Hayes Park

Site Waste Management Plan

May 2023

Waterman

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Quality Assurance – Approval Status

This document has been prepared and checked in accordance with
Waterman Group's IMS (BS EN ISO 9001: 2015, BS EN ISO 14001: 2015 and BS EN ISO 45001:2018)

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This report has been prepared by Waterman Infrastructure & Environment Limited, with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporation of our General Terms and Condition of Business and taking account of the resources devoted to us by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at its own risk.

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1. Introduction

1.1 The Brief

Waterman Infrastructure & Environment Limited (Waterman) has been instructed by Shall Do Hayes Developments Limited (the Applicant) to prepare a site waste management plan (SWMP) for the redevelopment of Hayes Park, Hayes End Road, Hayes, UB4 8FE (the site). This report has been prepared in support of a detailed planning and listed building consent application. The site lies within the administrative boundary of the London Borough of Hillingdon (hereafter the Council).

1.2 Description of Development

The proposed development will convert two vacant office buildings (which are listed due to unique heritage assets) to residential use.

The description of development is as follows:

"Change of use of the existing buildings to provide new homes (Use Class C3), together with internal and external works to the buildings, landscaping, car and cycle parking, and other associated works."

1.3 Report Scope

The purpose of this SWMP is to:

- summarise the benefits of waste minimisation and management (WMM) and relevant guidance, policies, and standards;
- describe the site, existing uses, and the proposed development (hereafter the development);
- forecast how much excavation, demolition, and construction waste might arise;
- set out ways to minimise and manage this waste; and
- outline WMM measures and performance targets for the construction phase.

1.4 Exclusions and Limitations

This report was undertaken in accordance with a scope of works agreed between Waterman and the Applicant as detailed in Waterman's fee letter (reference WIE19060.111.Q.1.1.1 dated 20 April 2023).

The benefit of this report is made to Shall Do Hayes Developments Limited.

The content of this SWMP is based on information made available to Waterman during preparation of the planning application. Waterman has endeavoured to assess all information provided to it during this work but makes no guarantees or warranties as to the accuracy or completeness of this information.

The conclusions resulting from this study are not necessarily indicative of future conditions or operating practices at the site.

When appointed, it is assumed the Principal Contractor will agree to comply with this SWMP and future revisions. It will implement and update the SWMP during the demolition and construction works.

It is assumed this SWMP will be reviewed and further developed prior to construction to include additional WMM measures.

2. Guidance, Policies, and Standards

The following guidance, policies, standards were considered in developing this SWMP.

2.1 Benefits of Waste Minimisation and Management (WMM)

Benefits of waste minimisation and management (WMM) include:

- reducing disposal and material costs by designing to be resource efficient, reducing ordering, and reducing waste taken to landfill (or other disposal);
- reducing carbon dioxide emissions;
- satisfying planning requirements; and
- complementing other aspects of sustainable design.

WMM should follow the principles of the waste hierarchy[1]: prevention; prepare for reuse; recycling; recovery; then disposal. In the first instance, finding ways to reduce waste generation. Where this is not possible, materials should be reused and recycled.

Waste minimisation includes designing out waste and limiting waste arising during construction. Waste management involves identifying potential waste streams, setting target recovery rates, and overseeing the process to meet these targets.

Fully benefitting from WMM means adopting its principles at the earliest possible stage, preferably mandated by the Applicant through procurement requirements.

2.2 Guidance

2.2.1 Government Guidance[2]

Waste management guidance is produced by government bodies including Defra[3], the Environment Agency, and Department for Levelling Up, Housing and Communities. It advises on disposing, moving, licencing, storing, treating, and using waste.

2.2.2 Defra Non-Statutory Guidance for Site Waste Management Plans 2008[4]

The Defra guidance on SWMPs explains how to implement and save money with a SWMP.

2.2.3 Building Research Establishment (BRE) SmartWaste[5]

BRE SmartWaste is a virtual waste and environment reporting tool. The waste benchmark calculator can be used for preparing, implementing, and reviewing SWMPs.

2.2.4 Waste Resources Action Programme guidance

Useful Waste Resources Action Programme (WRAP) resources include the following guidance documents:

- *"Procurement guidance for construction: Setting a requirement for Waste Minimisation and Management";*
- *"Practical Solutions for Sustainable Construction: Achieving Good Practice Waste Minimisation and Management"*;

[1] DEFRA (2011) 'Guidance on applying the Waste Hierarchy', [Online]. Available at www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy (accessed 25 April 2023).
[2] UK Government guidance, *"Environmental Management: Waste",* available from https://www.gov.uk/topic/environmental-management/waste (accessed 25 April 2023).
[3] Department for Environment, Food & Rural Affairs (Defra).
[2] DEFRA, *"Non-statutory guidance for site waste management plans",* April 2008.
[5] BRE SmartWaste, available from www.smartwaste.co.uk/ (accessed 25 April 2023).

- *"The Demolition Protocol: Aggregates Resource Efficiency in Demolition and Construction"*; and
- an online tracker designed to assist the collation and analysis of data associated with SWMPs.

WRAP recommended construction waste recovery rates are set out in section 5.2.1.

2.2.5 Definition of Waste: Development Industry Code of Practice (DoW CoP)[6]

The definition of waste code of practice is helpful when:

- assessing if an excavated material is classified as waste;
- determining if treated excavation waste ceases to be waste for a particular use;
- determining if excavated materials are not classified as waste, and when they can be reused;
- establishing and operating fixed soil treatment facilities;
- putting together a materials management plan (MMP);
- reusing contaminated and uncontaminated material at source or between sites within defined cluster projects; and
- transferring and reusing clean naturally occurring soils between registered sites.

A MMP details the type, volume, and quality of material. It should be submitted to a suitably qualified person for review. Then the project can be declared to CL:AIRE. A verification report is needed at the end of the project to confirm compliance with the MMP.

2.3 Legislation

2.3.1 Environmental Protection Act 1990

Section 34 of the Environmental Protection Act 1990 sets out the requirements for the duty of care for controlled waste. The duty of care applies to all businesses that produce, import, carry, keep, treat or dispose of controlled waste from business or industry, or act as a waste broker in this respect. Its purpose is to ensure that all parties in the waste handling chain take all reasonable steps to ensure that waste is handled legally and safely when being passed along the links in the chain between the waste producer and the site of final disposal or recovery.

All businesses are responsible for the safe and proper disposal of waste, even once it has been passed to a third party. This duty of care extends to the point where the waste has either been satisfactorily disposed of, or fully recovered.

The duty of care requires that:

- all waste is stored and disposed of responsibly;
- waste is only handled or dealt with by individuals or businesses that:
  - are authorised to deal with it;
  - have an Environmental Permit or relevant waste exemption;
  - are a registered carrier of controlled waste; and
- a record is kept of all waste received or transferred through the provision of written information about the waste (previously known as a waste transfer note – WTN – a term still in common usage).

Regulation 35 of the Waste (England and Wales) Regulations 2011 (see below) sets out the content of the written information / transfer note.

The failure of a person who produces, treats, or passes on waste to comply with the duty of care is a criminal offence under section 34 of the Environmental Protection Act 1990, regardless of whether environmental harm has occurred.

[6] CL:AIRE, *Definition of Waste Code of Practice*, available from http://www.claire.co.uk/projects-and-initiatives/dow-cop (accessed 25 April 2023).

Statutory guidance on how to meet the duty of care is outlined in *Waste Duty of Care, Code of Practice*[7].

2.3.2 The Waste (England and Wales) Regulations 2011

The Waste Regulations 2011 require waste producers or those handling waste to comply with the waste hierarchy (prevention, prepare for reuse, recycling, recovery, disposal) unless it can be justified on environmental or technical grounds that this is not appropriate.

The requirements include that:

- waste is stored correctly i.e. it must be properly contained;
- waste is only collected by registered waste carriers;
- records of transfers of waste are kept for at least two years; and
- waste is only taken to an appropriately authorised facility.

Businesses that carry their own waste need to be registered as a waste carrier. Lower tier waste carriers register once only. Companies transporting construction and demolition waste, whether their own waste or not, need to register as upper tier waste carriers and so must renew their waste carriers licence every three years.

2.3.3 Environmental Permitting (England and Wales) Regulations 2016

These regulations stipulate when an Environmental Permit (EP) is required for the storage or management of wastes. For a demolition or construction site, an EP could be required for the use of mobile plant to process waste on-site.

2.3.4 Hazardous Waste (England and Wales) Regulations 2005

If controlled waste is classified as hazardous, in accordance with the Hazardous Waste Regulations 2005, enhanced duty of care requirements apply. Facilities receiving hazardous waste must report to the waste producer and the regulator as to the receipt and fate of each consignment of hazardous waste. The written information requirements are met by the use of the consignment note (enabling tracking of waste from producer to final disposal / recovery facility).

2.4 Policy

2.4.1 National Planning Policy Framework (NPPF) 2021[8]

The NPPF introduces the presumption in favour of sustainable development. One of the objectives of sustainable development is environmental protection. Minimising waste is one of the ways of achieving the environmental objective.

2.4.2 National Planning Policy for Waste (NPPW) 2014[9]

The NPPW instructs local planning authorities to ensure that the reuse / recovery of construction waste is maximised. Off-site disposal should be minimised.

[7] HSMO, *Waste Duty of Care, Code of Practice*, available from https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/759083/waste-code-practice-2018.pdf (accessed 25 April 2023).
[8] NPPF 2021, available from https://www.gov.uk/government/publications/national-planning-policy-framework--2 (accessed 25 April 2023).
[9] NPPW 2014, available from https://www.gov.uk/government/publications/national-planning-policy-for-waste (accessed 25 April 2023).

2.4.3 Circular Economy Package policy statement 2020[10]

Defra, Northern Ireland's Department of Agriculture, Environment and Rural Affairs (DAERA), the Welsh Government, and the Scottish Government jointly issued a Circular Economy Package policy statement in July 2020. It summarised the UK's commitment to moving towards a more circular economy. Commitments to reducing waste and optimising resource use are set out in various strategies. Recent government strategies considering resources and waste in England include:

- the 25 Year Environment Plan; and
- the Resources and Waste Strategy for England.

The aim of these strategies is to move society away from an inefficient linear economic model of take, make, use, throw and move towards a more circular economy – reuse, remanufacture, repair, recycle.

See section 0 for more detail on circular economy targets.

The 25 Year Environment Plan 2018[11]

The 25 Year Environment Plan details how the government will work with communities and businesses to reduce humanity's impact on the environment. It recognises minimising waste as a way of reducing pressure on the environment. One of its goals, minimising waste, has an ambition of zero avoidable waste by 2050.

Resources and Waste Strategy for England 2018[12]

The resources and waste strategy for England promotes resource efficiency by detailing ways to preserve materials by minimising waste. The strategy describes the government's commitment to eliminate avoidable waste of all kinds (including construction, demolition, and excavation waste) by 2050. Other ambitions include:

- moving towards a more circular economy;
- minimising environmental damage by reducing and managing waste safely and carefully;
- appropriately dealing with waste crime; and
- encouraging waste producers and manager to implement the waste hierarchy in respect to hazardous waste.

2.4.4 London Plan (2021)[13]

London Plan policy SI 7, reducing waste and supporting the circular economy, promotes minimising waste, reusing materials, and recycling. It aims to meet or exceed the following targets:

- zero biodegradable or recyclable waste to landfill by 2026;
- reuse / recycle / recover 95% of construction and demolition waste; and
- beneficial use of 95% of excavation waste (though all inert excavation waste should be put to beneficial uses). Beneficial use includes placement to land in a way that provides environmental benefits such as restoration of priority habitat or flood alleviation.

[10] Circular Economy Package policy statement available from https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement (accessed 25 April 2023).
[11] UK Government guidance, "*25 Year Environment Plan*", available from https://www.gov.uk/government/publications/25-year-environment-plan (accessed 25 April 2023).
[12] UK Government guidance, "*Resources and waste strategy for England*", available from Resources and waste strategy for England - GOV.UK (www.gov.uk) (accessed 25 April 2023).
[13] GLA London Plan 2021 available from https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021 (accessed 25 April 2023).

2.4.5 Mayor of London guidance

The Mayor of London guidance seeks to assist Applicants in achieving the London Plan targets set out above.

Sustainable Design and Construction Supplementary Planning Guidance (SPG)[14]

This SPG provides guidance on the implementation of London Plan policy 5.3[15] - Sustainable Design and Construction.

Section 2.7 of this guidance, minerals and waste, provides guidance on design and construction stages including pre-fabrication, choice of materials, and managing existing resources.

Circular Economy Statement guidance[16]

The Mayor of London's circular economy statement guidance encourages Applicants to record the source of all waste arisings during construction and monitor using a waste management tool such as SmartWaste.

The guidance applies to the developments in London that are referable to the Mayor, and to which London Plan Policy 2021 SI 7 applies, however boroughs are encouraged to apply the policy's requirements to other developments.

2.4.6 The West London Waste Plan[17]

The West London Waste Plan (WLWP) provides a planning framework for the management of waste produced in the six West London Boroughs of Brent, Ealing, Harrow, Hillingdon, Hounslow and Richmond upon Thames over the period to 2031. The WLWP encourages the minimisation of waste and the use of waste as a resource. Policy WLWP 6: Sustainable Site Waste Management, states that construction, demolition, and excavation wastes should be minimised and then reused or recycled on-site, where practicable and environmentally acceptable.

2.4.7 Local Planning Policy

Local planning policies of relevance to this SWMP are outlined below.

Local Plan Part 1: Strategic Policies (2012)[18]

Part 1 of the Council's Local Plan is the key strategic planning document for Hillingdon and supports the delivery of the spatial elements of the Sustainable Community Strategy. It contains the planning vision and strategy for the Borough as well as the policies that will deliver the Council's vision through to 2026.

Core Policy 8: Environmental Improvement sets out the way that Hillingdon will protect and enhance the environment. One of the Strategic Objectives (SO) within this policy, SO13: Support the objectives of sustainable waste management, identifies the need to minimise waste.

[14] Mayor of London's Sustainable Design and Construction SPG available from https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance-and-spgs/sustainable-design-and (accessed 25 April 2023).
[15] London Plan Chapter 5- Sustainable design and construction available from https://www.london.gov.uk/programmes-strategies/planning/london-plan/past-versions-and-alterations-london-plan/london-plan-2016/london-plan-chapter-five-londons-response/poli-1 (accessed 25 April 2023).
[16] Mayor of London's Circular Economy Statement guidance available from https://www.london.gov.uk/what-we-do/planning/implementing-london-plan/london-plan-guidance/circular-economy-statement-guidance (accessed 25 April 2023).
[17] West London Waste Plan available from https://www.hillingdon.gov.uk/west-london-waste-plan (accessed 26 April 2023).
[18] London Borough of Hillingdon *"Local Plan"* available from https://www.hillingdon.gov.uk/local-plan (accessed 26 April 2023).

Policy EM11: Sustainable Waste Management outlines the Council's requirement for all new development to address waste management at all stages (from design and construction through to the end use and activity on-site), ensuring that all waste is managed towards the upper end of the waste hierarchy.

Local Plan Part 2: Development Management Policies (2020)

The purpose of Part 2 of the Council's Local Plan is to provide detailed policies that form the basis of the Council's decisions on individual planning applications. Chapter 6 sets out a range of policies related to environmental protection and enhancement, including Policy DMIN 4: Re-use and Recycling of Aggregates. This policy states that the Council will promote and encourage the recycling and re-use of construction, demolition and excavation waste.

3. The Site and Proposed Development

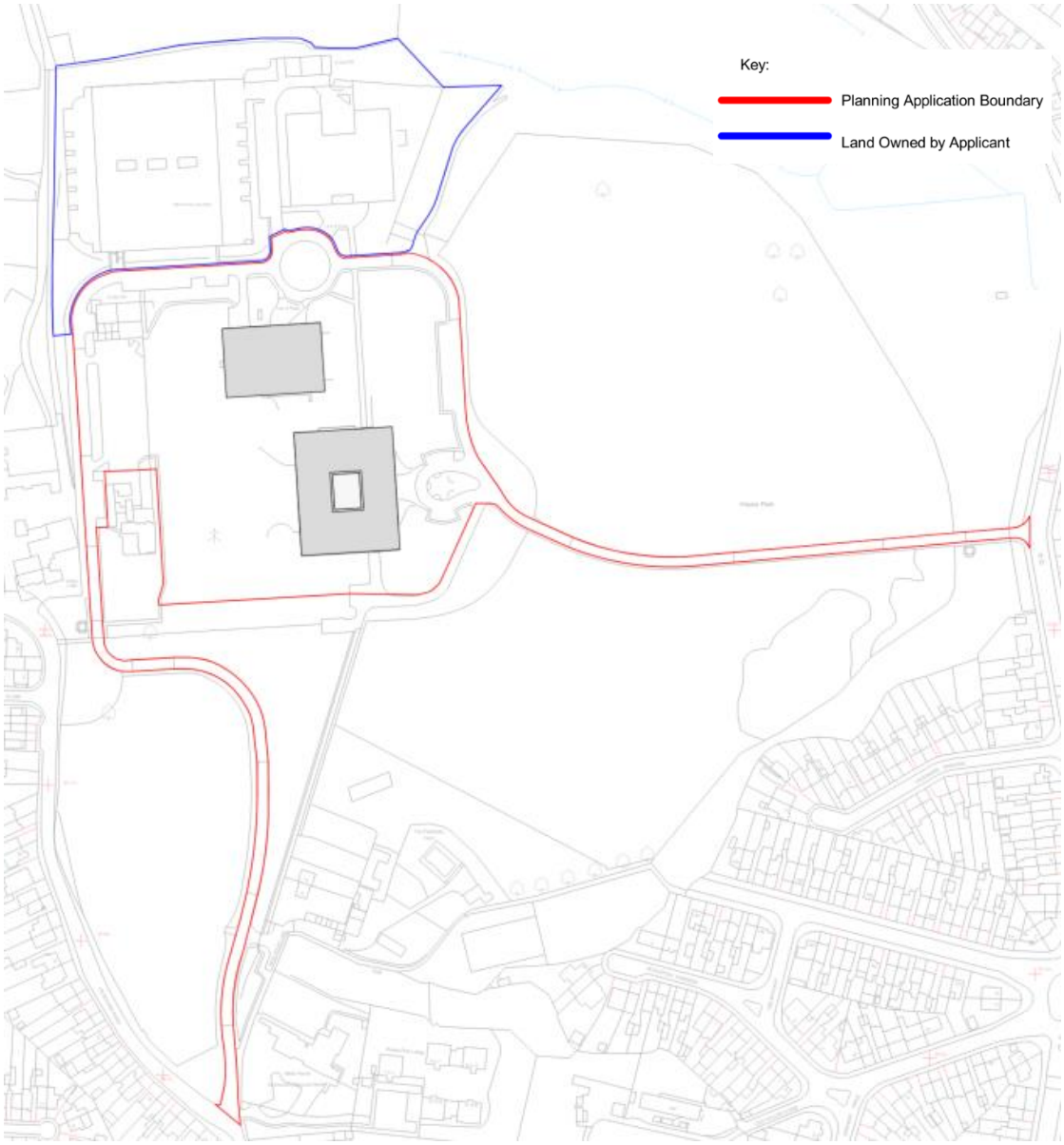
3.1 Site Location and Existing Use

The redline site area (shown in the figure below) is 3.73 hectares (ha) and comprises Hayes Park South, Hayes Park Central, the surrounding grassland area, and the associated car parking and road areas. It is located within a wider former business park known as *"Hayes Park"*. The Hayes Park Central and Hayes Park South buildings are both Grade II* Listed.

The site is bound to the north by Hayes Park North and the adjacent multi-storey car park, with open farmland beyond that. It is bound to the east and south by open parkland, and to the west by agricultural land and the buildings of Home Farm.

The existing layout is shown in the figure below.

Figure 1: Site plan



Source: Studio Egret West plan titled "*Existing Location Plan*", dated 12 May 2023 with file reference "*0419-SEW-ZZ-ZZ-DR-A-000003*".

3.2 Proposed Uses and Areas

The development is described in section 1.2. The development will provide:

- 124 new homes, including 25 x Studios, 40 x 1-bed, 41 x 2-bed, 17 x 3-bed and 1 x 4-bed homes;
- 2.48 ha of open space across the site, including a new playground, a new square, and communal grassed areas surrounding the buildings;
- communal spaces within the buildings, including courtyards and flexible spaces on all levels; and
- 203 cycle parking spaces and 124 vehicle parking spaces.

Proposed uses and areas of relevance to this SWMP are summarised in the table below.

Table 1: Proposed use and area[19]

Use	Proposed gross internal area (GIA) (m^2)
Residential	11,684

3.3 Retained Structures

Elements of the existing structure including the existing foundations, basement and concrete frame will be retained. Hoare Lea, the project sustainability consultant, has prepared the whole life carbon assessment included with the planning application. As part of that work, Hoare Lea has been able to provide the following information on the quantity of materials to be retained, and hence not to arise as demolition waste:

- concrete 4,578 tonnes; and
- steel 411 tonnes

It is noted the estimates are based on assumptions in the carbon assessment tool used and high-level information provided by the cost consultant rather than on detailed site survey for example.

3.4 Enabling Works

Initial activities to prepare for construction are likely to include:

- site set up, including supplying and installing construction compounds and welfare facilities;
- establishing temporary services such as power, lighting and water;
- establishing access; and
- diversion / isolation of existing services (if required).

3.5 Demolition

A pre-refurbishment audit of the refurbishment and partial demolition at Hayes Park was undertaken by WPS Compliance Consulting Ltd (WPSCC Ltd) in April 2023[20] to review potential hazards, assess structural integrity of the buildings, and confirm the possibility of reusing materials. The pre-refurbishment audit is discussed in more detail in section 4.1.

3.6 Groundworks and Excavation

Groundworks and excavation are anticipated. For example, excavation to install improved access for refuse vehicles. It is currently anticipated that existing basement space will be sufficient and will not require extension.

[19] Area schedule from Studio Egret West with file reference *"0419-SEW-ZZ-ZZ-SH-A-0000001"* dated 07 March 2023.
[20] WPSCC Ltd document titled *"Project Hayes Park, Hayes Park, Hayes End Road, Hayes, UB48FE, Pre-Refurbishment Audit"* with file reference "*ICENI PROJECTS PREDEM 05042023 MT FINAL V2*" dated April 2023.

3.7 Construction

Construction is likely to include:

- Installing substructure;
- building superstructure;
- façade and cladding;
- landscaping works;
- internal fit out and finishes; and
- hand over.

4. Estimated Waste Types and Arisings

4.1 Demolition

4.1.1 Anticipated waste types

A list of common demolition wastes is presented in Appendix A.

A pre-refurbishment audit which identifies demolition waste types can be found elsewhere in the planning application.

Some wastes could be hazardous or could become contaminated with hazardous material. These will require special management to prevent environmental harm.

4.1.2 Anticipated arisings

The pre-refurbishment audit estimates 601.51 tonnes of material will be produced from the demolition activities. The audit states that of this 601.51 tonnes, 5.65 (0.94%) is targeted for reuse, 589.96 (98.08%) is targeted for recycling and 5.89 (0.98%) is targeted for disposal.

More detail, including estimates for demolition waste types, can be found in the pre-refurbishment audit.

4.2 Groundworks and Excavation

4.2.1 Anticipated waste types

Anticipated waste types (hazardous / non-hazardous including inert) will be refined using the results of future ground investigations.

4.2.2 Anticipated arisings

The cost plan currently identifies a total excavation waste volume of 2,784cu.m. With an assumed conversion factor of 1.5 tonnes per cu.m, this equates to 4,176 tonnes.

4.3 Construction

4.3.1 Anticipated waste types

A list of common construction wastes is included in Appendix A.

Any hazardous wastes would require special management to prevent environmental harm.

4.3.2 Anticipated arisings

The BRE SmartWaste waste benchmark calculator is often used to estimate types and amounts of construction waste. However, it does not lend itself so readily to refurbishment projects, being more suited to new builds.

Project specific construction waste estimates have been provided by the project sustainability consultant Hoare Lea. The data were derived using the OneClick LCA's Building Circularity tool. Waterman has used the data in order to prepare the table below which summarises types and quantities of construction waste and likely waste management actions. It is noted these waste arisings are those directly related to the materials that will form the permanent works. They do not include packaging wastes for example.

Table 2: Estimated construction waste types, quantities and assumed waste management fates – directly related to construction products in the permanent works

Waste product	Quantity (kg)	Assumed waste management fate
Bitumen and other roofing	185.21	Landfilling (for inert materials)
Brick, common clay brick	547.76	Brick/stone crushed to aggregate (for sub-base layers)
Cables	15.56	Landfilling (for inert materials)
Concrete masonry units (CMU)	11,203.87	Concrete crushed to aggregate (for sub-base layers), Portland Cement 200 kg / m^3
Electrification components and systems	3.27	Metal-containing product recycling (90 % metal)
Fibre cement products	1,285.41	Concrete crushed to aggregate (for sub-base layers), Portland Cement 300 kg / m^3
Hot-dip galvanized/zinc coated steel	234.24	Steel recycling
HVAC components and equipment	1,293.15	Metal-containing product recycling (90 % metal)
Laminate flooring	3,330.34	Plastic-based material incineration
Levelling screeds (for floors)	136,869.99	Cement/mortar use in a backfill
Other steel/iron	1,422.59	Steel recycling
Paints, coatings and lacquers	899.07	Landfilling (for inert materials)
Pipes (water, heating, sewage)	374.03	Metal-containing product recycling (90 % metal)
Plastic membranes	1,169.50	Plastic-based material incineration
Ready-mix concrete for external walls and floors	15,242.07	Concrete crushed to aggregate (for sub-base layers), Portland Cement 300 kg / m^3
Regular gypsum board	71,140.30	Gypsum recycling
Reinforcement for concrete (rebar)	1,760.46	Steel recycling
Resilient flooring	1,304.28	Plastic-based material incineration
Rock wool insulation	16,841.21	Landfilling (for inert materials)
Sandwich panels, metal	1,388.23	Recycling sandwich panel metals (20% metal)
Sealants (silicone and others)	302.76	Landfilling (for inert materials)
Stainless steel	424.42	Stainless steel recycling
Wall and floor tiles	44,255.96	Brick/stone crushed to aggregate (for sub-base layers)
Total (tonnes)	**311.49**	

It should be noted these estimates do not include:

- waste from construction material packaging e.g. pallets, shrink wrap, cardboard, mastic tubes, paint tins etc.;
- construction staff waste – office wastes, canteen wastes, PPE etc.; and
- plant and equipment maintenance wastes – oily rags, oil containers etc.

Therefore, the BRE SmartWaste waste benchmark calculator has been used to estimate quantities of these waste types and so provide a more realistic estimate of construction waste arisings:

The waste benchmark calculator estimations in the table below are based on the GIA presented in Table 1 and the BRE SmartWaste category *"Houses / Flats / Apartments (Residential)"* with professional judgement used to select waste types likely to be attributed to the waste streams not captured in the OneClick data. Indicative waste management actions for each predicted waste stream are also shown in the table below.

Table 3: Estimated construction waste types, quantities, and proposed waste management actions – packaging waste, staff related wastes etc.

Waste product	Quantity (tonnes)	Proposed waste management action
Packaging materials	49.12	Likely despatched as part of mixed waste stream. Send to sorting facility able to process mixed construction waste to first recover recyclable materials such as metals, hard materials, timber, cardboard. The residual waste from this process is despatched as refuse derived fuel – so for energy recovery.
Timber	149.75	Segregate on-site and despatch for recycling (clean grade A wood used in e.g. particle board manufacture) or recovery (lower grade wood used as biomass fuel)
Electric and electronic equipment (non-hazardous)	0.67	Segregated on-site for removal by specialist contractor for recovery
Furniture	0.20	Likely despatched as part of mixed waste stream (see above)
Canteen / office / ad-hoc waste	18.45	Likely despatched as part of mixed waste stream (see above)
Liquids	0.94	Segregated on-site for removal by specialist contractor for recovery
Oils	0.28	Segregated on-site for removal by specialist contractor for recovery
Hazardous waste	10.74	Hazardous waste from the works will be limited to construction product packaging containing traces of products that are classified as hazardous. For example, mastic tubes and paint pots. These wastes will be placed is dedicated containers on-site for removal by the chosen waste management partner for the project. Waste management contractors are available who apply the waste hierarchy and recover such wastes rather than dispose.
Grand total	**230.15**	

All data presented in this section should be used for guide purposes only.

4.4 Summary for Circular Economy Statement

The table below sets out the London Plan policy targets for construction phase wastes for the purposes of circular economy statement reporting:

Table 4: London Plan Policy SI 7 targets construction phase waste streams

Waste Stream	Policy Requirement
Demolition waste materials (non-hazardous)	Minimum of 95% diverted from landfill for reuse, recycling or recovery
Excavation waste materials	Minimum of 95% diverted from landfill for beneficial reuse
Construction waste materials	Minimum of 95% diverted from landfill for reuse, recycling or recovery

The waste prevention achieved by the retention of parts of the structure as set out in section 3.3 is also notable.

4.4.1 Demolition waste

An estimated 601.51 tonnes of waste will be produced from the demolition activities. Of this, 5.65 (0.94%) is targeted for reuse, 589.96 (98.08%) is targeted for recycling and 5.89 (0.98%) is targeted for disposal. The diversion from landfill target of 95% should be achieved.

These figures and fates will be refined as the design progresses.

4.4.2 Excavation waste

It is estimated 4,176 tonnes of excavation waste will arise. Whilst waste classification assessments are yet to be undertaken, it is assumed much of the excavation arisings will either be suitable for recycling (e.g. external hard surfaced areas) or for use in backfilling or earthworks – either authorised as a waste recovery activity or as an inert landfill. The restoration of mineral workings by inert landfilling in our view being a beneficial use of inert waste. The diversion from landfill for beneficial reuse target should be achieved.

These figures and fates will be refined as the design progresses and the waste classification assessment is completed.

4.4.3 Construction waste

It is estimated 542 tonnes of construction waste will arise. The Applicant will require the Principal Contractor to appoint a waste management contractor that is able to provide a minimal (non-hazardous) waste to landfill service such that at least 95% of the waste will be reused, recycled or recovered. For the purposes of circular economy statement reporting wastes that would be expected to be recycled (e.g. blocks etc into recycled aggregates) amount to 151 tonnes (28%), recycled or recovered (depends on degree of contamination or market available to waste management contractor for example) amount to 373 tonnes (69%). In addition, it is our view inert landfilling is a beneficial use of inert waste that cannot be recycled into aggregate for example and therefore the balance of the waste predicted to arise which would go to inert landfill should be viewed in that context (18 tonnes – 3%). The diversion from landfill for beneficial reuse target should be achieved.

These figures and fates will be refined as the design progresses.

5. Waste Minimisation and Management Measures, Targets and Monitoring

It is recognised there is an opportunity to reduce the use of natural resources through the detailed design processes, procurement, and construction. The following measures and targets are applicable to all phases of the development.

5.1 WMM Measures

5.1.1 Design and Specification

The design will consider the use of:

- retaining existing features where possible;
- reusing waste that is created as much as possible;
- modern construction methods;
- prefabricated materials, standardised modulation components, or low waste fabrication techniques where feasible; and
- recycled materials from local or sustainable sources where available.

5.1.2 Procurement

The Applicant will ensure the Principal Contractor is aware of appropriate WMM measures through the tendering and contract processes. It will ensure drawings are adequately specified and dimensioned so that accurate quantities of materials can be ordered. It will maintain a role in the management of the supply chain during construction to encourage opportunities to minimise waste.

Communication with suppliers would be undertaken to:

- reduce over-ordering;
- specify materials to be delivered with minimum packaging and to seek recyclable packaging;
- encourage waste minimisation opportunities such as bulk buying;
- return reusable packaging to the supplier;
- use and / or recycle off-cut material; and
- return surplus materials to supplier e.g. plasterboard.

5.1.3 Waste Classification

Waste classification technical guidance[21] will be applied to ensure wastes are correctly classified. Correct classification enables informed decisions to be made, including in the context of the waste hierarchy and enables the duty of care to be applied.

The technical guidance requires that within a mixed waste the separately identifiable wastes are assessed separately. Mixing hazardous waste, including mixing different types of hazardous waste or mixing hazardous waste with other waste substances, is prohibited under the Hazardous Waste Regulations 2005. Wastes that have been mixed must be separated whenever possible.

Waste disposal will be minimised as much as possible, in line with the waste hierarchy. However, if demolition, excavation, or construction waste is to be disposed of, it requires pre-treatment before disposal at landfill. Pre-treatment must be a physical, thermal, chemical, or biological process (including sorting on-site) that changes the characteristics of the waste to reduce its volume, reduce its hazardous nature, facilitate its handling, and enhance its recovery.

[21] Technical Guidance WM3 available from https://www.gov.uk/government/publications/waste-classification-technical-guidance (accessed 25 April 2023).

Before a waste can be accepted at a landfill site, the landfill operator must be satisfied the waste meets:

- its permit conditions;
- waste acceptance procedures (WAP); and
- waste acceptance criteria (WAC).

If disposal to landfill is the best management option, the waste producer must follow these procedures or the operator may refuse to accept the waste.

Before a waste producer can take waste to a landfill site for disposal, they need to check the landfill site has the appropriate permit[22] and must have completed the following:

- duty of care transfer note / hazardous waste consignment note;
- pre-treatment declaration form;
- basic characterisation of the waste, to include:
  - description of the waste;
  - waste code (using List of Wastes[23]);
  - composition of the waste (by testing, if necessary); and
  - WAC testing (if required).

5.1.4 Demolition

Before

Prior to any demolition works, a pre-refurbishment audit was undertaken to identify and maximise material that could be saved or recycled. The result of this audit is often known as a Demolition Bill of Quantities.

The purpose of the audit was to:

- specify types of materials;
- estimate the amount of material expected;
- record the condition of materials. Cleaner material is easier to recycle;
- identify potential applications for the reuse and recycling of demolition materials; and
- identify possible contamination by hazardous materials like asbestos or lead. These materials will limit reuse / recycling options and are more likely to require disposal.

During

Soft strip before demolition allows items to be reclaimed for use on-site or sold to a reclamation yard (or equivalent). The construction programme should allow time for this reclamation to take place. Materials potentially suitable for reuse and / or salvage are identified in the pre-refurbishment audit.

Accurate data records on all demolition waste arisings and management routes should be added to the SWMP.

5.1.5 Excavation

Before

A waste classification assessment should be carried out when the extent of excavation (and so waste arising) is established. This should minimise the volume of hazardous waste excavated and maximise opportunities for reuse or recovery.

[22] See https://www.gov.uk/guidance/waste-environmental-permits (accessed 25 April 2023).
[23] More information about the List of Wates, or European Waste Catalogue codes, is available from https://www.gov.uk/how-to-classify-different-types-of-waste (accessed 25 April 2023).

A MMP should be prepared if excavated material is to be reused.

During

If feasible in terms of space and programme, suitable material for use in landscaping may be retained.

Any excavated material will be handled carefully. Excavated soils will be analysed and classified prior to despatch from the site.

5.1.6 Construction

Before

The Applicant / Principal Contractor will develop a detailed construction SWMP that:

- identifies likely hazardous waste and procedures for management;
- identifies registered waste carriers, authorised recycling facilities, and authorised waste management contractors;
- instructs how to check valid authorisation of these waste carriers / contractors; and
- ensures detailed procedures are in place for the transfer of waste to registered carriers and that all contractors, including subcontractors and their personnel, are fully aware of those procedures.

The Principal Contractor must ensure:

- responsibility for waste management is assigned;
- the responsible party has the necessary training and authority to ensure compliance;
- waste is stored in accordance with relevant legislation, notably section 34 Environmental Protection Act 1990;
- waste collection is undertaken only by registered waste carriers;
- waste is deposited at authorised treatment and disposal sites;
- when waste is removed from site the following information is recorded:
  - the quantity of waste leaving (volume or tonnage);
  - the identity of the person removing the waste;
  - the relevant waste carrier registration number;
  - a written description of the waste; and
  - the destination of the waste and its fate in terms of the waste hierarchy.
- resources are reused within the site where possible;
- waste segregation is undertaken as appropriate following assessment of waste types and quantities to arise at various stages of the project and the local waste reprocessing market;
- waste is sorted and recycled on-site into as many of the following categories as possible / practical;
  - cardboard / paper;
  - concrete;
  - glass;
  - gypsum / plasterboard;
  - hazardous e.g. chemicals and oils
  - inert / hardcore;
  - metals;

- miscellaneous;
- plastics; and
- timber;

- on-site segregation receptacles are marked, clearly signposted, and easily accessible;
- on-site segregation is considered in the first instance. If this is not possible, off-site sorting of mixed wastes should be undertaken in preference to disposal; and
- a quick wins approach is adopted. This should target waste with high impact on cost. It should focus on moving from disposal to recycling / recovery. Waste timber (from formwork) and plasterboard off cuts are often chosen.

Quick wins can offer significant cost savings to the project. WRAP identifies a waste recovery quick win as: "*an improvement in recovery (reuse or recycling) for a specific construction waste material which will deliver a higher than standard practice recovery without increasing costs, preferably with a cost saving*"[24].

During

The Principal Contractor is encouraged to recycle and reuse locally available construction, demolition, and excavation waste materials.

The Principal Contractor should arrange audits to:

- ensure waste actually reaches its planned destination; and
- record amounts of waste reused, recycled, recovered and sent to landfill against targets.

The Principal Contractor should seek to establish a strong partnership with a waste management contractor from the outset to enable fast flow of data returns after collection.

At least every six months during construction works the Principal Contractor should review the plan, record the types, quantities and disposal method of all wastes, and subsequently update the plan as necessary.

5.2 WMM Targets

5.2.1 Best and Good Practice Recovery Rates

WRAP guidance details standard, good practice, and best recovery rates. These are summarised in Table 5.

Before works start, waste targets will be set by the Applicant. Due consideration will be given to the rates below. Standard recovery rates should be adopted as the minimum.

[24] WRAP, *Practical solutions for sustainable construction: Waste Recovery Quick Wins: Improving recovery rates without increasing costs*, July 2007, page 8.

Table 5: Standard, good and best practice recovery rates by material, extracted from WRAP guidance

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

Notes from the WRAP guidance:

** "This is a required recovery target for the type of WEEE likely to be produced from construction sites e.g., lighting (Waste Electrical and Electronic Equipment (WEEE) Regulations 2013)"*

*** "This cannot be 100%, as some hazardous waste (e.g., asbestos) must be landfilled."*

5.3 WMM Monitoring

The Principal Contractor will review the SWMP at least every month. It will check it meets the needs of the project's WMM and recycling rates. Quantities of waste reused, recycled, recovered, incinerated, or landfilled will be recorded. A comparison should be made with estimated waste arisings where relevant. Targets should be adjusted / improved where possible.

6. Roles and Responsibilities

The responsibilities of each party in the development and monitoring of the SWMP are outlined in the table below.

Table 6: Roles and responsibilities

Organisation	Timeframe	Responsibilities
The Applicant: Shall Do Hayes Developments Limited		The overriding responsibility for ensuring that a SWMP is prepared and implemented lies with the Developer. However, on appointment of a Principal Contractor, responsibility is shared.
	Pre-construction	• ensure updated SWMP is prepared before any construction work begins and ensure it is clear and comprehensive; • appoint Principal Contractor, provide a copy of this planning stage SWMP to the Principal Contractor; • require a pre-demolition / pre-refurbishment audit (completed by WPS Compliance Consulting Ltd) to identify materials that could be salvaged and reused; and • require soft strip of the existing buildings before demolition.
	During construction	• alongside Principal Contractor, update SWMP as project progresses and ensuring effective implementation; • pay waste contractors only when evidence of delivery at an authorised site is provided; and • undertake periodic checks and audits.
	Post Construction	• require Principal Contractor to produce detailed SWMP; • keep a copy of SWMP for two years; and • together with Principal Contractor undertake a review of waste arisings and fate against estimated waste arisings and identify strengths and weaknesses of waste management method. And explore opportunities for future improvement.
Author: Waterman	Pre-construction	• Preparation of SWMP (this document).
	Construction / post construction	Not applicable – responsibility for updating and implementation should lie with the Applicant / Principal Contractor.
Principal Contractor: To be confirmed	Pre-construction	• review and update SWMP; • produce MMP for any excavation waste that is proposed for reuse; • undertake pre-demolition / pre-refurbishment audit (completed by WPS Compliance Consulting Ltd) to identify materials that could be salvaged and reused; and • undertake a soft strip of the existing buildings before demolition.
	During construction	• ensure SWMP is kept at either the site office, or a central location, and ensure it is available to all contractors and that its location is known; • ensure subcontractors adhere to the SWMP; • provide induction and training to all workers, and brief subcontractors; • make and maintain arrangements to ensure cooperation and develop and promote sustainable waste management and monitoring of effectiveness;

Organisation	Timeframe	Responsibilities
		• ensure waste produced during construction is reused, recycled or recovered; • review and update the SWMP to record all waste removed from site: – identity of person removing waste and the waste carrier registration number; – copy of written description of waste; and – the site the waste is being taken to and whether it is permitted or exempt. • update the plan (a minimum of every six months and recommended every three months) to record types and quantities of waste that is: – reused (whether on or off-site); – recycled (whether on or off-site); – sent for recovery (physical sorting, chemical biological treatment, composting, incineration with energy and remedial treatment of soil) (whether on or off-site); – landfilled; and – disposed of by other means (including burning without recovery or where quantities of mixed waste that are landfilled, reused, recycled or recovered are not known). • review waste quantities against estimated waste arisings every month; and • set up a recycling centre on-site to facilitate achieving highest recycling rates.
	Post construction	Within three months the following would be undertaken: • confirm the plan has been monitored and updated as required; • explain differences between estimated waste arisings and likely destination of waste and actual performance. • estimate likely cost savings that have been achieved by implementing the SWMP; and • a copy of SWMP would be kept for two years at place of work or site office. Other responsibilities: • undertake review of waste arisings and disposal method against estimated waste and arisings and identify strengths and weaknesses of waste management method, and opportunities for future improvement.

7. Training and Communication

The Applicant / Principal Contractor will provide regular training to staff and contractors to enable them to stay compliant with the SWMP. Training will be provided in the form of inductions or toolbox talks, for example.

The table below offers a template to help identify relevant training and communication activities, and how to record these have been undertaken.

Table 7: Summary of training record

Task	Details	Responsibility
Ensure all staff and subcontractors (where relevant) are briefed on waste management practices and the SWMP as part of induction and ensure attendance.		
Place information boards on waste management practices in accessible locations (e.g. in the canteen).		
Distribute a copy of the SWMP to all key personnel each time it is updated including where relevant: • Client; • Principal Designer; • Site manager; and • Subcontractor(s).		
Undertake inspections and independent audits to ensure waste management is being undertaken in accordance with legislation and to identify if targets are being met.		
Provide update bulletins outlining results of audits and performance against reuse and recycling targets.		
Provide appropriate training and ensure it is up to date.		

APPENDICES

A. Common Construction and Demolition Waste Codes

The list below is available online from the Gov.uk website[25]. You can find additional codes for other waste and advice on how to apply these codes in the Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste.

An asterisk (*) at the end of a code means the waste is hazardous.

Insulation and asbestos materials

Waste type	Waste status	Waste code
Insulation containing asbestos	Hazardous	17-06-01*
Other insulation containing hazardous substances	Hazardous	17-06-03*
Other insulation materials	Non-hazardous	17-06-04
Other construction materials containing asbestos	Hazardous	17-06-05*

Concrete, bricks, tiles and ceramics

This list excludes asbestos-containing materials – refer to the insulation and asbestos materials table for any waste with asbestos.

Waste type	Waste status	Waste code
Concrete	Non-hazardous	17-01-01
Bricks	Non-hazardous	17-01-02
Tiles and ceramics	Non-hazardous	17-01-03
Concrete, bricks, tiles and ceramics (alone or in mixtures) containing hazardous substances	Hazardous	17-01-06*
Concrete, bricks, tiles and ceramics in mixtures, containing no hazardous substances	Non-hazardous	17-01-07

Wood, glass and plastic

This list excludes packaging wastes and domestic type recyclables - refer to the packaging section for related codes.

Waste type	Waste status	Waste code
Wood - untreated	Non-hazardous	17-02-01
Glass - uncontaminated	Non-hazardous	17-02-02
Plastic - excludes packaging waste	Non-hazardous	17-02-03
Treated wood, glass, plastic (alone or in mixtures) containing hazardous substances	Hazardous	17-02-04*

[25] Gov.uk *Classify different types of waste,* available at: https://www.gov.uk/how-to-classify-different-types-of-waste/construction-and-demolition-waste (accessed 25 April 2023).

Bituminous mixtures, coal tar and tar

Waste type	Waste status	Waste code
Bituminous mixtures containing coal tar	Hazardous	17-03-01*
Other bituminous mixtures	Non-hazardous	17-03-02
Coal tar and tarred products	Hazardous	17-03-03*

Metallic waste, including cable

Waste type	Waste status	Waste code
Copper, bronze and brass	Non-hazardous	17-04-01
Aluminium	Non-hazardous	17-04-02
Lead	Non-hazardous	17-04-03
Iron and steel	Non-hazardous	17-04-05
Tin	Non-hazardous	17-04-06
Mixed metals	Non-hazardous	17-04-07
Metals containing hazardous substances	Hazardous	17-04-09*
Cables containing oil, coal tar and other hazardous substances	Hazardous	17-04-10*
Other cables	Non-hazardous	17-04-11

Soil, contaminated soil, stones and dredging spoil

You must be able to prove that your waste does not contain any hazardous substances to classify soil as non-hazardous. You will always need to assess the soil before you hand it over to be collected.

The presence of any fragments of asbestos-containing material in the soil results in a mixed hazardous waste – refer to the insulation and asbestos materials table for more guidance.

Waste type	Waste status	Waste code
Soil and stones containing hazardous substances	Hazardous	17-05-03*
Other soil and stones	Non-hazardous	17-05-04
Dredging spoil containing hazardous substances	Hazardous	17-05-05*
Other dredging spoil	Non-hazardous	17-05-06

Gypsum

Waste type	Waste status	Waste code
Gypsum materials containing hazardous substances	Hazardous	17-08-01*
Other gypsum materials	Non-hazardous	17-08-02

Cement

Waste type	Waste status	Waste code
Un-used or un-set cement	Hazardous	17-09-03*

Paints and varnishes

Waste type	Waste status	Waste code
Containing organic solvents or other hazardous substances	Hazardous	08-01-11*
Not containing organic solvents or other hazardous substances	Non-hazardous	08-01-12
Paint or varnish remover	Hazardous	08-01-21*
Paint cans	Hazardous	Refer to packaging waste and recyclables section

Adhesives and sealants

Adhesives and sealants of a type normally used by householders can be classified under the codes indicated in brackets if separated out from other waste.

Waste type	Waste status	Waste code
Containing organic solvents or other hazardous substances	Hazardous	08-04-09* (20-01-27*)
Not containing organic solvents or other hazardous substances	Non-hazardous	08-04-10 (20-01-28)
Adhesive or sealant containers	Hazardous	Refer to packaging waste and recyclables section

Our vision

"Engineering a better environment for people and the planet"

Our mission

"To solve complex problems for the benefit of clients, communities and the climate"

Our values

People orientated

Individually and collectively, people are our business.
We strive to create environments for everyone to flourish and thrive.

Flexible

Pragmatic by nature and dedicated to getting the job done to the highest possible standard.

Professional

Operating at pace with integrity to deliver technical and robust solutions.

Environmentally aware

We understand our responsibility to the environment, it shapes our decision making and informs our practice.

Innovative

Our forensic questioning provides the ability to deliver appropriate innovations at every stage on every project.

Relationship focused

We value individuality and the benefits of working collaboratively to achieve positive outcomes for all.