

YMCA TOTTENHAM LANE

OUTLINE SITE WASTE MANAGEMENT PLAN

PROJECT NO. 25/233 DOC NO. D013

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1 INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 This Outline Site Waste Management Plan (SWMP) has been prepared by Velocity Transport Planning, on behalf of YMCA London City and North ('the Applicant') to support a planning application for the development at YMCA, 184 Tottenham Lane, London, N8 8SG, hereafter referred to as the 'Proposed Development,' in the London Borough of Haringey (LBH).

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

1.2 SITE LOCATION AND CONTEXT

1.2.1 The site currently operates as a YMCA hostel for young people, as well as ancillary functions. The existing accommodation is no longer fit for purpose and the buildings currently fail to meet the YMCA's hostel requirements.

1.2.2 The site is located in Crouch End and sits at the junction of the A103 Tottenham Lane, Elmfield Avenue and Roseberry Gardens.

1.2.3 The site is bound by the A103 Tottenham Lane to the south, Elmfield Avenue to the east, Roseberry Gardens to the west, and residential properties and their rear gardens to the north.

1.2.4 The site location is shown in **Figure 1-1** below.

Figure 1-1 Site Location



1.3 PROPOSED DEVELOPMENT

1.3.1 The Proposed Development is described as follows:

“Demolition of the existing building and erection of a new, improved hostel facility with ancillary office, training and communal facilities within a part four to part six storey building.”

1.4 CIRCULAR ECONOMY CONSIDERATIONS

1.4.1 This report includes details of the project objectives that have been set based on industry targets informed by prevailing policy.

1.4.2 The London Plan Policy SI 7 target will be targeted, which involves 95% reuse/recycling/recovery of construction and demolition waste material streams, and 95% of excavation waste sent for beneficial use.

1.4.3 It is confirmed that no more than 5% of demolition, excavation or construction waste will be sent to landfill.

1.4.4 The developer will be contractually responsible for all site waste reporting for the Proposed Development. Specific waste quantification and monitoring will assist in determining the success of waste management initiatives employed on site and progress against targets set should be relayed back to the appropriate stakeholders.

1.5 DOCUMENT STRUCTURE

1.5.1 This report is set out in the following sections:

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



2 DEMOLITION AND EXCAVATION WASTE

2.1 INTRODUCTION

- 2.1.1 This section outlines the estimated waste anticipated to be generated by the existing structures on the site of the Proposed Development during the demolition and excavation phases.
- 2.1.2 All estimates should be considered indicative and will require updating by the relevant contractors following appointment on site.

2.2 ESTIMATION OF DEMOLITION AND EXCAVATION WASTE

DEMOLITION WASTE

- 2.2.1 The following section has been informed by the Pre-Demolition Audit produced by BRE.
- 2.2.2 **Table 2-1** below shows the estimated weight of materials generated by the demolition process.

Table 2-1 Summary of Demolition Waste Generated

Material	Total Weight (Tonnes)	Weight Reused (Tonnes)	Weight Recycled (Tonnes)	Weight Diverted (Tonnes)
Concrete	5,955.51	0	5,806.62	5,806.62
Metal	219.96	4.4	215.56	219.96
Gypsum-Based Materials	152.85	152.85	76.43	229.28
Brick	123.73	24.75	92.8	117.55
Timber	109.8	16.47	71.37	87.84
Insulation Materials	42.75	0	21.38	21.38
Bitumen	25.32	0	6.33	6.33
Tiles and Ceramics	10.02	0	9.52	9.52
Glass	8.02	0.4	6.41	6.81
Plastic	7.22	0	7.22	7.22
Textiles	2.72	0	2.72	2.72
Totals*	6659.36	199.16	6317.08	6516.24

**Totals may not sum due to rounding*

- 2.2.3 The Pre-Demolition Audit can be found in **APPENDIX A**.
- 2.2.4 Although inert materials are generally processed for recycling, opportunities to recover individual materials for direct reuse will be considered in accordance with the waste hierarchy. In particular, the potential to salvage bricks for reuse will be explored before demolition.
- 2.2.5 As the condition and recoverability of the bricks cannot yet be confirmed, the developer and principal contractor will assess this further during the technical design and pre-demolition stages and seek to maximise their direct reuse, either on-site or elsewhere, wherever practicable.

EXCAVATION WASTE

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



- 2.2.7 Excavation waste figures have been derived from high-level design levels for the purpose of quantifying material export for sustainability and pre-planning feasibility reports only.
- 2.2.8 A detailed cut-and-fill analysis will be undertaken during the subsequent technical design stage and final quantities may therefore vary significantly.
- 2.2.9 A proportion of the excavated material may be suitable for reuse on site. However, this cannot be confirmed at this stage and will be subject to physical and chemical testing, together with confirmation of the development's material requirements.

CAPPING LAYER AND MADE GROUND

- 2.2.10 It is assumed the capping layer and made ground will be removed during the demolition works.

GROUND LEVEL SLABS, BASEMENT DIG, FOUNDATIONS AND PILE ARISING

- 2.2.11 The excavation estimate relates to the net cut required for the proposed ground-floor slab, basement, foundations and associated piling works.
- 2.2.12 Excavation waste volumes have been estimated at high level by the project quantity surveyor, summarised in **Table 2-2** below.

Table 2-2 Excavation Volume Estimates

Section	Volume (m ³)
1m reduced-level dig across 1,438m ² ground-floor area	1,438
Basement dig	1,264
Additional heave protection	125
Pile arisings	2,392
Secant pile arisings	407
Total	5,626

- 2.2.13 On this basis, approximately 5,626m³ of compacted material is expected to be excavated.
- 2.2.14 Once excavated, the excavated material will bulk up to approximately 6,751m³ of loose soil, assuming a bulk factor of 1.2.
- 2.2.15 Assuming a conversion rate of 1.5 tonnes per 1m³ material, this equates to approximately **10,127 tonnes** of material in total to be excavated and removed from site.
- 2.2.16 It is anticipated that this volume of material will significantly decrease as the structural proposals are refined.

2.3 MANAGEMENT OF DEMOLITION AND EXCAVATION WASTE

- 2.3.1 Waste arising from site clearance, primary infrastructure and earthworks is expected to comprise rubble, concrete, road planings from existing hard-standings, gravel, and clay material.
- 2.3.2 It is proposed that the excavated concrete and tarmac from the capping layer is crushed on site for reuse as secondary aggregate. It should be noted that any potential re-use of materials should be undertaken under a Materials Management Plan in line with the CL:AIRE Code of Practice.



- 2.3.3 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another local development site, recycled into secondary aggregate or sent for disposal at appropriately licensed facilities (these are expected to be inert waste landfill sites).
- 2.3.4 Efforts will be made to minimise the volume of material removed from site and reuse as much material on-site as possible. This can be reviewed in more detail once sufficient on-site investigation and associated material testing has been conducted. All loads removed from site would be transferred to appropriately licensed facilities for reuse or recycling.
- 2.3.5 Any contaminated material found that requires removal from the site will be collected by suitable waste carriers and sent for disposal at appropriately licensed waste facilities.
- 2.3.6 **Table 2-3** below details the estimated number of vehicles required to remove the material generated during the excavation phases.

Table 2-3 Excavation Material Generation and Vehicle Movements

On-Site Activity	Reused On-Site	Material Removed from Site	Excavated Material	
			Volume (m ³)	Number of Vehicle Loads Required *
Ground Level Slabs, Basement Dig, Foundations and Pile Arisings	No	Yes	6,751	676
* Assumes 10m ³ volume HGVs				



3 CONSTRUCTION WASTE

3.1 CONSIDERATE CONSTRUCTORS SCHEME

- 3.1.1 It is expected that the Principal Contractor(s) once appointed, will register their site with the 'Considerate Constructors Scheme'. This is a national initiative, set up by the construction industry. Sites that register with the Scheme sign up and are monitored against a Code of Considerate Practice, designed to encourage best practice beyond statutory requirements.
- 3.1.2 The Scheme is concerned about any area of construction activity that may have a direct or indirect impact on the image of the industry as a whole. The main areas of concern fall into three categories: the environment, the workforce, and the general public. Waste management is a key area of focus and on-site considerations may include:
- ⦿ How waste is avoided, reduced, reused, and/or recycled;
 - ⦿ Whether there is a Waste Management Plan/Strategy and how this is monitored; and
 - ⦿ The type of feedback received (if any) as to how much waste on-site is diverted from landfill.
- 3.1.3 It is expected that registered construction sites work in an environmentally conscious, sustainable manner.

3.2 SITE WASTE MANAGEMENT PLAN

- 3.2.1 As part of a drive to cut red tape, the Government revoked the requirement for Site Waste Management Plans (SWMPs) for construction projects costing over £300,000 as of 1 December 2013 and they are no longer statutory.
- 3.2.2 However, SWMPs remain good practice during construction and allow waste credits to be achieved under certification schemes such as BREEAM; one will be prepared by the Principal Contractor(s) once appointed, post planning consent.

3.3 ESTIMATED CONSTRUCTION WASTE

- 3.3.1 During each stage of the construction process there is the potential to generate waste from a variety of means, including the over-ordering or on-site damage of raw materials and construction process waste, such as material off-cuts, packaging, and chemical residues.
- 3.3.2 Opportunities for minimising construction waste are discussed in this section, considering issues such as reducing waste through selection of more sustainable raw materials and the implementation of effective on-site waste management practices.
- 3.3.3 The Building Research Establishment (BRE) have produced benchmarks in the *New Construction Technical Manual Version 6.1*, from which to base performance credit allocation construction waste arisings. The Site Waste Reduction Performance metric measures tonnes of waste/100m² of floor area.
- 3.3.4 **Table 3-1** shows the relevant metric for the Proposed Development, chosen as the median value for the range.



Table 3-1 Environmental Performance Indicators

Description	Project Type	Tonnes/100m ² GIA	Source
Residential	Site Waste Produced from New Build Projects	4.9	BRE
Commercial		6.5	

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

Table 3-2 Area Schedule

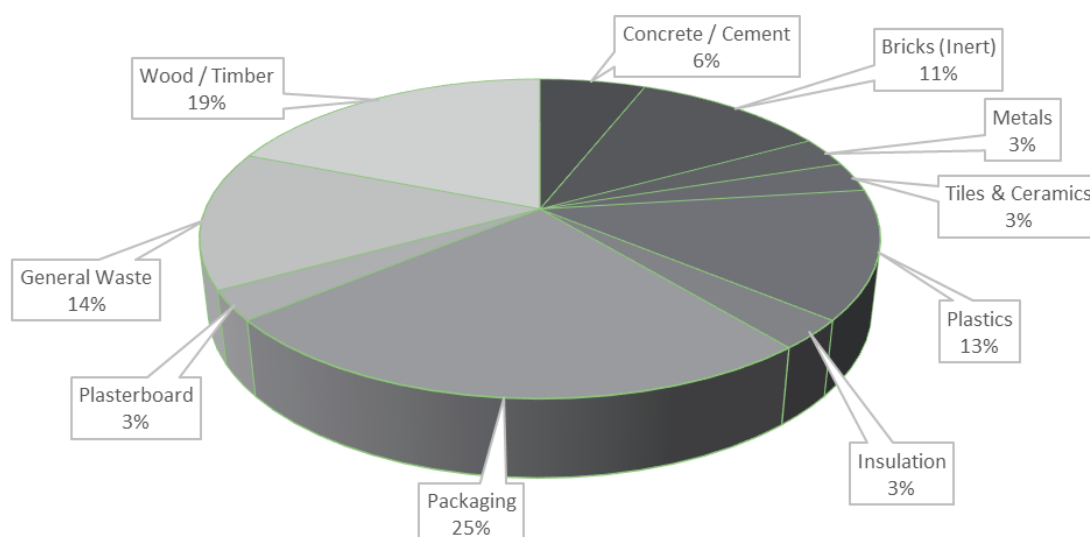
Use	GIA (m ²)	Construction Waste (Tonnes)
Residential	6,853	336
Commercial	297	19
Total	7,120	355

3.3.5 It is estimated that approximately **355** tonnes of waste may arise from the construction phase of the Proposed Development.

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

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

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



3.3.8 **Table 3-3** below shows the typical recovery rate of construction materials.



Table 3-3 Recovery Rate of Construction Materials

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

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

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

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

3.3.9 **Table 3-4** below shows the type and volume of waste generated during construction based on the percentages provided in **Table 3-3**.

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

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

Material	Estimated Quantity (Tonnes)		
	Total	Recovered	Disposal
Concrete / Cement	21	21	-
Bricks (Inert)	39	39	-
Metals	11	11	-
Tiles & Ceramics	11	11	-
Plastics	46	44	2
Insulation	11	10	1
Packaging	88	84	4
Plasterboard	11	10	1
Miscellaneous	50	48	2
Wood/Timber	67	64	3
Total	355	342	13



- 3.3.11 It is assumed that where it is not possible to reuse or recycle construction waste, contractors will use alternative disposal routes that divert material from landfill, such as Energy from Waste (EfW), Refuse Derived Fuel (RDF) or Solid Recovered Fuel (SRF). These routes are reported separately and are not included within the recovery figures, in line with the GLA definition under London Plan Policy SI 7, which specifically excludes energy recovery.
- 3.3.12 It should be noted that typical hazardous materials from construction sites that fall within the Hazardous Waste Regulations include:
- ⊙ Treated wood, glass, plastic (alone or in mixture) containing dangerous substances;
 - ⊙ Bituminous mixture containing coal tar and other dangerous substances;
 - ⊙ Metals containing oil, coal tar and other dangerous substances;
 - ⊙ Cables containing oil, coal tar and other dangerous substance;
 - ⊙ Rubble or hardcore containing dangerous substances;
 - ⊙ Soil, stones and dredging spoil containing dangerous substances;
 - ⊙ Gypsum materials such as plasterboard containing hazardous materials;
 - ⊙ Unused or unset cement;
 - ⊙ Paints and varnishes containing organic solvents or other dangerous substances;
 - ⊙ Paint or varnish remover;
 - ⊙ Adhesives and sealants containing organic solvent or other dangerous substances; and
 - ⊙ Empty packaging contaminated with residues of dangerous substances e.g. paint cans.
- 3.3.13 Hazardous waste materials will be stored in secure bunded compounds in appropriate containers which are clearly labelled to identify their hazardous properties and are accompanied by the appropriate assessment sheets.
- 3.3.14 Any fuels, oils and chemicals that are used will be stored in appropriate containers within secure bunded compounds in accordance with good site practice and regulatory guidelines and located away from sensitive receptors.

SUSTAINABLE SELECTION OF CONSTRUCTION MATERIALS

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



SETTING TARGETS FOR REDUCING CONSTRUCTION WASTE

- 3.3.16 Appropriate targets and objectives will be set in relation to the minimisation, reuse, and recycling of any waste materials during earth works and construction. This will ensure that a clear action plan is generated for the management of specified types and quantities of materials identified for each of the construction stages. These targets will be agreed at the inaugural meeting between the Principal Contractors, the contractors and LBH.
- 3.3.17 To ensure that the system of waste prevention, minimisation, reuse and recycling is effective, consideration will be given to the setting of on-site waste targets and a suitable programme of monitoring at regular intervals to focus upon:
- Quantifying raw material wastage;
 - Quantifying the generation of each waste stream;
 - Any improvements in current working practices;
 - Methods by which the waste streams are being handled and stored; and
 - The available waste disposal routes used, e.g. landfills, waste transfer stations.
- 3.3.18 The Principal Contractors will be responsible for the setting and review of waste targets from the outset of the development process to ensure that high standards are maintained with the emphasis being on continual improvement. Specific waste quantification and monitoring will assist in determining the success of waste management initiatives employed on each construction site and progress against these targets should be relayed back to the appropriate stakeholders.

ACHIEVING REDUCTIONS IN CONSTRUCTION WASTE - PROMOTION OF BEST PRACTICE

- 3.3.19 As part of the encouragement of on-site best practice, there will also be a need to ensure that suppliers of raw materials to the Proposed Development are committed to reducing any surplus packaging associated with the supply of any raw materials. This includes the reduction of plastics (i.e. shrink wrap and bubble wrap), cardboard and wooden pallets. This may involve improved procurement and consultation with selected suppliers regarding commitments to waste minimisation, recycling, and the emphasis on continual improvement in environmental performance.
- 3.3.20 **Table 3-5** below summarises the most important mitigation measures to minimise the potential waste of on-site materials during construction. It is important to note, however, that not all construction materials will be provided by local suppliers.

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

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



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

CONSTRUCTION MATERIALS AND WASTE STORAGE

- 3.3.22 Emphasis will be placed on the provision of appropriate storage conditions for raw materials and key waste streams relating to each development. This will include the segregation of material for reuse or recycling on-site. Where this is not practicable, materials will be segregated for off-site recycling.
- 3.3.23 The location of the waste storage areas will be clearly labelled, identifying the materials that can be received. Provisions that will be made include:
- ⊙ Temporary offices and work compounds on-site will retain all details relating to the waste strategy for the site, health and safety and monitoring and reporting details;
 - ⊙ Storage areas for raw materials and assembly areas for construction components will be located away from sensitive receptors;
 - ⊙ Clearly identified containers for segregated waste streams for reuse and recycling; and
 - ⊙ Dedicated skips will be provided for any construction waste that requires off-site disposal.
- 3.3.24 In addition, the provision of effective and secure storage areas for construction materials is important to ensure that potential loss of material from damage, vandalism or theft is avoided. These measures will be supported by ensuring well-timed deliveries to the site, providing on-site security, and installing temporary site security fencing.
- 3.3.25 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.

TAKE-BACK SCHEMES

- 3.3.26 Where re-use is not possible, contractors can identify opportunities and encourage on-site teams to use 'take-back' schemes. 'Take-back' schemes (also referred to as 'closed loop') return products and materials directly back to manufacturers for reuse or specialist recycling otherwise unavailable on site.
- 3.3.27 Returning excess materials to suppliers in this manner maintains materials further up the waste hierarchy.
- 3.3.28 Identifying opportunities to use a 'take back' scheme will require consideration for site specific constraints, including geographic location and overall footprint.
- 3.3.29 Packaging materials (particularly during the construction phase) can provide opportunities to use take-back schemes, including:
- ⊙ Oversized packaging;
 - ⊙ Oversized void fillers; and
 - ⊙ Unnecessary transport protection and strapping.



- 3.3.30 A number of contractors are signed up to use The Pallet LOOP¹ which promotes the reuse of pallets from deliveries to construction sites.

MANAGING TRANSPORT AND TRAFFIC IMPACTS FROM CONSTRUCTION

- 3.3.31 The logistics associated with construction waste are affected by a wide range of factors. The quantity and types of waste materials generated will fluctuate during the construction phases and the resulting number of waste collections will be dictated by a range of variables, including the amount of storage space for waste, the capacity of waste containers used, the materials segregated for recycling and whether any on-site processes are used for reducing the volume of waste (compactors / balers / shredders etc.).
- 3.3.32 The Principal Contractors will be expected to provide construction waste logistics forecasts, which will be discussed with waste contractors and LBH following appointment of relevant parties.
- 3.3.33 The impact of traffic associated with the movement of construction and waste materials on surrounding neighbourhoods and the local road network will be minimised by a combination of factors. These include reducing the need to import / export materials; and minimising off-site removal of waste to landfill. Dedicated haulage routes will be agreed with LBH to minimise disturbance to local communities.

¹ *The Pallet Loop* <https://www.thepalletloop.com/>



4 SUMMARY & CONCLUSION

4.1 SUMMARY

SITE PREPARATION AND EARTHWORKS

- 4.1.1 Waste arising from site clearance, primary infrastructure and earthworks is expected to comprise topsoil, rubble, concrete, and road planings from existing hard-standings, gravel, and clay material.
- 4.1.2 Any clean excavated material that cannot be reused on-site will be removed by licensed waste carriers and sent for reuse at another local development site, recycled into secondary aggregate or sent for disposal at appropriately licensed facilities.
- 4.1.3 Any contaminated material found that requires removal from the site will be collected by suitable waste carriers and sent for disposal at appropriately licensed waste facilities.

CONSTRUCTION WASTE

- 4.1.4 During each stage of the construction process there is the potential to generate waste from a variety of means, including the over-ordering or on-site damage of raw materials and construction process waste, such as material off-cuts, packaging, and chemical residues.
- 4.1.5 Metrics from BRE has been used to estimate the tonnage of construction waste produced. The site waste reduction performance target measures tonnes of waste/100m² of floor area.
- 4.1.6 Where it is not possible to reuse or recycle construction waste, contractors will be expected to seek disposal routes that divert material from landfill, such as EfW, RDF or SRF.
- 4.1.7 Hazardous waste materials will be stored in secure bunded compounds in appropriate containers which are clearly labelled to identify their hazardous properties and are accompanied by the appropriate assessment sheets.
- 4.1.8 Any fuels, oils and chemicals that are used will be stored in appropriate containers within secure bunded compounds in accordance with good site practice and regulatory guidelines and located away from sensitive receptors.
- 4.1.9 Appropriate targets and objectives will be set in relation to the minimisation, reuse, and recycling of any waste materials during earth works and construction. This will ensure that a clear action plan is generated for the management of specified types and quantities of materials identified for each of the construction stages. These targets will be agreed at the inaugural meeting between the Principal Contractor(s), the contractors and LBH.
- 4.1.10 The Principal Contractors will be responsible for the setting and review of waste targets from the outset of the development process to ensure that high standards are maintained with the emphasis being on continual improvement. Specific waste quantification and monitoring will assist in determining the success of waste management initiatives employed on each construction site and progress against these targets should be relayed back to the appropriate stakeholders.



- 4.1.11 Emphasis will be placed on the provision of appropriate storage conditions for raw materials and key waste streams relating to each development. This will include the segregation of material for reuse or recycling on-site. Where this is not practicable, materials will be segregated for off-site recycling.
- 4.1.12 The Principal Contractors will be expected to provide construction waste logistics forecasts, which will be discussed with waste contractors and LBH following appointment of relevant parties.
- 4.1.13 The impact of traffic associated with the movement of construction and waste materials on surrounding neighbourhoods and the local road network will be minimised by a combination of factors. These include reducing the need to import / export materials and minimising off-site removal of waste to landfill. Dedicated haulage routes will be agreed with LBH to minimise disturbance to local communities.

4.2 CONCLUSION

- 4.2.1 This Outline SWMP has considered the need to lessen the overall impact of waste generation through the recycling and effective management of materials generated during the construction phase.
- 4.2.2 The proposals set out in this strategy meet the requirements of relevant waste policy and follow applicable guidance.



APPENDIX A

PRE-DEMOLITION AUDIT

CLIENT REPORT

Pre-demolition Audit of YMCA Crouch End

Prepared for: YLCAN
Date: 13.02.2026
Report number: P001308R
Issue: 1

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1. Executive Summary

The Building Research Establishment Limited (BRE) has carried out a pre-redevelopment audit (PRA) and pre-demolition audit (PDA) of 184 Tottenham Lane, a five-storey semi-detached property fronting Tottenham Lane in central Crouch Lane. The audit provides independent advice about the materials present on site, and the opportunities for their reuse and recycling. Data obtained through the audit can support YLCAN in meeting assessment criteria of the Waste 'Wst 01 - Project waste management' credit in BREEAM Refurbishment & Fit-out. A PRA can satisfy the requirements of 1 credit and assist in achievement of additional credits.

Available credits in BREEAM Wst 01 are as follows:

- Pre-refurbishment audit (1 credit).
- Reuse and direct recycling of materials (up to 2 credits).
- Resource efficiency (up to 2 credits).
- Diversion of resources from landfill (1 credit, 1 exemplary credit).

This report presents an estimate of the materials that could potentially arise from the demolition of buildings including the materials associated with superstructure, and hardstanding at the site. The audit suggests that the demolition and clearance of the site could give rise to an estimated 6656.42 tonnes of material with an estimated total volume of 3525.78m³, as shown in Table 1.

Table 1: Estimated weights and volumes of materials resulting from the demolition of the site.

	Sum of Weight [Mg/T]	Sum of Material Volume [m³]
Z1:YLCAN Main Quad	2929.91	1537.89
Concrete	2596.97	1128.26
Metal	112.70	20.57
Gypsum-based materials	89.60	70.27
Wood	67.41	134.82
Insulation materials	20.46	146.15
Brick	17.06	11.37
Bitumen	16.83	13.94
Tiles and Ceramics	2.27	0.95
Glass	2.17	1.08
Textiles	1.78	8.90
Stone	1.46	0.58
Plastic	1.20	1.00
Z2:YLCAN Sir Brett Cloutmanm Wing	2924.02	1452.09
Concrete	2789.39	1211.92
Gypsum-based materials	43.36	35.48
Metal	42.57	5.95
Wood	22.95	45.90
Insulation materials	20.46	146.15
Glass	1.50	0.75
Bitumen	1.21	0.96
Tiles and Ceramics	1.00	0.42
Textiles	0.81	4.07
Plastic	0.77	0.48
Z3:Crouch End Fitness Centre	802.49	535.80
Concrete	546.78	232.81
Brick	106.67	71.12
Metal	64.68	8.36
Insulation materials	20.46	146.15
Gypsum-based materials	19.89	22.10
Wood	19.44	38.87
Tiles and Ceramics	7.57	3.15
Bitumen	7.27	6.61
Plastic	5.25	3.84
Glass	4.35	2.18
Textiles	0.12	0.61
Grand Total	6656.42	3525.78

The Key Demolition Products (KDPs) identified are concrete, metal, gypsum-based materials, brick, timber, insulation materials, bituminous materials, glass, plastic, tiles and ceramics, and textiles. The breakdown of KDPs by weight (%) is shown in Figure 1 and is dominated by concrete. Figure 2 shows the KDPs by weight (%) with concrete removed to show a breakdown of non-concrete KDPs.

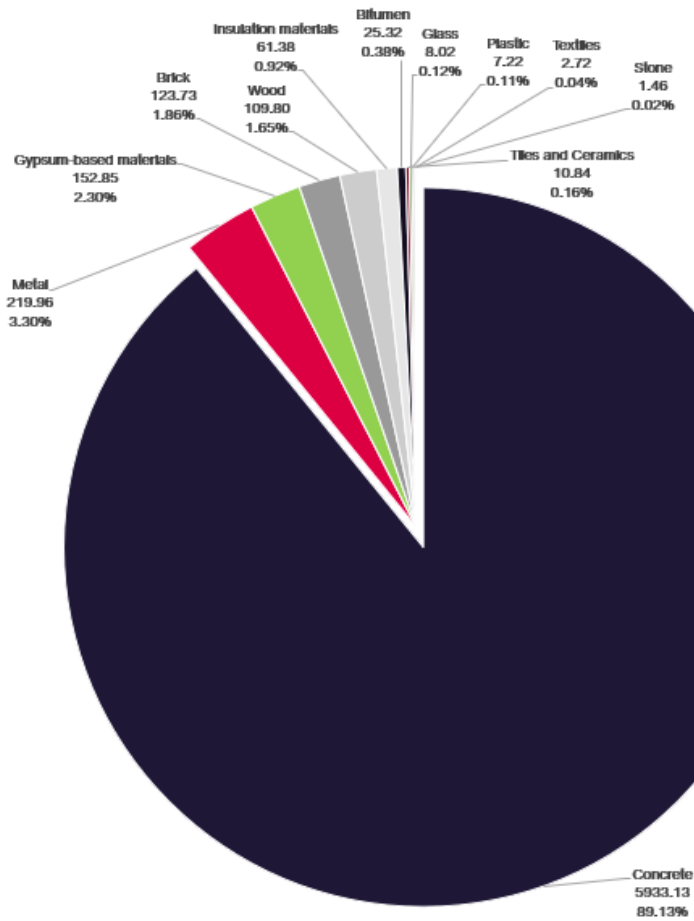


Figure 1: Key Demolition Products by Weight (%).

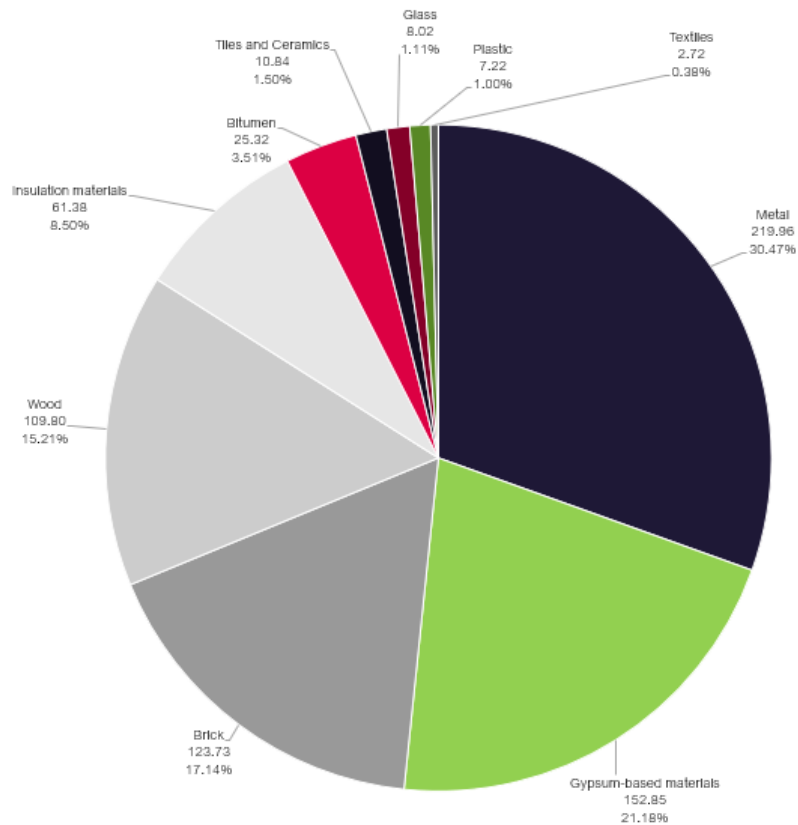


Figure 2: Key Demolition Products by Weight (%), excluding concrete.

The London Plan 2021¹ targets a 95% diversion of non-hazardous waste from landfill (by weight). A potential reuse and recycling strategy (high-level and indicative) which could help meet this target is presented in this report. It is however recommended that further detailed investigation be undertaken to determine the practicalities of achieving these targets for specific product groups. In addition, it will be important for relevant contractual requirements for reuse and recycling to be investigated and developed (ideally as early as possible).

Furthermore, to maximise the recycling and/or re-use potential it is recommended that materials are separated on site according to their KDP classifications, i.e.:

- Concrete.
- Non-ferrous metals.
- Ferrous metals.
- Timber.
- Plastic.
- Bituminous materials.

¹ <https://www.london.gov.uk/what-we-do/planning/london-plan/new-london-plan/london-plan-2021>

It is also recommended that the actual materials arising from demolition are recorded with details of how they are managed, as this is a requirement within the London Plan 2021 for post-completion reporting of developments that are referred to the Mayor's Office. Similarly, the measurement and management of actual materials arising is also a requirement of the 'WST1' credit within BREEAM New Construction 2018, which may be important if the development project is being assessed under the BREEAM sustainability framework.

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2. Development description

The audit comprises of one site within the London Borough of Haringey. The site, 184 Tottenham Lane, is a five storey semi-detached property fronting Tottenham Lane in central Crouch End. Currently the property is made up of 155 single occupancy bedrooms, with shared shower rooms and toilets, along with communal areas (including meeting rooms, storage areas and a canteen with adjacent kitchen) and a fitness centre. The site is adjacent to private housing, as well as public highway and high street shops.

The original building at 184 Tottenham Lane was constructed in 1929 but sustained significant damage during World War II, with just the art-deco annex located on Elmfield Avenue to the north, which currently houses a commercial gym, being retained. A five-storey red brick extension with additional hostel rooms was added in 1959, followed by a further 3-storey extension, the Sir Brett Clouthman Wing, in 1981. The scope of the full development is shown in Figure 3 and Figure 4.



Figure 3: Scope of PRA and PDA at 184 Tottenham Road outlined in red (image from Google Maps).



Figure 4: Scope of PRA and PDA at 184 Tottenham Road outlined in red (image provided by client; '251006 YLCAN Pre-Demolition and Pre-Redevelopment Audit t - RFQ and Scope.docx').

2.1 Redevelopment plan

YLCAN are conducting a redevelopment of 184 Tottenham Lane. The development aims to transform the existing site into a more modern, functional and sustainable residential facility. The development plans to deliver 180-200 bedspaces, configured into a mixture of cluster flats (80%) and move-on accommodation (20%) to meet the growing demand for affordable housing in the area, as well as communal spaces, support facilities and ground floor spaces for commercial or community use.

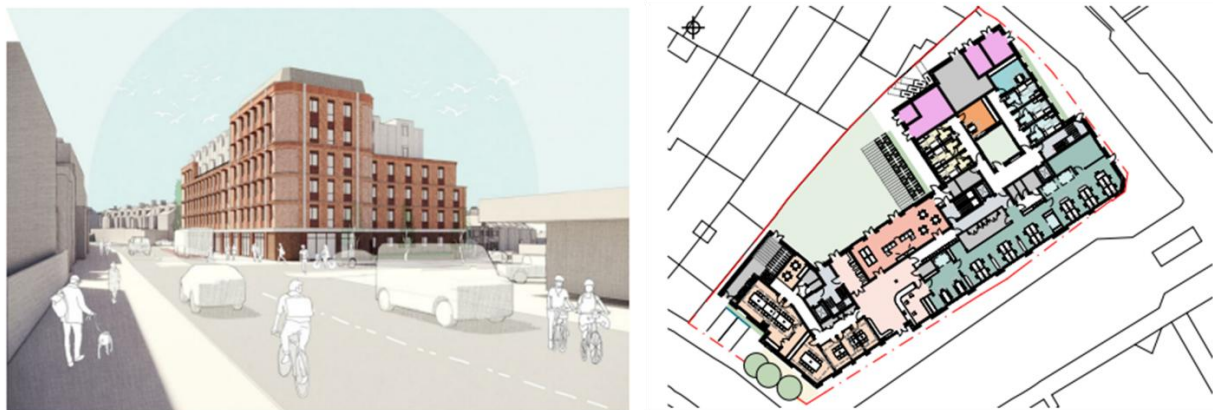


Figure 5: Redevelopment Plan of 184 Tottenham Lane (image provided by client; '4079_184 Tottenham Lane, YMCA LCN - Preapp02_Presentation.pdf').

3. Policy background and project context

3.1 London circular economy ambitions

The London Plan 2021 (the Plan) is the Spatial Development Strategy for Greater London. It sets out a framework for how London will develop over the next 20-25 years and the mayor's vision for Good Growth. The Plan is part of the statutory development plan for London, meaning that the policies in the Plan should inform decisions on planning applications across the capital. The Plan includes policies to

promote waste reduction, increase material reuse and recycling, reduce waste to disposal, and to promote and support the development of a circular economy. This includes improving resource efficiency and innovation to keep products and materials at their highest use for as long as possible (ref: Policy SI 7). Some key targets of the Plan include: zero biodegradable or recyclable waste to landfill by 2026; to meet or exceed the municipal waste recycling target of 65% by 2030; to meet or exceed 95% beneficial use of excavation materials and 95% reuse/recycling of construction and demolition materials. In addition, the Plan suggests that, to improve material circularity, developments should be designed to reduce material demands and enable building materials, components, and products to be disassembled and re-used at the end of their useful life. The Plan also suggests that redevelopment projects should demonstrate how all materials arising from demolition and remediation works will be managed in accordance with the waste hierarchy, managing as much waste as possible on site.²

3.2 The London Borough of Haringey

The Borough of Haringey falls within the remit of The North London Waste Plan (2022), which references the London Plan 95% targets for construction, demolition and excavation waste. Preference should be given to using the materials on-site or within local projects.³ The Haringey Local Plan 2013 – 2026 also states that Site Waste Management Plans are required for all major planning applications to identify volume and types of demolition and construction waste and to demonstrate how waste will be minimised and managed during construction and occupation.⁴

Haringey are in the process of developing a New Local Plan to adapt to changes in the national planning policy and legislation landscape since their existing plan was written in 2017. The draft Local Plan states that a Circular Economy Statement will continue to be required for major projects in line with GLA guidance. Adherence to the targets for major development proposals should be demonstrated in the Circular Economy Statement and referenced in the Whole Life Carbon Assessment.⁵

3.3 Pre-redevelopment and pre-demolition audit

A pre-redevelopment audit (PRA) and pre-demolition audit (PDA) is a process of establishing the materials (including their type, weight, volume, and approximate condition) likely to arise from the demolition or re-development of a building. When conducted prior to a redevelopment or demolition, a PRA/PDA can support the development of a demolition or redevelopment strategy, and thus they are a valuable first step to help address many requirements of the Plan. A PRA/PDA provides a list of Key Demolition Products (KDPs) that are likely to arise during the demolition phase of redevelopment and that may be suitable for reuse and recycling. Ideally, the audits should be conducted at an early stage and should inform re-design. The results of the PRA/PDA can be used to assist in:

- reducing demolition waste leaving the site.
- maximising materials for reuse and recycling and minimising materials going to landfill.
- highlighting technical options on recycling of materials on site.
- advising on targets for demolition waste.
- facilitating better links and communication within the supply chain actors; and demonstrating associated cost-savings and environmental rewards.

² https://www.london.gov.uk/sites/default/files/circular_economy_statements_lpg_0.pdf

³ <https://www.nlwp.net/wp-content/uploads/2022/05/NLWP%202022%20final%20high%20res.pdf>

⁴ https://haringey.gov.uk/sites/default/files/2024-01/final_haringey_local_plan_2017_online.pdf

⁵ <https://haringey.gov.uk/sites/default/files/2025-10/draft-local-plan-part-3-borough-wide-policies-10-october.pdf>

4. Methodology

4.1 Data collection

BRE conducted site visits on the 18th and 19th of December 2025 to capture site data to facilitate the audit. In addition, the client provided BRE with the following information to complete the audit:

- 251006 YLCAN Pre-Demolition and Pre-Redevelopment Audit t - RFQ and Scope.docx
- 2507 YLCAN project brief Rev 5.pdf
- 4079_184 Tottenham Lane, YMCA LKAN - Preapp02_Presentation.pdf
- 2502006 - YMCA Elevations Final.pdf
- 2502006 - YMCA Floor Plans Final.pdf
- 2502006 - YMCA Title Overlay Final.pdf
- 2502006 - YMCA Topo Final.pdf
- 250424 TL structural report.pdf
- 2405 TL Asbestos Reinspection Survey.pdf

BRE were unable to capture site data within the massage suite of the fitness centre due to the tenanted area being in constant use during both site visits. Later, the client provided BRE with site data, including perimeter measurements and photos, to enable inclusion of this space in the audit.

4.2 Assessment boundary

This report presents the findings of a PDA/PRA to identify the potential materials that could arise from a demolition of all the permanent buildings inside the red line boundary in Figure 3 and Figure 4.

4.3 Methodology

All areas of the site which could be safely accessed during the site visit were assessed with the exception of the roof and fifth floor where only reduced access was possible and/or where photos and measurements were later provided by staff on site.

The volume of different materials has been estimated based on information gathered during the site visit, building scans, measured survey drawings, design drawings, photographs, and knowledge of common component sizes. Weight/mass has been estimated using material densities from BRE's Green Guide and from material suppliers.

4.4 Assumptions

Assumptions have been made for some of the internal fittings and finishes and the composition of some internal walls as stated in the report.

Due to the audit being non-invasive we are unable to directly quantify internal wall insulation and have made reasonable estimates for external hardstanding and foundations.

The results presented in this report are indicative since direct intrusive measurement and physical assessment was not conducted.

Materials associated with all mechanical, electrical & plumbing services are excluded, apart from radiators and sanitary ware.

Internal furniture and equipment that is not fixed to the building is also excluded as it is assumed that any such items will be removed from the building prior to demolition.

4.5 Research on local waste contractors

Research has been undertaken into local companies that may be able to provide waste reuse or recycling services for the main KDP's identified in this audit. The research took place in January 2026 and involved general web-based research along with the use of the London waste map⁶ and the Salvo website⁷. The research was scoped around identifying relevant waste contractors within the greater London area. It

⁶ <https://apps.london.gov.uk/waste/>

⁷ <https://www.salvoweb.com/>

should be noted that this was not an exhaustive search, and the companies that have been listed under each KDP section are provided for information only. In addition, their inclusion does not constitute an endorsement of their services, capability, or a recommendation.

4.6 Hazardous materials considerations

It is important to know which parts of a building, and/or material components, may contain hazardous substances. Any such materials must be handled and managed according to relevant hazardous waste requirements. Typical items include but are not limited to:

- some types of treated timber from 1950 to 2007.
- materials with persistent organic pollutants (POPs)⁸;
- oils such as in oil tanks.
- fluorescent light tubes.
- lead flashing; and
- asbestos containing materials (ACMs).

More information can be found in the National Federation of Demolition Contractors (NFDC) hazardous demolition and refurbishment information data sheets (DRIDS)⁹. A waste management contractor that is licensed for hazardous waste should be contacted to manage these substances if they are present in the building / on-site.

⁸ <https://www.gov.uk/guidance/dispose-of-waste-containing-persistent-organic-pollutants-pops>

⁹ <http://nfdc-drids.com/drid/hazardous.html>

5. Findings

5.1 Summary

The types and amounts of materials likely to arise during the strip out, demolition and clearance across the site have been estimated based on information gathered during the site visit, building scans, measured survey drawings, design drawings, photographs, and knowledge of common component sizes, while also applying the assumptions outlined above and KDPs that present potential for reuse and recycling have been identified. An estimate of the overall tonnage, and volume, of all materials likely to arise are shown in Table 1. Figure 1 presents a graph with tonnages and volumes for all KDPs. Figure 2 shows the same graph but with the dominant material concrete removed. A detailed element listing is also provided as a separate Excel file alongside this report. Please note that the sum of all individual items may not equate exactly to the totals due to rounding. Each KDP is described in more detail including:

- The European Waste Code (EWC),
- Product description,
- Product volumes and/or tonnages where these could be quantified,
- Recommendations regarding opportunities to divert waste from landfill for reuse and/or recycling; and,
- Examples of local companies that may be able to provide waste reuse or recycling services. Note that this list is non-exhaustive, is for information purposes only and inclusion does not constitute any endorsement or recommendation.

5.2 Concrete – 17 01 01

Product Description

The largest amount of material likely to arise from the demolition is Concrete, accounting for 89.13% (5933.13 tonnes) of total material tonnage for the site. This equates to a volume of 2573 m³ of waste. The main sources of Concrete are the walls and floors of the building and basement, and the yard (Figure 6, Figure 7). The overall quality of the Concrete is assumed to be average. In some areas the Concrete may have been exposed to asbestos cement sheets which could mean it is contaminated and may not be suitable for recycle. A licensed asbestos professional should be consulted for specialist advice on whether such materials can be recycled.



Figure 6: Exposed stairs and flooring showing concrete structure at the site.



Figure 7: Concrete paving slabs in the yard.

Recommendations

For in situ construction (concrete cast to form a monolithic mass), the separation of elements typically requires cutting through the structure. There could be limitations with reusing these components due to the practical achievement of removal during deconstruction, the non-standard dimensions and reinforcement. For prefabricated concrete structures that were assembled for their first use, there have been investigations into their reuse potential that concluded panels may still be usable in the architectural design of other structures. In addition to reducing carbon emissions, some studies also reported reductions in the cost of new construction of 20-30% by reusing panels. However, this is project dependent as studies also found that the costs of handling and storing concrete building components could make reclamation and reuse uneconomical. It is recommended to match the supply of reclaimed product with the demand at local or regional level.^{10,11}

Given that concrete elements may be difficult to reclaim, there has been greater focus on recycling than reuse. Methods and techniques for increasing the quality, durability and tension-stiffening properties of recycled concrete are widely researched. Where reuse of concrete components is not feasible, concrete should be separated and can be crushed on site for use as recycled concrete aggregate (RCA)¹² in accordance with the WRAP Quality Protocol for aggregates¹³ from inert waste. RCA is permitted for use in

¹⁰ *Recovery and reuse of structural products from end-of-life buildings.*

https://bradscholars.brad.ac.uk/bitstream/handle/10454/16643/Lam_et_al_Engineering_Sustainability_Final.pdf.

¹¹ Author links open overlay panel Wasim Salama and AbstractDue to various kinds of obsolescence (2017) *Design of concrete buildings for disassembly: An explorative review, International Journal of Sustainable Built Environment.*

<https://www.sciencedirect.com/science/article/pii/S2212609016301741>.

¹² Author links open overlay panelP. Chindaprasirt 1 *et al.* (2015) *Reuse of recycled aggregate in the production of alkali-activated concrete, Handbook of Alkali-Activated Cements, Mortars and Concretes.*

<https://www.sciencedirect.com/science/article/pii/B9781782422761500198>.

¹³ Agency, E. (2013) *Quality protocol: Aggregates from Inert Waste, GOV.UK.* <https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-from-inert-waste>.

certain grades of concrete but the quality of concrete with RCA is very dependent on the quality of the recycled material used. RCA can be used in:

1. bitumen bound materials – recycled concrete aggregate may be used in a variety of base course and binder course mixtures.
2. pipe bedding – suitably graded recycled concrete aggregate is used in pipe bedding.
3. hydraulically bound mixtures (HBM) for sub-base and base – recycled concrete aggregate can be suitable for use in HBMs. These can be used in the construction of car parks, estate/minor roads and hard standing.
4. unbound mixtures for sub-base – suitably graded recycled concrete aggregate is used as sub-base.
5. capping – recycled concrete aggregate is suitable for capping applications.
6. embankments and fill – suitably graded recycled concrete aggregate is used in these applications.

The best option, from a circularity perspective, is to use the RCA in the construction process of the new development where possible. RCA would however need to be stockpiled on site until it is needed in the new construction which may require an Environmental Permit¹⁴. If this is not possible, it could be sent to a licensed waste management contractor for crushing and recycling. RCA is permitted for use in certain grades of concrete but the quality of concrete with RCA is very dependent on the quality of the recycled material used. Reinforcing steel and other embedded items must be removed, and care must be taken to prevent contamination by other materials such as soil, glass, plasterboard, sealants, wood, and roofing materials.

Reuse of reclaimed precast concrete slabs in new buildings has been demonstrated in a number of projects (e.g. a new housing development in Mehrow near Berlin used unwanted precast concrete slabs from demolished buildings to construct new houses which resulted in a 30% reduction in project costs)¹⁵. The European Super Circular Estate project in the Netherlands aimed to reuse, remanufacture, and recycle 90% of materials sourced from the demolition of an outdated social housing building next door. Some of the key circular techniques explored include: recycled aggregate from existing structure to make foundations with only 7% of new cement added during production; direct reuse of main loadbearing structure by cutting 3D concrete modules from the existing structure; direct reuse of partition walls; and, recycled aggregate from existing structure to make façade¹⁶.

Crushed concrete can be used for new retaining walls or within garden beds as a base material. The Brooklyn Grange Farm in New York used crushed concrete from a demolished building to build a new retaining wall around their rooftop garden.¹⁷ It can also be used as a base material for walkways and paths and in playgrounds and seating areas which can help to improve drainage, such as in Los Angeles, where the Baldwin Hills Scenic Overlook uses recycled concrete to create a new seating area and overlook platform¹⁸.

¹⁴ *Environmental permits: Detailed information* Environmental management : *Environmental permits - detailed information* - GOV.UK. : <https://www.gov.uk/topic/environmental-management/environmental-permits> (Accessed: 14 June 2023).

¹⁵ Author links open overlay panel Wasim Salama and Abstract Due to various kinds of obsolescence (2017) *Design of concrete buildings for disassembly: An explorative review*, *International Journal of Sustainable Built Environment*. : <https://www.sciencedirect.com/science/article/pii/S2212609016301741> (Accessed: 14 June 2023).

¹⁶ Weijers, T. Kerkrade, Super Circular Estate - First Circular Social Housing Estate for 100% Material and Social Circularity. <https://www.uia-initiative.eu/en/uia-cities/kerkrade>

¹⁷ Simkins, A. (2021) *Brooklyn Grange: A Rooftop Farm in New York*, TOAST. <https://www.toa.st/blogs/magazine/brooklyn-grange-a-rooftop-farm-in-new-york>

¹⁸ *Home - Safdie rabines architects*. https://www.safdie rabines architects.com/wp-content/uploads/2017/07/09_12-IFPRA-Baldwin-Scenic-Overlook-Article.pdf

Potential waste management contractors

Local waste management companies that could manage the concrete waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattrouktd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

5.3 Metal – 17 05 04

Product description

The second largest amount of material likely to arise from the demolition is Metal, accounting for 3.3% (219.96 tonnes) of total material tonnage for the site. This equates to a volume of 34.88 m³ of waste. The main sources of metal are structural beams (Figure 8), rebar assumed in the structural concrete, and two elevators (Figure 9). The overall quality of the Metal exposed to the elements may be of a poorer quality to any internal metal, however, as the majority of metal is present as internal structural beams most is likely to be average to good quality.



Figure 8: Exposed structural steel beam in the Fitness Centre.



Figure 9: Elevators in the Fitness Centre (l) and Sir Brett Cloutmann Wing (r).

Recommendations

The European Steel Association (EUROFER), which represents almost 100% of EU steel production, produced recommendations for policy makers on circular economy for the steel industry¹⁹. The recommendations note that recycling of steel can help to reduce steel product lifecycle CO2 emissions. Steel's characteristic as a 'permanent' material means that it can be easily reused and subsequently recycled in a constant loop. UK demolition contractors were surveyed in 2012 by the NFDC to estimate the reuse and recycling rates of steel construction products arising from the demolition of buildings in the UK. The results indicated that steel had a combined reuse and recycling rate of 96% with, on average, 91% recycled and 5% reused²⁰.

The reuse of structural steel for structural purposes may involve complications of stability and safety, and so must be thoroughly evaluated and tested. There are also limitations if the material has been treated or coated with heavy metal-based products, as found in some paints.²¹ Limitations experienced in the market supply of secondary steel include demolition practices, a lack of re-certification options and a low margin between new and reused steel pricing.

The BedZED project (London, 2002)²² pioneered reclamation with 95% of the structural steel (around 98 tonnes) being reclaimed from demolition sites within a 35-mile radius to assess the structural integrity, historical documentation was researched to understand the in-life stresses placed on the material, and the material was also visually inspected by structural engineers. There is also the option of non-destructive portable hardness testing²³ and coupon tests for further assurance.

Metal components should be disassembled/deconstructed and reused as the first option. Elevators and their parts should be collected separately during the dismantling process. Ferrous metals, non-ferrous metals as well as electronic components used in elevators can all be recycled at the end of life. Batteries, adhesives, and lubricating oils used in elevators should be treated as hazardous waste.

The Steel Construction Institute (SCI) protocol for reusing structural steel²⁴ discusses CE marking for reclaimed steel, design recommendations, assessment and testing, potential challenges, and declaration requirements. The protocol recommends data collection, inspection and testing to ensure that reclaimed structural steelwork can be used with confidence in a new context. Some companies also specialise in, and advocate for, steel reuse such as Cleveland Steel & Tubes²⁵ and Portal Power.²⁶

Where reuse is not possible, metals should be recycled by a licensed waste management contractor. It is recommended that non-hazardous metal arising from demolition is segregated on site and higher value metals such as aluminium should be separated from other metals.

In the UK, there are examples where salvaged steel or aluminium frames have been reused for greenhouse construction. These frames are often reinforced and modified to accommodate the desired greenhouse design and dimensions, providing a cost-effective and sustainable solution. One high profile example is The Eden Project's Mediterranean Biome in Cornwall which is a large greenhouse housing various plant species. This features a steel frame made of recycled materials.²⁷

¹⁹ *Steel and the circular economy* Eurofer. <https://www.eurofer.eu/publications/brochures-booklets-and-factsheets/steel-and-the-circular-economy/>.

²⁰ *The recycling and Reuse survey* steelconstruction.info. https://www.steelconstruction.info/The_recycling_and_reuse_survey.

²¹ *A guide for identifying the reuse potential of construction products*. https://vb.nweurope.eu/media/10132/en-fcrbe_wpt2_d12_a_guide_for_identifying_the_reuse_potential_of_construction_products.pdf.

²² *BedZED: Toolkit part I - united diversity*. https://library.uniteddiversity.coop/Ecological_Building/BedZED-Toolkit-Part-1.pdf.

²³ *Sustainable materials: With both Eyes open* The Use Less Group. <https://www.uselessgroup.org/publications/book/chapters>.

²⁴ *Protocol for reusing structural steel* - steel-sci.com. <https://www.steel-sci.com/assets/downloads/steel-reuse-protocol-v06.pdf>.

²⁵ *Greener Steel supports the environment: Cleveland Steel & Tubes Greener steel supports the environment* | Cleveland Steel & Tubes. <https://cleveland-steel.com/sustainability>.

²⁶ Portal Power New & Pre-Used Buildings. <https://portal-power.co.uk/product/page/2/>

²⁷ *Homepage The Eden Project*. <https://www.edenproject.com/>

Potential waste contractors

Local waste management companies that could manage the metal waste include:

- Any London Waste, 0800 599 99 96, [Builders Waste Removal in London | Anylondonwaste.co.uk](https://anylondonwaste.co.uk)
- London Metal and Recycling, 07795 106 168, <https://www.londonmetalandrecycling.co.uk/>
- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](https://www.powerday.co.uk/enfield-skip-hire-recycling-centre)
- Argall Metal Recycling, 020 8558 3223, [Argall Metal Recycling](https://www.argall.co.uk)

5.4 Gypsum based materials – 17 08 02

Product description:

The third largest amount of material likely to arise from the demolition are Gypsum based materials, accounting for 2.3% (152.85 tonnes) of total material tonnage for the site. This equates to a volume of 127.85 m³ of waste. The main sources of Gypsum based materials are the walls, wall finishes and ceiling (Figure 10). The overall quality of the Gypsum is assumed to be average quality.



Figure 10: Gypsum ceiling tiles, and plasterboard wall and ceiling finishes in the Fitness Centre.

Recommendations

Some of the plasterboard recycling routes include being used to manufacture new plasterboard and creating agricultural products. The plasterboard should be separated on site if possible or removed by a licensed waste contractor for separation. If it is sent to disposal, it should be landfilled in a monocell (i.e., landfilled separately from the other waste).

A 2022 publication by Arup discusses the reuse potential of plasterboard. It notes that plasterboard recycling is mature, however reuse of plasterboard is nascent. The publication goes on to note the following challenges with reuse:

- plasterboard is often skimmed with gypsum plaster after installation which cannot be removed and therefore makes it unsuitable for re-use;
- if plasterboard panels are not nailed on, screw heads are often covered with plaster making them inaccessible for deconstruction;
- for reuse of plasterboard, transport and storage need to be carefully managed so that panels are not contaminated, damaged, or exposed to moisture;
- smaller sites can struggle to find the space to store the volume of plasterboard created by deconstruction activities, so storage options should be planned for in advance; and

- low reuse rates occur because of demolition practices, instead of deconstruction

The Arup publication also notes that synchronizing redevelopment sites with those that require reusable plasterboard could minimise the volume of plasterboard entering the waste stream²⁸.

Potential waste contractors

Local waste management companies that could manage the gypsum based material waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattrouktd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

5.5 Brick – 17 01 02

Product description

The fourth largest amount of material likely to arise from the demolition is Bricks, accounting for 1.86% (123.76 tonnes) of total material tonnage for the site. This equates to a volume of 82.49m³ of waste. The main sources of Bricks are the building facades (Figure 11). The overall quality of the bricks is assumed to be poor to average, with most being exposed to the elements for many years which has weathered them significantly. Stone cladding from the external façade has been grouped with the brick for this audit, however, this may want to be separated in the demolition (Figure 12).



Figure 11: Exterior of the site showing exposed brick.

²⁸ *Evaluating re-use potential: Material Profiles and vision for project workflow* Arup.
<https://www.arup.com/perspectives/publications/research/section/evaluating-re-use-potential-materials-profiles>.



Figure 12: Stone cladding on the Sir Brett Cloutman Wing façade

Recommendations

It is recommended that a local reclamation yard is contacted to see if the bricks are suitable for reuse. The supply of reclaimed product should be matched with the demand on site, at local or regional level. For storage between uses, bricks should be protected from water and temperature fluctuations to minimise deterioration. If reuse is not possible, bricks should be separated from the other materials and can be crushed to produce recycled aggregate which can be used for hard landscaping or infill. Where possible, this should be carried out on-site and used in the new construction. If this is not possible it should be sent to a licensed waste contractor for crushing and recycling.

Dismantling of bricks for reuse rather than crushing them for aggregate is possible and has been successfully demonstrated. The Circular Economy Wiki²⁹ notes the factors influencing how the dismantling of bricks can be undertaken, including:

²⁹ *Dismantling of bricks for Reuse Dismantling of bricks for reuse - Designing Buildings.*
https://www.designingbuildings.co.uk/wiki/Dismantling_of_bricks_for_reuse.

- the strength of the bricks and the mortar used to bond them (lime-based mortar can typically be removed from bricks much more easily than the concrete-based mortar (which is typically used in post 1960's buildings, and which is typically stronger than the bricks themselves);
- the surroundings and space available for demolition or dismantling (big demolition machinery such as excavators require significant space to move while dismantling bricks using hand tools requires significantly less space);
- the intended use of the bricks (as different dismantling processes can affect the durability of the bricks removed and therefore what they can be used for afterwards); and
- the project timetable (hand removal of bricks is slower compared to knocking down bricks with an excavator but it is easier to avoid breaking the bricks with a removal by hand).

Removal techniques for bricks with lime-based mortar are mostly manual and very time-consuming, using a heavy hammer and broad cold chisel. Larger areas could be removed using an excavator but requires sufficient space for machinery and there is a higher chance of damaging the bricks. To help improve efficiency, automatic brick-cleaning systems have been and continue to be developed³⁰. Where the inner leaf of brickwork has been plastered, it may be difficult to remove the plaster to reuse those bricks. The dismantling process may also impact the durability of the removed bricks and limit their potential uses.

Total reclamation on a brick-by-brick basis may therefore not be feasible, especially where bricks are bonded with cement-based mortar, but brick wall sections may be separated by saw cutting and punching techniques. There are challenges such as saw cutting brick structures at scale in a traditional way could damage the bricks and the punching method is not yet commercially used. However, the Regenerative Buildings and products for a circular economy (REBUILD) UK Engineering and Physical Sciences Research Council (EPSRC) project found that this reclamation approach may significantly lower energy consumption and carbon impact in comparison to manufacturing new bricks³¹.

The European Super Circular Estate project in the Netherlands aimed to reuse, remanufacture, and recycle 90% of materials sourced from the demolition of an outdated social housing building next door. One of the key circular techniques explored was using brick modules cut from the existing building for the new façade³². The Resource Rows housing project in Copenhagen (refer to Figure 13), demonstrated the reuse of brick wall sections in new homes. Square brick panels were cut from three existing buildings to form 3m² panels either by fixing them to a steel frame or by bedding them into a thin backing layer of concrete, both of which were on the outside of the homes³³, saving as much as 29% CO₂ by upcycling only 10% of all building materials.

³⁰ [Gamle Mursten ApS](#) developed a technology that handles demolition waste through cleaning concrete and cement from old bricks.

³¹ Zhou K, Chen HM, Wang Y, Lam D, Ajayebi A, Hopkinson P (2020) [Developing advanced techniques to reclaim existing end of service life \(EoS\) bricks – An assessment of reuse technical viability](#). *Developments in the Built Environment*. 2, 100006.

³² *Super Circular Estate SUPERLOCAL*. <https://www.superlocal.eu/sce-en/>.

³³ *Resource rows* (2022) *Lendager*. <https://lendager.com/project/resource-rows/>.

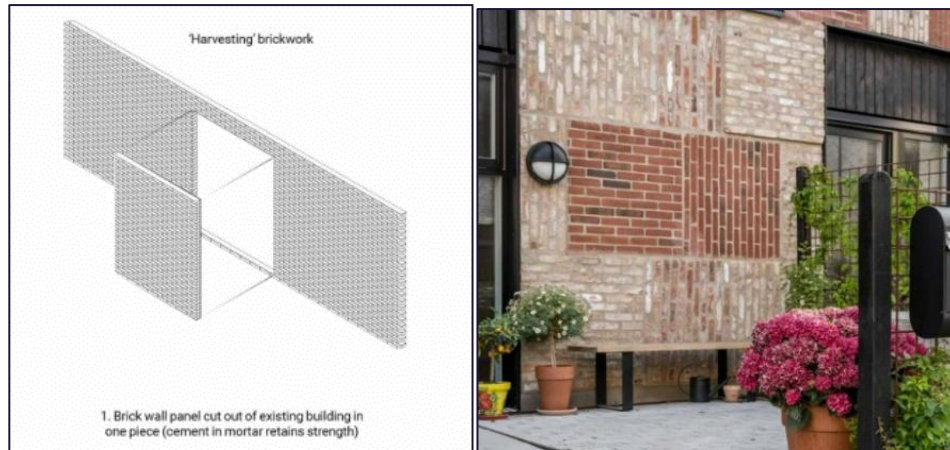


Figure 13: Diagram of brick wall panel (cement-based mortar) cut from existing building and an example of application in The Resource Rows housing project in Copenhagen.

A case study conducted by The Georgian Group has demonstrated reuse of bricks after demolition of buildings to be possible, through careful cleaning and sorting, for future restoration projects such as a Georgian-era House in London; allowing it to maintain its historical character³⁴. Other methods of reuse include building a brick path in a garden forming a pathway, building garden benches from leftover bricks or even building brick waterfalls³⁵.

Potential waste management contractors

Local waste management companies that could manage the concrete waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattroukLtd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

³⁴ The Georgian Group. https://georgiangroup.org.uk/wp-content/uploads/2018/05/The_Georgian_Group_Guides_N2_Brickwork-s.pdf.

³⁵ Beaty, V. et al. (2023) 20 incredibly creative ways to reuse old bricks, *DIY & Crafts*. <https://www.diyncrafts.com/19862/repurpose/20-incredibly-creative-ways-reuse-old-bricks>.

5.6 Timber – 17 02 01

Product description

The fifth largest amount of material likely to arise from the demolition is Timber, accounting for 1.65% (109.8 tonnes) of total material tonnage for the site. This equates to a volume of 219.59 m³ of waste. The main sources of Timber are the doors, vertical stud frames and ceiling structures (Figure 14). The overall quality of the Timber is assumed to be average quality. The doors and frames are of mainly average to good quality and the stud frames should be assessed by a contractor.

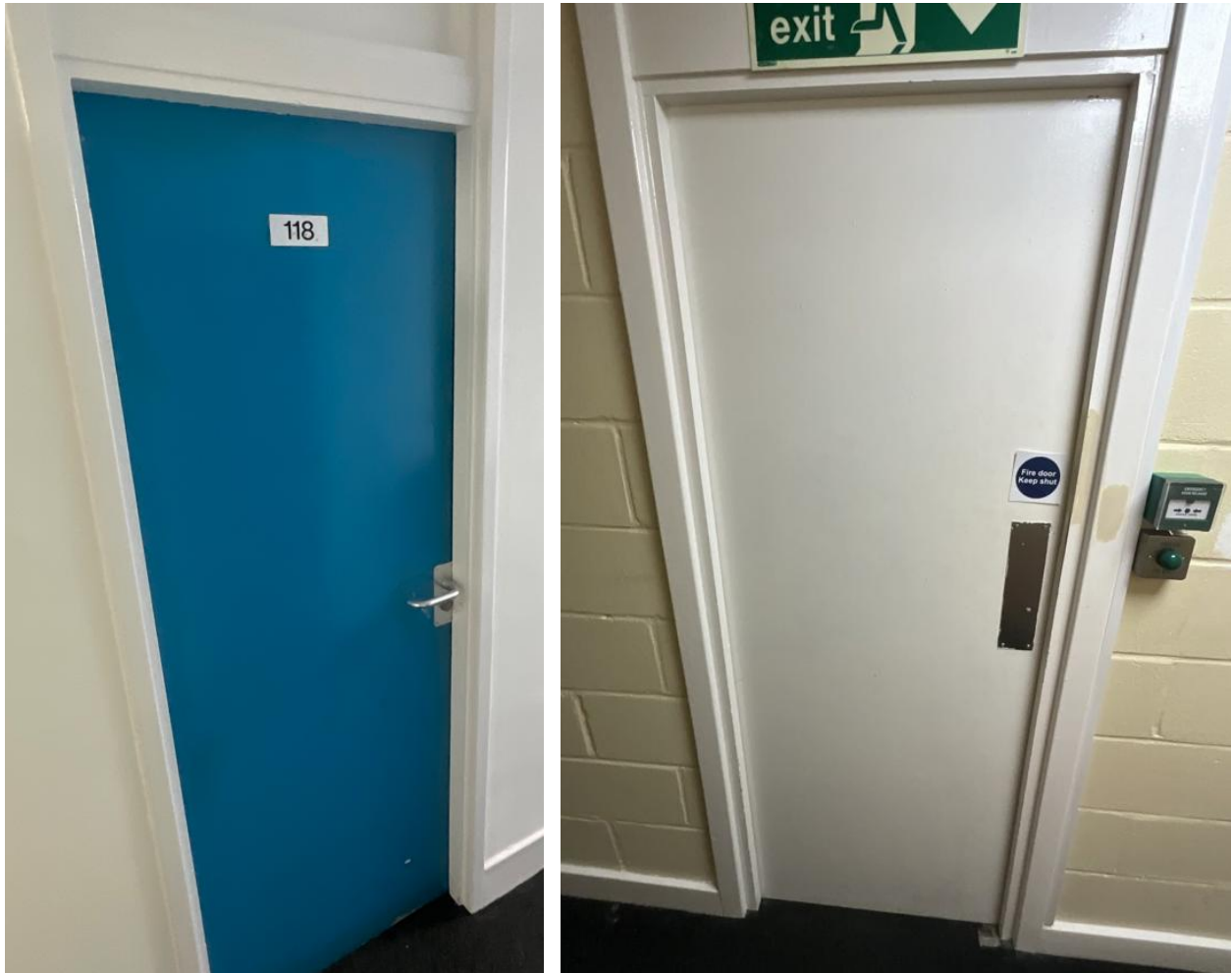


Figure 14: Examples of timber doors from the site.

Recommendations

Depending on the condition, doors may be reused within the redevelopment or through a community reuse scheme. If not, they could be recycled. Timber from the doors and stairs may be suitable for reuse or recycling but this will depend on the condition once removed. The national Community Wood Recycling project provides information on a network of wood recycling social enterprises (Any timber that is not reused should be removed by a licensed waste contractor for recycling or disposal (if timber is hazardous due to treatments applied)).

Before disposing of any timber, it is recommended that the Waste Wood Assessment Guidance for the Construction and Demolition Sectors (from the CIWM Construction Demolition Waste Forum³⁶) is followed to ensure that waste wood is properly classified at the time of disposal. The document also helps to

³⁶ *Condemwaste.org*. <https://condemwaste.org/wp-content/uploads/2021/07/CIWM-CD-Waste-Wood-Guide-v1.0.pdf>.

identify which waste wood items are hazardous in accordance with Technical Guidance WM3³⁷. Until 2007, some softwood timbers may have been treated with preservatives that contain hazardous substances above the threshold of WM3. Any such waste will need to be identified at source and separated from other wood waste and consigned as hazardous waste.

A 2022 publication by Arup discusses the reuse potential of timber. It notes that salvaging for reuse of timber studwork and joists does not require specialist labour meaning these components are more widely available than beams, doors, or floorboards. The publication goes on to note the following challenges with reuse:

- lead time and labour required will often increase if timber is reused (compared to using new timber), as sourcing, deconstructing, testing, inspecting & post fabricating of reused timber will all require higher costs and extended project schedules. However, lower purchase costs and carbon savings could offset this;
- if old timber flooring is being relayed, more skill will be required to lay it in a way that avoids trip hazards as old boards will typically have some warping, and;
- block flooring isn't reused as widely as timber floorboards as it can be more labour intensive to clean.

The publication recommends that, in order to avoid damage to tongues and grooves, specialist timber reclaimers should be used to take up strip flooring (they will also work faster and produce less wastage)³⁸.

After demolition, timber can be repurposed into creating garden furniture. The Royal Botanic Gardens in Kew, London implemented a program where timber from tree removals and building demolitions is transformed into attractive and durable garden furniture.³⁹ A Lewes-based company is also taking the first steps to create an urban farm to upcycle salvaged materials from the Phoenix Industrial Estate to create planters and a greenhouse as part of its redevelopment of the brownfield site⁴⁰.

Potential waste contractors

Local waste management companies that could manage the timber waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattrouk.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)
- Veolia, [Commercial Wood Recycling | Veolia UK](#)
- Forest Recycling Project, 020 8539 9076, [Reclaiming Wood | Forest Recycling Project](#)

³⁷ Agency, E. (2021) *Waste classification technical guidance*, GOV.UK. <https://www.gov.uk/government/publications/waste-classification-technical-guidance>.

³⁸ *Evaluating re-use potential: Material Profiles and vision for project workflow* Arup. <https://www.arup.com/perspectives/publications/research/section/evaluating-re-use-potential-materials-profiles>.

³⁹ Centre, U.W.H. *Royal Botanic Gardens, Kew, UNESCO World Heritage Centre*. : <https://whc.unesco.org/en/list/1084>.

⁴⁰ *Lewes-based company creates greenhouse and planters entirely from salvaged materials for Landmark Urban Farm* (2022) *SussexWorld*. <https://www.sussexexpress.co.uk/news/people/lewes-based-company-creates-greenhouse-and-planters-from-salvaged-materials-3603862>.

5.6.2. Engineered timber

Product description

Engineered timber has been quantified as part of the total amount of timber, however, it is important to note that this material can be more challenging to recycle and should be separated from other timber types. Engineered timber has been identified as likely as the floor material in the Fitness Centre studios (Figure 15), and MDF or chipboard may have been used elsewhere in the building, such as toilet cubicles.



Figure 15: Studio floor in the Fitness Suite, a likely source of engineered timber.

Recommendations

The treatment of engineered timber for recycling is complex due to the presence of glues, resins and surface treatments, making it distinct from the recycling of natural wood. While engineered timber can be recycled, it may also be 'downcycled' into lower-value products (such as animal bedding) or incinerated for energy recovery.

Alternatively, reuse may be an option for engineered timber. Solid wood floors can be sanded and refinished multiple times to restore them to as-new condition. For example, the new home arena of Scottish professional basketball team Caledonia Gladiators recently opened fitted with a reclaimed wooden sports floor⁴¹. The beech sports floor made by solid wood floor company Junckers was previously used in the large, multi-purpose sports hall at the University of Birmingham. Reclaimed sports floors have also been reused in bars, workspaces and residential buildings.

Potential waste contractors

Local waste management companies that could manage the engineered timber waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- Veolia, [Commercial Wood Recycling | Veolia UK](#)
- Junckers, +44 1376 534700, [Junckers Flooring | Find your Danish designed floor here](#)

⁴¹ Junckers. (n.d) *Caledonia Gladiators: Reclaimed Junckers sports floor for new basketball arena*. <https://www.junckers.co.uk/sports-flooring/sport-flooring-projects/case/caledonia-gladiators>

5.7 Insulation materials – 17 06 04

Product description

The sixth largest amount of material likely to arise from the demolition is insulation material, accounting for 0.92% (61.38 tonnes) of total material tonnage for the site. This equates to a volume of 438.44m³ of waste. Due to the low density of this material, it accounts for a large volume of waste generated during the demolition. This is assumed to be made up of all Mineral Wool insulation likely to be found in ceiling voids and wall voids. It is important to note that the assumption was made that all solid walls have been insulated, however our survey techniques were not invasive.

Recommendations

Reuse of most insulation material is unlikely to be possible as it is usually damaged during removal. Rockwool has invested in a recycling programme that takes back certain types of insulation if it is not mixed with other waste. Otherwise, insulation is typically disposed of to landfill via a licensed waste contractor or sent for energy recovery depending on contaminants. Mineral wool waste from older buildings could be classified as hazardous waste depending on the content of carcinogenic fibres. Care should be taken to ensure that insulation that may contain ozone-depleting substances is removed and handled carefully and testing of these materials may be required.

Potential waste management contractors

Local waste management companies that could manage the insulation waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- Rockwool, 01656 868400, [rockwool-uk-recycling-brochure.pdf](#)

Potential hazardous waste management contractors

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- Waste London, 0207 593 8393, [Waste London waste clearance London, Kent, Surrey, and Sussex | Waste London waste clearance are the premier London waste clearance company. Domestic waste, commercial waste removal, building site waste clearance leaders](#)

5.8 Bituminous Materials – 17 03 02

Product description

The seventh largest amount of material likely to arise from the demolition is Bituminous material, accounting for 0.38 % (25.32 tonnes) of total material tonnage for the site. This equates to a volume of 21.51 m³ of waste. The main source of bituminous materials is the road in the yard and the roof (Figure 16). The overall quality of the Bitumen is assumed to be poor due to weathering.



Figure 16: Road in the yard of the building.

Recommendations

Bitumen membrane may be difficult to recycle without the correct separation.⁴² There are a few companies that will be able to recycle the roofing material. A Dutch company, Icopal BV, has worked on bitumen End of Life Solutions and created a bitumen roofing recycling facility so that it can be used again as Citumen⁴³. The Citumen can then be used for waterproofed roofs or roads and industrial systems^{44,45}. The roofing should be surveyed before being stripped out to correctly identify the feasibility of recycling and the best method for removal.

In Spain, researchers have evaluated and studied the mechanical properties of bitumen generated from building demolition waste in the laboratory and in the field. The waste was used as unbonded aggregate for pavement foundations and roadbeds. The road mechanical performances were acceptable. Bitumen

⁴² A recycling resurgence, Elizabeth Hart, *Professional Roofing*, 2023, <https://www.professionalroofing.net/Articles/A-recycling-resurgence--11-01-2017/4124>

⁴³ Bitumen roofing can be recycled... but isn't, 2013, <https://cordis.europa.eu/article/id/133609-bitumen-roofing-can-be-recycled-but-isnt>

⁴⁴ The first 100% bitumen recycling facility has been unveiled by leading building membranes specialist the Icopal Group, Barbour Product Research, 2008, <https://www.barbourproductsearch.info/the-first-100-bitumen-recycling-facility-has-been-news011535.html>

⁴⁵ Companies To Recycle Bitumen from Roofing, De Ingenieur, 2018, <https://www.deingenieur.nl/artikel/companies-to-recycle-bitumen-from-roofing>

which is mostly used as a binder for asphalt or concrete can also be utilised in the construction of walkways, bike paths, parking lots, and driveways⁴⁶.

Potential waste management contractors

Local waste management companies that could manage the bituminous material waste include:

- OCL Regeneration Ltd, 01634 251311, [OCL Regeneration | OCL Regeneration](#)
- Coast & Counties Contractors Ltd, 0800 230 0644, [Tarmac Surfacing Specialists | Tarmac & Pothole Repairs \(coastandcounties.co.uk\)](#)
- TARMAC A CRH Company, 0370 111 6116, [Home page - Tarmac](#)
- AAROC AGGREGATES RECYCLING, 519 659 9110, [AAROC Recycling – AAROC Aggregates | Aggregate Supplier – Large scale infrastructure developments to residential projects.](#)

5.9 Tiles and Ceramics – 17 01 03

Product description

The eighth largest amount of material likely to arise from the demolition is Tiles & Ceramics, accounting for 0.16% (10.84 tonnes) of total material tonnage for the site. This equates to a volume of 4.52m³ of waste. The main sources of Tiles & Ceramics are wall and floor tiles (Figure 17), and sanitary ware including toilets, sinks, showers and urinals. The overall quality of the Tiles & Ceramics is assumed to be average and could lend itself to some reuse opportunities as outlined below.

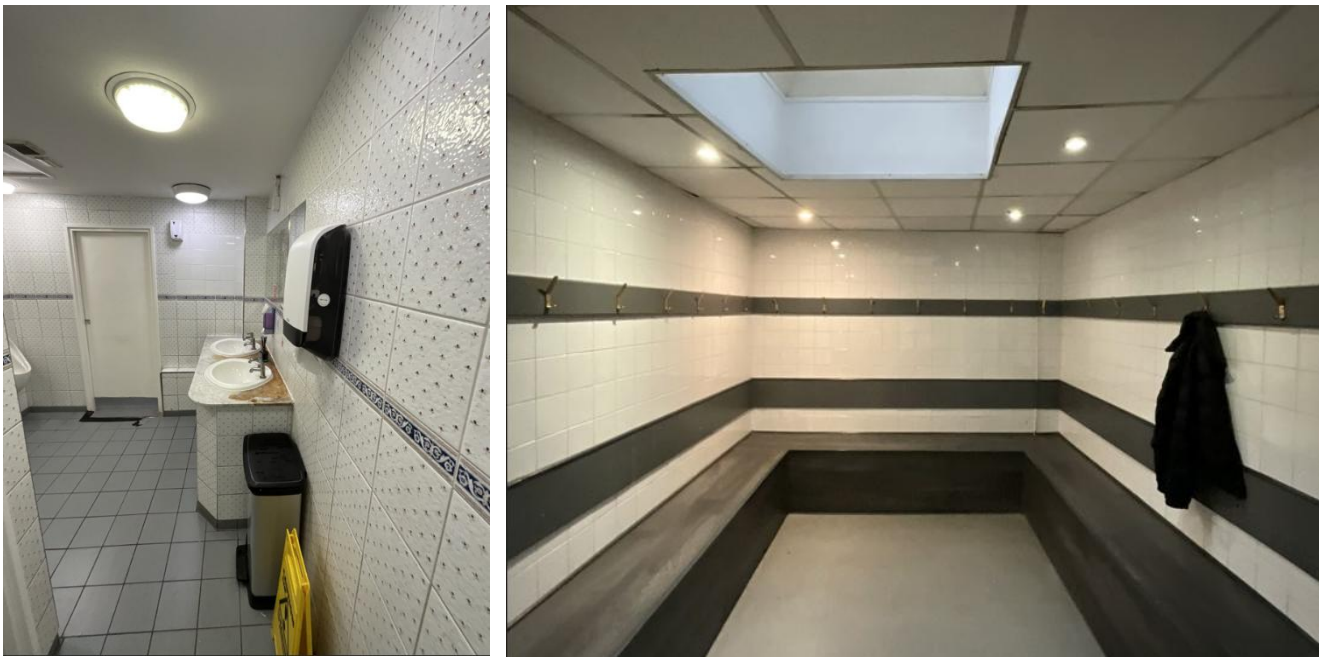


Figure 17: Examples of ceramic tiles at the site.

Recommendations

A research project called “Facilitating the Circulation of Reclaimed Building Elements (FCRBE)” reported that baths, wash hand basins, sinks, drains, urinals, and toilet bowls are commonly reclaimed, especially sanitary equipment with a particular aesthetic interest.⁴⁷ That said, some items may require in-depth cleaning to be reused and some glued/mortar bound installations may be difficult to dismantle. Where

⁴⁶ *Recycling of Waste Materials for Asphalt Concrete and Bitumen: A Review* - PMC (nih.gov)

⁴⁷ *Vb.nweurope.eu*.

https://vb.nweurope.eu/media/9955/20200331_fcrbe_wpt3_d1_1_a_guide_for_the_integration_of_eclaimed_building_materials.pdf.

reuse is not possible, ceramics should be removed by a licensed waste management contractor and recycled.

Greenhouses can make the most of the repurposed tiles and ceramic by using them in flooring. Offering durability and water resistance makes them suitable for a greenhouse environment. Additional uses could be in a pathway or a decorative feature, or for drainage and water management purposes. They can be used as fillers or separators in drainage layers or as components in water collection systems. The Kew Gardens in London, UK, have incorporated decorative ceramic tiles into their greenhouse structures, showcasing the artistic potential of recycled tiles while creating unique focal points⁴⁸. The ceramic membranes manufactured from recycled locally sourced materials could facilitate the cost-effective recycling of treated wastewater and help address water shortages which is being tried to be applied in EU-funded REMEB project⁴⁹.

Potential waste management contractors

Local waste management companies that could manage the tiles and ceramic waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattrouktd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

5.10 Glass – 17 02 02

Produce description

The ninth largest amount of material likely to arise from the demolition is Glass, accounting for 0.12% (8.02 tonnes) of total material tonnage for the site. This equates to a volume of 4.01 m³ of waste. The main sources of glass are windows and external doors (Figure 18). The overall quality of glass is assumed to be average to good. Particularly good quality glass features include the large glass wall located in the fitness suite (Figure 19), windows in the fitness suite, and stained glass in the multi-faith room of the main building.

⁴⁸ Centre, U.W.H. *Royal Botanic Gardens, Kew, UNESCO World Heritage Centre*. : <https://whc.unesco.org/en/list/1084>.

⁴⁹ *Ceramic solution opens recycled wastewater possibilities*. <https://cordis.europa.eu/article/id/241021-ceramic-solution-opens-recycled-wastewater-possibilities>.



Figure 18: Examples of glass features identified at the site.



Figure 19: Glass wall on the ground floor of the Fitness Suite.

Recommendations

If possible, glass should be segregated on site for recycling and removed and managed by a licensed waste contractor. If an aluminium recycler is to be used to recycle the window and glazing frames, they should be consulted on whether the glass should be removed prior to collection. Crushed glass can be used as an aggregate incorporating into concrete, asphalt, or other construction materials, reducing the demand for virgin materials. This glass aggregate can be commonly used for road surfaces, pathways, and drainage systems.

Glass can be reused as a decorative feature and for pathways. The Royal Horticultural Society's Garden Wisley in Surrey incorporated recycled glass mulch in their planting beds to make it attractive along with helping with moisture retention⁵⁰. Another University of Sheffield building, The Diamond, is made of aluminium diamond-shaped facade exterior, with galvanised steel sheets and glass, all made from recycled materials⁵¹. Reuse opportunities should be considered for good quality glass, such as wall shown in Figure 18 and the stained glass in the main building. Windows which are considered good quality could be considered for reuse directly in local development or refurbishment sites.

Potential waste management contractors

Local waste management companies that could manage the glass waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattrouktd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

⁵⁰ *The Glasshouse Journey through the Wisley Glasshouse / RHS Gardening*. : <https://www.rhs.org.uk/gardens/wisley/garden-highlights/the-glasshouse>.

⁵¹ *The diamond (2023) The University of Sheffield*. <https://www.sheffield.ac.uk/library/buildings/diamond>.

5.11 Plastics – 17 02 03

Product description

The tenth largest amount of material likely to arise from the demolition is Plastics, accounting for 0.11% (7.22 tonnes) of total material tonnage for the site. This equates to a volume of 5.32 m³ of waste. The main sources of Plastics are found in the roof and the vinyl flooring (Figure 20). The overall quality of the Plastics is assumed to be average to poor quality, due to use and wear.



Figure 20: Vinyl flooring in the Fitness Centre.

Recommendations

Plastic should be separated on site if possible or removed by a licensed waste management contractor for separation. Schemes exist to recycle old vinyl flooring, depending on the quality and amount of screed attached. This can either be dropped off at specific locations or collected. If the product does not meet the specification for recycling, then it is likely to be either disposed of to landfill or energy recovery.

Potential waste management contractors

Local waste management companies that could manage the plastic waste include:

- QM Recycled Energy, 01732 521 025, <https://www.qmre.ltd/>
- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- SRC Group, 01371 874 212, [Home | SRC Aggregates](#)
- Bywaters, 020 7001 6000, <https://www.bywaters.co.uk/sectors/construction>
- Quattro, 0208 838 2648, <https://www.quattroukltd.co.uk/>
- Hubba UK, 0333 050 0033, [Hubba | Construction waste solutions UK-wide, from skips to full service.](#)

5.12 Textiles -20 01 11

Product description

The eleventh largest amount of material likely to arise from the demolition is Textiles, accounting for 0.04% (2.72 tonnes) of total material tonnage for the site. This equates to a volume of 13.58 m³ of waste. The main sources of Textiles are carpets (Figure 21). The overall quality of the Textiles is assumed to be average to poor quality, due to the use and wear.

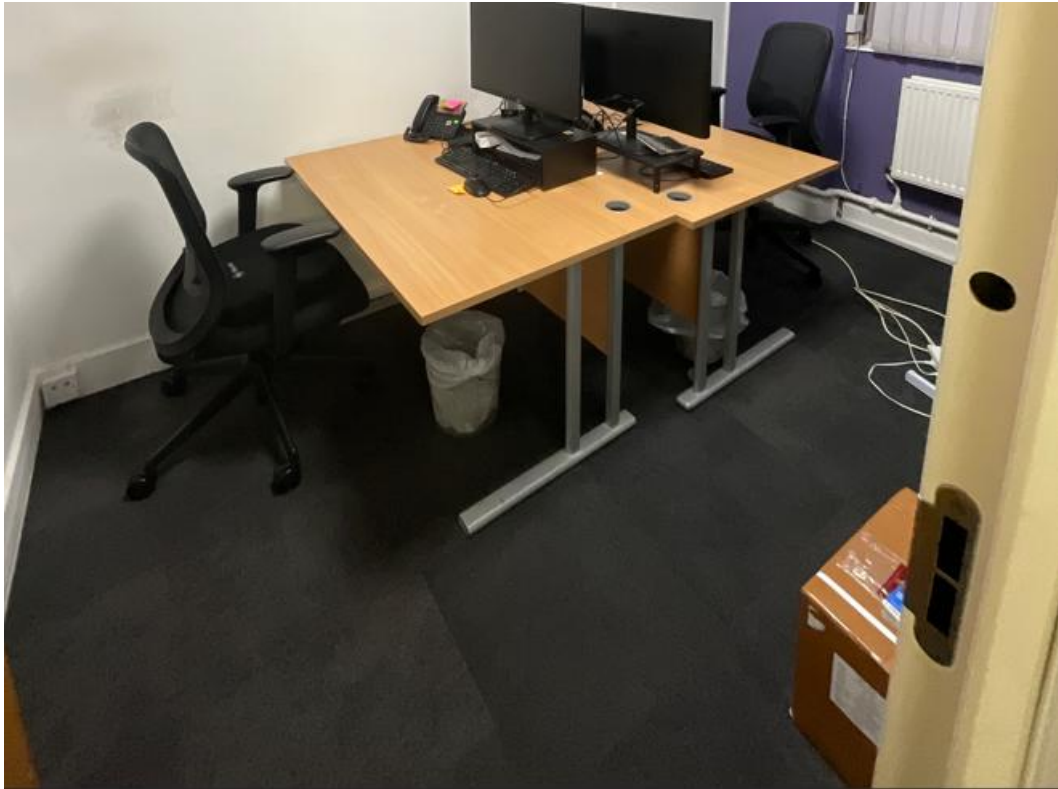


Figure 21: A carpeted office on the ground floor of the main building.

Recommendations

Many carpets available today can be recycled into products such as insulation or sports pitch materials⁵². Further advice on the reuse of commercial carpets / carpet tiles can be found on specialist organisation websites. For example, Carpet Recycling UK⁵³ have helped to divert millions of tonnes of carpet waste from landfill since their foundation in 2007 and they provide case studies, advice, and options to recycle and reuse carpet, in order to reduce the amount being sent to landfill.

Potential waste management contractors

Local waste management companies that could manage the textiles waste include:

- Envirocycle London, 07549 448123, [Waste Clearance, Reclamation & Carpet Tile Recycling | London & Surrey](#)
- Carpet Recycling UK, 0161 440 8325, <https://carpetrecyclinguk.com/>
- North London Waste Authority, 020 8489 5730, [Carpet | NLWA](#)

⁵² *Carpet disposal and recycling* (2023) *Business Waste*. <https://www.businesswaste.co.uk/learn-about/carpet-disposal-and-recycling/>.

⁵³ <https://carpetrecyclinguk.com/>

5.13 Other materials

Plant room equipment

There are a two plant rooms/boiler rooms/gas meter rooms found within the basement, as well as various locations with external air conditioning equipment (Figure 22). When plant equipment is to be removed this should be carried out by specialist contractors, and the metal elements recycled where possible.



Figure 22: A basement plant room, and an air conditioning outlet in the Fitness Centre

Light fittings

A range of light fittings were found throughout the site (Figure 23). Metal light fittings should be segregated with other metal for recycling and the fluorescent tubes separated for disposal by a licensed hazardous waste carrier and facility. Recolight (<https://www.recolight.co.uk>) offers free recycling of lamps and has multiple nearby commercial collection points, the closest being Rexel UK Ltd, situated in West End on Berners Street⁵⁴. More innovative and circular lighting solutions include collaborating with a manufacturer to carefully strip out lighting and renew the light fittings' warranty.⁵⁵ There are, however, common reuse/refurbishment challenges with lighting as new electric regulations and better performing fittings could limit/remove possible uses. Outdated designs may also limit the desirability for potential new users.

⁵⁴ Rexel UK | Electrical Wholesaler

⁵⁵ <https://kb.breeam.com/knowledgebase/approved-breeam-innovation-applications/>



Figure 23: Examples of different lights identified at the site

Kitchen units

There are a variety of kitchen areas within the site, with different types of cupboards and worktops present, including the main hostel kitchen and staff kitchen in the Fitness Suite (Figure 24). Kitchen units should be reused where possible by offering to a local reuse charity. If cabinets and worktops cannot be reused, the MDF, metal, timber and/or composites should be separated and be removed by a licensed waste management contractor.



Figure 24: Kitchen units identified at the site.

6. Hazardous waste

Any hazardous waste generated from the strip out works will need to be disposed of by a licensed hazardous waste contractor. Some general advice for specific types of hazardous waste management is listed in the subsections below.

Asbestos

An Asbestos Re-Inspection Survey (05/06/2024) for YMCA 184 Tottenham Lane was provided to BRE which states that asbestos is strongly presumed to be located within the building at various areas, including the insulation board. Any asbestos containing materials should be managed according to the Control of Asbestos Regulations 2006. For more information refer to HSE website⁵⁶

Fluorescent tubes

As noted in the lighting section above, any fluorescent light tubes should be disposed of by a licensed hazardous waste contractor as they are likely to contain small amounts of mercury dust which can cause environmental harm.

Treated timber

Timber testing may be required to ensure hazardous materials associated with treated timber products are correctly identified and dealt with appropriately. It is unlikely that stud walls, fire doors, and engineered wood flooring will need to be treated for hazardous materials.

Potentially hazardous waste contractors:

Local waste management companies that could manage the potentially hazardous waste include:

- Powerday Enfield, 020 8960 4646, [Enfield Skip Hire & Recycling Centre | Powerday](#)
- Waste London, 0207 593 8393, [Waste London waste clearance London, Kent, Surrey, and Sussex | Waste London waste clearance are the premier London waste clearance company. Domestic waste, commercial waste removal, building site waste clearance leaders](#)
- Junkwize, 020 3797 4568, [Hazardous Waste Disposal in London | Junkwize](#)
- Haringey London, 020 8489 2280, [Welcome to Haringey Council | Haringey Council](#)
- CSG, 0808 134 4251, [CSG | Waste Management Company | Industrial & Household Waste](#)

⁵⁶ [Asbestos - HSE](#)

7. General Advice

7.1 Reclamation

The reclamation values for any Key Demolition Products (KDPs) detailed in this report are dependent upon finding a market for the right items at the right time. Ensuring a long lead-in time and maximum exposure to site activities and developing local networks are thus key considerations. The best chances for reuse, with the best environmental and economic benefits, are as near to site as possible - used by the same client locally or sold or given away locally.

The following recommendations may assist in maximising the reclamation potential of the identified KDPs:

- Consult the client on the findings of this report and consider options for closed-loop reuse in the re-development. This may require some adaptation of designs and specifications for the new development so that reusable components are incorporated. This should be carried out only where careful consideration, including appropriate inspection and testing, has been taken place regarding the impact on the performance (e.g., structural, fire, hazardous materials, thermal resistance, etc.) of any spaces or elements that may be redesigned to incorporate reclaimed components.
- Consider setting aside storage on site for segregation of salvage items.
- Advertise specific salvage items for free on relevant platforms (e.g., www.salvoweb.com). Some platforms operate a demolition alert service on their websites which serves to bring forthcoming products to the attention of potential buyers or users.
- Contact local architectural salvage merchants about specific items. Ensure that salvaged items are removed and stored in such a way that all components remain together.

7.2 Adaptability

From a circular economy perspective, the first option would be to retain structures for their intended use, where environmentally and socially suitable. For example, a former Dundee College building was redeveloped into 310 apartments and a cinema to provide additional housing and leisure facilities in the local area, delivering economic and social benefits while reducing the waste, carbon emissions, and other impacts of demolishing to build new⁵⁷.

Redevelopments such as the one mentioned above, directly support a circular economy by avoiding unnecessary demolition and new construction on the site whilst delivering social and economic value to the local area in the form of employment, revenue and, in the case of the makerspace and entertainment/leisure facilities and community vibrancy. A logistics hub or makerspace could also support the wider circular economy by facilitating reuse of materials from other urban development projects or even materials from other sectors (i.e., not limited to construction materials). Additionally, these suggestions may offer commercial benefits to the project by increasing the attractiveness of the area to potential buyers of new homes in the development and/or area. Where possible, components arising from strip out and demolition of buildings onsite should be reused or repurposed as part of the new development.

Feasibility studies will be required to fully explore options for redevelopment. It is recommended that consultation with local residents, business owners, local planning authorities, and other stakeholders is undertaken to better understand local needs and ambitions.

7.3 Candidate sites for direct material reuse and recycling

There are multiple upcoming or planned projects within Haringey Council that may be considered as possible options for reuse or recycling of demolition, or strip-out, products. Details of these can be found through the Haringey Council website⁵⁸, for example:

- Oak Lawn, Compton Avenue, Hornsey, London, N6 4LB

⁵⁷ Duncan, E. (2021) *Constitution road: Student flats plan for old dundee college building approved*, *The Courier*.

<https://www.thecourier.co.uk/fp/news/dundee/2720013/constitution-road-dundee-college-plans-approved/>.

⁵⁸ [Major projects and regeneration | Haringey Council](#)

- Mallard Place, 1 Mallard Place, Wood Green, London, N22 6TS
- 2 to 240 Block, Tiverton Road, Tottenham, London, N15
- 30-48 Lawrence Road, Tottenham, London, N15 4EG
- Holcim UK Limited, Ferme Park Sidings, Cranford Industrial Estate, London, N8 9DG
- 289-295 High Road, Wood Green, London, N22 8HU
- 1-6, Crescent Mews, London, N22 7GG

It is recommended that direct communication be made with the relevant parties for upcoming developments to initiate discussions on the potential for acting as a supplier of secondary materials. In any discussions, both parties (i.e., material donors and the owners/project managers of the potential recipient site) will need to reach an agreement about how to share responsibility for organising and funding any inspections, testing, transport, and storage of materials to be supplied.

7.4 Material passports

Additionally, the project may demonstrate and support industry innovation in circular economy by creating “material passports” or “component passports” for any reusable components. This involves the creation of a digital data record containing useful information about the component's key attributes that can support its circular use and reuse (for example by providing standardised information for listing on reused materials platforms such as Globechain). For further information see outputs from the Buildings As Materials Banks project (BAMB), the Mapping the flows project⁵⁹, and the Orms Materials Passports working group. Also note that the CIRCuIT project is currently developing a ‘Material Exchange Portal’, an online platform that matches materials arising from demolition projects with material requirements on upcoming construction projects (for which material passports is a useful tool).

⁵⁹ *Mapping the flows Circuit*. <https://www.circuit-project.eu/mapping-the-flows>

8. Conclusion and recommendations

The results of the audit show that potential material arising from the demolition phase of the project is estimated to be circa 6656.42 tonnes. concrete, metal, gypsum-based materials, brick, timber, insulation materials, bituminous materials, glass, plastic, tiles and ceramics, and textiles. The breakdown of KDPs by weight (%) is shown in Figure 25.

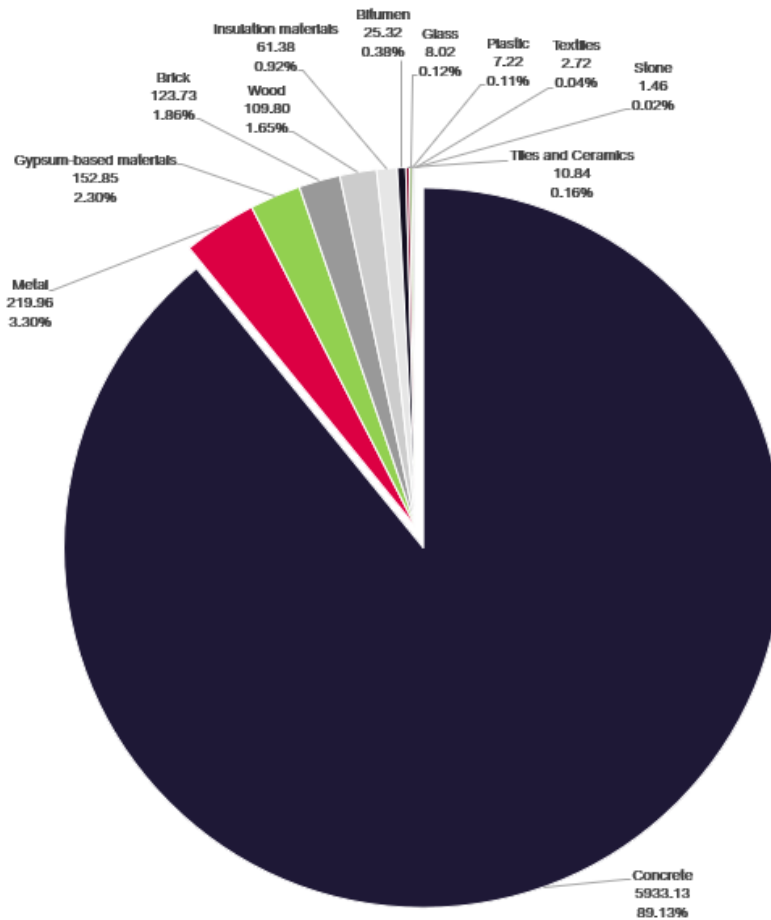


Figure 25: Key Demolition Products by Weight (%).

To maximise the recycling potential of the KDPs it is recommended that the following materials are separated on site:

- Concrete and brick;
- Non-ferrous metals;
- Ferrous metals;
- Gypsum-based materials;
- Tiles and Ceramics;
- Glass;
- Insulation Material;
- Timber;
- Textiles;
- Plastic;
- Bitumen;

There is potential for steel and aluminium reuse. Where there is limited potential for reuse, there is potential for recycling e.g. metal, plasterboard, glass, and ceramics, which could divert the majority of waste from landfill.

- The findings and recommendations from this pre-demolition audit can help the project recognise:
- High profile environmental credentials;
- Savings in disposal and transport costs;
- Revenue and landfill cost savings from reuse and recycling;
- Reduction in environmental nuisance;
- Best practice in materials waste management; and,
- A duty of care for material waste.

Reuse and recycling targets

The London Plan requires a target of 95% of waste to be diverted from landfill. It is therefore recommended that a recycling and re-use strategy that can satisfy this target is developed prior to the start of the strip-out phase. The results of this pre-demolition audit, and the recommendations made in this report can help inform such a strategy.

Table 2 outlines suggested re-use and recycling targets for each KDP, highlighting how much material could be directly reused and recycled for each of the material groups mentioned in this report. The proposed strategy scenario would satisfy the London Plan's 95% target, as shown in Table 3. This scenario is based on the findings of the audit and high-level assumptions regarding the potential re-use and/or recyclability of certain material groups. If the scenario as presented can be achieved, then this could result in 3% re-use and 94.9% recycling (both by weight) of KDPs, which would result in 97.9% diversion of the total non-hazardous waste from landfill (by weight), meeting the target set in The London Plan. If the proposed strategy as outlined in Table 2 is followed, the estimated carbon emissions (kgCO₂eq) that would be emitted from the waste disposed of in landfill is shown in Table 4. It is recommended that setting targets per KDP is completed. It should be noted that this is an indicative assessment, and that further investigation should be undertaken to determine the practicalities of achieving the levels of re-use and recycling.

Comparison of actual material arisings with forecast

During the strip-out, details of the actual materials arisings, and the waste management methods used, should be recorded to allow a comparison between actual with forecasts, and to assess performance against the targets set. This is a requirement in post-completion reporting for referred developments in London as per the London Plan 2021. SmartWaste is a web-based tool that can be used to record details of waste arisings and waste management methods used (see Appendix A for further details). SmartWaste also allows users to produce reports of waste arisings by waste product and diversion of waste from landfill figures along with reports on other environmental impacts.

Following completion of the project, any barriers to achieving the targets should be reviewed to ensure that these barriers can be considered and overcome in future projects.

Table 2: Potential non-hazardous waste management target percentages for diversion from landfill/incineration

European Waste Code (EWC)	KDP Group	Total Weight (Tonnes)	% Reuse Target	Weight Reused (Tonnes)	% Recycled Target	Weight Recycled (Tonnes)	% Diverted* Target	Weight Diverted (Tonnes)	End of Life Scenarios	Notes
17 01 01	Concrete	5955.51	0	0.00	97.5	5806.62	97.5	5806.62	Cut and reused / crushed and recycled	Reuse is unlikely as concrete needs to be crushed to be recycled as aggregate.
17 05 04	Metal	219.96	2	4.40	98	215.56	100	219.96	Dismantled and reused / recycled	Direct reuse of metal is unlikely due to condition of metal elements such as garage doors or playground areas, most have been exposed to weather for a long period of time. Good potential for recycling however.
17 08 02	Gypsum-based materials	152.85	0.00	152.85	50.00	76.43	50	229.28	Decontaminated and recycled / disposed	Plasterboard on site is assumed to be skimmed with gypsum making it unsuitable for reuse. Specific conditions need to be met in order to achieve the targets for recycling.
17 01 02	Brick	123.73	20	24.75	75	92.80	95	117.55	Cut and reused / crushed and recycled	A good option for reuse directly on site as sections of new wall. Discussed in the relevant recommendations section.
17 02 01	Timber	109.80	15	16.47	65	71.37	80	87.84	Reused / Recycled, avoid incineration	Some timber doors were in good condition and could be suitable for reuse. Lower quality timber should aim to be recycled timber. Engineered timber may be difficult to recycle, but contractors should be contacted over the possibility of recycling/reuse
17 06 04	Insulation materials	42.75	0	0.00	50	21.38	50	21.38	Recycling possible but challenging	Can be reprocessed into a similar surface again, contact the original supplier to see if they offer recycling schemes. Reuse unlikely as insulation will likely be damaged during removal
17 03 02	Bitumen	25.32	0	0.00	25	6.33	25	6.33	Decontaminated and recycled / disposed	Some options for recycling have been identified, but it is unlikely this material can be reused directly on site.
17 01 03	Tiles and Ceramics	10.02	0	0.00	95	9.52	95	9.52	Dismantled and reused / recycled	Direct reuse of metal is unlikely due to condition of metal elements such as garage doors or playground areas, most have been exposed to weather for a long period of time. Good potential for recycling however.
17 02 02	Glass	8.02	5	0.40	80	6.41	85	6.81	Reused / recycled	Some options for reuse have been identified, but reuse of glass is usually limited. Glass is highly recyclable, but may be difficult in some circumstances
17 02 03	Plastic	7.22	0	0.00	100	7.22	100	7.22	Recycled	Plastic is highly recyclable, but unlikely to be suitable for direct reuse due to condition
20 01 11	Textiles	2.72	0	0.00	100	2.72	100	2.72	Reused / Recycled, avoid incineration	Carpet condition will limit the direct reuse potential onsite, therefore recycling is recommended

Table 3: Overall reuse/recycling targets with total diversion %, if targets in Table 2 are achieved.

KDP Group	Total Weight (Tonnes)	% Reused by Weight	Total Weight Reused	% Recycled by Weight	Total Recycled (Tonnes)	% Diverted by Weight	Total Weight Diverted (Tonnes)	Total Weight to Landfill (Tonnes)
All Material	6659.36	3.0%	199.16	94.9%	6317.08	97.9%	6516.24	143.12

Table 4: Estimated carbon emissions (kgCO₂eq) from waste sent to landfill, if targets in Table 2 are achieved. Landfill coefficient (kgCO₂eq/tonne) data source: *Greenhouse gas reporting: conversion factors 2025*; GOV.UK.

European Waste Code (EWC)	KDP Group	Weight NOT Diverted (Tonnes)	Landfill Coefficient (kgCO ₂ eq/tonne)	Carbon Emission (kgCO ₂ eq)
17 01 01	Concrete	148.89	1.26338	188.101744
17 05 04	Metal	0.00	1.26435	0
17 08 02	Gypsum-based materials	76.43	71.95	5498.914888
17 01 02	Brick	6.19	1.26338	7.816154644
17 02 01	Timber	21.96	925.34348	20319.88322
17 06 04	Insulation materials	21.38	1.26338	27.00721109
17 03 02	Bitumen	18.99	1.26338	23.99313864
17 01 03	Tiles and Ceramics	0.50	N/A	N/A
17 02 02	Glass	1.20	8.98311	10.80206483
17 02 03	Plastic	0.00	8.98311	0
20 01 11	Textiles	0.00	496.78228	0
17 05 04	Stone	0.44	1.26338	0.552174126
Total		295.97	N/A	26077.0706

9. Appendix

9.1 Appendix A: SmartWaste Tool

SmartWaste® is part of the SmartSite software for better site safety, health, environmental and quality performance. SmartWaste is a web-based membership tool allowing you to comprehensively measure and monitor the environmental impact of your construction, demolition, or refurbishment site.

The tool can be used for:

- preparing, implementing, and reviewing Site Waste Management Plans (SWMPs);
- industry waste benchmarks; and,
- online measuring and reporting on;
 - waste (aligned to defined waste groups);
 - site energy, fuel, and water use;
 - procurement of certified/sustainable materials;
 - transport impacts from deliveries, waste removal and staff movements;
 - incidents, complaints, and visits;
 - biodiversity and ecology;
 - project management statistics such as number of staff, staff hours and toolbox talk records;
 - carbon impacts from energy and water use, waste management processes, embodied; carbon of materials and transport of materials, waste, and staff; and,
 - Considerate Constructors Scheme;

This membership tool is frequently updated and offers the user flexibility, reporting and support. Data are collated in SmartWaste to meet the latest BREEAM credits and can be downloaded. More information is available at www.bresmartsite.com.

9.2 Appendix B: Table of assumptions

Element	Material	Assumption
Toilet	Tiles & ceramics	Default element weight applied (35kg)
Sink (bathroom)	Tiles & ceramics	Default element weight applied (11kg)
Sink (kitchen)	Metal	Default element weight applied (11kg)
Urinal	Tiles & ceramics	Default element weight applied (25kg)
Shower	Tiles & ceramics	Default element weight applied (5kg)
A/C unit	Metal	Default element weight applied (5kg)
Radiator	Metal	Default element weight applied (15kg)
Lighting	Metal	Default element weight applied (1-3kg dependent on lighting element)
SG window	Glass	Default element thickness applied (0.003m)
DG window	Glass	Default element thickness applied (0.006m)
Glass door	Glass	Default element thickness applied (0.006m)
Wood door	Timber	Default element thickness applied (0.45m)
Concrete	Concrete	Default element thickness applied (0.003m)
Rebar	Metal	Rebar assumed in all structural concrete. Volume assumed to be 0.015 per/m ³
Brick	Brick	Default element thickness applied (0.1m)
Plasterboard	Gypsum	Default element thickness applied (0.0125m).
Plasterboard partition	Timber	Frame cross-sectional area of 0.00016 per/m ² applied
Ceiling tiles	Gypsum	Default element thickness applied (0.01m)
Insulation	Insulation	Assumed as mineral wool insulation. Default element thickness applied (0.15m)
Ceramic tiles	Tiles & ceramics	Default element thickness applied (0.003m)
Vinyl floor	Plastic	Default element thickness applied (0.004m)
Carpet	Textiles	Default element thickness applied (0.006m)
Roof	Bitumen	Default element thickness applied (0.0026m)
Road	Bitumen	Default element thickness applied (0.08m)
Paving slabs	Concrete	Default element thickness applied (0.05m)

