

Whitley Wood Training Centre Building

Construction Method Statement

On behalf of Royal Berkshire Fire and Rescue Service

By Premier Modular Limited



J. Mould

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Issue 2- July 2024

1. INTRODUCTION

- 1.1. Premier Modular Limited (PML) are appointed by Royal Berkshire Fire and Rescue Service (RBFRS) to design and build a new Training Centre Building at Whitley Wood Fire Station, Reading, RG2 8FT.
- 1.2. This Construction Method Statement (CMS) summarises the proposed construction methods and sequencing for the project works as identified in the planning application.

Background

- 1.3. A planning application has been approved by Reading Borough Council reference number 231841 dated 15th May 2024, requiring a CMS to be submitted and approved as a pre-commencement condition for development.

Purpose

- 1.4. The purpose of this CMS is to address the requirements identified by planning condition number 3, specifically to identify the following items. Where these are not applicable to the development this has been identified and explained in red text against the points and will not be covered further in this CMS:
 - a) Space on site where vehicles of site operatives and visitors can be parked with details of how site operatives and visitors will be required to make use of the parking area provided;
 - b) Location on site for storage of plant and materials used in constructing the development;
 - c) The erection and maintenance (including removal of any graffiti or fly posters) of security hoarding around the site; **The construction site is contained within a secure site, fully fenced and subject to electronic access control facility, therefore, the site will not be enclosed by security hoarding. Reference should be made to the site set up plan for the fenced construction site enclosures.**
 - d) Identification of any footpath closures or road closures needed during construction; **No closures are required.**
 - e) Required wheel washing facilities on site;
 - f) A scheme for recycling waste resulting from the construction works
 - g) Measures for controlling the use of site lighting whether required for safe working or for security purposes; **Existing site lighting is present relating to the ongoing operational requirements of the fire station and training centre. No additional site lighting will be required for the construction works.**
 - h) Required measures to control the emission of dust, dirt and other airborne pollutants during demolition and construction;
 - i) Provisions to be made for the control of noise coming from the site during demolition and construction;
 - j) Full details of pest control measures following any demolition required. Where necessary, capping of drains/sewers and baiting arrangements.

Programme of Demolition and Construction Works

- 1.5. The overall project programme is expected to take 40 weeks to complete.
- 1.6. The programme of works consists of the following principal activities:
 - 1. Preparatory site works including isolation and disconnection of services, and erection of tree protection.
 - 2. Demolition of the existing Training Centre building.
 - 3. Construction of foundations and other associated ground works for the new modular Training Building.
 - 4. Diversion of existing services on the site, and construction of new ancillary installations (fuel pump, LPG tanks).

5. Delivery and installation of the prefabricated modules comprising the Training centre Building.
6. Fit out of the new Training Building.
7. Hard and soft landscaping around the new Training Building.
8. Demolition of the existing portacabin Training Centre offices.
9. Installation of EV charging points and cycle storage facilities.

2. CONSTRUCTION METHODS

Access, Vehicle and Parking Strategy

- 2.1 The management of construction traffic and vehicle parking on and around the site is of paramount importance to protecting the operational and emergency response capability of the RBFRS Fire Station which will remain fully operational for the duration of the construction project. Vehicular movements and parking for construction traffic and associated visitors will be restricted to the defined construction site compound, plus specific areas within the fire service site to be identified and agreed with the fire service duty Watch Managers on a daily basis. These areas will be dependant on operational and training activities. Extensive consultation has been undertaken by the RBFRS Capital Projects and consultant teams to agree procedures for daily briefings which must take place by the Principal Contractor's construction site manager.
- 2.2 A weekly 'forward look' will be undertaken by the Principal Contractor to identify dates and times for materials and waste deliveries / removals, and discussed with the RBFRS Watch Managers to identify and mitigate any adverse impact to operational activities. Deliveries of materials and waste removals will be programmed to avoid peak traffic times on the site (such as fire service shift change-over times) to avoid any consequential impact outside of the site.
- 2.3 The access route for construction traffic is from the main site entrance from Toro Way. The defined access route across the operational areas of the site is as identified in the construction stage site plan contained in the appendices.
- 2.4 Construction traffic travelling to the works shall be from the A33 and via Whitley Wood Road.
- 2.5 Traffic leaving the site shall access the A33 from Toro Way.
- 2.6 A delivery logistics plan will be prepared relating to the delivery of the modular units, to control the flow of the modular unit delivery vehicles on the local roads in proximity to the site. This plan will include identification of a suitable holding point from which deliveries will be called forward only once ready to be received onto the site, thus avoiding large delivery vehicles obstructing the local highways.
- 2.7 The site set up and compound areas will be different for the demolition and the new construction stages, and will be as identified on the site set-up plans contained at the appendix.
- 2.8 Due to the pre-fabricated modular form of construction for the new building, there will only be a small number of construction personnel on site at any time relevant to the stage of works, erection of modules, and fit out. Therefore the number of parking spaces required for construction personnel at any time is not expected to exceed 10. The location of these parking spaces will vary (refer to 2.1 above), but will be within the RBFRS secure site.

Storage of Plant and Materials

- 2.9 The prefabricated modular nature of the new building means that the site works will be limited to installation of façade cladding and interior fit out. Materials will be called to site on an as required basis to reduce site storage requirements.
- 2.10 All plant and materials will be securely stored within the construction site compound areas as shown on the site layout plans contained within the appendices, which will be within the secure RBFRS site. No materials or waste will be stored outside of the site boundary.

Loading and Unloading of Plant and Materials & Manoeuvring of Vehicles Within the Site

- 2.11 The position and access to the site compound has been identified to facilitate the loading and unloading of plant and materials whilst minimising operational impact to the fire service activities.
- 2.12 There is adequate space within the fire station and training centre yard areas to facilitate exceptional size loads / manoeuvring, subject to the management arrangements identified in 2.2 above. No deliveries or unloading of equipment will occur on the public highway for the duration of the project.
- 2.13 All manoeuvring of delivery and waste removal vehicles will be undertaken within the fire service site, not on the highway, and will be subject to the Principal Contractor's procedures for use of banksmen.
- 2.14 A separate craneage plan will be adopted for the delivery of the pre-fabricated building modules, which is expected to take 3 days to complete. All crane operations will be within the fire service site, not on the public highway, and no oversailing licences will be required.
- 2.15 HGV movements associated with materials delivery or waste removal will be scheduled as far as possible to avoid peak periods (08.00 – 09.00 and 15.30 – 17.00) to mitigate impacts on the surrounding road network during peak commuter periods and will also avoid the fire service shift changeover times

Plant and Wheel Washing

- 2.16 Ground excavation will be limited to the removal of existing foundations, construction of new pad foundations, and isolated areas of service trenching. These works will be of short duration and during summer months, and therefore the risk of contamination off site arising is considered to be very low. However, during the foundation construction and groundworks stage of the project a jet powered wheel wash facility will be situated within the construction compound for use in the event that delivery or waste removal vehicles become contaminated. However, clean vehicles entering and leaving the site will be kept within the identified contractor access route across the site, and should not become contaminated by site waste or mud arising from excavation works.
- 2.17 The operational training requirements of the fire service require that the training yard areas are kept free of contamination, and the contractor will be required to monitor this on a daily basis.
- 2.18 Any surface water run-off from the wheel wash will be controlled by the existing yard area surface water drainage system and silt traps / interceptors.
- 2.19 In the very unlikely event of any mud from vehicles contaminating the surrounding network, this will be removed as soon as possible by road sweeper.

Recycling Waste Arising from the Construction Works

- 2.20 As part of the project requirements to achieve BREEAM 'Very Good' standard a Demolition Waste Audit has been undertaken. A copy of the report is contained at the appendices. Reference should also be made to section 3.2 of the Demolition Method Statement contained at the appendices, identifying the method of 'soft stripping' to allow segregation of waste materials for recycling.

- 2.21 The modular construction process means that a large proportion of the superstructure build is undertaken off-site in factory conditions, and as such waste generation is minimised. Waste arising from the on-site construction process will be managed in accordance with the Site Waste Management Plan (SWMP) and our ISO14001 accreditation procedures incorporating procedures and processes for recycling.
- 2.22 All site waste will be collected and stored within the dedicated waste storage area, skips and containers as identified on the site plans included at the appendices and these will be covered.
- 2.23 All waste arising from the demolition of the existing buildings will be managed in accordance with the J Mould (Reading) Demolition Method Statement, and disposal via the local Waste Transfer Station.

Dust, Dirt and Airborne Pollutants

- 2.24 Dust and dirt nuisance is most likely during the short duration of the demolition of the existing Training Building at the start of the project. Reference should be made to section 2.5 of the Demolition Method Statement contained at the appendices and the information contained below.
- 2.25 Generally, in dry weather conditions, water suppression will be used to dampen dust as far as possible to minimise spread of dust to neighbouring properties. This will include the use of water suppression and wet cutting.
- 2.26 In order to minimise dust on site, waste piles and skips will be covered, and the use of hoarding/screening will be used where necessary. In addition extraction attachments will be used on tools.
- 2.27 Once the modular building units are in place, the majority of works will be internal, and therefore the likelihood of dust spread to neighbouring property will be low.
- 2.28 There shall be no burning of waste materials permitted on site.

Control of Noise

- 2.27 Reference should be made to section 2.5 of the Demolition Method Statement. Control of noise will be via use of appropriate modern machinery for the tasks.
- 2.28 In addition both the demolition contractor and the main contractor will ensure the following:
- No reverse beepers (white noise only) for site vehicles
 - No radios audible off site
 - Fixed plant as far from receptors (the neighbours on the northern boundary) as possible
 - Plant will be turned off when not in use
 - Drop height of materials minimised
 - Well maintained tools used
 - Briefing of site operators to minimise noise
 - Inform neighbours before particularly noisy activities and neighbours will be provided with specific contact details.
 - Display contact details for neighbours to raise issues
- 2.29 Noisy construction, demolition and associated activities shall be limited to between the hours of 08.00 to 18.00 Mondays to Fridays, and 08.00 to 13.00 on Saturdays in line with Informative No.4

on the Decision Notice. No noisy works shall take place at any time on Sundays or on Bank Holidays or Statutory Holidays.

Pest Control Measures

- 2.30 The RBFRS site has existing pest control measures in place through a maintenance service contract, including use of bait boxes to control rodents. These provisions will remain in place throughout the construction period.
- 2.31 Existing surface and foul water drains that serve the existing Training Building to be demolished will be disconnected and plugged at manholes prior to commencement of demolition works. The existing drains will be utilised to serve the new modular building on completion, with new local connections from the new building into the existing manholes. All existing drain runs that become redundant will be removed as part of the demolition works.
- 2.32 Foul water drains that serve the portacabin office will be plugged at the nearest manhole prior to demolition, and redundant runs will be permanently plug sealed at both ends.
- 2.33 If there is evidence of pests, then these will be baited in line with best practice.

Tree protection

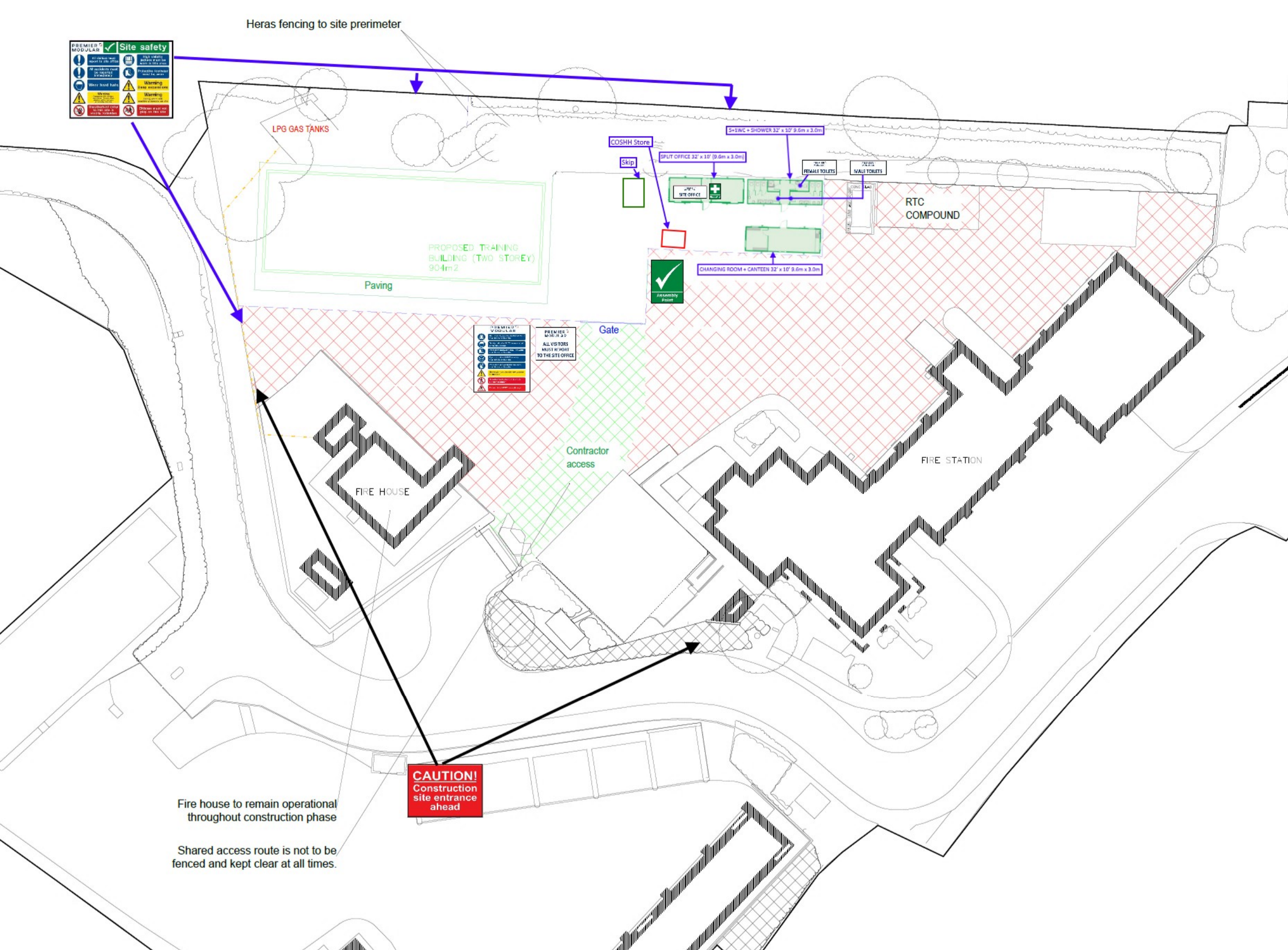
- 2.34 It is noted that tree protection is required to the area of landscape between the demolition / development area and the site boundary. This tree protection will be erected at the start of the project prior to commencement of demolition work. The position, extent, and type of tree protection is as identified on the Tree Protection Plan contained at the appendices.

3. SUMMARY AND CONCLUSION

- 3.1 This Construction Management Plan (CMP) sets out the overall framework for managing the movement of construction traffic, and the activities that may cause nuisance to neighbouring property. This CMP will be developed as part of the Principal Contractor's obligations for project and health and safety management to develop a Construction Phase Health and Safety Plan under the Construction (Design and Management) Regulations.
- 3.2 During the development work, the contractor will seek to minimise disruption to local residents. The measures outlined in this report will also protect against impact to users of the local highway network and surrounding amenities.
- 3.3 It is considered that this Construction Management Plan along with ongoing monitoring and management of the construction process satisfies the requirements.

APPENDIX A

Site Set Up Plan – Construction Stage



Site Signage

- Caution Construction Site Entrance x2 no. (2.3.1)
- Site safety (@ entrance) x 1 no. (3.1.2)
- All visitors must report to the site office x 1 no. (1.6.7)
- Site Safety 800 x 600 x 3 no. (3.1.6)
- Site Office x 1 no. (1.1.9)
- First Aid x 1 no. (5.1.11)
- Female Toilet x 1 no. (1.1.5)
- Male Toilet x 2 no. (1.1.4)

Fire Signage

- Fire exit x 8 no (5.1.1)
- Fire exit x 8 no (5.1.2)
- Fire exit x 8 no (5.1.3)
- Fire action x 2 no (5.1.12)

Site Welfare

- From Sunbelt Rentals Limited
- SPLIT OFFICE 32' x 10' (9.6m x 3.0m)
- CHANGING ROOM + CANTEEN 32' x 10' 9.6m x 3.0m
- 5+1WC + SHOWER 32' x 10' 9.6m x 3.0m

- 16 Yd Mixed waste skip
- COSHH Store

PROJECT:
36087 WHITLEY WOOD FIRE STATION

TITLE:
PROPOSED SITE SETUP

APPENDIX B

Demolition Method Statement

METHOD STATEMENT



CLIENT: Ridge

PROJECT: Whitley wood fire station

DOCUMENT REFERENCE: 23156

ISSUE NO: 01

ANTICIPATED START DATE: 1st of July

DURATION: 6 weeks

THIS ISSUE				
	PRINT NAME	SIGNATURE	POSITION	DATE
AUTHOR	David Stafford		Director Of Operations	17.05.2024
CHECKED BY:				
ACCEPTED BY:				

ISSUE HISTORY			
ISSUE NUMBER:	ISSUE DATE	AUTHOR	AMENDMENTS
1	17.05.2024	David Stafford	

All revisions to the method statement and risk assessment will be recorded on this page.

The author of the amendment(s), or other authorised person, must explain the details of the amendment (s) to the Site Manager/Site Supervisor. The author must ensure that the Site Manager/Site Supervisor signs off the amendment to confirm that he has received and understood it, and that the Site Manager/Site Supervisor returns the signed off front page so that the author can file it in the project office file.

The Site Manager/Site Supervisor must sign off and return the copy of this Amendment page, as explained above, and carefully insert this page and the amendments into the project site file. He must also clearly line through the existing pages to indicate they have been superseded.

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SECTION 1 – PROJECT INFORMATION

1.1 - PROJECT LOCATION

J Mould (Reding) have been appointed the role of Principal Contractor for demolition works at Whitley wood fire station.



1.2 – OUTLINE SCOPE OF WORKS

- Site set up
- Heras fencing to secure the sites
- Service isolations
- Demolition of both buildings
- Removal of all waste generated

1.3 – DURATION OF WORKS

- 6 weeks
- Start date – 1st July.

1.4 – SITE RESTRICTIONS

- Asbestos containing materials have not been identified within the asbestos surveys completed. All asbestos works will be completed prior to any structural demolition of buildings.

1.5 – LIVE SERVICES

- Service records for the area are poor. Whilst the client has made fair and reasonable effort to ensure all buildings are isolated of all services, the risk remains that the site could contain uncharted live services.
- All services will be removed prior to demolition.

SECTION 2 – ACTIVITY SPECIFIC ASPECTS

2.1 – RESOURCES REQUIRED

Management/Labour	Plant/Equipment
Project Manager	Hand tools
Site Manager	Heras fence panels
Plant Operators	Bowser
Crusher Operator	Welfare cabins
Demolition Operatives	Generator
Asbestos Removal Operatives	Scaffold tower/podiums
	1x20t excavator

- All operatives will hold the relevant competence cards/certification require. (CCDO, CSCS, CPCS, SMSTS)
- All plant and equipment will have relevant certification to work on site.

2.2 – SITE PERMITS

There is a requirement for a Site Permit System on this project.

The following Site Permits are required to be issued by the Site Manager / Supervisor

- Permit to Work
- Permit to Demolish
- Permit to Dig
- Hot Works Permit
- Permit to Enter Confined Space
- Permit to Alter, Load, Unload, or Strike Temporary Works

2.3 – PERSONAL PROTECTIVE EQUIPMENT

MANDATORY PPE				
				
HARD HAT	EYE PROTECTION	HI-VISIBILITY	SAFETY GLOVES	SAFETY BOOTS
BS EN 397	EN 166 1F	EN 471	BS-EN 388	EN – ISO 20345

TASK SPECIFIC PPE / RPE						
						
P3 HALF FACE MASK	P3 DISPOSABLE MASK	TYPE 5/6 DISPOSABLE COVERALLS	EAR PROTECTION	BURNING / FULL FACE VISOR	LEATHER BURNING JACKET	HARNES / LANYARD
EN140:1998 & EN143:2000	EN 149: 2001	EN ISO 13982 EN 13034	BS EN 352-3	EN 166 39B	BS EN ISO 11611:2007	EN361, EN354, EN362
The above PPE may be required for certain activities, or when specifically prescribed by the Site Manager.						

2.4 – CONTROL MEASURES

- Danger areas to be fenced off to stop unauthorised access, lay down areas to be free from obstructions.
- Adequate spill response equipment to be in place before works begin.
- Care will be taken to ensure that a secure site boundary fence and appropriate warning signage is in place throughout the demolition works.
- Good Communication is essential – Daily morning meetings of no more than 5/10 minutes will be required between the J Mould Site Manager and personnel on site, (including any sub-contractors) to discuss the day's proposed activities. This liaison will aid in the smooth running of the project and help to highlight any potential problems that could otherwise occur.
- Two-way radios (provided by J Mould) will be utilised for communication and emergency. Machine drivers and JM management will be in radio communication to stop works in the event of an emergency.
- Check service drawings and historical data to check for underground voids within the vicinity of the demolition area
- At the work face all teams will complete a **Toolbox Talk** before commencement of works to ensure of any changes are identified.



J. Mould

Site Rules

GENERAL

- Mobile phones/Bluetooth devices should not be used on site and do not answer mobile phones when operating plant or machinery. If there is a requirement to use a mobile phone move to the designated safe area.
- Valuables and personal property are brought to site at the owner's risk.
- Alcohol/drugs must not be brought onto site. Employees must not attend work if under the effect of any drugs or alcohol (they will be refused entry to site). Any drugs that may affect an employee's performance should be advised to Management. All employees are issued with the Company Drug Policy (contained in Employees' Handbook) which gives full guidance, be aware of random alcohol and drug testing by clients & J Moulds SHEQ team.
- Work areas are to be kept clear and tidy to allow safe access and egress. Everyone is responsible for picking up and moving trip hazards.
- The work site, excavations, pits, voids, etc. shall be guarded and signed at all times where necessary.

PPE & CLOTHING

- The following PPE is compulsory on all J Mould sites unless a specific risk assessment has deemed other PPE must be worn.
- High-Viz Vest or Coat
- Safety Footwear (S3 Minimum standard)
- Safety Helmet
- Safety Glasses (See risk assessment for specialist works i.e., Burning)
- Suitable Gloves for task

PLANT & EQUIPMENT

- All guards and safety devices, e.g., Emergency stop buttons; must be in place and working correctly.
- Daily checks and records to be carried out.
- All electrical plant & equipment must be 110V (with certain limited exceptions, e.g., Dust Boss, DCU)
- Speed limit must be adhered to within the site.

WELFARE

- Complaints from the public shall be dealt with in a courteous manner and referred to the Site Manager, Site Supervisor or Management as appropriate.
- For health & hygiene reasons, eating and drinking are not permitted outside of the welfare area and it is essential that employees wash their hands before handling food.
- Swearing, horseplay and practical jokes are not acceptable. Members of the public must not be subjected to wolf whistles or other inappropriate behaviour or language.

2.5 – MITIGATING NUISANCE NOISE, DUST, AND VIBRATION

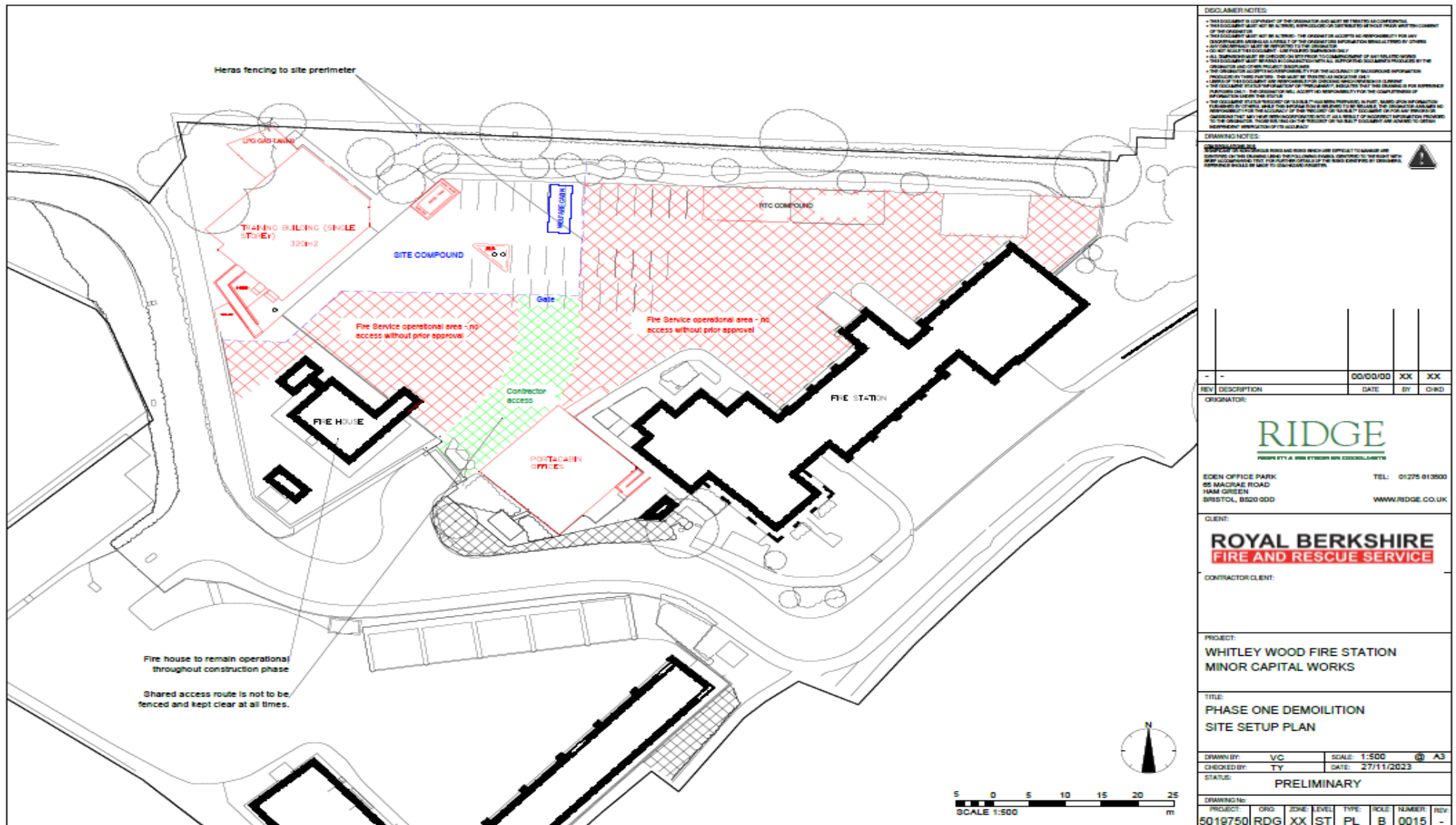
Throughout the demolition process noise, dust, and vibration will be kept to a minimum; this will be achieved in various ways as detailed below.

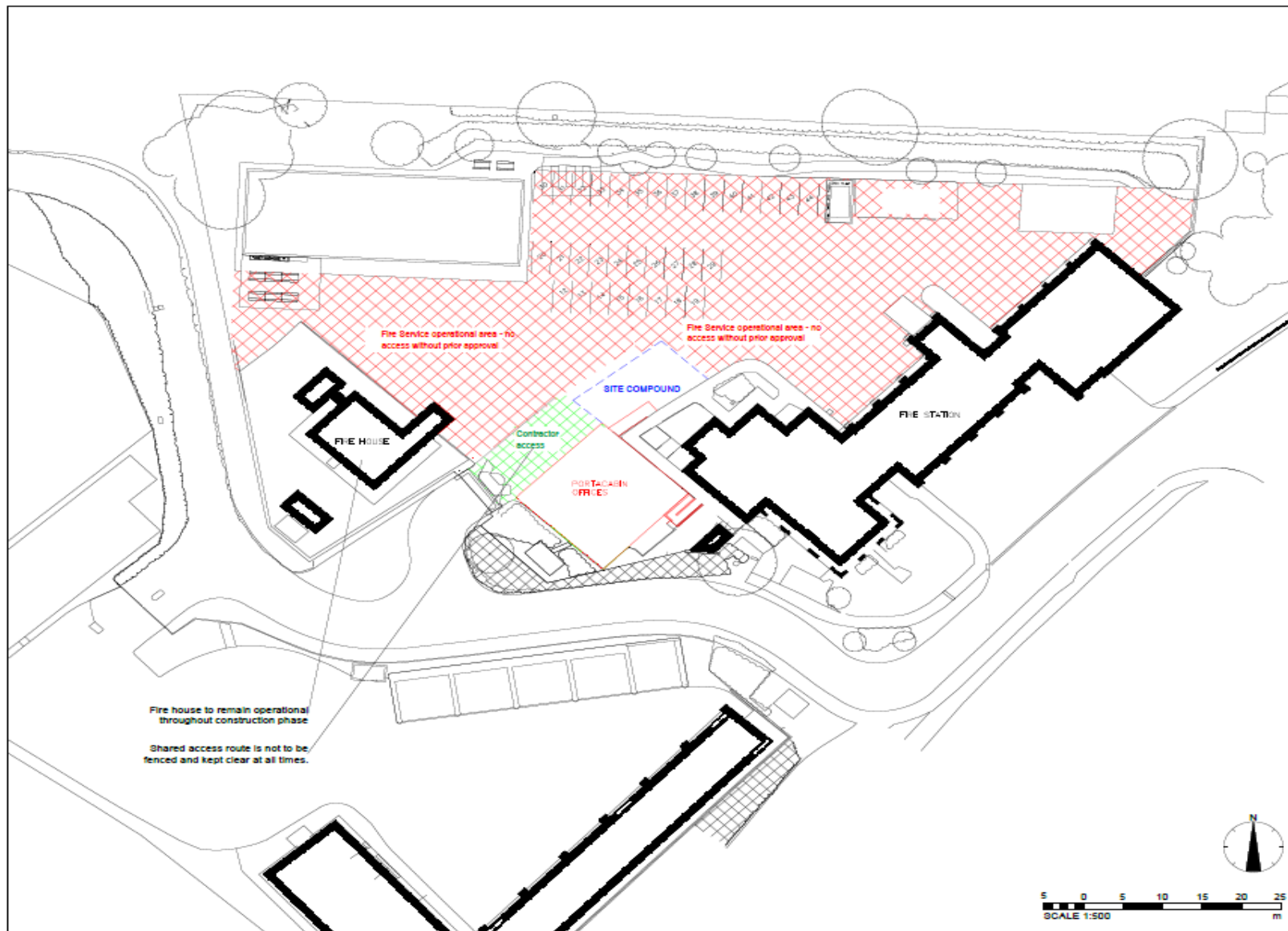
1. Use of correct plant for specific tasks ensuring plant is fully maintained. J Mould's plant fleet is constantly being updated, with all machines now fitted with Euro6 engines. We also have an extensive fleet of attachments for every demolition application.
2. Leaving part of external elevation of particular buildings intact to act as a visual and acoustic screen.
3. Using 'quietest' method when both demolishing structures i.e. using grab or pulveriser rather than impact breakers.
4. When removing ground floor slabs and foundations, structures will be lifted by bucket attachment whenever possible, in-lieu of using impact breakers.
5. Fire hoses will be used to spray water onto the work face and suppress dust.
6. Using proprietary dust suppression equipment, such as DustBoss DB60 or Dehaco DE75 Dust Fighter.
7. Water hoses will also be rigged into the high-reach machine, the water is then pumped up the arm of the machine and sprayed directly onto the attachment as demolition is undertaken.



Dehaco DE75 Dust Fighter

2.6 – SITE LAYOUT PLAN





SECTION 3 – METHOD STATEMENT

3.1 – ASBESTOS REMOVAL

Asbestos removal RAMS will be provided by licensed asbestos removal contractor.

Task Specific Risks

- 02 – Manual Handling
- 07 – Hand Arm Vibration Syndrome (HAVS)
- 14 – Disposal of Waste Materials
- 32 – Asbestos Exposure – Manual Removal
- 33 – Asbestos Exposure – Mechanical Removal
- 37 – Discovery of Suspected Hazardous Substances

3.2 – SOFT STRIP

- The removal of all fixtures & fittings, furniture, carpet tiles, false ceilings, timber, services, cables, light fittings, insulation / lining boards within the structures to allow for the demolition.
- In all manual lifting operations, regard is to be noted with reference to The Manual Handling Regulations. i.e. team lifts, use of lifting equipment/mechanical means rather than men where practicable.
- Skips will be placed as close as possible to the area of works and fenced off during the works.
- During soft stripping, to minimise Manual Handling, Drop Zones will be formed and the arisings will be dropped down to ground floor level, where a 360° excavator will segregate into various waste skips.
- All debris will be removed on a regular basis to the collection points for disposal, thus creating a clean, safe working area and maintaining good housekeeping procedures.
- Disposal transit routes are to be reduced to minimise the requirement for Manual Handling.
- This method is to be read in conjunction with the asbestos surveys. Known areas of Asbestos (not removed prior to soft stripping) will be highlighted to the operatives and sprayed red. It could be, however, that other such materials may be uncovered during the soft stripping process. Should such an incident occur, J Mould will secure the suspect material and its location, as far as is reasonably practicable, and inform the client and arrange the necessary sampling and testing of the material.
- All operatives will have undergone Asbestos Awareness training.
- Suitable hand PPE to be worn to protect from injury during all manual handling operations.

Soft Stripping of all doors, frames, windows, architraves, cable ducts and skirtings

- Doors may be fire resistant and may be required to be moved with support from a suitable trolley, whilst work in the removal from frames is carried out.
- There is potentially brittle glass within some of the doors. This can be taped over and removed by remote methods (i.e. scaffold tube used to break out the glass) prior to removing the door. Full gauntlets and visors are to be worn when handling glass. Glass will then be cleared up and placed into the skip.
- Doors and frames to be removed to the outside of the building for disposal to skips.
- Soft stripping of doors, frames, architraves, cable ducts and skirting's is to be carried out using hand tools or 110v Reciprocating Saw.
- Frames are to be removed using crow/nail bars and reciprocating saws for the removal of steel fixings.
- Timbers and glass to be removed directly to skips to prevent injury from cuts, nails etc
- Any protruding sharp edges, nails etc will be knocked flush with the adjacent structure or removed to avoid puncture wounds.

Soft Stripping of stud partitions

- Soft stripping of stud partitions is to be carried out using hand tools, Stanley knives, 110v reciprocating saw
- If required, the partitions will be cut into sections using a reciprocating saw to ease removal

Soft Stripping of all Cables and Services

- Soft stripping of service cabling and steelwork is to be carried out using hand tools, 110v Reciprocating Saw
- Cables are to be cut at each end of the sections to be removed prior to removal of fixings or support trays.
- Clips and small brackets are to be removed using crow/nail bars and reciprocating saws will be used for the removal of steel fixings and main supports, as access dictates.
- Cable trays and steelwork runs are to be dismantled in such a manner as to allow heavy or long lengths to be progressively lowered to floor level, without the need to over reach.

Waste Electrical and Electronic Equipment (WEEE)

- WEEE Items (such as monitors, microwaves, fridges, computers, light fittings etc will be removed from the structure by hand, segregated and palletised. These pallets will then be shrink wrapped and an inventory recorded for each pallet. This will then be stored in a secure location awaiting disposal as necessary.

Fluorescent Light Fittings

- Light fittings will be removed for segregation and disposal of the primary contaminant components -Mercury contained within Fluorescent tubes and potential PCB materials within starter capacitors.
- These will be removed by hand prior to demolition wearing the site standard PPE and placed into the disposal 'coffins'

Task Specific Risks

01 – Internal Strip Out of Buildings
02 – Manual Handling
04 – Downloading Debris – Lift Shafts / Chutes / Drop Zones
05 – Use of Portable Electrical Equipment
07 – Hand Arm Vibration Syndrome (HAVS)
14 – Disposal of Waste Materials
19 – Work Creating Dust
20 – Working at Height
21 – Use of Mobile Towers
35 – Occupational Diseases
37 – Discovery of Suspected Hazardous Substances
38 – Hypodermic Needles

3.3 – SUPERSTRUCTURE DEMOLITION

- The buildings will be demolished using traditional methods, our 20t excavator fitted with various attachments will carefully demolish the buildings so they can be loaded away from site
- Each area will be segregated using heras fencing and only the demolition operatives will be allowed to enter the work area.
- Dust suppression will be use on dampen down the building while its being demolished.
- 40yrd bins will be loaded with all the waste generated, this will be brought back to our waste transfer station in reading for further processing.
- No vehicles or plant will be allowed to park on the public highway during the works

Task Specific Risks

- 02 – Manual Handling
- 09 – Demolition of Structures – Mechanical
- 10 – Self-Propelled Plant Operation
- 11 – Self-Propelled Plant Set Up & Maintenance
- 12 – Use of Quick Hitches
- 14 – Disposal of Waste Materials
- 15 – Changing Attachments on Plant
- 16 – Noisy Machinery & Processes
- 19 – Work Creating Dust
- 27 – Storage of Fuels & Other Flammable Liquids
- 37 – Discovery of Suspected Hazardous Substances

3.4 – SUBSTRUCTURE DEMOLITION

Prior to any works commencing the following procedures will have been implemented and completed:

- Services drawings inspected
- Area (and surrounding perimeter) to be CAT Scanned
- Any identified services to be marked up with spray paint
- Permit to Dig issued

Once a significant amount of ground bearing slab has been exposed, machines fitted with impact hammers and buckets will begin to remove the slab and foundations. Machine fitted with impact hammer will begin by puncturing the slab and foundations to break them up to moveable sections. Machine fitted with a bucket will then lift and stockpile sections ready for further processing. Machines fitted with pulverisers will process arisings further to separate concrete from reinforcing bar, and load away respective materials.

All excavations will be backfilled progressively after foundation removal; the area will be graded to surrounding site contours, and the footprint tracked in by machine, leaving a flat site.

Task Specific Risks

- 10 – Self-Propelled Plant Operation
- 11 – Self-Propelled Plant Set Up & Maintenance
- 12 – Use of Quick Hitches
- 14 – Disposal of Waste Materials
- 15 – Changing Attachments on Plant
- 16 – Noisy Machinery & Processes
- 19 – Work Creating Dust
- 27 – Storage of Fuels & Other Flammable Liquids
- 37 – Discovery of Suspected Hazardous Substances

3.5 – CRUSHING

Site-won hard inert arisings will be crushed on site to produce aggregate for re-use.

Works will commence loading the Crusher using a 360o Excavator. Concrete/hardcore will be loaded into the hopper which is hydraulically fed into the crusher. The crushed material falls onto the conveyor where any reinforcement bar or other ferrous metal is removed by a hydraulic belt magnet fitted above the main conveyor. The crusher then discharges crushed aggregate and metal into two separate stockpiles. Metal will be periodically loaded away into metal bins, and aggregate will be regularly cleared and stockpiled in the client's desired location(s). Aggregate stockpiles will be formed with a suitable angle of repose to ensure they remain stable and to mitigate any "land-sliding" of aggregate.

The Crusher is fitted with a dust suppression system, whereby water is sprayed onto the discharge conveyor to minimise dust.

The area will be left clean and tidy on completion.

Task Specific Risks

- 10 – Self-Propelled Plant Operation
- 11 – Self-Propelled Plant Set Up & Maintenance
- 12 – Use of Quick Hitches
- 16 – Noisy Machinery & Processes
- 18 – Crushing of Concrete or Hardcore
- 19 – Work Creating Dust
- 27 – Storage of Fuels & Other Flammable Liquids
- 37 – Discovery of Suspected Hazardous Substances

Task Specific Risks

- 01 – Internal Strip Out of Buildings
- 02 – Manual Handling
- 03 – Lone Working
- 04 – Downloading Debris – Lift Shafts / Chutes / Drop Zones
- 05 – Use of Portable Electrical Equipment
- 06 – Removal of Glass and Glazed Items
- 07 – Hand Arm Vibration Syndrome (HAVS)
- 08 – Whole Body Vibration (WBV)
- 09 – Abrasive Wheels
- 10 – Demolition of Structures – Mechanical
- 11 – Self-Propelled Plant Operation
- 12 – Self-Propelled Plant Set Up & Maintenance
- 13 – Use of Quick Hitches
- 14 – Dismantling of Structures by Hand
- 15 – Disposal of Waste Materials
- 16 – Changing Attachments on Plant
- 17 – Noisy Machinery & Processes
- 18 – Demolition of Post Tensioned Concrete Beams
- 19 – Crushing of Concrete or Hardcore
- 20 – Work Creating Dust
- 21 – Working at Height
- 22 – Use of Mobile Towers
- 23 – Use of Mobile Elevated Work Platforms (MEWPs)
- 24 – Working Near Voids or Leading Edges
- 25 – Working from a Ladder
- 26 – Use of Oxygen/Propane Equipment
- 27 – Handling & Storage of Oxygen/Propane Cylinders
- 28 – Storage of Fuels & Other Flammable Liquids
- 29 – Hot Works on Tanks/Drums & Pipework
- 30 – Fire Prevention and Control
- 31 – Transportation of Gas Bottles by Road
- 32 – Confined Space Working
- 33 – Asbestos Exposure – Manual Removal
- 34 – Asbestos Exposure – Mechanical Removal
- 35 – Work Near Underground Services
- 36 – Occupational Diseases
- 37 – Disposal of Oils & Other Liquids
- 38 – Discovery of Suspected Hazardous Substances
- 39 – Hypodermic Needles
- 40 – Work with Lead / Galvanised Materials
- 41 – Contaminated Spoil
- 42 – Site Security – Fencing/Intruders
- 43 – Loading and Unloading of Plant Equipment
- 44 – Driving Company Vehicles
- 45 – Driving and Operation of HIAB
- 46 – Lifting Operations and Lifting Equipment
- 47 – Subcontractors Working on Site
- 48 – Night Working
- 49 – Slips, Trips and Falls
- 50 – Working Near Deep Water
- 51 – Work Adjacent to Railways

APPENDIX C

Waste Assessment Audit Report

Royal Berkshire Fire and Rescue

Pre-Demolition Waste Audit

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Figure 1 – Site Location Plan

Figure 2 – Site Demolition Drawing

Appendix A – Pre-Demolition Waste Audit Photos

Appendix B – Construction Waste Groups

Appendix C – Material Weight Conversion Factors

1 Executive Summary

This Pre-demolition Waste Audit (PWA) has been undertaken on specified areas of Whitley Wood Fire Station by Sweco UK Ltd (Sweco), on the instructions of Royal Berkshire Fire and Rescue Services.

The PWA has been prepared to accompany a planning application and/or attain BREEAM Credits by promoting resource efficiency and minimising environmental impact through effective management.

Its aim is to maximise the recovery of materials from the proposed redevelopment of the site for subsequent high grade/value applications, therefore reducing construction waste and diverting waste away from landfill as per the following order of hierarchy:

- 1 Prevention
- 2 Preparing for Reuse
- 3 Recycling
- 4 Other Recovery
- 5 Disposal

The PWA has been undertaken to determine as far as reasonably practicable, the volume and/or quantity of key demolition products (KDPs) that have the potential to be reused, recycled or disposed.

The proposed redevelopment site is currently occupied by the following buildings:

Office Block

Understood to have been constructed during the 1990s, the extent of the office block is predominantly made up of a single storey and is primarily of masonry construction with pitched timber framed roof with interlocking concrete roof tiles and façade windows and doors. The building has been largely disused due to water damage however some rooms are still used for storage and training.

The footprint of the office block is approximately 0.11 acre/450m².

Modular Building

Estimated to be approximately 20 to 25 years old, the modular building is a temporary prefabricated structure, predominantly made up of a single storey and is primarily of timber and steel construction with façade windows and doors. This unit is used as an office for on-shift service personnel. The footprint of the office block is approximately 0.06 acre/249m².

The external areas of the site are predominantly made up of hardstanding surfaces. With mature trees, bushes and grassed areas.

In addition to the proposed removal/demolition of the buildings, an existing fuel tank and pump are to be removed and relocated.

The PWA has estimated KDPs to total 435.31m³ and 374.67 tonnes. The KDPs have been categorised into groups and the estimated volumes and weights of the KDPs have then been calculated.

The suitability of these KDPs for reuse, recycling and recovery has subsequently been considered, in accordance with the recommended waste hierarchy.

The audit has estimated that >98% of key demolition products (by tonnage) have the potential to be diverted from landfill by either its reuse off-site, or by recycling.

2 Limitations and Exceptions

This report and its findings should be considered in relation to the terms and conditions proposed and scope of works agreed between Sweco and the Client.

The copyright in this report and other plans and documents prepared by Sweco is owned by them and no such report, plan or document may be reproduced, published or adapted without their written consent. Complete copies of this report may, however, be made and distributed by the Client as an expedient in dealing with matters related to its commission.

This report was prepared only for our Client and was not intended to be relied on by any other party. Third parties should not rely on the facts, matters or opinions set out in this report without the express written permission of Sweco.

The estimation of material types and quantities is based on the visual observations at the time of the survey and does not take account of future usage or clearance of the site.

All actions set out in this report are recommendations only and alternative uses or disposal actions may be undertaken by the demolition contractor.

The report provides an estimation of material quantities for guidance only. It is the demolition/main Contractor's responsibility to record and report actual materials present and accurate volumes of each material.

3 Introduction

3.1 General

This Pre-Demolition Waste Audit (PWA) has been undertaken on specified buildings at the Whitley Wood Fire Station site by Sweco on the instructions of Royal Berkshire Fire and Rescue

The PWA has been undertaken to meet the requirement of the BREEAM Wst01 Construction Waste Management standard and carried out in line with the BRE Code of Practice Pre-redevelopment Audits (July 2017).

The PWA was undertaken on 26 September 2023.

3.2 Terms of Reference

The terms of reference for this report were presented in Sweco proposal reference: 65210719-SWE-ZZ-XX-CP-J-0001 dated 07 August 2023 and accepted in an emailed instruction to proceed (PO 046354), dated 14 September 2023, from Royal Berkshire Fire and Rescue.

3.3 Site Information

The Whitley Wood Fire Station is located within the town of Reading, Berkshire and forms part of the Royal Berkshire Fire and Rescue Service. The site is located approximately 3.7 miles from Reading town centre and is positioned on the Whitley Wood Road, north of the M4 motorway.

The existing buildings that occupy the site consist of the following:

Office Block

Understood to have been constructed during the 1990s, the extent of the office block is predominantly made up of a single storey and is primarily of masonry construction with pitched timber framed roof with interlocking concrete roof tiles and façade windows and doors. The building has been largely disused due to water damage however some rooms are still used for storage and training.

The footprint of the office block is approximately 0.11 acre/450m².

Modular Building

Estimated to be approximately 20 to 25 years old, the modular building is a temporary prefabricated structure, predominantly made up of a single storey and is primarily of timber and steel construction with façade windows and doors. This unit is used as an office for on-shift service personnel. The footprint of the office block is approximately 0.06 acre/249m².

The external areas of the site are predominantly made up of hardstanding surfaces. With mature trees, bushes and grassed areas.

In addition to the proposed removal/demolition of the buildings, an existing fuel tank and pump are to be removed and relocated.

The location and outline of the site is presented as Figure 1.

The National Grid reference for the approximate centre of the site is SU 71757 68996.

3.4 Proposed Development

It is understood the existing office block will be demolished and a new modular office & training building will be constructed in its place. The existing modular building is also to be demolished and the existing fuel tank and pump is to be relocated adjacent the fire station.

It is understood that no Key Demolition Products (KDPs) identified within this audit report are being considered for reuse on-site. Options for the reuse off-site or recycling of KDPs will be the responsibility of the demolition contractor based on the recommendations presented within this report along with its disposal. This should be documented in a Site Waste Management Plan (SWMP) which can be provided by Sweco on request.

4 Pre-Demolition Audit Methodology

4.1 Pre-Demolition Audit Targets

The PWA has been undertaken to determine as far as reasonably practicable, the volume and/or quantity of KDPs on site that have the potential to be reused, recycled or disposed.

Its aim is to maximise the recovery of materials from demolition for subsequent high grade/value applications as per the following order of waste hierarchy:

- 1 Prevention
- 2 Preparing for Reuse
- 3 Recycling
- 4 Other Recovery
- 5 Disposal

4.2 Pre-Demolition Audit Procedure

The PWA incorporates the following steps:

- Collection and examination of available information
- Site visit to collect further information.
- Estimation of types and amounts of materials/key demolition products (KDP).
- Assessment of suitability of materials for reuse/recycling/other waste management method.
- Recommendations for materials management and target setting

Following this, the demolition contractor will apply the following:

- Materials management and target setting.

4.3 Collection and Examination of Available Information

The following information has been provided to Sweco which has been used in the undertaking of the PWA.

- Site Demolition Drawing

4.4 Site Audit

The audit of the site was undertaken on 26 September 2023. Photographs taken at the time of the audit are presented in Appendix A.

At the time of the audit the office block was not in a mixture of active and inactive use. The modular unit was in active use.

The following restrictions/limitations were present:

- Limited access to the office block roof space
- No intrusive investigation

4.5 Estimation of Types, Weights and Amounts of Materials

Assumptions and estimations of KDP types have been made based on the type and its condition on the site at the time of audit. These have been estimated and presented as Tonnes/m³ as per the BRE Code of Practice Pre-redevelopment Audits (July 2017).

All materials have been identified as per the categories within the European Waste Group classification (Presented in Appendix B).

Weights have been estimated as per their categories in the table of conversion factors (Presented in Appendix C).

Where the conversion factor varies for material type (e.g. metals/timbers), a calculation of the highest and lowest values has been undertaken, providing an estimated range of weights.

Where fixtures and fittings (i.e. door handles, hinges etc) constitute less than 10% of the volume of an element (i.e. door/windows etc), these have not been recorded.

For external hardstanding areas, where present (e.g. macadam/asphalt), an assumed thickness of 10cm has been used to calculate volumes unless information, such as a ground investigation report is available to provide a more accurate figure.

Steel rebar, where presumed present within structural concrete, will be calculated at 0.2 tonnes (200kg) per m³ of concrete. Whilst the size and quantity of rebar varies depending on structure age, type and location, this has been taken as an average from the Concrete Buildings Scheme Design Manual (ISBN 1-904818-44-7) unless proven otherwise.

The estimation of soils and/or D&E materials have been excluded from this report.

4.6 Below Ground Services

No estimates of below ground services (e.g. drainage, cables, pipework etc) have been made.

4.7 Assessment and Suitability of Material for Reuse/Recycling or other Waste Management Methods

For each of the types of materials identified that are likely to arise from the redevelopment or demolition of the site, an assessment of the best management options should be undertaken as per the following waste hierarchy:

- Reuse on site or off site: Reuse of the component without further processing. (Where reuse seems appropriate onsite, i.e. in the subsequent development, this should be highlighted).
- Closed Loop Recycling: Recycling/reprocessing into the same component (e.g. ceiling and carpet tile take back schemes.)
- Open Loop Recycling: Recycling/reprocessing into a different component (e.g. the shredding of a pallet to produce wood chips for particle boards.)
- Recovery: Typically used to describe generic separation and recycling of materials (usually at a waste transfer station), but there may be occasions where this could describe biological treatment such as composting.

- Energy Recovery: Incineration of waste to provide energy.
- Disposal: Disposal of waste via landfill, incineration without energy recovery or other form of treatment/encapsulation (e.g. for hazardous/difficult waste).

4.8 Recommendation for Materials Management and Target Setting

Material management and target setting should be undertaken by the demolition contractor, who should set targets for different waste management methods to determine the overall amounts of materials to be used on or off site in their original form, recycled on site or closed/open loop recycled off site.

Section 6 has set out recommendations for the diversion of materials from landfill. These are recommendations and alternative actions may be agreed by the client and demolition contractor.

Where possible, local companies and/or additional website sources of information have been identified for the purpose of reclamation and/or reuse of materials. This is for information only and there may be alternative companies available. Sweco does not endorse and is not affiliated with any business identified or information provider included within this report.

4.9 Site Waste Management Plan

The estimates of KDPs within this report including suggestions for disposal, recycling and/or reuse should be incorporated into the demolition contractors Site Waste Management Plan.

It should be noted that it is the demolition/main contractor's responsibility to record and report actual materials present and accurate volumes of each material via a Site Waste Management Plan (SWMP). This is normally required to demonstrate construction resource efficiency and diversion of resources from landfill and can be provided by Sweco on request.

4.10 Hazardous Materials

The identification and disposal of hazardous materials should be undertaken in line With the Hazardous Waste Regulations 2005 and the Health and Safety at Work Act 1974 (HSWA 1974).

The location, type and extent of any asbestos containing materials (ACMs) have not been included within the scope of this report and should be identified via a refurbishment and/or demolition asbestos survey prior to the start of works. This can be provided by Sweco on request.

Where works on or the removal of any ACMs is required, all work with asbestos must be carried out in accordance with the Control of Asbestos Regulations 2012. It should be understood that during the removal of ACMs, additional KDPs may also be required to be disposed of as hazardous waste in a designated landfill.

5 Summary of Site Key Demolition Materials

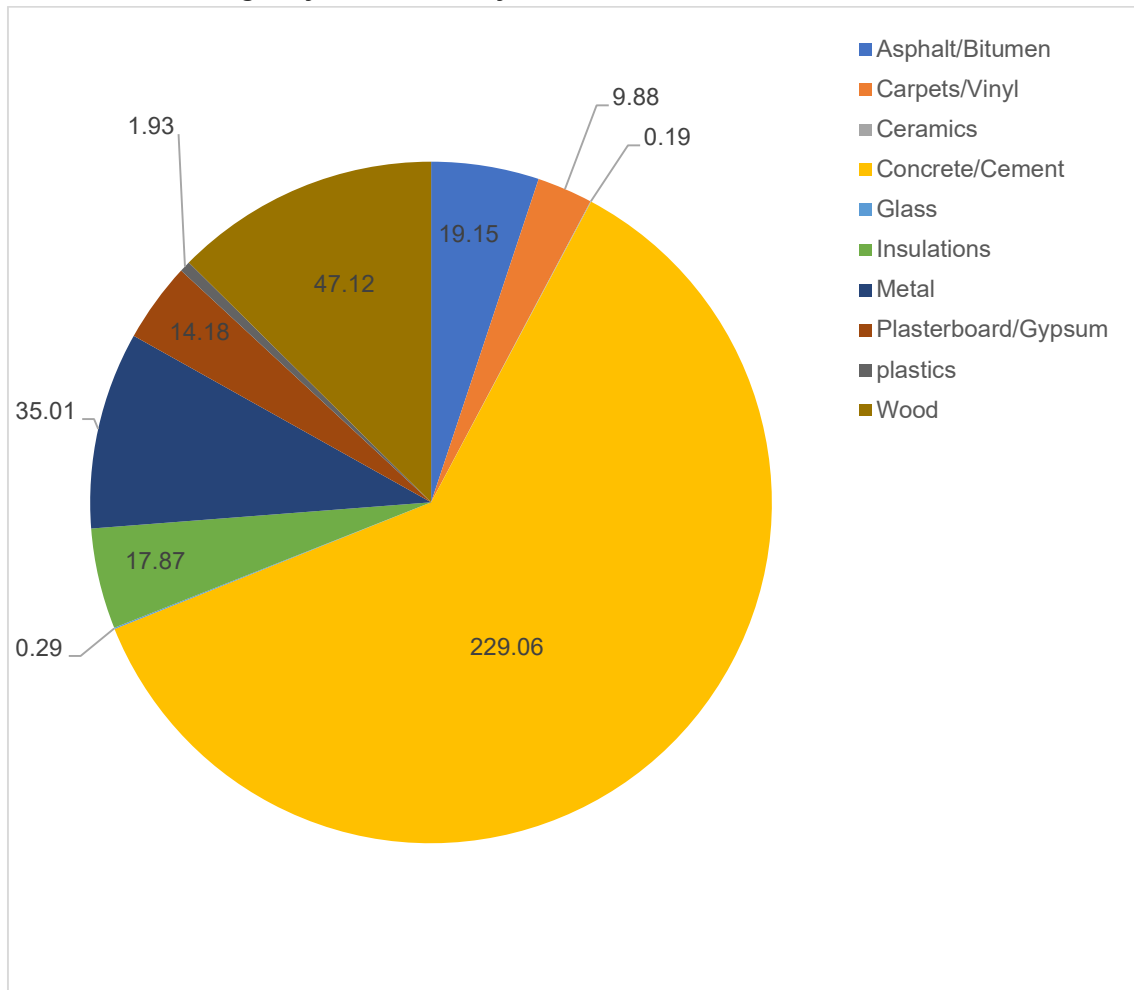
The results of the audit have estimated Key Demolition Products (KDPs) to total 435.31m³ and 374.67 tonnes.

These are categorised as per the Wst 01 construction waste management construction waste group table in Appendix B and calculated as per the material weight factors in Appendix C.

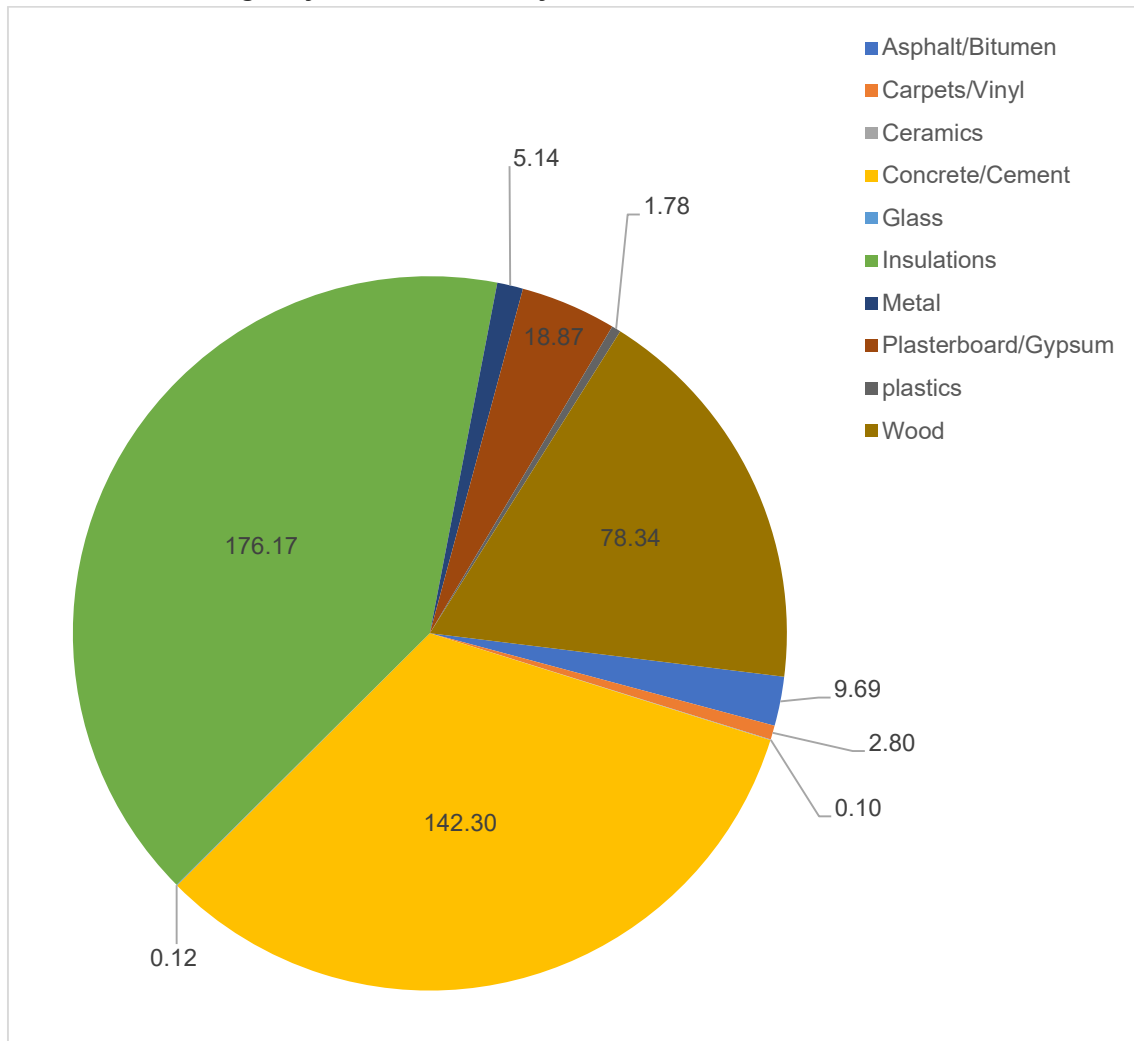
Estimated volumes and weights of key demolition materials (KDP) made throughout the Whitley Wood Fire Station site are presented as follows:

Key Demolition Product (KDP)	European Waste Group	Estimated Volume (m ³)	Estimated Weight (Tonnes)	Percentage by Weight (%)
Asphalt /Macadam/Bitumens	1703	9.69	19.15	5
Carpet/Vinyl	200111	2.80	9.88	3
Ceramics	107103	0.10	0.19	0
Concrete/Cement	170101 170102	142.30	229.06	61
Glass	17202	0.12	0.29	0
Insulations	170604	176.17	17.87	5
Metals	0714	5.14	35.01	9
Plasterboard/Gypsum	170802	18.87	14.18	4
Plastics	170203	1.78	1.93	0
Wood	070201	78.34	47.12	13
	Total	435.31	374.67	100

5.1 Total Weight by Tonnes of Key Demolition Products



5.2 Total Weight by Volume m³ of Key Demolition Products



6 Recommendations

6.1 Recommended Targets for the Diversion of Materials from Landfill

The assessment and suitability of KDPs for reuse, recycling and recovery have been set out as per the recommended waste hierarchy outlined in Section 3.7 and should be followed as much as reasonably practicable.

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Asphalt/Macadam/Bitumen	9.69	19.15	Reuse or Recycle 95%
RECOMMENDATIONS			
Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment.			
Asphalt/Macadam/Bitumen KDPs include Asphalt hardstanding car park surfaces as well as roof lining/felts			
Asphalt planings/scalpings could be used as a supporting layer on new construction hardstanding surfaces (e.g. Car parks, paths or roads). Alternative options are to crush and to be reused as C&D materials either as part of the new development or off site.			
It is understood that the demolition contractor will be responsible for removing the waste off-site, therefore it is advised a specialist contractor is employed to advise on the potential for to recycle.			
LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS			
Aggregate Industries: https://www.aggregate.com/locations			
Day Aggregates: https://www.daygroup.co.uk/			
Sussex Asphalt: https://www.sussexasphalte.co.uk/wp-content/uploads/2020/12/mrk072-gn33-working-towards-zero-avoidable-waste-in-the-roofing-sector.pdf			

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Carpet/Vinyl	2.80	9.88	Recycle 90%
RECOMMENDATIONS			
Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.			
Vinyl flooring if removed in a good condition can be donated to charity or recycled via a suitable waste recycling company or takeback scheme.			
Carpets in good condition can be either donated to charity or recycled via a suitable waste recycling company or takeback scheme.			
Vinyl flooring and carpet tiles however are commonly glued down and may therefore be damaged on removal.			

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Carpet Recycling UK: <https://carpetrecyclinguk.com/>

Reuse Network: <https://reuse-network.org.uk/>

Recofloor Vinyl Takeback Scheme: <https://www.recofloor.org/recycling-vinyl-flooring-saves-money/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Ceramics	0.10	0.19	Recycle 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Ceramic KDPs throughout consist of wall tiles as well as WCs and basins.

If removed in a good condition, clean ceramic tiles could potentially be recycled and reused, however these are generally of low-grade value, so this is unlikely.

Subject to inspection by a qualified person, WCs and basins could be recycled/reused off-site, however given its age and condition, the likely option is to crush and used for sub-base aggregates.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Powerday Commercial: <https://powerday.co.uk/material-recycling-facilities/recycled-aggregates-concrete/>

Salvoweb: <https://www.salvoweb.com>

Day Aggregates: <https://www.daygroup.co.uk/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Concrete/Cement/Stone	142.30	229.06	Reuse Off-Site or Recycle 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Concrete, cement and stone KDPs on site consist of brick work/blocks to walls, external brick walls, brick hardstanding surfaces, concrete roof tiles, brick plinths, concrete ramp, cement paving slabs, concrete base slab to tank, floor base slab to office block, shower trays.

Brickwork could potentially be carefully removed and reuse off-site. Investigations may be required to determine the suitability for its internal or external reuse by considering factors like (but not limited to) frost resistance, water absorption and compressive strength as these will not have been made in accordance with BS EN 771-1. This should be confirmed by qualified persons.

Roof tile material should be confirmed by qualified persons. These can be carefully removed and reused off-site subject to inspection and condition. Testing of the tiles may be required for reuse suitability to determine its flexural strength in accordance with BS EN 538, its frost resistance in accordance with BS EN 539-2 and its permeability in accordance with BS EN 539-1.

Cement paving slab tiles can be removed and reused off-site.

KDPs unsuitable for reuse can be downcycled and broken up on and/or off site to use as recycled sub base aggregates either as part of the new development or off-site.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Day Aggregates: <https://www.daygroup.co.uk/>

Salvoweb: <https://www.salvoweb.com>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Glass	0.12	0.29	Recycle 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Glass products identified throughout the site include windows and doors panes.

Glass window panes may be suitable for reuse off site, however, given their age and 15 to 20 year life expectancy, the likely option will be to close loop recycle and turn back into glass products.

All glazing products should be separated from its housing frames to avoid contamination and rejection from the recycling company unless specified otherwise.

Alternative options are to break up and use as sub-base aggregates, however this should not be the preferred option.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Salvoweb: <https://www.salvoweb.com>

May Glass Recycling: <https://mayglassrecycling.co.uk/>

Day Aggregates: <https://www.daygroup.co.uk/day-glass-recycling/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Insulations	176.17	17.87	Reuse off-site or Recycle 75%
RECOMMENDATIONS			
Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site. Insulation KDPs throughout include mineral wool insulation to walls, ceilings and floors, suspended ceiling tiles and glass fibre roof insulation. Given the age and condition of the suspended ceiling tiles it is unlikely the option to reuse will be made. Subject to meeting the required criteria, ceiling tiles unsuitable for reuse can be upscale recycled into new tiles. Mineral wool and glass fibre insulations may be suitable for reuse either on or off-site subject to its condition and meeting the necessary building regulation standards. This will need to be segregated and stored separately to avoid contamination and damage. Where insulation materials are identified to be unsuitable for reuse, these should be disposed of as per the hazardous waste regulations 2005 (where relevant).			
LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS			
Rockwool: https://www.rockwool.com/uk/about-us/sustainability/recycling/ Armstrong Ceilings: https://www.armstrongceilings.com/commercial/en/performance/sustainable-building-design/ceiling-recycling-program.html			

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Metals	5.14	35.01	Reuse Off-Site or Recycle 100%
RECOMMENDATIONS			
Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site. All materials should be inspected during removal to determine suitability for reuse on or off-site by qualified persons. Metal KDPs throughout the site include steel floor joists, steel pillars, aluminium ceiling tile frames, aluminium window frames and sills, aluminium wall frames, steel roof tank and frame, steel external doors, steel radiators, boiler/plant work, steel crash barriers and steel rebar within concrete. Roof and floor structural joists and pillars can potentially be reused on or off-site subject to inspection and confirmation by qualified persons. These may require reconditioning depending on condition.			

Frames to walls can be carefully removed and reused on or off-site subject to condition.

External steel doors can be reused on or off-site subject to condition.

Given the age of the windows it is unlikely the decision to reuse the windows, will be made. All glazing products should be separated from its housing frames to avoid contamination and rejection from the recycling company unless specified otherwise.

If broken up on site, steel rebar should be removed from its cement housing and segregated with scrap metals.

Plant work (radiators/boilers, etc) should be inspected by qualified persons for suitability for reuse off-site subject to condition.

Frames to plasterboard walls should be inspected and reused on or off site subject to condition.

All glazing products not being identified for reuse should be separated from its housing frames to avoid contamination and rejection from the recycling company unless specified otherwise.

All metals and plant deemed unsuitable for reuse/recycling can be collected by a waste management company for recycling, salvage and sold as scrap.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Salvoweb: <https://www.salvoweb.com>

Kings Recycling: <https://kingsrecycling.co.uk/metal-recycling/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Plasterboard/Gypsum	18.87	14.18	Recycle 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Plasterboard/Gypsum KDPs have been identified throughout to wall and ceilings as well as rendering to the modular unit walls.

Given the method of its removal, it is unlikely that the decision to reuse plasterboard will be made during the new construction, however metal studs/frames where present may be salvageable for reuse on or off site subject to inspection by a qualified person.

The rendering to the modular units will be bonded onto the timber wall panels and is unlikely to be removed separately and will not be suitable for recycling. Investigation should be undertaken to determine the modular units suitability for relocation and reuse, which will be based on age and condition.

Plasterboard waste can be recycled into new plasterboard products via a closed loop recycling service.

Waste plasterboard and plaster should be stockpiled separately and not be mixed with other waste products to avoid contamination.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

British Gypsum: <https://www.british-gypsum.com/sustainability/our-sustainability-services/our-plasterboard-recycling-service>

Vinco: <https://www.vincosales.co.uk/portable-buildings/buy-portable-buildings/>

Powerday Commercial: <https://powerday.co.uk/waste-management/plasterboard-recycling/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Plastics	1.78	1.93	Recycle 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Plastic KDPs have been identified as uPVC guttering and downpipes, uPVC window frames, uPVC electrical trunking, Polyethylene pipe insulation and Polyethylene membrane sheets.

uPVC and PVCu products are suitable for closed loop recycling to be transformed into new plastic materials.

Pipe insulation and electrical trunking can be reused on or off-site subject to condition.

Polyethylene products are suitable for recycling. The insulation and membrane sheets should be confirmed by qualified persons if deemed unsuitable for reuse.

Window frames should be separated from the glass panels and stockpiled separately to avoid contamination of materials.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Powerday Commercial: <https://powerday.co.uk/waste-management/plastic-recycling/>

CNC Recycling: <https://www.upvc-recycling.co.uk/>

Veka Recycling: <https://veka-recycling.co.uk/upvc-recycling/>

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	REUSE/RECYCLE TARGET
Wood	78.34	47.12	Recycle or reuse on/off site 100%

RECOMMENDATIONS

Sweco are unable to determine on-site reuse quantities due to no involvement or detailed knowledge of the proposed redevelopment. It is understood that no materials are being considered for reuse on-site. The demolition contractor will therefore be responsible for removing all KDPs off-site.

Wood KDPs throughout the site include roof joists and beams, soffit bards, floor joists, modular unit body and frame, flooring, doors and frames, window sills, wall and ceiling panels, wall and ceiling frames, workshop units, fence and ramp.

Subject to their condition and meeting the necessary fire safety rating where required, doors could potentially be reused on or off site.

The modular unit is presumed to be largely constructed of a timber body and frame. It is understood Investigation will be undertaken to determine its suitability for relocation and refurbishment/reuse via its sale or donation, which will be based on age and condition.

Workshop units could be safely dismantled and donated to charity and reuse organisations.

Inspection of all materials during strip out should be made to determine if it can be stockpiled/ segregated and reused as part of the new construction or reused off-site. In many cases timber products can be reconditioned and adapted for reuse (e.g doors and joists).

Alternatively, wood products can be open loop recycled off site by a waste management company or independent business / charity that can transform timber into further products.

LOCAL REFUSE CENTRES OR FURTHER INFORMATION CONTACTS

Solo Wood Recycling: <https://solowoodrecycling.co.uk/>

Vinco: <https://www.vincosales.co.uk/portable-buildings/buy-portable-buildings/>

Community Wood Recycling: <https://communitywoodrecycling.org.uk/>

7 Audit Summary

MATERIAL	VOLUME (m ³)	WEIGHT (TONNES)	PERCENTAGE BY WEIGHT %	REUSE/RECYCLE TARGET %
Asphalt /Macadam/Bitumens	9.69	19.15	5	95
Carpet/Vinyl	2.80	9.88	3	90
Ceramics	0.10	0.19	0	100
Concrete/Cement	142.30	229.06	61	100
Glass	0.12	0.29	0	100
Insulations	176.17	17.87	5	75
Metals	5.14	35.01	9	100
Plasterboard/Gypsum	18.87	14.18	4	100
Plastics	1.78	1.93	0	100
Wood	78.34	47.12	13	100
Total	435.31	374.67	100	

The results of this audit have determined that unless specified otherwise by qualified persons, >98% of key demolition products (by tonnage) have the potential to be diverted from landfill by either its reuse off-site, or by recycling.

The residual demolition waste must be disposed of via licensed waste disposal facilities and/or landfill as per the Hazardous waste regulations (England and Wales) 2005 (where relevant).

It is important that the results of this pre-demolition waste audit are communicated to the necessary persons or teams including the demolition contractor.

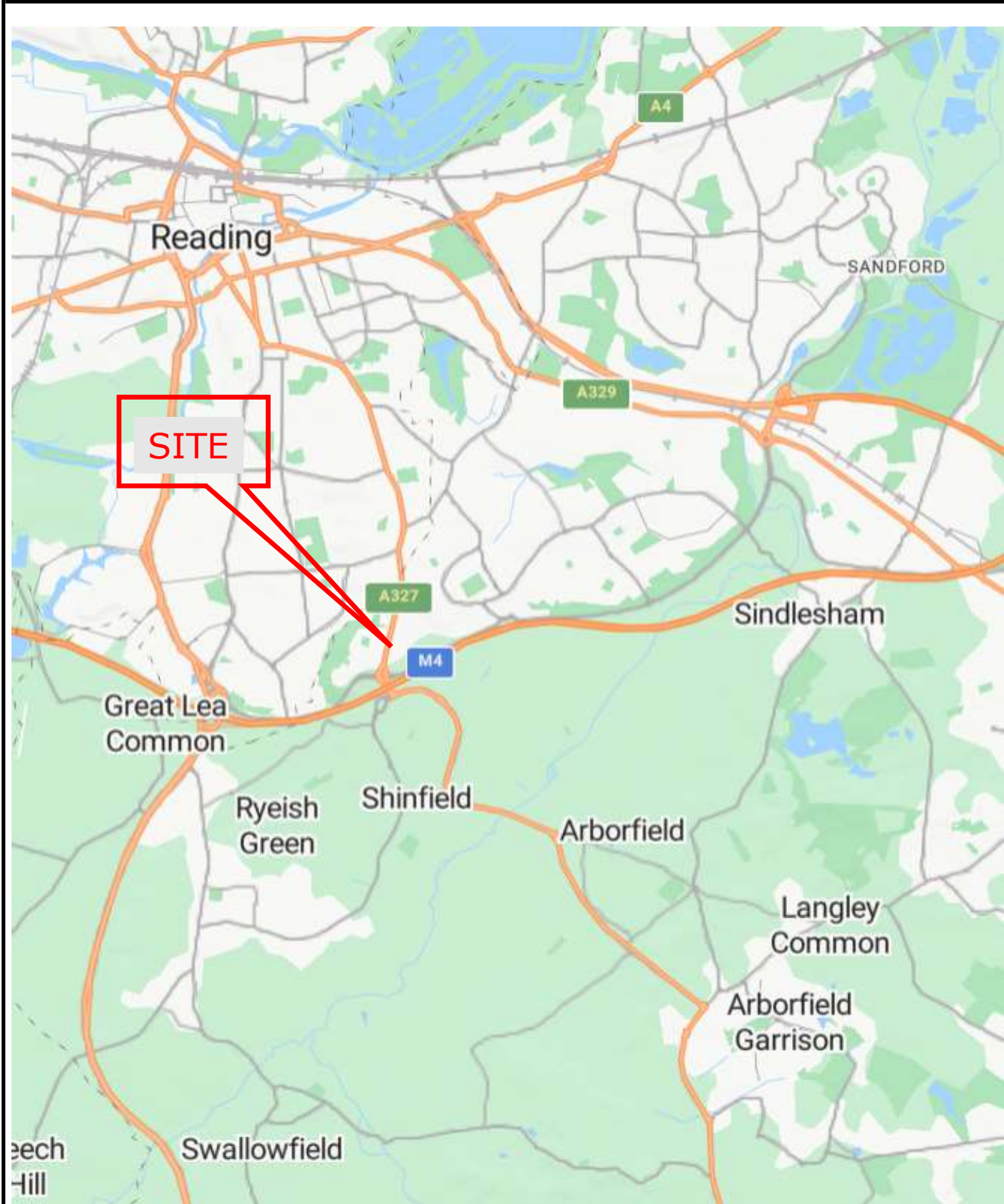
Prior to the commencement of redevelopment works, a target should be set based on the recommendations within this report and reviewed/compared on completion.

Following the comparison of actual targets achieved, a summary of the deviations from the targets along with the reasons for these deviations should be recorded to improve performance of future projects.

8 References

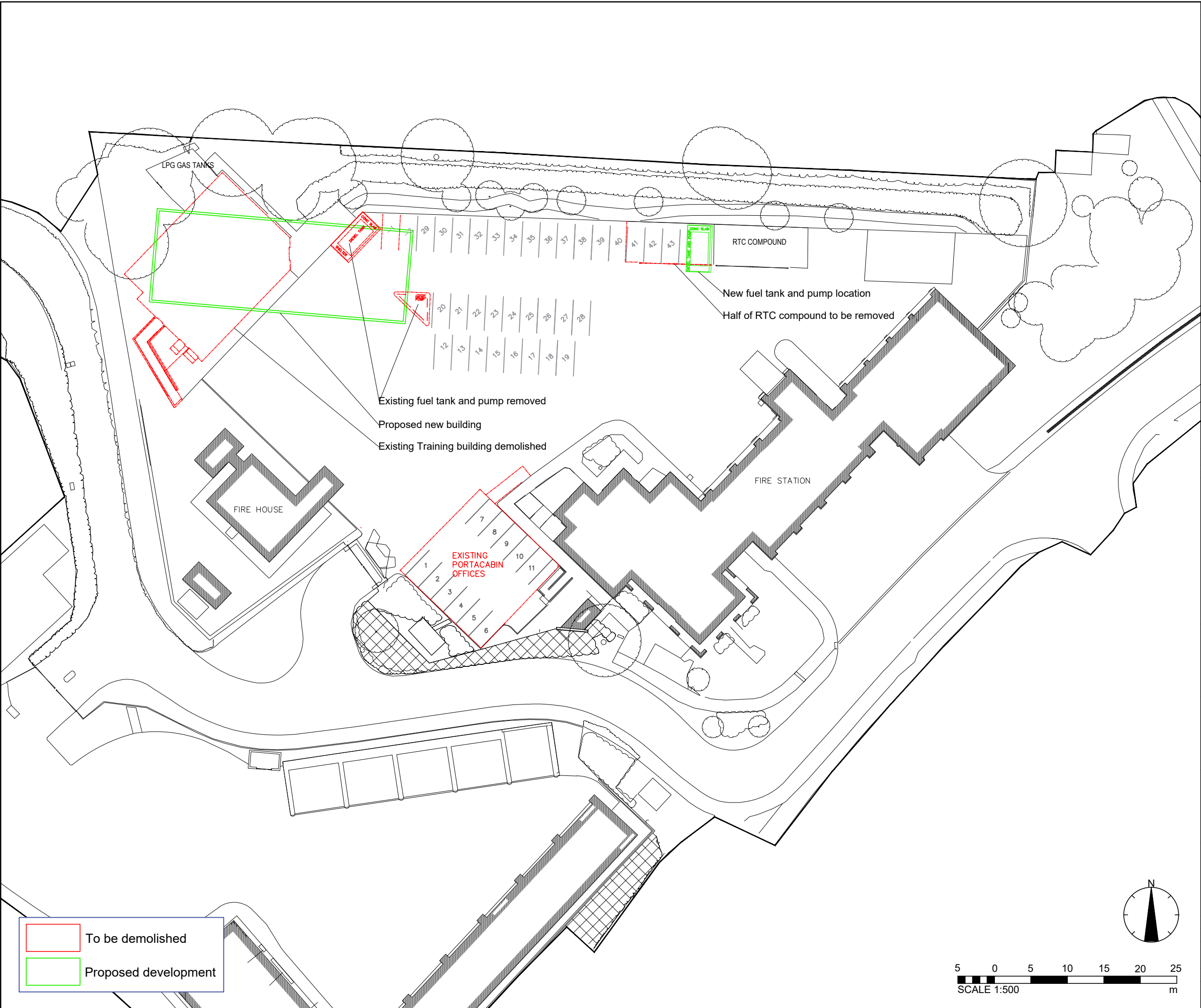
- 1 The Waste (England and Wales) Regulations 2011 and amendments.
- 2 Environmental Protection Act 1990.
- 3 Environmental Permitting Regulations (England and Wales) 2010 and amendments.
- 4 Hazardous Waste Regulations (England and Wales) 2005.
- 5 The Waste Electrical and Electronic Equipment Regulations 2006.
- 6 The Waste Batteries and Accumulators Regulations 2009.
- 7 Relevant quality protocols.
- 8 Control of Asbestos Regulation 2012 (CAR2012)
- 9 BRE Pre-redevelopment Audit Guidance (2017)
- 10 BREEAM New Construction Manual 2018
- 11 BREEAM WST 01 Construction Waste Management
- 12 Defra PB13530 Waste Hierarchy Guidance (2011)
- 13 <https://www.gov.uk/how-to-classify-different-types-of-waste/construction-and-demolition-waste>
- 14 <http://www.hse.gov.uk/waste/waste-electrical.htm>

Figure 1 – Site Location Plan



© 2023 Microsoft																											
C01	30.10.2023	-	JW	NR	NR	SWECO					CLIENT					DRAWING TITLE											
REV	DATE	REVISION		MADE	CHK						APP	ROYAL BERKSHIRE FIRE AND RESCUE SERVICE					SITE LOCATION PLAN										
DRAWING STATUS											PROJECT					SCALE		SWECO REF.		STATUS		REVISION					
FINAL ISSUE											WHITLEY WOOD FIRE STATION					NTS @A3		65210719		S2		C01					
SUITABILITY DESCRIPTION											PROJECT		ORIGINATOR		VOLUME/ SYSTEM		LEVELS & LOCATIONS		TYPE		ROLE		NUMBER				
SUITABLE FOR INFORMATION											65210719					SWE		XX		XX		D		GE		FIG 1	

Figure 2 – Site Demolition Drawing



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-	-	00/00/00	XX	XX
REV	DESCRIPTION	DATE	BY	CHKD

ORIGINATOR:

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CONTRACTOR CLIENT:

PROJECT:

WHITLEY WOOD FIRE STATION
MINOR CAPITAL WORKS

TITLE:

FUEL TANK LOCATION

DRAWN BY:	VC	SCALE:	1:500	@	A3
CHECKED BY:	TY	DATE:	16/06/2023		

STATUS:

PRELIMINARY

DRAWING No:							
PROJECT:	ORG:	ZONE:	LEVEL:	TYPE:	ROLE:	NUMBER:	REV:
5019750	RDG	XX	ST	PL	B	0013	-

Appendix A – Pre-Demolition Waste Audit Photos

Photographs Relating to Pre-Demolition Waste Audit

Project Name: Whitley Wood Fire Station

Project Reference: 65210719

Project Manager: John Wootton

Date: 30/10/2023

Document Reference: 65210719-SWE-XX-XX-T-GO-0001

Revision: P01



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT

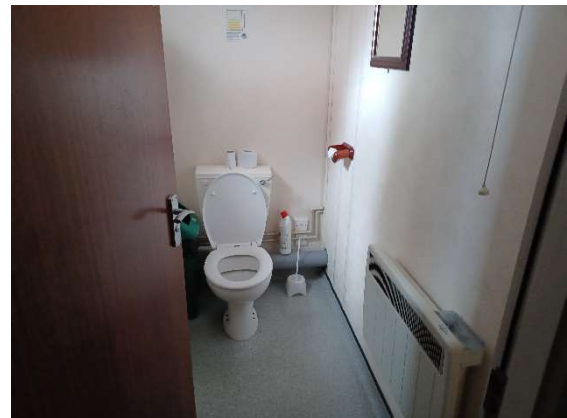




GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT



GENERAL VIEWS THROUGHOUT

Appendix B – Construction Waste Groups

Construction Waste Groups

European Waste Catalogue	Key Group	Examples
170102	Bricks	Bricks
170101	Concrete	Pipes, kerb stones, paving slabs, concrete rubble, precast and in situ
17202	Glass	Glass (Uncontaminated)
170604	Insulation	Glass fibre, mineral wool, foamed plastic
1501	Packaging	Paint pots, pallets, cardboard, cable drums, wrapping bands, polythene sheets
170201	Timber	Softwood, hardwood, boards products such as plywood, chipboard, medium density fibreboard (MDF)
1602	Electrical and electronic equipment	Electrical & electronic TVs, fridges, air-conditioning units, lamps equipment
200301	Canteen/office	Office waste, canteen waste, vegetation
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/excavation material, glass
1704	Metals	Radiators, cables, wires, bars, sheet
170802	Gypsum	Plasterboard, render, plaster, cement, fibre cement sheets, mortar
170203	Plastics	Pipes, cladding, frames, non-packaging sheet
200307	Furniture	Tables, chairs, desks, sofas
1705	Soils	Soils, clays, sand; gravel, natural stone
Most relevant EWC	Liquids	Non-hazardous paints, thinners, timber treatments

European Waste Catalogue	Key Group	Examples
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/ other	Efforts should be made to categorise waste into the above categories wherever possible

*Additional information and EWC Waste Category numbers can be found on document BREEAME Wst 01 Construction waste management, and the following link (<https://www.gov.uk/how-to-classify-different-types-of-waste/construction-and-demolition-waste>)

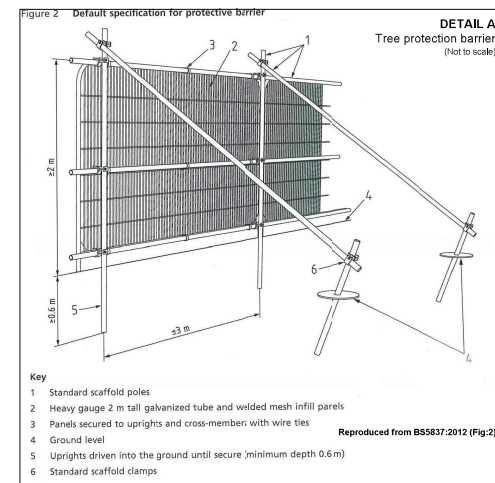
Appendix C – Material Weight Conversion Factors

Conversion factors for common materials arising from demolition projects

Material	Tonnes/m ³	Material	Tonnes/m ³
Aggregates	1.8	Mineral wool insulation	0.1
Aluminium	2.7	Mortar	1.7
Asphalt	2.1	Oriented Strand Board	0.6
Bitumen	1.0	Paving	2.3
Blocks	2.0	Polyethylene	0.1
Bricks	1.7	Plaster	0.7
Cables (not hazardous)	2.3	Plasterboard	0.7
Carpets	3.9	Plywood	0.8
Cement	1.5	Polypropylene	0.9
Chipboard	0.7	Polyurethane insulation	0.0
Clay roof tiles	1.9	Poly Vinyl Chloride	1.4
Copper	8.9	Render	2.3
Expanded Polystyrene insulation	0.0	Ready Mix Concrete	2.3
Glass	2.5	Roof tiles	2.5
Glass fibre insulation	0.1	Slate	2.9
Glass Reinforced Plastic	2.0	Softwood	0.4
Hardboard	1.0	Stainless steel	7.8
Hardwood	0.8	Stone	2.5
Internal building tiles	2.2	Structural Concrete	2.3
Iron	7.6	Tin	7.3
Lead	7.4	Vinyl flooring	1.4
Low density fibre board	0.6	Waste paper insulation	0.0
Medium Density Fibreboard	0.7	Wool fleece	0.0
Mild steel	7.0	Zinc	4.0

APPENDIX D

Tree Protection Plan



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Notes

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Key

- Survey boundary.
- Tree with numbered reference, Canopy spread and BS5837:2012 tree quality category as shown below.
- Tree (location estimated) with numbered reference, Canopy spread and BS5837:2012 tree quality category.

BS 5837:2012 Tree Quality Categories - Table 1

- Category A - High quality
- Category B - Moderate quality
- Category C - Low quality
- Category U - Unsuitable for retention

- Root protection area (RPA) Calculated in accordance with Section 4.6 - BS5837:2012
- Tree to be removed with numbered reference, Canopy spread and BS5837:2012 tree quality category.
- Temporary protective fencing in accordance with Section 6.2 - BS5837:2012. See inset details for example barriers.
- Existing hard surfaced area to be restored to soft landscape. Breaking out to be completed using hand-held machinery. Avoid removing redundant services, where safe, retain within the existing soils.

NOTES:

- Refer to RPS Tree Survey Report & Schedule for further details.
- Survey based on a visual inspection from the ground and is not intended as a full arboricultural inspection.
- Plan produced in accordance with recommendations set out in BS 5837:2012 - Trees in Relation to design, demolition and construction.
- Due to the legal protection afforded to breeding birds vegetation removal should not take place during the bird nesting period, generally, although not restricted to, March - August inclusive.
- Survey based upon topographic survey produced by Warner Surveys in 2017
- Protestant/vehicular emergency access routes to be maintained at all times.
- All protective fencing to be completed and approved by LPA / CA prior to commencement of any site works.
- All works to conform with requirements of BS 3998:2010 - Tree Works
- BS 5837:2012 - Trees in relation to design, demolition and construction
- NAG 4 - Guidelines for Utility Services in Proximity to Trees
- APN 12 - "Through the Trees to Development"

Rev	Description	By	CS	Date

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Client **Royal berkshire Fire & Rescue Service**

Project **Whitley Wood Fire Station Reading**

Title **Tree Removal & Protection Plan**

Status **Information** Drawn By **SH** PM/Checked by **DC**

Job Ref **JSL4925** Scale @ **A2** Date Created **July 2023**
1:500

RPS Drawing / Figure Number **701** Rev **-**

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