



MIX Manchester – Phase 1

Construction Site Waste Management Plan

Airport City Limited Partnership

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Acronyms and Abbreviations

BRE	UK Building Research Establishment
CDE	Construction, Demolition and Excavation
CEP	Circular Economy Package
DEFRA	Department for Environment, Food and Rural Affairs
EA	Environment Agency
EPI	Environmental Performance Indicators
EWC	European Waste Catalogue
GHG	Greenhouse Gas
GIA	Gross Internal Area
KPI	Key Performance Indicators
MSCP	Multi-Storey Car Park
OWMS	Operational Waste Management Strategy
POPs	Persistent Organic Pollutants
RCV	Refuse Collection Vehicles
RMA	Reserved Matters Application
RoRo	Roll On Roll Off
RPS	Regulatory Position Statement
SWMP	Site Waste Management Plan
WRA	Wood Recyclers Association



1.0 Introduction

Airport City Limited Partnership (the “Applicant”) has commissioned SLR Consulting Limited (SLR) to prepare a Site Waste Management Plan (SWMP), to support the hybrid planning application for a science and technology research and manufacturing park, to be known as MIX Manchester, located to the north of Manchester Airport (the Proposed Development).

The SWMP is designed to improve the management of wastes generated during the demolition and construction phase of the development project. It is a live document and at the relevant point in time will be passed to the principal contractor for updating prior to commencement of demolition and construction activities.

1.1 Description of Development

Hybrid Planning Application seeking:

- 1) Full planning permission for development of mid-tech units (Use Class E.g.(i,ii,iii)) and multi-storey car park (Use Class Sui Generis), alongside ancillary commercial uses (Class E) with associated access, servicing, public realm and landscaping.
- 2) Outline planning permission for development of a range of uses (comprising Use Class E.g., B2, C1) alongside a Multi-Storey Car Park (Use Class Sui Generis) and ancillary commercial uses (Class E), with associated access, servicing, public realm and landscaping. All matters reserved for future determination save for primary access.

In totality, the scheme is referred to as the Proposed Development. Within this document, the full planning permission aspects are referred to as the “detailed element of the Proposed Development” and the outline planning permission aspects are referred to as the “outline element of the Proposed Development”.

1.2 Site Location and Proposed Development

The Site, known as MIX Manchester (formerly Airport City North) is situated onland to The North of the A56 Spur, immediately South of Wythenshawe and to the North of Manchester Airport Manchester, M90 5AZ. Figure 1-1 below depicts the site location plan, a larger version of the drawing is provided in Appendix A.



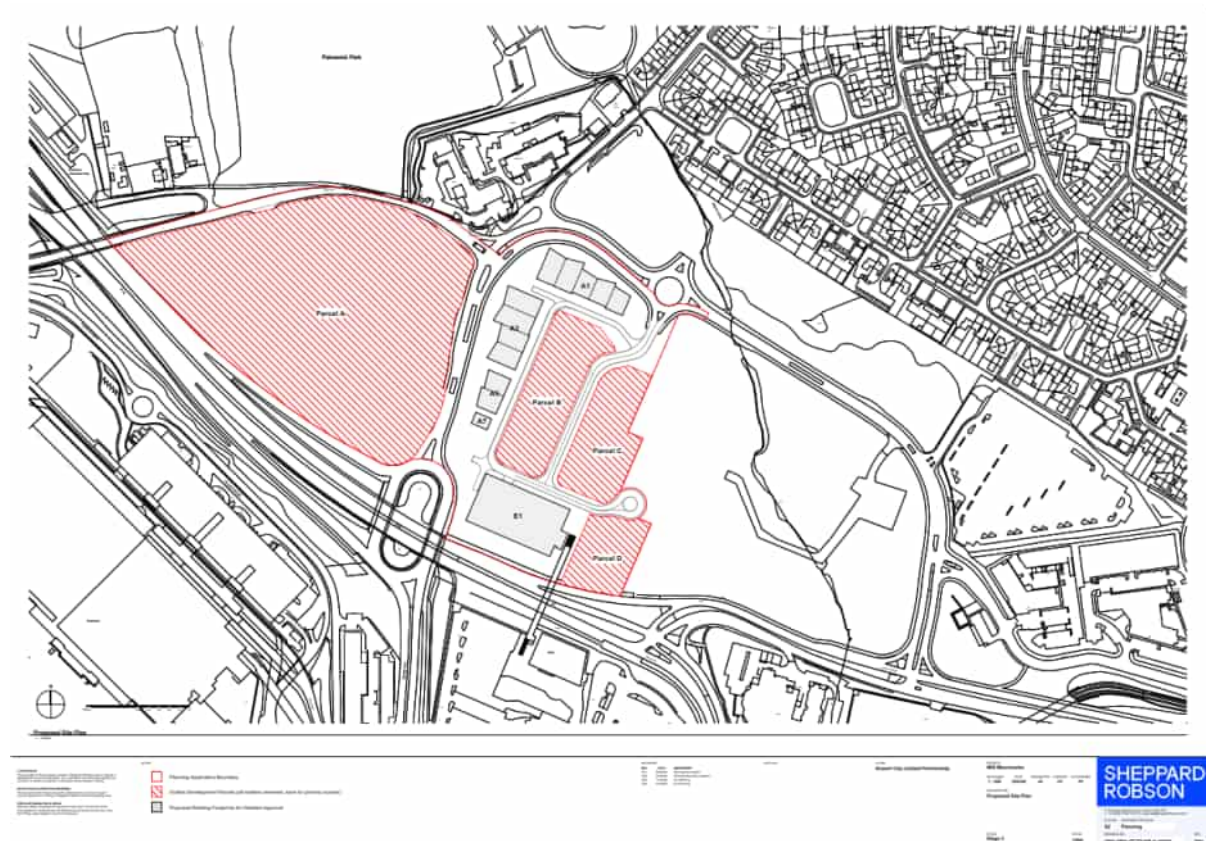
Figure 1-1 Site Location Plan



The existing land use is predominantly previously developed (brownfield) land, with Parcel A in use as a long stay airport car park (see Figure 1-2 for identification of parcel nomenclature). The Site consists of some areas of hardstanding (for roadways and parking functions) and gravel surface (for parking functions); no permanent building structures are located on the Site at present.



Figure 1-2 Proposed Site Plan (with Parcel Identification)



The detailed element of the Proposed Development would deliver:

- 6,570 sqm (GIA) Class E(g)(i), (ii), (iii)¹;
- 655 sqm (GIA) Class E (amenity – retail / F&B); and
- 41,253 sqm (GIA) Sui Generis (Multi-Storey Car Park, MSCP)

The outline element of the Proposed Development would deliver up to:

- 92,180 sqm (GIA) Class E(g)(i), (ii), (iii), B2, C1; and
- 14,300 sqm (GIA) Sui Generis (MSCP).

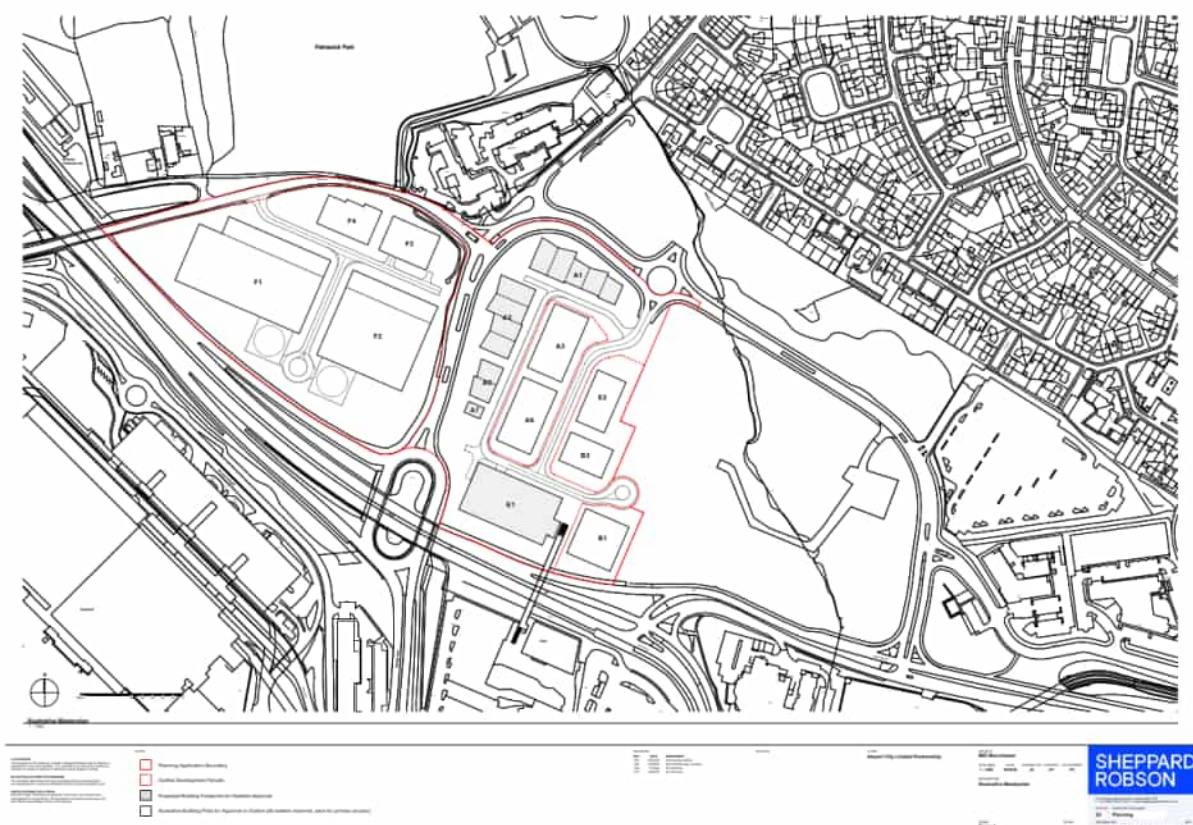
Figure 1-3 displays an illustrative masterplan for the Site, showing the potential building structures for both the detailed (grey fill) and outline (white fill) elements of the Proposed Development (a larger version of the drawing is provided in Appendix B).

Construction of the detailed element is projected to start in Q4 2026 and complete Q1 2030; with construction of the outline elements projected to commence at the start of 2028 and complete in 2035.

¹ Flexible use class Eg i (office), ii (R&D) and iii (light industrial) midtech units.



Figure 1-3 Illustrative Masterplan



1.3 Objectives

This SWMP presents an assessment of the likely arisings of wastes derived from the construction of the Proposed Development. In its most basic terms, the objective of this assessment is to produce a technical document which demonstrates to the planning authority that the Applicant (and its wider project team and in time its principal contractor) has given due consideration to minimising waste production during demolition and construction, and that where waste is produced, management practices will ensure that the waste hierarchy is applied.

This SWMP and its calculations are for the hybrid planning application and as such some high-level assumptions and calculations have been applied. For the outline element, SWMP(s) with more refined calculations and estimates will be produced at reserved matters application (RMA) stage(s), once specific and more detailed design information is available on the proposed buildings and uses.

1.4 Scope of Work

The scope of work for this assessment was devised by SLR in liaison with the Client to support the hybrid planning application for the Proposed Development. This report addresses the waste management issues associated with the demolition and construction activities required to deliver the Proposed Development.

From April 2008² it was a statutory requirement for all construction projects over £300,000 to be accompanied by a SWMP. The assessments aim to improve resource efficiency within

² <http://www.netregs.gov.uk/netregs/sectors/1842950/1843542/1865635/?version=1&lang=e>



the construction industry in order to reduce the amount of waste produced and recover as much value as possible from the waste that cannot be prevented. In July 2013 Defra ran a consultation on withdrawing the requirement for SWMPs (as part of the government's drive to reduce red tape), and as of 1 December 2013 businesses in England are no longer legally obliged to produce a SWMP³.

Although SWMPs are no longer a statutory requirement, the Client is committed to ensuring that they adopt a sustainable approach to the management of materials and wastes. The production of a SWMP will demonstrate that due consideration has been given to the potential impacts that demolition and construction wastes may have on the environment and where possible minimise wastes, and where not possible to minimise wastes, have in place systems which maximise the beneficial use and recycling of materials.

This report is intended to serve as a SWMP for a hybrid application and comprises a high-level assessment of waste arisings and proposed outline management methods. It is based on the interpretation of data collected from various sources which has been accepted in good faith as being accurate and valid. The principal contractor is yet to be appointed; however, the Client anticipates that waste management practices suggested in this SWMP will be adopted by the principal contractor prior to commencement of demolition and construction activities on site, and that the SWMP will be updated regularly throughout the construction period.

It is anticipated that the principal contractor will employ as many local sub-contractors and suppliers as possible in order to reduce fuel consumption and packaging requirements. Where appropriate each sub-contractor will be responsible for ordering (and therefore financially liable for) required materials, thus minimising the risk of over ordering and the generation of excess waste.

Satellite imagery and site details provided indicate that the area of the site covered by the detailed element of the Proposed Development is currently comprised of previously developed brownfield land, including some hardstanding, which will require demolition prior to construction commencement of the detailed element of the Proposed Development.

Satellite imagery and site details provided indicate that the area of the site covered by the outline element of the Proposed Development is currently comprised of previously developed brownfield land and a long stay airport car park and other hardstanding, which will require demolition prior to construction commencement of the outline element of the Proposed Development.

This SWMP therefore makes provisions for the management of wastes derived from demolition as well as the likely quantities of waste associated with construction of the Proposed Development.

Any soil removed during construction is expected to be reused for landscaping across the Site. A Materials Management Plan (MMP) can allow for the reuse of soil and other material in earthworks, without the requirement to go through the process of securing an environmental permit. Where required, a MMP will be developed in due course as the project progresses.

³ <http://www.letsrecycle.com/news/latest-news/legislation/site-waste-management-plans-regulations-repealed>



2.0 Waste Legislation

This section provides an overview of relevant national policy governing the management of waste arising from the construction phase of the Proposed Development.

2.1 Definition of Waste

Legal definitions for different waste streams are provided in Table 2-1. Some terms listed are not used within this document but are nevertheless included to avoid any confusion or ambiguity. The waste arising from the demolition activities and construction of the Proposed Development will be classified as construction, demolition and excavation (CDE) waste, while waste arising during the normal course of occupation and use of the Proposed Development will be classified as Commercial Waste and Industrial Waste.

For the avoidance of doubt, this SWMP focuses on demolition and construction waste only. Wastes generated during the normal course of occupation and use of the Proposed Development are outside of the scope of this document and are considered within the Operational Waste Management Strategy (OWMS) document, which is submitted with the hybrid planning application.

Table 2-1 Waste Descriptions

Controlled Waste	Description
Household Waste	Household waste refers to waste collected from domestic, residential properties; it includes household collection rounds, other household collections such as bulky waste collections, waste deposited by householders at household waste recycling centres and recycling points / bring banks.
Municipal Waste	The definition excludes non-domestic properties such as hospitals and nursing homes, residential hostels, residential homes, schools, universities and other educational facilities, caravan sites and campsites, self-catering holiday accommodation, prisons and penal institutions, public halls, royal palaces and premises occupied by charities and used for charitable purposes.
Commercial Waste	Commercial waste comes from premises used wholly or mainly for trade, business, sport, recreation or entertainment, and excludes household and industrial waste. In particular, waste generated from non-residential properties is classified as commercial waste.
Industrial Waste	Industrial waste is the waste produced by industrial activity which includes any material that is rendered useless during a manufacturing process such as that of factories, mills, and mining operations.
Construction, Demolition and Excavation Waste	Demolition waste includes unwanted material arising from the demolition or strip out of an existing structure. Excavation waste includes unwanted material resulting from excavation activities such as a reduced level dig and site preparation and levelling, excavation of foundations, basements, tunnels and services trenches, typically consisting of soil and stones. Construction waste is any other unwanted material produced at the construction site.
Green Waste	Green waste refers to biodegradable waste (i.e. waste that can decompose naturally and organically) such as grass cuttings, hedge trimmings or other material.
Food (Catering) Waste	Food (catering) waste is defined as all waste food including used cooking oils originating in restaurants, catering facilities and kitchens (including central kitchens and household kitchens). Where catering wastes are collected separately their management is subject to additional controls (Animal By-product Regulations).



Controlled Waste	Description
Bulky Waste	The definition of bulky waste is “any article of waste which exceeds 25 kilograms in weight; and/or any article of waste which does not fit or cannot be fitted into a receptacle for household waste provided in accordance with section 46 of the Environmental Protection Act 1990; or where no such receptacle is provided, a cylindrical container 750 millimetres in diameter and 1 metre in length.”

2.2 Relevant Legislation

2.2.1 Environment Protection Act 1990

The large amount of waste produced during construction, demolition, refurbishment and material supply is categorised as “Controlled” waste. The Waste (England and Wales) Regulations 2011 (which repealed the Environmental Protection (Duty of Care) Regulations 1991) apply the Duty of Care requirements brought in by the Environmental Protection Act 1990. Essentially anyone who produces, imports, keeps, stores, transports, treats, recycles or disposes of controlled waste must take all reasonable steps to fulfil the duties, as outlined below:

- describe the waste fully and accurately⁴;
- store waste safely on site;
- select an appropriate treatment or disposal method;
- ensure that the waste falls within the terms of the waste contractor’s waste management licence;
- pack waste securely;
- check the waste carriers’ registration documents;
- make reasonable checks on the waste carrier or manager;
- report offences to the Environment Agency; and
- complete and sign a waste transfer note when waste passes to another party.

A waste carrier’s licence is needed when a person moves waste from one location to another. Breach of the duty of care is a criminal offence and can result in a fine and / or imprisonment.

2.2.2 Clean Neighbourhoods and Environment Act 2005

The Act provides local authorities with powers (including fixed penalty notices) to tackle poor environment quality and anti-social behaviour. The Act also makes provisions for the requirement of plans for the management and disposal of waste created in the course of demolition and construction.

2.2.3 The Site Waste Management Plan Regulations 2008 SI 314

Aimed at diverting waste from landfill and improving resource efficiency, the Regulations require the preparation of a SWMP before construction work begins for any construction project with an estimated cost of over £300,000.

⁴ A record of all waste disposed of or transferred through a system of signed Waste Transfer Notes.



As discussed in Section 1.4, the Regulations were repealed on 1 December 2013 and therefore developers in England are no longer legally obliged to produce a SWMP (although many LPAs include a requirement for a SWMP within their planning application checklist or through planning condition).

2.2.4 The Hazardous Waste (England and Wales) (Amendment) Regulations 2016

The Hazardous Waste (England and Wales) (Amendment) Regulations 2016 came into force on 1st April 2016 and amend The Hazardous Waste (England and Wales) Regulations 2005. The 2016 regulations revoke Part 5 of the 2005 regulations, which means that (in England) if your premises produce or hold hazardous waste then you will no longer have to register the premises.

Hazardous wastes are wastes that are considered to be harmful to human health or to the environment, either immediately or over an extended period of time. The Hazardous Waste Regulations set out the requirements for safe management and disposal of hazardous wastes. In particular the Regulations provide the following:

- define what hazardous waste is;
- ensure safe management of hazardous wastes;
- provide cradle-to-grave documentation for the movement of hazardous waste; and
- require people who receive hazardous waste to keep thorough records of it and provide the regulator with quarterly returns.

The list of wastes, including those classified as being hazardous in nature, is set out in the European Waste Catalogue (EWC, transposed into UK law via the Landfill Regulations (England and Wales) 2002). Chapter 17 of the EWC covers wastes from construction and demolition activities. The Chapter 17 list is replicated below in Table 2-2; wastes that may be classified as hazardous, depending on the level of dangerous substances⁵, are highlighted. Where hazardous wastes are generated on site they must be managed and disposed of separately to other wastes.

A pre-demolition audit process will highlight any potential sources of hazardous waste likely to be generated during the course of demolition activities. Where hazardous waste does occur, it will be the responsibility of the waste coordinator to ensure that it is managed and disposed of in an appropriate manner.

Should asbestos containing construction materials be identified, a specialist contractor will be utilised to safely remove and manage the asbestos prior to commencement of structure demolition.

⁵ A dangerous substance is defined as a substance which exhibits one or more risks to human health or the environment for example explosive, flammable, toxic, carcinogenic.



Table 2-2 European Waste Catalogue for Construction and Demolition Wastes

17	CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)
17 01	concrete, bricks, tiles and ceramics
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	wood, glass and plastic
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with dangerous substances
17 03	bituminous mixtures, coal tar and tarred products
17 03 01*	bituminous mixtures containing coal tar
17 03 02	bituminous mixtures other than those mentioned in 17 03 01
17 03 03*	coal tar and tarred products
17 04	metals (including their alloys)
17 04 01	copper, bronze, brass
17 04 02	aluminium
17 04 03	lead
17 04 04	zinc
17 04 05	iron and steel
17 04 06	tin
17 04 07	mixed metals
17 04 09*	metal waste contaminated with dangerous substances
17 04 10*	cables containing oil, coal tar and other dangerous substances
17 04 11	cables other than those mentioned in 17 04 10
17 05	soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03*	soil and stones containing dangerous substances
17 05 04	soil and stones other than those mentioned in 17 05 03
17 05 05*	dredging spoil containing dangerous substances
17 05 06	dredging spoil other than those mentioned in 17 05 05
17 05 07*	track ballast containing dangerous substances
17 05 08	track ballast other than those mentioned in 17 05 07
17 06	insulation materials and asbestos-containing construction materials
17 06 01*	insulation materials containing asbestos
17 06 03*	other insulation materials consisting of or containing dangerous substances
17 06 04	insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05*	construction materials containing asbestos
17 08	gypsum-based construction material
17 08 01*	gypsum-based construction materials contaminated with dangerous substances
17 08 02	gypsum-based construction materials other than those mentioned in 17 08 01
17 09	other construction and demolition wastes
17 09 01*	construction and demolition wastes containing mercury
17 09 02*	construction and demolition wastes containing PCB (for example PCB-containing sealants, PCB-containing resin-based floorings, PCB-containing sealed glazing units, PCB-containing capacitors)
17 09 03*	other construction and demolition wastes (including mixed wastes) containing dangerous substances
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

2.2.5 The Waste (Circular Economy) (Amendment) (England and Wales) Regulations 2020

The Regulations implement the Revised EU Waste Framework Directive 2008/98/EC and the 2020 Circular Economy Package (CEP) into national law in England and Wales⁶. The UK is committed to moving towards a circular economy which will keep resources in use for as long as possible and minimise waste whilst promoting resource efficiency.

⁶ <https://www.legislation.gov.uk/uksi/2020/904/made>



The Regulations therefore identify steps for the reduction of waste and a long-term path for waste management and recycling. The Regulations require businesses to apply the waste management hierarchy, introduces a two-tier system for waste carrier and broker registration, and excludes some categories of waste from waste controls. The Regulations also amended the Hazardous Waste Regulations 2005.

2.2.6 Resources and Waste Strategy for England 2018

Published by the Department for Food and Rural Affairs (Defra), this strategy supersedes the documents 'Waste Strategy for England 2007'⁷ and 'Waste Management Plan for England 2013'⁸. The document builds on the direction set out in the 25 Year Environment Plan⁹ and sets out England's commitment to eliminate avoidable waste, promote resource efficiency and move towards a circular economy¹⁰.

The construction and demolition sector has been identified as a sector of key interest, although the scope for targets for specific materials is yet to be defined and will be decided following consultation with key industry stakeholders.

2.2.7 Regulatory Position on Landfill Pre-treatment

Since October 2007 it has been a legal requirement that all non-hazardous and inert waste has to be treated before it can go to landfill; the requirement also applies to hazardous waste landfills¹¹.

As a consequence, waste producers must adopt waste management practices that ensure they either pre-treat the waste themselves or make sure someone else does later on.

2.2.8 Regulatory Position on High Sulphate Bearing Wastes

The landfilling of gypsum and other high sulphate bearing wastes with biodegradable waste has been prohibited in England and Wales since July 2005¹². For a time, the Environment Agency had a working guideline whereby construction and demolition waste containing less than 10% plasterboard was deemed acceptable for landfill disposal. However, based on the results of research the condition was revoked, such that it is now not acceptable to dispose of gypsum containing wastes to landfill. Producers of construction and demolition waste are required to:

- separate the gypsum-based material from other wastes so that it can then be either recycled / reused or can be disposed of properly at a landfill;
- not deliberately mix gypsum waste with other construction and demolition waste; and
- comply with your Duty of Care and only pass waste on to someone who is an authorised carrier.

Separated gypsum wastes are readily recyclable into new gypsum products or for use in agriculture.

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69401/pb13540-waste-policy-review110614.pdf

⁸ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/265810/pb14100-waste-management-plan-20131213.pdf

⁹ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

¹⁰ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765914/resources-waste-strategy-dec-2018.pdf

¹¹ Environment Agency, Regulatory Position Statement, Treating non-hazardous waste for landfill.

¹² Environment Agency, Position Statement, Landfilling of gypsum waste including plasterboard.



2.2.9 Changes in Wood Waste Regulations

As of 1st September 2023, the Environment Agency withdrew the Regulatory Position Statement (RPS) 250¹³, which had been in effect from 1st August 2021, and previously allowed potentially hazardous waste wood items from the construction and demolition industry to be moved and processed as non-hazardous¹⁴.

The RPS created issues when hazardous materials were recycled or reused in sensitive applications, hindering recycling initiatives. The changes are a result of rigorous testing by the Wood Recyclers Association (WRA) to determine the amount of hazardous waste present in wood waste.

The withdrawal of RPS 250 means that businesses need to be more careful about the types of wood waste they are producing and where they end up. Classifications of wood that were previously recyclable are now considered hazardous and must be disposed of accordingly.

A new RPS, RPS 291 (Storing and treating hazardous waste wood)¹⁵, was released to respond to concerns about the disposal of potentially hazardous 'amber' waste wood. This RPS allowed the temporary storage and processing of amber waste wood as non-hazardous, provided it underwent quarterly WRA 02 testing¹⁶ and the results were shared with the WRA. Producers could treat and mix amber waste wood with non-hazardous wood at a wood processing site, if it was then moved as non-hazardous waste under a waste transfer note.

The types of wood waste affected by the new regulations are Grade D wood waste (hazardous), wood waste from pre-2007 structures (potentially hazardous)¹⁷, and any other amber waste wood. RPS 291 was a temporary RPS and was withdrawn on 11th September 2024¹⁸, with it being announced that the Environment Agency would deem amber wood waste to be 'non-hazardous'. RPS 249 has also been withdrawn, meaning that these sources of wood (from household waste recycling centres and demolition activities) can now be moved and processed as non-hazardous provided the wood is for use in panel board, manufacturing or biomass combustion. Wood from heavy industrial buildings will still require testing and assessment to determine whether it is hazardous or non-hazardous in nature.

2.2.10 Regulations for Waste Containing POPs

Waste containing POPs are typically only a concern during the demolition phase.

Persistent Organic Pollutants (POPs) are organic substances that persist in the environment, and therefore can accumulate in living organisms, posing a risk to the health of humans and the environment.

Many soft furnishings found in households have fire retardants applied to them to meet fire safety standards. POPs can therefore be present due to the flame retardant chemical decabromodiphenyl, which has been banned since 2019 and is no longer used¹⁹.

As a result of this, the Environment Agency announced in August 2022 that all waste upholstered domestic seating containing POPs must not be landfilled, mixed with other non-

¹³ <https://www.biffa.co.uk/biffa-insights/changes-in-wood-waste-regulations?blaid=5278519>

¹⁴ <https://www.gov.uk/government/publications/hazardous-waste-wood-from-demolition-and-refurbishment-activities-rps-250>

¹⁵ <https://www.gov.uk/government/publications/storing-and-treating-hazardous-waste-wood-rps-291>

¹⁶ <https://www.socotec.co.uk/our-services/environmental-science/waste-wood-classification>

¹⁷ <https://www.recyclingbristol.com/wood-regulations-2023/>

¹⁸ [\[Withdrawn\] Storing and treating hazardous waste wood: RPS 291 - GOV.UK](#)

¹⁹ [Persistent Organic Pollutants in waste upholstered domestic seating | Hampshire County Council \(hants.gov.uk\)](#)



POPs containing wastes, reused or recycled. Rather, it must be incinerated to ensure that any POPs are destroyed²⁰. Any waste mixed with this must also be incinerated.

The legislation also requires that waste treatment sites that are shredding upholstered domestic seating must have equipment to capture emissions by 1st December 2026²¹, and in the meantime, it can only be shredded inside a building or temporary storage site that is enclosed on three sides with a roof²².

Additionally, soft furnishings containing POPs that are being temporarily stored, must be stored in a secure building that prevents waste escaping or being accessed by members of the public.

Waste upholstered domestic seating includes:

- Sofas;
- Armchairs;
- Futons;
- Sofa-beds;
- Upholstered dining chairs and office chairs;
- Beanbags;
- Floor cushions; and
- Upholstered stools and foot stools.

Any other soft furnishing items are not covered by this legislation, and can be disposed of normally.

²⁰ [Waste sofas 'must be incinerated' because of POPs, EA says - letsrecycle.com](#)

²¹ [Shredding waste upholstered domestic seating containing POPs: RPS 264 - GOV.UK](#)

²² [Agency outlines enforcement stance for POPs and soft furnishings - letsrecycle.com](#)



3.0 Demolition Waste

The removal of the existing hardstanding for the detailed element of the Proposed Development, and the removal of the existing hardstanding and long stay airport car park for the outline element of the Proposed Development will result in the generation of demolition waste.

This section of the SWMP report describes the process undertaken in estimating the waste arising from the demolition activities. The existing site plan (included in Figure 3-1) was used to estimate the areas that will need demolishing (a larger version of the existing site plan is provided in Appendix C). Figure 3-2 shows the approximate demolition areas that were derived from the existing site plan and aerial imagery review.

Figure 3-1 Existing Site Plan



Figure 3-2 Approximate Demolition Areas



Note: In the above, the blue and yellow areas are deemed to be hardstanding; the red and green areas are deemed to be gravel; the non-shaded areas are assumed to be cleared previously developed brownfield land and vegetation.

3.1 Estimated Demolition Waste Arisings

A pre-demolition audit of the Site was not available at the time this SWMP was prepared. It is anticipated that the existing hardstanding road and gravel (present in both the detailed and outline element areas of the Site) will require removal prior to the commencement of construction of the Proposed Development. A typical excavation depth for hardstanding areas and an assumed bulk density for aggregates was used to calculate the estimated demolition waste arisings.

Where a pre-demolition audit is undertaken before commencement of demolition activities more accurate demolition estimations can be incorporated within the SWMP. As already identified, the SWMP is a live document and will be updated throughout the demolition and construction period.

3.1.1 Limitations and Assumptions

To aid the management of demolition waste, it is first necessary to identify the types and quantities of waste that will be produced during this phase of site development. The hardstanding demolition waste quantities are derived from desk-based analysis estimated using the methodology described in Section 3.1, the results of which are described in the following section.

3.1.2 Demolition Waste Tonnages

It is estimated that the demolition of the existing hardstanding will result in the generation of circa 2,305 tonnes of demolition waste for the detailed element of the Proposed Development, and circa 15,843 tonnes of demolition waste for the outline element of the Proposed Development. As only hardstanding will need to be demolished, for both the



detailed and outline element of the Proposed Development, the demolition waste arisings are estimated to be hard material and aggregates.

The above demolition quantities equate to circa 116 skips for the detailed element of the Proposed Development, and circa 793 skips for the outline element of the Proposed Development (assuming a typical maximum payload of 20 tonnes per skip for hard materials) should all material need to be moved off site. It is however an expectation of the project that suitable materials will be reused on site during the construction activities and as such the above tonnage and number of skip movements required should be significantly reduced or zero where all material is suitable for reuse on site.

Materials derived from demolition of the existing hardstanding will be processed and reused on site within the Proposed Development where it is practical to do so. Where wastes require off-site management, they will be segregated on site by material type to prevent contamination, promote recycling and prevent disposal of recyclable material. The EU and UK target is to recover at least 70% of non-hazardous construction and demolition waste by 2020. No new recycling targets have been published for CDE waste, so the demolition contractor will be encouraged to meet and (where technically and economically viable) exceed this target.



4.0 Construction Waste

The following section summarises the methodology applied to determine the construction waste arising estimates.

4.1 Site Dimensions and Details

A summary of the area schedule defining the gross internal areas (GIA) of the buildings in the detailed element of the Proposed Development is presented in Table 4-1. Areas are also defined for the associated built infrastructure (roadways, service bays / parking and pavements / patios), as shown in the illustrative masterplan (Figure 1-3 and Appendix B).

Table 4-1 Schedule of Areas for the Detailed Element of the Proposed Development

Land Use Component	Area Coverage (m ²) ²³
Buildings (GIA)²⁴	
A1	2,265
A2	2,225
A5	760
A7	180
MSCP Commercial Unit	475
MSCP	43,475 ²⁵
Sub-total Buildings	49,380
Hardstanding	
Roadways	5,060
Service bays, parking areas (excluding MSCP), service yards and aprons	1,050
Pavements and patios/other hardstanding	8,870
Sub-total Hardstanding	14,980

A summary of the area schedule defining the GIA for the buildings within the outline element of the Proposed Development and associated built infrastructure is presented in Table 4-2.

Table 4-2 Schedule of Areas for the Outline Element of the Proposed Development

Land Use Component	Area Coverage (m ²)
Buildings (GIA)²⁶	
Parcel A: GMP Manufacturing	29,000
Parcel A: Mid-Tech	3,000
Parcel A: MSCP	13,000
Parcel B	21,000

²³ As measured by the project architect teams.

²⁴ GIA = Gross Internal Area

²⁵ As noted in Section 1.0 the MSCP area is 41,253 (40,778 excluding the Commercial Unit). The calculations undertaken and presented in Section 4.0 are based on a larger area, and thus the construction waste calculation results are conservative.

²⁶ GIA = Gross Internal Area



Land Use Component	Area Coverage (m ²)
Parcel C	16,200
Parcel D	14,600
Sub-total Buildings	96,800
Hardstanding	
Roadways	5,370
Service bays, parking areas (excluding MSCP), service yards and aprons	1,510
Pavements and patios/other hardstanding	8,630
Sub-total Hardstanding	15,510

In addition to the areas detailed in Table 4-1 and Table 4-2, buildings A1, A2 and A5 within the detailed element of the Proposed Development include the potential tenant fit out of mezzanines consisting of up to 25% of the area of the buildings. If mezzanines were installed in all of the buildings, this would increase the total building area from 49,380m² to 50,700m². Construction waste estimates have been calculated for both of the above scenarios for completeness.

4.2 Waste Types and Quantities

To aid the management of construction waste, it is first necessary to identify the types and quantities of waste that will be produced during the construction phase of the Proposed Development. However, with minimal baseline data available for construction waste, the targets and action plans are informed by estimates, and will therefore be reviewed and amended throughout the construction phase of the Proposed Development.

As the requirement for SWMPs became more common so did the understanding of the volumes and types of waste produced during construction phases of projects. Together Defra²⁷ and BRE²⁸ developed a number of benchmark indicators to help determine approximate tonnages of waste produced during various types of construction project.

The benchmarks include Key Performance Indicators (KPI) which measure the volume (m³) of waste produced per £100,000 project value and Environmental Performance Indicators (EPI) which measure volume (m³) of waste produced per 100m² area. However, the KPI measure (per £100,000 project value) is not considered appropriate due to the passage of time. Therefore, for the purpose of this assessment, the EPI indicator has been used to estimate the quantity of waste arising from construction.

The SMARTWASTE²⁹ tool, developed by the BRE, provides KPI's and EPI's for the construction industry across a number of development types, including commercial, leisure and residential buildings as well as civil engineering projects. The EPI's are outlined below in Table 4-3.

Table 4-3 Waste Performance Indicators for the Construction Industry

Project Type	Average m ³ /100m ²
Residential	18.1

²⁷ Department for Environment, Food and Rural Affairs

²⁸ UK Building Research Establishment

²⁹ <http://www.smartwaste.co.uk/>



Project Type	Average m ³ /100m ²
Public Buildings	20.9
Leisure	14.4
Industrial Buildings	13
Healthcare	19.1
Education	20.7
Commercial Other	17.4
Commercial Offices	19.8
Commercial Retail	20.9
Civil Engineering	28.1

The Waste and Resources Action Programme (WRAP) has produced figures for the estimated annual building construction waste tonnages by waste stream and these are shown as percentage splits in Table 4-4 (second column), below. In the third column of Table 4-4, Environment Agency (EA) conversion factors for converting volume of waste (cubic metres) to mass of waste (tonnes) are provided.

Table 4-4 Average UK Construction Waste Composition by Material Waste Stream and Conversion Factors

Material Type	% Split by Volume of Waste Arising from Construction of Buildings	Conversion Factor
Hard material	32%	1.24
Timber	24%	0.34
Plastics	15%	0.22
Cast formless	9%	0.4
Gypsum material	6%	0.33
Metals	6%	0.42
Paper / card	4%	0.21
Bio-organic	3%	0.51
Soil	1%	1.25
Chemicals / paint	0%	0.57

Note: Compositional figures are rounded to zero decimal places and therefore totals may appear to exceed 100%.

4.3 Waste Tonnages and Composition

Using the EPI benchmarks, the BRE material split data, the EA waste volume conversion factors and the site plan details, it is possible to calculate approximate tonnages of waste arising from the construction of the Proposed Development. The following EPI benchmark assumptions have been applied to the different space uses of the Proposed Development:

- ‘Industrial buildings’ EPI benchmark has been applied to the proposed building areas expected to have “Mid-tech” and “Manufacturing” uses;
- ‘Commercial retail’ EPI benchmark has been applied to the proposed building areas expected to have “Commercial unit” and “Amenity” uses;



- ‘Commercial offices’ EPI benchmark has been applied to the proposed building areas expected to have the “Office/R&D” use;
- ‘Commercial other’ EPI benchmark has been applied to the proposed building areas expected to have “Hotel” use; and
- ‘Civil engineering’ EPI benchmark has been applied to the proposed building areas expected to have the “MSCP” use and the hardstanding.

For the detailed element of the Proposed Development, the predicted waste volume for the construction of the buildings is estimated to be approximately 13,036m³ and the predicted waste volume for the construction of the hardstanding is estimated to be approximately 4,209m³. If full mezzanines were installed, the predicted waste volume for the construction of the buildings is forecasted to rise to 13,207m³.

For the outline element of the Proposed development, the predicted waste volume for the construction of the buildings is estimated to be approximately 17,719m³ and the predicted waste volume for the construction of the hardstanding is estimated to be approximately 4,358m³.

However, it is expected that a large proportion of this waste can be segregated and re-used and / or recycled as shown in the compositional split data in Table 4-4.

Table 4-5 shows the predicted material breakdown and tonnage data for the waste arising from the construction of buildings and hardstanding from the detailed element of the Proposed Development, with Table 4-6 showing the equivalent information from the outline element of the Proposed Development. This is largely comprised of hard material from foundation excavation, timber, building materials and plastics (from packaging).

Table 4-5 Material Breakdown and Tonnage Data for Construction Waste from Buildings and Hardstanding for the Detailed Element of the Proposed Development

Material	% Split by Volume	Waste Arising (m ³)	Conversion Factor (tonnes/m ³)	Waste Arising (tonnes)
Hard material	41.9%	7,226	1.24	8,961
Timber	18.4%	3,171	0.34	1,078
Plastics	11.5%	1,976	0.22	435
Cast formless	6.8%	1,173	0.40	469
Gypsum material	4.5%	782	0.33	258
Metals	4.5%	782	0.42	329
Paper / card	3.0%	521	0.21	110
Bio-organic	2.3%	391	0.51	199
Soil	6.9%	1,183	1.25	1,478
Chemicals / paint	0.23%	39	0.57	22
Total	100%	17,245	-	13,339



Table 4-6 Material Breakdown and Tonnage Data for Construction Waste from Buildings and Hardstanding for the Outline Element of the Proposed Development

Material	% Split by Volume	Waste Arising (m³)	Conversion Factor (tonnes/m³)	Waste Arising (tonnes)
Hard material	40.0%	8,820	1.24	10,937
Timber	19.5%	4,296	0.34	1,461
Plastics	12.1%	2,680	0.22	590
Cast formless	7.2%	1,595	0.40	638
Gypsum material	4.8%	1,063	0.33	351
Metals	4.8%	1,063	0.42	447
Paper / card	3.2%	709	0.21	149
Bio-organic	2.4%	532	0.51	271
Soil	5.7%	1,267	1.25	1,583
Chemicals / paint	0.24%	53	0.57	30
Total	100%	22,077	-	16,456

Table 4-5 indicates a total of approximately 13,339 tonnes of material to be generated from construction activities for the detailed element of the Proposed Development (8,168 tonnes from the construction of buildings, and 5,171 tonnes from the construction of hardstanding). If full mezzanines were installed, this would increase to 13,446 tonnes.

Table 4-6 indicates a total of approximately 16,456 tonnes of material to be generated from construction activities for the outline element of the Proposed Development. (11,103 tonnes from the construction of buildings, and 5,354 tonnes from the construction of hardstanding).

Over the duration of the construction phase, a significant portion of the wastes are anticipated to be hard material, which will be readily recyclable as aggregate either on or off site. These estimates are indicative and based on generic industry figures for typical waste arisings and composition data from developments of a comparable nature and scale; actual waste tonnages will be recorded as part of the SWMP monitoring process (see section 6.0 for further information).



5.0 Waste Management Options and Implementation Plan

This section of the SWMP presents an outline approach for managing waste minimisation and recycling of construction waste from the Proposed Development.

The total waste arisings and material split for the Proposed Development (separated by detailed and outline elements) are presented in Table 4-5 and Table 4-6. It is estimated that the detailed element of the Proposed Development is likely to generate approximately 13,339 tonnes of waste from construction of the buildings and hardstanding (increasing to 13,446 tonnes with full mezzanines). It is estimated that the outline element of the Proposed Development is likely to generate approximately 16,456 tonnes of waste from construction of the buildings and hardstanding.

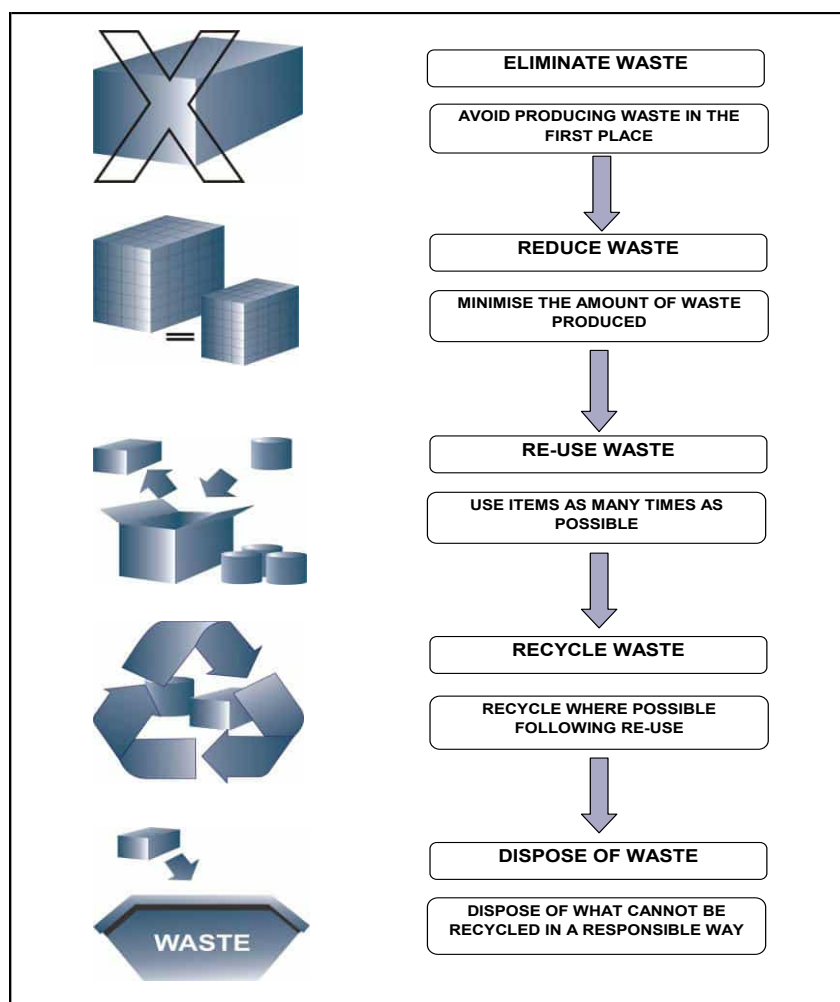
A significant portion of this waste (circa 83% by weight, 58% by volume for the detailed element of the Proposed Development, and circa 82% by weight, 55% by volume for the outline element of the Proposed Development) will include hard materials with anticipated suitability for aggregate recycling.

5.1 Waste Hierarchy

It is necessary to have a structured methodology for minimising the quantity of construction waste disposed of to landfill. The methodology outlined herein is not prescriptive; rather it sets out the guiding principles that will be adopted and as such is sufficiently flexible to accommodate site-specific issues that may not have been anticipated at present.



Figure 5-1 Waste Management Hierarchy



The waste management hierarchy, as outlined above in Figure 5-1, sets out the order in which options for waste management should be considered based on environmental impact. The following sub-sections set out how the hierarchy can be applied to the construction of the Proposed Development.

5.1.1 Waste Minimisation

Waste minimisation is at the pinnacle of the waste hierarchy and is essentially concerned with avoiding the production of waste in the first place. Whilst complete avoidance of waste is impossible, adopting certain waste minimisation practices will ensure that the overall quantity of materials not beneficially used on site is kept to a minimum.

The following factors will be adopted to help to minimise waste on site:

- Improved precautions in handling of materials on site can have a substantially positive impact on the reduction of waste generation on site. Wherever possible, materials will be kept in locked and covered storage until time of use to avoid damage from vandalism, theft, vehicle movements, weather, etc;
- On time delivery of materials when they are required will help to reduce damage;
- Maintaining a record of materials delivered on-site and dispatched – recording the number of skips used so that the amount of material consumed or sent for reprocessing, recycling or disposal can be determined;



- Packaging is designed to protect raw materials and wherever feasible will be kept on until the last moment. Material suppliers will be asked to collect packaging for reuse;
- Avoidance of over-ordering materials according to the stage of construction need; and
- Responsibility for overseeing waste minimisation activities will be assigned to specific site personnel (e.g. construction site manager) who will monitor the progress and smooth running of waste minimisation activities.

The BRE estimate³⁰ that on average, up to 10% reduction in waste quantities can be achieved through waste minimisation and re-use, which also has significant carbon benefits through avoidance of surplus raw materials used. The procurement of recycled or recovered materials reprocessed locally can also further enhance carbon savings.

5.1.2 Reuse

Where avoidance of excess materials on site is not feasible, all available excess materials will be recorded and considered for possible reuse on site before recycling. Materials such as timber, bricks, tiles, paving blocks and topsoil will be stored separately on site within the existing site footprint and will all be considered for reuse elsewhere. The purpose of storing reuse materials in separate areas / skips is to reduce the potential for contamination and to encourage the reuse of materials by offering clean material streams from which construction workers can choose.

Options for reuse include:

- use of reclaimed materials (where appropriate);
- on-site reprocessing of materials; and
- reuse of packaging materials (in limited circumstances).

The use of a data sheet, such as the sheet illustrated in Figure 6 1, will allow the construction site manager to keep a record of all available materials on site, hopefully reducing the need to over order and increasing opportunities for re-use where possible.

5.1.3 Recycling

The off-site management of all waste and recycling will be undertaken by a suitably qualified waste management contractor who specialises in the reprocessing and recovery of construction wastes. Where possible, the construction contractor will manage the reprocessing and recovery of construction waste produced on site using their own staff and on-site equipment or on-site sub-contractors and their on-site equipment. A number of local and national waste management companies offer a comprehensive recycling service for both businesses and households, with specialist disposal facilities for inert, non-hazardous and hazardous wastes³¹.

One option for the management of recycling is for separate skips to be allocated for the individual waste material streams on-site. Skips would be designated by type of waste or recyclable material; would be clearly labelled and easily accessible (placed near to the point of waste generation but away from traffic routes). Section 4.0 details the predicted tonnage breakdown for recyclables, which is circa 70% of the total construction waste tonnage for both the detailed and outline elements of the Proposed Development.

³⁰ BRE Sustainable Construction (2000).

³¹ Potential waste management companies who could offer skips for recyclables and waste disposal include a number of local skip hire companies in addition to national organisations such as Biffa, SUEZ, Veolia and Viridor.



Defra estimate that the average re-use / recycling rate for materials suitable for reprocessing into aggregate (rubble) is over 50%³² and recycling rates of up to 90% are often achievable. The rates for re-use and recycling of non-aggregate wastes in the construction industry are substantially lower than aggregates, at less than 10% for most materials. Defra and BRE also suggest that in line with best practice procedures, recycling rates upwards of 80% can be achieved for non-hazardous waste.

An alternative on-site management solution is to co-collect the waste on-site (within a single skip) and separate the recyclables at one of the waste management contractors recycling sites (a construction materials recycling facility; where the facility will be comprised of a range of waste processing equipment including trommels, magnets and picking stations). The recycling rate for this management option is estimated to be approximately 80%, although higher performance can be anticipated as new outlets for recyclables become available. Often items not recycled will be suitable for recovery, and therefore landfill disposal is minimised. The appointed waste management contractor will be able to provide full details of materials and tonnages recycled off-site.

Audits will be undertaken of waste contractors to ensure that waste from the site is being managed in an appropriate manner.

5.1.4 Disposal

Disposal of waste is at the bottom of the waste hierarchy (see Figure 5-1) as this is the least sustainable method of waste management and will be avoided as far as possible, in favour of waste prevention, reuse, recycling and recovery.

Where it is not possible to re-use or recycle materials, the residual fraction of waste will be taken to an appropriate residual treatment facility or landfill site. Recovery of waste, rather than disposal to landfill, will be prioritised where material types are suitable for recovery and the waste management contractor has access to competitively priced recovery capacity. The same procedure will also apply to hazardous wastes arising from construction activities on site.

5.2 Circular Economy

National and local governments have declared climate emergencies, and we each have a responsibility to consider how our actions can impact upon the global climate. In response, public and private organisations must now consider the impact of their activities and how they can be adapted to support efforts for sustainable growth³³.

Development works provide an opportunity to consider how materials are used, and opportunities to reduce emissions and wastes. The circular economy is an economic system where the very notion of waste is eliminated. The circular economy seeks to maximise the value we gain from our materials and products whilst eradicating the notion of waste entirely.

The Proposed Development will seek opportunities to adopt the principles of the circular economy. As a valuable and transformative development in the community, the Applicant will work to provide a sustainable, resilient and responsible development for the local community.

The Applicant and project team will consider the following circular principles when delivering the Proposed Development:

³² Waste Strategy 2007 Annex C3: Construction, demolition and excavation waste.

³³ <https://watereurope.eu/european-parliament-adopts-resolution-on-the-new-circular-economy-action-plan/>



- Incorporating sustainable materials and products that are technically, economically, and environmentally practicable alternatives to carbon-intensive supplies;
- Using careful supply estimations to minimise surplus materials. Where surplus materials do arise, seeking to return these to suppliers, utilise these in other developments or identify organisations within local communities that can use the product;
- Adopting a modular approach to the design and manufacture of the Proposed Development to minimise wastes and facilitate the ability to undertake repairs opposed to replacement of modules. A modular approach will allow for disassembly and reuse of items;
- Exploring opportunities to lease goods, fleet, or machinery. This will eradicate the need to purchase and then manage items;
- Working with local supply chains to minimise greenhouse gas (GHG) emissions in transporting materials to site;
- Sourcing suppliers that share the client values and who demonstrate circular principles in their own operations;
- Working with the supply chains and encourage take-back services that remove packaging, surplus stock and spent items from the Site, to then be reused, recycled or recovered in their own operations; and
- Working with local supply chains to identify off takers that can valorise waste materials from the Proposed Development to generate new products beyond dry mixed recycling materials.

The construction sector can benefit from application of circular economy principles. The Applicant is committed to supporting the local authority toward their carbon and GHG goals. As a responsible developer, the Applicant understands the value that a circular economy can bring; environmentally, economically and socially.

5.3 On-Site Management

The management of separate waste streams on site requires consideration of additional storage space for waste and recycling, usually in the form of skips. The tables below provide estimated waste storage requirements based on the indicative separation of material types. For the detailed element of the Proposed Development, Table 5-1 relates to the skip requirement for the construction of building structures, while Table 5-2 accounts for hardstanding areas. For the outline element of the Proposed Development, Table 5-3 relates to the skip requirement for the construction of building structures, while Table 5-4 accounts for hardstanding areas. It is possible, given the site size and depending on construction phasing, that more than one set of skips will be provided, thus ensuring convenient access for construction workers to waste management storage provision.

The skips will be stored in a dedicated waste management area(s) on site. Skips will be clearly labelled, and staff will receive training on the expected standard of segregation to improve waste minimisation and recycling. Training for staff, contractors and visitors will be delivered during the initial site induction and subsequent periodic refreshers via toolbox talks.

As part of the SWMP, the principal contractor will consider the setting of waste minimisation and waste recycling targets prior to commencement of construction activities. For the purposes of this high-level assessment, it is assumed that a waste minimisation target of 5% is achieved and that recycling targets of 80% for hard materials, 50% for timber products and plastics and 30% for most other materials are achieved. These targets are in line with the



Defra guidance notes produced as part of the Waste Strategy 2007, the subsequent Government Review in 2011 and the Waste Management Plan for England 2013. The targets should therefore result in an overall waste reduction and recycling rate for construction of over 70%, although it is anticipated that with the use of a construction materials recycling facility this figure can be almost as high as 90%. Furthermore, remaining material will be prioritised for recovery over landfill disposal.

The above minimisation and recycling assumptions have been considered to derive the skip quantity estimates for the Proposed Development provided in Table 5-1, Table 5-2, Table 5-3 and Table 5-4.

Table 5-1 Estimated Skip Requirement for Waste and Recycling from Construction of Buildings for the Detailed Element of the Proposed Development

Material	Skip Size (m³)	Skip Efficiency	Total Number of Skips Required for Project [#]	Collection Frequency	Number of Skips Required on Site for Project
General waste	30.6	95%	178	On demand	1
Hard material (Rubble)	15.3	95%	246	On demand	1
Metals	30.6	95%	20	On demand	1
Timber and products	30.6	95%	51	On demand	1
Packaging (plastic and card)	30.6	95%	46	On demand	1
Plasterboard & plaster	10.7	90%	23	On demand	1
Total			565		6
Total (excluding Rubble and Soil)			319		5

Based on assumed skip size and operational capacity.

Table 5-2 Estimated Skip Requirement for Waste and Recycling from Construction of Hardstanding for the Detailed Element of the Proposed Development

Material	Skip Size (m³)	Skip Efficiency	Total Number of Skips Required for Project [#]	Collection Frequency	Number of Skips Required on Site for Project
General waste	30.6	95%	28	On demand	1
Hard material (Rubble)	15.3	95%	217	On demand	1
Timber and products	10.7	90%	1	On demand	1
Total			246		3
Total (excluding Rubble and Soil)			29		2

Based on assumed skip size and operational capacity.



Table 5-3 Estimated Skip Requirement for Waste and Recycling from Construction of Buildings for the Outline Element of the Proposed Development

Material	Skip Size (m³)	Skip Efficiency	Total Number of Skips Required for Project [#]	Collection Frequency	Number of Skips Required on Site for Project
General waste	30.6	95%	242	On demand	1
Hard material (Rubble)	15.3	95%	334	On demand	1
Metals	30.6	95%	28	On demand	1
Timber and products	30.6	95%	70	On demand	1
Packaging (plastic and card)	30.6	95%	62	On demand	1
Plasterboard & plaster	10.7	90%	31	On demand	1
Total			768		6
Total (excluding Rubble and Soil)			433		5

Table 5-4 Estimated Skip Requirement for Waste and Recycling from Construction of Hardstanding for the Outline Element of the Proposed Development

Material	Skip Size (m3)	Skip Efficiency	Total Number of Skips Required for Project [#]	Collection Frequency	Number of Skips Required on Site for Project
General waste	30.6	95%	29	On demand	1
Hard material (Rubble)	15.3	95%	225	On demand	1
Timber and products	10.7	90%	1	On demand	1
Total			255		3
Total (excluding Rubble and Soil)			30		2

Where multiple buildings / phases are to be constructed concurrently then multiple sets of skips may be provided on site to ensure a convenient waste management system for construction workers.

Considering the materials identified, space provision for up to 6 skips could be required on site at peak periods during construction. Skips provided are expected to receive waste material from both building and hardstanding construction, thus reducing the total number of skips required on site. The construction contractor will also need to consider suitable access to all waste and recycling receptacles (both to construction workers and to waste collection vehicles) throughout the construction period. Numbers of skips could be reduced where materials are combined for processing at a construction waste materials recycling facility.

For the detailed element of the Proposed Development, it is estimated that circa 811 skip movements could be required for the management of construction waste throughout the construction period. This could be reduced to approximately 348 movements by processing and reusing hard material on site. For the outline element of the Proposed Development, it is estimated that circa 1,022 skip movements could be required for the management of construction waste throughout the construction period. This could be reduced to



approximately 463 movements by processing and reusing hard material on site. Material reuse on site is the aspiration of the project.

For the detailed element of the Proposed Development, assuming hard materials are managed on site, it is estimated that there will be less than 2 skip movement per week when averaged out over the course of the anticipated 182-week (circa 42 months, 3.5 years) construction period. For the outline element of the Proposed Development, assuming hard materials are managed on site, it is estimated that there will be circa 1 skip movement per week when averaged out over the course of the anticipated 416-week (circa 96 months, 8 years) construction period.

In general, full skips will be replaced with an empty skip of the same size and thus a single vehicle movement will result in the delivery of an empty skip and the collection and removal of the full skip from Site.

5.4 Off-Site Management

As described in Section 5.0, off-site waste recycling, treatment and disposal will be undertaken by a suitably qualified waste management contractor(s) who specialises in reprocessing and recovery of construction wastes.

The principal contractor will be responsible for identifying and procuring one or more waste management companies to provide the containers (skips), collection, transportation and downstream management of recycling and waste produced at the site.

Skips will be collected using a standard skip vehicle or a Roll On Roll Off (RoRo) vehicle for larger skips. Standard skip vehicles and RoRo vehicles are similar in size to Refuse Collection Vehicles (RCVs) and haulage vehicles utilised by local authorities for the collection of domestic waste, commercial waste and recycling. It is therefore anticipated that vehicles collecting construction waste and recycling should be able to access the Site without any special arrangements.



6.0 Ongoing Monitoring

6.1 Waste Management Responsibility

Responsibility for waste management will fall to the nominated waste management coordinator who will be appointed prior to commencement of site works. The responsibilities of the coordinator will include, but not be limited to:

- ensuring that all construction staff and sub-contractors are aware of site requirements for management of waste. All staff and sub-contractors will be required to attend a short introductory session on waste management principles;
- monitoring of material and waste tonnages;
- liaison with the waste management contractor(s) regarding removal of waste from site;
- dealing with any hazardous wastes that may be generated; and
- liaison with the project manager to ensure that materials are managed in the most sustainable manner possible.

Waste management will also be included as an item on the agenda of the construction progress meetings.

6.2 SWMP Data Record Sheet

In order to monitor waste minimisation and recycling targets, and to update information on construction waste arisings, it is suggested that the nominated waste coordinator completes a SWMP Data Record Sheet³⁴ (such as the sheet shown in Figure 6-1 overleaf and attached in Appendix D). As the initial waste forecasts are based upon UK average benchmarks it will be important to record all waste by quantity and type throughout the construction phase.

Software tools and web-based tools³⁵ are available to replace written paper-based data records for the monitoring of site waste production and management data and reporting. The appointed construction contractor will inform the Client on which method of construction waste monitoring and reporting will be utilised throughout the project.

³⁴ See Appendix D for printable version.

³⁵ Such as the BRE SMARTWaste tool <http://www.smartwaste.co.uk/>



Figure 6-1 Example Site Waste Management Plan Data Record Sheet³⁶

Site waste management plan waste data form

You need to update the waste data form regularly when waste is processed or taken away, to reflect the progress of the project.

Project name:			
Date when this sheet was filled out:			
Stage of project (eg planning stage, during project delivery, end of project):			
Report number (projected waste arising should be report number one etc):			
Project address/location:			
Estimated cost of the project:			
Client:			
Principal contractor:			
Person responsible for waste management on site (name and job title):			
Person and company completing this form, if different from above:			
Sites your waste is going to (including permit, licence or registered exemption reference number and details):			
A	B	C	D
Details of the people removing the waste from your site (including their waste carrier registration number):			
A	B	C	D

		Quantity (specify volume or weight, eg m ³ , kg, T, number of skips)																
Types of waste arising (add more rows if needed)	EWC * code	Reused				Recycled						Disposed of				Relate to boxes above (ie insert A or B etc)		WTN ** complete
		on site		off site		for use on site		for use off site		sent to recycling or reprocessing facility		land-fill		other than landfill (eg incinerated)				
Target/ achieved (T) / (A)		T	A	T	A	T	A	T	A	T	A	T	A	T	A	Waste site	Waste carrier	
Inert																		
Non-hazardous																		
Hazardous																		
Totals (m ³ , kg, T)																		
Performance score as % ***																		
SWMP target % ***																		

* European waste catalogue

** Waste transfer note, or consignment note for hazardous waste

*** There is an option to use this form as a measurement tool to work out savings etc against each waste stream

³⁶ Sourced from NetRegs: http://www.netregs.org.uk/PDF/SWMP_waste_data_form.pdf



7.0 Summary

This report provides a high-level assessment of demolition and construction waste arisings and management options for the Proposed Development.

For the detailed element of the Proposed Development, it is estimated that the demolition of the existing hardstanding will result in the generation of circa 2,305 tonnes of demolition waste. This equates to circa 116 skips (assuming a typical payload of 20 tonnes per skip), however reuse of material on site could theoretically reduce total skip movements to zero.

For the outline element of the Proposed Development, it is estimated that the demolition of the existing hardstanding will result in the generation of circa 15,843 tonnes of demolition waste. This equates to circa 793 skips (assuming a typical payload of 20 tonnes per skip), however reuse of material on site could theoretically reduce total skip movements to zero.

For the detailed element of the Proposed Development, waste volumes in the order of 13,036m³ are predicted from the construction of the buildings, which equates to approximately 8,168 tonnes (increasing to 13,207m³ and 8,276 tonnes with full mezzanines). Waste volumes in the order of 4,209 m³ are predicted from the construction of the hardstanding, which equates to approximately 5,171 tonnes.

For the outline element of the Proposed Development, waste volumes in the order of 17,719 m³ are predicted from the construction of the buildings, which equates to approximately 11,103 tonnes. Waste volumes in the order of 4,358m³ are predicted from the construction of the hardstanding, which equates to approximately 5,354 tonnes.

Waste management practices have been identified which can assist in minimising waste generation for the project. Where waste is generated, the document identifies management methods to aid material reuse or recycling prior to waste disposal.

Provision of a suitable area (or areas) on site for the management and storage of waste will assist in reducing waste disposal and the associated environmental impacts.

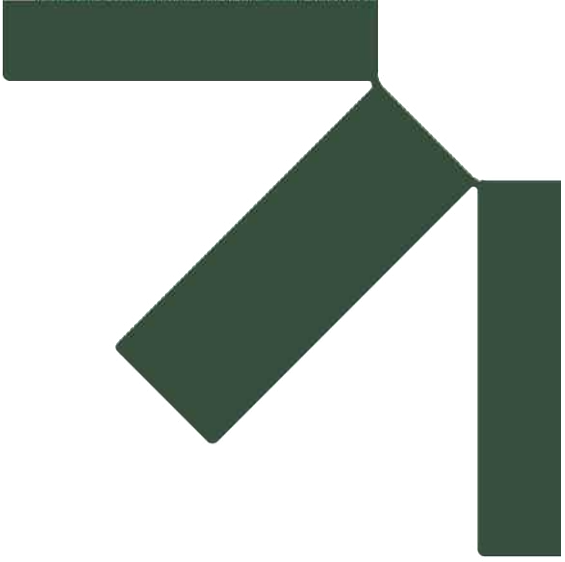
Taking into consideration potential waste minimisation and recycling performance (including reuse of hardcore on site), and average skip fill rates, it is estimated that circa 348 skip movements will be required for the management and removal of construction waste and recycling for the detailed element of the Proposed Development, and circa 463 skip movements will be required for the management and removal of construction waste and recycling for the outline element of the Proposed Development.

This is equivalent to less than 2 skip movement per week over an anticipated 182-week (42 months, 3.5-years) construction period for the detailed element of the Proposed Development, and circa 1 skip movement per week over an anticipated 416-week (96 months, 8 years) construction period for the outline element of the Proposed Development.

The principles and approaches described within this SWMP will support the delivery of circular economy practices and benefits. As a responsible developer, the Applicant knows the value that a circular economy can bring; environmentally, economically and socially.

In accordance with this SWMP, the principal contractor will monitor material delivery and waste generation on site to identify opportunities for waste minimisation and re-use. Monitoring of waste activities will also help to ensure materials are recycled where viable and therefore the environmental impacts of the construction project are minimised.





Appendix A Site Location Plan

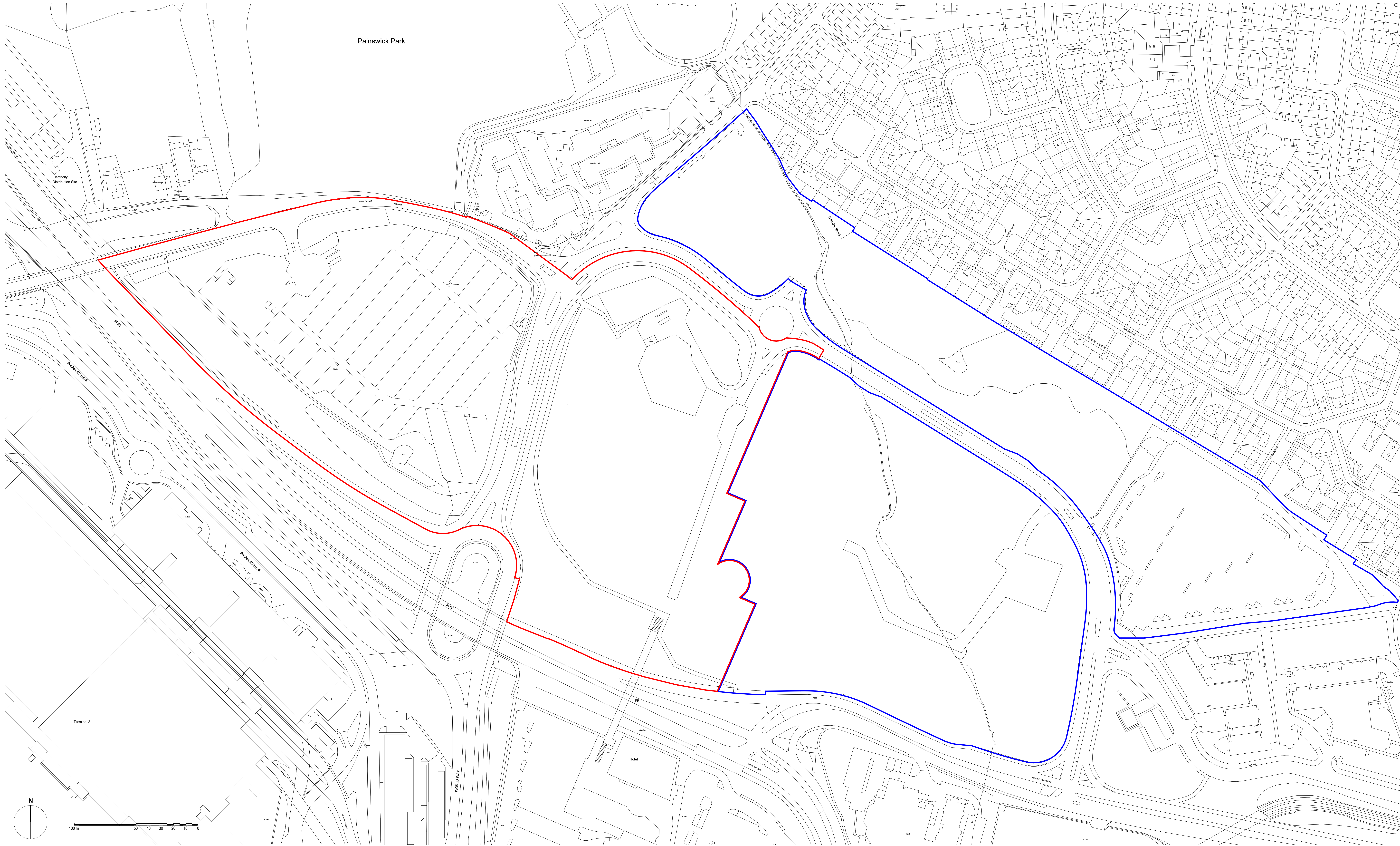
MIX Manchester – Phase 1

Construction Site Waste Management Plan

Airport City Limited Partnership

SLR Project No: 402.065887.00001

26 March 2026



Site Location Plan
1 : 1000

NOTES

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Planning Application Boundary



Additional Land within Ownership of Applicant

REVISIONS

REV.	DATE	AMENDMENT
P01	05/02/26	Planning Boundaries
P02	05/02/26	Planning Boundary Updated
P03	11/03/26	For Planning
P04	18/03/26	For Planning

KEYPLAN

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Airport City Limited Partnership

PROJECT

MIX Manchester

SCALE@AD	DATE	ORIGINATOR	CHECKED	AUTHORISED
1 : 1000	16/03/26	JD	CP	PC

DESCRIPTION

Site Location Plan

STAGE
Stage 3

SR NO.
7092

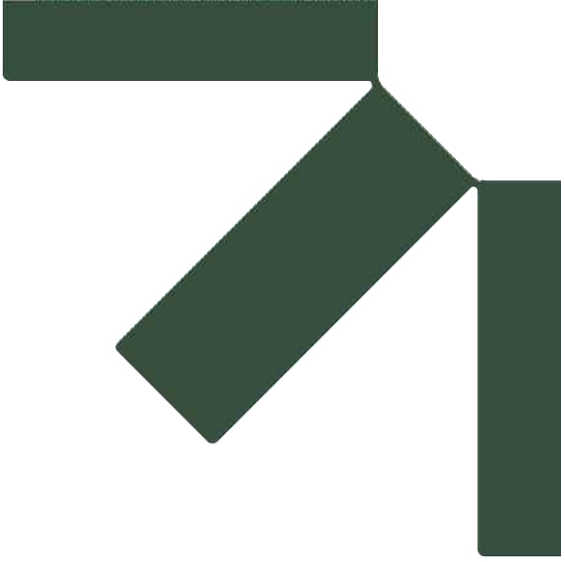
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STATUS PURPOSE FOR ISSUE
S2 Planning

DRAWING NO.
7092-SRA-ZZ-ZZ-DR-A-02010

REV.
P04



Appendix B Illustrative Masterplan

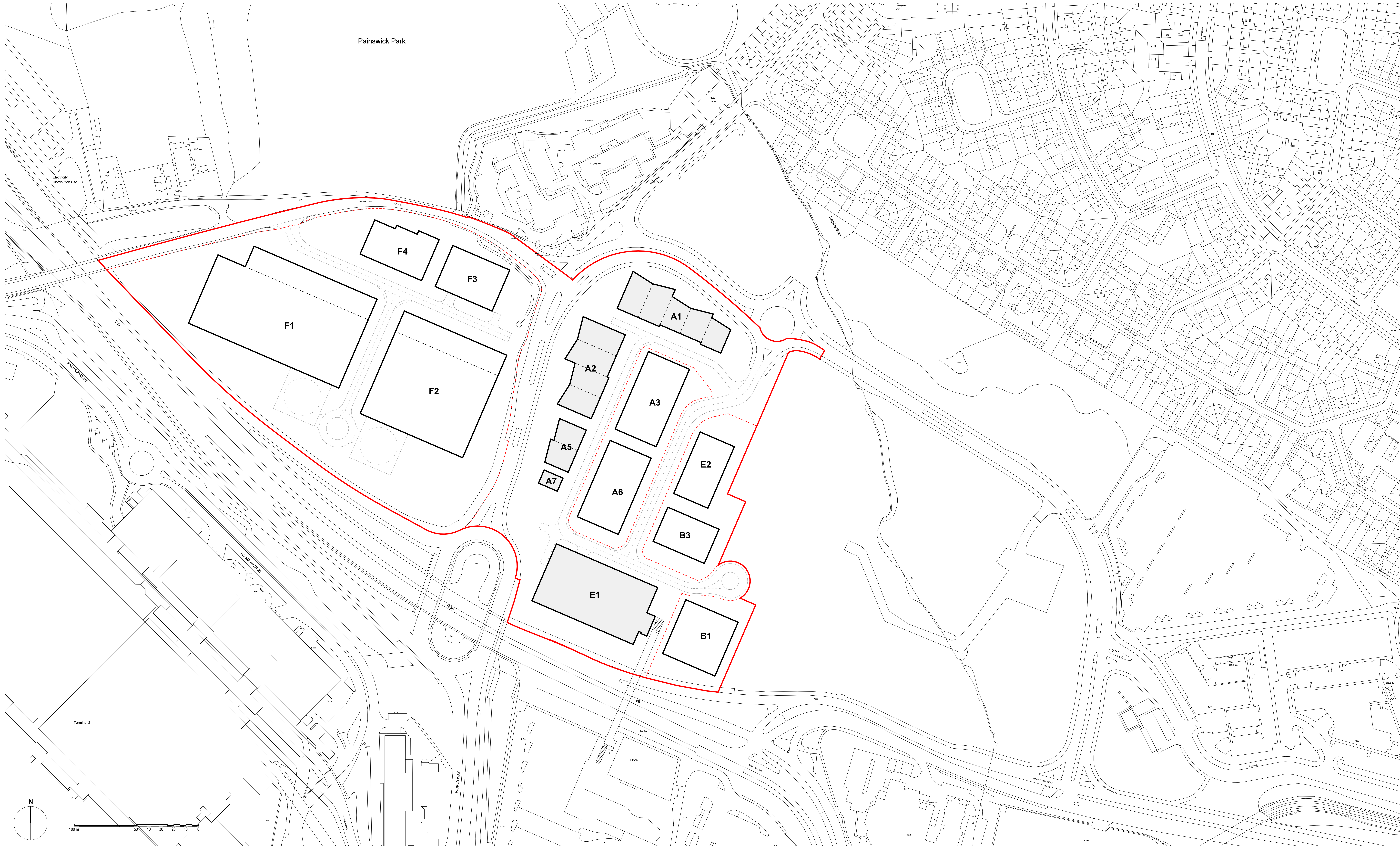
MIX Manchester – Phase 1

Construction Site Waste Management Plan

Airport City Limited Partnership

SLR Project No: 402.065887.00001

26 March 2026



Illustrative Masterplan
1 : 1000

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- Planning Application Boundary
 - Outline Development Parcels
 - Proposed Building Footprints for Detailed Approval
 - Illustrative Building Plots for Approval in Outline (all matters reserved, save for primary access)

REVISIONS	DATE	AMENDMENT
REV. P01	06/02/26	Planning Boundaries
P02	05/02/26	Planning Boundary Updated
P03	11/03/26	For Planning
P04	18/03/26	For Planning

KEYPLAN

CLIENT
Airport City Limited Partnership

PROJECT
MIX Manchester

SCALE@AD	DATE	ORIGINATOR	CHECKED	AUTHORISED
1 : 1000	16/03/26	JD	CP	PC

DESCRIPTION
Illustrative Masterplan

STAGE
Stage 3

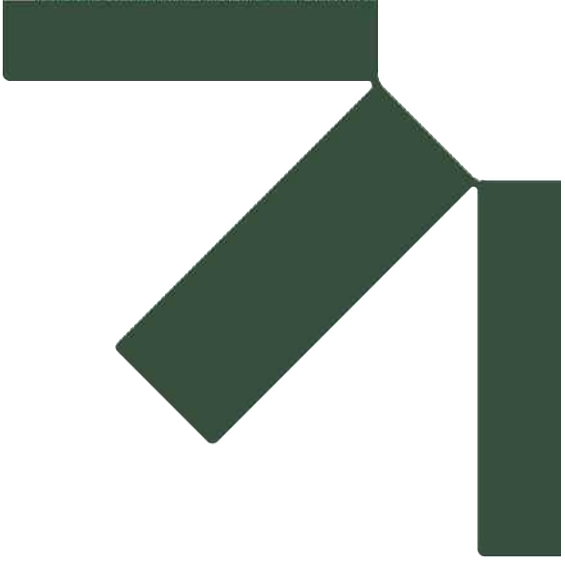
SR NO.
7092

DRAWING NO.
7092-SRA-ZZ-ZZ-DR-A-02050

REV.
P04

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Appendix C Existing Site Plan

MIX Manchester – Phase 1

Construction Site Waste Management Plan

Airport City Limited Partnership

SLR Project No: 402.065887.00001

26 March 2026



Existing Site Plan
1 : 1000

NOTES

 Planning Application Boundary

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REVISIONS

REV.	DATE	AMENDMENT
P01	05/02/26	Planning Boundaries
P02	05/02/26	Planning Boundary Updated
P03	11/03/26	For Planning
P04	18/03/26	For Planning

KEYPLAN

CLIENT

Airport City Limited Partnership

PROJECT
MIX Manchester

SCALE@AD	DATE	ORIGINATOR	CHECKED	AUTHORISED
1 : 1000	16/03/26	JD	CP	PC

DESCRIPTION
Existing Site Plan

STAGE
Stage 3

SR NO.
7092

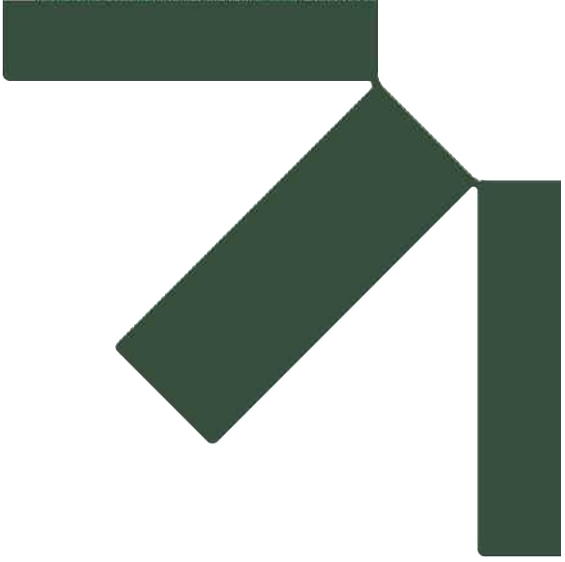
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STATUS PURPOSE FOR ISSUE
S2 Planning

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7092-SRA-ZZ-ZZ-DR-A-02020

REV.
P04



Appendix D SWMP Data Record Sheet

MIX Manchester – Phase 1

Construction Site Waste Management Plan

Airport City Limited Partnership

SLR Project No: 402.065887.00001

26 March 2026

Site waste management plan waste data form

You need to update the waste data form regularly when waste is processed or taken away, to reflect the progress of the project.

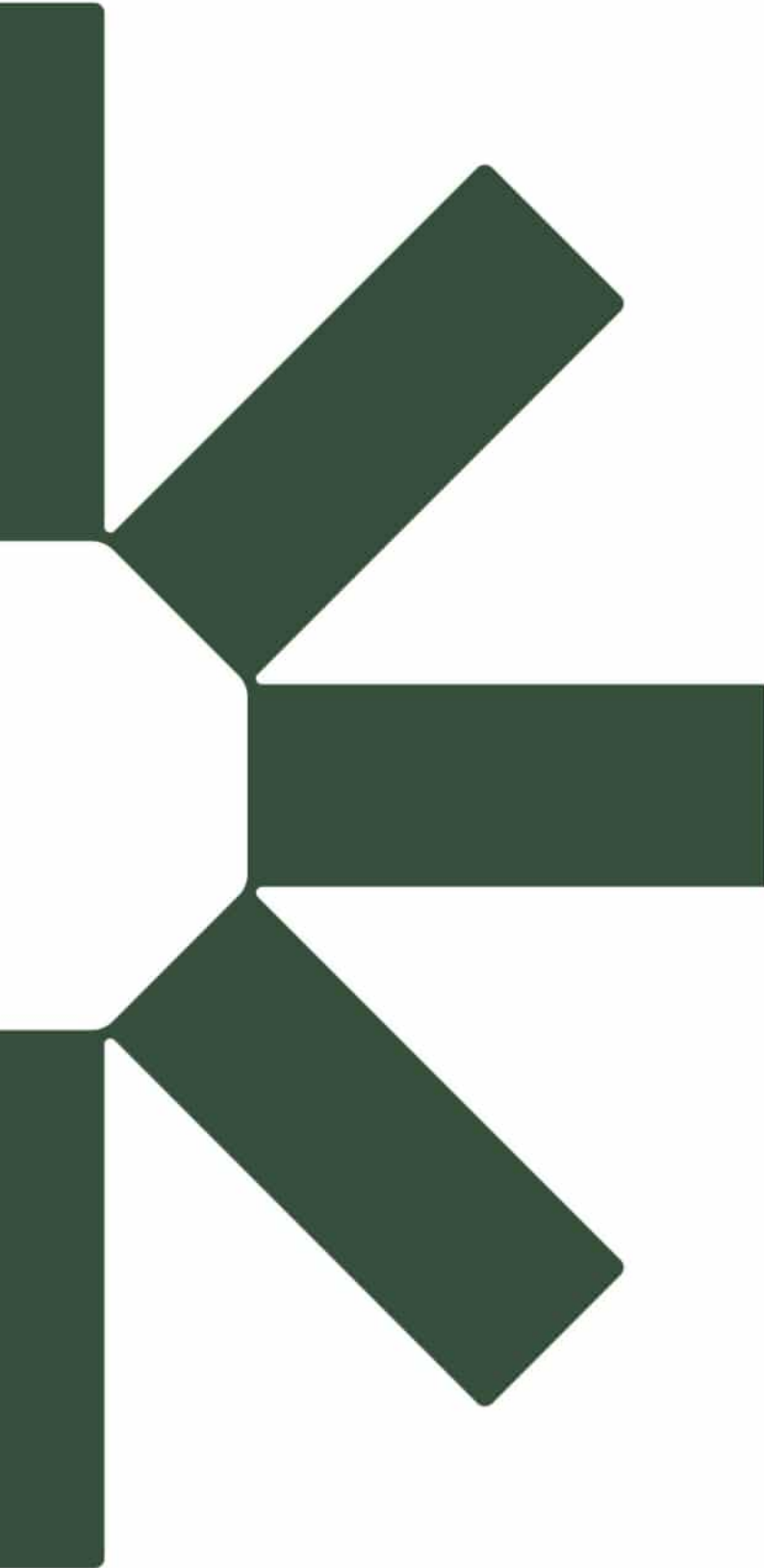
Project name:			
Date when this sheet was filled out:			
Stage of project (eg planning stage, during project delivery, end of project):			
Report number (projected waste arising should be report number one etc):			
Project address/location:			
Estimated cost of the project:			
Client:			
Principal contractor:			
Person responsible for waste management on site (name and job title):			
Person and company completing this form, if different from above:			
Sites your waste is going to (including permit, licence or registered exemption reference number and details):			
A	B	C	D
Details of the people removing the waste from your site (including their waste carrier registration number):			
A	B	C	D

		Quantity (specify volume or weight, eg m ³ , kg, T, number of skips)																
Types of waste arising (add more rows if needed)	EWC * code	Reused				Recycled						Disposed of				Relate to boxes above (ie insert A or B etc)		WTN ** complete?
		on site		off site		for use on site		for use off site		sent to recycling or reprocessing facility		land-fill		other than landfill (eg incinerated)		Waste site	Waste carrier	
Target/ achieved (T) / (A)		T	A	T	A	T	A	T	A	T	A	T	A	T	A			
Inert																		
Non-hazardous																		
Hazardous																		
Totals (m ³ , kg, T)																		
Performance score as % ***																		
SWMP target % ***																		

* European waste catalogue

** Waste transfer note, or consignment note for hazardous waste

*** There is an option to use this form as a measurement tool to work out savings etc against each waste stream



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