FIRE PREVENTION AND MITIGATION PLAN

JAYPLAS

Heol Y Mynydd,
Gorseinon,
Swansea
SA4 4NY
Grid reference: SS 59469 99671

Permit number: TBC
Issued: TBC

Document Reference: SWA ENV 003
February 2025

Revision History

Version	Date	Comments	Author	Approved by
1	May 2024	First document for permit application	V Cooper	K Struthers
2	Nov 2024	Section 1 – sensitive receptor contact details added to emergency contact list Table FPMP1 updated with sensitive receptors Section 3.2.3 added - amount and type of waste received daily. Table FPMP2: emissions and impact added Table FPMP4 updated with cardboard Table FPMP5 side yard stack size updated Table FPMP6: Internal bunker Sizes added Section 4.3.10 – details of cannons added Section 4.3.12 - waste stored within the building Section 4.3.13 – waste stored in containers Section 4.3.14 – seasonality added Section 4.4.5 – monitoring of stacks added Section 4.5.1 updated with separation distances Section 4.5.1 - A1 rated detail added to walls Section 4.7.3 fire detection storage yards added Section 4.11.1 updated with water cannon tank Appendix 1-13 Site Plans updated	V Cooper	K Struthers
3	Feb 2025	Updated	K Struthers	J Hall
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1.0 EMERGENCY CONTACT DETAILS

Emergency Services	Telephone Number	Emergency
Fire and Rescue Services	0370 6060699	**999**
Ambulance Service	111	**999**
Police	101	**999**

Hospitals	Telephone Number	
Morriston Hospital	01792 702222	

Utilities	Company Name	Telephone Number
Electricity	National Grid	0800 6783 105
Substation		
Water	Welsh Water	0800 085 3968
Piped Gas	Wales and West Utilities	0800 111 999
Diesel	Crown Oil	0330 123 1444
Spillage cleaning and 24/7 Emergency Tanker	Drain Force	0800 008 7307
	GD Environmental	01633 277 755

Health and Safety Executive	Telephone Number
General Enquiries/Local Office	0300 003 1647

Natural Resources Wales	Telephone Number
General Enquiries	0300 065 3000
Incident Hotline	0300 065 3000
24 Hour Emergency Floodline	0345 988 1188

Internal Emergency Contact	Telephone Number	Position
Jason Young	07834 652951	Director
Jeremy Young	07834 652953	Managing Director
Ryan Moulton	07590 224981	Operations Manager

Local Residents/Receptors	Telephone Number
Krislyn Motors	01792 893388
Farmer (Paul Gorvett)	07974 935776
Penyrheol Comprehensive School	01792 533066
Gorseinon Primary School	01792 987089
Penyrheol Primary School	01792 892337
Pengelli Primary School	01792 892736
Princess Street Surgery (Health Centre)	01792 895681
Gorseinon Hospital	01792 704184
Gorseinon Juniors School	Currently closed

2.0 INTRODUCTION

2.1 Scope

2.1.1 References to Jayplas throughout this document will refer to J. and A. Young (Leicester) Ltd. The Jayplas Swansea site has applied for an Environmental Permit Qtr2 2024. As the company operate other waste facilities, the Swansea site is being developed into a full plastic recycling facility using vast knowledge and experience gained over decades of running the company. This document is the Fire Prevention and Mitigation Plan written as part of the Environmental Management System which sets out the systems that the Swansea site has in place and it will be a working document for staff to refer to.

2.1.2 The site currently operates 3 core documents for their Environmental Management System relating to the environmental permit being applied for, for the site:
SWA ENV 001 – Environmental Management Systems Summary - this document highlights the steps taken to control day to day environmental risks including response to accidents and emergencies.
SWA ENV 003 - Fire Prevention and Mitigation Plan (FPMP) – this document identifies the potential Environmental hazards with a review to implementing mitigation measures designed to minimise the risk of a fire on site and how to reduce any environmental impact from a fire should it occur on site.
SWA ENV 004 – Business Continuity Plan

2.1.3 As of May 2024, the buildings are not occupied and no waste is being stored on site. The first piece of equipment to arrive on site will be the plastic extruder. This is due to be delivered Qtr4 2024. At this stage it is not known exactly when the site will need to commence receiving waste, however when waste does start to arrive on site the requirements of the FPMP will be implemented.

2.1.4 The FPMP has been written to detail the measures the site will have in place once the site is operational. The FPMP is a stand-alone document. The FPMP will be reviewed and updated as the site develops. Copies of the FPMP are pinned to the noticeboard in the sites reception, held in the manager's office, stored in a folder in the security hut and available on the internal sharepoint drive.

2.1.5 The document provides a structured framework approach in effectively preventing potential fires associated with the processing and storage operations at the site. This FPMP has been produced in accordance with Natural Resources Wales guidance – "Fire Prevention and Mitigation Plan - Waste Management" published August 2017, and Waste Industry Safety and Health Forum (WISH) document "WASTE 28 – Reducing Fire Risk and Waste Management sites, Issue 3" published March 2020.

2.1.6 This FPMP meets the fundamental objective of the FPMP Guidance as it demonstrates that the site can:

- Minimise the likelihood of a fire happening.
- Aim for fire to be extinguished within 4 hours; and
- Minimise the spread of fire within the site and to neighbouring sites.

2.1.7 This FPMP has been structured in accordance with the guidance and considers the following relevant aspects of the facility:

- Managing common causes fire
- Preventing self-combustion
- Managing waste piles
- Preventing fire spreading
- Detecting fires
- Supressing fires
- Firefighting techniques
- Quarantine area
- Water supplies
- Managing fire water
- Actions during and after an incident

3.0 SITE DETAILS

3.1 Site Setting

3.1.1 The site to which this FPMP relates is Heol Y Mynydd, Gorseinon, Swansea SA4 4NY, approximately 1mile north east of the town of Gorseinon as illustrated on the Site Location Plan, drawing No. SWA-DWG-EP-01. Gorseinon is a town within the City and County of Swansea, Wales, near the Loughor estuary. It was a small village until the late 19th century when it grew around the coal mining and tinplate industries. It is situated around 6 miles north west of the Swansea city centre. The site is approximately centred at National Grid Reference (NGR): SS 59469 99671.

3.1.2 Entrance to the site is gained from a spur road, Heol Y Mynydd, off a roundabout situated on Pontardulais Road to the north of the site. There is only one exit / entrance to the site.

3.1.3 The site was previously occupied by Toyoda Gosei UK Ltd.

3.1.4 The site is located north east of the town separated from residential and other industrial properties. To the east lies an area of established woodland, beyond which lies the M4 motorway. The areas to the south and west of the site are occupied by residential areas, as well as areas of corresponding infrastructure and areas of open land/woodland and recreational areas.

3.1.5 The closest residential property is a single farmhouse 275m North, the closest residential development is Pontardulais Road 330m West. The closest industrial building is Krislyn Motors 345m North West and the closest industrial and retail area is 760m South.

3.1.6 The site is currently secured by 2.4 metre high chain-linked, c/w single cranked extension for three strands barbed wire fencing, however the site is proposing to change the fencing at the rear of the site to paladin fencing when the site is developed. The site currently has 1 operational entrance which is protected with automatic gates

and access only via intercom and authorised entry. The site entrance and exit gates are locked shut outside of operational hours to prevent unauthorised access.

3.1.7 The drawings for the site are as follows:

Drawing Title	Drawing No.
Site Location Plan	SWA-DWG-EP-01
Site Ownership Plan	SWA-DWG-EP-02
Permit Boundary Plan	SWA-DWG-EP-03
Site Infrastructure Plan	SWA-DWG-EP-04
Waste Storage Plan	SWA-DWG-EP-05
Site Drainage Plan (Actual)	SWA-DWG-EP-06 (part 1 of 2)
Site Drainage Plan (Proposed)	SWA-DWG-EP-06 (part 2 of 2)
Internal Plant Layout (Actual)	SWA-DWG-EP-07 (part 1 of 2)
Internal Plant Layout (Proposed)	SWA-DWG-EP-07 (part 2 of 2)
Fire Prevention Plan	SWA-DWG-EP-08
Fire Water Pooling Points	SWA-DWG-EP-09
Fire Alarm Layout Plan	SWA-DWG-EP-10
High Level Sprinkler System Plan	SWA-DWG-EP-11
Emission Points	SWA-DWG-EP-12
Receptor Plan	SWA-DWG-EP-13
Topographic Survey Building	SWA-DWG-EP-14
Waste Storage Concept Plan	SWA-DWG-EP-15

3.2 Site Activities

Treatment Activities

3.2.1 The Swansea site will be developed to sort, treat, wash, flake and pelletise PE, PP and PET plastics. The building will be split into 3 core processes:

- Sorting (automatic, manual and optical sorting) including baling
- Washing and drying
- Extrusion

3.2.2 The maximum tonnage of permitted wastes to be processed by the facility during any one year shall not exceed 120,000 tonnes.

3.2.3 The amount and type of waste received daily and how it is managed is detailed in the table below:

Waste Type	Maximum Daily Amount	How it will be managed
Plastic (which includes plastic bottle bales which may contain metal cans)	350T	All inbound loads are checked before being unloaded from vehicle. The material will stored in external bays for processing, applying the first in, first processed rule (see section 4.3.5 below).
Cardboard	20T	All inbound loads are checked before being unloaded from vehicle. Cardboard bales are transferred to the external dedicated cardboard storage bay. If necessary i.e to prevent litter, the cardboard may be rebaled.

External Storage

3.2.4 With the exception of temporary stocking of waste immediately prior to or after processing within the buildings, all unprocessed and processed wastes will be stored externally in baled or bagged form - see Waste Storage Plan drawing no. SWA-DWG-EP-05. Residual wastes will be stored in bales, bags or containers.

3.2.5 Only residual waste and general waste created by the site processes will be stored in a skip container. As the site is not operational yet, this skip container will be delivered to site when required. Based on experience from other Jayplas sites, it is assumed that 1 or 2 containers may be required once operational. Any container that is on site will be accessible so any fire inside could be extinguished.

3.2.6 The maximum onsite storage capacity is 20,000 tonnes at any one time.

3.2.7 It is proposed that the majority of incoming and treated waste will be stored externally. There will also be internal bunkers for each processing line. The internal bunkers hold the material after the sortation process before either being transferred to the final reprocessing process or being baled and transferred to the external storage area. The internal bunkers are transient bunkers as material is constantly moving through the recycling process, the bunkers are designed to hold the material for hours not days. The internal bunkers will be empty when the site is closed over Christmas.

3.2.8 The external storage areas [once constructed] will be split across 2 separate areas, referenced as Main Yard and Side Yard. See section 4.4 and Table FPMP5 below which summarises the storage arrangements across the external yards.

3.2.9 Whilst the site predominately receives plastic waste, occasionally the site may receive small volumes of baled cardboard or used beverage cans which the customer has included on the collection. These materials will be removed from the vehicle and temporarily stored before being transferred to another Jayplas site. Whether the material is plastic, cardboard or used beverage cans, the material will be treated as combustible wastes and thus the points of the FPMP will apply.

Hours of Operation

3.2.10 As soon as the extrusion rPET pellet production line is operational, the site will operate 24 hours a day, 7 days a week performing treatment in the building (including external mobile plant movements). The site will only close for the Christmas period.

The delivery and dispatch of wastes will be restricted to the following hours:

- Monday – Friday: 06:00 to 18:00; and
- Saturday: 06:00 to 16:00

3.2.11 External planned maintenance works will be conducted between the hours of 08:00 hrs and 17:00 hrs with any emergency maintenance of plant and equipment conducted at any time, as considered appropriate.

3.2.12 Records will be held of the details/activities performed on site i.e operational hours, maintenance performed, periods of closure and made available to NRW upon request.

3.3 Sensitive Receptors

3.3.1 The town of Gorseinon is approximately 0.7mile south west of the site as illustrated on Site Location Plan SWA-DWG-EP-01. Gorseinon is a town within the City and County of Swansea, Wales, near the Loughor estuary.

3.3.2 A full list of potential sensitive receptors to fire within 2km of the facility are listed in **Table FPMP1** and illustrated in the Receptor Plan, drawing No. SWA-DWG-EP-13.

Table FPMP1: Summary of potential sensitive receptors 2km from the site boundary

Receptor Name	Receptor Type	Approximate distance from the site boundary (m)	Direction from the facility	Potentially Sensitive Receptor to Potential Fire? (Y/N)
Secondary (undifferentiated)- Till, Devensian- Rock D-Diamicton	Aquifer Designation (Superficial)	0	Underlies the site and surrounding areas	Y
Grovesend Formation-Secondary A	Aquifer Designation (Bedrock)	0	Underlies the site and surrounding areas	Y
Local infrastructure e.g. Heol Y Mynydd, A4240 and other roads within 1km of the site.	Public Highways	Adjacent – 1km	All directions	Y
Surface water features - Coal Brook along northern and eastern edge of permit boundary - Afon Lliw to the east of the site	Ponds, streams, drains	0 – 1km	All directions	Y
Industrial Premises + retail	Industrial/ Commercial	760m	S	N
Industrial (Krislyn Motors)	Industrial	345m	NW	Y
Farmhouse	Residential	275m	N	Y
Properties off Pontardulais Road	Residential	330m	W	Y
Properties off Howards Way	Residential	450m	S	Y
Residential development continues towards the town of Gorseinon.	Residential	330m – 1km	S, W, N	Y
Melin Mynach (WOM21)	Historic environmental feature	270m	S	Y
Cefn arda pit ss59459954 coal mine	Historic Monuments	Within permit boundary		Y
- Hall, brunant road, gorseinon, ss58989909 chapel - English, pengelli, birchgrove, llandeilo talybont sn5900 chapel - Melin mynach; monks mill ss59279905 mill - Coalbrook, old coal pit sn591002 coal mine - Chapel remains grovesend sn59190039 chapel - Brynteg (1) independent sunday school (vestry), brynteg road, gorseinon ss58749927 chapel - Mountain colliery ss59229926 coal mine	Historic Monuments	Within 500 meters		Y
Mine, Gorseinon	World Heritage Site	Within permit boundary		

Receptor Name	Receptor Type	Approximate distance from the site boundary (m)	Direction from the facility	Potentially Sensitive Receptor to Potential Fire? (Y/N)
- Bridge- Bridge, Melin Mynach, Gorseinon - Colliery- Coal Pits, Penyrheol and Mountain Colliery (x2) - Early Grist Corn Mill, Melin Mynach, Gorseinon - Dye-house, Melin Mynach, Gorseinon - Engine House, Melin Mynach, Gorseinon - farmstead- Bryn-yr-arad Farm (x2) and Gors-fawr Farm (x2) - Formal Gardens, Melin Mynach, Gorseinon - Mill House, Melin Mynach, Gorseinon - Mine, Gorseinon (x9) and Mine, Penllergaer - paper mill- Melin Mynach Paper Mill, Gorseinon - Quarry, Grovesend - steel work- Grovesend Steel and Tinplate Works - woollen mill- Melin Mynach Woollen Mill, Gorseinon	World Heritage Site	Within 500 meters		
Nant y Crimp	SSSI	Approx.1.95km		N
Burry Inlet and Loughor Estuary	SSSI	Approx. 1.7km 1.6km	NW SW	N
Ancient Semi Natural	Woodland	Approx 918m	NW	N
Restored Ancient and Semi Natural	Woodland	Approx 312m	East	Y
Coalbrook Grasslands. Site Code: 330	Local Wildlife Sites	275m	NW	Y
Upper Mynydd Garn goch Common. Site Code: 202	Local Wildlife Sites	265m	East	Y
- Waungron to Gowerton Railway line. Site code: 334 - Lower Lliw Corridor & Llan Confluence. Site Code: 326 - Brynlliw Grasslands. Site Code: 329	Local Wildlife Sites	Within and surrounding permit boundary		Y
Gorseinon Hospital	Medical Centre	1KM	SW	N
Princess Street Surgery	Medical Centre	900m	SW	N
Penyrheol Comprehensive School	School	500m	SW	Y
Gorseinon Junior School (currently closed)	School	920m	SW	N
Gorseinon Primary School	School	1km	SW	Y
Penyrheol Primary School	School	800m	W	N

Receptor Name	Receptor Type	Approximate distance from the site boundary (m)	Direction from the facility	Potentially Sensitive Receptor to Potential Fire? (Y/N)
Pengelli Primary School	School	1KM	N	N
Penyrheol Leisure Centre	Recreational	500m	SW	Y
Gorseinon Cemetery	Recreational	710m	SW	N
Gorseinon Rugby Club	Recreational	1.1km	S	N
Princess Street Bowling Green	Recreational	1.2km	SW	N
Princess Street Playing Space	Recreational	1.2km	SW	N
recreation ground (Parc Melyn Mynach)	Recreational		To the south	Y
Melin Mynach Pumptrack	Recreational	500m	SW	Y
Gower Way footpath	Recreational		To the East	Y
Gorseinon (Brynteg) Congregational	Recreational	1.3km	SW	N

3.3.3 **Table FPMP2** shows the combustion products and emissions (to air, land and water) and considers the impact on the local community, critical infrastructure and environment.

Table FPMP2: emissions and impact

Product	Emission…	Impact	Response
Smoke	to air	Residential / neighbours	Fire service to advise as necessary
Smoke	to air	Road network	Fire service may close Heol Y Mynydd. There are other roads available to local residents and thus impact is low.
Embers	to air	Residential / neighbours / local environment	Plastic – predominately melts and there is only a low risk of ash from plastic. Cardboard – small volume stored on site and cardboard stored at the further point away from receptors.
Melted waste	to water	Local watercourses	Drainage system closed, impermeable pavement and walls around waste storage area.
Melted waste	to land	Environment	Waste is stored on impermeable pavement and thus release to land is low.
Heat	to air	Residential / neighbours / local environment / critical infrastructure	Residents and neighbour are >250m from site and thus low risk of impact from heat. The main storage yard has been designed so that waste is not stored directly underneath electrical pylon.

4.0 FIRE PREVENTION AND MITIGATION PLAN

4.1 Introduction

4.1.1 This Fire Prevention and Mitigation Plan (FPMP) has been developed to assess the risk of fire on site and to detail the measures in place to prevent, detect, suppress, mitigate and contain fires.

4.1.2 This FPMP has been prepared with consideration given to the measures stipulated within Natural Resources Wales Fire Prevention and Mitigation Guidance. This FPMP identifies areas of fire risk posed by the proposed permitted operations and details how those risks are to be mitigated to ensure that the likelihood of a fire event is reduced as far as practicable. In addition, this FPMP also details what actions should be taken in the event of a fire to limit the damage caused to the environment or human health.

4.1.3 All staff and contractors working on site will understand the contents of the FPMP where it is applicable to their role and what they must do during a fire.

4.1.4 Copies of the FPMP are pinned to the noticeboard in the sites reception, held in the managers office, stored in a folder in the security hut and available on the internal sharepoint drive and all staff will be aware of where it is kept. Fire risk assessment will be undertaken regularly and reviewed as appropriate. All staff members will be trained with the site's evacuation procedures at induction.

4.2 Control of Potential Causes of Fire

4.2.1 **Table FPMP3** shows the common causes of fire and the measures that Jayplas will take to mitigate risks.

Table FPMP3: Control of Potential Causes of Fire

Area of consideration	Response by Jayplas
Arson or vandalism	CCTV is situated throughout the buildings and externally on the site and is used to monitor both H&S and security aspects. The CCTV is fitted with motion sensors which triggers the recording. CCTV is recorded locally and accessible remotely. CCTV is situated on external areas on the site and is used to monitor both H&S and security aspects. The site's perimeter fencing will be inspected daily and the inspection recorded on the Daily Environmental Monitoring Record (SWA ENV 009) Security Out of hours – security will be in place at all times that the site is not manned i.e Christmas closed period. Arson – the external boundary is fully fenced and access can only be gained via permission. Employee access to site is by pedestrian gated swipe access or vehicle swipe access through the main gates. Vehicles delivering or collecting waste, enter the site at the only external gate. The driver is required to press a button for access, this alerts staff on site that have to provide authorisation for that vehicle to enter the site.

	Staff are therefore always aware when external parties are on site and they are supervised at all times. All visitors and contractors have to obtain permission to enter the site via the intercom or via the security office upon arrival at site.
Plant and Equipment	As of May 2024, the site has a gas powered Forklift Truck (FLT). Once required for the movement of waste on site, additional Forklift Trucks (FLTs) will be used on the site. The first waste processing equipment to arrive is the Erema extruder, due to arrive Qtr4 2024, commissioning will take a few months so it is expected that the extruder will be operational Qtr1 2025. Scheduled maintenance will be performed on all plant and equipment and scheduled maintenance will start as soon as the equipment is commissioned. Records are maintained of the checks carried out either by external companies or daily pre-work checks. Documents to record any maintenance or pre-work checks on the extruder have been drafted and are ready once plant installed. Regular servicing and maintenance of the FLTs minimises the risk of overheating. FLT daily inspection records (SWA HS 010) will be completed for each truck used on each shift. FLT servicing is carried out by an externally contracted FLT engineer and records of scheduled servicing/completed works will be filed with the Site Manager.
Plant & Hot Exhausts	Once operational the site will implement weekly plant shutdown periods for preventative plant maintenance and cleaning to reduce fire risk, this will be recorded. Also monthly maintenance will be recorded on Maintenance & Lubrication Schedule records (SWA EGM 002). Again once the Erema is installed and the site is operational, the following checks will be implemented: • Standardised checks and housekeeping (SWA OPL 001). • Operators Daily Maintenance Tasks (SWA EGM 001) • Erema Operator Maintenance Tasks (SWA EGM 003) Regular servicing and maintenance of the Forklift Trucks (FLTs) minimises the risk of overheating. Each FLT will be serviced annually by an external FLT company and that external FLT company will also come to site upon request for ongoing maintenance or repairs. The only mobile plant on site will be Fork Lift Trucks (FLTs). FLTs will be used 24/7. The site has a dedicated FLT building which will be used to park FLTs and used as a workshop. Any repairs or servicing of FLTs will be carried out in the workshop which is detailed on Internal Plant Layout (Proposed) (SWA-DWG-EP-07 (part 2 of 2).
Infrastructure and site inspections	As of May 2024 the external storage yards are to be developed. External storage of waste will be carried out on an impermeable surface with either kerbing or walling around the perimeter which directs water flow into the onsite drainage system. Regular checks of site surfacing, drainage, and interceptors will be carried out, logged as checked on the Daily Environmental Monitoring Record (SWA ENV 009) and repaired as necessary, to ensure that they retain their integrity.

Electrical faults	Electrics on site will be fully certified by a qualified electrician and once equipment has been installed, the following regular electrical checks will be completed: • PAT testing across the operation (annually) • Thermal survey of all electrical distribution boards and machine control panels (annually) • Inspections of high voltage supply (annually) • Fixed electrical inspections (3 yearly) These tests will either be completed inhouse or by an external registered electrical company, records of all works completed will be held on site.
Ignition sources	Smoking is only permitted in the designated smoking area, shown on Fire Prevention Plan, drawing No.SWA-DWG-EP-08 and this safety rule is enforced by management. The smoking area is >70m from any areas that are proposed for the storage of bales or waste. There will be no heat sources in the outside storage areas. The main office areas are heated with fixed cassette air conditioning units and some other office areas are on a fixed supply wall heaters. No industrial heaters are used in the building.
Heat and spark prevention	Any hot work is subject to work permit conditions, this includes any works by contractors and/or their sub-contractors. Any major works undertaken by contractors are subject to a safety assessment, risk and method statements. Hot work permit (SWA HS 013) is used for any hot works performed on site and this includes a 1 hour fire watch following completion of works.
Gas bottles and other flammable items	Oxy/Acetylene is stored on site in low volumes, this is stored in the workshop area which is detailed on Internal Plant Layout (Proposed) (SWA-DWG-EP-07 (part 2 of 2). Once waste is stored on site, all gas bottles and other flammable items will be monitored to ensure they remain stored at least 25metres away from any bales or stored material on site. Gas tanks for FLTs will be located at least 25metres away from any bales or stored material on site and oil will be stored in the workshop building on bunds. Diesel will be stored in drums on a bunded pallet – Located at the rear of the site (see Internal Plant Layout (Proposed) SWA-DWG-EP-07 (part 2 of 2).
Leaks and spillages of oils and fuels	The volumes kept on site will always be low and stored away from the main waste storage areas. Transfer of substances on site will be kept to an absolute minimum and if any substances are transferred this will be done under controlled conditions. In the event of a spillage inside the building, spill kits will be available to deal with any spillages. In the event of a spillage in the outside areas, spill kits will be available, with any contaminated waters on the yard area cleaned up with either spill granules or pads as necessary.
Damaged or exposed electrical cables	Maintenance perform ongoing monitoring of equipment. Electrical circuit testing is performed every 3 years

Naked lights	Naked lights are prohibited on site as is any kind of open fire.
Substances	Chemicals will not be needed for the treatment process until the wash process is installed. The FPMP will be updated at this stage. Once installed the wash process will be performed within an internal sealed drainage system. A safe working procedure will be in place on the site for general spillages. The SWP will be issued as part of employee inductions, along with other specific training covered with the COSHH sheets (including diesel).
Training – staff and visitors	Employees have not started being recruited yet, once the extruder is delivered and staff are required, all new employees will be inducted. There will be an Induction Program which will include (but not limited too): SWP list and core documents: • General SWP (includes Spill Kit Procedure) • FLT SWP • Storage of Material SWP • Extruder SWP • Engineering general SWP • Fire Prevention and Mitigation Plan – SWA ENV 003 Once the drainage is installed and emergency lock off procedure completed, all managers and engineers will be trained on closing drainage system. Sufficient numbers of personnel will be trained to ensure the site is covered 24/7. Visitors are supervised whilst on site. All visitors are shown an instruction sheet at reception when signing in (SWA HS 018) that makes them aware of the correct safety and fire prevention procedures whilst on site. There is a designated smoking area at the front of the site which is away from the stored material. As part of the staff induction the location of the smoking area is shown.
Fire Watch	The site once operational will be open 24/7 • Once staff are recruited, all staff will be aware of the risk of fire and asked to be vigilant at all times. There will always be staff outside in the yard during operational hours including night hours and therefore the entire yard will be monitored on a regular basis. • The site manager or deputy will perform daily checks of the site and these will include walking the site daily to perform these checks. • CCTV cameras will cover the buildings and external storage areas and the CCTV will be available to view 24/7.
Build-up of Loose Combustible Waste and Dust	The site will have a regular inspection and maintenance programme which will identify any build-up of wastes and dust on site surfaces and aim to assess the general site condition. The results of these inspections and monitoring will be recorded on the Daily Environmental Monitoring Record (SWA ENV 009). This programme will specifically ensure that all areas of the site are maintained to a sufficient level of cleanliness and housekeeping to ensure that the plant does not present a fire risk. This programme will aim to

	keep levels of dust, loose fibre, and any other combustible materials to a minimum. Machinery will be regularly cleaned to remove any dust etc to ensure that it does not accumulate on moving parts. If any dust etc is identified then the area would be immediately cleaned. Once the Erema is installed and the site is operational, the following checks will be implemented: • Standardised checks and housekeeping (SWA OPL 001). • Operators Daily Maintenance Tasks (SWA EGM 001) • Erema Operator Maintenance Tasks (SWA EGM 003) All inspections will be logged, and all forms stored in the site office or the shared drive.
Reactions between wastes	All waste received at the site will be non-hazardous waste, the characteristics of which will be assessed prior to delivery to the site. Any non-conforming waste will be segregated and stored in an appropriate container separate from other waste types.
Hot Loads	Jayplas do not receive hot loads.
Out of hours	The site will only be closed during the Christmas period. During the Christmas period, all plastic feedstock material will be removed from production areas and returned to outside storage areas out of hours. Security will be employed so the site is manned when closed.

4.3 Preventing Self-Combustion

Managing Storage Times

4.3.1 The proposed external storage is in 2 separate storage areas (see Waste Storage Plan SWA-DWG-EP-05). Baled or bagged non-hazardous plastic will be stored in stacks. The storage stacks will be managed to ensure that full stock rotation is achieved. This rapid turnover of stock significantly reduces the risk of 'older' material from self-heating and practically eliminates the potential for thermal build up and self-combustion.

4.3.2 Table **FPMP4** summarises the maximum storage capacities as well as the maximum storage durations.

Table FPMP4: Maximum Storage Capacities and Storage Duration Periods

Waste Description		Storage Capacity (m^3)	Storage Period
Plastic Unprocessed and processed wastes	External (stacks)	$800m^3$ per bay	6 months (baled) 3 months (bagged – shred)
	Internal (bunkers)	$120m^3$ per bunker	12 hours
Cardboard	External (stacks)	$400m^3$	3 months (baled)
Separated metal Cans (after processing)	External (stacks)	$960m^3$	3 months (baled)

4.3.3 The treatment process will change the waste on site, taking the material to End of Waste status. If plastics did have to be rebaled and restored on the external yard area, the opening and rebaling would 're-set' the internal temperature of bales and 're-set' the storage period date.

4.3.4 Site operatives will also be required to take the oldest stored material first when selecting material for processing. A log will be maintained so operatives know which stack has the oldest stored material.

4.3.5 Jayplas will not be individually tagging bales or bags with the date of arrival, a log will be maintained so operatives know how long material has been in each stack and the date an individual bay has been fully emptied will be recorded.

4.3.6 The site operators will track material flow through the site to ensure that the storage times specified in this plan are adhered to. All material is processed through the site on 'first in – first out' principles.

4.3.7 The Site Operations Manager or nominated persons will be responsible for managing the rotation of waste.

4.3.8 Bales of waste or bagged waste will be stacked in a straight and uniform manner. The external storage area will be cleaned to minimise the build-up of residual waste.

Control Temperature

4.3.9 The Main Yard and Side Yard will have water cannons installed which will be used to douse the stored material as required. If the ambient temperature is 18ºc or higher then the water cannons will discharge at least 2 times per day, the discharging of the cannons will be spread across the day i.e at least once in the morning and once in the afternoon. The activation of the cannons will be recorded so a record is kept of when the material has been doused.

4.3.10 The vari-angle raingun will have a nozzle (18mm) at 7 bar pressure allowing the cannons to throw a radius of >43 metres and they can be set on an oscillating programme so that the cannons spray across the bales 180 degrees from where the cannon is on the boundary at timed intervals. The cannons will be strategically positioned so that all stacks are covered by the cannon.

4.3.11 A thermometer will be located on the outside of the reception entrance (location shown on Fire Prevention Plan SWA-DWG-EP-08) which shall be read every day to confirm the days when the cannons should be set to discharge.

Waste stored within a building

4.3.12 No waste is stored within the building. There are bunkers to hold the separated waste from sort process into the wash process, however this is not stored waste, only processed waste that is moving through the recycling process. The details on the bunkers are provided.

Waste stored in container

4.3.13 There are two 30 cubic yard RORO containers on site for the production outthrow material, and general waste. Any production outthrow material is transferred from the bunker to the roro. Each RORO container is stored on the side storage yard within separate concrete storage bays. Each roro will be emptied when full.

Seasonality and waste stack management

4.3.14 The materials received are not impacted by seasonal variations in demand and/or supply. The material received will be processed on a first in first out principle.

4.4 Management of stack size

4.4.1 The external storage areas [once constructed] will be split across 2 separate areas, referenced as Main Yard and Side Yard. Table **FPMP5** summarises the storage arrangements across the external yards.

Table FPMP5: Stack Sizes

Storage Area	Maximum Stack Size	Maximum Stack Capacity (m^3)	No. of stacks	Are there blocks of stacks separated with a wall?	Total Maximum Capacity (m^3)
Main Yard	20m (L) x 10m (W) x 4m (H)	$800m^3$	32	Yes – 4 blocks of stacks	$25,600m^3$
Main Yard	20m (L) x 10m (W) x 4m (H)	$800m^3$	2	Freestanding	$1,600m^3$
Main Yard	10m (L) x 10m (W) x 4m (H)	$400m^3$	4	Freestanding	$1,600m^3$
Side Yard	10m (L) x 12m (W) x 4m (H)	$480m^3$	20	Yes – 1 row of 20 stacks	$8,000m^3$

Metal will be stored on the side yard, cardboard will be stored on the main yard. See Appendix 8 - SWA-DWG-EP-05 - Waste Storage Plan for exact position.

4.4.2 The internal bunkers hold the material after the sortation process before either being transferred to the final reprocessing process or being baled and transferred to the external storage area. The internal bunkers are transient bunkers as material is constantly moving through the recycling process, the bunkers are designed to hold the material for hours not days.

Table FPMP6: Internal bunker Sizes

Area	Maximum Bunker Size	Maximum Bunker Capacity (m^3)	No. of Bunkers
Inside building between sort plant and wash plant	20m (L) x 2m (W) x 3m (H)	$120m^3$	15

4.4.3 Main Yard - Where four stacks are stored together, each of the four stacks in each storage block will be separated by pre-cast concrete bays walls with 1m freeboard provided along their height and length. A concept schematic of the storage arrangements and design of each storage area is presented in Storage Concept – SWA-DWG-EP-15. Each storage bay will contain four quadrants of material storage. Stacks of bales will be no more than 4m high and the maximum length or width will be no more than 20m. The maximum storage capacities and durations are summarised in Table **FPMP4** above.

4.4.4 The site manager or nominated deputy will conduct daily visual inspections of the storage area to ensure that the stack sizes are in line with the storage bays maximum capacities.

Monitoring of stacks

4.4.5 Bluetooth Hygrometer Thermometer Sensors will be placed in the centre of a stack on a pole and the bales will be placed around the sensor so the sensor ends up in the middle of the pile. Each sensor is connected to the Smart Control app. Readings will be taken twice a day when the ambient temperature is above 18°c and the readings monitored for increase in temperature of the pile.

4.4.5.1.1 Should any readings be detected that are 5 ºc higher than the ambient temperature then monitoring will be increased for that stack from twice daily, to hourly until temperatures return to the ambient.

4.4.5.1.2 Should temperatures be recorded that are 10 ºc higher than the ambient temperature then the material will be treated as "**a hotspot**" and transferred to the Quarantine area as detailed in 4.6.2. The stack will be separated and bales broken open if needed. Any source of heat within the bale will be removed and disposed of safely.

4.4.5.1.3 Only once the material has been suitably cooled and returned to ambient temperature will it be restacked back in a storage bay.

4.4.6 Regardless of the ambient temperature, the site manager / senior yard staff, will make at least twice daily inspections of the storage yards to check for any early signs of hot spots and / or potential self combustion.

4.4.7 All members of staff upon their induction to the company will undergo training on potential early signs of hotspots such as (but not limited to) Steaming, Smoking, Melting and charring as well as changes in odour emitted. All personnel should be keeping constant vigil around them for any signs, and any concerns reported to the site manager / senior members of staff immediately.

4.5 Preventing of Fire Spreading

Separation Distances

4.5.1 In line with NRW FPMP guidelines:

n/b whilst the FPMP guidance has different separation distances for plastic, with plastic having the greatest separation distance requirements, the separation distances for plastic have been applied to all of the storage area, irrespective of whether the bay will have plastic, cardboard or metal stored.

- *separation/fire break distance required between all waste/baled waste stacks* - each storage area within the main storage area will be separated from other storage areas by at least 27m from its longest dimension of 20m, and 19m along it shortest length of 10m in order to prevent fire spread.

- *minimum separation between stacks and buildings* - the storage areas are separated by at least 27m from the building wall

- *a clear area must be established around the perimeter of site* – the perimeter of the site is >50m from the main storage area and 30m from the side storage area which has max 10m width bays.

4.5.2 The only mobile plant or machinery will be FLTs. The site has a dedicated FLT building which will be used to park FLTs and used as a workshop. Any repairs or servicing of FLTs will be carried out in the workshop which is detailed on Internal Plant Layout (Proposed) (SWA-DWG-EP-07 (part 2 of 2). FLTs will be parked at a minimum of 30m from the waste storage areas when not in use or in the maintenance area.

Fire Walls and Bays

4.5.3 Main Yard and Side Yard – where required, each individual storage block will be separated by 5m high pre-cast concrete walls. The walls will be A1 rated concrete[1] and will have a fire resistance period of at least 120 minutes to allow the waste to be isolated.

4.5.4 There will be a 'freeboard' space of 1m at the top of the storage bays containing combustible waste which will remain clear at all times to minimum fire spreading over the walls.

4.5.5 The Daily Environmental Monitoring Record (SWA ENV 009) will be completed by the Site Manager or nominated persons which will record that the storage areas are visually checked to ensure they follow the Fire Prevention and Mitigation Plan.

4.5.6 All storage bays will be managed to ensure full stock rotation is achieved. The Site Operations Manager or nominated deputy will be responsible for managing the rotation of waste.

4.5.7 Stock takes will also be completed weekly, the stock takes enable key personnel to monitor that the correct storage areas are being used, the waste is stored in the correct areas, and the volume of waste in each storage area.

4.6 Quarantine Area

4.6.1 Suitable quarantined area that are located at least 6m from any building and waste stockpile are presented on Waste Storage Plan SWA-DWG-EP-05. The quarantine area will have the capacity to hold at least 50% of the volume of the largest waste stockpile and will be kept clear at all times to allow for the provision of access to the site for the FRS.

4.6.2 In the event of a hotspot being identified (see section 4.4.5), waste in the affected bay(s) will be safely transferred and spread across the quarantine area.

4.7 Detecting Fires

4.7.1 The treatment facility buildings have a mixture of automatic detection and manual call points. This consists of strategically located red 'Break Glass' alarm points and automatic detectors throughout the site. Breaking the glass will activate the alarm system. Smoke detection is present in some areas of the site, Extrusion building, main production area underneath the Mezzanine and large stores. Heat detection is also located around the site which will sound the alarm if temperatures exceed 70 c. The alarm when activated consists of strategically placed sounders.

4.7.2 Fire alarms will be tested weekly. During these tests, at least one fire alarm call-point will be activated to check that the alarm sounds and that the panel receives the signal. The fire alarm system will be inspected and maintained / serviced by a third-party at least every 6 months (in line with British Standard BS 5829).

4.7.3 The external main yard and side yard is manned 24 hours a day with staff permanently working outside. The external yard areas are covered by CCTV cameras 24/7 and the CCTV cameras are monitored by staff or security 24/7.

[1] A product can be described as non-combustible if it receives a Euroclass A1 rating under BS EN 13501-1. In addition, a separate test for non-combustibility is defined in BS 476-4:1970: Non-combustibility test for materials and BS 476-11:1982: Method for assessing the heat emission from building products.

4.8 Suppressing Fires

4.8.1 The site has the following equipment to fight fires before support of the local fire and rescue service:

- Automatic sprinkler system in building, each building is provided with a separate detection and activation zone(s) (see High Level Sprinkler System Plan SWA-DWG-EP-11). The sprinkler system is fed by 1 x 930m^3 tank filled from the mains.
- Fire hydrants on site and off site
- Fire extinguishers across site internally
- Fire extinguishers in J and A Young vehicles

The following equipment will be installed when the external yard areas are developed:

- Water cannons around perimeter of Main Yard and Side Yard
- Water cannons storage tank 30,000 ltrs

4.8.2 There are 7 fire hydrants located on site and 4 fire hydrants located within 100m of the site illustrated on Fire Prevention Plan SWA-DWG-EP-08 which could be used.

4.9 Fire Fighting Techniques

4.9.1 The site has been designed to allow active firefighting.

4.9.2 The person who discovers the fire will raise the alarm. Upon identifying or being made aware of a fire, the site manager, or nominated deputy on site at the time of the incident, will alert all present on site to the fire and its location and alert the emergency services.

4.9.3 The site will be evacuated in accordance with the site evacuation plan with the exception of those staff involved in active firefighting.

4.9.4 All staff, contractors and visitors would follow the Fire Evacuation procedure as included in Section 4.10 below.

4.9.5 Trained staff will only tackle the fire using the fire extinguishers if it is safe to do so, and only in relation to small scale fires.

4.9.6 The Site manager or nominated deputy and site fire warden will be responsible for ensuring that all personnel, visitors, and sub-contractors are accounted for, and to give the Emergency Services that information on arrival.

4.9.7 In the unlikely event of an internal fire which has been extinguished by the sites suppression system, staff are to await the arrival of the Fire and Rescue Service (FRS), who would then take the appropriate actions.

4.9.8 The facility will be operational 24 hours a day, 7 days week. The FRS will be contacted by site staff during operational hours.

4.9.9 There are three fire stations that could respond to an incident: Gorseinon Fire Station which is 1 mile away and Pontarddulais Fire Station which is 3.5 miles away but both are quite small stations; Morriston (north Swansea) is 7 miles away but a larger station and would certainly be called in for a major incident.

4.10 Fire Evacuation

4.10.1 Each building elevation is fitted with at least two points exit points to allow safe egress for staff from each building in the event of an emergency. Fire muster point is located

at the front of the site (see Fire Prevention Plan SWA-DWG-EP-08). All exit points and muster points will be clearly signposted with fire drills also conducted.

4.10.2 All personnel to follow the instructions of the Fire Wardens and the Site Manager.

4.10.3 A list of trained Fire Wardens will be maintained and displayed on the site, together with a list of on call staff to attend the site in the event of a fire outside of normal operation hours.

4.10.4 The Fire Evacuation Procedure is provided to staff, contractors, and visitors which states:

- On discovery of a fire, immediately operate the fire alarm by pressing the nearest break glass call point and / or contact the Site Manager via a radio to ensure the alarm is raised.
- Fire Wardens and staff must only tackle to fire if they are trained to do so, the equipment is appropriate and if their safety or that of others is not compromised.
- Leave the building / work area by the nearest available exit / safe route and report directly to the fire assembly point.
- Leave quickly but in a calm, controlled and orderly manner. Do not detour to collect personal items.
- Do not re-enter the building / work area for any reason until authorisation has been given by the Site Manager / Fire Brigade.
- The Site Manager or their deputy will assess the situation and call the Fire and Rescue Service if required.

4.11 Water Supplies

4.11.1 There is a 930m^3 fire water tank installed at the site to supply the fixed fire sprinkler systems and there will be another 30,000 litre tank installed for the water cannons, shown on Site Drainage Plan SWA-DWG-EP-06. There will be a connection point on theses tanks for the FRS which accords with the British Standard and enables a constant supply of water for firefighting. This infrastructure will be checked as part of the regular maintenance inspections undertaken by trained site operatives. Both tanks will be auto filling with Auto top up ball valves “Inlet Float Valve”. The connection point will be a 250 psi central/modern hydrant. The tanks will be maintained and checked both internally and by an external third party.

4.11.2 Once developed, the proposed closed drainage system of both storage yards will be held in a 1,050m^3 holding tank located at the front of the site (see Site Drainage Plan (Proposed) SWA-DWG-EP-06 (part 2 of 2)) which will be used to retain fire water generated in the event of the fire. There will be a connection point on this tank for the FRS and if necessary, this firewater could be recycled at the discretion of the FRS.

4.11.3 In accordance with Natural Resources Wales guidance, the site needs enough water supply for a worst-case scenario, which is considered as the largest pile on site catching fire. The guidance specifies that for a 300m^3 pile of combustible material you must have a water supply of at least 2,000 litres a minute for a minimum of 3 hours. Based on the maximum proposed pile size of 800m^3 a minimum of 960m^3 of fire water will be required. The calculations for the minimum required firewater supply are shown below:

2,000 (litres per minute) ÷ 300 (m^3) = 6.6667 l/min/m^3
800 (m^3) x 6.6667 = 5,333 (litres/min)
5,333 litres/min x 180 mins = 960,000 litres (960 m^3)
960,000 litres of firewater required (minimum)

4.11.4 The required litres of water is met by:

- Fire water tank = 930,000 litres
- Cannon water tank = 30,000 litres
- 7 fire hydrants across the site (these fire hydrants are serviced and maintained on an annual contract as governed by British Standards and Building Regulations, in particular BS9990:2015)
- 4 fire hydrants off site - hydrant should provide a minimum of 8 l/sec (480 l/min).

4.12 Managing Fire Water

4.12.1 The outside yard areas will run to surface waters via tank and interceptor and therefore protection of surface waters from fire waters is essential. Should a fire occur the consequences of failing to contain fire water can be harmful; water courses being at most risk with firewater runoff entering surface waters.

4.12.2 If the site encountered a fire, the surface water drainage system could be closed:

- Interceptors on site would be closed to hold water on site
- Main Yard and Side Yard - 1 x 50,000litre reception tank adjacent to the interceptor on the Main Yard for waste water
- 1 x 1,050m^3 holding tank at front of site which fire water from both storage areas could be pumped to.
- The storage yards will be designed to fall to a specific point to create additional water storage capacity via Pooling. The Main Yard will be able to hold an additional 960m^3 of pooled water. See Fire Water Pooling Points SWA-DWG-EP-09.

4.12.3 A fire for 3 hours on the maximum storage size of 800m^3 would potentially produce 960m^3 of fire water. The water storage capacity is 2,015m^3 and therefore the site has been designed to provide sufficient capacity.

4.12.4 Fire water in the storage tanks can be removed via tanker as necessary and tankers could be on regular turnaround until the fire water was removed.

4.13 During and After an Incident

<u>During</u>

4.13.1 During any firefighting or subsequent clear up operations, any incoming wastes will be diverted to an alternative site.

4.13.2 A Business Continuity Plan SWA ENV 004 is available for the site and this would be followed in an emergency.

4.13.3 Natural Resources Wales and Local Authority will be informed by Jayplas of any major incident. The Fire Rescue Service will contact any other relevant people, including nearby businesses and residential properties, if required, for example, in the event the fire poses a health and safety risk for potential receptors close to the site.

<u>After</u>

4.13.4 Once the FRS is satisfied that the fire has been extinguished, the following steps will be carried out to ensure that the site is fully decontaminated prior to the site returning to full operation:

- Affected materials will be quarantined for a minimum of 24 hours. After this period, testing will be carried out first to establish the nature of the waste and ensure that it is taken to the most suitable facility for treatment and / or disposal.
- All fire water captured by the drainage system will be tested and subsequently transferred off site via tanker to an appropriate facility.
- The site will undergo deep cleaning, including the drainage system, and the site infrastructure will be tested. Any damaged equipment / infrastructure will be replaced or repaired as soon as practicable.

4.13.5 Only once the above works have been completed and the site has been inspected will the operator re-open the site. NRW will be informed at every juncture.

5.0 REVIEWING AND MONITORING FPMP

5.1 Reviewing FPMP

5.1.1 This document will be subject to on-going review and revision where necessary. This review will be undertaken in response to events which may occur on site, and to ensure that it accords with the latest regulations and associated guidance documents. The review of the FPMP for the site will occur at least once per annum.

5.1.2 As explained in the document, the site is currently undergoing significant development and installation of equipment. The FPMP will be updated at regular intervals as parts of the project are completed. A copy of any updated and revised FPMP will be provided to NRW.

5.1.3 All revisions to the document will be recorded and details of said revisions will be described as part of the required record relating to document review.

5.2 Maintaining Compliance

5.2.1 Daily checks carried out and recorded on Environmental Monitoring sheet "SWA ENV 009" . CCTV operational 24/07

5.2.2 Periodic checks of equipment recorded on Environmental Monitoring sheet "SWA ENV 009" along with next due dates.

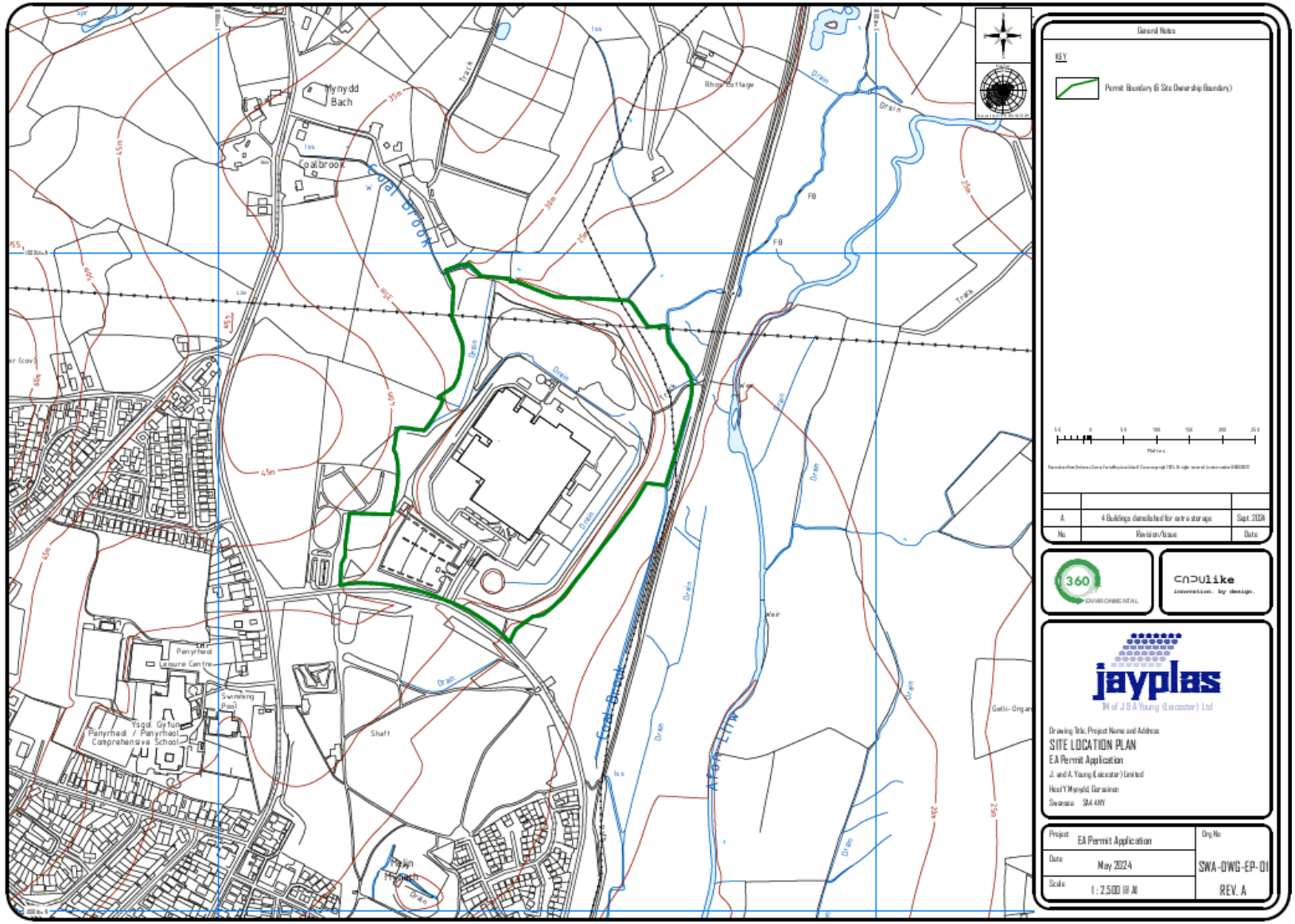
5.2.3 CCTV monitored 24/07

5.2.4 Weekly checks of sprinkler system

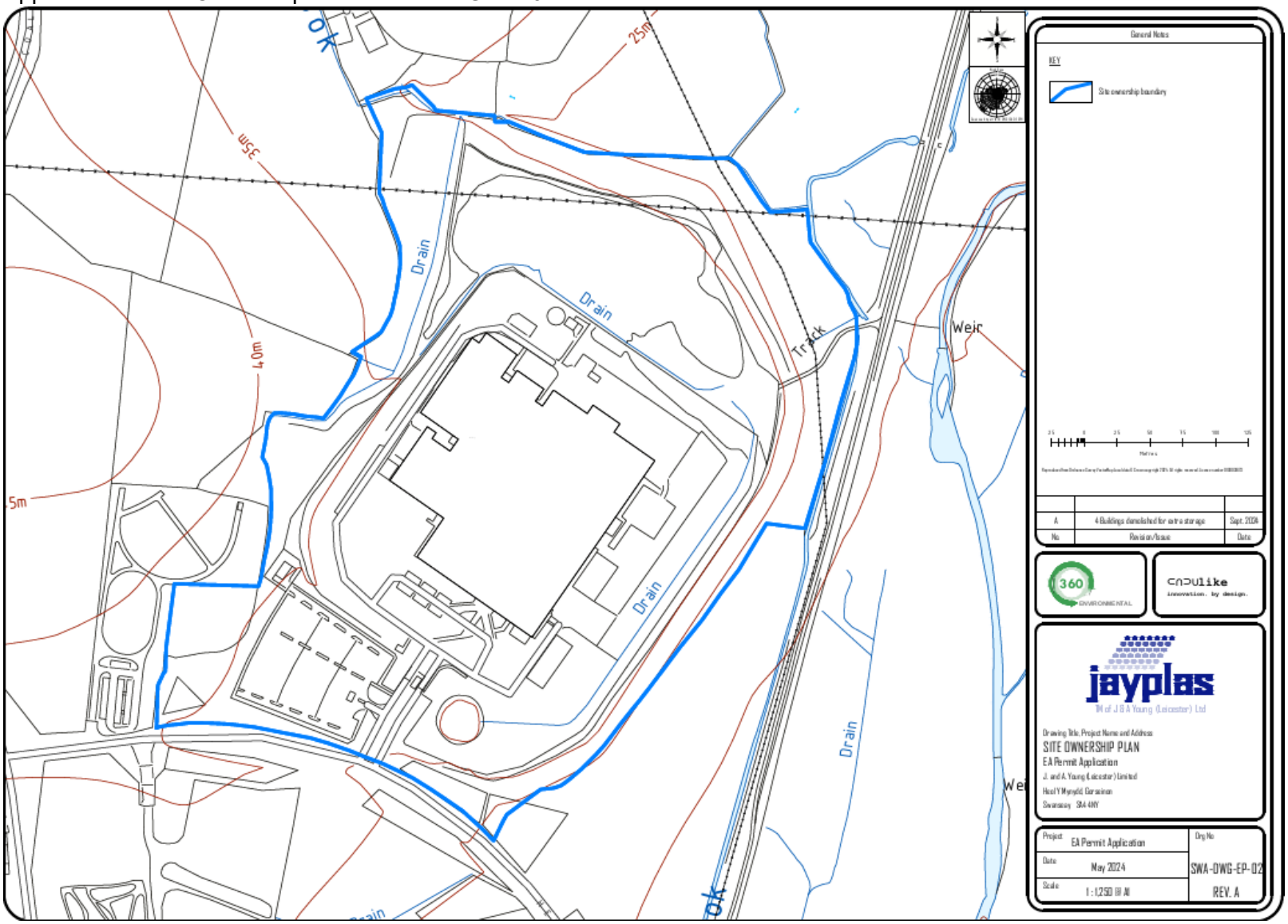
5.2.5 - At least annual review of FPMP and compliance, or following any changes to risk levels.

It is considered that this document complies with the Natural Resources Wales guidance "Fire Prevention and Mitigation Plan - Waste Management" and Waste Industry Safety and Health Forum (WISH) document "WASTE 28 – Reducing Fire Risk and Waste Management sites

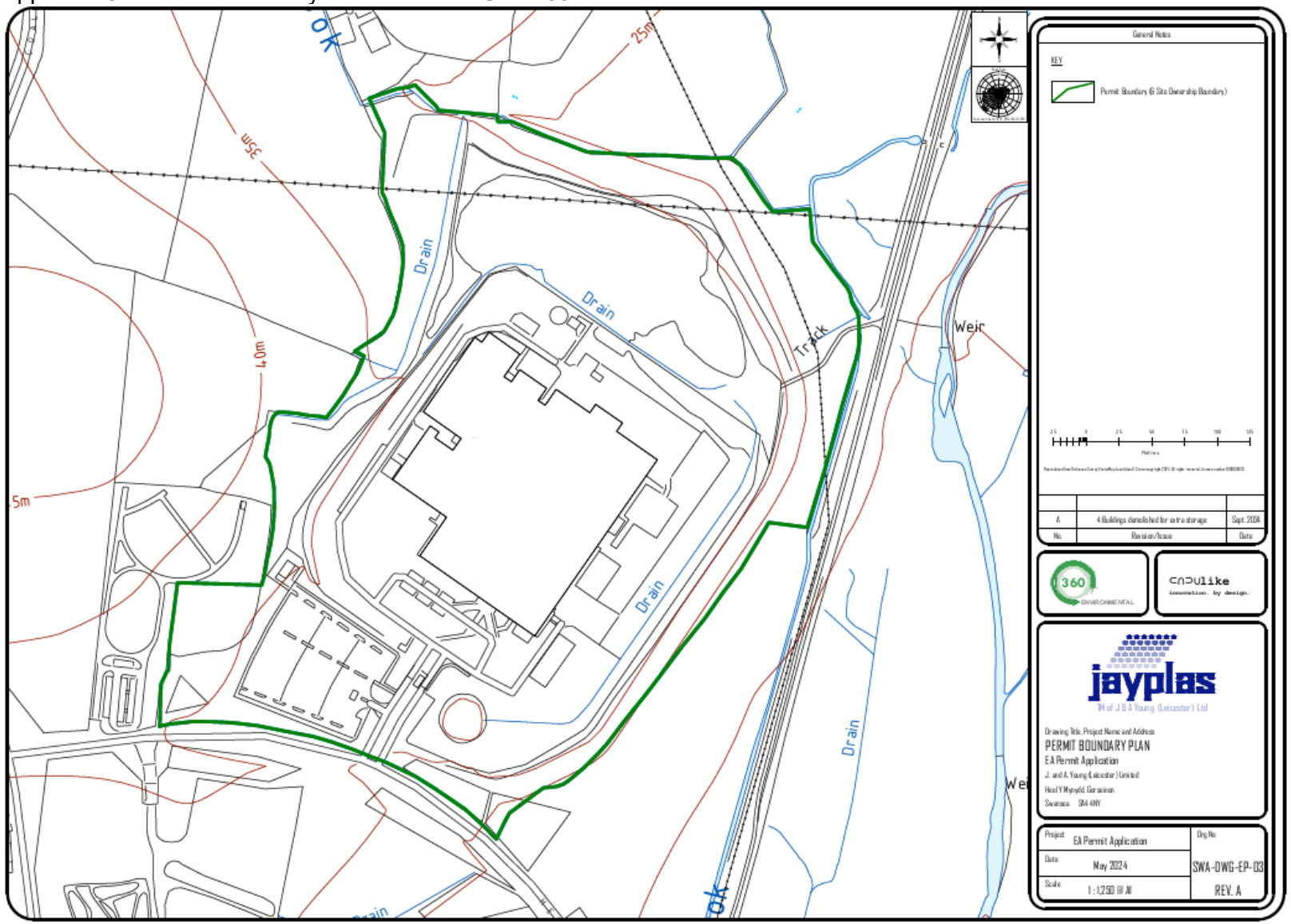
Appendix 1 – Site Location Plan SWA-DWG-EP-01



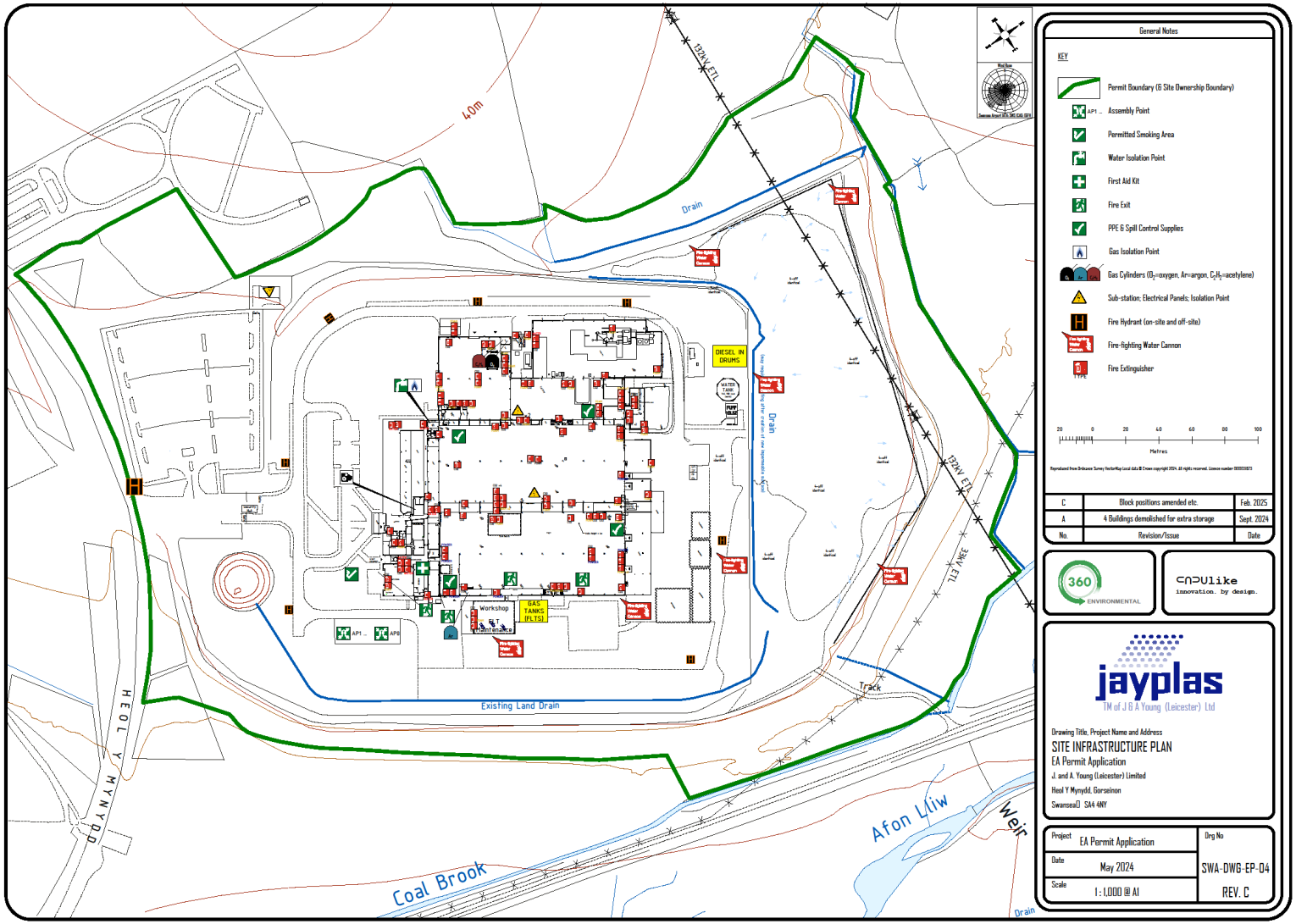
Appendix 2 – Site Ownership Plan SWA-DWG-EP-02



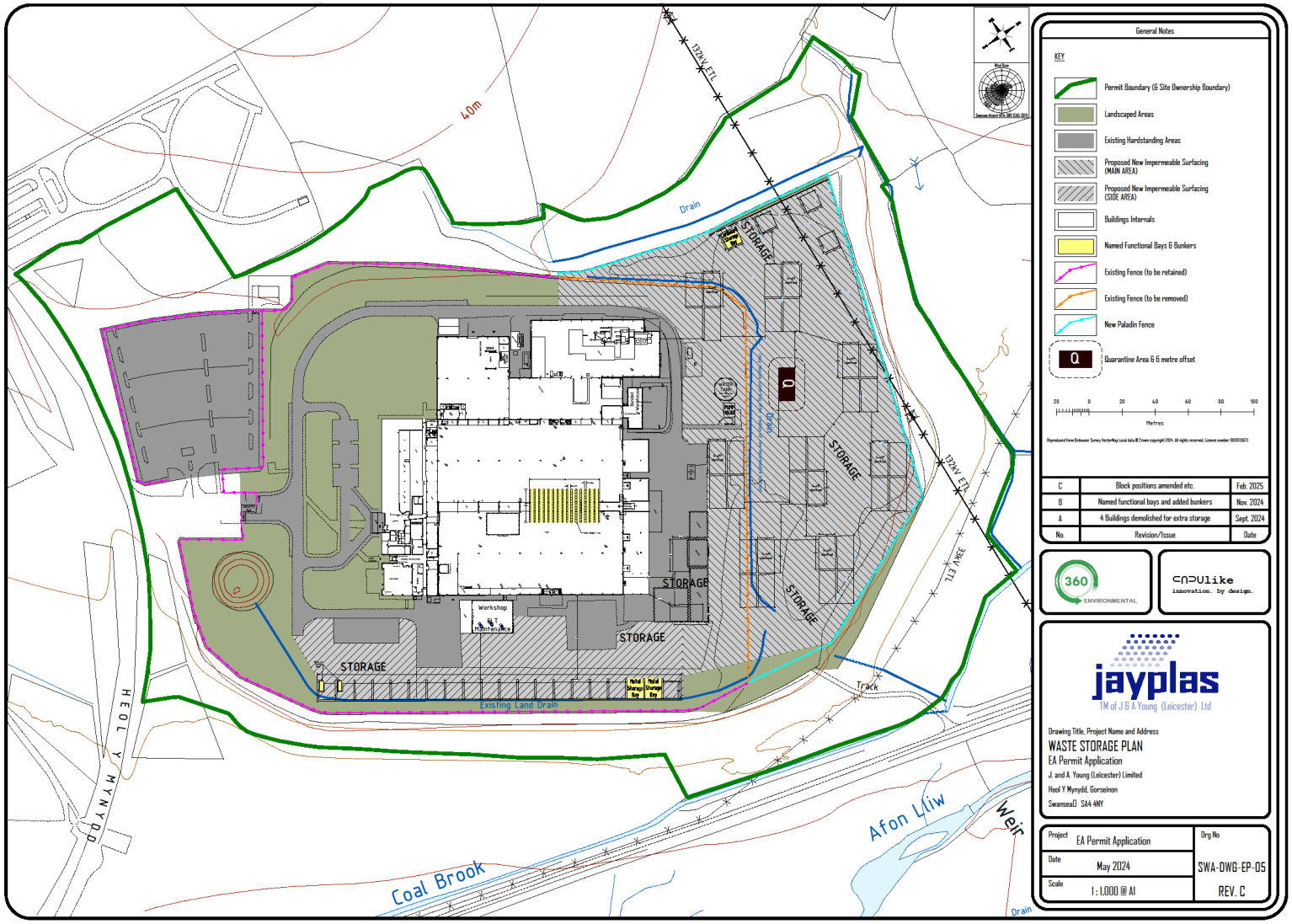
Appendix 3 – Permit Boundary Plan SWA-DWG-EP-03



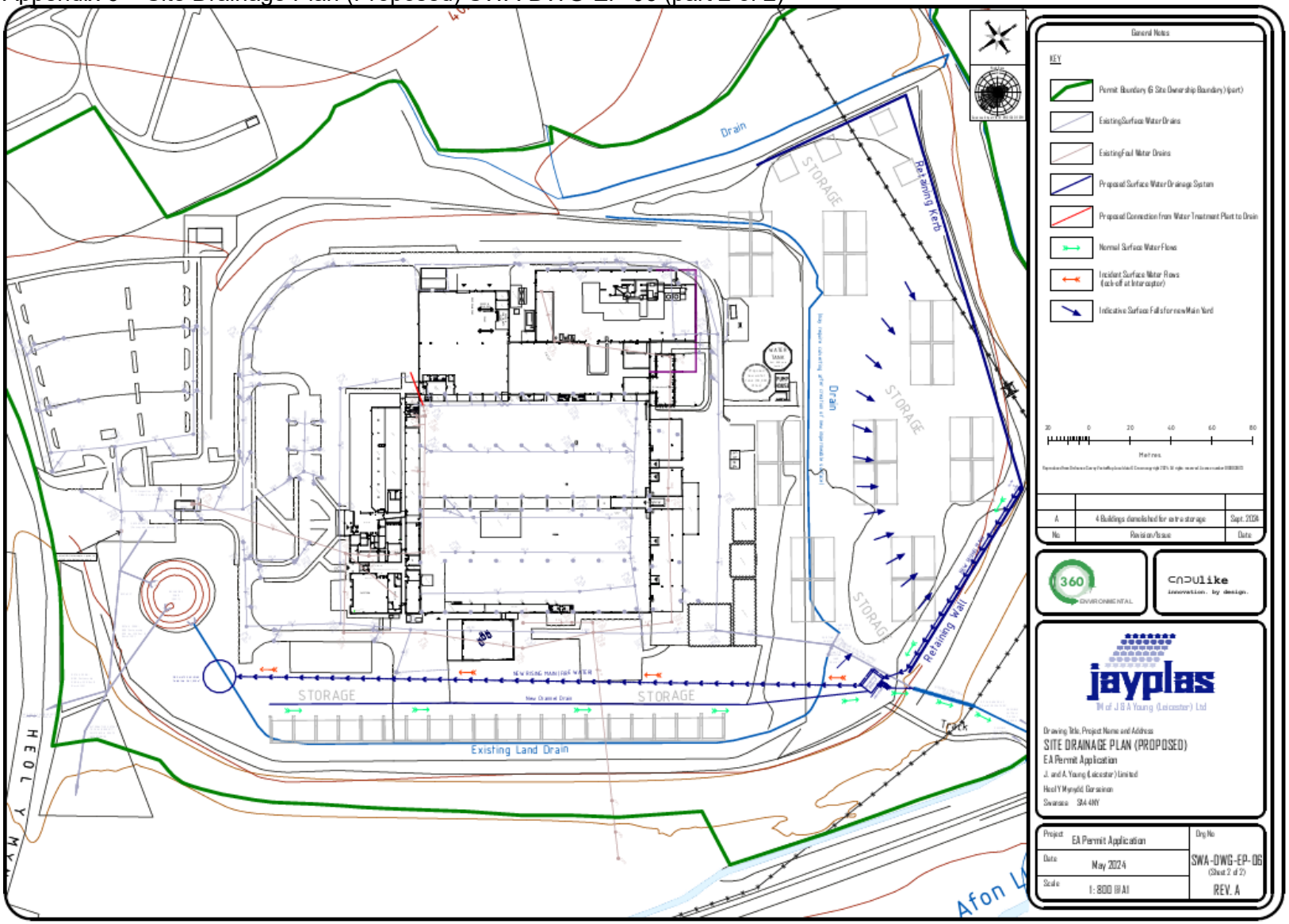
Appendix 4 – Site Infrastructure Plan SWA-DWG-EP-04



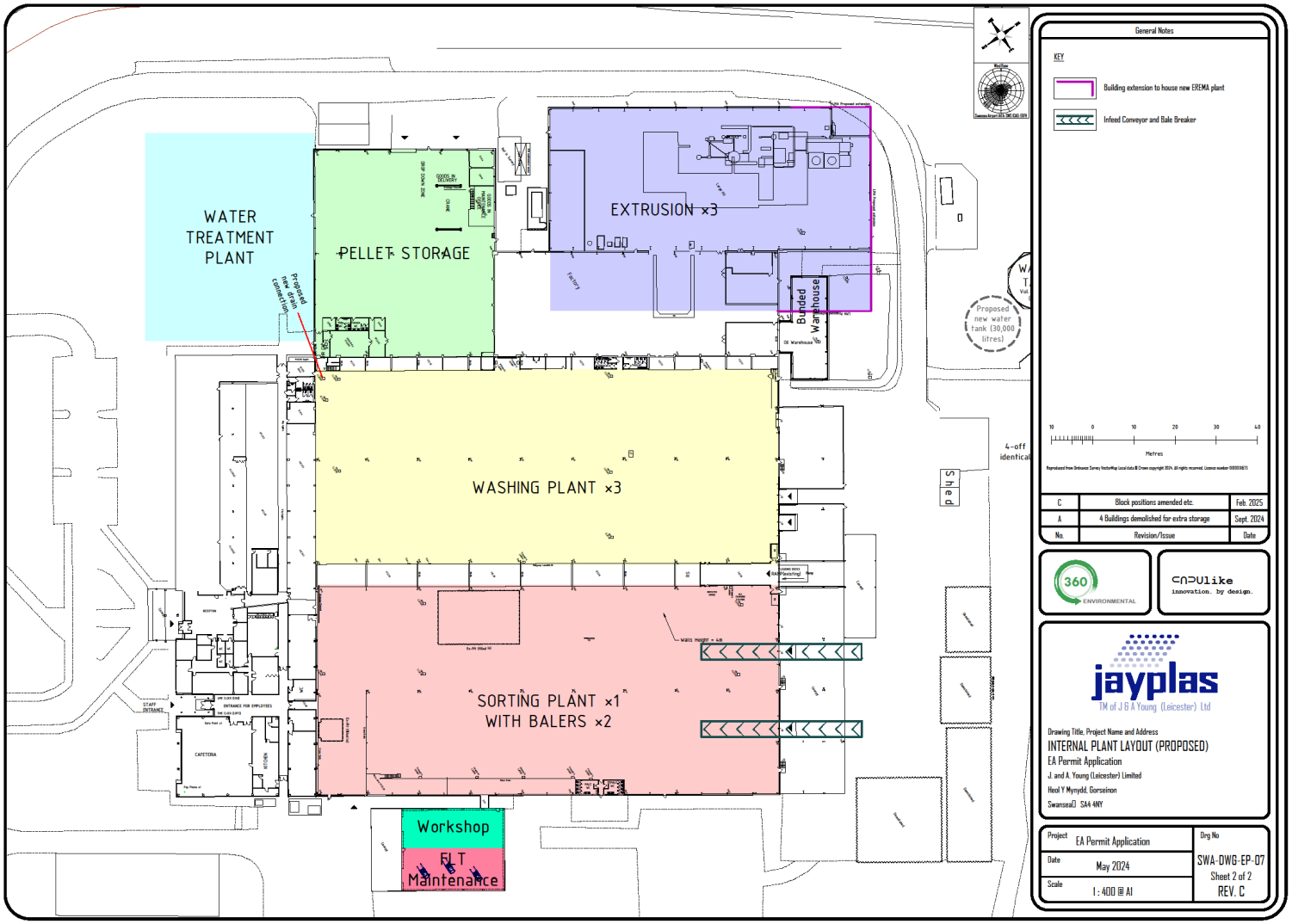
Appendix 5 – Waste Storage Plan SWA-DWG-EP-05



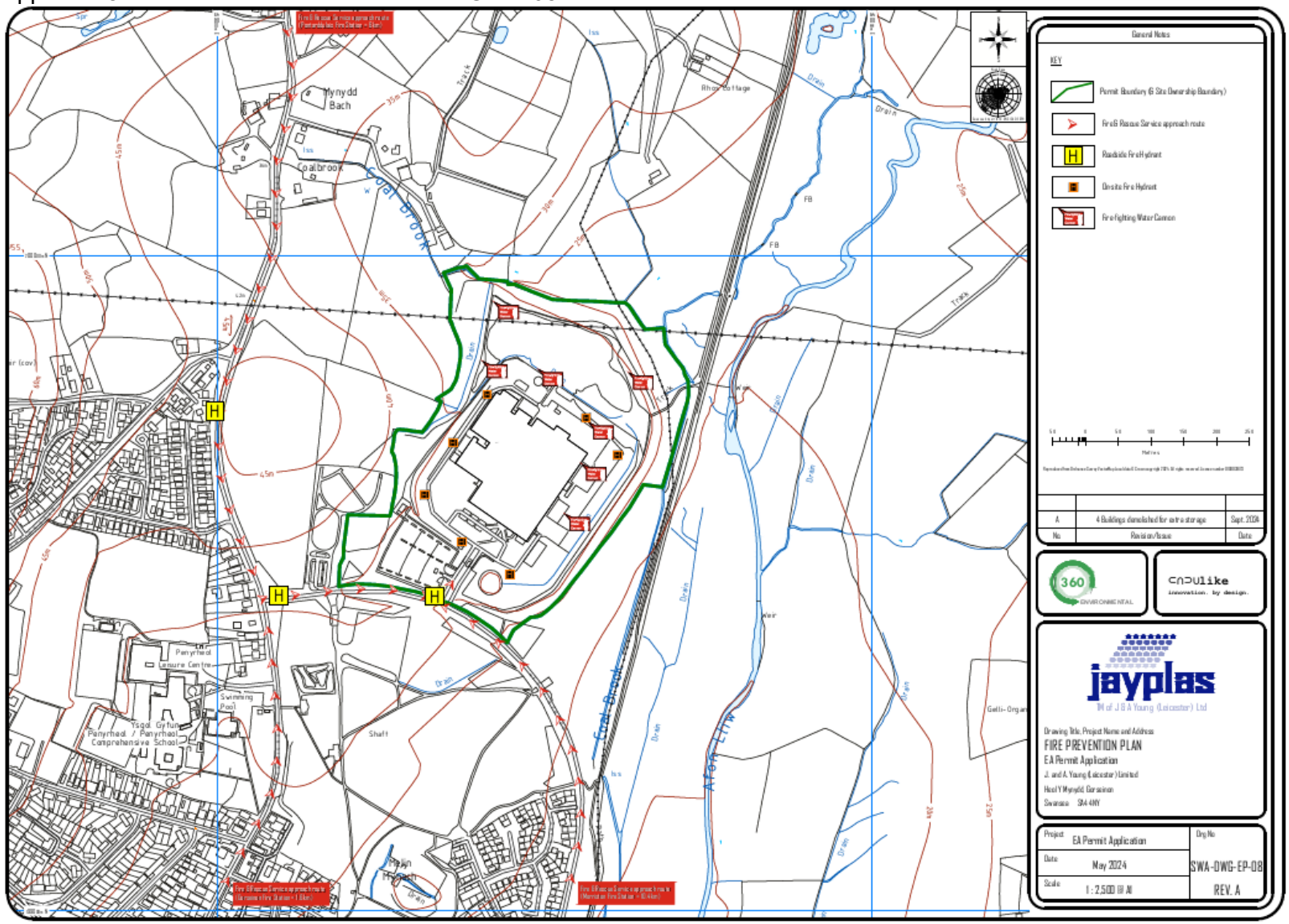
Appendix 6 – Site Drainage Plan (Proposed) SWA-DWG-EP-06 (part 2 of 2)



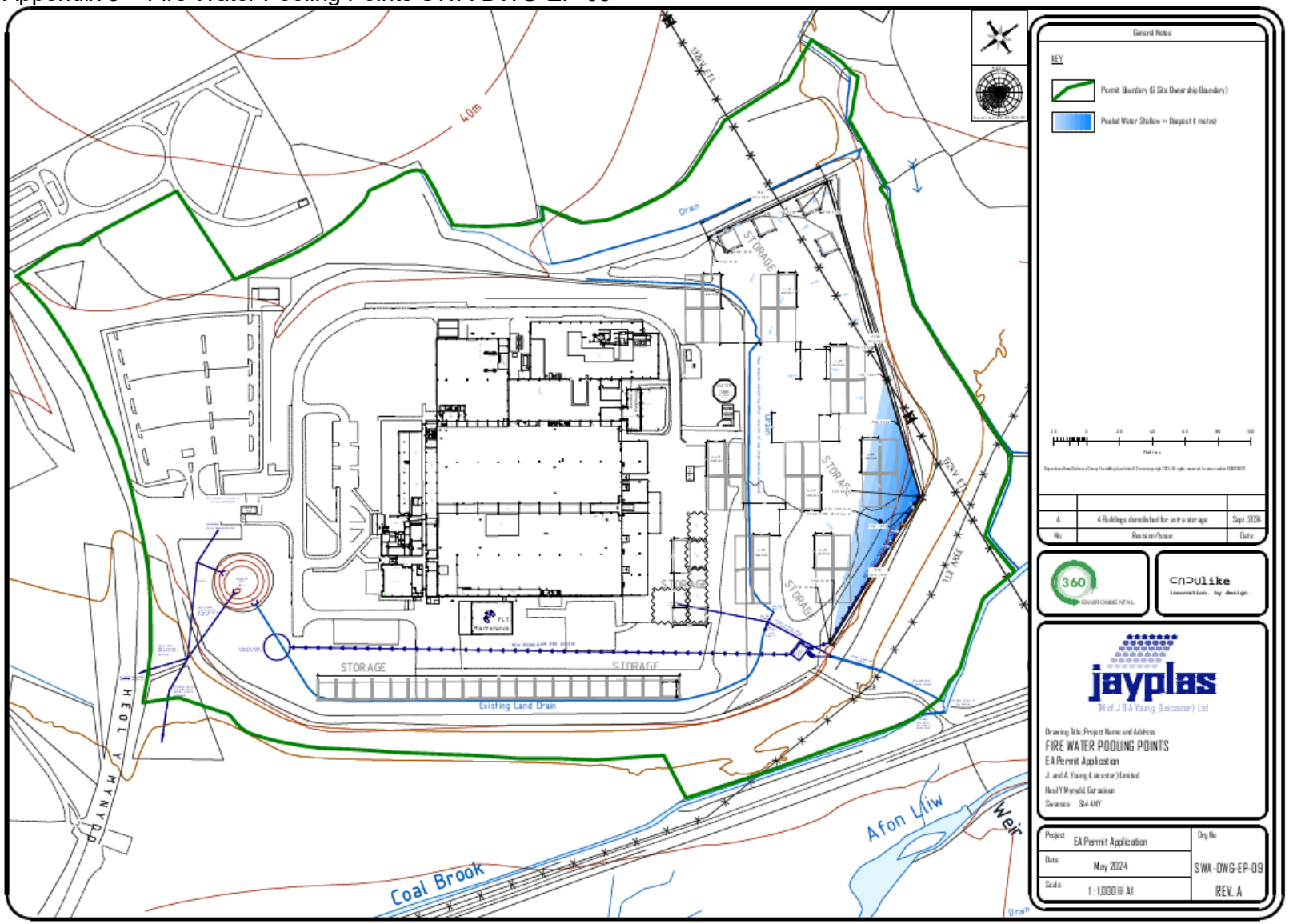
Appendix 7 – Internal Plant Layout (Proposed) SWA-DWG-EP-07 (part 2 of 2)



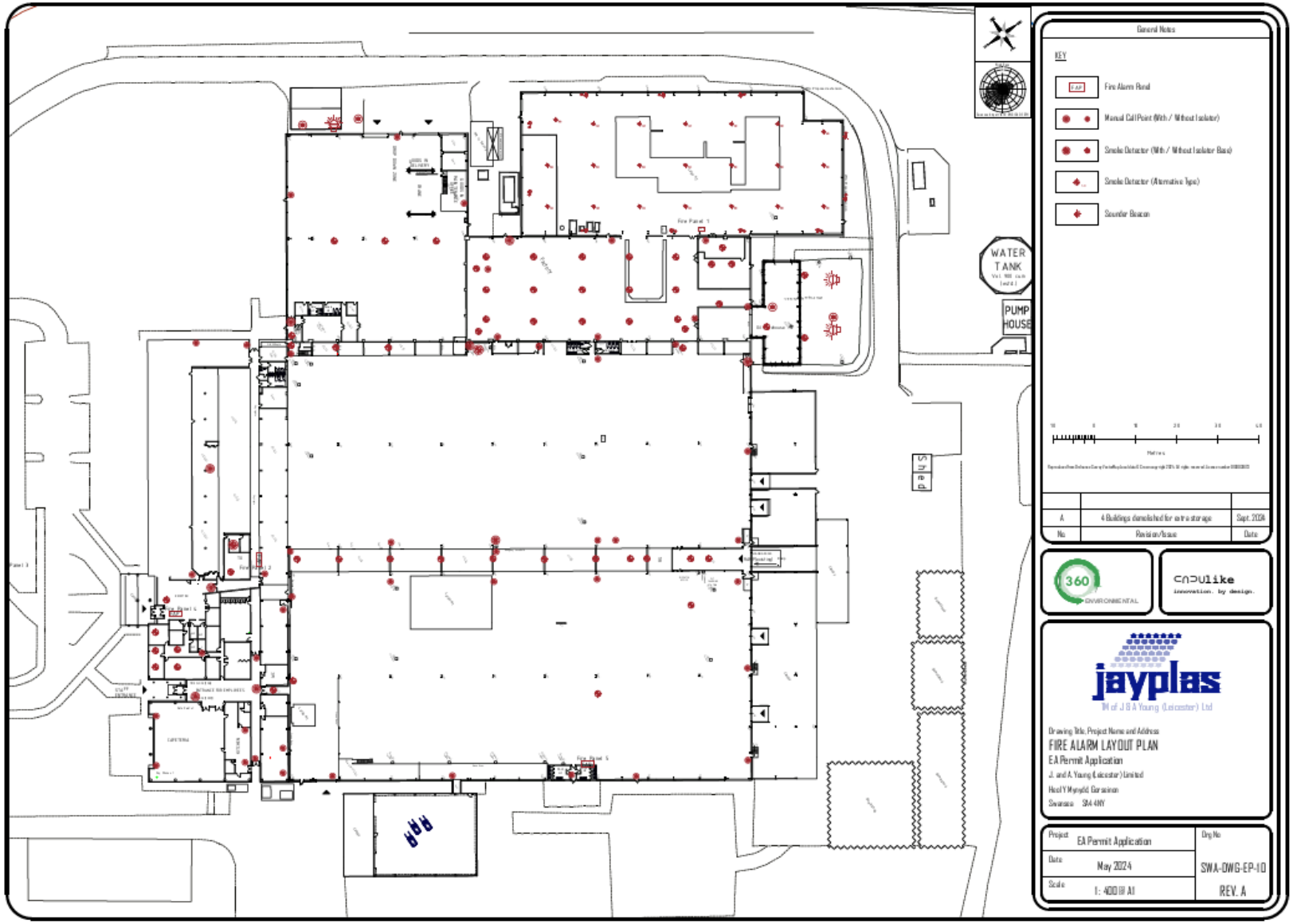
Appendix 8 – Fire Prevention Plan SWA-DWG-EP-08



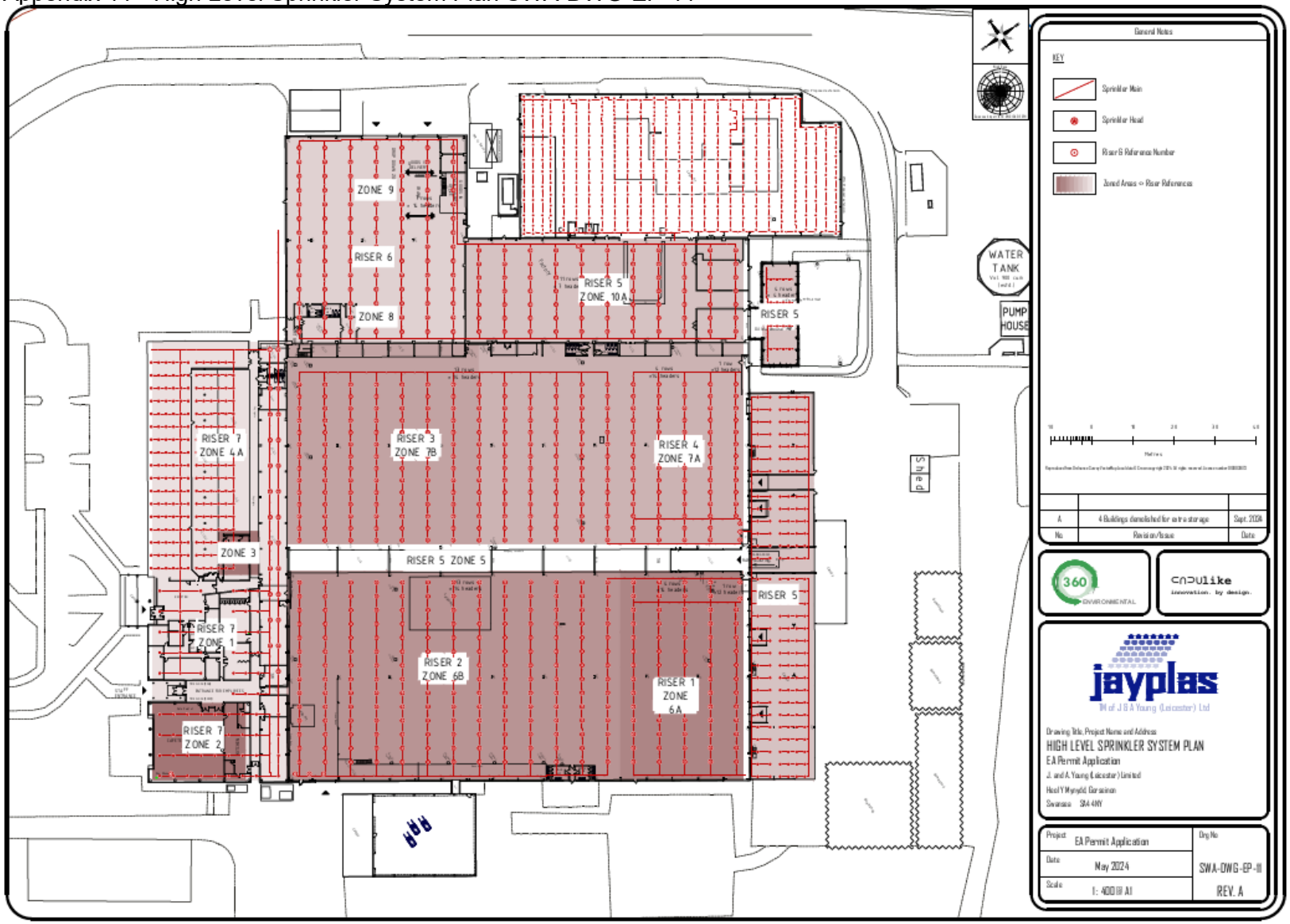
Appendix 9 – Fire Water Pooling Points SWA-DWG-EP-09



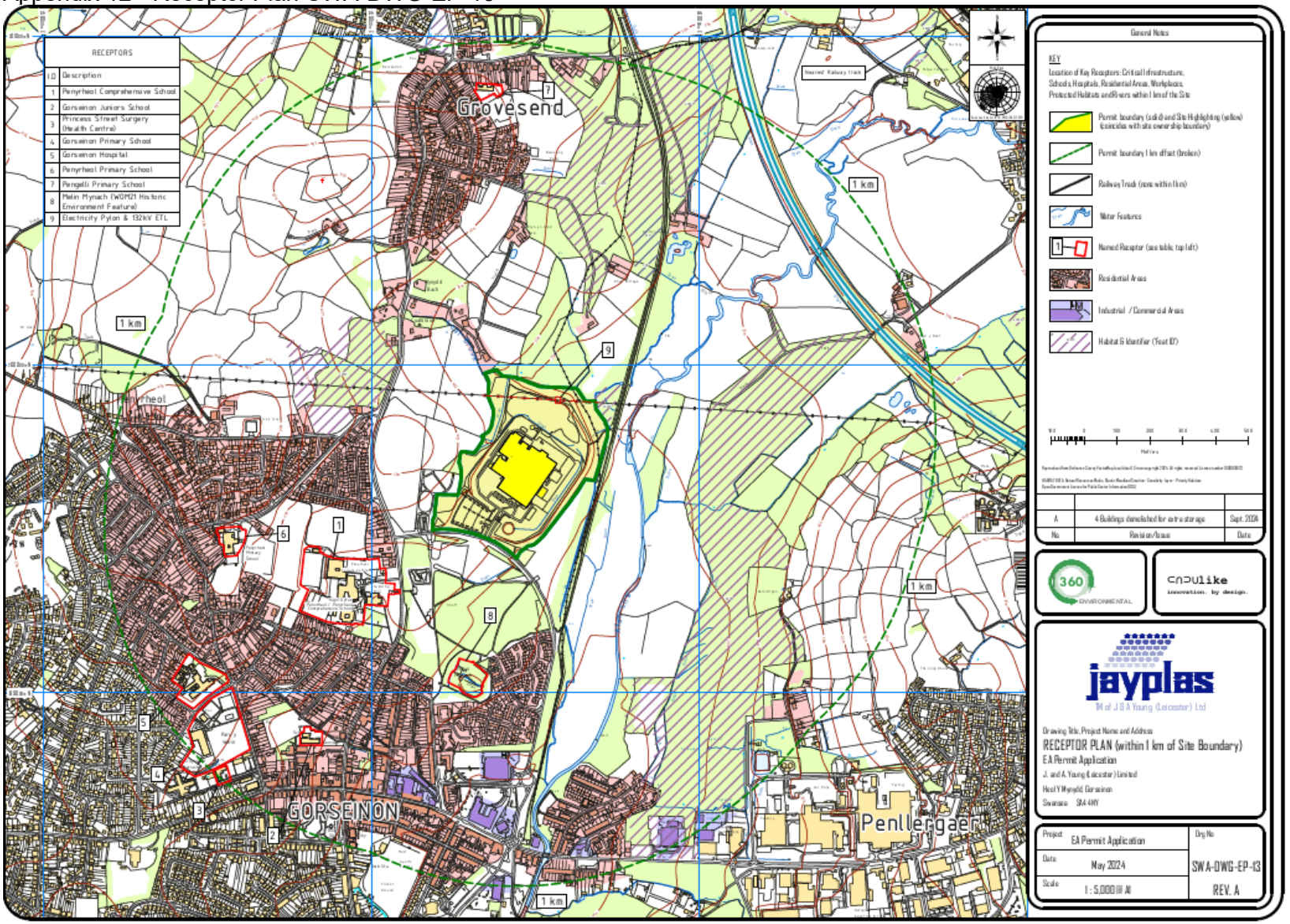
Appendix 10 - Fire Alarm Layout Plan SWA-DWG-EP-10



Appendix 11 - High Level Sprinkler System Plan SWA-DWG-EP-11



Appendix 12 - Receptor Plan SWA-DWG-EP-13



Appendix 13 - Storage Concept – Main Yard SWA-DWG-EP-15