223(b) of the NPPF").*

2.3.4 The contents of the NPPF are not intended to inform policy relating to waste or decisions relating to waste development, however the NPPF should be read in conjunction with the Government's waste planning policy which is summarised below.

National Planning Policy for Waste (2014)

2.3.5 The National Planning Policy for Waste (Department for Communities and Local Government (now Ministry for Housing, Communities and Local Government), 2014) provides guidance to local planning authorities when determining applications for non-waste related development. Local planning authorities are required to ensure that the "likely impact of proposed non-waste related

development 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".

2.3.6 Local planning authorities are also recommended to consider the following factors during determination:

- the likely impact of proposed, non-waste related development 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 development makes sufficient provision for waste management and promotes good design with the integration of waste management within the rest of the development (for example, providing adequate storage facilities); and
- the handling of waste arising from the construction and operation of the development maximises reuse and recovery opportunities and minimises off-site disposal.

2.3.7 The National Planning Policy for Waste (NPPW) (DLUHC, 2014) refers to the Government's ambition to work towards a more sustainable and efficient approach to resource use and management, identifying opportunities for improvements through driving waste management up the waste hierarchy.

Waste Management Plan for England (2021)

2.3.8 The Waste Management Plan for England (Defra, 2021) fulfils the requirements of the Waste (England and Wales) Regulations 2011 for the waste management plan to be reviewed every six years. It provides an analysis of the current waste management situation in England and evaluates how it will support the implementation of the objectives and provisions of the Waste (England and Wales) Regulations 2011. The Waste Management Plan for England also provides an overview of the type, quantity and source of waste generated within England; existing waste collection schemes and major disposal and recovery installations; an assessment of the need for new collection schemes; and general waste management policies. The Waste Management Plan for England includes recent changes to waste management plan requirements which have been made by the Waste (Circular Economy) (Amendment) Regulations 2020 where appropriate.

Waste Hierarchy

2.3.9 The waste hierarchy ranks waste management options according to what is best for the environment. The hierarchy gives top place to waste prevention. When waste has been generated, priority is given to preparing it for re-use, then recycling, then recovery, and last of all disposal (for example, landfill), as shown in Figure 2-1. The waste hierarchy is a key element of sustainable waste management and following the hierarchy is a legal requirement of the Waste (England and Wales) Regulations 2011.

2.3.10 The waste hierarchy stages are set out below (as defined in Article 3 of the Directive):

- Prevention' means measures taken before a substance, material or product has become waste that reduce:
  - the quantity of waste, including through re-use of products of the extension of the life span of products;
  - the adverse impacts of the generated waste on the environment and human health; or
  - the content of harmful substances in materials and products;

- ‘re-use’ means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived;
- ‘preparing for re-use’ means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other re-processing;
- ‘recycling’ means any operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials;
- ‘recovery’ means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- Disposal - landfill and incineration without energy recovery.

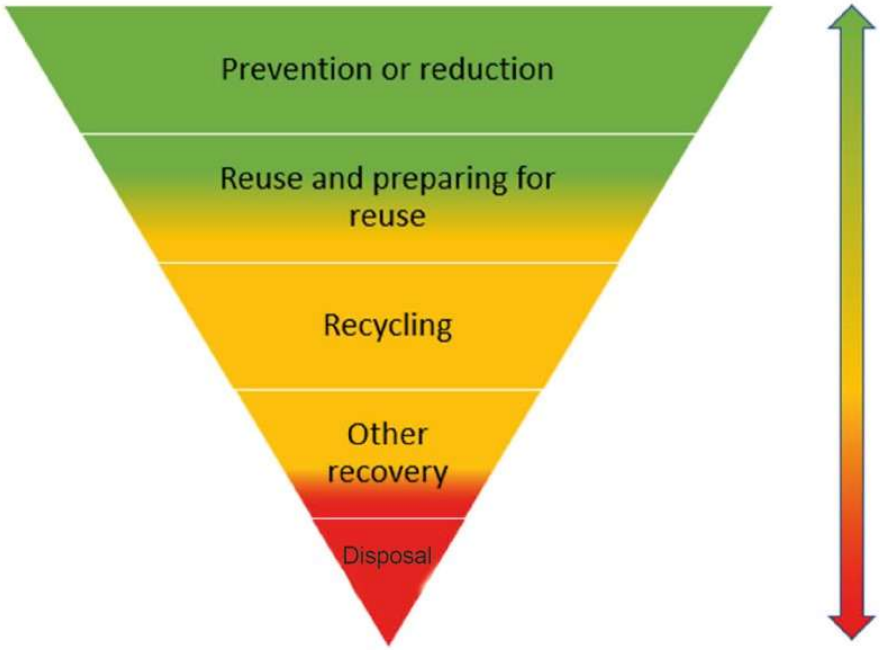

Figure 2-1: The Waste Hierarchy (CIRIA, 2023)

2.3.11 All waste generated by the Proposed Development would be managed in accordance with the waste hierarchy unless it can be demonstrated that an alternative option lower down the hierarchy is the best overall environmental outcome (for example, waste wood is often used for biomass heat recovery rather than being recycled).

Local Planning Policy

Sustainable Design and Construction Supplementary Planning Document

2.3.12 Wokingham Borough Council’s Sustainable Design and Construction Supplementary Planning Document was adopted in May 2010. It provides a detailed approach to considering sustainable design and construction in new development and is a material consideration for all planning applications.

2.3.13 Sustainability Issue 7: Waste recycling and composting requires the following:

- *All developments are expected to provide, or have access to, appropriate facilities for the storage and collection of waste*

- *Developments providing a garden or other green areas will be expected to include provision for on site composting of green waste. Where on-site composting is considered inappropriate, regard should be given to alternative such as communal collection facilities and sink macerators.*
- *Consideration should be given to the frequency of waste collection in the borough when determining storage sizes*.

2.4 Guidance

2.4.1 The Waste Management Plan also takes into account the definition of waste by Contaminated Land: Applications in Real Environments (CL:AIRE) 'Definition of Waste: Development Industry Code of Practice (CoP) (CL:AIRE, 2011). CL:AIRE is an independent body that promotes the sustainable remediation of contaminated land. The CoP provides a consistent and transparent process which enables the reuse of excavated materials on site or their movement between sites. It sets out good practice for the development industry to use when:

- '*assessing on a site-specific basis whether excavated materials are classified as waste or not; and*
- *determining on a site-specific basis when treated excavated waste can cease to be waste for a particular use'*.

2.4.2 The Environment Agency will take the CoP into account when deciding whether to regulate materials as waste. If materials are dealt with in accordance with the CoP, the Environment Agency considers that those materials are unlikely to be waste if they are used for the purpose of 'land development'.

2.4.3 The CoP requires that a CL:AIRE Materials Management Plan (MMP) is prepared to demonstrate that the material will not harm human health or the environment. The MMP will be developed further during detailed design stage. Regulatory authorities, including the Environment Agency, will be consulted to confirm that they have no objection to the use of the CL:AIRE Definition of Waste: Code of Practice, and that any risk assessments and remedial strategies have been agreed and any associated planning conditions or requirements discharged by such bodies.

2.4.4 The CL:AIRE MMPs will relate to 'excavated materials' which include:

- soil, both topsoil and subsoil, parent material and underlying geology;
- ground based infrastructure that is capable of reuse within earthworks projects (e.g., road base, concrete floors);
- made ground;
- source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the site of production within earthworks projects or as a sub-base or drainage materials; and
- stockpiled excavated materials that include the above.

2.5 Waste targets

National Targets

2.5.1 Our Waste, our Resources: A Strategy for England published in 2018 sets out the key national targets for England to achieve. Whilst the targets are still to be set, they set out strategic goals with the overarching aim being to become a more circular economy.

- 65% recycling rate for municipal solid waste by 2035;

- Municipal waste to landfill 10% or less by 2035; and
- 75% recycling rate for packaging by 2030.

Local Targets

2.5.2 Wokingham Borough Council has achieved statutory 50% recycling target in 2019/20 by introducing kerbside food waste collection service. The Wokingham Borough Council adopted Climate Emergency in July 2019 and has an ambition to achieve 70% recycling target by 2030 and go landfill free with 100% recycling by 2050 (Wokingham Borough Council, 2024).

Sector Targets

2.5.3 BREEAM was first launched in 1990 and is the most widely used environmental assessment method for buildings. BREEAM UK New Construction Manual (2024) is a performance based assessment method and certification scheme for new buildings. Its primary aim is to mitigate the life cycle impacts of new buildings on the environment in a robust and cost effective manner. This is achieved through measuring and evaluating the performance of a building against best practice using a number of criteria across a range of environmental issues. Performance is quantified using a credit system according to the measures implemented, which is ultimately expressed as a single certified BREEAM rating. Construction waste and operational waste are two of those issues.

2.5.4 The benchmarks for construction waste relate to the diversion of non-hazardous construction, demolition and excavation waste from landfill:

- Good practice is to divert 70% non-demolition waste and 80% demolition waste by volume (or 80% and 90% respectively by tonnage) from landfill; and
- Exemplary performance is to divert 85% non-demolition waste, 85% demolition waste by volume (or 90% by tonnage) and 95% excavation waste by volume (or 95% by tonnage) from landfill.

2.6 Data Limitations

2.6.1 Detailed design information was not available at the time of writing, therefore the type and quantities of construction waste likely to be generated are based on BRE indicators and the SmartWaste tool. However, this is a recognised approach and the waste information, which is contained in Annex A: Site Waste Management Plan, will be updated as the project evolves

3 WASTES GENERATED

3.1 Overview of Wastes Generated

3.1.1 At a strategic level, the key waste types generated from the construction of the Proposed Development can be classified as follows.

- Inert – wastes that will not cause adverse effects to the environment when disposed of, or do not decompose and they have no potentially hazardous content when deposited in a landfill. Examples of inert wastes are rocks, concrete, mortar, glass, uncontaminated soils and aggregates.
- Non-hazardous – wastes that will decompose when buried resulting in the production of methane and carbon dioxide. Examples of non-hazardous wastes include timber, paper and cardboard.
- Hazardous – wastes that are harmful to human health or the environment (for example, causing pollution of watercourses) if they are incorrectly handled, stored, treated or disposed of. Hazardous wastes may have one or more of the following properties: explosive, corrosive, flammable, highly flammable, infectious, oxidising or sensitising.

3.2 Demolition Waste

Waste Types

3.2.1 The following materials will be removed from the site as part of site clearance:

- Existing building materials including bricks, tiles, glass, metals
- Vegetation
- Topsoil;
- Fences (metals);
- Service cables and mains; and
- Concrete hardstanding.

3.2.2 A study undertaken by Natural Resources Wales on 2019 Wales construction and demolition waste arising survey[1] has been used to characterise the composition of demolition waste. Figure 4 in the Natural Resources Wales (2019) report provides an overview of the material waste arising from the Demolition and Site preparation sector. The composition of demolition waste is as follows:

- Soil – 55%
- Mixed waste (including timber, plastic and inert) – 30%
- Aggregate – 3%
- Other – 12%

[1] Natural Resources Wales (2022). *Wales Construction and Demolition Waste Arisings Survey | DataMapWales*. [online] Available at: https://datamap.gov.wales/documents/2938 [Accessed 19 Sep. 2025].

Estimated Waste Quantities

3.2.3 The volume of buildings to be demolished was calculated using the total footprint area (m^2) and estimated heights using the EA National Lidar programme digital surface model where heights were unknown. A commitment will be made to re-use demolition materials wherever possible and practicable. Where materials cannot be re-used, an effort will be made to recycle or reuse elsewhere as much of the materials as possible. Due to the variety of buildings on site, predictions of total waste volumes from the building structures have been calculated on the assumption that the total volume of buildings will arise as waste.

3.2.4 In line with the Minerals Chapter of the Environmental Statement, surplus topsoil and plot construction arisings from foundations, drainage and hardstanding may be able to be diverted from landfill where prior extraction of minerals is undertaken in advance of development. This has been considered in the calculations for volume of waste. The equation used is the Total Area for residential, non-residential, education, and open space (m^2) x Average Topsoil Thickness (m) x percentage of top soil to be removed, shown in Equation 1.

3.2.5 The equation considers the Total Area for residential, non-residential, education, and open space (m^2) x Average Topsoil Thickness (m) x percentage of top soil to be removed, shown below:

$$872000\ (m^2)\ x\ 0.36\ (m)\ x\ 0.35 = 109{,}872\ m^3$$

Table 3-1: Quantities of Excavation and Demolition Waste

Detail	Waste Type	Area (m^2)	Volume (m^3)	Notes/Assumptions
Volume of material arising from the demolition of existing buildings	Concrete/rubble, Bricks/masonry, Timber, Metals, soil and mixed construction waste (e.g. wires, glass etc)	20,809.44	145,214	Assumed that no waste is reused on site. Assumptions made on heights of buildings
Volume of material arising from topsoil stripping across all areas of the Site to be redeveloped	Soil/Top soil	872,000	109,872	Assumed average topsoil thickness of 0.36 m and 35% of the built area to be stripped of topsoil

Management

3.2.6 Prior to demolition of the buildings and structures an audit would be undertaken to identify hazardous materials and materials that could be reused or recycled. Following the audit, the buildings will be stripped to remove these materials and tanks will be emptied. Where necessary, specialist contractors will be used to remove the hazardous materials e.g. asbestos.

3.2.7 All identified hazardous waste will be removed and placed into separate secure and sealed waste bins/skips which will be located within their own designated area which is restricted from public access through the use of hoarding.

3.2.8 In line with the Minerals Chapter of the Environmental Statement, surplus topsoil and plot construction arisings from foundations, drainage and hardstanding may be able to be diverted from landfill where prior extraction of minerals is undertaken in advance of development.

3.2.9 Subject to the topsoil from the site being suitable for re-use in the landscaped areas works, it will be lifted and temporarily stored in soil mounds. The handling, placement and management of topsoil will be in accordance with the requirements of the soil management plan. The overall objective for managing earthwork materials will be to maximise material reuse, reduce truck movements as far as possible in handling materials, and reduce the amount of material that must be taken for management off-site. The fundamental principles of material reuse are set out below:

- Maximise reuse of materials
- Minimise handling of materials
  - Keep material on-site, wherever possible, as close to the excavation and deposit sites as feasible
  - Make use of stockpiles on site to store the material until it is needed.
- Minimise the amount of material sent for management offsite

3.2.10 Non-hazardous excavated spoil will be reused on site where possible. A Materials Management Plan will be prepared to document the re-use of this material, which will be managed in accordance with the CL:AIRE CoP.

3.2.11 Further detail on waste management is provided in Appendix A: Site Waste Management Plan .

3.3 Construction Waste

Waste Types

3.3.1 The key types of waste that would be generated from the construction works, are listed below (the list is not exhaustive and will be refined as the design of the Proposed Development progresses):

- Soils (spoil from preparing foundations, installation of drainage and infrastructure);
- Glass;
- Concrete/cement;
- Tarmac, asphalt, bitumen;
- Oils (lubricating oil);
- Metals (cables, wires, bars, relict structures);
- Timber (softwood and board products such as plywood, chipboard), pallets;
- Packaging (paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets);
- Plastics (pipes, cladding, frames, non-packaging);
- Green waste (grass, branches etc);
- Paints and solvents;
- Insulation (glass fibre, mineral wool or foamed plastic); and
- Plasterboard.

Estimated Waste Quantities

3.3.2 Estimates of construction waste are set out in Table 3-2 below. The estimates are based on the type of building, total floor space and the BRE Waste Benchmark data (2012).

Table 3-2: Quantities of Construction Waste

Type of building	Area (m^2)	Waste Estimates (Tonnes)	Notes/Assumptions
Residential Development, including 54.3 ha of Residential Areas and 2.6 ha for self-build plots.	569,000	95,592	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 16.8 Tonnes of waste per 100 m^2
Residential Area, Mixed Use Centre	52,000	7,488	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 21.6 Tonnes of waste per 100 m^2
Educational Buildings including 2.8 ha primary school and 16.5 ha Education Area	193,000	44,776	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 23.3 Tonnes of waste per 100 m^2
Neighbourhood Centre Development, Retail and community facilities	18,000	4950	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 27.5 Tonnes of waste per 100 m^2
Neighbourhood Centre Development, Food and Drink	2,000	140	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 7 Tonnes of waste per 100 m^2
Open space areas	155,000	33,480	BRE Waste Benchmark Data, Table 2: Waste Benchmark Data by Project Type. Assumed 21.6 Tonnes of waste per 100 m^2

Management

3.3.3 Opportunities will be considered for offsite manufacture of design elements and using pre-fabricated materials for on-site assembly. Buildings/structures will be designed to standard dimensions of blocks or frames to minimise off-cuts; and internal materials and fittings would be pre-cut to reduce the need for site cutting.

3.3.4 On appointment of the construction team, the buyer would discuss the purchasing requirements with the site manager to identify priorities and review the quotations received. Materials would be checked against the material specifications as part of the quality control system. During procurement the buyer will agree minimum allowed variances in the delivered quantities of material compared to the design quantity (i.e. the quantity ordered). Where possible, hazardous materials will be substituted for less hazardous alternatives.

3.3.5 Waste will also be minimised by improving wastage rates when ordering materials. Waste allowances are generally included within material orders to take into account design waste and construction process waste. These waste allowances are often generic and not project specific and, therefore, run the risk of being inaccurate. This can lead to a surplus of materials, which typically ends up being discarded (i.e. waste). A system would be put in place to improve on existing estimates of material requirements (and waste allowances) at the detailed design stage.

3.3.6 The following measures will be implemented during construction to minimise the quantities of waste requiring disposal:

- A logistics system which allows ‘just-in-time’ deliveries to minimise the length of time materials are stored on site which increases the risk of damage and disposal as waste.
- Providing suitable and secure storage for materials where ‘just-in-time’ deliveries cannot be set up.
- Agreements with material suppliers to reduce the amount of packaging.
- Mechanical systems and machinery would be considered for moving materials to reduce the risk of damage.
- Where possible, programming and monitoring construction activities to avoid overlap of incompatible trades working in the same area and to reduce the potential for waste to be generated from replacing damaged work.

3.3.7 Further detail on waste management is provided in Appendix A: Site Waste Management Plan .

3.4 Operational Waste

Waste Types

Residential units

3.4.1 Waste generated during the occupation of the residential units, are likely to include:

- Food waste;
- Garden waste;
- Paper;
- Card;
- Metals;
- Plastic;
- Plastic film;
- Textiles;
- Waste Electronic and Electrical Equipment (WEEE);
- Hazardous waste (in small quantities such as paint, cleaning chemicals);
- Bulky waste (.e.g. furniture)
- Wood; and
- Miscellaneous waste.

3.4.2 Using the national average household occupancy of 2.4 residents per household, the amount of household waste arising from the Proposed Development would be in the order of 2,533 tonnes annually. This assumes that 377kg of household waste will be generated per person per day.

District Centre and Local Centre

3.4.3 The precise commercial and employment uses are not confirmed at this outline stage, however the key types of waste that are likely to be generated include:

- Paper;
- Cardboard;

- Printer toners and cartridges;
- Plastic packaging;
- Plastic containers;
- Food waste;
- Pallets;
- Metals;
- Glass;
- WEEE;
- Solvents;
- Sanitary waste.

Schools

3.4.4 The main types of waste generated by schools are paper and card, and food waste, glass, plastic, plastic packaging and sanitary waste. Smaller quantities of WEEE may also be generated.

Community Facilities

3.4.5 The main types of waste generated by schools are paper and card, and food waste, although small quantities of plastic and plastic packaging may also be generated.

Estimated Waste Quantities

3.4.6 Based on the data from Local Authority Collected and Household Waste Statistics 2023/24 (www.defra.gov.uk/statistics/environment/waste) households in the Wokingham Borough Council Region are estimated to generate 338 kg of household waste per person per year. The Proposed Development comprises up to 2,801 units.Table 3-3: Indicative Waste Arising from Households has also assumed the number of bedrooms per dwelling based off typical percentage shares of number of bedrooms per dwelling in new residential developments.

Table 3-3: Indicative Waste Arising from Households

Type of Dwelling	Number of dwellings	Amount of waste per household (kg)	Total waste (Tonnes)
Two Bed	616	676	417
Three Bed	1,176	1,014	1,193
Four Bed	840	1,352	1,136
Five Bed	168	1,690	284
Total			3,030

3.4.7 The predicted amount of commercial and industrial waste likely to be generated from the proposed retail unit and ancillary buildings cannot be accurately predicted until the type of retail unit and building have been determined. However, the British Standard BS5906:2005 Waste Management in Buildings BSi and G.Blyth, A. (2005) has been used to inform indicative calculations of operational waste from the restaurant and neighbourhood development areas (including the leisure centre).

3.4.8 To estimate operational waste from the educational facilities, a study undertaken by Waste & Resources Action Programme (WRAP) in 2007/2008 has informed indicative estimates. The

WRAP study was undertaken to better understand the types and quantities of waste produced by schools. Whilst the study is outdated it provides a worst case assessment of the operational waste quantities generated from the Proposed Development.

3.4.9 The study reported that based on findings, 45 kg of waste per pupil per year in primary schools and 22 kg of waste per pupil per year in secondary schools were generated.

Table 3-4: Guidance from British Standard BS5906:2005 Waste Management in Buildings BSi and G.Blyth, A. (2005).

Building Type	Equation for weekly waste arising (litres)
Domestic	Number of dwellings x {(number arising per bedroom (70l) x average number of bedrooms) +30}*
Restaurant	Number per volume of covers (75l)
Entertainment Complex/Leisure Centre	Volume per m^2 of floor area (100l) x floor area

Table 3-5: Guidance from British Standard BS5906:2005 Waste Management in Buildings BSi and G.Blyth, A. (2005), Non-residential Waste Arisings per annum

Standard Industry Code (SIC) and description	Mass per company (tonnes)
52. Retail excluding motor vehicles	200.46
55. Hotels and restaurants	126.64
74. Other business activities	88.66

3.4.10 Utilising BS5906:2005 and study undertaken by WRAP, indicative operational waste estimates have been calculated for the Proposed Development.

Table 3-6: Estimated Operational Waste Arising Quantities

Element of Proposed Development	Number/Floor Space	Quantity of Waste Annually	Assumption
Two 3-form entry primary schools	540 Pupils	24.3 tonnes	30 pupils per form, 6 year groups
An 8-form entry secondary school, 5 of which are part of the Proposed Development	625 Pupils	13.75 tonnes	25 pupils per form, 5 year groups
Entertainment Complex/Leisure Centre	62,000 m^2	6,200,000 litres	Assumed floor space includes both Mixed Use Centre and Neighbourhood Centre Development and community facilities
Retail	1000 m^2	2004.6 tonnes	Assumed possibility for 10 retail units
Food and Drink	2000 m^2	633 tonnes	Assumption of 5 Food and Drink facilities
Class E(c) Professional Services and Class E(g)	7000 m^2	443 tonnes	Assumption of 5 different facilities

3.4.11 The existing International Cocoa Quarantine Centre within the Site already have existing procedures for the management of waste arisings. This is reported in the Operating Procedures Document (Reading.ac.uk., 2024) and is not considered as part of this report.

Management

3.4.12 Wokingham Borough Council provides a fortnightly collection service for general waste and recycling waste and weekly food waste service from summer 2024. A fortnightly allowance of 180-litre per self-contained housing for general waste is in place which is strictly practised across the borough. There is no restriction on capacity for dry recycling and food waste recycling. A weekly allowance of 80-litre per property with communal waste facilities for general waste is in place which is strictly practised across the borough. There is no restriction on capacity for dry recycling and food waste recycling.

3.4.13 Waste generated in residential houses should be source segregated into individual receptacles for residual, mixed recycling, organic, and garden wastes in line with Council requirements. The Wokingham Borough Council operate the following waste collection for household waste.

- General waste is picked up fortnightly;
- Recyclable waste is picked up fortnightly on alternate weeks to general waste;
- Food waste is collected weekly;
- Garden waste is a subscription service and is collected fortnightly.

3.4.14 The Wokingham Borough Council does not collect glass bottles and jars for recycling. These items should be taken to nearest recycling banks. The Proposed Development could look to install communal glass bottle and jar recycling bins on site and organise private contractor options to ensure glass bottles and jars are recycled to reduce waste.

3.4.15 Waste storage and collection for all non-domestic premises (schools, health hub, employment) will comply with the government's Simpler Recycling requirements: separate dry recyclables (plastic, metal, glass, paper and card) and food waste from residuals; paper/card will be separately collected by default. Storage capacities, signage and management plans will reflect these duties. North Hertfordshire Council require that space for a minimum of three streams of waste collection will be provided for commercial premises. Food waste collection will also be provided for businesses with more than 10 employees.

4 EXISTING WASTE FACILITIES

4.1.1 The Environment Agency register for Waste Operations Permits has been used to identify locations of waste facilities within 10 km of the Proposed Development

Table 4-1: Environment Agency Data used to identify Waste Facilities within 10 km of the Proposed Development

Permit Number	Site Name	Site Type	Site Address
WE8542AB	Ducks Nest Farm	SR2015 No 15: Hazardous Waste Physical Treatment Facility	Unit 4, Ducks Nest Farm, Eversley Road, Arborfield, RG2 9PJ
FP3390EU	A1 Wokingham Car Spares	A20: Metal Recycling Site (MRS) (mixed)	Highland Avenue, Highland Avenue, Wokingham, Berkshire, RG41 4SP
CP3099VG	Select Environmental Services	SR2008 No 24: Clinical Waste Transfer Station	5 - 7 Select Environmental Services, Bennet Road, Reading, Berkshire, RG2 0QX
MP3499EK	Darwin Close Transfer Station	A11: Household, Commercial and Industrial Waste Transfer Station	6 Contract Services, Darwin Close, Reading, Berkshire, RG2 0SG
DP3799EU	Darwin Close Ts2	A12 : Clinical Waste Transfer Station	6 Contract Services, Darwin Close, Reading, Berkshire, RG2 0SG
XP3199EZ	Reading Football Club	A04: Household, Commercial and Industrial Waste Landfill	Smallmead, Bennet road, Reading, Berkshire, RG2 0JL
ZP3195EG	R3 Environmental - Swallowfield	A28 : WEEE Treatment Site	Unit 12 Wyvols Court Farm, Basingstoke Road, Swallowfield, Reading, Berkshire, RG7 1PY
MP3338LU	Reading Sludge Treatment Centre - EPR/MP3338LU	A16: Non-hazardous waste physical treatment facility	Reading Sewage Treatment Centre, Island Road, Reading, Berkshire, RG2 0RP
FB3607LR	Fleetwood Recycling	SR2022 No 1: Non-hazardous waste physical treatment facility	Gravelly Bridge Farm, Grazeley Green Road, Reading, Berkshire, RG7 1LG
BP3298EE	Smallmead Waste Management Centre	A11: Household, Commercial and Industrial Waste Transfer Station	Smallmead Waste Management Centre, Island Road, Reading, Berkshire, RG2 0RP
FB3105XW	Smallmead Farm	A04: Household, Commercial and Industrial Waste Landfill	Smallmead Farm, Burghfield, Reading, Berkshire, RG30 3UR
EB3807XH	Wokingham Metal Recycling	A20: Metal Recycling Site (MRS) (mixed)	Wokingham Metal Recycling, Old Forest Road, Wokingham, Berkshire, RG41 1XA
DB3532AY	Moores Farm	A25 : Deposit of waste to land as a recovery operation	Moores Farm, Pingewood, Reading, Berkshire, RG30 3UH
BB3909GD	Burghfield Grid Substation	SR2012 No 15: Hazardous Waste Transfer Station	Burghfield Grid Substation, Cottage Lane, Pingewood, Reading, Berkshire, RG30 3UW
GB3106FS	Pingewood Lagoon	A25 : Deposit of waste to land as a recovery operation	Pingewood Lagoon, Berrys Lane, Pingewood, Reading, Berkshire, RG30 3XA
HP3193ET	Bramshill Plantation Qy	A06: Landfill taking other wastes	Land at Bramshill Plantation Quarry, Bramshill, Eversley, Hampshire, RG27 0RJ

Permit Number	Site Name	Site Type	Site Address
XP3799EB	Reading Quarry	A05: Landfill taking Non-Biodegradable Wastes	Reading Quarry, Berry's Lane, Burghfield Bridge, Reading, Berkshire, RG30 3XA
HP3693ER	Bramshill Landfill, Eversley, Rg27 0rf	A04: Household, Commercial and Industrial Waste Landfill	Land At Bramshill Plantation, Plough Lane, Eversley, Hampshire, RG27 0RF
XP3099EF	Knights Farm	A05: Landfill taking Non-Biodegradable Wastes	Knights Farm, Burghfield, Reading, Berkshire, RG3 3XE
DP3893ER	Whistley Court	A01: Co-Disposal Landfill Site	Whistley Court Farm & Lea Farm, Mohawk Way, Woodley, Reading, Berkshire, RG5 4UE
JB3132AR	Reading Quarry	L05: Landfill Directive Compliant Inert Landfill	Reading Quarry, Berry's Lane, Burghfield Bridge, Reading, Berkshire, RG30 3XA
EB3500KB	R Collard Limited	SR2022 No 4: Non-hazardous waste physical treatment facility	128, Cardiff Road, Reading, Berkshire, RG1 8PQ
DP3293EG	Whistley Mill (Stage 4)	A06: Landfill taking other wastes	Whistley Mill (Stage 4), Broadwater, Hurst, Twyford, Berkshire, RG10 0EX
DP3493EF	Whistley Mill (Stage 3)	A05: Landfill taking Non-Biodegradable Wastes	Whistley Mill (Stage 3), Broadwater, Hurst, Twyford, Berkshire, RG10 0RA
BP3092SZ	Field Farm Stage 2b	A05: Landfill taking Non-Biodegradable Wastes	Field Farm Landfill, Burghfield Road, Theale, Reading, Berkshire, RG30 3UQ
BP3093LK	Field Farm Stage 2	A05: Landfill taking Non-Biodegradable Wastes	Field Farm Landfill, Burghfield Road, Theale, Reading, Berkshire, RG30 3UQ
KB3103CY	Chandlers Farm	SR2022 No 1: Non-hazardous waste physical treatment facility	Eversley Quarry, Hall's Way, Eversley Cross, Hampshire, RG27 0NG
DB3400KJ	Chandlers Farm	A25 : Deposit of waste to land as a recovery operation	Eversley Quarry, Hall's Way, Basingstoke, Hampshire, RG27 0NQ
BP3093MT	Field Farm Stage 3	A05: Landfill taking Non-Biodegradable Wastes	Field Farm Landfill, Burghfield Road, Theale, Reading, Berkshire, RG30 3UQ
FP3497SF	Eversley Quarry	A25 : Deposit of waste to land as a recovery operation	Eversley Quarry, Fox Lane, Eversley, Hampshire, RG27 0NQ
BP3491LC	Playhatch Quarry	A11: Household, Commercial and Industrial Waste Transfer Station	Playhatch Quarry, Dunsden Green Lane, Playhatch, Reading, Berkshire, RG4 9QN
EB3231RG	A1 Wokingham Car Spares At Bennetts Commercials	SR2008 No 21: Metal Recycling Site (MRS) (mixed)	Longacres, Waterloo Rd, East Hampstead, Wokingham, Berkshire, RG40 3DA
MP3195EA	Reynolds Skip Hire	A11: Household, Commercial and Industrial Waste Transfer Station	40 Unit 3, Wigmore Lane, Reading, Berkshire, RG30 1NP

Permit Number	Site Name	Site Type	Site Address
GP3399EP	Barton Court Landfill & Recycling Facility	A11: Household, Commercial and Industrial Waste Transfer Station	Barton Court Landfill & Recycling Facility, Barton Court, Kintbury, Berkshire, RG17 9SA
HB3904UX	Sonning Quarry	A25 : Deposit of waste to land as a recovery operation	Sonning Quarry, Playhatch, Sonning, Oxfordshire, RG4 9RB
BP3092LX	Herons Nest Landfill Stage 2	A04: Household, Commercial and Industrial Waste Landfill	Herons Nest Landfill Stage 2, Sheffield Bottom, Theale, Reading, Berkshire, RG30 3TA
UP3999ES	Herons Nest Landfill Stage 1	A06: Landfill taking other wastes	Herons Nest Landfill, Sheffield Bottom, Theale, Reading, Berkshire, RG30 3TA
XP3796ER	Bramshill Quarry	SR2009 No 8: Mining Waste Operations	Bramshill Quarry, Welsh Drive, Eversley, Hampshire, RG27 0RE
GB3933DZ	Warren Heath Recycling Facility	A16: Non-hazardous waste physical treatment facility	Land At Warren Heath, Bramshill, Hook, Hampshire, RG27 0JW
CB3909UF	Sheffield Bottom Waste Transfer Facility	A11: Household, Commercial and Industrial Waste Transfer Station	Deans Corpse Road, Reading, Berkshire, RG7 4GZ
UP3737QP	Wargrave Sewage Treatment Works (CHP Engine) EPR/UP3737QP	A16: Non-hazardous waste physical treatment facility	Wargrave Sewage Treatment Works, Wargrave Road, Wargrave, Reading, RG10 8DJ
QP3490EA	Eversley Haulage Park	A09: Hazardous Waste Transfer Station	Eversley Haulage Park, Fleet Road, Eversley, Hampshire, RG27 8ED
WE0001AC	Bracknell Data Centre - Decommissioning Room	SR2015 No 15: Hazardous Waste Physical Treatment Facility	Amen Corner Business Park, Cain Road, Binfield, Berkshire, RG12 1HN

APPENDICES

Appendix A

Site Waste Management Plan

A.1 Site Waste Management Plan

Overview

A.1.1 This Site Waste Management Plan sets out the key management measures that will be implemented during the construction phase of the Proposed Development:.

Purpose

A.1.2 The purpose of this Outline Site Waste Management Plan is to:

- Demonstrate how waste and the use of resources will be considered during the construction phase of the Proposed Development.
- Ensure compliance with legal requirements for managing waste, including the completion of duty of care paperwork.
- Set out measures for managing waste and resources during construction to meet legislative and policy requirements, including the waste hierarchy principle.
- Identify the roles and responsibilities for implementing the measures in the Plan.

Roles and Responsibilities

A.1.3 The Principal Contractor(s) will be responsible for ensuring the Site Waste Management Plan is adhered to. This will be done following the completion of work and would include:

- confirmation the Site Waste Management Plan has been monitored (and updated) on a regular basis throughout construction of the Proposed Development;
- comparison of the actual waste quantities against the estimated quantities of each waste type; and
- an explanation of any deviation from this plan.

A.1.4 The key roles and associated responsibilities with regard to this Site Waste Management Plan are outlined below. The Construction (Design and Management) Regulations 2015 also identify the legal duties, responsibilities and obligations of all the major roles within the construction team.

Developer

A.1.5 The Developer will be responsible for the following:

- Ensuring that the outline Site Waste Management Plan is implemented effectively
- Giving necessary direction to contractors (for example, setting contractual obligations)
- Preparing the detailed Site Waste Management Plans and undertaking reviews and refining the Site Waste Management Plans (where necessary) in conjunction with the Principal Contractors.

Principal Contractor(s)

A.1.6 The Principal Contractor(s) will be appointed by the Developer and has the overall responsibility for the following:

- Working with the developer to identify opportunities to divert waste from landfill.
- Ensuring all procedures in the Site Waste Management Plan are followed.
- Ensuring all contractors are suitably qualified and experienced in implementing the measures within the Site Waste Management Plan. These measures will be contained within the terms of contracts to ensure understanding and accountability.
- Ensuring that all legal and contractual requirements relating to the Site Waste Management Plan are met by ensuring adequate plans/procedures, licences and certificates are in place, and that they can be achieved.
- Ensuring that adequate waste collection systems are in place including frequent collections and that waste carriers are registered.
- Establish procedures for the regular review and recording of the quality of the works as part of its Quality Management System.
- Notify the Environment Agency if construction activities are anticipated to generate more than 500 kg of hazardous waste within a 12-month period.
- Maintain records relevant to the Site Waste Management Plan.
- Monitor compliance with the forecasts and measures in the Site Waste Management Plan by regularly undertaking audits (at least once every three months) and preparing a report for management record. A review will be undertaken at least every six months or earlier where there has been a change to the works or relevant regulations.

Contractors/Subcontractors

A.1.7 Contractors and sub-contractors will be responsible for carrying out the waste management tasks in the Site Waste Management Plan. All contractors producing construction waste will be responsible for ensuring their waste is managed in accordance with the legislative requirements set out section 3 and the waste duty of care (set out in paragraph A.1.13). All waste carriers used to transport construction waste from the Proposed Development will be registered carriers with the Environment Agency. Contractors will also have to demonstrate how they have minimised waste and that they have considered opportunities to reuse or recycle their waste.

Training

A.1.8 A training regime will be implemented to ensure that all relevant members of the onshore construction teams, including subcontractors' personnel receive focused Site Waste Management Plan training to ensure their competence in carrying out their duties on the Proposed Development.

Environmental Induction

A.1.9 A general site induction will be given to all site personnel to introduce the environmental issues connected with the Site Waste Management Plan, important environmental controls associated with the day-to-day operation of the project and effective delivery of the Site Waste Management Plan (for example, waste storage arrangements, appropriate waste segregation).

Toolbox Talks and Method Statement Briefings

A.1.10 Toolbox talks and method statement briefings will be given to onshore construction teams as work proceeds and will cover the types of wastes produced at each key build stage, and the methods for managing wastes generated from specific construction activities (e.g., reuse of topsoil).

Training Records

A.1.11 All training records will be maintained and filed on-site. The records will include the content of the courses (induction and toolbox training), record of attendance and schedule of review.

Key Obligations

Duty of Care

A.1.12 The duty of care requirements are explained in the 'Waste Duty of Care: Code of Practice' (Defra, 2016), pursuant to section 34(7) of the Environmental Protection Act 1990. To meet these requirements, waste materials arising from construction will only be transported by waste carriers and hazardous waste carriers holding a valid registration with the Environment Agency. Each consignment of waste removed from the construction site will be accompanied by a waste transfer note (or hazardous waste consignment note as appropriate), which correctly describes the waste using the European Waste Catalogue code, identifies the waste carrier and where the waste will be transported to.

A.1.13 Requirements for transferring waste and registered waste carriers are set out in Part 8 and 9 of the Waste (England and Wales) Regulations 2011. The waste will only be transferred to facilities that have the benefit of a registered waste exemption, or an environmental permit. Periodic audits would be undertaken of these facilities. Prior to construction commencing, the Developer and Principal Contractor(s) will sign the declaration in the form set out in Table 1 to confirm that waste from construction will be managed in accordance with the duty of care requirements.

Table 1: Site Wate Management Plan Declaration

Name of Developer	
Contact	
Principal Contractor	
Site waste management plan prepared by	
Date	
Project Details	
Declaration	
All waste from the site will be dealt with in accordance with the duty of care in section 34 of the Environmental Protection Act 1990 and the duty of care provisions in the Waste (England and Wales) Regulations 2011). Materials will be handled efficiently, and waste managed appropriately	
Signature of the developer	**Signature of principal contractor**

Identification of Waste Arisings

Waste Types

A.1.14 The construction of the Proposed Development is likely to include (but not be limited to) waste contained within the following list of waste categories. These are also known as waste classification codes, as identified in Technical guidance MW3 waste classification – Guidance on the classification and assessment of waste (EA, 2021)):

- 17 01 concrete, bricks, tiles and ceramics;
- 17 02 wood, glass and plastic;
- 17 03 bituminous mixtures, coal tar and tarred products;
- 17 04 metals (including their alloys);
- 17 05 soil (including excavated soil from contaminated sites), stones and dredging spoil;
- 17 06 insulation materials and asbestos-containing construction materials; and
- 17 08 gypsum-based construction material.

A.1.15 It is noted that a number of sub-categories of wastes are included within the above. The waste codes for each specific waste type will be provided on each waste transfer note that will accompany every movement of waste from construction areas.

Completing Site Waste Management Plan Data Sheets

A.1.16 Once construction is underway, the principal contractor(s) will complete a waste management data sheet (a template of which is to be produced as part of the detailed Site Waste Management Plans). These sheets will be updated every time waste is removed from the construction site and will record:

- the types and quantities of waste produced;
- the types and quantities of waste that have been re-used/recycled/ recovered/landfilled or otherwise disposed of on or off site;
- the identity of the person removing the waste;
- the registration number of the waste carrier;
- a copy of or reference to the written description of the waste; and
- details of the site where the waste is taken to and whether it holds a permit or is exempt.

A.1.17 The detailed Site Waste Management Plans will be reviewed by the Principal Contractor(s) during the construction process to check progress in meeting the reuse/recycling targets and to identify if any changes are required to the waste management measures. Any changes will be provided to relevant authorities upon request.

A.1.18 On completion of construction of the relevant stage of the connection works, a comparison of the estimated waste arisings (waste estimates sheet) and the actual waste management data (waste management data sheet) will be undertaken by the Principal Contractor(s).

Management of Waste Arisings

Waste Hierarchy

A.1.19 The waste hierarchy ranks waste management options according to what is best for the environment (see Figure 2-1). It gives top place to waste prevention. When waste has been generated, priority is given to preparing it for re-use, then recycling, then recovery, and last of all disposal (for example, landfill). The waste hierarchy is a key element of sustainable waste management and following the hierarchy is a legal requirement of the Waste (England and Wales) Regulations 2011 (as amended).

A.1.20 The Department for Environment, Food & Rural Affairs (Defra) (2011) has published guidance on how the waste hierarchy should be applied to a range of common wastes. It highlights the importance of prioritising waste management practices using a specified order to minimise any

potential environmental impacts. The guidance states that for most materials the waste hierarchy ranking applies. However, the evidence suggests that for some materials, the preferred waste management option (i.e. with the lowest environmental impact) does not follow the waste hierarchy order. This is true for lower grades of wood, where energy recovery options are more suitable than recycling.

A.1.21 All waste generated by the Proposed Development will be managed in accordance with the waste hierarchy unless it can be demonstrated that an alternative option lower down the hierarchy is the best overall environmental outcome (for example, waste wood is often used for biomass heat recovery rather than being recycled).

Prevention

A.1.22 Waste can be minimised during the design stage, including the following measures:

- using prefabricated materials for on-site assembly;
- buildings/structures designed to standard dimensions of blocks or frames to avoid offcuts;
- topsoil and subsoil generated from the site preparation works at the converter stations will be retained on site where possible to be used in the site restoration and landscaping; and
- internal materials and fittings will be pre-cut to reduce the need for site cutting.

A.1.23 Waste will also be minimised by improving wastage rates when ordering materials. Waste allowances are generally included within material orders to take into account design waste and construction process waste. These waste allowances are often generic and not project specific and therefore, run the risk of being inaccurate. This can lead to a surplus of materials, which typically ends up being discarded (i.e., waste).

A.1.24 On appointment of the principal contractor(s), the purchasing requirements will be discussed with the site manager(s) to identify priorities and review the quotations received. Materials will be checked against the material specifications as part of the quality control system.

A.1.25 Where possible, hazardous materials will be substituted for less hazardous alternatives.

A.1.26 Waste minimisation measures will be implemented by the principal contractor(s) and site manager(s) during construction in order to achieve the waste reduction targets. These measures include:

- subsoil and topsoil generated from the excavation areas would be used where possible on other areas of the Site;
- a logistic system which allows ‘just-in-time’ deliveries to minimise the length of time materials are stored on-site and co-ordinate with other trades;
- providing suitable and secure storage for materials where ‘just-in-time’ deliveries cannot be set up;
- mechanical systems and machinery will be considered for moving materials to reduce the risk of damage; and
- programming and monitoring construction activities to avoid overlap of incompatible trades working in the same area and to reduce the potential for waste to be generated from replacing damaged work.

Recycling

A.1.27 The Principal Contractor(s) will consider the use of recycled materials where possible, subject to cost, availability and technical durability (for example, recycled aggregate and secondary aggregates for use in concrete, or granular fill).

A.1.28 During construction, wastes will be segregated into waste types to facilitate offsite recycling (for example, metals, wood, plastic). The layout of the construction site has been designed to allow sufficient space for separate containers of key waste materials to be stored. These containers will be clearly labelled and construction staff will be given training on waste segregation.

Disposal

A.1.29 All waste that cannot be reused, recycled or recovered would be collected by the licensed waste management contractor and disposed of at a permitted site suitable for the type of waste. Burning of surplus material or material arising from the site construction would not be permitted.

Storage of Waste

A.1.30 Dedicated waste storage areas would be provided within the construction compound. Each skip/container would be clearly marked to indicate the intended contents and would be suitable for the storage of the specified contents. All skips/containers would be covered to prevent the escape of waste by wind blow or vandalism. If liquid waste is being stored, an appropriate bund and drip pans would be in place.

A.1.31 Storage areas would be located away from potential contaminant pathways such as drains, and excavations and trenches. Any hazardous waste would be stored safely in a designated area away from non-hazardous and inert wastes and labelled accordingly.

Registered Carriers

A.1.32 Construction waste generated will only be transported by companies registered with the Environment Agency and with valid waste carrier licences as required by the 'Waste Duty of Care Code of Practice' and legislation (i.e., Environmental Protection Act section 34 and the Waste (England and Wales) Regulations 2011).

Audit, Monitor and Review

A.1.33 Regular inspections of the construction works will be undertaken by the Principal Contractor(s) (or appropriately trained member of the construction staff) to ensure the continued compliance of site operations with the provisions of the Site Waste Management Plan.

A.1.34 Appropriate duty of care paperwork for the movements of waste (for example, waste transfer notes) will be retained on site. Volumes (m^3 or tonnes) and waste types will be recorded for all wastes sent for reprocessing, recycling or disposal. Records will also be kept of waste re-used/recycled on site.