UMBRELLA ENVIRONMENTAL

PROTECTING YOUR BUSINESS

Environmental Management System and Operating Instructions

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CIWM

Affiliated Organisation 2025

Together, we stand for a world beyond waste

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Terms and Definitions

Not all terms will be used in this document.

Term	Definition
Auditor	Person with the competence to conduct an audit.
Continual improvement	Recurring process of enhancing the environmental management system in order to achieve improvements in overall environmental performance.
Corrective action	Action to eliminate the cause of a detected nonconformity.
Document	Information and its supporting media.
Environment	Surroundings in which site operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
Environmental aspect (EA)	Elements of sites activities or products or services that can interact with the environment.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially resulting from sites environmental aspects.
Environmental management system (EMS)	Part of sites management system used to develop and implement its environmental policy and manage its environmental aspects.
Environmental objective	Overall environmental goal, consistent with the environmental policy.
Environmental performance	Measurable results of sites management of its environmental aspects.
Environmental policy	Overall intentions and directions of sites related to its environmental performance.
Environmental target	Detailed performance requirement applicable to site or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Interested party	Person or group concerned with or affected by the environmental performance of site.
Internal audit	Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the environmental management system audit criteria set by site are fulfilled.
Nonconformity	Non-fulfilment of a requirement.

Organisation	Site/Operator
EP	Environmental Permit.
NTS	Non-technical Summary.
ERA	Environmental Risk Assessment.
SCR	Site Condition Report.
EMS_OT	Environmental Management System and Operating Techniques. Compliant with Permit Condition 1.1.1.
FPP	Fire Prevention Plan.
NVMP	Noise and Vibration Management Plan.
OMP	Odour Management Plan.
Appropriate Measures	Appropriate measures are the standards that operators should meet to comply with their environmental permit requirements.
Site	Location of waste activities.
EA	Environment Agency
HSE	Health and Safety Executive
TCM	Technically Competent Manager

1 INTRODUCTION

This Environmental Management System and Operating Instructions (EMS Op Ins) accompanies the application for a variation to an existing bespoke waste installation EPR/TP3602SH/V001 at Unit 21-22 Roman Way Longridge Road, Preston, PR2 5BB. The site location is shown on plan 027.1_09_001 an aerial image provided in Figure.

The site was historically an industrial unit. The site will receive various types of hazardous waste plastics from Waste Electrical and Electronic Equipment (WEEE) containing Brominated Flame Retardants (BFR's) as well as WEEE. These consist of Persistent Organic Pollutants (POPs) of global environmental concern.

The site will accept loads of waste from various different suppliers all with a booking to control the rate of input and storage levels.

The site is designed to operate a Waste Electrical and Electronic Equipment (WEEE) sortation plant. The facility is equipped with purpose-built machinery designed to perform density separation, effectively segregating mixed WEEE shredder output into multiple recyclable streams. Some waste will just be accepted as apart of a waste transfer activity.

Figure 1 Site Location (Aerial Photo)

1.1 Permitted Activities

A copy of the environmental permit available in the site office and all staff should be familiar with it. The key points of the environmental permit and operation include:

- To permit the operation of a WEEE sortation plant.
- To permit the acceptance of 25,000 tonnes per year.
- WEEE shredded material will predominately be received loose or contained in bulk bags on articulated vehicles.
- All wastes shall be treated in a building
- All waste will be stored either inside a building or outside under a zapp shelter style cover or container.
- Clean surface water from roofs, or from areas of the site where the water can not run off stored hazardous or contaminated waste or from areas not connected with treating waste, will be discharged directly to surface waters.

- All material is removed from site within 3 months (see Fire Prevention Plan for further details on material storage and rotation).

The activities on site shall not extend beyond the site boundary. The proposed site environmental permit boundary is shown on Drawing 1 Permit Boundary. The site has a palisade fence around the site boundary.

1.2 Hours of Operation

Monday-Friday	Day shift 08:00-16:30 Night shift 16:00- 00:30
Saturday	Maintenance only
Sunday and Bank Holidays	Closed

1.3 Waste Types

See Table 1 List Of Waste.

1.4 Environmental Policy

As a corporately responsible company, we're at the forefront of the evolving attitude to a sustainable future. We firmly believe in ethical business and recycling. We're committed to developing new, commercially viable solutions to waste management needs, meeting the challenges of ever-changing government legislation and our commitment to a zero-landfill goal.

1.5 Annual Waste Tonnages

Up to 25,000 tpa.

1.6 Total Storage Quantities

Waste stream	Location	How it is stored For example this may include piles, bays, containers, skips, racks, bales	Max. length / m	Max. width / m	Max. height / m	Volume / m^3
15 01 01	1	Bay	10	7	3	210
15 01 03	2	Container	12.9	2.44	2.59	82
16 02 09*	3	Bay	10	7	3	Up to in combined total 210
16 02 10*	4					
16 02 11*	5					
16 02 12*	6					

Waste stream	Location	How it is stored For example this may include piles, bays, containers, skips, racks, bales	Max. length / m	Max. width / m	Max. height / m	Volume / m^3
16 02 13*	7					
16 02 14	8					
16 02 15*	9					
16 02 16	10					
17 04 10	11		15	7	3	Up to in combined total 315
17 04 02	12					
19 02 04*	13		16	4.8	2.4	184
19 10 01	14	Container	12.9	2.44	2.59	82
19 12 11*	15	Bay	15	7	3	Up to in combined total 315
19 12 12	16					
20 01 23*	17					
20 01 35*	18					
20 01 36	19					
20 01 35*	18a	Bag	7	4	1.5	Up to in combined
20 01 36	19a					Total 42

2 SCOPE OF ENVIRONMENTAL MANAGEMENT SYSTEM

This EMS_OT covers the on site activities of 3R Technology UK Limited activities and contains:

- The Environmental Policy;
- Statements of responsibility and authority;
- An overview of the company's environmental procedures and controls;
- The identification of the resources and training allocated to management, performance of work and verification activities including internal audit;
- The appointment of the Environmental Management Representative (EMR); and
- The arrangement for periodic management reviews.

2.1 Notice Board

The notice board as a minimum will include:

- the permit holder's name
- an emergency contact name and telephone number
- a statement that the site is permitted by the EA
- the permit number
- Environment Agency telephone number 03708 506506 and the incident hotline 0800 807060

2.2 Site Surfaces

All site surfaces are made of an impermeable material see Drawing 2 Site Plan

2.3 Drainage

Drainage is sealed, see Drawing 4 Drainage Plan

Main Building

- The building has no internal drains on the building floor, so there are no open drains where the treatment of WEEE will be carried out.
- Surface water drainage runs under the building floor and connect the rear yard with the release point to surface waters at the front of the site.
- The roof of the building has 2 valleys, there are specific points along those valleys where the rain water falls down internal pipework which are positioned next to the stanchions which run internally in the building, the internal pipework is connect to the surface water drainage that runs under the building floor.
- The bottom of the internal pipework from the roof will be sealed around the stanchion casing which houses the pipework to prevent any waters or waste stored or treated internally to enter the surface waters. Any damage to the stanchion casing will be repaired within 7 days and waste removed from around the area to prevent surface waters mixing with the waste stored in the building

- Clean surface water from roofs, or from areas of the site where the water can not run off stored waste or from areas not connected with treating waste, will be discharged directly to surface waters.
- Internal site surface is fully impermeable.

External - rear

1. **Material Storage and Protection:**
    - We propose to continue using Zapp shelters, with an increased number to ensure all materials are fully covered.
    - We will continue to use Zapp shelters as we consider them to provide equivalent mitigation to a traditional building. The attached document provides further explanation of why we believe this is the most appropriate solution for storing our materials.
    - All bags will remain on pallets with protective covers.
    - The area within the Zapp shelters can be further bunded to provide additional containment and protection.
2. **Drainage System:**
    - All external rear yard drainage will be routed through a newly installed interceptor designed to capture plastic solids and oils.
    - Clean water will then be discharged off-site via a shut-off valve into the main surface water drainage system.
3. **Monitoring and Maintenance:**
    - Water discharged from the system will be tested at regular intervals to ensure compliance. Test results will be documented and made available for your review.
    - The interceptor will undergo cleaning at least twice annually, with records maintained and made available for inspection.

Infrastructure

- Fully impermeable pavement
- Kerbing (ordinary residential style) around main yard except across main access gate
- Main access gate comprises of a double gate and rising barrier arm, located in north corner of yard

External - front – including car park

Surface water drainage

Infrastructure

- Fully impermeable pavement

WC

Foul connection to public sewer

Emergency Closure Surface Water Drainage

- Lock off point of surface water connection to be installed at grid reference SD 58158 32708. The lock off valve will be able to be closed with a switch locked at the front of the offices, see Drawing 4 Drainage Plan
- Lock off point once closed for emergency situations would allow water to be held in the surface water drainage systems and to then pool on site in the waste storage area.
- Perimeter of site has 3 inch deep kerbing to aid containment and water can be held in surface water drainage system.

2.4 Construction and Supervision

Any construction work, infrastructure improvement and replacement will be undertaken by a specialist contractor. A suitably qualified Civil Engineer will inspect works to ensure that all necessary standards and specifications are met.

2.5 Inspection and Maintenance

The site has a preventative maintenance programme which includes:

- Daily check of all machinery and plant before work commences with sign off sheet
- In house maintenance done weekly each Saturday and when required on a daily basis as company employ their own maintenance team based on site.
- Annual shut down for in depth maintenance is carried out by 3R Technology UK. Preventative Maintenance documents are stored on the Shared Drive and all required paperwork completed is filed as either hard copy or a scanned copy record on the Shared Drive.

See Table 4 Maintenance and Inspection.

3 SITE INFRASTRUCTURE

3.1 Access

The site is approx. 5949 m^2 and is located at Unit 21-22 Roman Way Longridge Road, Preston, PR2 5BB. NGR SD 58158 32772, What Three Words: shops.tubes.risks.

Site is accessed by the north eastern gate for deliveries located on Roman Way.

3.2 Security

CCTV - The site has CCTV which records 24/7. Multiple camera images from the CCTV are displayed in the office and the images are recorded to a hard drive in the office.

CCTV is situated on internal and external areas on the site and is used to monitor both H&S and security aspects. Thermal cameras are situated on internal areas where heat monitoring of waste is required. This is checked daily as part of our environmental monitoring regime and recorded on the Environmental Site Checksheet see Appendix 2 Daily Site Checks.

Delivery or collection of waste – the entrance to the main storage yard where material is delivered and collected is closed at all times by a barrier and persons have to obtain approval for access. The barrier is lifted manually by staff once permission to enter granted. The entrance gate is locked at the end of the day shift (16:30) and out of hours.

All visitors and contractors have to obtain permission to enter the site via the offices upon arrival at site.

All reasonable precautions are taken to prevent unauthorised access to the site. Condition of fencing, gates and security are performed daily and recorded on the Environmental Site Checksheet. If fences and gates are damaged and their integrity is impaired, they shall be repaired within 7 working days. Where it is not possible to make proper repairs within the working day, temporary measures are implemented.

3.3 Site Information

Emergency contact numbers, hours of operation, permit number and the EA's incident number and general enquiries number will be displayed in the operational area as per 2.1 Notice Board.

3.4 Office and Welfare

The main warehouse is used for storage and treatment of WEEE. The surrounding buildings also incorporates the offices and welfare facilities.

The buildings are provided with water, electricity, telephone/data, fire extinguishers and first aid equipment.

Appropriate methods such as daily site inspection List, visitor's book and electronic records will be used to record any significant event (e.g. visit form the EA and other regulatory bodies), accidents and incidents, and any other information relating to compliance with the Environmental Permit.

3.5 Quantity Measurements

Site weighs waste in to and out of site utilising the on site weigh bridge.

3.6 Fuel Storage

All fuel stored with secondary containment, see Drawing 2 Site Plan for location.

3.7 Building

All processing activities are internal and occur in main building. Storage in the rear yard will still be within buildings 'Zapp Shelters'.

- Under the **Industrial Emissions Directive (IED) 2010/75/EU** and UK Environmental Permitting Regulations, operators must apply **Best Available Techniques (BAT)** or **appropriate measures** to prevent or reduce emissions to air, water, and land.
- For **non-hazardous and inert waste facilities**, the Environment Agency's guidance explicitly states that **enclosure within buildings** is an appropriate measure for controlling emissions of **dust, odour, noise, and litter** (Section 6.1 of the guidance).
- However, operators may propose **alternative measures** if they achieve the **same level of environmental protection** (Regulation 61 and EA guidance).

How Zapp shelter Meets BAT / Appropriate Measures

The core BAT objectives for enclosure are:

- **Prevent or minimise fugitive emissions** (dust, odour, litter).
- **Reduce noise and vibration impacts**.
- **Provide weather protection to avoid contaminated runoff**.
- **Ensure safe storage and handling of waste**.

Zappshelter achieves these through:

1. **Physical Containment**
    - Steel-framed structure with heavy-duty membrane creates a **fully covered bay**, preventing wind-blown dust and litter.
    - Meets BAT 14 for controlling diffuse emissions to air by enclosure or containment.
2. **Odour and Dust Control**
    - Enclosure reduces dispersion of odorous compounds and particulates, satisfying BAT 12 & 13 for odour management and BAT 25 for dust control.
    - Combined with site dust suppression and odour management plans, this equals the performance of a permanent building.

3. **Noise Mitigation**
    - Membrane and container walls act as acoustic barriers, supporting BAT 17 & 18 (noise and vibration management).
4. **Water and Leachate Management**
    - Covered bays prevent rain ingress, reducing leachate generation and runoff risk, aligning with BAT 19 (optimise water use and prevent emissions to soil/water).
5. **Structural Integrity**
    - Engineered to BS EN 1991 & 1993 standards, with proven resilience to storms, meeting EA expectations for robust containment structures.

Legislative References

- **IED Article 11**: Obligation to prevent and reduce emissions using BAT.
- **BAT Conclusions for Waste Treatment (2018)**: Require enclosure or equivalent techniques for dust/odour control (BAT 14, 18, 25).
- **EA Appropriate Measures Guidance**: Allows alternatives if they deliver equivalent environmental protection (Section 1.2 and 6.1).

Matrix

Requirement	Traditional Building	Zappshelter
Dust & Odour Control	Full enclosure	Full enclosure with membrane
Noise Reduction	Solid walls	Acoustic attenuation via membrane & containers
Weather Protection	Permanent roof	Engineered membrane roof
Compliance with BAT	Yes	Yes (meets BAT 14, 18, 25)

4 STAFFING AND EQUIPMENT

Main operational instruction for the onsite operations and management is given in the sites EMS and specific written procedures issued separately but are referenced within this EMS.

Updates in training will be as required or when the permit or site EMS requires a change or update. This may also occur if there is a large scale change to on site operations and or infrastructure.

4.1 Staffing

When the site is open it will be staffed by a minimum of 2 members of staff who are aware of the following.

- Waste acceptance and control procedures
- Operational controls and environmental monitoring
- Maintenance
- Record keeping
- Emergency action plans
- Notifications to the Environment Agency

4.1.1 Management

Operations will be overseen and monitored by a TCM qualified via schemes approved under the Environmental Permitting (England and Wales) Regulations 2016 (as amended)[1]

Details of the TCM will be provided to the EA. At times where the specified TCM(s) is/are unavailable, an alternative TCM will be allocated responsibility for the operations, the EA will be made aware of these changes.

Responsibilities of the TCM are to ensure permit compliance, ensure compliance with the Health and Safety policy, and the liaison with the EA and other regulatory bodies.

4.1.2 Operational

A minimum of two persons will be on site during operational hours. Site staff will be responsible for vehicles coming in to and leaving site, inspecting waste to ensure it is compliant with the permit, list of waste in the environmental permit, Duty of Care paper work, controlling vehicle movements, using site equipment and machinery, loading and unloading vehicles, ensuring good general housekeeping for the site and reporting any issues to the TCM. Extra staff will be brought to site if required.

[1] https://wamitab.org.uk/wp-content/uploads/2020/06/CIWM-WAMITAB-Operator-Competence-Scheme-Version-9-Final.pdf

5 WASTE MOVEMENTS

5.1 Health and Safety

All visitors to the site will report to the site office. First time visitors to the site will be required to complete a visitor form and read the displayed notice board giving instructions on health and safety and site procedures. They will also be informed of any works ongoing on site that may impact them.

As a minimum during the unloading, weighing and categorisation and acceptance of waste at the site, all operators and drivers must wear PPE as detailed below:

- Gloves and wrist protection sleeves specified within EN388:2016 to at least the following specification:
    - Abrasion resistance 4
    - Blade cut resistance 5
    - Tear resistance 4
    - Puncture resistance 3
    - Safety boots including steel midsole.
    - Occupational health monitoring for all staff by an external company

5.2 Duty of Care

We have a legal obligation under the 'Duty of Care' to know what wastes are being deposited at site, that they are controlled correctly, and that there is sufficient written information accompanying the waste.

Main Objectives:

- To ensure compliance with legal requirements
- To ensure the identification on non-compliant waste
- To ensure correct completion of paperwork and therefore customer invoicing
- To ensure the identification of reuse items, and compliance with the Waste Hierarchy

The consignment note must be inspected. Ensure all Parts (A-D) have been completed, and that the driver and waste producer have signed and dated Part C and D respectively.

Ensure that the date of consignment is the same date as the date upon which the load is received, or within one working day.

Check the written description of the waste, provided on the Consignment Note Recyclables Annex. Confirm with the driver that this is a true representation of the waste collected and undertaken an initial visual inspection of the waste within the vehicle.

Ensure that the correct box is completed to indicate whether hazardous or non-hazardous wastes are being received.

1. **Details of the parties involved:**
    - Fill in the name, address, and contact information of both the waste producer (the person or business generating the waste) and the waste carrier (the person or business transporting the waste). Ensure accuracy as this information is crucial for tracking purposes.
2. **Description of the waste:**
    - Provide a detailed description of the waste being transferred. Include information such as type of waste, quantity, and any relevant codes or classifications (e.g., EWC codes).
3. **Waste handling instructions:**
    - Include any specific instructions for handling the waste, such as storage requirements, transportation conditions, or disposal methods. This ensures that the waste is managed safely and in accordance with regulations.
4. **Declaration and signatures:**
    - Both the waste producer and the waste carrier should sign and date the transfer note to acknowledge their responsibilities and agreement to comply with the duty of care regulations.
5. **Retention and distribution:**
    - Retain a copy of the completed transfer note for your records and provide copies to all relevant parties involved in the waste transfer (e.g., waste producer, waste carrier, EA).
6. **Review and compliance:**
    - Review the completed transfer note to ensure all information is accurate and compliant with duty of care regulations enforced by the EA

5.3 Carriers Registrations

Only registered waste carriers will be contracted to deliver or remove waste from site, or **3R Technology UK Limited** . The TCM or a trained and appointed member of staff will ensure that hauliers are moving waste from the site are registered waste carriers using standard checks such as the EA public register. Where there is uncertainty the carrier will be asked to provide a validated waste carriers certificate.

5.4 Description of Waste

All loads will be described appropriately and will only be accepted where in compliance with acceptable waste types for the site refer to environmental permit. the TCM will ensure that delivered waste is acceptable and permitted by the environmental permit.

5.5 Input Controls

Site only accepts pre booked waste in accordance with Table 1 List Of Waste below.

5.6 Outgoing Vehicles

Outgoing vehicles are containerised but will be covered or sheeted as required.

6 OPERATIONS

The site is operated as a waste operation in accordance with the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

The site operates a WEEE sortation plant. Purpose built equipment to carry out density separation to produce a number of recyclable streams from mixed WEEE shredder output that is likely to be classified as hazardous waste following the revised POPs classification on WEEE waste. Specialist equipment separates the heavy and light fractions of WEEE plastic to enable the light fraction to be sent for recycling whilst the heavy – POPs – fraction is disposed of at high temperature incineration. The separation process also include other materials removed from the feedstock including metals, paper, etc

The site Environmental Permit (EPR/TP3602SH) refers to permitted waste operations described in 1.1 Permitted Activities.

6.1 Incoming Waste

Waste to be accepted to site must conform with Table 1 List Of Waste. If it is not on this list then it is rejected. Waste arrives on site delivered by third party haulage. And is accepted in accordance with the waste acceptance procedure in section 7 Waste Acceptance.

If any waste is identified as non-conforming then firstly the site manager shall be informed. The waste must be identified and the decision made whether it can be handled on site; if it can (i.e. listed in table of wastes) then it shall be deposited in the correct container else-where on site. If waste cannot be identified or is suspected as or non conforming the waste shall by isolated in a container and removed from site to an appropriately authorised site.

The Team leader will get advice on how best to deal with the material and manage it accordingly. All non-conforming wastes will be kept separate on site from other wastes and moved (providing it is safe to do so) to a designated quarantine area. All non-conforming wastes will be removed from site within 7 working days, or as soon as reasonably practicable using specialist contractors. All instances of non-conforming waste will be recorded in Appendix 2 Daily Site Checks. All instances of non-conforming waste will also be notified to the TCM to allow for preventative actions to be put in place

6.2 Waste Unloading and Inspection

During unloading the site operative will visually check to ensure no ‘non-compliant’ waste is present.

Any spillages will be cleared in accordance with section 6.4 Spillages.

6.3 Non-conforming loads

Waste is unlikely to be non-conforming as loads are pre booked prior to tipping. Customers are informed of what can be accepted, drivers check loads prior to collection and reject any visible contamination or the load is sent to another authorised site to tip, waste acceptance is well established.

In the unlikely event that non-conforming waste is delivered to site the waste will be returned to producer if this is not possible it will be isolated in an appropriate way for the waste type and sent to an appropriately authorised waste site.

6.4 Spillages

Spillages will be dealt with using on site spill kits. Any parts of the spill kits that are used during an incident will be disposed of appropriately. See spills procedure Appendix 3 Spill Procedure

7 WASTE ACCEPTANCE

The Waste Acceptance and Rejection Procedure details the company's procedure for accepting waste materials on site and when material should be rejected. Only permitted wastes as specified by the environmental permit will be accepted on site. All waste received is inspected upon delivery to ensure it conforms to type and quality purchased. Any waste which does not conform to the environmental permit or does not meet the specification of the material purchased will be rejected from site. See Appendix 1 Waste Acceptance Procedure.

Waste is source segregated and only accepted from pre authorised suppliers. See Appendix 1 Waste Acceptance Procedure.

Table 1 List Of Waste

Waste code	Description
16	**Wastes not otherwise specified in the list**
16 02	**wastes from electrical and electronic equipment**
16 02 09*	transformers and capacitors continaing PCBs
16 02 10*	discarded equipment containing or contmainated by PCBs other than those mentioned in 16 02 09
16 02 11*	discarded equipment containing chloroflurocarbons, hydrochlorofluorocarbons and hydrofluorocarbons
16 02 12*	discarded equipment containing free asbestos
16 02 13*	discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12
16 02 14	discarded equipment other than those mentioned in 16 02 09 to 16 02 13
16 02 15*	Hazardous components removed from discarded equipment – plastics only
16 02 16	Components removed from discarded equipment other than those mentioned in 16 02 15 – plastics only
19	**Wastes from waste management facilities, off-site waste water treatment plants and the preparation of water intended for human consumption and water for industrial use**
19 02	**wastes from physico/chemical treatments of waste (including dechromatation, decyanidation, neutralisation)**
19 02 04*	Premixed wastes composed of at least one hazardous waste
19 12	**wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 11*	Other wastes (including mixtures of materials) from mechanical treatment of waste containing hazardous substances

19 12 12	Other wastes (including mixtures of materials) from mechanical treatment other than those mentioned in 19 12 11
20	**MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**separately collected fractions (except 15 01)**
20 01 23*	discarded equipment containing chlorofluorocarbons
20 01 35*	discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components
20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35

8 WASTE STORAGE

Under normal operational procedures storage limits and locations will be in accordance with the Drawing 2 Site Plan.

All waste is Stored internally or externally under a Zapp Shelter or in a container. All bays are covered with plastic wrapping to avoid any potential risk of water ingress.an impermeable site surface within a sealed drainage system, further reducing the risk of rainwater ingress and contamination.

The roof water run-off is segregated as a separate sealed system.

Across all storage areas employees will be expected to remain vigilant for signs of heating and ignition. The Daily Site Inspection (Appendix 2 Daily Site Checks) includes monitoring all waste storage locations at the start and finish of each shift with the thermal imaging camera. All waste storage locations will be physically monitored by staff, CCTV and thermal imagery cameras..

8.1 Storage Areas

Storage areas are shown on Drawing 2 Site Plan where waste is stored there are fire resistant barriers rated to 120 mins or a 6 m fire break.

8.2 Waste Handling

Once waste has been deposited as directed by on site trained staff, waste is stored in accordance with 1.6 from arrival to processing to being transferred from site for onward disposal or recovery.

9 WASTE TREATMENT

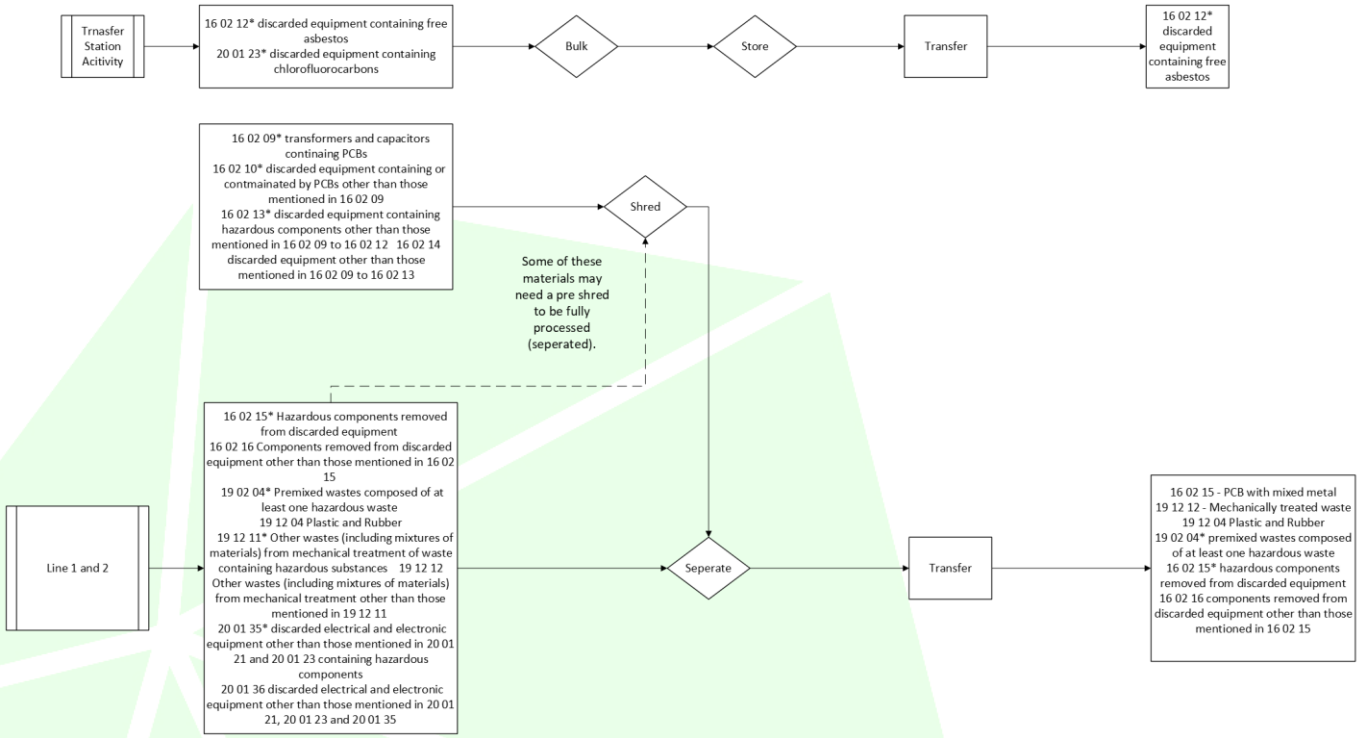

Figure 2 Waste Treatment

10 WASTE DESPATCH

Non-hazardous/Hazardous waste streams generated by the permitted activities will be sent off site for recovery or disposal at appropriately permitted facilities. These materials and other wastes will be removed from the site in accordance with strict waste management controls.

Loads are documented in accordance with Duty of Care requirements (e.g. Waste Transfer Note); prior to engaging contractors' due diligence checks are made (e.g. obtain and review a copy of the Environmental Permit for the receiving site, obtain copies of Carrier's Registration etc.) to ensure that materials are transferred to a suitably permitted facility by a licensed waste carrier. All vehicles are enclosed to ensure containment of the load.

Waste dispatch and delivery documentation are retained on site and can upon request be submitted to client or EA.

11 INFRASTRUCTURE AND EQUIPMENT MAINTENANCE PLAN

Table 2 Summary of site inspections

Equipment	Inspection Schedule	Look For	Responsible Person	Repair/Replacement Time Scales
Impermeable Surfaces	1 X per week	Integrity of site surface, standing water any obvious wear and tear.	TCM or Site Manager	5 Days
Security Fences/Boundary	1 X per week	Break ins, compromises in the site boundary.	TCM or Site Manager	1 Day Temporary. 5 Days Permanent
Litter Blow, Odour, Dust, Noise, Birds, Mud.	Daily	Litter Blow, Odour, Dust, Noise, Birds, Mud escaping site when site is operational and non-operational.	TCM, Site Manager and all Stie Staff.	Review site operations, identify problem and remedy issue
Vermin and Pests	Daily	Signs of infestations, such as droppings.	TCM, Site Manager or Appointed Contractor.	Initiate treatment without delay.
Fire Equipment	1 X per week	Visual inspection of the integrity of fire equipment and its renewal date for servicing.	TCM, Site Manager or Appointed Contractor.	3 Days
Roof Drains, Gutter, Buildings, Structure, Lights and drainage system	Monthly	Checking for leaks, integrity of structure, drain running clear.	TCM or Site Manager	5 Days

Process Machinery	Weekly	Visual inspection of the machinery to ensure it is visibly in working order.	TCM, Site Manager or Appointed Contractor.	5 Days

12 CONTINGENCY PLAN

12.1 Fire Prevention Plan

The FPP guidance applies to those activities where combustible wastes are stored at permitted sites. The guidance sets out the minimum standards which must be achieved to address fire risk relating to the bulk storage of materials such as paper, card, wood (processed and unprocessed), rubber, rags and textiles, WEEE, scrap metal and tyres. The objectives of the FPP Guidance are:

- minimise the likelihood of a fire happening
- aim for a fire to be extinguished within 4 hours
- minimise the spread of fire within the site and to neighbouring sites

All fire safety related emergency procedures, including relevant elements of the FPP, are communicated to all staff members, contractors and visitors who attend site.

The FPP (027.1_05_005) details the measures in place to prevent, detect, suppress, mitigate and contain fires that may be associated with the acceptance and storage of waste.

The FPP (027.1_05_005) relates solely to combustible waste activities carried out within the permit boundary .

12.2 Flood

See Appendix 11 Flood Plan.

12.3 Waste Removal

When wastes cannot be sent to other sites due to their planned or unplanned shutdown. Site will cease to accept waste if they are unable to store it compliantly with their FPP.

To enable site to remove waste other off takers will be sought beyond their usual supply chain. To ensure that these off takers are authorised to accept the waste material a copy of their authorisation will be requested and compared against the EAs public register[2], prior to any waste move off site to them.

[2] https://environment.data.gov.uk/public-register/view/index

13 ACCIDENT PREVENTION AND MANAGEMENT

Any accident or incident that has caused, is causing, or may cause significant pollution will be recorded.

These will be investigated by the TCM or senior management and where action is identified as being required, this will be recorded; responsibility will be allocated; preventative or corrective actions specified and completion required to an clearly defined time scale.

Table 3 Accident Prevention and Management

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
Transferring substances (spillage during handling between vessels)	Groundwater Superficial Layer - Secondary A Aquifer	Through impermeable site surface/drainage system.	There is a low consequence should the inert wastes be spilt during transfer as it is solid waste and would not spill far Should there be a spillage of an oil or a fuel then contamination may occur, however, these materials are rarely used on site and only handled under controlled conditions.	LOW	Transfer of all substances to be undertaken on an area of impermeable site surface Continual monitoring and maintenance of surfaces.	Spillages will be cleaned up immediately upon detection. Spills kits located at strategic locations around the site will be deployed in the event of spillage. Details of the spillage will be recorded and retained. In the event of a significant spillage which has the potential to cause environmental pollution the EA will be informed as soon as is reasonably possible.
	Geology Superficial Layer - Secondary A Aquifer					
	Neighbours 13 commercial units 2 residential areas 9 public use areas	Dispersion through the air	Dust and litter nuisance to surrounding neighbours. Less likely as waste is stored internally.	LOW	Regular house keeping.	

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
	5 recreational areas 10 designated sites 12 non designated sites 6 heritage sites					
	Surface water features	Overground flow	Contamination and dispersion within wider water bodies.	LOW	Transfer of liquids to be undertaken within secondary containment.	
Plant or equipment failure	Site workers	Direct contact	Severe personal injury could result.	LOW	All site personnel must wear PPE at all times, and be trained in the safe operations of plant and equipment. Plant and equipment is maintained in	Record and retain all plant and equipment failures on site. Where plant or equipment failure has the potential to cause injury or pollution ensure that issue is clearly communicated to all relevant

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
					accordance with a strict maintenance schedule to ensure risk of breakdown or failure is minimal.	individuals to prevent further use. Where plant or equipment failure results in a leak or spillage ensure the spillages is cleaned up immediately upon detection and the faulty plant/ equipment is stored on an impermeable surface.
	Groundwater Superficial Layer - Secondary A Aquifer	Through impermeable site surface/drainage system.	Contamination of surrounding area and dispersion within the wider groundwater environment.	LOW	Spill equipment available should oils or fuels be released from plant or equipment. Plant and equipment maintained in accordance with a strict maintenance programme to	
	Geology Superficial Layer - Secondary A Aquifer					

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
					ensure a limited risk of failure.	
Containment failure	Groundwater Superficial Layer - Secondary A Aquifer Geology Superficial Layer - Secondary A Aquifer	Leaking through cracked or overtopped bunding/ containment feature	Contamination of surrounding area and dispersion within the wider groundwater environment.	LOW	Daily site checks will ensure ongoing inspection of the integrity of containment features.	Spillages will be cleaned up immediately upon detection. Spills kits located at strategic locations around the site will be deployed in the event of spillage. In the event of a significant spillage which has the potential to cause environmental pollution the EA will be informed as soon as is reasonably possible.
Fire	Site operatives and infrastructure	Direct contact	Loss/damage of property. Injury.	LOW	See 027.1_05_005 FPP	With ongoing maintenance of plant and equipment risk of fire is low.

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
	Neighbours 13 commercial units 2 residential areas 9 public use areas 5 recreational areas 10 designated sites 12 non designated sites 6 heritage sites		Business disruption.		All plant and equipment maintained to a schedule. Key business processes and documentation stored remotely for business continuity purposes.	Management systems for business continuity will aid in the event of a fire.
Storage of hazardous substances	Site operative	Direct contact	Injury or ill health.	LOW	If handled personnel must be wearing appropriate PPE. Impermeable site surface.	All hazardous substances stored in suitable containment with bunding (where applicable). Hazardous substance storage areas are separate from operational areas.
	Groundwater Superficial Layer - Secondary A Aquifer	Through impermeable site surface/drainage system.	Contamination of underlying ground and groundwater.			
	Geology					

Possible Accident/Incident	Receptor	Pathway	Consequence	Likelihood	Risk Management	What to do if the accident/incident occurs
	Superficial Layer - Secondary A Aquifer				Drainage system can be sealed. Spill kits located on site.	All hazardous substances will be stored in secured containers which will be locked when not in use.
Vandalism	Plant and Equipment or site infrastructure	Direct contact	Impact on business processes	LOW	Machinery is located within the building. The wider site is secured by an palisade fence. There is also CCTV located internally and externally.	Ensure vandalism has not resulting in an environmental pollution incident. Inspect the site for damage and record and retain results.
Flooding	Site infrastructure	Direct	N/A	N/A	The site is not within a floodplain.	N/A

14 COMPETENCE AND TRAINING RECORDS

14.1 Management

A TCM holds the relevant competence through schemes approved under the Environmental Permitting (England and Wales) Regulations 2016 (as amended)[3].

Details of TCM will be provided to the EA and reported through the national operator waste returns. Copies of Certificates will be held at the site office. At times where the specified TCM(s) is/are unavailable, alternative TCM cover arrangements will be made.

Responsibilities include day to day operations and activities at the site, ensuring compliance with the Permit and planning conditions, ensuring compliance with Health and Safety Policy, responsible for fire safety at the site and liaison with the EA and other regulatory bodies.**Staff**

All site staff will be given instruction on relevant elements of the Environmental Permit, the FPP, this Management Plan and the wider management system; to effectively and efficiently carry out their job function. Training will be documented, and records kept.

All staff members are given training on fire safety and will receive refresher training as appropriate.

Staff members are shown the correct methods of using fire extinguishers during fire drills. All employees are trained to detect and respond to fires, and to implement measures to control fire water.

14.3 Competence & Awareness Training

All site staff will be given relevant training and supervision on the procedures, plant, mobile plant and equipment used at the site

[3] https://wamitab.org.uk/wp-content/uploads/2020/06/CIWM-WAMITAB-Operator-Competence-Scheme-Version-9-Final.pdf

15 ENVIRONMENTAL EMISSION CONTROLS

15.1Fire Prevention

15.1.1 Fire Prevention Plan

See 027.1_05_005 FPP.

15.1.1.1 Persistent Organic Pollutants (POPs)

Any waste that contains POPs at the end of the treatment process are separated in to separate fractions and sent under consignment note to an appropriately authorised facility for disposal.

15.2 Storage Area of Liquids

Diesel – One forklift truck uses diesel (all other Fork lifts are electric) and therefore we need one ICB of Diesel stored on site at any one time. The ICB is stored on a bunded pallet in the outside.

There is only a minimal need for hydraulic oil and therefore only 5 x2 0 ltr plastic bottle is stored on bunded pallet

There are no other chemicals or cleaning products in the main building. Cleaning chemicals for the toilets or offices are kept in a cupboard in the offices.

The volumes kept on site are always very low. Transfer of substances on site is kept to an absolute minimum and if any substances are transferred this is done under controlled.

In the event of a spillage on site either inside buildings or on the outside storage areas, pallets of spill dry are available. The spill dry is used to contain any oil or contaminated waters. The contaminated granules are put in the allocated steel drum spill bin and disposed of to a hazardous waste disposal.

15.3 Litter Control

All incoming and outgoing loads are covered.

The site is subject to regular housekeeping and staff are required to litter pick on a ‘see it, pick it up’ basis.

Whilst unlikely, where litter is identified as a nuisance at or near to the site boundary, the Site Manager will immediately organise the collection of litter.

The source of the litter will be investigated and removed to a covered container ready for disposal.

15.4 Odour Control

The material received is WEEE and thus the risk of odour is low on site. If complaints were received regarding odour, the Complaint Form would be completed together with a record of the prevailing weather conditions (especially wind direction and speed) at the time. The complaint would be investigated, recorded and conclusions acted upon.

15.5 Dust Control

The material received is not a dusty material and therefore would not increase the level of dust even in dry weathers. Dust levels are reviewed and monitored daily on the Environmental Site Checklist.

As the material is stored and treated inside the building, it is unlikely that dust would escape outside the building.

15.5.1 Sealed Central Dust Extraction System

To prevent fugitive dust emissions, protect human health, and avoid environmental pollution through the controlled operation, inspection, and maintenance of the sealed central dust extraction system in accordance with the site Environmental Management System (EMS).

- **Environmental Risks Controlled**

This system controls the following environmental risks:

- Emissions of dust and particulate matter to air
- Occupational exposure to airborne dust
- Contamination of land or surface water from dust escape
- Non-compliance with environmental permit emission control requirements
- **System Description**

The dust extraction system is a **fully enclosed, negative-pressure system** incorporating cyclone pre-separation, cartridge filtration, sealed ducting, fan, control system, and sealed hopper discharge. The system is designated within the EMS as a **primary pollution prevention and emissions abatement measure**.

- **Operational Controls**
- System operates continuously under negative pressure
- Dust is fully contained within sealed ductwork, filters, and hoppers
- Automatic online pulse-cleaning maintains filter performance
- No access panels, filter housings, or hoppers are opened during normal operation

Intrusive access, internal inspection, or filter replacement is only permitted following full shutdown, isolation, and authorisation under the site maintenance and permit-to-work system.

- **Inspection and Monitoring**

Environmental performance is maintained through:

- **Daily and weekly operational checks** of system parameters and alarms
- **Monthly condition monitoring** of pressure trends, housings, seals, and hopper discharge

- **Annual inspection** in line with manufacturer guidance and EMS review requirements

Filter cartridges are monitored based on performance and condition rather than fixed replacement intervals. All inspections are non-intrusive unless the system is formally isolated.

- **Abnormal Operation and Incidents**

Any of the following constitute an environmental non-conformance:

- Visible dust emissions
- Loss of negative pressure
- Seal or ducting failure
- Unexplained pressure loss or system alarms

Such events must be reported immediately, recorded under EMS incident procedures, and the system isolated where necessary to prevent dust release.

Dust extraction system specification shown in Appendix 14 Central Dust Collection System Technical manual and maintenance and triggers shown in Appendix 13 Dust Extraction System.

15.6 Noise and Vibration Control

As site operations are performed inside the building, noise is risk rated as low on site. Neighbouring industrial neighbours are medium industrial and therefore the background noise of the industrial estate is elevated.

Residential neighbours are over 250 m from the site boundary.

All on site mobile plant and machinery complies with current legislative requirements. If noise became an issue, possible solutions are to monitor the noise levels at different times of the day to identify the problem and to maintain equipment with specific respect to noise.

If complaints were received regarding noise the Complaint Form (see Appendix 10 Complaint Form) The complaint shall be investigated and a concluding record made..

15.7 Birds, Vermin and Pest Control

The material received does not attract flies. If complaints were received regarding flies, the Complaint Form (Appendix 10 Complaint Form) would be completed. The complaint would be investigated, recorded and conclusions acted upon.

15.8 Mud and Debris Control

The likelihood of vehicles carrying significant volumes of mud or debris which would then be tracked onto main roads is limited. However, vehicles will be visually checked in wet conditions. Any vehicles found to be carrying mud or debris on the wheels or chassis will be cleaned down prior to exiting site.

Where observation identifies an issue, this will be recorded in the daily site inspection List along with any subsequent corrective or preventative actions.

15.9 Summary of Maintenance and Inspection

Table 4 Maintenance and Inspection

Equipment	Inspection Schedule	Look for	Responsible Person	Repair / Replacement Timescale
Impermeable Surfaces	1x per week	State of repair and damage	TCM or Site Manager	5 days
Security Fences	1 x per day visual	Damage	TCM or Site Manager	1 day temporary. 5 days permanent.
Litter blow, odour, dust, noise, birds, mud	Daily visual inspection, constant attention see Appendix 13 Dust Extraction System	Ensure no off-site problem	TCM, Site Manager and all site staff	Immediate cease of problem or removal of source from site.
Vermin and pests	Daily visual plus monthly visit	Absence of vermin and pests	Site Manager and Appointed contractor	Call in contractor to initiate immediate treatment
Fire Equipment	1 / week visual Annual formal	Visual damage. Working order	Site Manager Specialist Contractor	3 days
Roof drains and gutter, building structure, lights, ventilation and drainage system.	Annually	Continued use and effectiveness	Site Manager	5 days
Process machinery	According to manufactures instructions	Wear of blades, greasing of machines, and other routine checks	TCM or appointed contractor	5 days

Equipment	Inspection Schedule	Look for	Responsible Person	Repair / Replacement Timescale
		required by manufacturer		
Gully Pot proximate to activity	Weekly	Damage to mesh basket & build-up of particles and sediment	Site Manager	Repair / remove sediment – 3 days
Interceptors	Quarterly	Build-up of debris and sediment associated with permitted operations	TCM or Site Manager	If build-up of sediment associated with permitted operations is noticed, arrange removal within 7 days

15.9.1 Leak detection and repair (LDAR) programme

Optical gas imaging Optical imaging uses small lightweight hand-held cameras which enable the visualisation of gas/air leaks in real time, so that they appear as 'smoke' on a video recorder together with the normal image of the component concerned, to easily and rapidly locate significant organic compound leaks. Monitored in accordance with EN 15446 within 12 months of issue of permit and there after a frequency agreed with the EA in accordance to base level findings of 1st report

15.10 Persistent Organic Pollutants (POPs) Monitoring

All waste fractions are consigned from site as default, example of testing of material is supplied, below is the list of POPs indicators used.

POPs indicators	Concentration levels (trigger for classification)
Polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDD/PCDF),	Not accepted on site
DDT (1,1,1-trichloro-2,2-bis (4- chlorophenyl)ethane),	50mg per kg
Chlordane,	50mg per kg

Hexachlorocyclohexanes (including lindane),	50mg per kg
Dieldrin,	50mg per kg
Endrin,	50mg per kg
Heptachlor,	50mg per kg
Hexaclorobenzene,	50mg per kg
Chlordecone,	50mg per kg
Aldrin	50mg per kg
Pentachlorobenzene,	50mg per kg
Mirex,	50mg per kg
Toxaphene	50mg per kg
Hexabromobiphenyl polychlorinated biphenyls (PCB's)	Not accepted on site

Table 5 Air extraction limits (Mercury)

Substances	Alarm 1 (Pre-warning)	Comment	Alarm 2 (levels exceeded)	Comment
Mercury	2 µg/Nm3	Extraction may not be working.	7 µg/Nm3	part of operation will be stopped and will not operate again until levels have dropped back down and the route cause found

(When mercury containing waste is processed above to be monitored).

15.11 Wastewater Management and Monitoring

Objective

To manage process water that is no longer suitable for reuse in a manner that prevents pollution and complies with BAT 7 monitoring requirements.

Procedure

1. **Removal and Disposal**
    - When process water can no longer be reused on site, it shall be:
        - Collected in designated containment systems.
        - Removed from site by an authorised wastewater carrier.
        - Sent to an approved permitted facility for treatment or disposal in compliance with environmental legislation.
2. **Monitoring of Emissions to Water**
    - **P**rior to removal, emissions to water (including any discharge or transfer) shall be monitored at least at the frequency specified in BAT conclusions.
    - Monitoring shall be carried out in accordance with EN standards.
        - If EN standards are not available, ISO, national, or other international standards that provide equivalent scientific quality shall be used.
    - **Parameters to monitor include:**
        - pH, temperature, conductivity
        - Chemical Oxygen Demand (COD), Biological Oxygen Demand (BOD)
        - Suspended solids and relevant pollutants identified in the site's inventory.
3. **Sampling and Analysis**
    - Samples shall be taken at representative points (e.g., storage tanks prior to off-site removal).
    - Analysis shall be performed by a competent laboratory using validated methods.
    - Maintain chain-of-custody records for all samples.
4. **Record Keeping**
    - Document:
        - Date and time of sampling.
        - Analytical results and standards applied.
        - Waste carrier details and permitted facility information.
    - Retain records for a minimum of 6 years for compliance and audit purposes.

Performance Indicators

- Compliance with monitoring frequency and standards.
- Complete documentation of wastewater removal and analysis.
- Zero non-conformances in audits related to wastewater management.

16 CLIMATE

See climate change risk assessment in Appendix 9 CCRA.

This document discusses the risks and impacts of climate change on non-hazardous and inert waste treatment.

The document provides a risk matrix that assesses the probability and consequences of exposure to workplace hazards.

It identifies various impacts of climate change, such as increased temperatures, extreme weather events, and changes in rainfall patterns.

The document highlights potential risks, including increased waste reactions or fires, damage to electrical equipment, and expansion and stress of plant and fittings.

Mitigation considerations are provided for each risk, such as waste segregation, equipment shading, and regular inspections and maintenance.

The document also addresses potential risks related to drought, pests and scavengers, and wildfires.

It discusses the impact of climate change on winter temperatures, including odour complaints, pest infestations, and freezing pipes.

Risks associated with increased rainfall and flooding are identified, along with mitigation measures such as flood warnings and good housekeeping practices.

The document mentions the potential impact of sea level rise on coastal sites and the need for site location away from the coast.

It addresses the potential impact of drier summers on water supplies and the need for dust suppression systems.

The document also discusses the potential impact of storms, including high winds, damage to buildings and infrastructure, and lightning strikes.

17 ACCIDENT AND INCIDENT MANAGEMENT

Any accident or incident that has caused, is causing, or may cause significant pollution will be recorded.

These will be investigated by the TCM or senior management and where action is identified as being required, this will be recorded; responsibility will be allocated; preventative or corrective actions specified and completion required to an clearly defined time scale

17.1 Emergency Planning

The 027.1_05_004 EMS_Op and 027.1_05_005 FPP will have detailed Emergency plans these plans are reviewed at least every two years or sooner following any incident.

Drills are undertaken regularly at least every 6 months to test emergency procedures and ensure staff are confident of the actions to take in the event of an emergency. All drills are documented and any problems highlighted are used to review the procedures if necessary.

Process	Event or process Failures	Air	Land	Water	Flora and Fauna	Local Amenity	Detail	Likelihood	Consequences	Risk H/ML)[4]	Emergency Plan Required
Waste Inputs	Vehicle breakdown/oil spill/containment failure		✓	✓	✓	✓	• Contamination of surface waters and or ground water • Contamination of land • Land contamination resultant damage to flora and fauna	• Vehicles maintained to manufacturers recommendation with visual checks. • Spill measures in place • Site surface impermeable with a sealed drainage system. • Vehicle turn around time is swift minimising time spent on site. • All drainage sealed with an impermeable site surface.	• Zone 2 for flooding. • Nearest surface water feature is 215 m west south west. • Area is historically industrial/commercial no European designations within 500 m. • Closest non-designated site of impact to permitting 122 m north west.	M	✓

[4] H=High
, M=Medium
L=Low

Process	Event or process Failures	Air	Land	Water	Flora and Fauna	Local Amenity	Detail	Likelihood	Consequences	Risk H/ML)[4]	Emergency Plan Required
	Escape of Waste	✓	✓	✓		✓	• Contamination of surface waters or ground waters • Contamination of land • Littering increasing fire risk and amenity impact.	• Wastes unlikely to cause litter as stored in bays or containers. • All waste is deposited in designated areas. • All deliveries are supervised, all waste leaving site is sheeted and secured for transportation.	• Zone 2 for flooding. • Nearest surface water feature is 215 m west south west. • Area is historically industrial/commercial no European designations within 500 m. • Closest non-designated site of impact to permitting 122 m north west.	L	✓

Process	Event or process Failures	Air	Land	Water	Flora and Fauna	Local Amenity	Detail	Likelihood	Consequences	Risk H/ML)[4]	Emergency Plan Required
Waste Deposit	Deposit of Hazardous/non-conforming waste	✓	✓	✓		✓	• Contamination of surface waters or ground waters • Contamination of land • Emissions to air, fire risk • Potential health risks to local amenity	• Visual Inspections undertaken prior to waste acceptance • No liquid or dusty waste accepted. • Measures in place to contain spills • Fire Extinguishers • Quarantine area in place for waste on fire or non-burning waste. • Isolation area for non-conforming loads	• Zone 2 for flooding. • Nearest surface water feature is 215 m west south west. • Area is historically industrial/commercial no European designations within 500 m. • Closest non-designated site of impact to permitting 122 m north west.	M	✓
	Mixing of Incompatible Wastes	✓	✓	✓		✓	• Emissions to air/Fire Risk • Potential Health Risks	• No hazardous or chemical wastes are accepted on site. • Visual assessment of waste carried out quarantine and isolation procedures in place.	• Industry adjacent. • Emissions to air would be short term impact, Fire may disrupt industry and local sensitive receptors.	M	✓

Process	Event or process Failures	Air	Land	Water	Flora and Fauna	Local Amenity	Detail	Likelihood	Consequences	Risk H/ML)[4]	Emergency Plan Required
Waste Storage	Combustion of Stored Materials	✓		✓		✓	• Emissions to air/fire risk • Potential health risk	• Storage periods are minimised by business objectives. • No smoking on site • Wastes stored in secure bays and or containers. • Regular maintenance of plant • Regular housekeeping.	• Emissions to air would be short term • FPP procedures would be enacted. • Fire may disrupt local sensitive receptors.	**M**	✓

18 COMMUNICATION

18.1 Complaints

On receipt of a complaint, the TCM, or their nominated person, will investigate the complaint to see if the cause can be established and if substantiated, resolved swiftly. Where additional time is required to undertake repair or replacement of infrastructure which has caused the complaint the complainant will be contacted with details on the actions being taken and the estimated timescale for completion.

All complaints will be acknowledged and investigated, with resultant actions reported to the complainant and records kept.

See Appendix 10 Complaint Form

18.2 Non- Conformances, Corrective Actions and Preventative Measures

Any non-conformances recorded by the TCM or the EA will be actioned in a timely manner or in line with an appropriate time scale set by the EA.

Non-conformances will be remedied so that the operation that led to the non-conformance is prevented or changed, to ensure compliance with the environmental permit.

Corrective actions will be recorded in the daily site inspection List.

19 INFORMATION AND RECORDS

19.1Complaints

The Complaint Form can be found on the Shared Drive (see Appendix 10 Complaint Form). Following a complaint, the Complaint Form should be completed and the reasons for the complaint investigated including reviewing root cause analysis and actions to prevent complaint occurring again.

19.2 Non-conformance procedure

The Accident & Incident Record is used to record near miss accident or incidents on site, failure of the EMS system or breaches in site operating procedures. The Accident & Incident Record can be found on the Shared Drive. Completion of the Accident & Incident Record should be completed to investigate the root cause analysis and to take actions to prevent the non-conformance occurring again.

19.3 Records (Waste Receipt/Dispatch)

All records required relating to the receipt and dispatch of waste are legible, made as soon as reasonably practicable by the site and are retained for a minimum of 6 years. Events effecting the environment shall be kept until any permit approved is surrendered.

All waste entering the site is weighed and a weighbridge ticket is printed, this includes the following information:

- Time and date received
- Vehicle registration and waste carrier details
- Producers name and address
- Description of the waste by EWC category and quantity in tonnes

All waste leaving the site is weighed and a weighbridge ticket is printed, this includes the following information:

- Time and date removed
- Vehicle registration and waste carrier details
- Name of company accepting waste and the carrier
- Description of the waste by EWC category and quantity in tonnes
- Recycling facility accepting the waste

The weighbridge is inspected at least annually and a Certificate of Verification is issued. The weighbridge is maintained on a regular schedule.

19.4 Reporting

Quarterly Returns

Once the environmental permit is issued it is assumed that the environmental permit will require quarterly reporting to the EA. A daily record of waste types and quantities received and removed from the site will be maintained and provided to the EA quarterly and in the format requested.

19.5 Notifications to Environment Agency

Within 24 hours of any of the following incidents, 3R Technology UK Ltd must notify EA:

- For any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution
- For any breach of a limit
- For the detection of any significant adverse environmental effect

19.6 Security of Records

Records shall be kept securely within the site office. Where held electronically these shall be backed up on a regular basis and a copy held off site.

19.7 Availability

In accordance with the condition requiring records to be kept, all records required under the terms of the Permit shall:

- Be legible;
- Be made as soon as reasonably practicable;
- If amended, be amended in such a way that the original and any subsequent amendments remain legible or are capable of retrieval; and
- Be retained, unless otherwise agreed with the EA, for at least 6 years from the date when the records were made, or in the case of the following records until Permit surrender:
- Off-site environmental effects; and
- Matters which affect the condition of land and groundwater.

All records, plans and the management system required to be maintained by the Permit shall be held on site.

20 RAW MATERIALS

Waste returns are submitted to the EA for all wastes received and dispatched. Monitoring of raw water and energy use on site is carried out via supplier invoices and records of these are maintained. Use of hydraulic and lubricating oils is monitored via purchase invoices.

Table 6 Raw Material Monitoring

Schedule 1 activity	Description of raw material and composition of raw material	Maximum amount daily	Annual throughput	Description of how raw material is used including main hazards	Justification for use (Form B3 Q6d)	Reducing waste arising from raw materials
S5.3A(1)(a)(ii) Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment	Electricity			No hazards associated other than slips, trips, falls etc.	Treating waste for further recovery to reduce waste to landfill. Segregation of hazardous and non-hazardous waste	N/A
S5.6 A(1)(a) The temporary storage of hazardous waste in a facility with a total capacity exceeding 50 tonnes pending any of the activities listed in sections 5.1, 5.2 and 5.3.	Electricity			No hazards associated other than slips, trips, falls etc.	Treating waste for further recovery to reduce waste to landfill. Segregation of hazardous and non-hazardous waste	N/A
Process water filtration	Electricity					
R13: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced)	Electricity					

Schedule 1 activity	Description of raw material and composition of raw material	Maximum amount daily	Annual throughput	Description of how raw material is used including main hazards	Justification for use (Form B3 Q6d)	Reducing waste arising from raw materials
R3: Recycling/reclamation of organic substances which are not used as solvents	Electricity					

Mobile Plant	Description of raw material and composition of raw material	Maximum amount daily	Annual throughput	Description of how raw material is used including main hazards	Justification for use (Form B3 Q6d)	Reducing waste arising from raw materials
Fork Lift	Diesel	Unknown as new site will be monitored for first year to identify.	Unknown as new site will be monitored for first year to identify.	Fuel/engine oil for fork lift truck. Main hazard would be spillages.	Moving waste around site to enable treatment/transfer.	N/A
Fixed plant	Electricity	Unknown as new site will be monitored for first year to identify.	Unknown as new site will be monitored for first year to identify.	Moving parts Main hazard would be spillages.	Processing waste.	N/A

21 PACKAGING REUSE MANAGEMENT

Objective

To reduce the quantity of packaging waste sent for disposal by maximising reuse opportunities, in line with BAT 24 and the site's Residues Management Plan.

Scope

This procedure applies to all packaging materials associated with the receipt, storage, handling, and dispatch of WEEE and related components, including pallets, crates, containers, protective packaging, and transport packaging.

Responsibilities

- **Site Manager**: Ensure implementation and review of packaging reuse measures.
- **Operations Team**: Segregate reusable packaging and follow reuse protocols.
- **Compliance Officer**: Monitor performance and maintain records for permit reporting.

Procedure

1. **Identification and Segregation**
    - Inspect packaging during unloading for reuse potential.
    - Segregate reusable packaging from waste streams and store in designated clean, dry areas.
2. **Reuse Systems**
    - Implement return-to-supplier schemes for pallets, crates, and durable containers.
    - Reuse intact packaging for internal transfers and outbound shipments.
    - Repair minor damage to pallets or containers to extend life.
3. **Standardisation**
    - Where practicable, use modular, durable packaging designed for multiple cycles.
    - Avoid single-use packaging unless no alternative exists.
4. **Storage**
    - Maintain a dedicated storage area for reusable packaging, ensuring it is protected from contamination and weather.
5. **Training**
    - Train staff on packaging inspection, segregation, and reuse procedures.
    - Include packaging reuse in induction and refresher training sessions.
6. **Monitoring and Reporting**

- Record quantities of packaging reused versus disposed in the waste tracking system.
- Review performance quarterly and report as part of the EMS continuous improvement process.
- Document cost savings and environmental benefits where possible.

7. **Supply Chain Engagement**
    - Negotiate with suppliers for bulk deliveries in reusable containers and take-back agreements.
    - Communicate reuse targets to contractors and logistics partners.

Performance Indicators

- Percentage of packaging reused vs. disposed.
- Reduction in packaging waste sent for disposal compared to baseline.
- Number of supplier agreements for packaging return/reuse.

21.1 Material Efficiency – Substitution of Materials with Waste

Objective

To improve resource efficiency and reduce the use of virgin raw materials by substituting them with suitable waste-derived materials, in compliance with BAT 22.

Scope

This procedure applies to all site operations where raw materials are used, including:

- Packaging and storage materials.
- Process aids (e.g., absorbents, fillers).
- Construction and maintenance materials for site infrastructure.

Responsibilities

- Site Manager: Ensure implementation of substitution practices and review opportunities.
- Procurement Team: Source waste-derived materials where feasible.
- Compliance Officer: Maintain records and verify suitability of substituted materials.

Procedure

1. **Identification of Opportunities**
    - Conduct an annual review of materials used on site.
    - Identify materials that can be replaced with waste-derived alternatives without compromising quality or safety.
    - Examples for WEEE sites:

- Use recovered plastics from dismantled WEEE for protective packaging.
- Reuse shredded foam or polystyrene from incoming appliances as cushioning material.
- Employ recycled aggregates for yard surfacing or maintenance.

2. **Assessment of Suitability**
    - Verify that waste-derived materials meet technical and safety requirements.
    - Ensure compliance with relevant standards and permit conditions.
    - Document risk assessments for each substitution.
3. **Implementation**
    - Update procurement specifications to prioritize waste-derived materials.
    - Maintain segregation and quality control to prevent contamination.
    - Train staff on handling and storage of substituted materials.
4. **Monitoring and Reporting**
    - Record quantities of virgin materials replaced by waste-derived alternatives.
    - Report annually as part of EMS performance review.
    - Include substitution data in the residues management plan.

Performance Indicators

- Percentage reduction in virgin material use.
- Volume of waste-derived materials utilized.
- Cost savings and environmental benefits achieved.

22 REVIEW MANAGEMENT SYSTEM

The EMS will be reviewed in its entirety at least annually or following any substantial change in site operations or complaint.

Other activities which may prompt review of the EMS are variations to the environmental permit, accident, complaint, breach or a change in the site setting or sensitive receptors.

Where the review results in required changes, this will be documented and maintained with the site records, for example, waste storage volumes, changes to abatement measures, new or altered equipment.

23 AVAILABILITY OF ENVIRONMENTAL MANAGEMENT SYSTEM

All site staff and visitors will have access to the EMS when it is applicable to them to ensure compliance and consistent operation of the site.

A copy of the EMS will be available in the main site office for reference purposes and at the request of regulators.

24 CLOSURE AND DECOMMISSIONING

24.1 Site Condition Report

A Site Condition Report (SCR) has been produced as part of this application, site condition report 010.1_05_007.

24.2 Decommissioning Plan

A Decommissioning Plan has been prepared meeting S5.06 section 2.11 and is shown below. The plan follows the general principles as detailed below:

- If the site is to be dismantled all equipment, buildings etc. will be disposed of having full regard to the waste hierarchy.
- Buildings and pipe work will be checked and any infrastructure likely to contain asbestos material will be inspected and removed only using suitably authorised contractors.
- The dismantling and re-use of the majority of the equipment through sale to interested third parties the remainder to be scrapped; and
- The scrapping of the majority of the equipment probably through a single contractor with only a small proportion salvaged for re-use at some point in the overall process.

24.3 Sequence of Decommissioning

Final use, after the final consignment of waste has been despatched from the site, electrical systems will be isolated and locked off leaving only lighting and what circuits are considered necessary for on-going inspection and maintenance in place. All systems will be double checked and labelled to ensure there are no unmarked live systems on the site.

The drainage system and water supply will remain intact.

Dismantling - In line with the waste hierarchy efforts will be made to seek a buyer for all the plant and equipment, forklift trucks etc. Either as a whole or in suitable lots.

Scrapping - If no suitable parties are found to purchase the plant it will be scrapped, again either as a whole or in suitable lots.

After plant has been removed - The whole internal area will be subject to a thorough inspection

Deep cleaning the building, floors and removing all residues off-site to a suitably permitted facility.

24.4 Monitoring

Throughout the period of decommissioning the plant and building will be checked at least weekly when dismantling work is not being undertaken and daily when it is. Checks will ensure the integrity of the site surface is being maintained and the risk of spillage or pollution is being kept to a minimum. Contractors will be required to make

their own checks and make these available during such checks. Once plant has been removed periodic checking will be carried out giving regard to the risk if any the use of the area may pose.

24.5 Permit Surrender

If the permit is to be surrendered a scheme of sampling and analysis of the soil beneath the site maybe undertaken if during communications with the EA it is deemed required.

If analyses show any contamination to be present which would interfere with the succeeding use of the site this will be removed or treated to bring the round/groundwater into an acceptable condition for the surrender of the permit and completion of the site condition report to the satisfaction of the EA or the relevant regulatory body at that juncture.

25 APPENDICES

Appendix 1 Waste Acceptance Procedure

Scope

To be followed by all site operators.

Objective

This procedure is to ensure the safe, efficient, accurate and compliant acceptance of waste at site. All wastes received at 3R Technology UK sites are pre-booked.

Operator has a legal obligation under the 'Duty of Care' to know what wastes are being deposited, that waste is controlled correctly, and that there is sufficient and accurate written information accompanying the waste.

- To ensure compliance with legal requirements
- To ensure the identification on non-compliant waste
- To ensure correct completion of paperwork and therefore customer invoicing
- To ensure the identification of reuse items, and compliance with the Waste Hierarchy

Responsibility

Logistics manager

Business development manager

Operations Manager

Vehicle Arrival

Upon arrival of delivery vehicle, The duty of care paper work must be handed to weighbridge operator for first compliance inspection of paper work and visual inspection of waste. This inspection includes but not limited to;

- Integrity of vehicle and containers looking for potential sources of pollution
- Waste type
- Written description matching what is actually there
- Any obvious non-conforming waste types (against permitted wastes)

Consignment/Transfer note

The consignment note must be inspected. Ensure all Parts (A-D) have been completed, and that the driver and waste producer have signed and dated Part C and D respectively.

Ensure that the date of consignment is the same date as the date upon which the load is received, or within one working day.

Check the written description of the waste, provided on the Consignment Note Recyclables Annex. Confirm with the driver that this is a true representation of the waste collected and undertaken an initial visual inspection of the waste within the vehicle.

Ensure that the correct box is completed to indicate whether hazardous or non-hazardous wastes are being received.

The transfer note should be completed and signed by both persons the handling the waste e.g. producer and person receiving.

A waste transfer note must include;

- a description of the waste
- any processes the waste has been through
- how the waste is contained or packaged
- the quantity of the waste
- the place and date of transfer
- the name and address of both parties
- details of the permit, licence or exemption of the person receiving the waste
- the licence or registration number of the person handing over the waste, if they have a waste management licence or are a registered carrier of controlled waste
- the Standard Industry Code (SIC) of your business
- the appropriate European Waste Catalogue (EWC) code for your waste

Unloading of Waste

The Reuse Operator must be present during the unloading of the vehicle to identify any items which are suitable for reuse.

Continue to observe the wastes as they are unloaded, check that the waste types match the number and type listed on the Consignment Note/Transfer Note. Only those wastes listed on the Consignment Note/Transfer Note Annexes are to be accepted at the site, these are the only wastes permitted for acceptance in accordance with the sites Environmental Permit.

Where any waste is identified which has not been noted on the Consignment Note/Transfer Note inform the Site Manager and place the waste within a isolation area.

Where the load conforms with the accompanying Consignment Note or Transfer Note, continue to weigh and categorise WEEE Inputs and record all net weights on the Consignment Note Annex.

Identify the treatment/recovery operations to which the waste is to be subjected, this is likely to be one of the following:

- Temporary Storage Pending Recovery Elsewhere
- Mechanical Reprocessing of WEEE
- Repair / refurbishment / cleaning etc. for reuse
- Repair / refurbishment / cleaning for re-use in products or components

Complete the information required within Part E and sign/date.

Non-Conformances

Where a non-conformance with the Consignment Note/Transfer Note has been identified the Operations Manager will assess the action to be taken:

Where the Consignment Note/Transfer Note is incomplete – the load may be rejected and returned to the customer, however, wherever possible the Operations Manager will attempt to complete the Consignment Note/Transfer Note through liaison with the producer to enable acceptance of the load.

Where the Consignment Note/Transfer Note is incorrect – the Operations Manager will attempt to correct the Consignment Note/Transfer Note through liaison with the producer, their agreement to additional charges and have the corrections countersigned, where this is not possible the load/non-conforming wastes are to be rejected.

Where the waste is not permitted at the site – Reject the load, take photographs and reload. The Operations Manager will assess whether it is safe for the load to go back on the road. If so, they will contact the waste producer to arrange to return the waste. Where this is not possible the waste is to be quarantined, Environment Agency and Directors informed, and arrangements made between the parties to remove the waste to a suitable licenced facility at the earliest opportunity.

The safety of personnel, road users and the site are the paramount concern.

Health & Safety

As a minimum during the unloading, weighing and categorisation and acceptance of waste at the site, all operators and drivers must wear PPE as detailed below:

- Gloves and wrist protection sleeves specified within EN388:2016 to at least the following specification:

- Abrasion resistance 4
- Blade cut resistance 5
- Tear resistance 4
- Puncture resistance 3

- Safety boots including steel midsole.
- Hi Visibility Jacket

Training

All Recycling Operatives will be trained in the Waste Acceptance procedure. This will ensure the correct identification of non-conforming wastes.

Training is provided during the site induction, which covers the key topics of this document.

Appendix 2 Daily Site Checks

DAILY/WEEKLY INSPECTION CHECKLIST

Version 1 Nov 2025

Site: 3R Technology UK PRESTON

Week Commencing: _____

TCM Minimum Attendance Required: 16 hours

TCM Attendance (hours/week): _____

	Inspected Items	Frequency	Mon	Tue	Wed	Thur	Fri	Sat	Sun	TCM Weekly Audit	Issues raised on next page
	Person Completing the Checklist	Daily Initials									
	All Facilities										
1	Condition of Site ID Board & Signs	Weekly									
2	Condition of Access, Site Road & Hardstanding	Weekly									
3	Condition of Waste Reception Area & Operational area	Weekly									
4	Site Building & Welfare	Weekly									
5	Condition of Interceptors	Weekly		External Checked/Emptied - Yes / No							
6	Surface Water management - Shut off valve check	Weekly									
7	Surface Water Management e.g. Drainage System, Kerbs & Gullies	Daily									
8	Surface water Containment systems - Pad and Kerb Condition	Daily									
9	Waste Type, Quantities & Storage (including stockpiles)	Daily									
10	Waste Acceptance / Inspection & Duty of Care	Daily									
11	Condition of Fencing, Gates & Security	Daily									
12	Condition of ALL Waste Containers	Daily									
13	Condition of Lighting System	Daily									
14	Condition of fuel & storage tanks, inc bunded pallets	Daily									
15	Condition and stability of all steps, including mobile steps on CRCs	Daily									
16	Other liquid storage; Availability of spillage kit	Daily									
17	Are Fire Extinguishers in the right place in in a good condition	Daily									
18	Thermal Camera and CCTV check	Daily (am)									
		Daily (pm)									
19	Control of Dust Extraction System	Daily (am)									
		Daily (pm)									
20	Control of Litter	Daily									
21	Control of Noise	Daily									
22	Control of Mice & Rats	Daily									
23	Control of Flies (* record spraying and any problem loads on reverse)	Daily									
24	Control of Odour	Daily									
25	Control of Debris on Yard & Road	Daily									
26	Have any samples been taken (e.g discharge monitoring). If sample taken please note what, date and time on next page.	Daily									
27	Weather information recorded on next page	Daily									
28	Have any inspections occurred (e.g. Regulator)	As Inspected									
29	Review of incidents and/or complaints	Monthly									
30	Review of tonnages	Monthly									

(please record your information on the 1st working day of each month) DATE:

For those sites with energy meters	Gas	Electricity	Water
Monthly Meter Reading			
Monthly Meter Consumption			
YTD Consumption			
Annual Verification of Supplier			

☑ = Satisfactory; X = Unsatisfactory; NI = Not Inspected; NA = Not Applicable

Note:

1 Checklists should be comleted at the end of each day

2 If the unsatisfactory condition is minor and resolved the same day, remedial action / comments to be recorded over page.

CoTC / TCM NAME: _____

CoTC / TCM Signature: _____ Date: _____

DAILY/WEEKLY INSPECTION CHECKLIST

Site: 3R Technology UK PRESTON

Week Commencing:

Monday	
Weather ;	Sample;
Daily info and any CAR's-	
Tuesday	
Weather ;	Sample;
Daily info and any CAR's-	
Wednesday	
Weather ;	Sample;
Daily info and any CAR's-	
Thursday	
Weather ;	Sample;
Daily info and any CAR's-	
Friday	
Weather ;	Sample;
Daily info and any CAR's-	
Saturday	
Weather ;	Sample;
Daily info and any CAR's plus maintenance activities	
Other Comments	

Appendix 3 Spill Procedure

OBJECTIVE

The objective of this procedure is to ensure the facility cleans spillages as soon as practicably possible and to prepare staff to act in a safe and efficient manner to implement the procedures in the event of an incident that occurs.

Main Objectives:

- To ensure the facility, neighbours and the environment are protected if an incident occurs
- Spillages are stopped and cleaned up as soon as practicable
- To dispose of spill kits appropriately.

SCOPE

This procedure must be followed by nominated staff members of **3R Technology UK Limited**

RESPONSIBILITY

The director and nominated staff members.

SPILLAGE PROCEDURE

- **Assess the risk**, Before you take action, make sure the scene is safe to proceed. Determine the source of the spill, the product(s) involved and protect yourself from any hazards that may be present.
- **Protect**, Choose the proper PPE and equipment to safely respond
- **Stop**, Prevent any further material spilling if safe to do so, e.g stand oil drum up, close valves etc on fuel tanks
- **Spill containment**, Use absorbent socks (Booms), pads to contain the spill to the immediate area. Prevent spilled product from entering waterways, storm drains, sewers, floor drains, etc.
- **Recover spilled material**, Use absorbent products (pads & booms) found in your spill kit to recover all free liquids and thoroughly clean the area.
- **Collect and package absorbents**, Gather used absorbents and other contaminated materials and place into temporary disposal bags. Secure with cable tie and store safely until disposal.
- **Proper waste storage and disposal of used absorbents**, contaminated material and other waste products must be stored and disposed of in accordance to local regulations. Place into h azardous waste storage container. If you are unsure where this is located, please ask your Technically Competent

manager or manager

AFTER INCIDENT

Replace or restock spill kits, Immediately replace or restock used spill kit components to ensure preparedness should another spill occur.

HEALTH & SAFETY

As a minimum, when following the steps to prepare the site for an emergency situation all operators must wear PPE as detailed below:

- Gloves and wrist protection sleeves specified within EN388:2016 to at least the following specification:
  - Abrasion resistance 4
  - Blade cut resistance 5
  - Tear resistance 4
  - Puncture resistance 3
- Safety boots including steel midsole.
- Safety glasses to EN166.

TRAINING

All relevant staff will be trained in Spillage Procedure. This will ensure the correct steps are followed during an incident.

Training is provided during the site induction which covers the key topics of this document. Refresher training will be carried out biannually.

Appendix 4 House Keeping Checklist

Site:			**Date**	
Floors & Walkways	**Yes**	**No**	**N/A**	**Observations**
Are all walkways kept clear?				
Is the floor free from tripping hazards?				
Are all cables and hoses suitably stored?				
Are all awkward items being stored safely so as not to cause a hazard to pedestrians or vehicles?				
Is all uneven flooring clearly identified?				
Is there a program in place for replacing uneven flooring?				
Are unsafe areas cordoned of?				
Spillages-liquids				
Are wet surfaces covered with non slip materials?				
If necessary are non slip safety shoes provided?				
Are floors cleaned regularly?				
Storage of waste				
Are there suitable skips/containers to handle the different waste products produced on the site?				
Are they regularly emptied?				
Are they able to receive waste now?				
Storage-general				
Are materials and equipment stored in such a way that sharp objects don't interfere with walkways?				
Are tools and equipment stored correctly (shadow boards)?				
Are workbenches free of clutter?				
Are COSHH substances stored securely and tidily?				
Is lifting equipment stored tidily?				
Poor weather				
Are drains clear of blockages?				
Is salt or grit available for clearing ice and snow?				
Lighting				
Is the work area suitably lit?				
Falls				

Are all edges protected?				
Are all ladders secured?				
Offices				
Is the office(s) clean, tidy and free of loose carpet tiles and spillages?				
Are cables tidy?				
Are there suitable arrangements for the storage and collection of waste?				
Are windows cleaned on a periodic basis?				

Appendix 5 Permit to Work

Permit to Work Form Note: Only to be issued by an authorised person			
Location of works……..			
Permit type (please tick			
○ Asbestos	○ Excavation	○ Machinery	○ Working at height
○ Confined space entry	○ Electrical isolation	○ Hot work	○ other
Name of receiver…….		Company…….	
Other persons covered by this permit			

Work to be undertaken

The following documents must be available for work to start (please tick confirm)	
○ **Risk assessment**	○ **Safe system of work**
List all identified hazards and precautions	
○ **Hazards**	○ **Precautions**

Isolation and lock off Note: Only a competent person may verify that all isolation and lock offs are in place. All HV work must be approved by an electrical specialist.	
Isolation type and location	
Authorised by	
Signature	
Date	
Time	
Warning notices to be displayed at the following locations	

The permit will be displayed at the following locations		
Emergency Contacts		
Name	**Position**	**Contact Number**

Permit Validation			
This permit is valid from		**This permit is valid to**	

Issue and acceptance of permit	
Issued: I authorise the above work to be carried out subject to all relevant conditions being adhered to. I also confirm that I have reviewed the risk assessment and safe system of work which have been communicated to the receiver of this permit.	
Signature	**Print**
If the receiver of this permit leaves the work area then the job must stop immediately. It will not re-start until the authorised person has been notified and a new permit has been raised.	
Extended time	
Time overrun: If the time specified within permit validation has expired then the authorised person must either extend the validity of the permit or cancel it.	
This permit extended from	**This permit is extended to**

Closure of the permit (to be completed by the authorised person)			
The work has been completed and the area/plant has been left in a safe condition and is ready for operation			○
Signed		**Date**	**Time**

The permit has been cancelled. Work has been suspended and a new permit has been issued				○
Signed			**Date**	**Time**

Monitoring of permit/activity		
Observations	**Date/Time**	**Initials**

Appendix 6 Training Record

Employee Name **XXXXXXXXXX**	**Job Title** **XXXXXXXX**					
Training Required	Date due	Date done	Date for refresher	Employee Signature	Reviewer Signature	Comments
Continuing Competence						
Environmental Policy						
Daily Weekly Inspection						
Environmental Awareness						
Waste Acceptance/Duty of Care						
Waste Separation & Storage						
Daily defect reports						
Regular maintenance and repairs						
Accident Plan						
First Aid						
Emergency Procedure						
Fire Procedure						
Spillage Procedure						

Appendix 7 Training Matrix

STAFF TRAINING MATRIX

Name	Induction inc H&S	Manual Handling	EA Technical Comp	Load Accetance and Rejection Procedure	Waste Receipt, Separation and Storage	Env Permit Awareness	Fire Prevention Plan	Fire Marshall & Extinguisher Users Course	Evacuation and emergency response	Spill Response	Daily Checks and Maintenance - WEEE Plant	Daily Checks and maintenance Balance Forktruck	Plant re-fueling	Loading / Unloading
Site Manager														
Site Supervisor														
Operator 1														
Operator 2														
Operator 3														

Trained

Training in Progress

Able to Train Others

Training Required

Version 1

Appendix 8 Maintenance Schedule

All plant will have weekly maintenance on Saturdays. Friday afternoons plant will shut down for cleaning in preparation of maintenance, including mobile plant. Annual shutdown also takes place for major PPM on the plant. Defect reporting and a defect control log is in use along with a maintenance tracker so we can plan when maintenance will be needed.

Appendix 9 CCRA

Risk is the probability of an individual being exposed to an work place hazard and the impact of such exposure. The Primary risk is assessed with no mitigation in place such as managerial procedures and Personal Protective Equipment (PPE).

Probability

Probability of exposure
HIGH – exposure is probable: direct exposure likely with no / few barriers between hazard, source and receptor.
MEDIUM – exposure is fairly probable: feasible exposure possible, barriers to exposure less controllable.
LOW – exposure is unlikely: several barriers exist between hazards source and receptors to mitigate against exposure.
VERY LOW – exposure is very unlikely; effective, multiple barriers in place to mitigate against exposure.

Consequence

Consequences of Exposure
HIGH – the consequences are severe: sufficient evidence that short or long term exposure may result in serious damage.
MEDIUM – consequences are significant; sufficient evidence that exposure to hazard may result in damage that is not severe in nature and reversible once exposure ceases (e.g. irritant).
LOW – consequences are minor; damage not apparent though reversible adverse changes may occur.
VERY LOW – consequences are negligible; no evidence of adverse changes following exposure.

Risk Matrix

		Consequences			
		Very Low	Low	Medium	High
Likelihood	High	Low	Medium	High	High
	Medium	Low	Medium	Medium	High
	Low	Low	Low	Medium	Medium
	Very Low	Very Low	Low	Low	Low

For all hazards identified either procedures or PPE have been developed. Residual risk will remain and are detailed in the tables below.

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
Summer daily maximum temperature This may be around 7°C higher compared to average summer temperatures now, with the potential to reach extreme temperatures as high as over 40°C with increasing frequency based on today's values.	**Impact 1** Greater potential for increased waste reactions and fires involving heat-sensitive or combustible waste.	**M**	**M**	**M**	• Waste segregated so no reactions can take place. • Stored as per 027.1_05_005 FFP • Fire resistant barriers provided. • Only permitted wastes accepted. • Site is inspected regularly as per 027.1_05_004 EMS_OP. • Fire suppression system installed (fire extinguishers)	**L**
	Impact 2 There could be an increase in high temperature expansion and stress of plant, pipework and fittings. The mitigation for this could be to conduct regular inspection and	**M**	**M**	**M**	• Leak detection program in place see 027.1_05_004 EMS_OP.	**L**

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
	preventative maintenance of site and plant or equipment.					
	Impact 3 Potential increased dust emissions from, for example, external hazardous waste soil treatment areas.	**M**	**M**	**M**	• Regular house keeping and inspections see 027.1_05_004 EMS_OP. • Localised dust extraction see 027.1_05_004 EMS_OP. and Drawing 2 Site Plan	**L**
Winter daily maximum temperature This could be 4°C more than the current average with the potential for more extreme temperatures, both warmer and colder than present.	**Impact 1** Lower winter temperatures could increase risk of pipework and other external equipment freezing.	**M**	**M**	**M**	• All processing and equipment for processing stored inside. • Regular maintenance of on site plant both fixed and mobile see 027.1_05_004 EMS_OP. • Leak detection program in place see 027.1_05_004 EMS_OP.	**L**

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
	Impact 2 Lower winter temperatures could reduce the performance of effluent treatment plant (ETP).	**M**	**M**	**M**	• Process water filtration system located internally. • Process water filtration system monitored as apart of active process.	**L**
Daily extreme rainfall	**Impact 1** Potential for increased site surface water and flooding.	**M**	**M**	**M**	• See Appendix 11 Flood Plan • Drainage systems are inspected and maintained	**M**
	Impact 2 There is potential for increased incidents involving water-reactive wastes.	**M**	**M**	**M**	• external areas where wastes are handled or stored are provided with contained drainage	
Average winter rainfall Average winter rainfall may increase by over 40% on today's averages.	**Impact 1** This could lead to increased site surface water and localised site flooding.	**M**	**M**	**M**	• See Appendix 11 Flood Plan • Drainage systems are inspected and maintained	**M**

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
	Impact 2 There is potential for increased incidents involving water-reactive wastes.	**M**	**M**	**M**	• external areas where wastes are handled or stored are provided with impermeable surfacing and contained drainage, and that these are in good condition	**L**
Sea level rise Sea level rise which could be as much as 0.6m higher compared to today's level.	**Impact 1** If located near the coast, a site could experience increased:	**-**	**-**	**-**	• Not located near the coast.	**-**
	Impact 2 There could be localised issues with surface water discharge leading to backing up and worsening site flooding.	**M**	**M**	**M**	• See Appendix 11 Flood Plan • Drainage systems are inspected and maintained	**M**
Drier summers	**Impact 1**	**M**	**M**	**M**	• Measures are in place to review and minimise water use and to maximise	**L**

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
Summers could see potentially up to 40% less rain than now.	Potential increased use or reliance on mains water for dust suppression and cleaning and provision of fire water.				collection and use of rainfall	
River flow The flow in the watercourses could be 50% more than now at its peak, and 80% less than now at its lowest.	**Impact 1** There is potential increased impact of discharge to watercourse from on-site effluent treatment plant due to reduced low flow and effluent dilution.	**M**	**M**	**M**	• No point source emission to water courses. • reviewing and improving the effluent treatment process if added impact is predicted for the receiving watercourse	**L**
Storms Storms could see a change in frequency and intensity. The unique combination of increased wind speeds, increased rainfall, and lightning during these events provides the potential for more extreme storm impacts		**M**	**M**	**M**	• Reviewing the design of vulnerable structures and buildings • Reviewing wind loading calculations, providing reinforcement if necessary	**L**

	Impacts	Risk Level (Likelihood X Consequence= Risk)			Mitigation Consideration	Retained Risk
Storms and high winds could damage building structures with increased potential for fugitive emissions.					• Maintaining building integrity via continual proactive maintenance.	

(https://www.gov.uk/government/publications/adapting-to-climate-change-industry-sector-examples-for-your-risk-assessment/hazardous-waste-and-treatment-examples-for-your-adapting-to-climate-change-risk-assessment)

Appendix 10 Complaint Form

Customer Details	
Complainant Name	
Address – Postcode -	
Complainant Contact Details -	
Tel -	
Email -	
Date -	
Complaint Details -	
Investigation Details	
Investigation carried out by -	
Position -	
Date & time investigation carried out -	
Weather conditions -	
Wind direction and speed -	
Investigation findings -	
Feedback given to Environment Agency and/or local authority -	
Date feedback given -	
Feedback given to public -	
Date feedback given -	
Review and Improve	
Improvements needed to prevent a reoccurrence -	
Proposed date for completion of the improvements -	
Actual date for completion -	
If different insert reason for delay -	
Do managerial procedures need to be updated?	
Date that the noise and Vibration management plan was updated -	
Closure	
Site manager review date	
Site manager signature to confirm no further action required	

Appendix 11 Flood Plan

1. Flood Risk Summary

- **Flood Zone:** The site is in Flood Zone 2 (medium probability of flooding from rivers/sea). A flood risk assessment is mandatory for development and operations.
- **Sources:** The flood map covers river/sea flooding only; other sources (surface water, groundwater, drainage) must also be considered.

2. Site-Specific Flood Hazards

- **Drainage:** The site has impermeable surfaces, sealed drainage, and a lock-off valve for emergency closure of surface water drainage.
- **Storage:** All hazardous waste and materials are stored and treated on an impermeable site surface with sealed drainage system.

3. Flood Warning & Monitoring

- **Floodline Registration:** Register for Floodline Warnings Direct (0345 988 1188) for real-time alerts.
- **Weather & River Levels:** Monitor Environment Agency flood warnings, weather forecasts, and river/sea levels.
- **Trigger Points:** Prep if flood warnings are triggered.

4. Flood Response Actions

- **A. Staff & Site Safety**
- **Roles:**
    - Site Manager
        - Leads flood response, contacts authorities, oversees evacuation.
    - Site Supervisor
        - Directs staff, checks containment/drainage, keeps records.
    - Operators
        - Secure containers, use spill kits, assist evacuation.
    - Fire Marshal/Emergency Response
        - Leads evacuation, helps shut down equipment.
    - Maintenance
        - Inspects/repairs containment and drainage.
- **Evacuation:** Emergency evacuation procedures are part of staff induction; ensure routes are not compromised by floodwater.
- **B. Protection of Hazardous Materials**
- **Bulk Storage:** Tanks and containers are stored on bunded pallets; ensure they are secured or elevated above predicted flood levels.
- **Drums/IBCs:** Move portable containers above flood level or secure them if flooding is predicted.

- **C. Utilities & Critical Systems**
- **Isolation:** Ensure electricity, gas, water, and control systems can be safely isolated before flooding. Backup systems for critical equipment should be considered.
- **D. Drainage & Containment**
- **Lock-Off Valve:** Close the surface water drainage lock-off valve at grid reference SD 58158 32708 to contain water on site.
- **Kerbing:** Perimeter kerbing aids containment; inspect regularly for integrity.
- **E. Emergency Resources**
- **Contacts:** Maintain up-to-date contacts for emergency services, Environment Agency, and suppliers of pumps/generators.
- **Spill Kits:** Ensure spill kits and absorbents are available and accessible.

5. Post-Flood Actions

- **Water Removal:** Remove floodwater from site using pumps; ensure safe disposal.
- **Integrity Checks:** Inspect plant, containment, and drainage for damage.
- **Inventory:** Check for loss of hazardous/polluting materials.
- **Reporting:** Notify the Environment Agency within 24 hours of any incident, breach, or pollution event as per permit conditions.

6. Flood Resilience Improvements

- **Storage:** Soluble or reactive materials stored away from potential flood waters.
- **Critical Equipment:** Stored internally where possible.

7. Training & Exercises

- **Staff Training:** Regularly train staff on flood response and evacuation procedures.
- **Plan Exercises:** Conduct flood plan drills to ensure actions are realistic and achievable.

8. Records & Review

- **Documentation:** Keep all flood plan records, incident logs, and training records for at least 6 years.
- **Review:** Annually review and update the flood plan, especially after any flood event or change in site operations.

9. References & Further Guidance

- Environment Agency Flood Risk Assessment Standing Advice
- Flood Plan Template
- CIRIA C688 & C736 (Flood resilience and pollution containment)
- Pollution Prevention Guidance (PPGs)

Appendix 12 POPs Sampling

Purpose

To establish a consistent method for sampling Waste Electrical and Electronic Equipment (WEEE) and associated treatment outputs to determine the presence and concentration of POPs (e.g., brominated flame retardants, PCBs) for compliance with UK waste classification requirements.

Scope

Applicable to:

- WEEE items (e.g., display devices, cables, printed circuit boards).
- Outputs from WEEE treatment processes (e.g., shredded plastics, fines, sludges).
- Mirror entry wastes where POPs assessment is required.

References

- **WM3 Technical Guidance** – Steps for classification and hazardous property assessment.
- **Environment Agency POPs Guidance** – Concentration limits and destruction requirements.
- **List of Waste (LoW) Codes** – For assigning correct waste codes (e.g., 16 02 15*, 19 12 11*).

Responsibilities

- Waste producer or operator must ensure sampling is representative and documented.
- Competent person to oversee sampling and maintain chain of custody.

Equipment

- PPE (gloves, goggles, protective clothing).
- Sampling tools (e.g., stainless steel scoop, auger).
- Sample containers (clean, airtight, inert material).
- Labels and documentation forms.
- Cooler or secure storage for samples.

Procedure

Step 1: Identify Sampling Points

- Select representative points in the waste stream:
    - Whole WEEE items (before treatment).
    - Separated fractions (plastics, cables, PCBs).
    - Residues (dust, fines, sludges).

Step 2: Define Sampling Plan

- Follow **Appendix D of WM3**:
    - Determine number of samples based on batch size and variability.
    - Use composite sampling for homogeneous materials.
    - For heterogeneous waste (e.g., mixed plastics), stratify by type or density fraction.

Step 3: Collect Samples

- Avoid contamination and cross-mixing.
- Minimum sample size: typically 500 g for solids.
- Combine increments into composite samples where appropriate.
- Record:
    - Date, time, location.
    - Waste description and LoW code.
    - Process stage.

Step 4: Preserve and Transport

- Seal containers immediately.
- Label with unique ID.
- Store in cool, dry conditions.
- Transport to accredited laboratory under chain of custody.

Step 5: Laboratory Analysis

- Analyse for POPs listed in WM3 and EA guidance (e.g., PBDEs, PCBs, SCCPs).
- Use validated methods (e.g., GC-MS).
- Report concentrations in mg/kg.

Step 6: Interpretation

- Compare results to POPs concentration thresholds (e.g., PBDE sum ≥ 500 mg/kg).
- If above threshold:
    - Classify as POPs waste.
    - Apply hazardous LoW code (e.g., 16 02 15*, 19 12 11*).
    - Ensure destruction by high-temperature incineration or equivalent.

Step 7: Documentation

- Maintain records for at least 6 years:
    - Sampling plan.
    - Chain of custody.
    - Analytical results.
    - Waste classification decision.

Quality Assurance

- Samples sent to China to sampling every quarter.
- Use duplicate samples and blanks for QA/QC.
- Review sampling plan annually.

Health & Safety

- Follow site-specific risk assessments.
- Avoid exposure to hazardous substances during sampling.

Key Notes From Guidance

- POPs must be destroyed even if diluted below concentration limits.
- Do not use landfill WAC analysis for classification.
- Mixing POPs waste with other waste is prohibited.

Appendix 13 Dust Extraction System

Purpose

To ensure the safe, compliant, and effective operation of the sealed central dust extraction system, maintaining dust containment, filtration efficiency, and system reliability while preventing dust release to the workplace or environment.

Scope

This procedure applies to:

- The sealed central dust collection system, including cyclone pre-separation, cartridge filtration, ducting, hopper, fan, and control system
- All personnel responsible for inspection, operation, and maintenance
- Routine inspections only – no intrusive maintenance unless the system is isolated and authorised

System Status – Sealed System

- The dust extraction system is designed as a fully enclosed, negative-pressure system
- Dust is contained at all times within ducting, filters, and sealed hoppers
- No panels, doors, or access points are to be opened during normal operation
- All inspections described below are external and non-intrusive unless formally isolated under a separate maintenance permit system

Responsibilities

- Operators: Carry out daily and weekly checks and report abnormalities
- Maintenance Team: Carry out monthly and annual inspections
- Site Management: Ensure inspection records are maintained and cartridge lifespan is monitored

Maintenance Schedule & Procedure

Daily Checks – Operational Monitoring

Frequency: Daily (during operation)

Procedure:

- Check system parameters via the control panel (e.g. pressure readings, alarms, fan operation)

- Confirm system is running within normal operating range
- Observe for:
    - Alarms or fault indications
    - Unusual noise or vibration from fan or ducting
    - Visible damage to external ductwork or seals

✅ **No access panels are to be opened**
✅ **System remains fully sealed**

Record: Daily inspection log

Weekly Checks – Cleaning System Inspection

Frequency: Weekly

Procedure:

- Confirm the **automatic pulse cleaning system** is operating correctly via indicators or control system feedback
- Check compressed air supply pressure to the pulse cleaning system
- Verify no fault alarms are present relating to cleaning cycles

✅ **Cleaning is automatic and online – no shutdown required**
✅ **No manual cleaning or access permitted**

Record: Weekly inspection log

Monthly Checks – Filters and Valves (External Monitoring)

Frequency: Monthly

Procedure:

- Review system pressure trends to assess filter condition
- Inspect externally:
    - Filter housing integrity
    - Seals and flanges
    - Hopper discharge valves for leakage or damage
- Confirm hopper discharge system remains sealed and operational

✅ **Do not remove or access filter cartridges**

✅ **Inspection is condition-monitoring only**

Note on Filter Cartridges:

- Cartridge filters are **estimated to last 10–15 months**
- Filters are listed on the site check sheet for **condition monitoring only**
- Replacement is based on performance and inspection findings, not calendar time alone

Record: Monthly inspection log and filter condition record

Annual Inspection – Full System Inspection

Frequency: Yearly

Procedure:

- Conduct a full system inspection in line with the manufacturer's maintenance guidance
- Inspection to include:
    - Structural condition of collector, cyclones, ducting, and supports
    - Fan condition and vibration
    - Control system functionality
    - Review of pressure data and filter performance history

Any internal inspection or filter replacement requires:

- Full system shutdown
- Electrical and mechanical isolation
- Dust control precautions
- Authorised maintenance personnel only

Record: Annual inspection report

Safety & Environmental Controls

- System must remain sealed to prevent:
    - Dust escape
    - Occupational exposure
    - Environmental release
- Any breach of seals, abnormal pressure loss, or visible dust leakage must be:
    - Reported immediately

- System isolated if required

- Collected dust is removed via a sealed hopper and discharge system only

Records & Documentation

- Daily, weekly, monthly, and annual inspection records must be retained
- Filter cartridge condition and estimated life tracking must be maintained on the check sheet
- Records support compliance with occupational health and emission control requirements

Central Dust Collection System Technical manual

Central Dust Collection System Technical Proposal

1. Project Overview

This project is designed to address the treatment of mixed dust (plastic, metal, and non-metal) generated during the crushing process of small household appliances. A combined central dust collection system consisting of **cyclone pre-separation + cartridge filtration** is specially designed.

The system is designed with a rated air handling capacity of **30,000 m³/h**, serving **16 fixed dust extraction points**. Through integrated design including negative pressure collection, centrifugal pre-treatment, high-efficiency cartridge filtration, automatic pulse cleaning, and intelligent variable frequency control, the system achieves fully enclosed dust collection, efficient purification, and centralized disposal.

It effectively eliminates uncontrolled dust dispersion, ensures compliance with occupational health standards, and meets national emission regulations. The system operates stably, saves energy, and is easy to maintain. It is fully adapted to a **65% equipment operating rate**, with an additional **10% pressure loss margin**, ensuring stable performance under all conditions.

---

2. Design Basis

(1) Site Parameters

- Dust collection points:
  - Ø200 mm × 14
  - Ø100 mm × 2
  - Total: 16 fixed points
- Design air velocity at inlet: **25 m/s**
- Pipeline pressure loss margin: **10%**
- Equipment operating rate: **65% (VFD controlled)**
- Dust characteristics:
  Mixed dust from appliance shredding
  Particle size: **0.1 μm – 5 mm**
  Low density, easily airborne, with small fibrous content

(2) Applicable Standards

- GB 16297-1996 – Comprehensive Emission Standard
- GBZ 2.1-2019 – Occupational Exposure Limits
- GB/T 16157-1996 – Dust Sampling Methods
- Industrial Dust Collection Engineering Specifications
- Industrial Ventilation Design Standards
- Cartridge Filter Dust Collector Standards

3. Key Technical Parameters

- Airflow: **30,000 m³/h**
- Operating rate: **65%**
- Pressure loss margin: **10%**
- Dust inlets: **16 pcs**
- Inlet velocity: **25 m/s**
- Duct velocity: **18–22 m/s**
- Filter area: **480 m² (48 cartridges)**
- Filtration velocity: **1.04 m/min**
- Efficiency: **≥99% (≥0.5 μm particles)**
- System pressure: **3300 Pa**
- Fan: **37 kW centrifugal fan**
- Cyclones: **Ø1500 mm × 2**
- Cartridge size: **Ø350 × 660 mm × 48 pcs**

4. Design Principles

Negative Pressure Capture

The system generates negative pressure to capture dust immediately at the source, preventing leakage and dispersion.

Cyclone Pre-separation

Large particles are removed via centrifugal force, reducing load on filters and extending service life.

Filtration Principle

High-efficiency membrane polyester filters remove fine dust through interception, inertia, and diffusion.

Intelligent VFD Control

Fan speed automatically adjusts based on pressure feedback and machine operation rate, optimizing energy use.

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5. Operating Principle

- **Startup:** PLC-controlled soft start via VFD
- **Dust Collection:** Dust is transported through ducts at 18–22 m/s
- **Filtration:** Cyclone + cartridge filtration stages
- **Cleaning:** Automatic pulse jet cleaning based on pressure
- **Discharge:** Dust collected in hopper for sealed removal
- **Protection:** Automatic alarms and shutdown on faults

---

6. Air Velocity Details

Duct Velocity

- Designed at **18–22 m/s**
- Prevents dust settling and blockage

Filtration Velocity Calculation

- Airflow: 30,000 m³/h = 500 m³/min
- Filter area: 480 m²

Filtration velocity:

500 ÷ 480 ≈ 1.04 m/min

Ensures optimal efficiency and filter lifespan.

---

7. Pulse Cleaning System

- Pressure: **0.4–0.6 MPa**
- Interval: **10–30 s**
- Pulse duration: **0.1–0.3 s**

Features:

- Dual mode (pressure + time based)
- Online cleaning (no shutdown required)
- Adjustable intensity
- Fault detection

---

8. System Components

1. Dust Collection Unit

- 16 inlets with flared design
- Flexible sealing connection

2. Cyclone Unit

- 2 × Ø1500 mm cyclones
- High-efficiency separation

3. Cartridge Filter Unit

- 48 filters (480 m² total)
- PTFE membrane polyester material
- ≥99% efficiency

4. Dust Storage Unit

- Sealed hopper with discharge valve

5. Exhaust Unit

- 37 kW centrifugal fan
- Low vibration and energy-efficient

6. Duct System

- Galvanized steel (0.6–1.2 mm)
- Flanged connections

7. Control System

- Siemens PLC + HMI
- Schneider electrical components
- Full automation

---

9. System Advantages

- High efficiency (≥99%)
- Accurate engineering design
- Energy-saving VFD control
- Fully automatic operation
- Durable construction
- Easy maintenance
- Safe and reliable

---

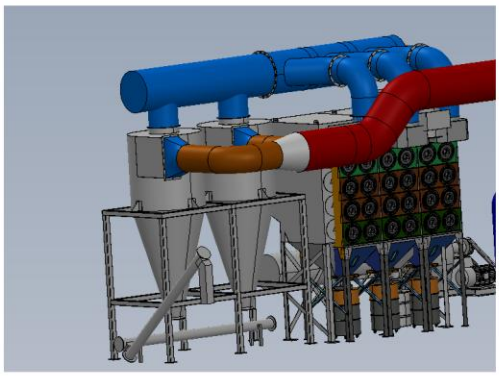
10. Installation & Maintenance

Installation

- Install on solid concrete foundation
- Ensure airtight sealing
- Proper electrical grounding
- Stable duct support

Maintenance

- Daily: Check system parameters
- Weekly: Inspect cleaning system
- Monthly: Check filters and valves
- Yearly: Full system inspection



26 DRAWINGS

Drawing 1 Permit Boundary

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Permit Boundary

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Revison: REV A
Drawn By: AIL
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Changelog:
- N/A

3R Technology

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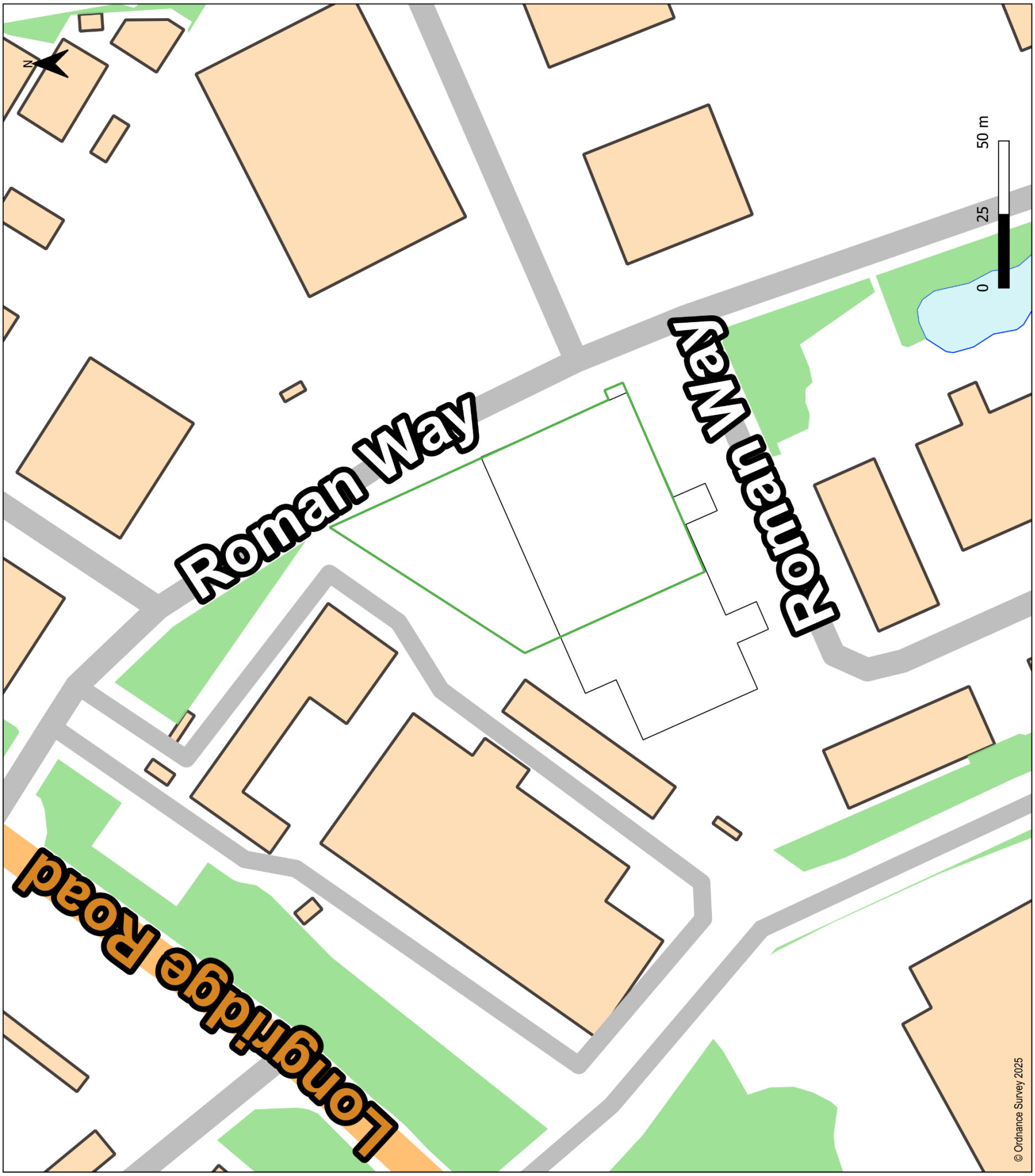
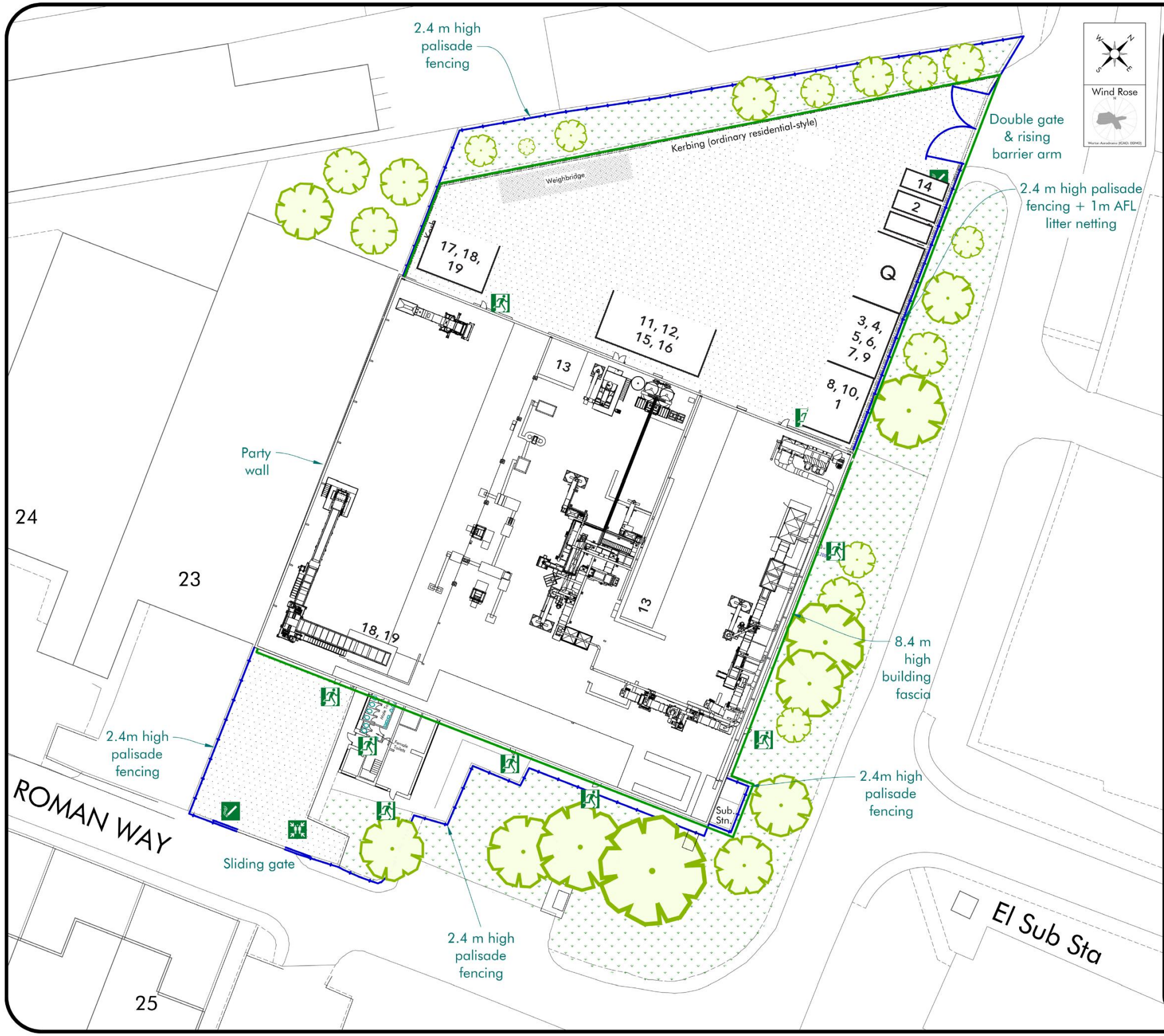




General Notes

KEY

Storage ID's EWC Code

Q Quarantine Area

1. 15-01-01	11. 17-04-10
2. 15-01-03	12. 17-04-02
3. 16-02-09*	13. 19-02-04*
4. 16-02-20*	14. 19-10-01
5. 16-02-11*	15. 19-12-11*
6. 16-02-12*	16. 19-12-12
7. 16-02-13*	17. 20-01-32*
8. 16-02-14	18. 20-01-35*
9. 16-02-15*	19. 20-01-36
10. 16-02-16	

5 0 5 10 15 20 25

Metres

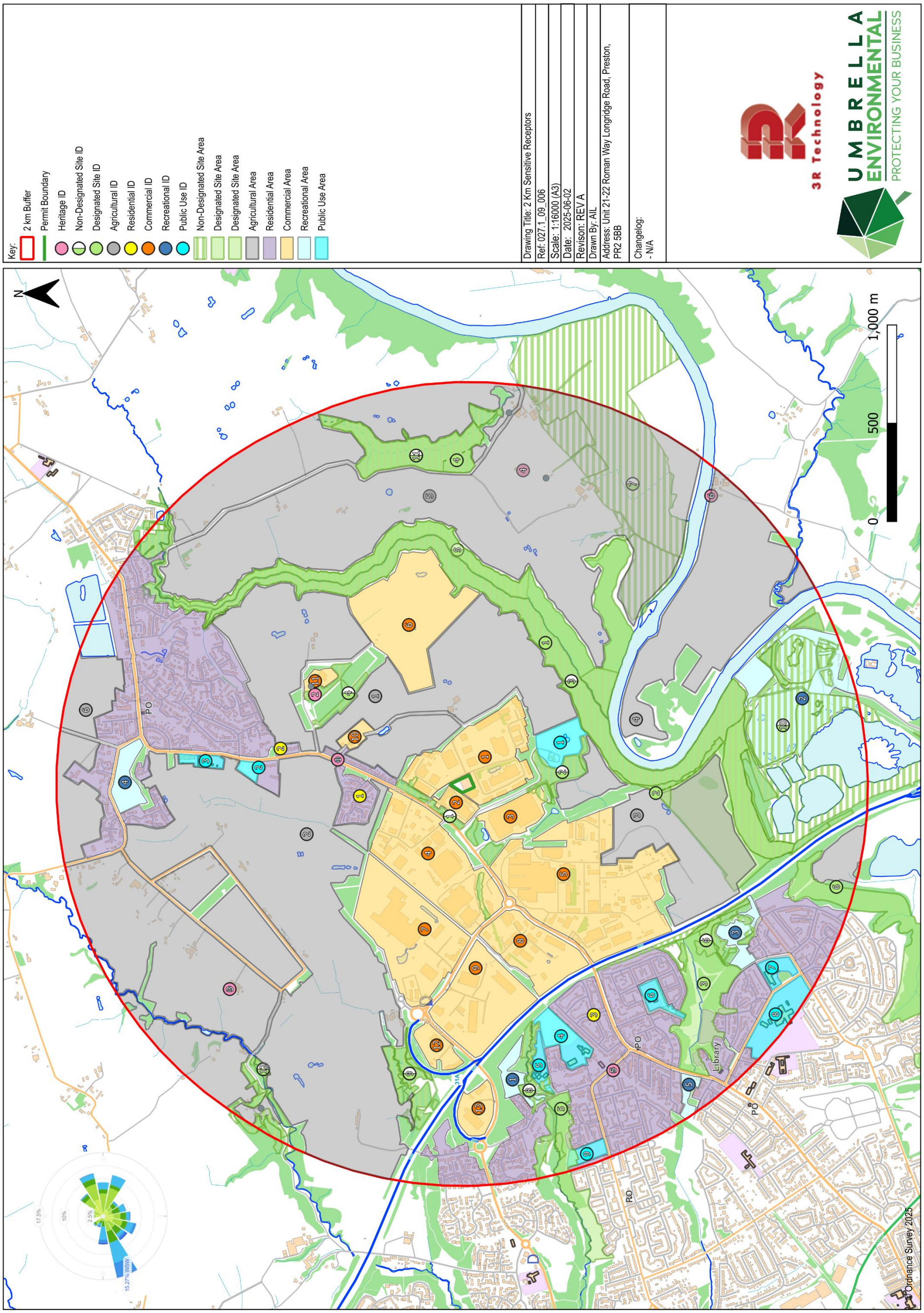
No.	Revision/Issue	Date

3R Technology UK

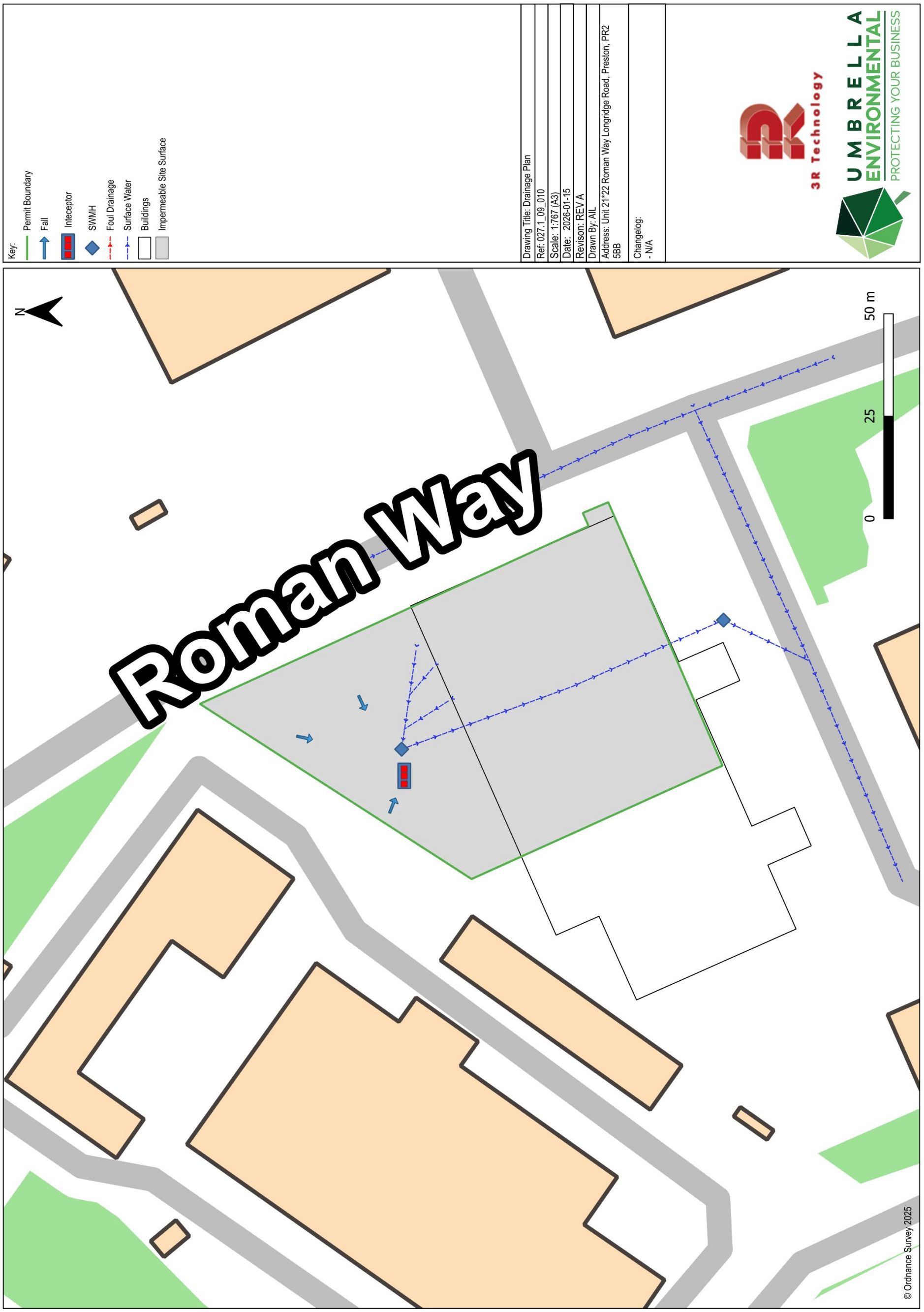
Drawing Title, Project Name and Address
Fire Protection Plan
3R Technology UK Ltd
Units 21 & 22, Roman Way Industrial Estate
Preston, Lancashire
PR2 5BB

Project: EA Permit Variation	Drg No: 02 -
Date: November 2025	
Scale:	

Drawing 3 Sensitive Receptors



Drawing 4 Drainage Plan



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