

Faraday Tower Demolition

Demolition Methodology Note and Principles of Site Waste Management



MANCHESTER
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The University of Manchester

Document Control Sheet



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Glossary

Term	Definition
GEA	Gross External Area
SWMP	Site Waste Management Plan

1. Demolition Methodology Note

Design Note

Project Faraday Tower
Subject Demolition Methodology for Faraday Tower
Project no 0066184
Date 21 July 2025

Revision	Description	Issued by	Date	Approved (signature)
00	Demolition methodology draft issue	MA	21/07/2025	HL

1 Overview

This note has been provided to identify the demolition methodology for Faraday Tower. The methodology outlined here takes reasonable assumptions to form a description of the proposed demolition works taking place suitable for informing the assessments in the Environmental Impact Assessment (EIA). The assumptions are based on information provided by Manchester University and the tendering contractors; however, it should be noted that this list is not exhaustive and subject to change.

This methodology offers a likely approach to demolition, once the demolition contractor is on board, the demolition methodology will be developed and maybe subject to change. The appointed contractor will have the responsibility to provide a detailed methodology. This developed methodology will be secured through a planning condition.

2 Indicative Demolition Programme

The indicative programme for the demolition is provided in Table 1.

Table 1 Indicative demolition programme

Phase	Duration
Advanced safety measures	8 weeks
Decontamination works and soft strip	32 weeks
Hard demolition works	60.2 weeks

3 Demolition Methodology

3.1 Stages of work

The anticipated stages of work are as follows:

- Site establishment
- Asbestos removal
- Hazardous material clean/decontamination
- Soft stripping of building
- Demolition of the former district heating

- Execution of scaffolding wrap enclosure around the tower
- Demolition of the tower to ground level
- De-camp from site

3.2 Site Activities

The following activities are anticipated within each stage of works:

Site Establishment

- Site establishment, including necessary additional / relocation of hoarding / footpath closures and siting the welfare facilities.
- Erect hoarding fence onto Sackville Street footway to secure the site before works can commence.
- Welfare facilities will include site offices, segregated toilets, canteen, drying and changing rooms, and decontamination units.
- Mobile CCTV security towers will be used for site surveillance.
- Dedicated plant and materials storage areas will be set up.
- Fire safety arrangements will be implemented, including proper storage of flammable materials and hot works permits.
- Pedestrian walkways and Heras fencing will be installed to segregate work areas and ensure safe access.
- Traffic marshals will control delivery vehicle movements within the site area.
- Delivery of site plant

Asbestos Removal

- An asbestos survey has identified ACM's throughout the building.
- All removal work will be carried out under controlled conditions by competent specialists.
- Live asbestos work areas and transit routes will be identified by appropriate signs and physical demarcation.
- A DCU (Decontamination Unit) and sealed asbestos skips will be used.
- Fibre air monitoring will be carried out by a UKAS accredited Analyst.
- All works will conform to the Control of Asbestos Regulations 2012 and associated HSE guidance.

Hazardous Material Clean / Decontamination

- A hazardous materials survey has been undertaken. Hazardous materials are present throughout the building
- Redundant fume cupboards will need specialist decontamination
- Air conditioning units will require de-gassing by competent contractors to prevent accidental release of ozone-depleting substances.
- Environmental clean of the building will include removal of hypodermic needles, dead birds, and pigeon excrement.
- Operatives will use appropriate PPE/RPE and follow enhanced hygiene protocols.

Soft Stripping of Building

- Soft stripping of building, removal of non-structural materials (excluding large plant items – removed during demolition works).
- Removal of all remaining furniture and fixtures, doors, frames, skirting, architraves, window boards, built-in units, and electrical fittings.
- Use of handheld tools including pry bars, crow bars, mallets, bolt croppers, reciprocating saws, and battery-powered grinders.
- Floor coverings assessed for asbestos content before removal.
- Use of internal lift shafts and designated drop zones for debris removal.
- D-Rig excavator with selector grab will segregate and load waste into skips.

Demolition of the Former District Heating

- Demolition of the former district heating redundant district heating buildings and cantilevered nib and storage cells.
- This will be completed using standard demolition excavators (D-Rig) with rotating concrete and metal cutting jaws.

Erection of Scaffold Wrap Enclosure Around the Tower

- Erection of scaffold wrap enclosure around the tower to minimise the risk of debris and dust falling outside the site boundary.
- Scaffold erected in 2m lifts
- Scaffold will be fully encapsulated with debris fans and monoflex sheeting.
- Edge protection will be provided at each lift and to the lift shaft debris chutes.

Demolition of the Tower to Ground Level

- Demolition of the tower to ground level to Sackville Street.
- Top-down demolition method using tower crane, Brokk demolition robot, and D-Rig excavators. Internal walls and structural elements removed floor by floor.
- Tower crane used to lift Brokk demolition robot and equipment to roof and removal of structural elements.
- External panels and staircases lifted out.
- Pre-cast concrete walls, cladding panels, and floor slabs will be cut and lifted out using the tower crane.
- In-situ reinforced concrete elements will be demolished using Brokk or mini excavators.
- Debris will be placed down lift shaft chutes and removed by excavator for recycling.
- Scaffold will be progressively struck as demolition proceeds.
- Final 2–3 storeys will be demolished using high reach D-Rig.
- Segregation and processing of all arisings prior to removal off site to an approved recycling facility for further processing and re-use.
- A pump within the basement of the tower will be used to ensure that the basement does not flood.

3.3 Plant and Energy Supply

Plant and Equipment

The following plant and equipment is anticipated to be used during the demolition works:

- D-Rig excavators with hydraulic attachments
- Brokk demolition robots
- Tower crane
- Mini excavators and skid steers
- Dust Boss suppression units
- Two-way radios
- Temporary lighting
- CCTV towers
- Dedicated skips with secure storage, and segregated waste streams
- Dust suppression systems (water sprays)
- Mobile access platforms and scaffold towers
- Tippers

Energy Supply

The energy supply is anticipated to primarily use diesel fuel, AdBlue, and hydraulic oil.

3.4 Working Hours

The anticipated working hours are presented below:

- 07:00 to 18:00 Monday to Friday.
- 08:00 to 13:00 Saturday.
- No work on Sundays or Bank Holidays.

3.5 Traffic and Access

The anticipated traffic and access arrangements for the demolition works are presented below:

- Access via Sackville Street, routing through A57 Mancunian Way due to height restrictions.
- Access via designated gates with traffic marshals.
- 5 MPH speed limit enforced on site.
- Minimise HGV movements between 08:00–09:00 and 16:00–17:00.
- Banksman to control all vehicle movements.
- Segregated pedestrian routes with barriers, signage, and lighting.
- Deliveries pre-planned and escorted.
- No parking or waiting on Sackville Street permitted.
- Vehicle inspections to prevent debris on public roads.

3.6 Environmental Controls

Noise and Vibration

The following environmental controls relating to noise and vibration are expected to be implemented.

- Use of modern, silenced equipment.
- Acoustic covers kept closed.
- No plant or equipment idling.
- No radios or audio devices allowed.
- Scaffold sheeting to act as noise barrier.
- Percussion tools limited to essential use only.
- Noisy activities restricted to working hours.
- Drop heights for materials minimised.
- Noise attenuation barriers to be installed at sensitive locations if required.

Air Quality

The following environmental controls relating to air quality are expected to be implemented.

- PM10 monitored in real-time.
- Trigger level: 190 $\mu\text{g}/\text{m}^3$ (15-minute mean).
- Atomising sprays and water bowsers used.
- Dust Boss suppression units deployed.
- Dust suppression using water sprays and misting systems.
- Scaffold enclosure to contain dust.
- Windows left in place until last to limit dust escape.
- Roadways damped down and swept regularly.
- Skips to be sheeted.
- Waste to be processed and removed promptly.
- Drop zones enclosed and managed to prevent dust spread.

2. Introduction to Principles of Site Waste Management



The project scope comprises the demolition of 12 floors of Faraday Tower. The ground floor and two basement levels are being retained in preparation for construction works at a later date.

The overall total proposed area is 4,000sqm (GEA).

A pre-demolition audit has been undertaken by Buro Happold in March 2025, to identify the types and quantities of demolition waste.

There is an asbestos survey report produced by Halliday Meecham that covers the quantity of asbestos and identifies the level of risk.

A demolition method statement will be produced by the successful Contractor to ensure that demolition is conducted safely, efficiently and in line with policies.

3. Waste Management Policies and Guidance



The project scope comprises the demolition of 12 floors of Faraday Tower. The ground floor and two basement levels are being retained in preparation for construction works at a later date.

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The following national, local, and regional policies related to waste will be adhered to during the course of construction. Further details are outlined in Appendix A.

3.1 National Policies and Guidance

- Environment Act 2021;
- The Waste Framework Directive (2008/98/EC);
- The Landfill Directive (1999/31/EC);
- Waste (England and Wales) Regulations 2016 (amended);
- Our Waste, Our Resources: A Strategy for England (Defra, 2018);
- National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2019);
- Waste Management Plan for England (2021);
- Environmental Permitting Regulations (England and Wales) 2016;
- The Site Waste Management Plans Regulations 2008;
- Hazardous Waste (England and Wales) (Amendment) Regulations 2016 SI;
- The Circular Economy Package: Policy Statement, DEFRA, 2020;
- The Waste (Circular Economy) (Amendment) Regulations, 2020;
- National Planning Policy for Waste (Ministry of Housing, Communities and Local Government, 2014);
- Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001;
- Defra Review of the Environmental Health Effects of Waste Management, 2004;
- Control of Asbestos Regulations, 2012; and
- Waste Duty of Care Code of Practice, 2016

3.2 Regional Policies and Guidance

- Northwest Regional Waste Strategy, 2004

3.3 Local Policies and Guidance

- Manchester City Council Waste Storage and Collection Guidance for New Developments, last updated 2023
- Greater Manchester Joint Waste Development Plan Document, 2012

4. On-Site Waste Reduction

4.1 Introduction

Sustainable waste management techniques should be considered throughout the Site demolition phases. The Principal Contractor will have oversight over this implementation plan and should endeavour to adopt the following sustainable waste management principles.

4.2 Materials Management On-Site

- Dedicated areas should be created that allow for the correct storage of materials recovered during demolition. This will reduce the risk of contamination.
- Clearly marked segregated bins/skips for demolition materials should be provided to avoid cross-contamination and to facilitate recycling.
- All waste generated should be stored in designated areas that are isolated from surface drainage. Waste containers should be covered to prevent dust and litter being blown out and rainwater accumulating. Containers will be inspected regularly and replaced when full.

4.3 Waste Segregation On-site

Waste should be segregated on-site wherever possible. However, when this is not viable due to spatial constraints, mixed materials will be stored and sent to a local recycling facility. The following recommendations should be considered to minimise the amount of waste produced and increase the proportion of waste that is segregated:

- Ideally, a specific area should be allocated and labelled to facilitate the segregation of waste materials for potential re-use, recycling, and recovery;
- Different waste streams should be segregated. At a minimum, containers/skips for hazardous/non-hazardous waste and plasterboard waste should be provided on-site. Some examples are shown in Figure 6—1;
- Recycling and waste skips will be kept clean and clearly marked to reduce contamination of materials. The labelling shall use 'Waste Stream Colour Codes'; and
- Training should be provided for all site personnel, informing them of the correct disposal routes for materials. A site waste champion could be appointed to oversee correct segregation/disposal and keep a record of all resources recovered

4.4 On-Site Treatment and Preparation for Recycling

In addition to waste segregation, simple on-site treatment measures may be implemented by the Principal Contractor to improve the quality of waste streams and facilitate more effective recycling and recovery off-site.

The following actions are recommended where possible:

Pre-Processing of Concrete, Brick and Masonry

- Larger elements can be broken down using mechanical breakers to reduce transport volumes and prepare for off-site crushing and screening
- Reinforcing steel and other embedded materials can be removed from concrete, where possible

Metal Sorting and Stockpiling

- Ferrous and non-ferrous metals can be separated on-site to prevent contamination
- De-nailing or de-bolting larger steel sections can improve their value and reduce downstream processing requirements

Timber Preparation

- Timber can be graded on-site into clean, untreated wood and treated or contaminated wood categories
- Clean timber can be cut or chipped on-site. This reduces the trips required to transport wood off-site

4. On-Site Waste Reduction

Plasterboard Preparation

- Plasterboard should be kept dry and uncontaminated through storage in a separate, covered skip
- Plasterboard should be separated from other materials to increase the likelihood of acceptance at gypsum recycling facilities

Hazardous Material Isolation

- Hazardous materials identified during soft-strip or demolition (e.g., asbestos, lead-based paints) should be carefully segregated and stored in secure, labelled containers to prevent cross-contamination
- Early identification and removal of hazardous components reduce risks and simplify the recycling of non-hazardous waste streams

4.5 Waste Treatment Off-Site

Following collection from site, demolition waste should be processed at licensed waste management facilities. The treatment processes will vary depending on the type of material. The key waste streams typically generated during demolition and their potential off-site treatment routes include:

- **Concrete, Brick and Masonry:** These materials will be crushed and screened to produce recycled aggregates, which can be reused in construction applications such as sub-base, backfill, or general fill. Reinforcing steel will be removed from concrete using magnets during the crushing process and sent for metal recycling.
- **Metals:** Metals will be sorted into ferrous (e.g., steel) and non-ferrous (e.g., copper, aluminium) streams, either on-site or at the recycling facility. These materials will be processed at metal recycling facilities where they are melted down and reformed for use in new products.
- **Timber:** Clean timber may be recycled into wood products (e.g., chipboard, MDF) or processed for use as biomass fuel. Contaminated or treated timber may require specialist treatment and will be sent to approved facilities for appropriate recovery or disposal.
- **Plasterboard:** Where segregated, plasterboard will be sent to specialist gypsum recycling facilities where it is processed into new plasterboard or used as a soil conditioner. Plasterboard mixed with general waste may require further separation off-site to recover gypsum.
- **Hazardous Waste:** Materials such as asbestos-containing materials, lead-based paints, or contaminated soils will be handled by licensed hazardous waste contractors. These will be processed and disposed of in accordance with relevant hazardous waste regulations.
- **General Mixed Waste:** Any residual mixed waste will be sorted further at off-site materials recovery facilities (MRFs) to extract remaining recyclable materials. Only non-recyclable waste will be sent to landfill or energy recovery facilities as a last resort.

4.6 Site Waste Management Responsibilities

The Principal Contractor will be responsible for waste management upon appointment. The detailed SWMP produced by the Principal Contractor will be updated at least every six months.

5. Waste Management Responsibility

Responsibility for the various aspects of the SWMP are set out below. It should be noted that ownership roles are indicative and may vary as the project develops.

SWMP Responsibility Matrix

Title	Responsible Owner
Administration And Planning	Client
Action Log	Client
Responsibility For Waste Management	Principal Contractor
Forecasting Key Waste Production	Principal Contractor
Planning Re-Use And Recycling	Principal Contractor
Register Of Licences, Permits And Movements	Principal Contractor
Quantifying All Waste Materials	Waste Carrier
Comparison Of Estimated And Actual Quantities	Principal Contractor
The Costing Of Site Waste Management	Principal Contractor
Overall Recycled Content	Principal Contractor
Implementation	Principal Contractor
Final Project Declarations	Principal Contractor

The responsibility to prepare an on-site detailed SWMP is with the Principal Contractor. The detailed SWMP should be provided to the client in both digital and hard copies, with the hard copy enclosed in a folder onsite.

The Principal Contractor should update the SWMP as work progresses and ensure that workers on-site are aware of the SWMP and co-operate with it. This will include providing suitable site inductions, information, and training.

Contractors will in turn need to engage their employees and sub-contractors to ensure that any waste management objectives in the SWMP are understood and achieved.

Although the Principal Contractor is responsible for updating the SWMP and ensuring compliance and cooperation amongst the workers, the client will continue to have a role in ensuring its effective implementation. The client must give any reasonable direction to contractors to ensure compliance, for example, in setting contractual obligations. Both the client and the Principal Contractor are responsible for reviewing, revising, and refining the SWMP as necessary, in particular, to ensure that roles and responsibilities are clear as the project progresses.

The SWMP must be kept at the site office and be available to any contractor carrying out work described in the plan. Once the development has finished, the Principal Contractor must keep the SWMP for two years after completion at their place of business or at the site of the project.

6. Appendix A - Policies and Guidance

National Policies And Guidance

The Waste Framework Directive (2008/98/EC) – This revised Directive sets out the position regarding waste and how to dispose of it. It introduced the waste hierarchy which is widely used as the basis of development for sustainable waste management strategies.

The Landfill Directive (1999/31/EC) - The Directive's overall aim is "to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from the landfilling of waste, during the whole lifecycle of the landfill".

Waste (England and Wales) Regulations 2016 (amended) - The Waste (England and Wales) Regulations 2016 work towards implementing the revised EU Waste Framework Directive (2008/98) relating to some key components of waste operations; collection, recovery, transport, and disposal of waste materials. They also address the application of additional responsibilities to the contents of transfer notes, the introduction of a two-tier system for the registration of waste carriers and brokers, further amendments to hazardous waste controls and also the omission of certain categories of waste from waste controls.

Our Waste, Our Resources: A Strategy for England (Defra, 2018) - This document was published in the wake of the Government's 25 Year Environment Plan (Defra, 2018). The strategy sets out plans to double resource productivity and eliminate avoidable wastes of all kinds by 2050. It includes details of how waste will be minimised and managed to reduce damage to the environment. The strategy gives a policy direction in line with the 25 Year Environment Plan (Defra, 2018), with a particular focus on moving away from a traditional linear economic model towards a more sustainable and efficient circular model.

National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021) - A revised version of the National Planning Policy Framework (NPPF) was first published in 2012 and updated in 2019 and 2021. The document notes that the purpose of the planning system is to contribute to the achievement of sustainable development and states that efforts must be made to minimise waste generation and increase re-use and recycling.

Relevant targets from this document include the following:

- To work towards achieving a 65% recycling rate for MSW by 2035;
- To work towards sending 10% or less of MSW to landfill by 2035; and
- To eliminate all avoidable waste by 2050.

National Planning Policy for Waste (Ministry of Housing, Communities and Local Government, 2014) - The National Planning Policy for Waste states that planning applications should consider their impact on existing and planned waste infrastructure. The document also states that suitable provision should be made for managing waste within new developments.

Waste Management Plan for England (2021) - This plan sets out a planning framework to help local authorities develop strategies that identify sites and areas suitable for new or enhanced waste management infrastructure/facilities. In addition, the document provides advice for local authorities to better apply the waste hierarchy in their own jurisdiction.

- The waste hierarchy ranks waste management options according to what is best for the environment. This goes in the order of 'prevention, reuse, recycling, recovery and disposal', with disposal being the least preferred option.
- At its core, the plan describes how the government intends to work towards a more efficient and sustainable approach to waste and resource use/management. The plan feeds off other policy documents including the 25 Year Environmental Plan (2018), the Resources and Waste Strategy (2018) and the Waste Prevention Programme for England.

Environmental Permitting Regulations (England and Wales) 2016 – The Environmental Permitting Regulations introduce a single environmental permitting and compliance regime to apply in England and Wales. This regime streamlines and combines Waste Management Licensing Regulations 1994 (as amended) and The Control of Pollution (Amendment Act) 1989 to create a single environmental permit with a common approach to permit applications, maintenance, surrender and enforcement.

6. Appendix A - Policies and Guidance

The Site Waste Management Plans Regulations 2008 - Site Waste Management Plans (SWMP) are no longer a requirement for construction and demolition projects in England, however it is good practice to produce a SWMP to mitigate construction and demolition waste.

Hazardous Waste (England and Wales) (Amendment) Regulations 2016 SI – The Hazardous Waste Regulations, which came into force in 2005, provide requirements for controlling and tracking the movement of hazardous waste and bans mixing different types of hazardous waste.

The Circular Economy Package: Policy Statement, DEFRA, 2020 - The Circular Economy Package identifies steps for the reduction of waste and the establishment of a credible long-term path for waste management and recycling. Many of the themes and provisions covered within the Circular Economy Package relate to areas of resources and waste policy where the UK nations are already actively involved through existing measures or work underway to take forward commitments made in their respective domestic waste strategies. Furthermore, the bulk of the 2020 Circular Economy Package measures are relatively small technical changes and/or the implementing legislation simply adopts the same wording as that of the Directive. The UK government has also stated that the departure from the EU will not weaken any current or future environmental protections planned.

The Waste (Circular Economy) (Amendment) Regulations, 2020 - The objective of this regulation is to transpose the 2020 EU Circular Economy Package (CEP) requirements in Wales and England. In addition, EU Directives amendments in the field of waste are reflected in these regulations such as the Landfill Directive and the Waste Framework Directive.

Noise Emission in the Environment by Equipment for use Outdoors Regulations 2001- The regulations provide guidance on reducing noise levels of each machine used on construction/ demolition sites by utilising various types of construction site equipment such as concrete breakers, excavators, welders and generators.

DEFRA Review of the Environmental Health Effects of Waste Management 2004 - This review examines potential health risks from waste management practices. It finds some associations with health impacts and calls for better monitoring and further research.

Control of Asbestos Regulations, 2012 - This regulation sets out the legal requirements to prevent exposure to asbestos in workplaces. It places duties on employers to manage, assess, and control asbestos risks. The regulations aim to protect workers and the public from asbestos-related diseases.

Waste Duty of Care Code of Practice, 2016 - The Waste Duty of Care Code of Practice sets out practical guidance for individuals and businesses in England and Wales on how to manage waste responsibly to protect human health and the environment. It applies to anyone who produces, carries, keeps, treats, disposes of, or controls waste. The regulation mandates that waste must be stored and transported safely, only transferred to authorized persons, and properly documented. Non-compliance can result in significant fines and legal action.

A1.2 Regional Policies And Guidance

Northwest Regional Waste Strategy, 2004 – This strategy outlines a plan for managing waste in the region, focusing on waste reduction, recycling and sustainable treatment. It aims to reduce the environmental impact of waste management and promote resource efficiency. The strategy supports a shift toward a circular economy.

A1.3 Local Policies and Guidance

Manchester City Council Waste Storage and Collection Guidance for New Developments, last updated 2023 – This guidance provides standards for waste storage and collection in new buildings. It aims to ensure efficient waste management, accessibility and sustainability. The guidance includes requirements for space, design and logistics to support recycling and waste reduction.

Greater Manchester Joint Waste Development Plan Document, 2012 – This plan outlines a strategy for managing waste across Greater Manchester. It focuses on sustainable waste management and resource efficiency, supporting waste reduction, recycling and the development of waste treatment facilities. The plan aims to ensure that waste management meets future needs while minimising environmental impact.