- Set the level of the building to minimise export of spoil.
- Plan for the re-use of spoils to form landscape features.

5.7 The following actions will be taken by the Principal Contractor in order to reduce the amount of waste generated throughout the project:

- Order the correct materials, as specified.
- Order the correct quantity of materials.
- Deliver materials at the appropriate time (just in time delivery).
- Encourage suppliers to use less packaging.
- Store and handle materials correctly.
- Ensure protection of finished works.
- Follow the suppliers' storage instructions.
- Keep harmful chemicals in secure bunded areas.
- Protect lightweight materials from wind.

Re-Use Materials

5.8 Where possible, surplus materials should be re-used on the site. Where materials are surplus to requirements on-site (such as soils), there may be a requirement for them to be recovered off-site at other projects. Materials can be sold on by the Principal Contractor, or donated.

Recycling Waste

5.9 Wherever possible, waste will be segregated before being removed from site, with skips and bins clearly labelled. This prevents specific waste streams from becoming contaminated and ensuring they are ready for recycling. However, due to the limited storage area on typical construction sites, a general waste skip may be used for all waste generated (other than Gypsum products) and separation will be carried out off-site at a Waste Transfer Station. Waste will either be diverted for reuse or recycling or disposed of at landfill.

5.10 It is critical that waste separation is relayed to the Site Manager by the operators of the Waste Transfer Station in order to ensure that accurate data is recorded in the SWMP. Where possible, smaller waste materials, such as that from the canteen and the office, should be segregated and recycled separately at the nearest Local Civic Amenity point or other recycling centre. This is to include the recycling of plastic, paper, cardboard, cans and other waste.

Waste to Landfill

5.11 This is a last resort option. Landfill disposal is expensive, and it is accompanied by high disposal costs in the Landfill Tax.

6. WASTE TYPES, QUANTITIES AND TARGET SETTING

Construction Stage Waste Targets

6.1 Waste related targets for the Site will be set by the Applicant. Overall construction and operational waste targets will be set, as well as specific targets developed for each waste stream. These are specified in the section below.

6.2 The following targets will be set:

- Diversion from landfill - 95% by volume.
- Incorporate an effective incident reporting system to reduce near misses with a target of zero environmental incidents.

6.3 The use of recycled content and secondary aggregates must be encouraged and given priority, reducing the demand for virgin material and optimising material efficiency in construction. Recommended at:

- Concrete (up to 10% recycled aggregate content, and/or 10% cement replacement with Ground Granulated Blast-furnace Slag (GGBS). The latter figure can be increased to above 40% for all mixes providing longer curing time can be accommodated in the construction process).
- Blockwork (at least 50% recycled content).
- Insulation (at least 50% recycled content).
- Plasterboard (at least 95% recycled content).

Demolition Waste Segregation and Diversion Targets

6.4 The project involves the refurbishment of the existing office facility to a post operative healthcare facility, within the existing structure. The proposed changes to the office building to convert it into a medical care facility will be minimal, with no major changes to the external facade. The existing ceiling heights are adequate for most medical uses, so no structural changes are required. The interior of the building will need to be renovated to accommodate the needs of a medical facility. This will include the creation of exam rooms, waiting areas, and treatment rooms. The glazed façade of the building will be retained, with only minor changes to the signage and lighting.

6.5 Therefore, minimal demolition waste is expected to be produced during strip out of the existing facility. Demolition (strip out) waste generated as a result of the Proposed Development should be

repurposed where possible in line with the waste hierarchy above and, at a minimum, target a landfill diversion rate of 95% of the total volume (m^3).

6.6 Further review is required once the Principal Contractor is appointed.

Construction Waste Segregation and Diversion Targets

6.7 The Building Research Establishment (BRE) has developed indicators to aid in the calculation of construction waste arisings at the design of a new development. The Environmental Performance Indicator (EPI) measures tonnes of waste / 100m^2 of gross floor area. Table 6.1 shows the EPIs from the BRE.

Table 6.1 Construction waste benchmarks

Project Type	Tonnes / 100m^2 gross floor area
Residential	15.3
Commercial Retail	15.7
Commercial Offices	12.4
Education	14.9
Leisure	14.8
Industrial Buildings	12.4
Healthcare	13.0

Notes: Data taken from BRE Waste Benchmark Data (issued October 2017)

6.8 Tables 6.2 below shows the estimated construction waste arisings for the Proposed Development, based on the indicative Gross Internal Area (GIA) and the applicable BRE benchmarks. It should be noted that, as the Proposed Development seeks to undertake works on an existing building, the estimated construction waste arisings calculated below represent a worst-case scenario, as they are based on metrics prescribed for new build development.

Table 6.2 Estimated Construction waste

Total GIA (m^2)	BRE project type	Tonnes / 100m^2 gross floor area (BRE)	Estimated construction waste (tonnes)
10,361	Healthcare	13.0	1,347
Total	-	-	1,347

6.9 It is estimated that approximately 1,347 tonnes of waste may arise from the construction of the Proposed Development. Over the duration of the construction works (expected to commence in June 2024 and be completed by December 2025), waste generation is likely to vary significantly according to the programme and phasing.

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

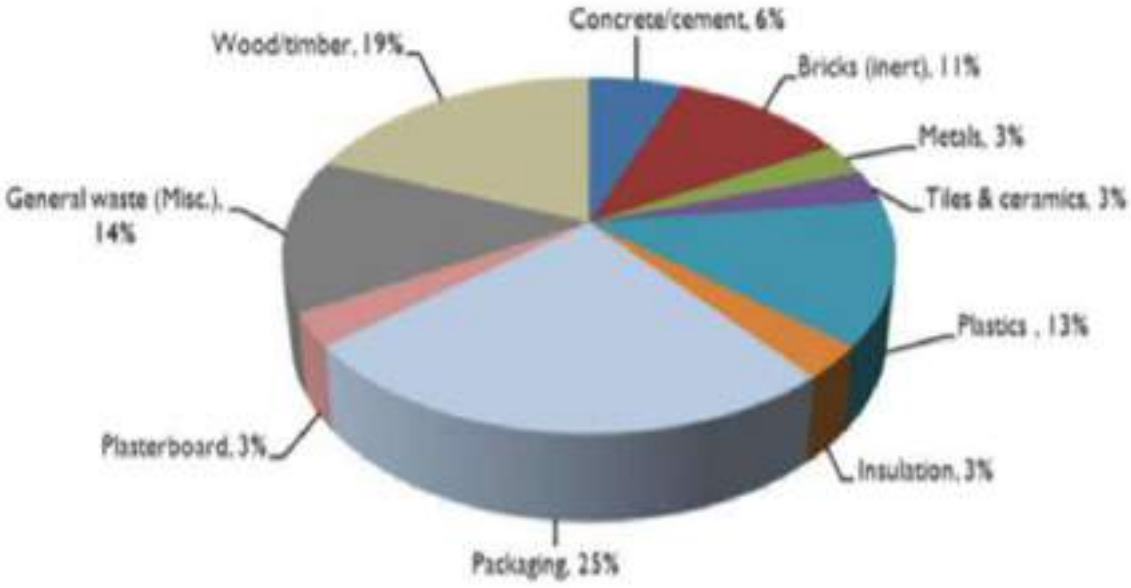
Identification and Classification of Waste

6.11 Prior to the start of works and/or upon the introduction of a new waste stream, the SWMP Owner will identify and classify waste materials leaving site by reference to a six-digit European Waste Catalogue (EWC) code and associated description as required by the List of Wastes (England) Regulations 2005 (LoWR). Waste can be solid, liquid or sludge.

Predicted Waste Streams

6.12 Figure 6.1 below illustrates the estimated composition of construction waste arisings for the Proposed Development, based on data from UK construction projects of a similar nature.

Figure 6.1 - Estimated Construction Waste Composition (Source: SmartWaste)



6.13 Table 6.3 below shows the standard, good and best practice recovery rates for typical construction materials.

Table 6.3 Recovery rates for typical construction materials

Material	Standard recovery* %	Good practice recovery* (quick win) %	Best practice recovery* %
Timber	57	90	95
Metals	95	100	100
Plasterboard	30	90	95
Packaging	60	85	95
Ceramics	75	85	100
Concrete	75	95	100
Inert	75	95	100
Plastics	60	80	95
Miscellaneous	12	50	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***
* Proposed waste management actions			
‘Reuse’ and ‘recycling’ are forms of waste recovery			
** This is a required recovery target for the type of Waste Electrical and Electronic Equipment (WEEE)			

6.14 It should be noted that typical hazardous materials from construction sites that fall within the HWR include:

- Treated wood, glass, plastic (alone or in mixture) containing dangerous substances;
- Bituminous mixture containing coal tar and other dangerous substances;
- Metals containing oil, coal tar and other dangerous substances;
- Cables containing oil, coal tar and other dangerous substances;
- Rubble or hardcore containing dangerous substances;
- Soil, stones and dredging spoil containing dangerous substances;
- Gypsum materials such as plasterboard containing hazardous materials;

- Unused or unset cement;
- Paints and varnishes containing organic solvents or other dangerous substances;
- Paint or varnish remover;
- Adhesives and sealants containing organic solvent or other dangerous substances; and
- Empty packaging contaminated with residues of dangerous substances e.g. paint cans.

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

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

6.17 This section will be reviewed and amended as required once the Principal Contractor is appointed.

Operational Waste Targets

6.18 A target for the amount of waste to be diverted from landfill for operational waste has been set at 65% of the total volume (m^3). The following actions have been identified to achieve this:

- Provision of on-floor bins in various locations throughout the building, with waste segregation at source to be considered.
- Separate bin storage for recyclable waste to be provided.
- Provision of waste storage areas at each level of the building.
- Bin removal strategy and access to bin stores to be considered.

6.19 In compliance with the relevant guidance, standards and legislations, appropriate receptacles for the collection of residual, dry recycling and healthcare related waste streams will be provided. It is recommended that at least 65% of the total storage capacity for non-healthcare related waste streams is allocated for recycling.

7. WASTE MANAGEMENT MEASURES

Construction Phase Waste Reduction Measures

7.1 This section presents a number of measures that may be implemented during the construction of the Proposed Development in order to minimise the amount of waste arising. Appendix A3 identifies additional measures for reducing waste during specific elements of the construction phase. This document will be further developed once the Principal Contractor has been appointed.

7.2 The waste hierarchy identified above will be followed throughout the construction phase. Good practice actions to reduce waste and subsequent actions identified during construction will be recorded within A2. This will seek to minimise the production of waste throughout the project.

Storage and Segregation

7.3 Where space allows, an area for the storage of off-cuts and surplus materials will be created with appropriate packaging and weatherproofing to keep them in usable order so that these materials can be reused on site or stored for reuse on another project.

7.4 All waste will be stored securely on site and during transportation to prevent pollution, contamination, fly tipping and nuisance complaints. A waste management compound will be established within the site perimeter taking into account the sensitivity of the surrounding area and characteristics of the waste types produced on site. This will be accessible to on-site staff and waste removal to facilitate re-use, recycling and recovery of waste. Signs will be placed throughout the relevant areas of the site directing individuals to the location of waste storage areas.

7.5 The Applicant will also adhere to the following requirements:

- Waste will be segregated into hazardous, non-hazardous and inert waste. Waste materials will be classified in accordance with the LoWR and segregated onsite according to European Waste Classification (EWC) codes.
- There will be an adequate number of containers of an appropriate size and type for the collection and segregation of waste. Suitable containers may include: Wheelie bins: 240ltr, 360ltr, 660ltr; Skips: 8YD, 12YD, 16YD.
- Waste containers will be covered with netting, sheeting or lids to prevent the escape of waste and the contents from getting wet e.g., from rain and on-site water use.
- Storage areas for raw materials and assembly areas for construction components will be located away from sensitive receptors.

- All waste containers will be clearly labelled with appropriate segregation stickers as per the Institution of Civil Engineers (ICE) colour coding. Each will be labelled with the relevant waste segregation sign to help reduce mixed waste skips.

- During the internal strip out and fit out phases, wheelie bins or a practical alternative will be provided on each floor and labelled with segregation signs for each relevant waste stream being produced. Once full, these bins are to be transported to the designated waste consolidation area.

- Regular checks on site will be conducted for litter and damage to waste containers, such as leaks.

- Temporary offices and work compounds on-site will retain all details relating to the waste strategy for the site, health and safety and monitoring and reporting details.

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

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

Earthworks

7.8 Where excavations required for landscaping works encounter both Made Ground and the underlying natural soils, the soils should be segregated prior to subsequent testing for either disposal off-site or reuse on site (under The Definition of Waste: Development Industry Code of Practice).

7.9 If off-site disposal is required, classification of surplus arisings should be carried out in line with the requirements of Technical Guidance WM3, including analysis of the total concentrations of polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, metals and pH and waste acceptance criteria (WAC) analysis. If asbestos is identified in the sample, asbestos quantification testing should be undertaken.

7.10 Where practicable, clean excavated material will be reused on-site within the proposed landscaping works.

7.11 Any material that cannot be reused on-site will be removed by licensed waste carriers and sent for treatment or disposal (as appropriate) at appropriately licensed facilities.

Gypsum Waste

7.12 Any waste containing any amount of Gypsum that is sent to landfill must go to a separate cell for high sulphate waste. Therefore, it is imperative that Gypsum waste is separated from other waste.

7.13 The following measures will be implemented to address this:

- A dry storage area will be set aside for bagged plaster mix. This will reduce wastage and may save money.
- Mixed or dry plaster should not be washed into drains or surface waters as this can cause water pollution.
- Clean, uncontaminated plasterboard will be recycled.
- Wet, mixed plaster should be left to go off before disposal. Liquid waste cannot be disposed of at landfill sites.
- Plaster, plasterboard and other Gypsum products will be separated from general waste, as they contain high levels of sulphates.

Landfill

7.14 Indicative lists of landfill sites and transfer / treatment facilities that have the potential to receive waste from the Proposed Development can be found at Appendix A4. It should be noted that the specific waste facilities that will be used during construction phases will not be known until the Principal Contractors had been appointed.

Sustainable Selection of Construction Materials

7.15 A sustainable materials selection strategy should be prepared prior to construction. Measures should be taken, such as face-to-face 'toolbox talks' and provision of clear operational instructions, to ensure that contractors are committed to the operation of good practice measures on-site with emphasis on continual improvement and identifying appropriate opportunities to reduce waste, promote recycling and use recyclable materials. The ordering of appropriate, minimum amounts of building materials should be part of the materials selection strategy.

Promotion of Best Practice

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