Resource Management Plan

for

52-54 Avenue Road

NW8 6HP

Prepared by Knowles Construction Date 07/07/2023

Revision Record			
Rev	**Date**	**Revision Details**	**Revised by**
A	28/06/2023	Issued	KC
B	30/06/2023	Updated detailing	KC
C	07/07/2023	Added detailing on spoil away locations and reuse	KC

Contents

1.0 Introduction

Knowles Construction's Environmental Management System has been developed to meet the complex requirements of modern and varying constructions methods and materials, and covers all activities of its construction sites and offices.

All Knowles Construction sites aim to use natural resources responsibly to reduce our impact on the environment; this includes energy, water, sustainable & legal timber, waste reduction, waste prevention and forecasting wastes.

Our Environmental Management Systems had required our sites to produce a Site Waste Management's plan. Changes to the requirement for Site Waste Management Plans in England, Knowles took the opportunity to change and introduce into our procedures project resource efficiency plans, extending beyond recording how we prevent/recycle waste to conserving energy and water during construction demonstrating a sustainable construction.

The completion of the RMP prior to the project starting on site, is the responsibility of Project Manager, supported by our wider operations and procurement team. The RMP is to be reviewed quarterly and updated where necessary to accurately reflect the progress of the project. A review of the project will also be carried out within 3 months of completion to compare the estimated quantities of resources used to actual consumption.

The project is targeting an Excellent BREEAM rating, but Knowles Construction will apply environmental targets to the construction phase of new development at 52 Avenue Road. The purpose of the specific waste targets is to both prevent, reduce and recycle the amount of waste created, and that what is produced is sent to licenced transfer station for further recovery and maximise diversion from landfill any that is produced.

2.0 Declaration

The Client and Principal Contractor will take all reasonable steps to ensure that all waste from this site is dealt with in accordance with Section 34 of the Environmental Protection Act 1990 (Waste Duty of Care), and the Environmental Protection (Duty of Care) Regulations 1991, and that all materials will be handled efficiently and waste managed appropriately.

3.0 Description of the Site

Proposed development site is on the site of an existing large single dwelling plot, that is where 12 plot development will be situated. The scope of works includes demolition of existing dilapidated building within new development site, and the construction of 12 new high quality residences with associated amenity spaces.

Below images showcase the proposed development:

The existing Building

- As part of the construction, it is necessary to demolish the existing structure, picture below in appendix b.
- The building in currently in a state of disrepair, it shall be safely demolished in conjunction with sitewide clearance to allow for the new development.

4.0 Resource Efficiency

Steps taken to minimise waste, the amount of waste generated during excavation, demolition and construction

The management of materials on this site, will ensure that materials consumption is reduced and the, production of waste created (excavation, demolition and construction) is avoided wherever possible. This will be possible by following prevention, reduction and reuse measures outlined below. Only where these routes have been exhausted should waste be sent for disposal.

The site has existing structures in place, we have tabled below the approach to how opportunities will be explored to
how those existing materials could be reused or recycled in the first instance.

Waste Streams	Waste Prevention & Reuse, and recycling measures
Excavation	Application of the excavation activity to the waste hierarchy includes the following although not limited to: • Foundations and drainage grubbed out, pilling arising and a surplus of the cut & fill will need to be removed from site.
Demolition	Application of the demolition activity to the waste hierarchy includes the following although not limited to: • A pre-demolition audit is appended to the document, to identify those materials to be removed, for suitability for reuse and recovery to minimise non-recyclable waste, although the building has been in derelict for some years hence weathering of certain elements limits reuse. • a soft strip is not required thus not considered in relation to reuse • There will be a full intrusive investigation carried out before demolition works are carried out.
Demolition (Hazardous)	• Asbestos survey to be undertaken via demolition contractor – account to be taken of safety of any appointed surveyor due to dilapidated state of existing structure.

Construction
Knowles Construction understands that steps to minimise waste that can be created latter on site, start early in a project concept/design where the biggest opportunities exist. Following the waste hierarchy, Knowles look to view opportunities to influence the design with the design team and procurement through to on- site construction to reduce waste.

We have included in this section the outline measures of decisions taken that will reduce the amount of waste produced at later stages in the project, from the design team through to Knowles Construction on site good site practices.

As per BREEAM guidance the below template will be used to establish the no. of credits to be persued and the assosiated target for waste generated. This will be monitored monthly and reported both monthly on site hoarding for local stakeholders, and at the end of the project to establish the BREEAM credits achieved.

The following benchmarks will also be assessed in conjunction with the project BREEAM assessor to discuss and agree suitable targets. As per the pre demolition audit demolition and excavation is expected to be 95% diversion from landfill.

BREEAM credits	Amount of waste generated per 100m² (gross internal floor area)	
	m³ (actual, not bulk volume)	tonnes
One credit	≤ 13.3	≤ 11.1
Two credits	≤ 7.5	≤ 6.5
Three credits	≤ 3.4	≤ 3.2
Exemplary level	≤ 1.6	≤ 1.9

BREEAM credits	Type of waste	Volume	Tonnage
One credit	Non-demolition	70%	80%
	Demolition	80%	90%
	Excavation	N/A	N/A
Exemplary level	Non-demolition	85%	90%
	Demolition	85%	95%
	Excavation	95%	95%

Prevent & Reduce - 'Designing out waste' steps that will contribute to minimising waste:

Reduce - Minimising construction Waste through design

- We will be utilizing the existing boundary brick wall around the site as our secure hoarding line, there will need some amendments and rebuilds whereby this material will be utilised for piling mat
- New structural steel frame to roof elements– prefabricated off site
- New RC Frame – Knowles to investigate benefits of offsite construction eg. Precast RC columns to reduce deliveries to site and expedite works.
- Palette of materials is proposed that include (See indicative build ups in appendix A):
    - Block work with render
    - Mansard roof with tiling
    - Louvre features – generally off site pre-fabricated
    - Windows & doors(both internally and externally – fabricated off site

Minimising Construction Waste through Procurement:

- Prevention: review opportunities with manufactures for take back schemes for offcuts of materials to reduce waste and alternative reusable packaging to reduce waste on site
- Prevention**:** timber bearers delivered with steel frame to prevent damage, returned to supplier to prevent timber waste on site
- Prevention: review opportunities with manufactures for alternative packaging of materials to reduce waste and ensure materials are not overpackaged to reduce waste

On site: Management to reduce Waste

The production of waste material on the site is to be avoided wherever possible by working through the waste hierarchy below. Only where all avenues under a category have been exhausted, would we move onto the next. Where disposal off-site is chosen, legal Duty of Care requirements will need to be followed.

1. Reduce the amount of waste generated.
2. Reuse materials more than once wherever possible.
3. Recycle the waste when it can no longer be reused.
4. Recover the energy from the waste if it cannot be recycled.
5. Dispose of the waste where none of the above are possible.

Excavation - Targeted reuse of ground arisings – London Clay Spoil

- Calcined clay, for use as supplementary cementitious material (SCM) in concrete mixes
- Pelletized expanded clay to form light weight aggregates (LWA), for use in concrete mixes and/or as fill material

Targeted procurement - materials with low embodied carbon

- Engage suppliers for design life clarifications to ensure materials can last suitable design lives to reduce the overall impact of embodied carbon over the lifetime of the materials.
- Target low carbon products – Low carbon concrete
- Identify supplier locations to factor in carbon cost in transportation, always ensure deliveries are rationalized to provide the most material on site for the least no.
- Engage design team on options in relation to insulations that may have high embodied carbon.
- VE structure and ensure most efficient slab cross sections are utilised. Assess foundation detail eg. Raft vs Piled to reduce embodied carbon.
- Reduce damage and wastage of materials by utilsing a robust storage regime, use just in time delivery to reduce risk of damage to materials prior to installation.

Minimising Energy & water usage during construction

- Recycle water where possible, water storage for run off from site welfare, settlement tanks for any water on site
- Investigate opportunities to reuse grey water for toilet facilities on site
- Insulated site cabins to ensure minimal energy loss
- Waterless urinals to site welfare.
- Ensure all pipe work is secure & leak free
- Energy efficient appliances to all welfare areas
- Auto turn off heating and lighting outside of site hours
- LED task lighting throughout site for duration of works.
- Assess plant and machinery on site and size to suit tasks required.

Storage of materials

- Good material storage will minimise waste caused by damage. The 52 Avenue Road project is being constructed on a site in close proximity to other residential addresses as a result of these materials will be delivered and materials stored in designated storage areas.

- All materials will be stored, off the ground and transferred safely to prevent damage that will result in waste. Take Back schemes will be utilised where available e.g. timber pallets returned to suppliers for reuse.

- Upon the completion of the ground floor slab a material storage area will be established within the building in the lower ground floor and ground floor podium. This will serve as the distribution point to areas within the building.

5.0 Waste Management Type and quantity of the waste to be generated (three waste streams)

Waste forecast types & Quantities of Waste

This table completed with forecast of types and quantities wastes generated, for removal off site during the construction period, reviewing proposed design and historical data from Knowles construction of similar projects.

Source & type of Waste to be removed from site	Estimate forecast wastes generated (m^3)
Excavation Wastes	
Excavated material (soils & stones)	*~18000m3 of virgin clay, highly reusable for grading and level build ups, haughlier to be procured on ability to reuse excavated materials on other projects.* *Calcined clay, for use as supplementary cementitious material (SCM) in concrete mixes* *Pelletized expanded clay to form light weight aggregates (LWA), for use in concrete mixes and/or as fill material*
Demolition Wastes	*Please see appended pre-demo audit*
Mixtures of concrete, bricks, tiles & ceramics (inert)	
Timber/Wood	
Mixed metals (e.g. steel roof)	
Mixed demolition waste	
Gypsum	
Hazardous waste (asbestos)	
Construction Wastes	
Mixtures of concrete, bricks, tiles and ceramics (inert)	TBC (Target less than 5% of total quantity to be waste)
Timber / Wood	TBC (Target less than 5% of total quantity to be waste)
Mixed metals	TBC (Target less than 5% of total quantity to be waste)
Gypsum (plasterboard)	TBC (Target less than 5% of total quantity to be waste)
Mixed Packaging, cardboard and paper	TBC (Target less than 5% of total quantity to be waste)
Mixed construction waste	TBC (Target less than 5% of total quantity to be waste)

6.0 Recycle & Recovery Measures, steps to achieve the reuse and recycling

Material Reuse the site will have a material reuse area, where offcuts of suitable materials e.g. timber length no longer needed or excess from one trade can be placed here for use by other subcontractors/trades as the project progresses rather than buying new.

Segregation of waste for reuse, recycling and recovery. As the project progresses with different types of materials being used, waste will be segregated into well signed skips not limited to, but including inert; wood; metals; gypsum and in addition to a mixed construction skip , example below of good site practice for this element and further the European waste segregations classifications.

Industry standard waste colour coding scheme


Waste colour coding scheme in practice

European Waste Catalogue	Key group	Examples
170102	Bricks	Bricks
170101	Concrete	Pipes, kerb stones, paving slabs, concrete rubble, precast and in situ
170604	Insulation	Glass fibre, mineral wool, foamed plastic
1501	Packaging	Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets
170201	Timber	Softwood, hardwood, board products such as plywood, chipboard, medium density fibreboard (MDF)
1602	Electrical and electronic equipment	Electrical and electronic TVs, fridges, air-conditioning units, lamps equipment
1301	Oils	Hydraulic oil, engine oil, lubricating oil
1703	Asphalt and tar	Bitumen, coal tars, asphalt
170103	Tiles and ceramics	Ceramic tiles, clay roof tiles, ceramic, sanitary ware
1701	Inert	Mixed rubble or excavation material, glass
1704	Metals	Radiators, cables, wires, bars, sheet
170802	Gypsum	Plasterboard, plaster, fibre cement sheets
170101	Binders	Render, cement, mortar
170203	Plastics	Pipes, cladding, frames, non-packaging sheet
1705	Soils	Soils, clays, sand, gravel, natural stone
Most relevant EWC	Liquids	Non-hazardous paints, thinners, timber treatments
Most relevant EWC	Hazardous	Defined in the Hazardous Waste List (HWL) of the European Waste Catalogue (EWC)
Most relevant EWC	Floor coverings (soft)	Carpets, vinyl flooring
Most relevant EWC	Architectural features	Roof tiles, reclaimed bricks, fireplaces
170904 (Mixed)	Mixed or other	Efforts should be made to categorise waste into the above categories wherever possible.

Transfer Station to be used, at the time of writing this Resource Management Plan Knowles have not chosen a waste management company for the construction waste. We will select a company who meets our duty of care quality and recycling rate diligence check requirements. Construction waste leaving this site will go direct a transfer station for further recovery and recycling of waste material.

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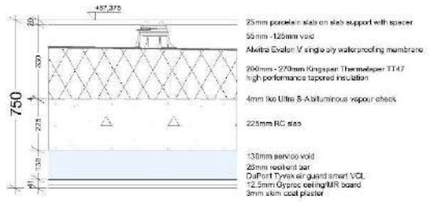
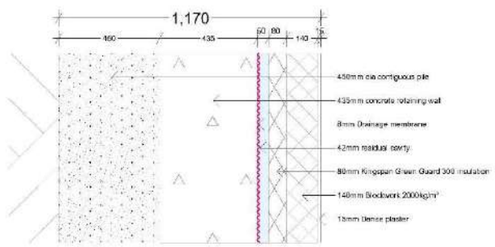
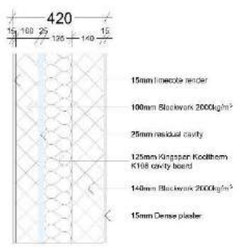
Appendix A – Example Material build ups within new build



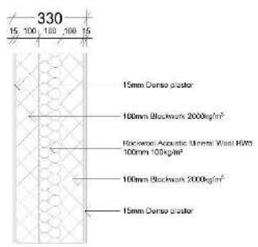
FLAT ROOF BUILD-UP
0.12W/m²K



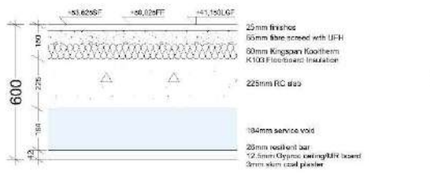
BASEMENT WALL
0.13W/m²K



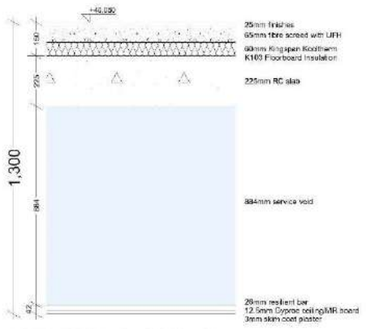
EXTERNAL WALL
0.13W/m²K



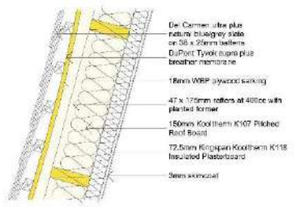
PARTY WALL



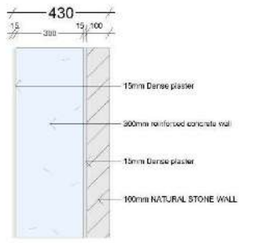
FIRST, SECOND AND LGF FLOOR BUILD-UP



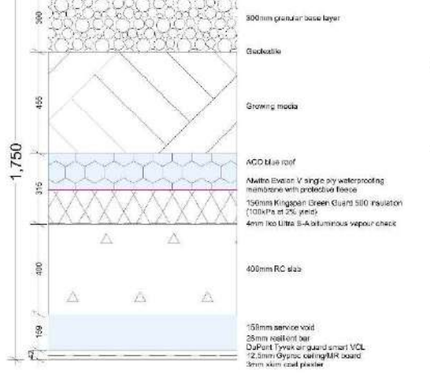
GROUND FLOOR BUILD-UP



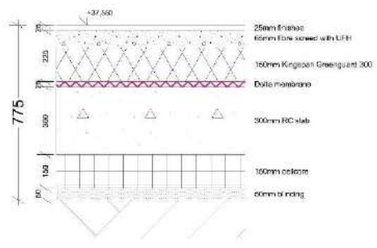
SWEPT MANSARD ROOF BUILD-UP
0.12W/m²K



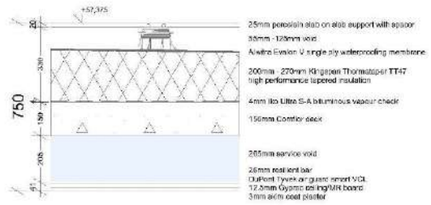
PARTY WALL AT POOL



PODIUM BUILD-UP
0.12W/m²K



BASEMENT FLOOR BUILD-UP
0.11W/m²K



PAVILION BLOCK FLAT ROOF BUILD-UP
0.12W/m²K

DESIGN DEVELOPMENT

DOMVS
LONDON

WWW.DOMVSLONDON.COM

PROJECT:
52 AVENUE ROAD

TITLE:
ENVELOPE BUILD UPS

Date: JUNE 2023

Scale: 1:10 @ A1 Drawn: SDK

DRAWING NUMBER: 208-1399P1

Appendix B – Pre Demolition Audit

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PRE-DEMOLITION AUDIT

52-54 Avenue Road, NW8 6HP

Pre-Demolition Audit

52-54 Avenue Road

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

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Document Revision History

Revision	Date	Comments
A	05/06/2023	Document issued

Knowles

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

INTRODUCTION

Scope
This document gives details of how the company will manage the demolition works for the site, The site 52-54 Avenue Road, NW8 6BS. This is based on a desktop study undertaken using site records and photographic survey of the building demolition in question. This document is to be read in conjunction with any existing SWMP (Site Waste Management Plan) to ensure the maximum reuse and recycling of existing materials and mitigate the carbon footprint of the demolition works on site.

Responsibility
As the main contractor Knowles would ensure that the waste and routes highlighted within this report are assessed and implemented where possible. Furthermore, any hazards highlighted in the document will be assessed and suitably mitigated by Knowles and this information will be passed onto subcontractors to allow them to suitably plan their works. This report has been prepared in order to address MAT 01 Credits in BREEAM.

Related Documents
- Appendix A – Existing Site Plans
- Appendix B – Photographic Survey on site

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

The Project

The current structure consists of a detached main property, and a garage to the rear paved area. The existing building is currently unlisted but is being considered for demolition to allow for substantial improvement in both use and performance to provide a home to last into the future.

The current building is unoccupied and is in a state of disrepair at the time of surveying. The existing structure has already been soft stripped of all FFE and soft furnishings and thus will not be considered in the report.

The partitions to be removed within the existing building consist of London brick and mortar, nominally 100mm thick to principal walls and timber stud to remaining. Intrusive surveys where not possible however the state of damage to sections of ceiling and wall allowed for nominal investigation. Reviewing this material make up broadly what would be expected for a building of this age. The GF slab appears to be concrete, with no lower cellars or basements. The upper floors appear to be timber joisted, with a combination of various finishes. The roof structure is assumed to be timber truss however access was not available to survey. We would hope to retain the tiles for sale and reuse, recycle the timber elements, and crush any brick and concrete on site to assist in future piling works for the new structure. This should ensure very little wastage during the demolition scope.

The garage as far as surveyed consists of concrete strip foundations supporting a single storey brick wall with lightweight timber roof, with double glazed glass windows. The roof is tiled. The slab looks to be ground bearing and shows signs of deterioration.

This report has been prepared in full compliance with the waste hierarchy principles as supported by WRAP.

This is a report based on a non- invasive inspection of the building and as such it does not include wiring and copper pipework as by default all demolition contractors will scrap these for recycling due to the high value of the material. However, in this instance it is noted that the structure looks to have already been stripped of any such material.

An estimated 811 tonnes of waste will be produced from the removal of the structure including both the primary residence, garage, hard landscaping and boundary walls. Excluded elements are the boundary walls to 57 Elsworthy & the rear garden wall to 50 Avenue Road as these are to be retained and protected for the duration of works.

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

Demolition statement

Main Building:
Full Demolition of existing structure, grub out of all existing foundations to allow for new piled RC foundations.

The structure in its current form is deemed unsafe and would benefit from demolition, numerous internal floor plates have failed to the upper floors and water ingress within the building and caused further damage and deterioration within. The structure has numerous cracks to structural walls varying in thicknesses, this is assumed due to the heave of the clay soil and its impact on foundational settlement.

Garage:
The whole building is to be demolished in keeping with the redevelopment plan, the house and garage look to have been constructed in tandem, and although the garage has remained a semblance of weathertight, the existing slab shows signs of failure and its setting within the site is not beneficial for future use.

The garage shows signs of differential movement and settlement over time and is not considered a candidate for continued use.

All of the waste will be for recycling or energy recovery and the tiling to the existing outbuilding has great potential for reuse if carefully removed.

External:
It is expected that hard landscaping to the rear of the property will be removed during the works. It is also expected the boundary walls to both Elsworthy Road and Avenue Road will require replacing due to poor condition and subsidence over time.

KDPs:

The Key Demolition Products (KDP's) are

Concrete: 324Te.

Brickwork 380Te.

Timber 54te.

Metal N/A

Glass 6.25Te.

Tiling 34.5Te.

Internal Finishes 10Te.

Furniture 0Te.

MEP 2Te.

It is recommended that a target of at least 95% diversion of waste from landfill (by weight) should be set and 98% could be reached depending on the availability of recycling routes.

The current structure is approximately 430m² in plan and the amount of waste generated from the demolition in relation to the floor area is estimated to be 811Te. Please note this does not include any waste from the construction of the new building, however the largest quantity material comes from the external house walls of which 181m3 of brickwork & 135m3 of concrete hardstanding & footing is expected.

There is good potential for reuse on this project, with tiling to be carefully removed and stored, and brickwork/blockwork to be crushed and used for new build construction.

Where this is not possible, there is potential for recycling most of these materials thereby diverting waste from landfill.

Pre - demolition audit methodology

Construction drawings provided the perimeter areas for the building and gross floor areas. These were used along with measurements of the building and site which were manually taken during the site survey, undertaken in May 2023.

The principal residence was inspected with full photographic records listed below. Although no intrusive surveys were undertaken it can be well deduced from measuring on site the expected build up of walls and floors plus where existing floor plates have failed visual inspection can be undertaken.

There was a full set of as built plans available at the time this audit was undertaken.

The structure was deemed unsafe and as such a comprehensive survey of upper floors and some areas on the GF was not possible, this site is broadly overgrown and visuals to the structure GF to 1st externally are largely obscured.

The volume (m3) figures calculated for each material have been converted into tonnages using standard density figures for each material assessed.

Note: The findings and values contained in this report represent the best estimate of the materials and components within Building by means of using drawings of the buildings and taking measurements of the different materials encased in the buildings. We received plans listing the approximate area (m2) of the layouts for the different floors but not an inventory of the types of materials and construction used. Calculating the quantities of the different materials contained in the buildings was undertaken in an office environment. Material conversion rates used to calculate volume (m3) into tonnages have been undertaken using standard density factors.

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

Audit results

A number of Key Demolition Products that presented potential for recycling were identified. An estimate of the overall volume and tonnage of waste likely to be generated during the refurbishment are shown in Table 1:

Table 1

Material	M3	Tonnage
Concrete	135	324
Brickwork	181	380
Timber	107	54
Glass	2.5	6.25
Tiling	431 (m2)	34.5
Internal Finishes	N/A	10 (remaining plaster/boarding)
Fittings	N/A	0.5
Furniture	N/A	0
MEP	N/A	2

The largest KRP by tonnes is brickwork (380 tonnes), followed by concrete (324 tonnes), timber (54 tonnes)

The KDPs are now described.

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

Reuse within the development

Analysing the material list and quantities now identified. Values can be applied to achieve 20% reuse by cost within the development. Below table 2 ascribes cost estimates to the materials identified:

Table 2

Material	M3	Value (GBP/£)
Concrete	135	£17,550
Brickwork	181	£116,745
Timber	107	£60,955
Glass	2.5	£12,485
Tiling	431	£128,701
Internal Finishes	N/A	£40,000
Fittings	N/A	£45,000
Furniture	N/A	£5,000
MEP	N/A	£80,000 (plant to be removed)
TOTAL		**£506,436**

Analysing the site we expect that without reuse we would need to import approximately 316m3 of additional 6F2 crush material to create working platforms for plant and machinery, this equates to 41no. tipper loads. By utilising a concrete crusher we will reuse both concrete and brickwork from the building and as such should omit the need for imported crushed material, making a saving of £141,050.

With a total material value of £506,436 this is a 28% reuse by value on site. With the remaining value being diverted/recycled to 95% of its value.

Recycling within the development

Bricks and block work

The brick and concrete can be recycled as recycled aggregate or recycled concrete aggregate. It is unsuitable for reuse.

It is recommended that the concrete should be segregated either onsite or at a waste facility and crushed to produce recycled concrete aggregate (RCA) in accordance with the WRAP Quality Protocol for aggregates from inert waste. Various options are available to utilise RCA.

Recycled concrete aggregates can be used in:

1. Bitumen bound materials – Recycled concrete aggregate can be used may be used in a variety of base course and binder course mixtures.

2. Concrete – Recycled concrete aggregate

is permitted for use in certain grades of concrete. It is generally acknowledged that RCA can potentially be used to replace 20% of the coarse aggregate in concrete up to Grade 50.

3. Pipe bedding – suitably graded recycled concrete aggregate is used in pipe bedding.

4. Hydraulically bound mixtures (HBM) for subbase 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.

5. Unbound mixtures for subbase – suitably graded recycled concrete aggregate is used as subbase.

6. Capping – Recycled concrete aggregate is suitable for capping applications.

Concrete

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

Day Aggregates

Gatwick Rd, Crawley RH10 9RE, 01293 511644

http://www.dayqroup.co.uk/

Alternatively, licensed waste management contractors should be able to reprocess concrete waste into aggregates.

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

Timber (including MDF)

The majority of the timber can be recycled. It is recommended that a local wood recycling organization is contacted to see what timber items are suitable for reclamation and reuse.

Mid Sussex wood recycling project

The Old Dairy Barn Brooklands Farm, Rocky

Ln, Haywards Heath RH16 4RR

07974 933940

https://www.midsussexwoodrecycling.com/

Where reclamation is not possible the timber should be segregated on site and sent to a licensed waste management contractor for recycling.

Additional material types

It should be noted that there are likely to other sources of metal from the refurbishment especially from building services (water, central heating, ducting, wiring etc). These materials been estimated but not intrusively established.

It is common practice for demolition contractors to reduce their contract value by allowing for the income from the recycling of metals during demolition and refurbishment. Standard skip hire companies are likely to charge for haulage costs only, they may give back a small rebate on the metals. Local waste management contractors include:

Sussex waste management services Ltd

Bank House, Southwick Square, Southwick BN42 4FN

01273 871971

http://sussexwaste.com/

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

Additional material types

Additional materials likely to arise from the demolition and refurbishment are summarised below:

WEEE (Waste electronic and electrical equipment). WEEE should be sent to a specialist recycling facility, such as the following:

Oden Services UK Ltd

Unit 4 Sharlands Road Industrial Park

14 Sharlands Road, Fareham, Hampshire

PO14 1RD

www.odenservicesuk.co.uk

Maximising Reuse

Experts advise that a long lead-in time and maximum exposure are required to enable the reuse of products and components. 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.
- Sold or given away locally.

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

- Consult the client on the findings of this report and consider any options for closed-loop re-use in a similar project in this project.
- Consider setting aside storage on site for segregation of salvage items.
- Advertise specific salvage items for free on www.salvo.co.uk or low value materials on www.salvomie.co.uk. Salvo also operates a demolition/refurbishment alert service on their website which serves to bring forthcoming demolition products to the attention of potential buyers or users.
- Use local organisations such as London Reuse (www.londonreuse.org)
- Contact local architectural salvage merchants about specific items. Salvo publishes a directory on their website. Local options can also be found by looking on BREMAP (www.bremap.co.uk). This is a BRE tool which lists local waste management facilities based on postcodes.
- Ensure that salvaged items are removed and stored in such a way that all components remain together, e.g., doors in their frames.

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Recommendations

It is highly recommended that to maximise reuse and recycling that the following materials are segregated on site or if space does not permit at a waste facility:

- Timber
- Hard-core materials (brick, block, cement and render)
- WEEE

Recycling/reuse targets

It is recommended that an overall reuse and recycling target is set prior to the demolition commencing based on the recommendations of this report in conjunction with the selected contractor. An estimate on the total percentage of waste materials that can be reused and recycled, and thus diverted from landfill on this project is 95%; it is therefore suggested that a target of 95% of waste diverted from landfill is set.

It is recommended that the following targets could be set:

Table 3

Material	% Reuse	% Recycle
Concrete	80 (Crushed on site)	100 (including reuse on site)
Brickwork	80 (Crushed on site)	100 (including reuse on site)
Timber	0	100
Glass	0	100
Tiling	0	100
Internal Finishes	0	95
Fittings	0	95
Furniture	0	95
MEP	0	95
Overall Target	**28% (By value)**	**95% (By quantity)**

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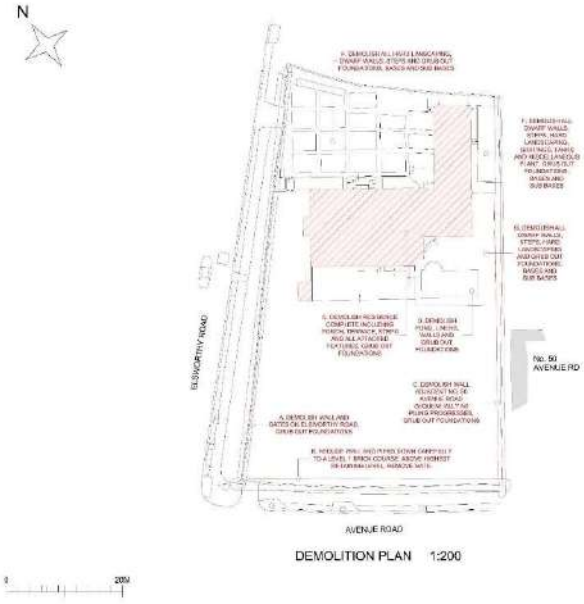
52-54 Avenue Road, NW8 6HP

Appendix A – Existing Site Plans



DEMOLITION PLAN 1:200

REV P22/03/2023: NOTE F AMENDED

DOMVS
LONDON

WWW.DOMVSLONDON.COM

PROJECT:
62 AVENUE ROAD

TITLE:
DEMOLITION PLAN

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

REV P2 28/03/2023 NOTE ADDED IN RED

DOMVS LONDON

WWW.DOMVSLONDON.COM

PROJECT:
52 AVENUE ROAD

TITLE:
DEMOLITION - PLANS OF THE EXISTING BUILDING

Date: MARCH 2023
Scale: 1:100 @ A1 Drawn: SDK

DRAWING NUMBER: 208-1081 P2

DEMOLITION - PLANS OF THE EXISTING BUILDING
1:100

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PRE-DEMOLITION AUDIT
52-54 Avenue Road, NW8 6HP

DEMOLITION - ELEVATIONS OF THE EXISTING BUILDING
1:100

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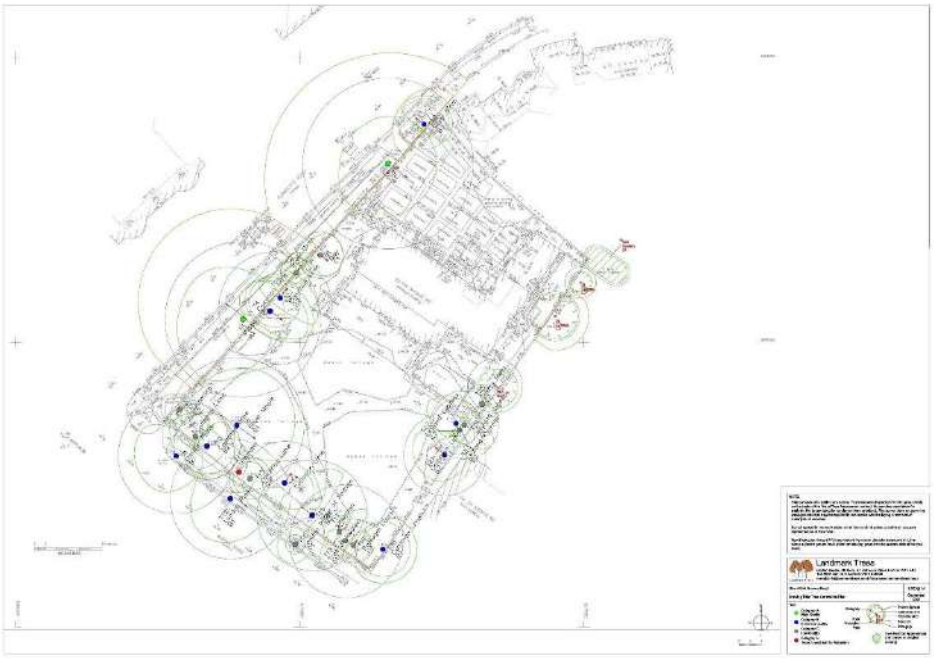

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52-54 Avenue Road, NW8 6HP

Appendix B – Site Photographic Survey

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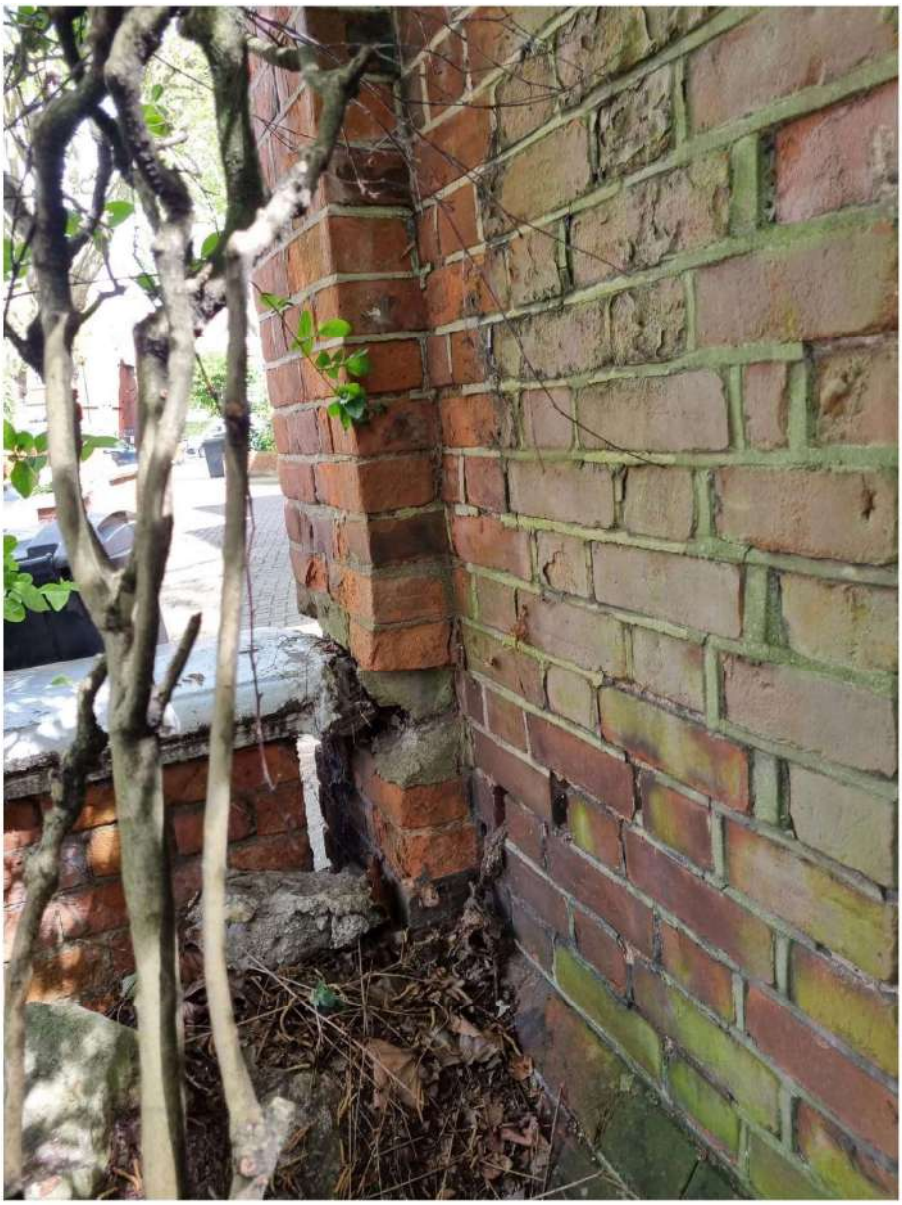

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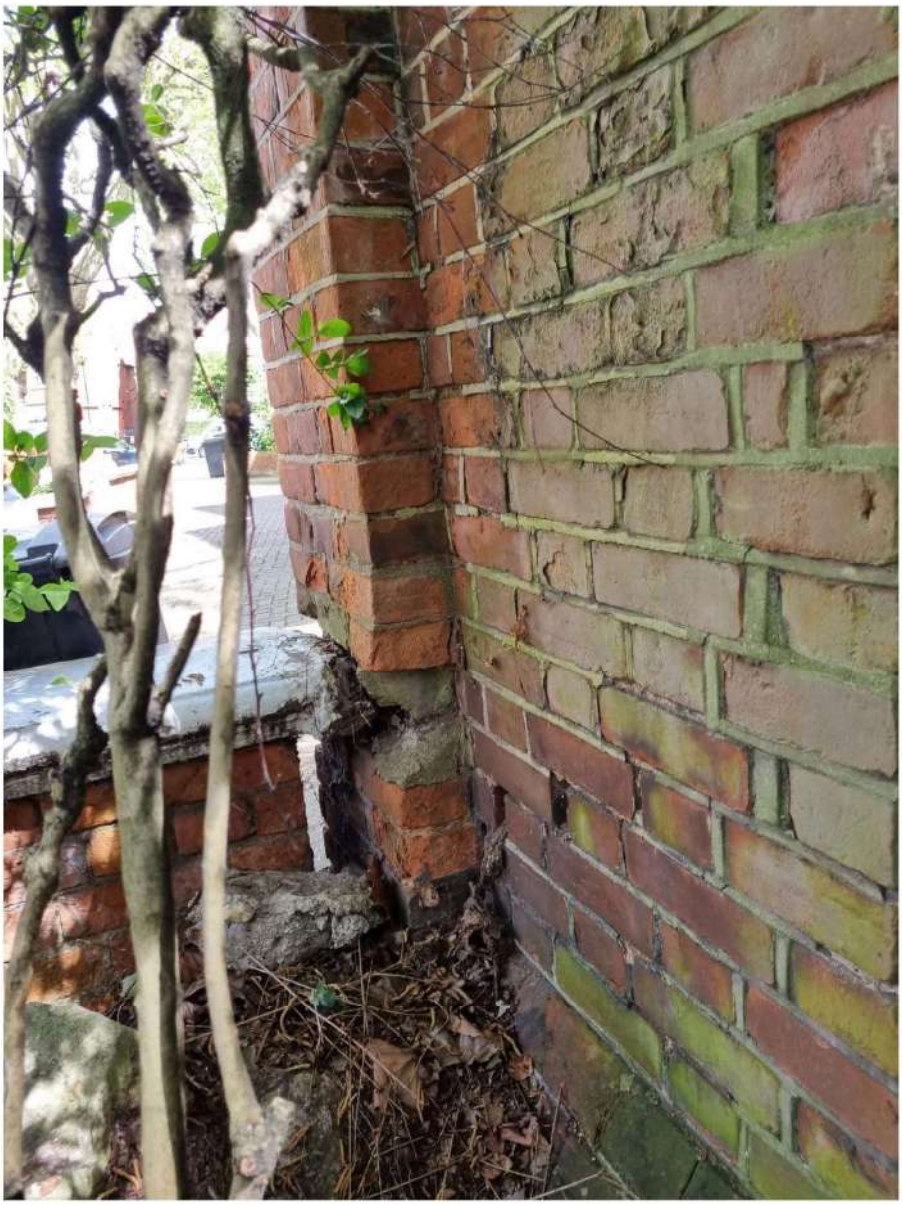

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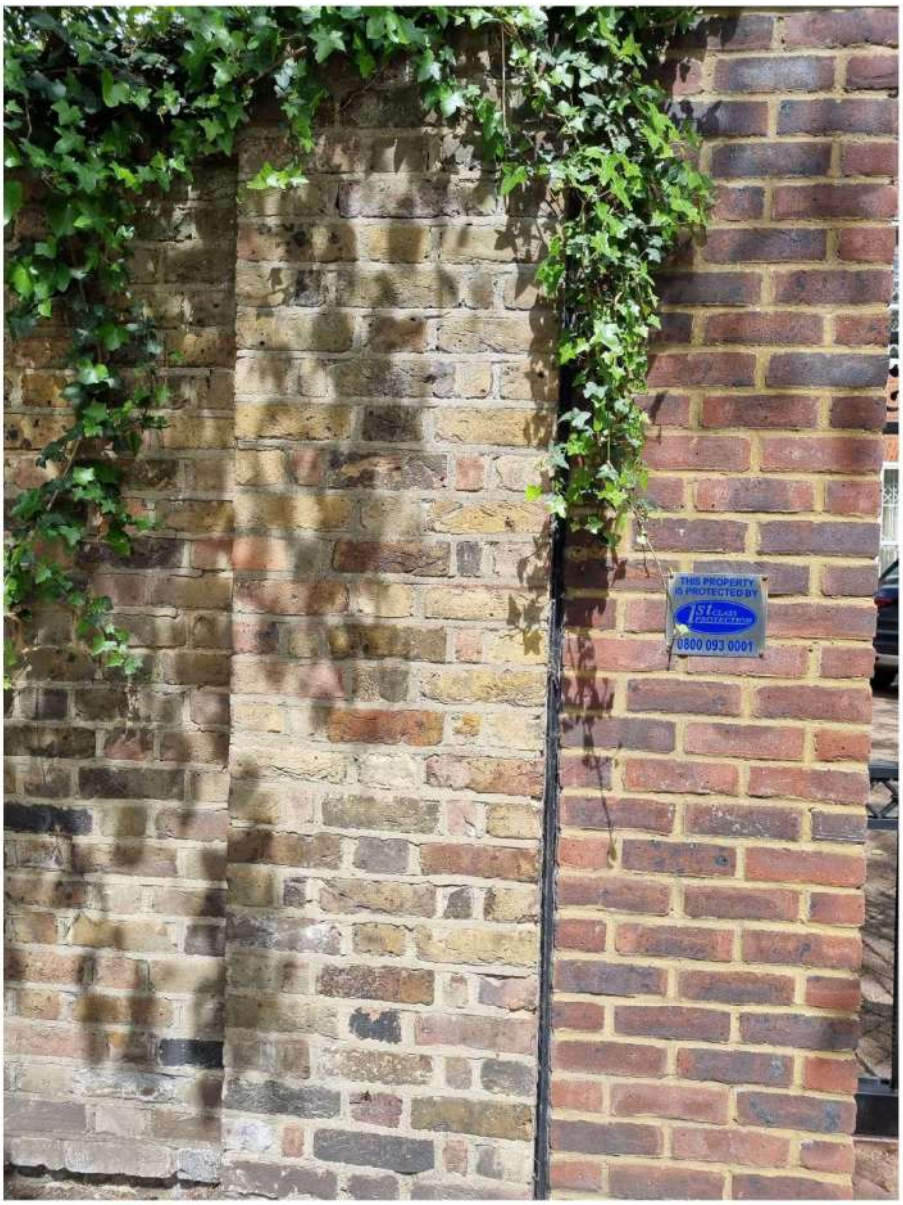

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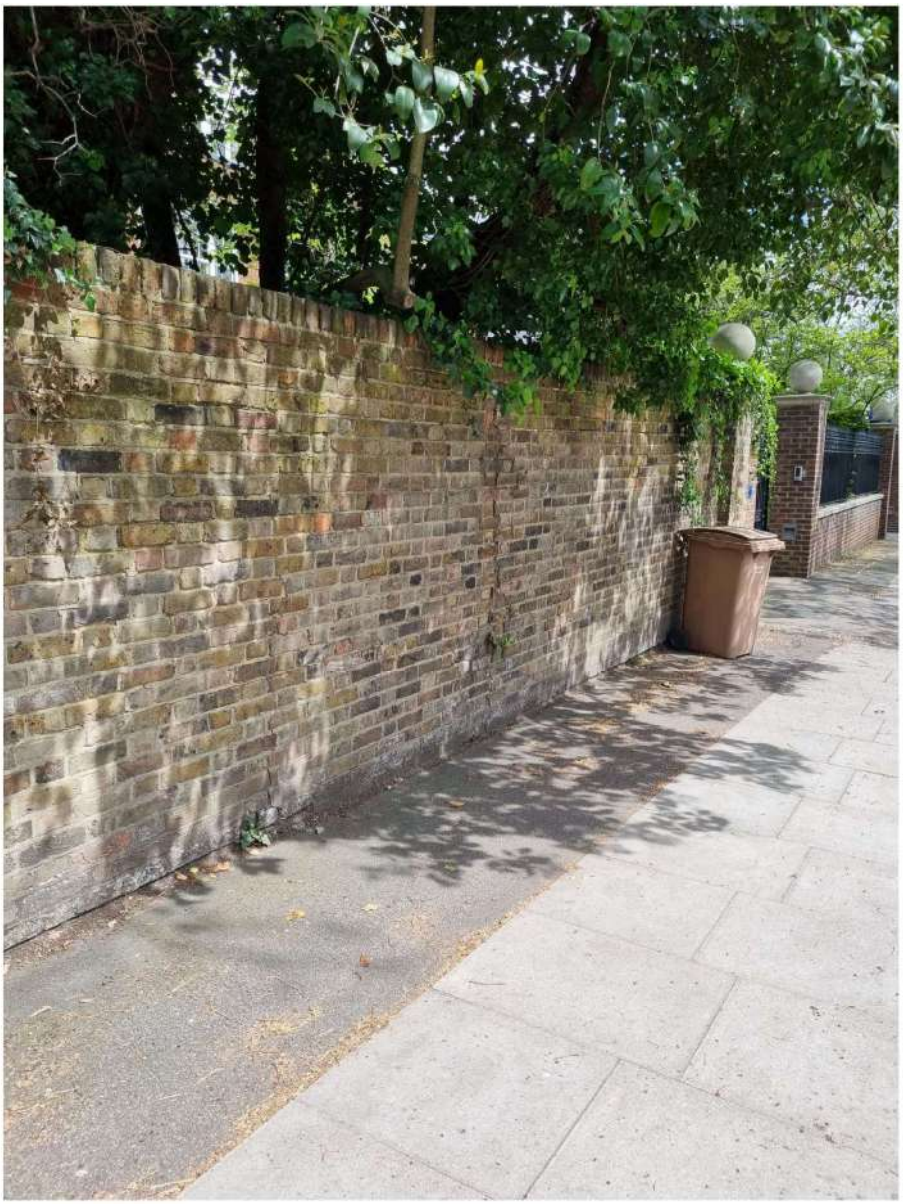

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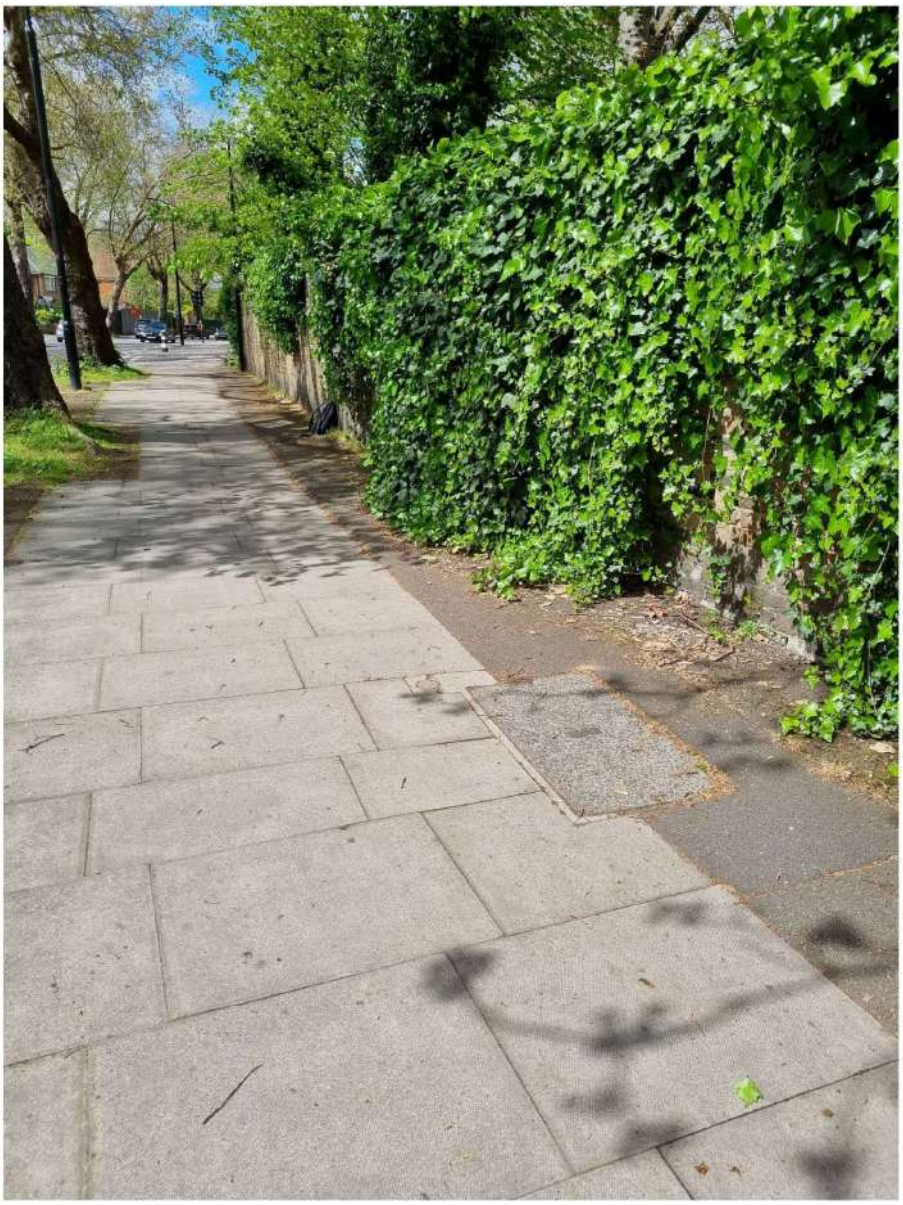

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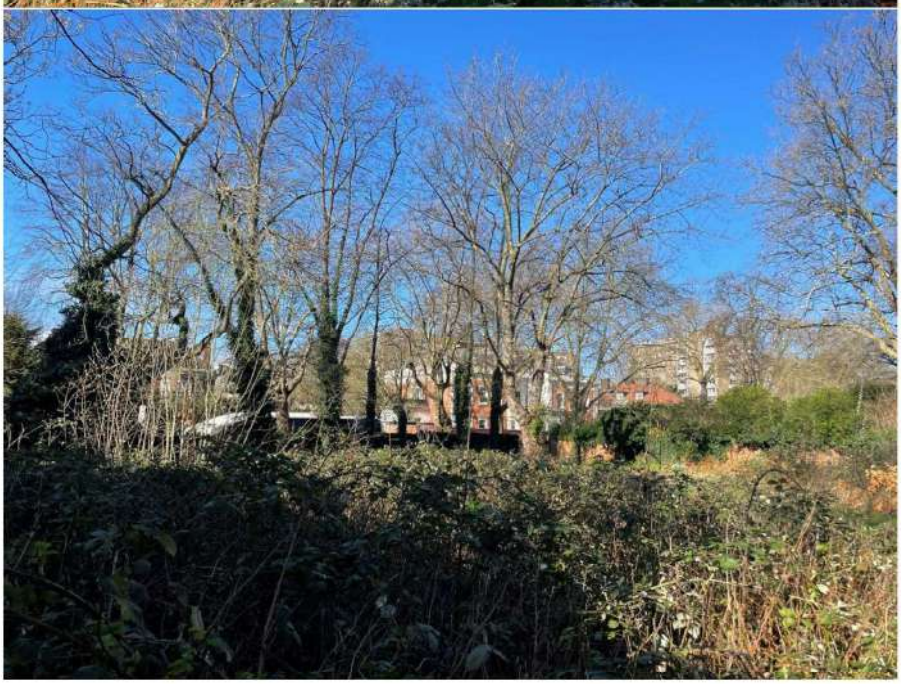

Appendix C – SWMP

Site Waste Management Plan

Knowles Construction

for

52-54 Avenue Road

NW8 6HP

28 June 2023

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SRMP Guidance Notes

General Notes

- All waste quantities measured in Tonnes.
- Where BREEAM credits are calculated per 100sq M of floor area, this refers to the Wst01 credit.

1. Project information and responsibilities

This section is an overview of the project and details all the main information and the persons responsible for each element.

This will list:-

- The principal contractor, client, project manager and site manager.
- A description of the construction works along with the **floor area in m², project cost** and construction type.
- The location of the project, the start date, estimated end date, who will be responsible for implementing the SWMP and who will be the waste champion.

2. Resource Minimisation Opportunities

This is a list of all the waste minimisation statements detailing how the production of waste from the project will be minimised.

3. Forecasts of Resource Usage

This section is where the forecasting of how much waste will be produced by the project during demolition, groundworks and construction is recorded.

The automated forecast data generated by indicative drawing and detail analysis.

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4. Waste Hierarchy Routes

This section is a table with a breakdown of each of the waste types per project phase and displays the percentages for Reduce, Reuse, Recycle, Recover and Dispose for each waste stream. This table also shows if the waste is managed on or off site.

This table includes all waste types accepted by a disposal site and should include those relevant to the project.

5. Duty of Care Compliance Checks

This section ensures that Duty of Care responsibilities are satisfied. All waste contractors removing waste from site **MUST** be logged in this section, or waste data cannot be uploaded into the project.

All waste contractors must have a valid, up to date Waste Carrier's Licence and the transfer station being used must have the relevant Permits and Licences for the waste being received.

SitePlan includes an updated database of waste contractors and waste transfer stations and is regularly checked against the Environment Agency Public Registers. No waste carriers or disposal sites are in the SitePlan database unless they have been checked against these Registers.

When a waste transfer station is selected the type of waste that can be received, together with the recycling rates for that waste stream are displayed.

All Waste Transfer Notes(WTNs) must be retained for two years. In addition, even if no hazardous waste is forecast, it should be made clear that any hazardous waste will be stored separately from non-hazardous waste and also from other hazardous waste streams. In addition, all hazardous waste Consignment Notes will be kept for at least three years.

If a Water Discharge Permit is required, this is the section where it can also be included.

6. Training and Communicating the SWMP on Site

This section identifies any SWMP Training / Communications that will be implemented for the project.

To help with the implementation of the SWMP there are downloadable resources in this section including:

- Induction sample
- EWC Code toolbox talks
- Posters and signage
- Subcontractor agreement sample
- Waste contractor agreement sample

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7. Resource Data

This section displays the overall summary for the waste data uploaded (the Waste Arisings) for the project.

As data is added it will feed into the totals for the project and update the company graphs.

This section shows the total waste generated up to the last waste entry onto SitePlan, the total waste per 100m² of project floor area (Tonnes per 100m²), the total waste per £100k of project cost (Tonnes per £100k), the Reuse / Recycle totals and the overall percentages of each.

In addition, the total waste disposed and the total diverted from landfill (as both a weight in Tonnes and as a percentage of the total waste produced) are shown.

Also, a graph is generated showing totals of waste produced by waste stream and a table is generated showing the current actual quantities versus forecasted quantities.

If the waste, water and carbon box has been ticked on the Project Overview page a table with water meter readings that have been uploaded will be displayed in this section, together with graphs showing actual tonnages of carbon used for electricity, waste collection mileage and staff and visitor mileages for each month.

8. Ongoing Review

This section is the Audit Trail for the Plan, automatically detailing what actions were carried out when and by whom. This data / information cannot be amended or altered by a user.

9. Project Completion Review

This section is completed after the project has finished and the last waste data entry has been uploaded.

This section shows the 'Lessons Learnt' for the project by comparing the forecasted data against the actuals.

The calculation for Tonnes of waste produced per 100m² of Floor Area details the number of BREEAM Wst01 credits achieved.

The Costs and Benefits section compares the predicted and actual waste disposal costs for the project to assist with future tenders and waste disposal / resource budgeting.

The Appendices

Appendix 1. Copies of Waste Licence(s) and Environment Agency Check(s)

This section is where all the licence(s) for each waste contractor and waste transfer station are shown. Each contractor and transfer station has been checked against the Environment Agency register before being added to the SitePlan database.

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Appendix 2. Site Inspection Reports

This section accommodates the storing of any SWMP Site Inspection reports in the hard copy site folder.

Appendix 3. Sub-Contractor Agreements

In the hard copy site folder, this is where the agreements with sub-contractors removing their own waste may be filed.

Appendix 4. Waste Data Lists

In the hard copy site folder this section is used to file the waste reports for the project.

Appendix 5. Waste Transfer Notes (WTN)

This section of the hard copy site folder is where the actual Waste Transfer Notes are filed.

Appendix 6. Site Floor Drawing

This is where the site plan layout is filed in the hard copy site folder. It denotes the location of waste disposal 'areas' or containers and their allocated waste stream usage, with colour coding of labels. It also denotes site security information, such as fences and lockable gates to prevent inward fly tipping.

Appendix 7. Waste Actuals

This section is a record of all the Waste Transfer Notes that have been uploaded into SitePlan for this project.

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Contents

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1. Project information and responsibilities

Project name	52-54 Avenue Road
Project ref.	52-54 Avenue Road
Principal Contractor	Knowles Construction Second floor 32 Queensway London W2 3RX Tel:07793955245
Client	
Project Manager	TBC Knowles Construction info@knowles.uk.com
Site manager	TBC
Description of construction works	New build residential development
Project floor area	5,263.00 sq.m.
Construction type (i.e. masonry, timber?)	Concrete Frame
Location	52-54 Avenue Road, NW8 6HP
Estimated project cost	TBC
Project timescales	TBC
Who is responsible for drafting the SWMP	Knowles Construction
Who is responsible for implementing the SWMP	Knowles Construction
Will there be a waste champion on site? If so, please identify the individual	TBC
Where will the SWMP be kept?	Site Office
Project classification	Residential New Build – 12no. residences

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Declaration statement:
The Client and Principal Contractor will take reasonable steps to ensure that-
(a) all waste from the site is dealt with in accordance with the waste duty of care in section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) regulations 1991; and
(b) materials will be handled efficiently and waste managed appropriately.

☐ Tick box to agree

Client signature:	Print name:	Date:
Principal Contractor signature:	Print name:	Date:

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2. Waste Minimisation opportunities

Minimisation Type	Decision Type	Waste Minimisation Decision Taken	By Whom	Intended Results
Waste	Construction Method	To reduce the overall packaging waste from materials delivered to site	Principal Contractor	To increase recycling rates
Waste	Construction Method	To reuse demolition materials where possible for example, hard core for the construction phase	Principal Contractor	To increase recycling rates and promote reuse
Waste	Construction Method	To segregate waste on site where possible	Principal Contractor	To increase recycling rates and promote reuse
Waste	Demolition Method	To segregate Gypsum waste on site	Principal Contractor	To reduce the amount of plasterboard waste on site and encourage re-use and recycling.
Waste	Demolition Method	To segregate timber waste on site	Principal Contractor	To reduce timber waste arisings on site and encourage the reuse and recycling of all timber waste materials.
Waste	Demolition Method	To reduce the amount of metal waste	Principal Contractor	To treat all waste in terms of the waste hierarchy: reuse - repurpose - recycle. Where possible, metals should be segregated and reused / sold as scrap metals via local and specialised contractors
Waste	Construction Method	To reuse timber pallets	Principal Contractor	repurpose and reusing timber pallets will allow for greater recycling rate and provide a more suitable method of disposal of the timber.

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4. Waste Hierarchy Routes

Waste type	Location	Reduce	Reuse	Recycle	Recover	Dispose
Bricks (17 01 02)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 100 %	0 % 0 %	0 % 0 %
Concrete (17 01 01)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 100 %	0 % 0 %	0 % 0 %
Metals (17 04 07)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 100 %	0 % 0 %	0 % 0 %
Packaging (15 01 06)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 80 %	0 % 0 %	0 % 20 %
Gypsum (17 08 02)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 100 %	0 % 0 %	0 % 0 %
Plastics (17 02 03)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 80 %	0 % 0 %	0 % 20 %
Timber (17 02 01)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 95 %	0 % 0 %	0 % 5 %
Hazardous (17 09 03*)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 0 %	0 % 0 %	0 % 100 %
Mixed (17 09 04)	On-Site Off-Site	0 % 0 %	0 % 0 %	0 % 0 %	0 % 0 %	0 % 0 %
Overall target		**0 %**	**0 %**	**95 %**	**0 %**	**5 %**
Total tonnes						

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5. Duty of care compliance checks

Waste carrier details:

Waste Carrier Name	Waste Carrier Licence Number	Issue Date Expiry Date	Copy Licence	Waste Site Taken To	Waste Management License/ Issue Date	Waste Transfer Note Storage Location	Recycling rate	Copy Licence
LMD Skip and Grab Hire Ltd	CBDU83937	04/02/2022 07/02/2025	☐	LMD Skip and Grab Hire Ltd (LMD Grab Hire)	83456 - EPR/JB3839AQ 06/08/2004	In the site office		☑

Recycling rates:

Destination Waste Site	Waste Type	Recycling Rate (%)
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Inert (17 01 07)	100.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Mixed (17 09 04)	80.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Timber (17 02 01)	90.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Gypsum (17 08 02)	100.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Concrete (17 01 01)	100.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Bricks (17 01 02)	100.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Metals (17 04 07)	100.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Packaging (15 01 06)	80.00
LMD Skip and Grab Hire Ltd (LMD Grab Hire)	Plastics (17 02 03)	80.00

Water Discharge Permits

N/A

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6. Training and communicating the SWMP on site

Training

Everyone on site should receive relevant training which should include:

- The SWMP
- Roles and responsibilities
- Waste procedures on site
- Hazardous waste
- Duty of care / responsibilities
- Materials storage.

The following types of training are being undertaken:

Method	Undertaken
Induction	Yes
Toolbox Talks	Yes
Workshop	No
Other Training	No

Communication

The plan is being communicated by:

Method	Undertaken
Meetings	Yes (Site management)
Posters	Yes
Feedback	No
Other Communication(s)	No

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7. Waste Data

This section will be updated once waste is removed from site.

Tonnage	
Total tonnage of waste generated to date	
Tonnes of waste per 100/1 sq.m. of floor area (tonnes/100 sq.m.)	
Tonnes of waste per £100K of project cost (tonnes/£100K)	
Reused on site	
Reused off site	
Total reused	0.00 tonnes
Recycled on site	
Recycled off site	
Total recycled	0.00 tonnes
Sent for recovery off site at licensed facilities	
Total recovered off site at licensed facilities	
Total recovered	
Disposed off site	
Disposed from licensed facilities	
Total disposed	
Total waste diverted from landfill	

BREEAM credits:

Type of Waste	**Tonnes Produced**	**% Diverted from Landfill**	**BREEAM (2018) Credits**
Non-demolition			
Demolition			
Groundworks / Excavation			
All			

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Actual tonnage of waste to date by product group

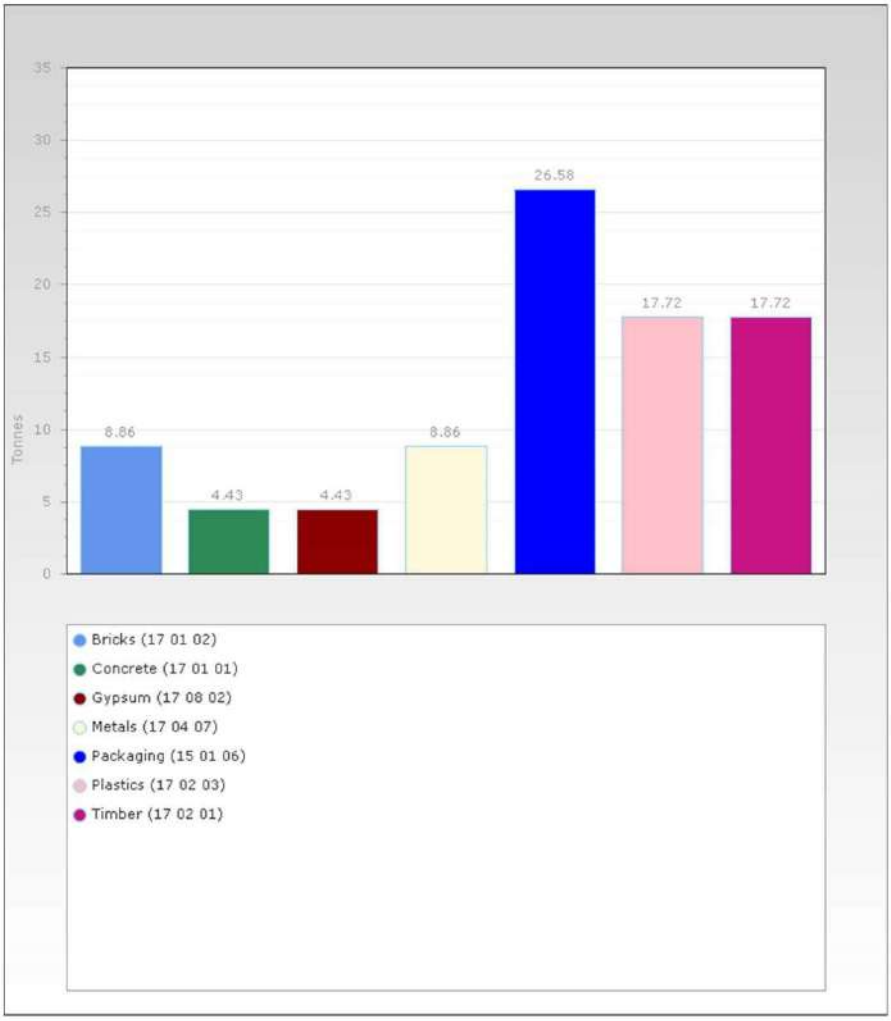

Figure 1 EXAMPLE - WASTE PRODUCTION GRAPHIC

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Current actual quantities versus forecasted quantities

Waste type	Forecasted quantity (tonnes)	Actual (tonnes)
Bricks (17 01 02)		
Concrete (17 01 01)		
Gypsum (17 08 02)		
Hazardous (17 09 03*)		
Metals (17 04 07)		
Mixed (17 09 04)		
Packaging (15 01 06)		
Plastics (17 02 03)		
Timber (17 02 01)		
TOTAL:		

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8. Ongoing review

Date	Name	Summary/ Actions carried out
28/06/2023	Knowles Construction	Issued

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9. Project completion review

Waste Minimisation

Waste Minimisation Decision	Achieved Action Undertaken	Financial or Other Direct Benefit for the Principal Contractor
To reduce the overall packaging waste from materials delivered to site		
To reuse demolition materials where possible for example, hard core for the construction phase		
To segregate waste on site where possible		
To use just in time deliveries avoiding excess carbons		
To ensure there are no leakages. The site will be checked daily.		
To segregate Gypsum waste on site		
To segregate timber waste on site To reduce the amount of metal waste		
To reuse timber pallets		

Lessons Learnt

Waste type	Forecasted quantity (tonnes)	Actual (tonnes)
Bricks (17 01 02)		
Concrete (17 01 01)		
Gypsum (17 08 02)		
Hazardous (17 09 03*)		
Metals (17 04 07)		
Mixed (17 09 04)		

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Packaging (15 01 06)	
Plastics (17 02 03)	
Timber (17 02 01)	
TOTAL:	

Based on the total waste produced for this project and our floor area we have achieved:

Tonnes per 100 sq.m.	Total Credits for BREEAM

Diverted from landfill

Type of Waste	Tonnes Produced	% Diverted from Landfill	BREEAM (2018) Credits
Non-demolition			
Demolition			
Groundworks / Excavation			
All			

Comments:

To be completed at end of project.

Cost and Benefits

Item Description	Estimated at Tender Stage	Actual
Number of skips		
Cost per skip		
Total Cost		
Comments		

How successful was the SWMP implementation on site?

To be completed at end of project

Was there any deviation from the pre construction phase SWMP?

To be completed at end of project

Are there any actions or lessons learnt for future projects?

To be completed at end of project

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What are the estimated project cost savings due to SWMP?

To be completed at end of project

We confirm that the plan has been monitored on a regular basis to ensure that work was progressing to the plan and the plan waste updated. We confirm the review of this SWMP was undertaken within 3 months of project completion.

This plan should be kept at either the principal contractors place of business, or at the site of the project, for 2 years.

Signature

Print name

Date

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Appendix 1- Copy Waste licence(s) and Environment Agency check(s)

Notice of transfer

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 21 of the Environmental Permitting (England and Wales) Regulations 2010 transfers

Permit number
EPR/JB3839AQ

to
LMD Waste Management Ltd
whose registered office is
32 Willow Lane
Mitcham
Surrey
CR4 4NA

company registration number 09392465
to operate a regulated facility at
LMD Waste Management Limited
32 Willow Lane
Mitcham
Surrey
CR4 4NA

from New Era Recycling Limited
The notice shall take effect from 07/03/2016

The number of the new permit granted to LMD Waste Management Ltd is EPR/DB3805GC

Name	Date
Stephen Copley	**11/03/2016**

Authorised on behalf of the Environment Agency

Transfer application number
EPR/DB3805GC/T001

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Appendix 2- Site Inspection Reports

Appendix 3- Sub contractor agreement forms

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Appendix 4- Waste data lists

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Appendix 5- Waste transfer notes (WTN)

Knowles

Knowles

Appendix 6- Site/floor drawings

Knowles

Knowles

Appendix 7- Waste Actuals

Date WTN	Carrier	Destination	Work Package	Container Size	Segregated Waste type	Tonnes