

Final V1

Powys County Council

North Powys Bulking Facility



Environmental Permit Application

Fire Prevention & Mitigation Plan

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Written by: SLR Consulting Ltd



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Acknowledgements

The content of this Report has been based upon information provided by WRAP Cymru and Powys County Council.

1.0 Introduction

1.1 Report Context

The Waste and Resource Action Programme (WRAP), on behalf of Powys County Council (PCC), has instructed SLR Consulting Limited (SLR) to prepare a Fire Prevention & Mitigation Plan (FPMP) in support of a bespoke Environmental Permit (EP) application for the North Powys Bulking Facility, Abermule Business Park, under the Environmental Permitting (England and Wales) Regulations 2016 (as amended).

This report follows the Natural Resources Wales (NRW) guidance for FPMPs¹ and details the required mitigation and management methods to prevent a fire of combustible materials stored on site.

The information contained within this FPMP aims to satisfy NRW that the following factors are equivalent or less than would be incurred if the site followed the minimum standards in the regulatory guidance:

- Likelihood of fire;
- Impact from emissions during or after a fire on the local community, critical infrastructure and the environment;
- Resources required by NRW and other emergency responders during an incident; and
- Post incident clean-up and remediation costs.

Under current fire safety legislation², a responsible person must carry out, or appoint a competent person to carry out, a suitable and sufficient Fire Risk Assessment (FRA) of the risks of fire to employees and others who may be affected by the site. The FRA will be kept on site available for review at any time.

A copy of this FPMP is stored in a secure container fixed to the exterior wall of the site office and an additional copy is stored in a secure container fixed to the security fence at the site entrance.

1.2 Site Location

1.2.1 Surrounding Land Use

The site is situated in Abermule Business Park, approximately 5km north west of Newtown and approximately 500m south of the village of Abermule. The A483 runs to the west of the site with the River Severn and Montgomery Canal located to the north. The National Grid Reference (NGR) for the site is SO 15692 94193.

The site is predominantly surrounded by open/agricultural ground and areas of woodland. Several business units are located adjacent to the site's north eastern boundary. To the north east of the site is a small residential area with the larger residential village of Abermule located to the north.

1 Fire Prevention & Mitigation Plan Guidance, August 2017

2 Regulatory Reform (Fire Safety) Order 2005

The surrounding land uses and local receptors within 1km are identified on Drawing 001, Environmental Site Setting.

A summary of the site's immediate surrounding land uses is identified in Table 1-1 below.

**Table 1-1
Surrounding Land Uses**

Boundary	Description
North	Abermule Business Park including several business units, the B4386 and the A483 roads, followed by open ground. Beyond this lies the River Severn, Montgomery Canal and the residential areas of Abermule.
East	Adjacent to the site's eastern boundary lies the railway line. This is followed by a small pond, several drains and open ground. Beyond this lies an area of ancient woodland.
South	Immediately to the south runs a railway line, surrounded by a small strip of woodland. Beyond this lies open ground.
West	The A483 road followed by open ground and farm/agricultural buildings. Beyond this runs the River Severn, Montgomery Canal and areas of ancient woodland.

The immediate surrounding land uses are described in further detail below.

1.2.2 Residential Properties

The closest residential receptors are the farmhouses associated with Bryn-y-Maes approximately 50m west and Maesderwen 215m to the north east. A larger area of residential properties is located along Court Close approximately 300m north east of the site.

1.2.3 Caravan Park

Smithy Park Country Holiday Park is situated approximately 490m north east of the site.

1.2.4 Commercial and Industrial Premises

The site is situated within Abermule Business Park with business units located adjacent to the north eastern boundary. Additional commercial/industrial premises are located approximately 290m north east and 400m south west of the site.

1.2.5 Farm/Agricultural Buildings

The closest farm/agricultural buildings to the site are located approximately 75m to the west.

1.2.6 Local Transport Network

The A483 is located approximately 30m from the site's north western boundary whilst the B4386 runs approximately 20m north of the site.

A railway line is located adjacent to the site's south eastern boundary.

There is a public footpath following the route of the River Severn located approximately 300m north of the site at its closest.

The wider local road network is illustrated on Drawing 001.

1.2.7 Educational Facilities

There is one educational facility within 1km of the site's boundary. Abermule County Primary School is located approximately 800m north east of the site.

1.2.8 Sewage Pumping Station

Adjacent to the north east of the site boundary lies a sewage pumping station.

1.2.9 Open Ground

There are areas of open ground surrounding the site in all directions. The closest area lies adjacent to the site's south west boundary.

1.2.10 Surface Water Features

The River Severn is located approximately 210m north of the site and the Montgomery Canal is situated approximately 410m north of the site. Approximately 20m south lies a drain and a small pond beyond this at 60m.

1.3 Ecology

The following information has been assessed to determine the ecological site setting:

- MAGIC Mapping Website³;
- Lle Map Browser; and
- Natural Resource Wales Designated Sites Tool⁴; and
- Ecological surveys:
 - Preliminary Ecological Survey (GLEC-0896a-01), April 2017;
 - Great Crested Newt Survey and Mitigation Plan (GLEC-0896a-01), May 2017;
 - Reptile Survey (GLEC-0946b-01), June 2017;
 - Dormouse Survey (GLEC-0946a-01), September 2017;
 - Great Crested Newt Method Statement (RT-MME-126868-03-Rev E), November 2019; and
 - Addendum Ecology Note (RT-MME-153226-01), July 2020.

1.3.1 Sites of Special Scientific Interest

The Montgomery Canal Site of Special Scientific Interest (SSSI) is located approximately 410m north of the site. The site is a designated SSSI for its open waters that support a rich assemblage of plants and aquatic invertebrates indicative of good water quality.

1.3.2 Special Area of Conservation

The Montgomery Canal, located approximately 410m north of the site, is also a Special Area of Conservation (SAC) due to the wildlife it supports.

³ <https://magic.defra.gov.uk/MagicMap>, accessed August 2020

⁴ NRW Designated Site Search, accessed August 2020

1.3.3 Ancient Woodland

There are several areas of ancient woodland located within 1km of the site's boundary. The closest area lies approximately 550m north of the site. Additional areas are situated approximately 700m east of the site.

1.3.4 Protected Species

The following species have been identified as potentially being present within 1km of the site's boundary:

- European Eel;
- Sea/Brown Trout;
- Atlantic Salmon;
- Great Crested Newts;
- Dormouse; and
- Reptiles.

The searches confirmed that there are none of the following within the 1km:

- Ramsar's;
- Special Protection Area's (SPA).
- Areas of Outstanding Natural Beauty;
- Local Nature Reserves;
- National Nature Reserves; and
- National Parks.

1.4 Cultural and Heritage

1.4.1 Listed Buildings

There are seven listed buildings within 1km of the site's boundary as illustrated on Drawing 001. The closest is Bridge 148 and Byles lock located approximately 420m north west of the site. The other listed buildings are described below:

- Bridge 149 over Montgomeryshire Canal and Lock: 590m west;
- Oak Tree Cottage: 620m north east;
- Bridge 150 over the Montgomeryshire Canal: 735m west;
- Castle Cottage: 960m north west;
- Dolforwyn Castle: 980m north west; and
- Rock Cottage: 860m east.

1.4.2 Scheduled Monuments

The only scheduled monument located within 1km of the site boundary is Dolforwyn Castle, located approximately 940m to the north west.

The search on Lle Map confirmed that the following features do not lie within 1km of the site:

- World Heritage Sites;
- Registered Battlefields; and
- Registered Parks and Gardens.

1.5 Receptors

Table 1-2 and Drawing 001 show the locations of receptors that are considered to be potentially sensitive and could reasonably be affected by the activities occurring on site.

**Table 1-2
Identified Receptors**

Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary at closest point (in metres)
Receptors located within 1km of the EP boundary as shown on Drawing 001			
Secondary B Aquifer	Secondary Aquifer	Below Ground	N/A
Abermule Business Park	Industrial/Commercial	Site located within the boundary of the business park	N/A
Business Units	Industrial/Commercial	North east	Adjacent
Open Ground	Open Ground	South west	Adjacent
Railway Line	Local Transport Network	South east	Adjacent
Sewage Pumping Station	Sewage	North east	Adjacent
B4386	Local Transport Network	North	20m
Drain	Surface Water Feature	South	20m
A483	Local Transport Network	North west	30m
Bryn-y-Maes	Residential	West	50m
Pond	Surface Water Feature	South	60m
Farm/Agricultural Buildings	Farm/Agricultural Buildings	West	75m
The River Severn	Surface Water Feature	North	210m
Maesderwen	Residential	North east	215m
Commercial and Industrial Premises	Industrial/Commercial	North east	290m
Court Close	Residential	North east	300m
Public Footpath	Local Transport Network	North	330m

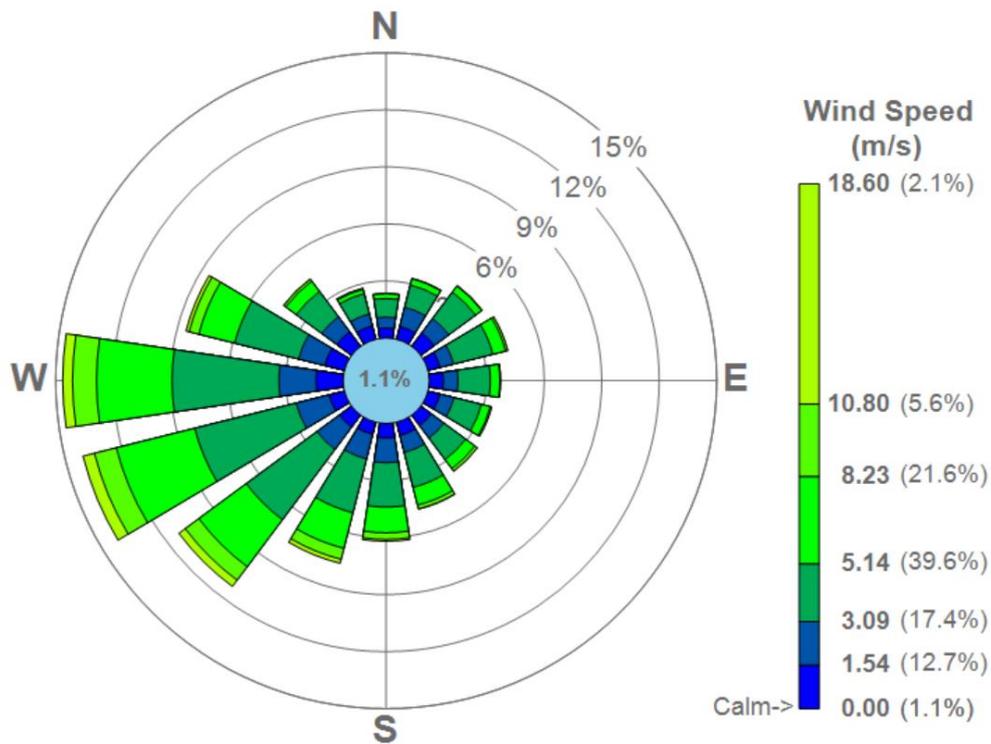
Receptor Name	Receptor Type	Direction from Site	Approximate Distance from Site Boundary at closest point (in metres)
Commercial and Industrial Premises	Industrial/Commercial	South west	400m
Montgomery Canal	Surface Water Feature	North	410m
Montgomery Canal	SSSI	North	410m
Montgomery Canal	Special Area of Conservation (SAC)	North	410m
Bridge 148 and Byles Lock	Listed Building	North west	420m
Smithy Park Country Holiday Park	Residential	North east	490m
Ancient Woodland	Ancient Woodland	North	550m
Bridge 149 over Montgomeryshire Canal and Lock	Listed Building	West	590m
Oak Tree Cottage	Listed Building	North	620m
Abermule	Residential	North east	650m
Ancient Woodland	Ancient Woodland	East	700m
Bridge 150 over the Montgomeryshire Canal	Listed Building	West	735m
Abermule County Primary School	Educational Facility	North east	800m
Rock Cottage	Listed Building	East	860m
Dolforwyn Castle	Scheduled Monument	North west	940m
Castle Cottage	Listed Building	North west	960m
Dolforwyn Castle	Listed Building	North west	980m

1.6 Windrose

There are no meteorological stations in proximity to the site which were considered to be representative of the site location. Therefore, Numerical Weather Prediction (NWP) meteorological data has been utilised and presented in Figure 1-1 below.

The windrose shows the most prominent wind direction is from the west and south west. Winds from the north, east and south are relatively infrequent. Receptors highlighted in bold in Table 1-2 above are likely to be affected in the event of a fire as they are located in the path of the prevailing wind (from the west and south west).

Figure 1-1
NWP Meteorological Data Windrose, 2015-2019



1.7 Site Type

The site is permitted to accept and process up to 22,500 tonnes per annum (tpa) of non-hazardous material arising from household and commercial premises collected by PCC.

The only treatment activity undertaken on site is the bulking up of materials. Materials received on site will be kerbside segregated during collection before arrival and therefore will not require any manual sorting or separation.

The site layout, including material storage locations have been identified on Drawing 002.

1.8 Waste Types

The EP allows for the following materials to be accepted on site which are defined as 'combustible materials' in the FPMP Guidance¹:

- Plastic;
- Metal;
- Paper;
- Cardboard;
- Rags/textiles;
- Waste Electrical and Electronic Equipment (WEEE);
- Green waste; and
- Mixed waste.

The site also accepts non-hazardous batteries which the FPMP Guidance¹ require to be considered within the FPMP.

The full waste list is included within Table S2.1 of the EP.

1.9 Site Access

The site is accessed via the B4386 to the north west which leads from the A483. The closest Fire Station is Newtown Fire Station to the south west of the site. Using Google directions and mapping⁵, the drive time is approximately 9 minutes and it is approximately 5.6 miles between the site and the Fire Station.

The local road network within the surrounding area is designed to accommodate large haulage vehicles. As such, the Fire & Rescue Service (FRS) would be able to reach the site without difficulty.

Access roads around the perimeter of the site, the bulking shed and the external storage bays each will be kept clear to allow easy access to the combustible material storage areas during an incident. The access points for vehicles are illustrated on Drawing 002.

The site's operating hours, as permitted in the planning permission, are Monday to Sunday between 07.00 and 18.00 (including bank holidays). Whilst the hours available to the site to operate are between 07.00 and 18.00 Monday to Sunday, the site will only be manned between 07.00 and 16.00 Monday to Friday.

The site would be operational over the weekend, but only to accept a small number of waste deliveries resulting from street waste collections (waste from public bins and litter picking), tipped by smaller PCC vehicles.

1.10 Compliance

The site operates its own Environmental Management System (EMS) that governs all operations at this facility.

Consequently, operational procedures for the management of the facility ensures that all appropriate pollution prevention and control techniques are delivered reliably and on an integrated basis.

This FPMP is considered to be a 'working' document that is reviewed and updated annually or as required should any of the following occur:

- A fire on site;
- Additional combustible waste streams accepted on site;
- An increase in waste volumes accepted on site;
- Development of site infrastructure (including new buildings);
- Installation of new equipment or plant;
- A change or review of legislation; or

⁵ Google Maps, Accessed in October 2020

- If the site is instructed to do so by the NRW.

The following sections of the FPMP will be reviewed and updated following the occurrence of any of the above:

- Staff training;
 - Confirm that the FP&MP is available and all staff know where it is kept;
 - Ensure staff training is reviewed and updated to enable them to carry out the procedures and measures within the FP&MP. This will include:
 - New starters – Induction training;
 - Existing staff and new starters – refresher courses, toolbox talks, on-site exercises/drills;
 - Record all training within the EMS.
- Site Monitoring
 - Site inspections before, during and after shifts to ensure:
 - No identifiable ignition sources; and
 - All equipment is operating/turned off correctly
 - Waste stacks and separation distances are in accordance with the FP&MP;
 - The monitoring and recording of waste storage times;
 - The plant and equipment servicing and maintenance records;
 - The records of daily, weekly and monthly checks; and
 - The periodic testing of the FP&MP.

It is the responsibility of the site supervisor or nominated person to maintain this FPMP and to ensure it is adhered to in the event of a fire on site.

2.0 Fire Prevention Measures

The following measures are implemented on site to minimise the causes of fires.

2.1 Fire Detection and Alarm System

The bulking shed benefits from a UKAS accredited fire detection and alarm system consisting of an Advanced fire panel and Hochiki flame detectors positioned along the two short sides of the building providing coverage for all internal material storage areas. Manual call points are installed by each pedestrian exit and heat/smoke detectors are fitted throughout the office and welfare building. Outside of operational hours the waste building will rely on flame detectors. Flame detectors were chosen as opposed to heat/smoke detectors because it was previously agreed with PCC's insurers on similar sites that flame detectors are a more sophisticated, technically advanced method of detecting fire in a WTS setting. Previously, heat/smoke detectors have been falsely triggered by dust and vehicle fumes etc. causing unnecessary nuisance and disruption. Out of hours the main waste building doors will be closed which makes it more likely that heat/smoke detectors would be falsely triggered by dust making flame detectors the most appropriate.

Each element of the system connects to a fire alarm panel. If any of the flame, heat or smoke detectors are triggered, the fire alarm system will sound leading to an evacuation of the site during operational hours. The alarm system is monitored 24 hours a day, 7 days a week (24/7). Outside of operational hours the fire alarm system is monitored by an alarm receiving station via CSL Dualcom. If a detector is triggered, the receiving station is alerted and the PCC out of hours service and the emergency services are contacted immediately. As detailed in Section 3.5.1, all out of hours staff are familiar with the site and have received training on the use of plant/machinery.

Site operatives are trained in the detection of fires and therefore can provide an additional level of management for fire detection when the site is operational.

2.2 Waste Acceptance and Rejection

The site follows strict waste acceptance and rejection procedures to ensure that no non-conforming material is accepted. The procedure to be adopted by all site operatives is included in the EMS. The procedure includes the following key points:

- The waste accepted on site has a low risk of self-combustion because it consists only of non-hazardous household waste, segregated at the kerbside. Therefore, collection operatives check the waste prior to it arriving at the site and will leave behind any visually identifiable non-conforming waste;
- Each incoming load is visually inspected as it is deposited. Particular attention will be given to the identification of batteries and non-conforming material;
- In the event that unauthorised waste is delivered to the site, the waste will be segregated and stored in a designated quarantine area within the EP boundary prior to export from the site as soon as possible, to a suitably permitted facility for recovery or disposal;
- Any non-conforming material deemed to be unsafe to move to the quarantine area will be cordoned off and site operations/traffic movements in that area will be suspended; and

- All details of the non-conformance will be recorded in the site diary and an incident report form will be completed.

2.3 Inspections and Amenity Monitoring

The site is continually manned during manned hours stated in Section 1.9 above and site operatives are asked to remain vigilant at all times and look out for signs of fire. Staff are trained in how to identify fires and fire hazards on site. Staff also receive training on the use and selection of fire extinguishers, site evacuation and shut down procedures, fire safety and all relevant emergency procedures.

All material storage areas are visually inspected throughout the day and all findings are logged in the site diary as a minimum. Should signs of self-combustion be identified such as steaming/smouldering/smoking, the stockpile will be removed to the quarantine area using a tele-handler and broken up to dissipate any heat built up in the pile. Visual checks of the affected stockpile will be increased to hourly for the remainder of the day to ensure no further hotspot development occurs.

The site is swept daily and washed down weekly using mobile plant and wash down hoses/jet wash to prevent a build-up of debris and dust on site. All escape routes, fire exits, alarm call points and fire extinguishers are kept clear from loose material at all times.

Daily and weekly monitoring is recorded in line with the requirements of the EP and detailed in the EMS.

2.4 Material Storage Arrangements

Material storage takes place within the areas illustrated on Drawing 002.

2.4.1 Bulking Shed

All material in the bulking shed, with the exception of batteries, textiles and WEEE, is stored in bays. AHP's are deposited within the dedicated bay and subsequently transferred into a dedicated sealed skip (hinged lid with rubber seals) at the end of each weekday. Food waste is stored within the food bay during the week and within the food waste skips over the weekend period. All bays are constructed from precast concrete walls coated with intumescent paint. The bay walls are tapered from 250mm to 100mm thick. The precast concrete, coated with intumescent paint, used to construct the bay walls, is produced in accordance with the current standards to ensure that appropriate standards of fire resistance are met. This specification has been established by JP Concrete and Aithon and is included in Appendix 03. The construction of the walls offers a thermal barrier and prevents thermal transfer from one bay to another. This meets the fire resistance requirement of 120 minutes as set out in the FPMP Guidance.

2.4.2 External Concrete Bays

The external concrete bays are constructed from pre-cast concrete with class A1 fire resistance in accordance with clause 4.3.4.4 of EN 13369. The precast concrete coated with intumescent paint used to construct the bays is produced in accordance with current standards to ensure that appropriate standards of fire resistance are met. The

construction of the walls offers a thermal barrier and prevents thermal transfer from one bay to another.

All bays were installed in line with the methods recommended by the manufacturer. A freeboard space of 1m is maintained at the top, sides and front of all bays on site. Lines drawn on the inside of each bay mark the maximum height and width of each stockpile ensuring the maximum volumes are adhered to. The bay walls, and bulking shed walls for wastes stored inside, offer protection from wind whipping.

All material is stored within bays except for batteries and WEEE which are stored in suitable containers or skips. AHPs are deposited within the dedicated bay and subsequently transferred into a dedicated sealed skip (hinged lid with rubber seals) at the end of each weekday. Food waste is stored within the food bay during the week and within the food waste skips over the weekend period. Table 2-1 details the storage location and how each material type is stored.

Separation distances have been calculated in accordance with guidance from WISH, WASTE 28: Reducing fire risk at waste management sites, issue 2 April 2017 and are shown on Drawing 002. The separation distances and 1m freeboard prevent the spread of fire between piles, brands or lighted material moving outside the bay walls and the bridging across or around bay walls.

The amount of material received daily will be as follows:

- Monday – Friday: 85 tonnes; and
- Saturday and Sunday: 0-100 tonnes (Only to accept a small number of waste deliveries resulting from street waste collections (waste from public bins and litter picking), tipped by smaller PCC vehicles and around bank holidays or due to missed collections).

The amount of any one material type included in Table 2-1 received or stored on site could be up to the maximum thresholds shown above. The combination and quantities of different material types will vary daily but will not exceed the maximum daily tonnage shown above. Stock capacity will be controlled in line with the 'first in, first out' concept detailed in Section 2.5 below.

The total amount of material stored on site at any one time will not exceed 425 tonnes.

The material types, maximum storage times and storage arrangements are detailed in Table 2-1 below. Non-combustible material types are shaded grey in the table below and are not subject to the FPMP guidance requirements.

Table 2-1
Material Types, Storage Time and Dimensions

Material Type	Max Storage Time	Length (m)	Width (m)	Height (m)	Max Volume (m ³)
Stored within the Bulking Facility building					
Bay 1: Absorbent Hygiene Products	Maximum of 1 week	4.5	2.5	2.0	22.5
Bay 2: Paper and Cardboard	4 days	7.34	9	3.0	191.5 ⁶
Bay 3: Cans and Plastic (including composite packaging)	5 days	6.35	9	3.0	165.7 ⁶
Bay 4: Cans and Plastic (including composite packaging)	5 days	6.35	9	3.0	165.7 ⁶
Bay 5: Residual Waste including Street Cleaning Litter and Bulky Waste	4 days	8.15	9	3.0	207 ⁶
Bay 6: Food (stored in the bay or in skips)	24 hours*	3.75	7.5	3.0	84.4
Waste stored in designated containers within the Bulking Facility building					
Non-hazardous Batteries	3 months	1.3	1.3	1.0	1.69 ⁷
WEEE	3 months	1.3	1.3	1.0	1.69 ⁷
Textiles	7 days	1.2	1	0.76	0.912
Stored externally within designated bays					
Glass	4 days	10.53	11.77	2.0	182.6 ⁶
Green Waste	4 days	7.77	7.9	3.0	184 ⁶

* Storage of food waste for 24 hours within the food waste bay during the week, and up to 72 hours within the food waste skips over the weekend period.

2.4.3 Non-Waste Materials

The site stores non-waste materials that are not covered by the FPMP Guidance but are considered due to the potential for them to cause or increase the impact of a fire on the site. The materials and their storage arrangements are shown in Table 2-2 below and illustrated on Drawing 002.

⁶ Maximum volume accounts for the slope of the stockpile and the freeboard space at the top and sides of each stockpile.

⁷ Maximum volume based on a 1,100 litre storage container.

**Table 2-2
Non-Waste Materials: Storage Arrangements**

Type	Storage Location	Storage Arrangement
Fuel Tank (white diesel)	Externally in the vehicle re-fuelling area.	Stored within a tank which is integrally banded with a leakage containment bund capable of containing at least 110% of the volume of the tank.

There is no storage of gas bottles or oil on site.

2.4.4 Seasonality of Material Acceptance

Material volumes and supply and demand of material on site are subject to seasonal variation at Christmas and during summer months. Procedures to monitor the variations are included within the EMS. Incoming material volume is measured and recorded via the weighbridge software and material transfers off site will be increased if the site appears to be reaching maximum capacity.

PCC have the following contracts in place allowing for the daily removal of material from site. Each contract allows for additional loads to be collected during periods of peak throughput:

- Glass: Recresco;
- Plastics*: Roydon;
- Aluminium cans*: Newport Recycling;
- Steel cans*: European Metal Recycling;
- Paper and cardboard: DS Smith Recycling;
- Food: Seven Trent Green Power;
- Non-recyclable residuals: Sundorne Products;
- Bulky waste: Sundorne Products;
- Street cleaning residues: Sundorne Products;
- Small WEEE**: ERP UK Ltd;
- Non-hazardous batteries**: ERP UK Ltd;
- AHP: PCC are currently working with WRAP and Welsh Government to set up collection for this waste stream;
- Composite Packaging: PCC are joining a regional agreement for the collection of this waste stream which is facilitated by WRAP's Material Brokerage with ACE Recycling; and
- Green Waste: Sundorne Products.

*Plastics and cans are transported to PCC's Brecon WTS where they are separated and baled before onward transportation for reprocessing.

**The end user outlet for small WEEE and non-hazardous is the local HWRC where they will be collected from.

Textiles, and AHPs are not currently collected. However, PCC are currently working with the Welsh Government to set up collections for these waste streams. With changes to the blueprint method of collections, textiles may be collected as part of the kerbside

collection scheme in the future. When the infrastructure is in place to do so, PCC will introduce a separate collection of AHPs from the kerbside. Prior to these materials being collected, a tendering process will be carried out which will ensure that all materials are recycled by a suitably licenced site. PCC will ensure that each contract allows for additional loads to be collected during periods of peak throughput.

2.5 Monitoring and Turning of Stacks

As detailed in this FPMP, suitably qualified site operatives carry out daily checks of the site to identify the risks and to inspect the storage bays. Visual checks on moisture content are included and any excessively wet loads will be monitored to check for 'steaming off'. If identified, the site manager will be informed, and the stockpile will be removed to the quarantine area using a tele-handler and broken up to dissipate any heat built up in the pile. Visual checks of the affected stockpile will be increased to hourly for the remainder of the day to ensure no further hotspot development occurs.

To reduce the likelihood of hotspot development within material storage areas the storage time is minimised. It should also be noted that waste is source segregated at the kerbside before acceptance on site. All material received on site is processed and removed within a maximum of 5 days, to provide contingency in the event of an emergency. However, under normal operating conditions, waste storage bays are emptied at least 4 times per week therefore, all material received on site is usually processed and removed within 2 days. Under normal operating conditions waste would only be stored on site for over 2 days if it is tipped on a Friday afternoon, once hauliers have already been that day so a load would not be taken before the end of the week. Therefore, the waste would remain on site over the weekend.

The site operates on a 'first in, first out' basis. Material is deposited on alternate sides of the material specific bay and emptied at least 4 times per week starting with the material that was accepted first. For example, material is deposited into the left side of the bay on Monday and the right side on Tuesday. It is then removed from the left side first followed by the right and the process repeats like this. Therefore, stock rotation is not required. The site supervisor is responsible for ensuring that this is followed and that no wastes are stored for longer periods than indicated in Table 2-1.

During normal operating conditions, materials are not driven over by on site plant to avoid compaction, which may contribute to a build-up of heat within the pile.

Due to the above preventative measures and monitoring techniques, monitoring equipment for detecting temperatures and moisture content is not considered necessary on site.

The only treatment of material on site is bulking up, therefore all material is stored in its largest form prior to being removed from site.

Stockpiles are visually inspected throughout the day and the findings logged within the site diary at the start and end of each shift as a minimum. The Daily Site Inspection Checks (EMS.8.05) include fire prevention specific checks.

To summarise, stockpiles are managed as follows to minimise self-combustion:

- Stockpile storage times are minimised;
- Risk factors (e.g. mixing of materials) are reduced;
- Stockpile sizes are minimised;
- Stored materials are processed, on a first in and first out basis; and
- Hotspots are detected and controlled within stockpiles by:
 - Routinely visually monitoring stockpiles; and
 - Minimising external heating during hot weather - When stationary or parked, mobile plant and all vehicles delivering or removing waste will be positioned to avoid concentrated beams of sunlight or glare reflected onto stockpiles through surfaces.

2.6 Plant and Equipment on Site

The following items of mobile plant are held on site:

- 1 x Tele-handler;
- 1 x Tele-truck;
- 1 x Electric Jet Washer; and
- 2 x Petrol Back Pack Blowers.

Daily checks are carried out on all mobile plant and any findings are recorded in the site diary. All mobile and fixed plant servicing and maintenance is carried out as per the manufacturer's instructions. Any defects that might harm the environment are entered into the incident management system.

All mobile plant is fitted with fire extinguishers as are all vehicles entering the site. All heavy mobile plant used to move waste around the site is suitable for the task and benefits from enclosed cabs.

Any mobile plant not in use is temporarily stored within the collection vehicle parking areas as illustrated on Drawing 002. The storage areas are located over 6m from any combustible material.

Plant and equipment are visually inspected prior to every use to ensure it is fit for purpose.

If additional mobile plant is required for firefighting techniques or removal of waste material it would be hired from the following contractors:

- Williams Plant Hire; or
- SDW Plant Hire and Sales.

The site includes a parking area for collection vehicles, as illustrated on Drawing 002. In total 31 vehicles will be stored on site consisting of the following vehicles:

- 1 x Articulated Lorry;
- 2 x 26 Tonne RCVs;
- 2 x 15 Tonne RCVs;

- 2 x 16 Tonne RCV;
- 8 x Large kerbside collection (recycling) vehicles;
- 3 x Small kerbside collection (recycling) vehicles;
- 1 x Caged Waste Collection Vehicle;
- 7 x Street Cleaning Caged Vans;
- 3 x Rural round collection vehicles;
- 1 x Stillage Van;
- 1 x Transit Van; and
- 3 x Small Vans.

Vans are not always parked on site. All vehicles are parked within bays to ensure that they will not affect firefighting efforts or impinge upon the movement of waste from the main storage building to the quarantine area. If the Fire Service require the vehicles to be moved, site operatives would park them on the site access road temporarily.

2.7 Training

Staff receive training in the use and selection of fire extinguishers, site evacuations, fire safety and all relevant emergency procedures.

All staff and contractors working on site are made aware of the contents of the FPMP and the procedures that are in place in the event of a fire on site during their induction. Staff training is regularly refreshed particularly in the event of non-compliance.

The procedures for fires discovered on site are provided both in the site's EMS and on-site notice boards.

PCC review the FPMP at least once a year, or in the event of any significant changes to site operations, to ensure that the contents are still relevant and that all staff members' knowledge is current and up to date. Fire evacuation drills are conducted every 6 months.

2.8 Security Measures

The site is entirely enclosed by 2.4m high metal palisade fencing. There are lockable gates at the site's access point which will be locked outside of operational hours.

Outside of operational hours, the fire alarm system will connect to the PCC out of hours service who will attend the site in the event of a fire to ensure that the FRS can access the waste storage building, in the event of an emergency. In addition to this, the FRS keep a key to the site's main entrance gates at the local fire station to ensure that they will be able to access the site, without delay, outside of operational hours. The FRS have also completed a 'walk around' of the site so are familiar with the site's layout.

The gates and fencing are inspected weekly to identify any weaknesses or defects. Any defects identified are repaired with a temporary solution within 24 hours, with a permanent fix implemented within 7 days, unless a timescale is otherwise agreed with the NRW.

The site benefits from a recorded CCTV system that provides full coverage of all external and internal areas on site and all doors to buildings are locked when not in use.

2.9 Fire Sources and Prevention Measures

Table 2-3 below provides a summary of the potential causes of fire on site and associated preventative measures and is taken from the FPMP guidance.

**Table 2-3
Fire Sources and Preventative Measures**

Cause	Preventative Measure
Arson and Vandalism	<p>The site has a number of security measures in place to limit the likelihood of arson or vandalism including:</p> <ul style="list-style-type: none"> ■ Perimeter fencing with a gated entrance which is locked if appropriate; ■ Lockable doors on the processing building and office/welfare facilities; ■ Full recorded CCTV coverage of all areas, operational 24 hours a day; ■ Intruder alarms in the waste storage building, office and welfare buildings monitored by CSL Dualcom; ■ Inspection and maintenance procedures; and ■ A visitor sign in system. <p>If an intruder alarm is triggered, the receiving station is automatically alerted and the PCC out of hours service and/or the emergency services are contacted immediately. Any damage caused by an intrusion will be identified and repaired with a temporary solution within 24 hours, with a permanent fix implemented within 7 days, unless a timescale is otherwise agreed with NRW.</p> <p>CCTV can be viewed at any time, both inside and outside of operational hours, and is available to view remotely. CCTV footage is played on screens in the office so is in view of and can be monitored by all staff working in the site office. If an intruder or fire alarm is triggered an alert will be sent to the management centre (Delta). During operational hours, Delta will contact the site directly to ensure that they are aware of the incident. This will prompt on site staff to monitor the CCTV footage. Outside of operational hours, Delta will contact the site and the PCC out of hours line which is connected to the relevant Duty Officer for that shift. The Duty Officer has remote access to the CCTV footage and will monitor the CCTV footage at the time of the incident.</p> <p>The CCTV footage will provide full coverage of all external areas of the site and the waste transfer building. Any intruders, incidents or issues will be reported to site management and/or the emergency services immediately. If any reports of intruders are received, the police will be informed.</p>

Cause	Preventative Measure
	<p>CCTV recordings will be assessed by site management following an incident to ascertain how it occurred and how to further prevent them in the future. This will be recorded in the Daily Site Log. Records maintained will include inspections and maintenance of doors and locks, breaches of security, investigations and actions taken.</p> <p>Section 2.8 describes how safe access to the site for the FRS and other emergency responders is achieved outside of operational hours.</p>
Ignition Sources	<p>All ignition sources are kept a minimum of 6m away from the storage of combustible and flammable materials. No naked flames, space heaters, furnaces or incinerators are permitted on site.</p>
Site Visitors and Contractors	<p>Site safety and fire prevention procedures are explained to all site visitors and contractors. Site visitors are accompanied at all times by a site operative.</p>
Self-Combustion	<p>Effective stock management limits the likelihood of the self-combustion of materials stored on site. As such, the site has waste acceptance and stock management procedures which are upheld by all employees at the site, as detailed in Section 2.2.</p> <p>The majority of material accepted on site originates at households where it will have been stored for short periods of time before collection. The risk of self-combustion is significantly removed due to the short overall storage time of material.</p> <p>Only material included in Table S2.1 of the EP are accepted at the site.</p> <p>Non-waste materials that pose a risk of self-combustion are stored as indicated in Table 2.2.</p>
Plant or equipment failure	<p>Plant and equipment are maintained in accordance with the manufacturer's recommendations. The details of the maintenance and inspection procedure are contained within the EMS (<i>Ref: EMS.S8.02 - Maintenance Procedure</i>). All new plant on site is fitted with telematics, which automatically highlights any faults.</p> <p>Plant and equipment are operated in accordance with the manufacturer's instruction manuals. Instruction manuals for plant and equipment are held either on site or online if a hardcopy is not available from the manufacturer.</p> <p>No industrial heaters are utilised on site. A low-pressure hot water system with associated radiators on a timer system are provided in the office and welfare areas. There is no heating provided in the main building.</p> <p>Induction training and refresher training is provided to staff in the safe operation of plant and equipment relevant to their role, in accordance with the EMS.</p> <p>Inspection of plant and equipment is undertaken on a daily basis to check for faults and ensure appropriate safeguards are in place. The</p>

Cause	Preventative Measure
	<p>procedure also covers general housekeeping and cleaning of plant and all equipment on site.</p> <p>Storage of mobile plant is detailed in Section 2.6 above.</p> <p>In the event of a failure or suspected fault with an item of plant or piece of equipment, the operator will ensure that the equipment is shut off in a safe manner and not used until the equipment can be repaired or replaced.</p>
Electrical faults (including damaged or exposed electrical cables)	<p>All electrics on site are fully certified by a qualified electrician and regular safety inspections are carried out in accordance with the EMS. Records of faults and/or daily electrical maintenance are recorded in the site diary.</p> <p>Annual PAT testing is carried out on all electrical devices.</p>
Discarded Smoking materials	<p>No smoking is permitted on site.</p>
Hot works	<p>All hot works are undertaken under a permit to work system which includes a 60-minute fire watch by a competent person at the end of the works. No hot works will be carried out within the last 2 hours of the working day. No hot works are undertaken by staff unless they are trained and have the relevant permit to work.</p> <p>All hot works are conducted in a cleared area of the site at least 6m from any combustible materials. A site operative performs a continuous fire watch during the hot work and for a minimum of 60 minutes after the work is completed.</p>
Hot Exhausts	<p>Vehicles are turned off when not in use. Consideration is given to the high-risk time for hot exhausts (one hour after switch off when dust can settle on hot surfaces) and wherever possible vehicles are given time to cool down prior to site staff leaving site at the end of a shift. All plant is inspected and undergoes a visual fire check twice daily, at the start and end of the working day. Visual fire check inspections are logged throughout the day on the 'daily site inspection' sheet. Any issues/concerns will be reported to the site supervisor who will implement appropriate remedial actions which will be recorded on the same 'daily site inspection' sheet. All plant is parked outside, a minimum of 6m from material storage, minimising potential for exhausts to result in ignition of materials when left unattended following the end of the shift.</p>
Open Burning	<p>Burning is not permitted on site.</p>
Reactions between incompatible materials	<p>To ensure that incompatible materials or reactions do not take place, material is offloaded at the site supervised by suitably qualified site operatives.</p> <p>Only vehicles that are accompanied by the correct documentation are accepted onto site. Material undergoes a visual inspection at the point of deposit into the building.</p>

Cause	Preventative Measure
	Tanks containing fuel are constructed so that any leaks/spillages are contained. Tanks are integrally bunded with a leakage containment bund capable of containing at least 110% of the volume of the tank. Bunds are impermeable and resistant to the stored materials.
Neighbouring sites	<p>The site is located within a predominately rural area with no immediate neighbours that pose a risk of fire.</p> <p>Employees remain aware at all times and report activities or behaviour which could represent a fire risk from nearby sites to the site supervisor. The manager will then take action as appropriate to address the risk.</p>
Incompatible Wastes (Including reactions between incompatible materials and batteries)	<p>All materials arriving onsite are checked in accordance with the waste acceptance procedure, details of which are included within Section 2.2 of this FPMP, to ensure no non-conforming materials are accepted at the site.</p> <p>In the event that unauthorised waste is delivered to the site, the waste will be segregated and stored in a designated quarantine area within the permit boundary prior to export from site to a suitably permitted facility for recovery or disposal.</p> <p>Any identified batteries are safely handpicked and placed into the specialised battery storage box supplied by the off taker. Different types of batteries will not be mixed.</p> <p>Spillages and leakages of fuels and oils will be handled in accordance with the Accident Management Plan.</p>
Hot loads deposited at site	<p>No burning, reactive / reacting or visibly hot (producing steam or heat) loads are accepted on site. In accordance with the waste acceptance procedure detailed within Section 2.2 of this FPMP, each load is visually inspected at the site entrance to ensure compatibility with accompanying delivery notes, therefore minimising prohibited materials and the acceptance of hot loads.</p> <p>Instructions are given to customers to ensure no hot loads are accepted on site.</p> <p>Should a hot load be deposited on site, it will be isolated immediately within the fire management quarantine area and attempts will be made to cool the waste (either with water or extinguisher as appropriate) and the load will be removed to a suitably licenced facility for disposal.</p>
Build-up of loose combustible waste, dust and fluff	<p>As outlined in Section 2.3, the site undergoes daily cleaning using brooms, and weekly washdowns using hoses/jet wash to prevent a build-up of debris and dust on site.</p> <p>PCC adopt good housekeeping measures on site.</p>

Cause	Preventative Measure
"Tramp" metal	Materials are kerbside segregated before acceptance on site and the waste acceptance procedures outlined in Section 2.2 ensure a low risk of contamination.

3.0 Fire Management

3.1 Containing and Mitigating Fires

A fixed fire suppression system, such as a deluge or high-level sprinkler system is not considered to be appropriate or Best Available Technique (BAT) for buildings that are open and have very high ceilings.

The nature of the on-site building is that it has very high ceilings with the roller shutter doors opened periodically throughout the day.

Because such systems rely on being activated by heat sensors located in the roof of a building, they need to detect a temperature well above 50 degrees to be activated. However, in large buildings with high ceilings, a 'cold air plug' would typically develop at ceiling level during the early stages of a fire due to cold air becoming trapped above the rising hot air. This means that the system is only likely to be activated in this type of building once a fire has become deep seated.

Therefore, the most effective way of minimising the time it would take to extinguish a fire in this type of building, is to focus on early detection and monitoring of material piles. This allows any potential fire to be detected and managed at the earliest possible stage when on-site plant can be utilised to move material and isolate a fire so that it can be suppressed and extinguished quickly using extinguishers.

As discussed in Section 2.1, the site benefits from an extensive series of detection systems. The hours available to the site to operate are between 07.00 and 18.00 Monday to Sunday. The site will be manned between 07.00 and 16.00 Monday to Friday. Weekend operating hours will vary and only arise in exceptional circumstances. Therefore, fires will be detected early by the trained employees or the automatic detection system in and out of operational hours.

The local FRS will assume full control for the approach to suppression/extinguishing of any fire once it is in attendance at the site.

3.1.1 Manual Fire Suppression

The locations of all fire extinguishers on site are illustrated on Drawing 002. Foam, carbon dioxide and powder extinguishers are provided across the site. The extinguishers are inspected annually.

The bulking shed is constructed to the appropriate standards. Should fire compromise the stability or integrity, the buildings and site will be immediately evacuated.

3.1.2 Site Plans

Up-to-date site plans are on display in the site office and detail:

- Site layout;
- Material storage arrangements;
- Firefighting equipment locations (Pollution Control Equipment); and
- Personal Protection Equipment (PPE).

In addition, all procedures relating to emergency procedures on site, including fires, are held within the site office and can be easily found and are readily available.

3.2 Managing Emissions to Air, Land and Water

PCC recognise that a fire at the site could impact on the sensitive receptors identified in Table 1-2 above. Receptors highlighted in bold in Table 1-2 are likely to be affected in the event of a fire as they are located in the path of the prevailing wind (from the west and south west). Emissions from a fire include smoke, ash, soot and contaminated firewater.

3.2.1 *Minimising Fire Combustion Emissions (Smoke, Ash and Soot)*

As detailed in Section 2.1, the building is alarmed and has a fire detector connected to a 24hr alarm receiving centre ensuring rapid detection of a fire and minimisation of damage and emissions. The fire will likely be contained within the building and the waste is classified as non-hazardous.

The bulking shed has roller shutter doors to aid fire-fighting by enabling the clearance of any smoke. This provides multiple access points to the building for the FRS and enables rapid extinguishing of a fire therefore minimising emissions of smoke. Local residents, Traffic Wales and Network Rail will be notified of a fire following the procedure in Section 3.4 below.

3.2.2 *Minimising Fire-fighting Emissions (Contaminated Firewater)*

The site has an engineered firewater containment system and associated procedures as detailed in Section 3.6.3 below. Firewater containment has been 3D modelled to ensure there are no accidental emissions from the site.

3.2.3 *Emergency Response*

As detailed in Section 3.6.3, all firewater will be contained within the site via 92.485mm high site kerbing and permanent bund features comprised of a 100mm high containment wall along the southern boundary and a 75mm bund at the site entrance. All penstock valves will be closed to prevent the release of firewater to surface or foul water. The closure of the penstock valves is completed automatically when the fire alarm is activated without the need to be on site, allowing the penstock valves to be closed outside of operational hours.

3.3 Fire Drills on Site

A fire drill is carried out and documented on a 6-monthly basis.

This FPMP is implemented across the site and all fire management equipment is tested on an annual basis.

If any issues are found during these fire drills, the FPMP will be updated or amended accordingly and site operatives will be re-trained.

Regular checks are made of all escape routes and equipment.

3.4 Emergency Contact Details

An emergency contact sheet, including contact details for local receptors and transport networks, is included in Appendix 01. In the event of a fire the following procedure will be followed:

- The site supervisor or individual nominated by the site supervisor will locate the emergency contact list included in Appendix 01;
- In the event of a large fire, 999 will be dialled first;
- The site supervisor or individual nominated by the site supervisor will phone Traffic Wales, North and Mid Wales Trunk Road Agent, Network Rail and each of the local receptors, included in Appendix 01, followed by the sewage service if appropriate to do so; and
- Finally, the NRW incident hotline will be dialled once the situation is under control.

PCC will use its website and social media channels to further communicate information and developments regarding the fire event to local residents. PCC will also liaise with the community council and County Councillor, in addition to the internal Highways department, North and Mid Wales Trunk Road Agent and Network Rail.

3.5 Firefighting Strategy and Procedures

3.5.1 Firefighting Strategy

The site benefits from a temporary fire management quarantine area as outlined in Section 3.8.2. There is sufficient space within the operational areas on site to move burning waste from the bulking shed to the temporary fire management quarantine area and submerge it into a skip of water and/or douse burning/smouldering waste and/or separate unburnt waste. The decision on firefighting tactics and the use of the temporary fire management quarantine area is at the discretion of the FRS.

Mobile plant required to move material from within bays and to move skips/containers is available at all times. All heavy mobile plant used to move waste around the site is suitable for the task and benefits from enclosed cabs. Additional mobile plant could be hired from Williams Plant Hire and/or SDW Plant Hire and Sales if required.

Outside of operational hours, the fire alarm on site is connected to PCC's out of hours service. The out of hours officer will direct the call to the relevant staff who are on call. All staff who work under the out of hours service have received an induction on the site, its operations, and its layout. Out of hours staff are also trained to use the plant/machinery, as necessary, to move material from within bays and to move skips/containers in the event of a fire to prevent the fire spreading.

As detailed in Section 2.7, site operatives are trained in the use of fire extinguishers, fire safety and procedures for moving material to the quarantine area. A trained Fire Marshal is always present on site during operational hours.

Depending on the severity and location of the fire, the following techniques may be used:

- Applying water to cool unburnt material within a bay or a skip and other nearby hazards; and

- If safe to do so, separating unburnt material from a bay or skip using a tele-handler and placing it in the temporary fire management quarantine area thereby reducing the amount of material available to be burnt.

3.5.2 *Firefighting Procedures*

Small Fire

A small fire or area of smouldering waste will be dealt with as follows:

- A fire or area of smouldering waste will not be dealt with in-situ, mobile plant will be utilised to pull the affected waste into the open and away from any further waste that could become a light on contact; and
- If safe to do so, the fire the waste will extinguished immediately⁸ utilising the fire extinguishers or hose reels.

Once a small fire is dealt with the remaining area will be visually inspected immediately by site operatives for any signs that a fire / smouldering waste still remains. The same procedure, detailed in this section, will be implemented should this be the case.

Uncontainable Small Fire or a Large Fire

The following procedure is in place on site that will be followed in the event of a small fire becoming uncontainable or in the event of a major fire onsite:

- The site supervisor and FRS will be contacted immediately. The local sewerage service and NRW will be notified at the first opportune moment;
- The site and buildings will be evacuated; and
- The penstock valves will be closed. Outside of operational hours, the PCC out of hours service will be notified of the fire by the fire alarm receiving station. Both during and outside of operational hours the penstock valves will be closed automatically, when the fire alarm is activated, before firefighting commences on site. The valves can also be closed manually if required.

3.5.3 *Additional Procedural Considerations*

The following techniques will be considered in addition to extinguishing a fire using water:

- Reducing the amount of firewater run-off generated by using sprays and fogs rather than jets (this is the responsibility of the FRS); and
- Recycling firewater will occur if it is not hazardous and it is possible to reuse.

Site operatives will work in conjunction with, and take instruction from, the FRS if they deem recycling firewater to be a possibility.

The following parameters will be considered when determining which firefighting options/strategy to implement in the event of a fire:

⁸ Should a single item of the waste stream be alight, and the fire is well contained, then the waste will be doused via use of an extinguisher/hose reel as it is pulled from the waste pile. The burned / fire- damaged portion will then be removed to the quarantine area and the remaining waste returned to the pile.

- The scale and nature of the environmental hazards on site and the activities that take place on it;
- The risks posed to people, the environment and property;
- The types of materials currently stored on site, in what form they are stored in and the length of time needed to extinguish a fire involving them; and
- The availability of firewater containment facilities.

3.6 Fire Waters

3.6.1 Site Drainage

The main details of the site's drainage system are illustrated on Drawing 003 and described below.

The site operates under a discharge consent to public sewer (009188V). The external storage bays, the vehicle wash down area and the internal bulking shed all connect to the foul pipeline. The external storage bays and the vehicle wash down drain to a washdown silt separator fitted with an alarm. All foul drainage flows into a class one full retention oil separator before entering an attenuation tank connected to the public sewer.

All surface water collected from the building roofs and from the external yard area passes through a class one full retention oil interceptor before entering one of two soakaways on site. Penstock valves, as described in Section 3.6.3 below prevent the release of firewater run off from going to the soakaways.

3.6.2 Firewater Calculations

Based upon the FPMP guidance firewater calculations a 300m³ stack of combustible material will require an average water supply of at least 2,000 litres a minute for a minimum of 3 hours. This equates to approximately 360m³ of water. Based on this calculation and the largest stockpile within each area of the site, the water requirements are as follows:

- Bulking Shed (Residual Waste including Street Cleaning Litter and Bulky Waste – 207m³): 249,642 litres (249m³)⁹; and
- External Storage Bay (Green Waste – 184m³)¹⁰: 221,904 litres (222m³).

Primary Water Source

The primary source of water on site is a 250,000 litre water tank located in the north western area of the site, as illustrated on Drawing 002. The water tank alone will provide sufficient water to put out the largest stockpile (207m³ stockpile requires a minimum of 249,642 litres).

Secondary Water Source

⁹ Based on a 207m³ bay being the largest combustible pile in the bulking shed and it requiring 6.7 litres of water per cubic metre to extinguish. $6.7 * 207 = 1386.9$ litres/minute. $1386.9 * 180 = 249,642$.

¹⁰ Based on a 184m³ bay being the largest combustible pile in the external storage area and it requiring 6.7 litres of water per cubic metre to extinguish. $6.7 * 184 = 1232.8$ litres/minute. $1232.8 * 221,904$ litres.

In addition, the site has two hydrants as shown on Drawing 002. The hydrants are as follows:

- Hydrant 1: located at the entrance to the site, 13 bar with estimated flow rate of 1,920 litres/minute. The hydrant has been adopted by Mid and West Wales Fire Service; and
- Hydrant 2: private hydrant located within the locked site. 3 bar with confirmed flow rate of 480 litres/minute. Adopted as a private hydrant by Mid and West Wales Fire Service and maintained by PCC.

Therefore, the site has a combined flow rate of 2,400 litres/minute from the two hydrants, if they were ever needed.

In the event of a fire PCC and the FRS have permission to use water from the fire hydrants as they are registered and adopted by Mid and West Wales Fire Service as confirmed by Dylan Walters from Mid and West Wales Fire Service, in Appendix 4.

3.6.3 Fire Water Containment

The containment capacity of the site has been modelled using 'ACAD Civil 3D' software based on the required firewater for material stored within the bulking shed and the external green waste bay as shown in Section 3.6.2 above. The 3D survey of the site creates a 3D model of the existing surface including all the features of the site such as kerbs, ramps and walls. As flooding water is level, a second model is created which is a flat surface. The flat surface and the 3D model of the existing surface are compared, and the software calculates a volume between the two surfaces. By adjusting the flat surface up or down the volume matching the anticipated volume of firewater can be found. The results of the modelling and the flooded area on site are indicated in Figure 3-1 below.

The primary means of containment on site is provided by the 92.485mm high site perimeter kerbing, a 100mm high containment wall constructed along the southern boundary of the site and a 75mm ramp at the entrance to the site. The natural topography of the site falls towards the southern boundary therefore all firewater would fall in that direction and be contained by the wall.

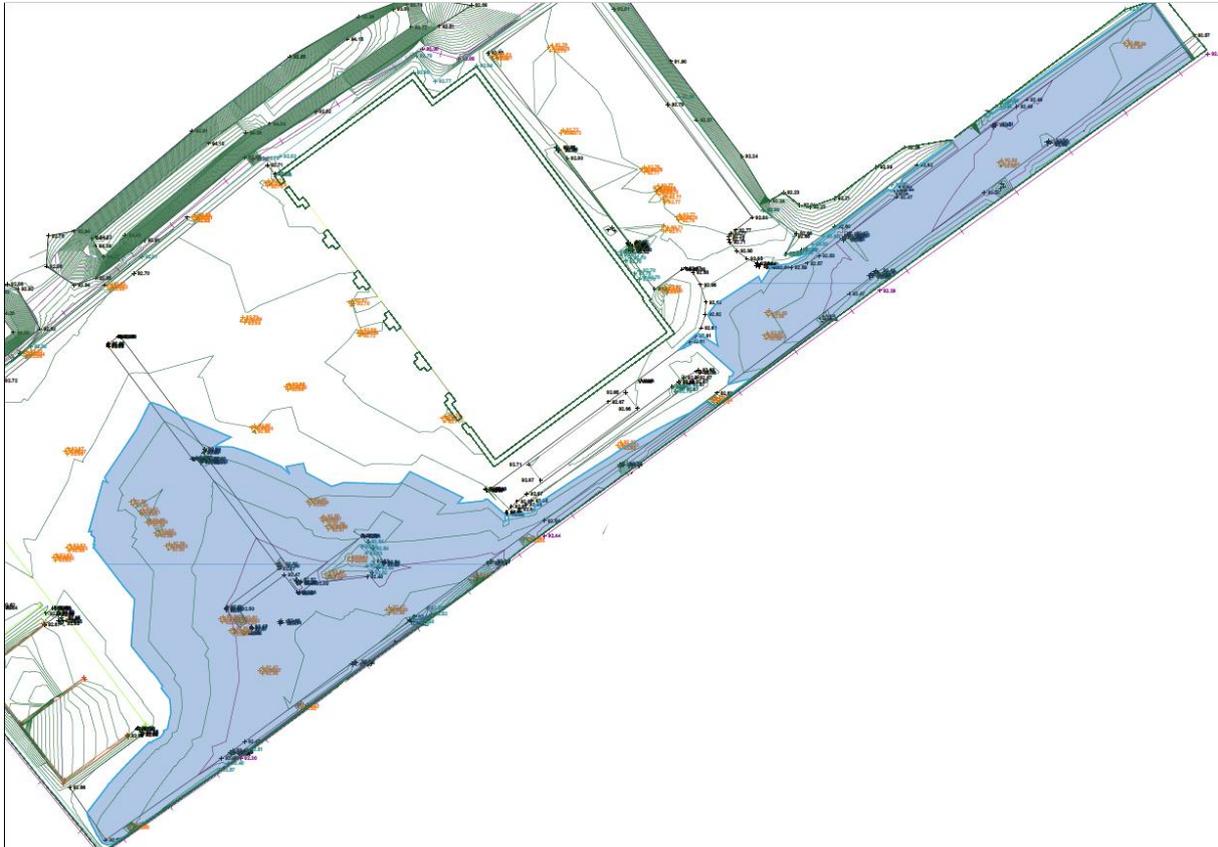
In the event of a fire, all penstock valves will be closed prior to the commencement of firefighting activities to prevent the release of firewater outside the site through the surface or foul water drainage systems. The penstock valves are closed automatically when the fire alarm is activated without the need to be on site or remote operations, therefore, allowing penstock valves to be closed outside of operational hours. All containment features are illustrated on Drawing 003.

Any firewater contained within the site will be removed via tanker to a suitably authorised facility. The following local contractors could be used to removed fire water from the site and within the drainage system:

- Metrorod; and
- Mayglothing Waste Ltd.

Figure 3-1 illustrates the containment capacity of the site. The volume of water shown is 259,000 litres (259m³), therefore the site is capable of containing the worst-case firewater requirements calculated in Section 3.5.2 above.

Figure 3-1
Modelled Firewater Containment



3.7 Management after a Fire Event

After a fire event, the following procedure will be implemented depending on the severity of the fire:

- A small and containable fire that can be safely dealt with in-house using suitably trained staff and firefighting equipment located on site: The fire will be recorded in the site diary, including the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPMP and the site's EMS as required.
- A larger fire that requires the presence of the FRS: If the site operatives have been told to evacuate or cease operations by the NRW and/or FRS, the site will wait until told it is safe to re-enter site and resume operations. All incoming material will be diverted to the authorised facilities shown below and no material collections will take place during the fire event. Any closure of the site will be followed by informing customers and the regulatory authorities. The fire will be recorded in the Daily Site Log and in an incident report and will detail the causes of the fire and methods used to manage the fire. An assessment will be carried out to determine whether further

mitigation measures could have prevented the fire. Any outcomes to be implemented onsite will be incorporated within this FPMP and the site's EMS as required.

Should damage be sufficient to prevent the site from being able to store material, the site will cease accepting material and will divert to Rhayader Waste Transfer Station (EPR/DB3930AB). However, Abermule is the only PCC site permitted to accept textiles, AHPs, WEEE and batteries. Therefore, textiles, WEEE and batteries will be diverted to PCC HWRCs which have suitable containers to store these materials and AHPs will be added to the residual waste which Rhayader is currently permitted to accept.

The site supervisor will liaise with NRW to determine a plan-of-action to introduce normal operations at the site, and the timescales involved to achieve this.

3.8 Fire Damaged Material

A visual assessment will be carried out by the site supervisor to determine whether the material can remain on site and bulked up. Wherever possible, unburnt materials will be separated from fire damaged piles. If material piles have become mixed, then it is likely that the material will be removed from site to a suitably permitted facility.

3.8.1 Clearing and Decontaminating the Site and Steps to Becoming Operational Again

Site Management will determine what decontamination and cleaning measures will be required to be carried out proportionately to the impact caused by the fire. Measures to be implemented include (but are not limited to):

- Hose down affected areas;
- Sweep/brush up any loose burnt material or contaminated firewater ready for removal from site; and
- Assess any damage to site infrastructure as detailed below.

After a significant incident, an assessment will be undertaken by a suitably qualified individual. Technically competent managers and/or engineers and/or the insurance company will assess the degree of damage caused by a fire and the residual risk from fire damaged material, emissions or equipment. Burnt material will be kept on site for a short period of time if required for a subsequent internal investigation. Following this, the material will be transferred off site to a suitably licensed disposal facility.

The period of time taken to restore the site or affected part of the site to operational status will be determined by the nature and extent of the fire. If the affected area does not impact the rest of the site's operation, operations will re-start as and when appropriate.

3.8.2 Quarantine Area

The site benefits from a dedicated temporary fire management quarantine area, that can hold at least 50% of the largest stockpile on site, and a non-conforming waste quarantine area.

Non-Conforming Waste Quarantine Area

The non-conforming waste quarantine area will only be used to store non-conforming waste temporarily and will not be used for fire management. Therefore, no containment

measures for firewater are required. Any non-conforming waste will be segregated and stored in the designated non-conforming quarantine area within the EP boundary, prior to export from site to a suitably permitted facility for recovery or disposal. The location of the non-conforming waste quarantine area is illustrated on Drawing 002.

Temporary Fire Management Quarantine Area

The site benefits from a temporary fire management quarantine area that can hold at least 50% of the largest stockpile on site. This area will not remain clear at all times, but site operatives will clear this area and make it available to the FRS in the event of a fire. In the event of a fire, vehicles and mobile plant will be moved from the parking area by site operatives as described in section 2.6.

The location of the temporary fire management quarantine area is illustrated on Drawing 002 and detailed in Table 3-1 below.

**Table 3-1
Quarantine Area Dimensions**

Quarantine Area	Primary Use	Length (m)	Width (m)	Height (m)	Volume (m³)
Fire Prevention	Burning material to be submerged into a skip of water, and/or dousing of burning/smouldering waste and/or separation of unburnt waste (at the discretion of the FRS).	6.0	6.0	3	108

The quarantine area will always have a separation distance of at least 6m on all sides. The largest stockpile on site is 207m³ therefore the temporary fire management quarantine area is able to hold at least 50% of the largest stockpile.

The non-conforming quarantine area will not be used for fire management. A temporary fire management quarantine area is located in front of the bulking shed. This area will be suitable for use by the FRS to remove burning waste from the bulking shed and submerge it into a skip of water and/or douse burning/smouldering waste and/or separate unburnt waste. The decision on firefighting tactics and the use of the temporary fire management quarantine area is at the discretion of the FRS. The release of firewater outside of the site from the temporary fire management quarantine area would be prevented by the existing containment arrangement. The placement of the temporary fire management quarantine area in this location provides an open area of the site to allow for the prompt and direct removal of burning materials from the bulking shed and to allow access by the FRS.

Site Management will instruct all site operatives when and how any hot loads delivered accidentally to site, will be moved to the non-conforming waste quarantine area and how

any burning materials or unburnt will be moved to the temporary quarantine area. The following procedure will be implemented on site:

- When it is safe to do so, the material will be moved by on site plant to the quarantine area;
- The movement of the material will be overseen at all times by the site supervisor to minimise any spillages and ensure the area is not overfilled; and
- To limit any spillages, plant will not be overfilled when moving the material.

All site operatives will be trained to follow this FPMP and all procedures listed in the above sections.

Appendix 01: Emergency Contact Sheet

Fire Service (in the event of a major fire)

- 999 or 112

Natural Resources Wales Hotline (24 hour service)

- 0300 065 3000

Local Receptors (with associated directions)

- SDW Plant Hire & Sales (West): 01686 630270;
- Morris Rogers & Sons Abermule Ltd (North-East): 01686 630327;
- Gareth Pugh Steel Framed Buildings North-East): 01686 630500;
- The Abermule (North-East): 01686 630117;
- Smithy Park (North-East): 01686 630657;
- Abermule Mobile Service Post Office (North-East): 01686 650516; and
- Abermule County Primary School (North-East): 01686 630240.

Sewage Service – Hafren Dyfrdwy Emergency Number (24-hour service)

- 0800 085 8033

Traffic Wales (Report an incident that could impact the road network)

- 0300 123 1213

Network Rail (Report an incident that could impact the railway)

- 03457 11 41 41 (24/7 Emergency Line)

North and Mid Wales Trunk Road Agent (Report urgent issues such as road traffic incidents or hazards)

- 0300 123 1213

North Powys Bulking Facility

- Mark Jones: 07920138363 (Emergency Key Holder); and
- Mark Francis: 07403271997 (Emergency Key Holder)

Appendix 02: Drawings

Drawing 001

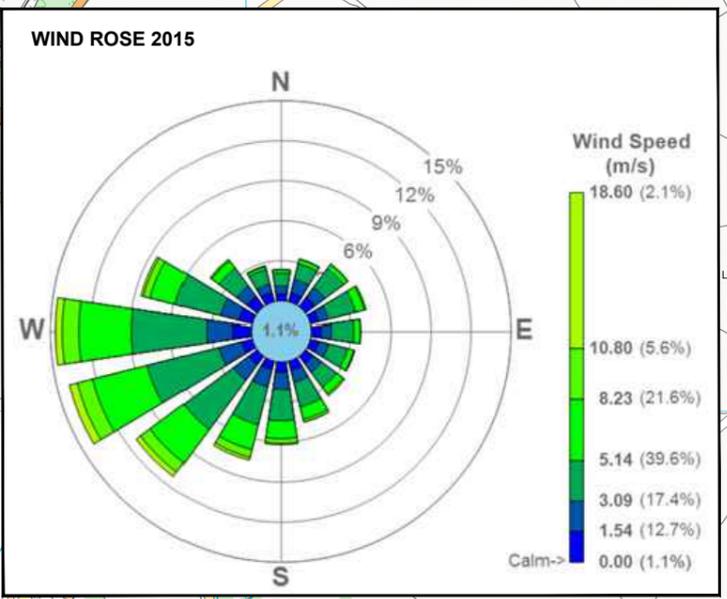
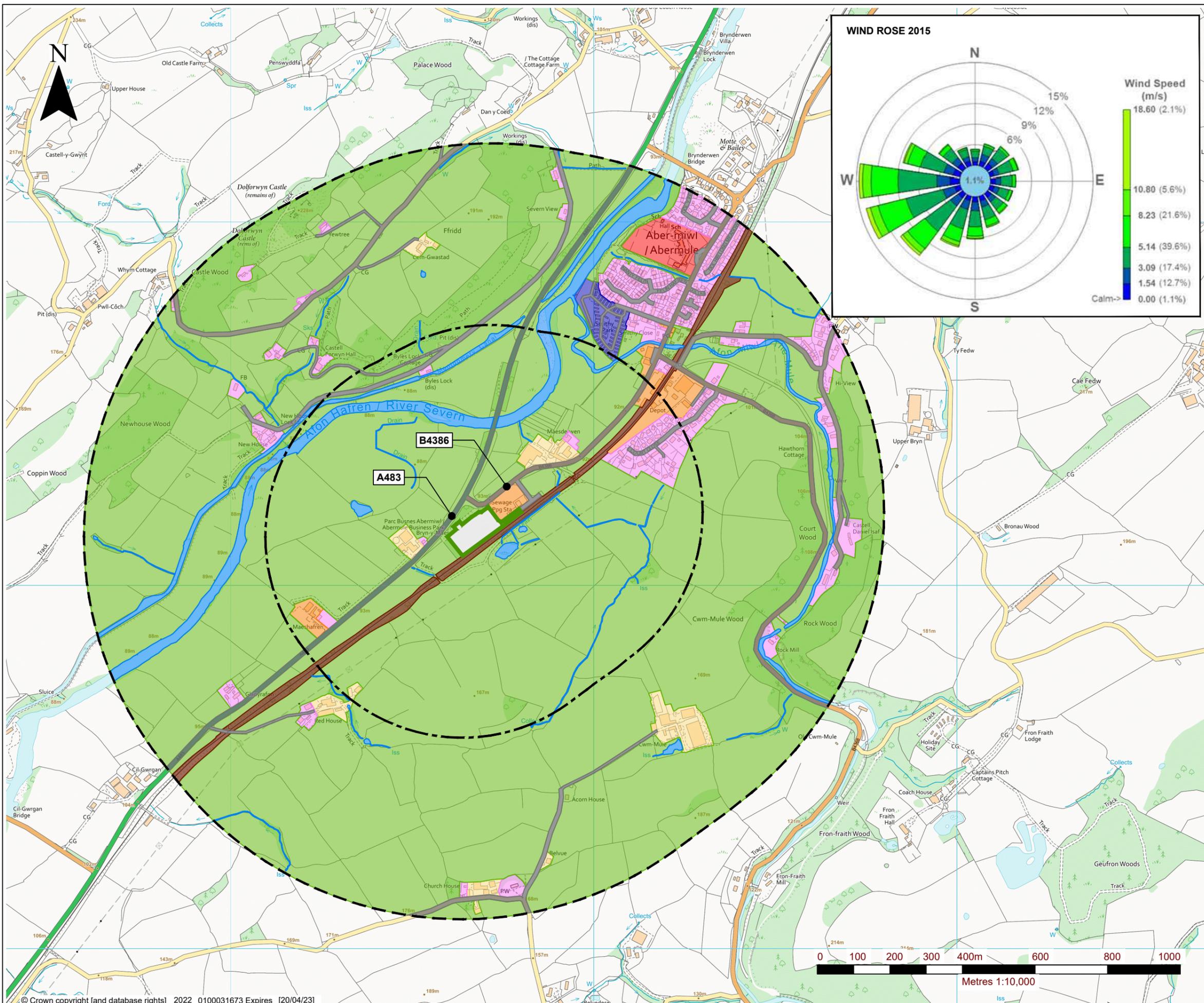
Drawing 002

Drawing 003

Environmental Site Setting

Site Layout and Fire Management

Site Drainage



- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - 500m OFFSET BOUNDARY
 - 1km OFFSET BOUNDARY
 - COMMERCIAL / INDUSTRIAL
 - RESIDENTIAL
 - LOCAL ROAD NETWORK
 - OPEN WATER / DITCHES
 - WOODLAND / OPEN GROUND / AGRICULTURAL
 - EDUCATIONAL
 - FARM / AGRICULTURAL BUILDING
 - CARAVAN PARK
 - RAILWAY LINE



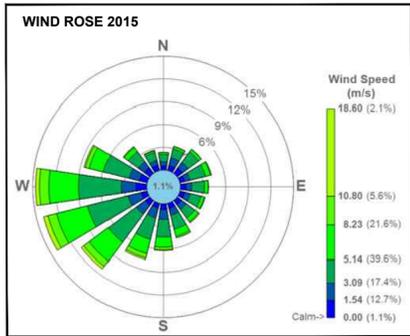
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THE BREW HOUSE
JACOB STREET
BRISTOL, BS2 0EQ
T: 01179 064280
www.slrconsulting.com

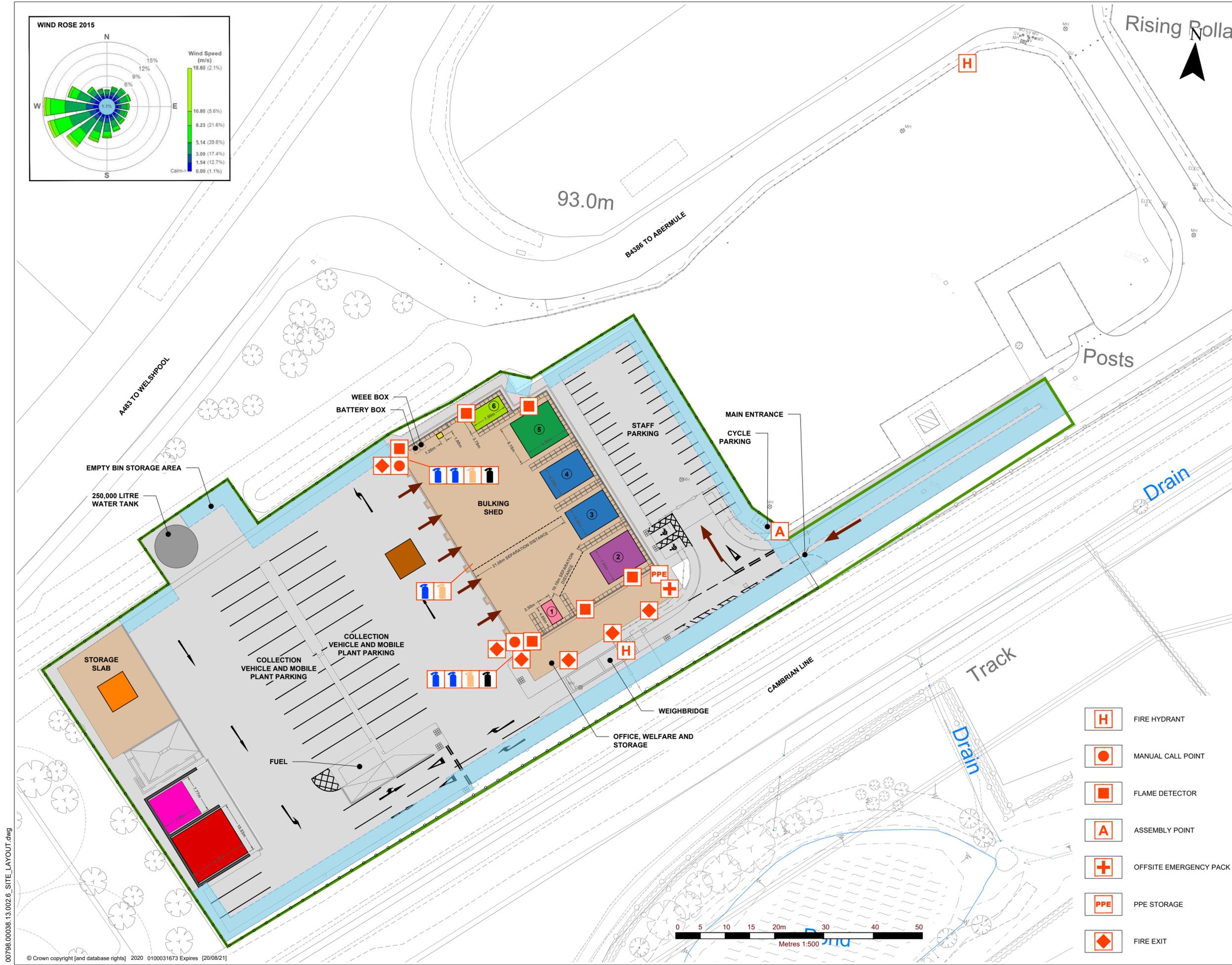
NORTH POWYS BULKING FACILITY
ENVIRONMENTAL PERMIT APPLICATION
ENVIRONMENTAL SITE SETTING
DRAWING 001A

Scale 1:10,000 @ A3 Date MAY 2022

00798.00038.13.001A.5_SITE_SETTING_PLAN.dwg



- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - TARMAC SURFACING
 - IMPERMEABLE CONCRETE SURFACING
 - VEHICLE ACCESS
 - FIRE WALL
 - CLEAR AREA AROUND PERIMETER OF THE SITE
 - BAY 6: FOOD BAY AND SKIPS
 - BAY 5: RESIDUAL WASTE (INCLUDING STREET CLEANING LITTER AND BULKY WASTE)
 - BAY 3 AND 4: CANS AND PLASTIC (INCLUDING COMPOSITE PACKAGING)
 - BAY 2: PAPER AND CARDBOARD
 - BAY 1: ABSORBENT HYGIENE PRODUCTS
 - GLASS
 - NON-CONFORMING WASTE QUARANTINE AREA
 - TEMPORARY FIRE MANAGEMENT QUARANTINE AREA
 - TEXTILES CONTAINER
 - CO₂ FIRE EXTINGUISHER
 - FOAM FIRE EXTINGUISHER
 - WATER FIRE EXTINGUISHER



- FIRE HYDRANT
- MANUAL CALL POINT
- FLAME DETECTOR
- ASSEMBLY POINT
- OFFSITE EMERGENCY PACK
- PPE STORAGE
- FIRE EXIT

wrap
Cymru

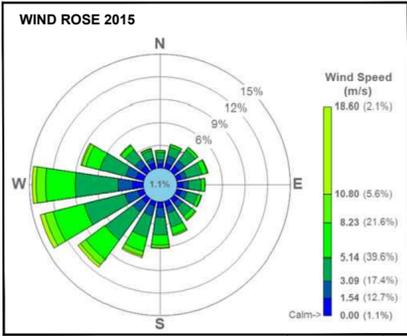
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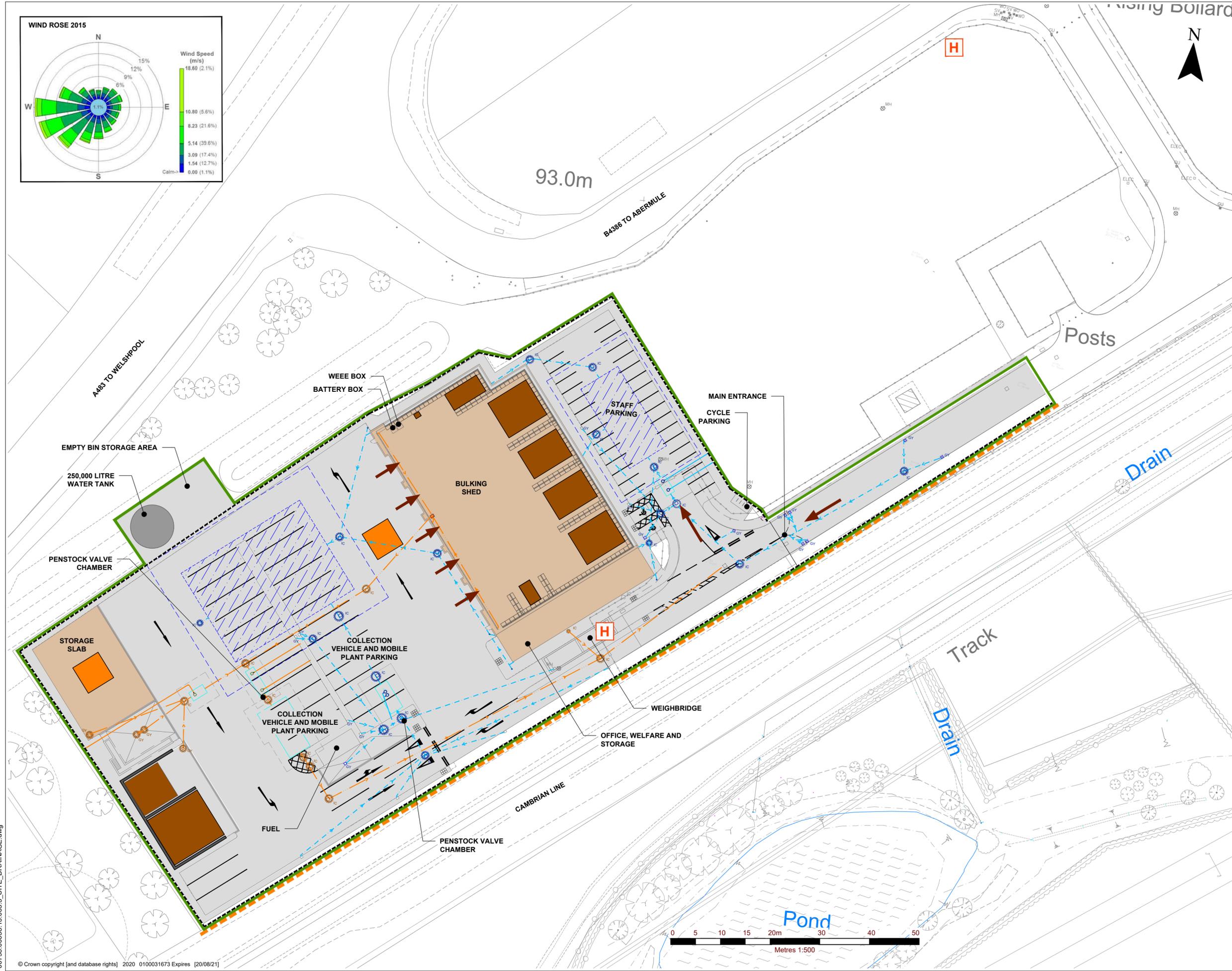
NORTH POWYS BULKING FACILITY
ENVIRONMENTAL PERMIT APPLICATION
SITE LAYOUT AND FIRE MANAGEMENT
DRAWING 002

Scale: 1:500 @ A2 Date: MAY 2022

00798.00038.13.002.6_SITE_LAYOUT.dwg



- LEGEND**
- ENVIRONMENTAL PERMIT BOUNDARY
 - TARMAC SURFACING
 - IMPERMEABLE CONCRETE SURFACING
 - KERBLINE
 - RAMP
 - VEHICLE ACCESS
 - FIRE WALL
 - FIREWATER CONTAINMENT WALL
 - WASTE STORAGE
 - QUARANTINE AREA
 - FIRE HYDRANT
 - SURFACE WATER DRAINAGE
 - SURFACE WATER DRAINAGE INSPECTION CHAMBER
 - SURFACE WATER DRAINAGE GULLY
 - FOUL DRAINAGE
 - FOUL DRAINAGE INSPECTION CHAMBER
 - FOUL DRAINAGE GULLY
 - SOAKAWAY SYSTEM







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NORTH POWYS BULKING FACILITY
ENVIRONMENTAL PERMIT APPLICATION
SITE DRAINAGE
DRAWING 003

Scale 1:500 @ A2

Date MAY 2022

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Appendix 03: Fire Resistance Specification



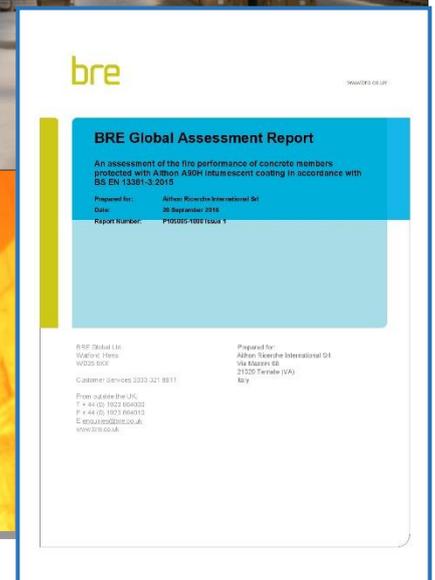
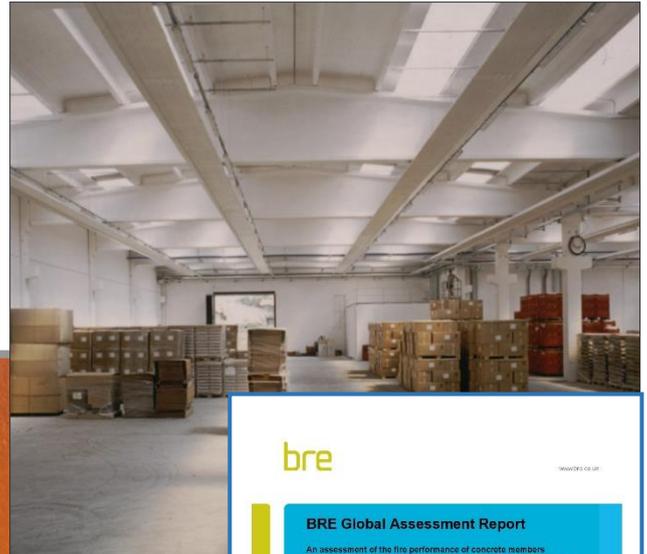
AITHON A90H

**fire protection
of concrete
structures**

Assessed by B.R.E.

**BS EN 13381-3
BS EN 12501-2**

- **R240 on concrete slabs and walls**
- **R120 on concrete beams and columns**
- **For pre-stressed and reinforced concrete**



A FIRE TEST ON A CONCRETE SLAB

- **FOR CONCRETE AND PRE-STRESSED CONCRETE**
- **WATERBORNE, LOW VOC COATING**
- **CLASSIFIED IN Y CLASS: NO NEED OF TOP-COATING EVEN IN HIGH HUMIDITY AND LOW TEMPERATURE INTERIOR ENVIRONMENT**



***hard, thin film intumescent coating
for durable fire protection and decoration***

Up to 240 minutes fire resistance according to BS EN 13381-3 and BS EN 13501-2

The BS EN 13381-3 regards the fire resistance of concrete structures and the performance of the intumescent coatings applied on concrete are expressed in terms of **equivalent concrete thickness**. The method defines the quantities (in gr/m^2) of intumescent coating required to achieve the same insulation performance provided by different thicknesses of concrete.

The calculation of the equivalent concrete thickness required for slabs and walls exposed to fire on one side is based on fire test results achieved on loaded slabs having minimum ($500 \text{ gr}/\text{m}^2$) and maximum ($2035 \text{ gr}/\text{m}^2$) applied quantity of intumescent coating. Linear interpolation between minimum and maximum is allowed.

AITHON A90H		Fire resistance time (min.) (exposed to fire on one side)					
		30	60	90	120	180	240
required quantity g/m^2	mm DFT	Equivalent concrete thickness (mm)					
500	0.25	12.5	10.4	8.3	5.4	0	0
1000	0.50	16.4	16.9	14.5	11.7	7.1	6.0
1500	0.75	20.3	23.4	20.6	18.0	14.0	11.9
2035	1.02	24.5	30.4	27.2	24.7	21.6	18.2

The calculation of the equivalent concrete thickness required for beams and columns exposed to fire on three of four sides is based on fire test results achieved on loaded beams having minimum ($500 \text{ gr}/\text{m}^2$) and maximum ($2092 \text{ gr}/\text{m}^2$) applied quantity of intumescent coating. Linear interpolation between minimum and maximum is allowed.

AITHON A90H		Fire resistance time (min.) (exposed to fire on three or four sides)			
		30	60	90	120
required quantity g/m^2	mm DFT	Equivalent concrete thickness (mm)			
500	0.25	16.1	14.2	12.8	0
1000	0.50	21.5	20.7	19.1	10.6
1500	0.75	26.8	27.1	25.3	21.0
2092	1.05	33.0	34.7	32.6	33.2



Fire protection and decoration

AITHON A90H has a smooth, matt white finish and does not need a top coating even in high humidity, low temperature environment (classified Y according ETAG 18-2)

But if a decoration is required, **AITHON A90H** has a suitable top-coating which provide a satin or matt finish in the full RAL colour range



30 years guarantee

Defining the lifetime of a fire protection system is often a difficult problem to solve. The over 30 years of our experience in research and development of intumescent coatings, together with the high quality of the raw materials that we use, allow us to offer a 30 years guarantee for all our intumescent coatings and varnishes. For further details about our guarantee program please contact our technical service.

Technical data	Solids by volume	66%
	solids by weight	72%
	density	1,33 Kgr/lit
	colour	white
	viscosity	thixotropic product
	VOC	< 45 gr/lit
	VOC (on request)	< 5 gr/lit

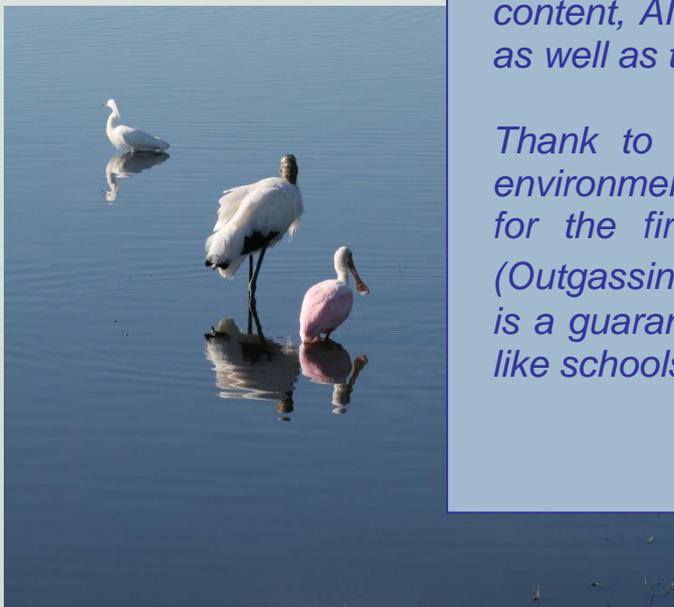
Application	thinner	water
	wet film thickness	2 Kgr/sqmt for 1500 micron
	dry film thickness	2 Kgr/sqmt for 1000 micron
	first coat	< 250 gr/sqmt (recommended)
	further coats	up to 1 Kgr/sqmt per coat
	Drying time (20°C, 65% R.H.)	dust dry: 30 mins.
		touch dry: 2 hours
		3 – 4 hours between coats
	Top coating (if required)	after 24 hours
Shipment weight	20 Kgr net plastic pails	



Aithon Ricerche International srl
 Via Mazzini 68
 21020 Ternate (VA) – Italy
 Tel. +39 0332 964550
 Fax +39 0332 964529
 info@aithon.co.uk
 www.aithon.co.uk

19

ETA 13 / 0926
 EAD 350402-00-1106
 Fire protective product
 See ETA for relevant characteristics



ENVIRONMENTALLY FRIENDLY

Waterborne, halogen-free, low VOC content, AITHON A90H protects concrete as well as the environment.

Thank to its very low emission to the environment, AITHON A90H is approved for the fire protection in clean rooms (Outgassing tests at 40°C: 2,6 µg/g). This is a guarantee for any sensitive buildings like schools and hospitals.

AITHON RICERCHE INTERNATIONAL s.r.l.

via Mazzini 68, I 21020 Ternate (VA) – Italia

info@aithon.co.uk

www.aithon.co.uk

Technical service: tel. +39-348-900-1515

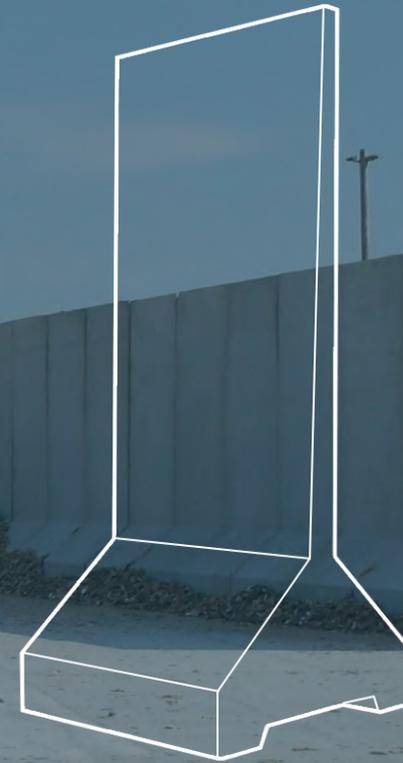


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FREESTANDING RETAINING WALL

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Our product specialists will advise on the most cost-effective precast solution for your project.



Quality Assured

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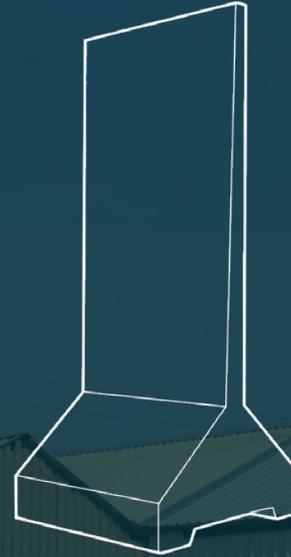


Precast solutions

Our skilled teams of engineers, groundworkers & precast installers cover the entire project life-cycle.

FREESTANDING RETAINING WALL

Freestanding retaining walls are a versatile product which can be used to store wide variety of materials.



- ✓ Retaining Wall Heights 1.5m to 3.5m
- ✓ 90 Degree Corner Units
- ✓ Chamfered Edges
- ✓ C60 Concrete Mix Strength
- ✓ Installation Service Available

Features

90° corner units are available for all unit heights, enabling you to construct bays with ease.

Units are easily manoeuvred to create flexible storage solutions.

Wall units are manufactured under factory-controlled conditions, designed to relevant British Standards and are CE marked.

The freestanding retaining walls are suitable for a wide range of applications including:

- Storage Bays
- Aggregate Bays
- Waste & Recycling
- Flood Defence
- Grain Walling

We provide a full design, construction & installation service for all of our products, enabling us to offer turnkey solutions. Call the team today to discuss your project. 01158 220 282

PRODUCT SPECIFICATIONS

Below is a table outlining the characteristics of the freestanding retaining wall.

Here you can find information on concrete strength, material density and surcharge capacity.

If you require any further details please contact us and one of our product experts will be happy to provide more information.

Wall units are manufactured under factory control, have been designed to relevant British (BS) standards and are CE marked.

Concrete Strength 	Material Density 	Surcharge Capacity 	Design Life 
Compressive strength of concrete after 28 days of curing.	Maximum material density of retained material, measured in kN/m ³	Maximum surcharge capacity of precast element, measured in kN/m ²	Number of years precast element has been designed for.
Connection 	Edge Detail 	Concrete Finish 	Fire Resistance 
Precast elements have flat sides & do not interlock.	Chamfered edges create softer sight lines & reduce damage during installation	Smooth mould finish Type A to precast element, defined in British Standards	Number of minutes precast element would provide fire resistance.
Reinforcement Cover 	Tolerances 	Foundation Type 	Retained Face 
Minimum cover to steel reinforcement in precast element, measured in mm.	Typical manufacturing tolerances & dimensional variations +/- in mm.	A reinforced concrete (RC) foundation is required for installation.	Double Load - Precast element is suitable for retaining material on both faces

PRODUCT RANGE

In addition to the standard units shown below, 90o corner units are also available for all heights, enabling you to construct storage bays with ease.

Installation of the precast units is quick and easy, the elements placed directly onto a reinforced concrete foundation or concrete floor slab. The units can be connected to each other using a steel channel, bolted to the top of the units. No additional support is required, making them the perfect solution if you have no existing steelwork to fix to.

1.5m



Height **1500mm**

Length **1200mm**

Width **1300mm**

Weight **1750kg**

2m



Height **2000mm**

Length **1200mm**

Width **1300mm**

Weight **2180kg**

2.5m



Height **2500mm**

Length **1200mm**

Width **1300mm**

Weight **2380kg**

3m



Height **3000mm**

Length **1200mm**

Width **1300mm**

Weight **3080kg**

3.5m



Height **3500mm**

Length **1200mm**

Width **1300mm**

Weight **3190kg**



Get clarity

Visit our new website and get to grips with our precast products in detailed 3D



NOTTINGHAM

DEVON

SUSSEX

Get a FREE quotation or advice
Call **01158 220 282** or
email: **info@jpconcrete.co.uk**

Head Office

The Quay, Plymouth Road, Tavistock,
Devon, PL19 8AB

Manufacturing

Staunton Works, Staunton in the Vale,
Nottingham NG13 9QB

Sales & Marketing

Newhaven Enterprise Centre, Newhaven,
East Sussex BN9 9BA

Appendix 04: Confirmation of Fire Hydrants

From: [Walters, Dylan H.Q.](#)
To: [Tom Davies](#)
Cc: [Pearson, Simon Northern Division](#)
Subject: Re: Customer contact.
Date: 27 May 2022 15:36:43
Attachments: [image001.png](#)
[image007.png](#)
[image003.jpg](#)
[image004.png](#)
[image001.png](#)
[image001.png](#)
[image001.png](#)
[image001.png](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.png](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.png](#)

You don't often get email from d.walters@mawwfire.gov.uk. [Learn why this is important](#)

Hi Both,

I can confirm that we have inspected these washouts and have added them to our system. Therefore are ready to use if need be.

Kind Regards
Dylan

Cofion/Regards

Dylan Walters

Rheolwr Cymorth Gweithredol ac Rheolwr Dŵr /Operational Support Manager and Water Officer
Yr Adran Cyfarpar Gweithredol a Sicrwydd / The Operational Equipment And Assurance Department,
Gwasanaeth Tan ac Achub Canolbarth a Gorllewin Cymru /Mid & West Wales Fire & Rescue Service.

(**Allanol** / External: [03706060699](tel:03706060699)

(**Estyniad Mewnol** / Internal Extension: Ext. 4444

(**Ffôn Symudol**)/Mobile telephone: **07971 918148**

***Ebst** / Email: D.Walters@tancgc.gov.uk / D.Walters@mawwfire.gov.uk

Gwefan/Website: www.tancgc.gov.uk / www.mawwfire.gov.uk

Rydym yn croesawu galwadau yn y Gymraeg a'r Saesneg / We welcome calls in Welsh and English.

Rydym yn croesawu gohebiaeth yn y Gymraeg a'r Saesneg - byddwn yn ymateb yn gyfartal i'r ddau ac yn ateb yn eich dewis iaith heb oedi / We welcome correspondence in Welsh and English - we will respond equally to both and will reply in your language of choice without delay.

Mae'r e-bost ac unrhyw ffeiliau a drosglwyddir gydag ef yn breifat ac wedi'u bwriadu ar gyfer defnydd yr unigolyn neu'r endid y maent yn cael sylw. Os nad chi yw'r derbynnydd y bwriedid y E-bost ac unrhyw ffeiliau wedi cael eu trosglwyddo i chi mewn camgymeriad, rhoch wybod i'r anfonwr ar unwaith a dinistrio y deunydd a storio ar gyfrifiadu neu fel arall; yn ogystal, bydd unrhyw ddefnydd gopio, dosbarthu neu eraill y wybodaeth geir ynddynt yn gwahardd yn llym. Dim gweithiwr Canolbarth a Gorllewin Cymru Gwasanaeth Tân ac Achub yn cael ei awdurdodi i ddod i'r casgliad unrhyw gytundeb cyfrwymol ar ran yr awdurdod gydag unrhyw barti arall yn unig gan y defnydd o e-bost - Canolbarth a Gorllewin Cymru Gwasanaeth Tân ac Achub. Gall E-bost adael y Canolbarth a Gorllewin Cymru Gwasanaeth Tân ac Achub yn cael ei logio, ei monitro a / neu ei chofnodi am resymau cyfreithiol.

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