Fire Prevention & Mitigation Plan (FPMP)

for

EV Recycling Ltd.

Site Location:

EV Recycling
Unit 12, Llanelli Gate
Dafen, Llanelli
Carmarthenshire
United Kingdom
SA14 8LQ

Overview

This Fire Prevention & Mitigation Plan (FPMP) has been created for EV Recycling Ltd, by EV Recycling Ltd. The site is intended to be used for recycling activities of lithium ion battery cells, including the delivery of battery cells, storage, mechanical crushing/processing, and finally separation and storage of the outputted materials prior to it being purchased by customers.

Document Revision History			
Date	**Author**	**Version**	**Notes**
15/05/2019	Sam Joseph	1	Report
05/09/2019	Sam Joseph	2	Page numbers added, address amended, detail changes and additions to content
08/11/2019	Sam Joseph	3	Storage Quantities Added
15/01/2020	George Chamberlain	4	Address needs changing
31/01/20	George Chamberlain	5	Address
05/02/2020	Sam Joseph	6	Various
11/02/2020	Sam Joseph	7	Drainage Plan & Materials Storage Information Added
05/03/2020	Sam Joseph	8	Feedback points addressed in order to satisfy NRW guidance. Section 6 added to document.
16/03/2020	Sam Joseph	9	Confidentiality Justification Review and changes to page 4

Contents

Note: An electronic copy of this document is kept and updated, as well as the physical copy which is located on-site.

1. Fire Procedure

Fire Procedure	
Step	**What to do if it happens?**
1	In the event of a fire occurring, the fire alarms will sound and personnel will exit the site, raise the alarm if possible, and gather at the muster points. All personnel will be accounted for
2	Contact fire emergency services
3	If trained to do so, use emergency fire equipment such as extinguishers, hoses and sand bags
4	Contact Natural Resources Wales to inform them of the incident and confirm where fire water is going according to the site drainage plan
5	After the fire has been extinguished, fill out the accident and incident report
6	Liaise with emergency services regarding preventative measures

2. Fire Environmental Risk Assessment

Assessment Part 4 of the ERA (Environmental Risk Assessment)	
Date of Assessment:	**05/02/2020**
Hazard:	Fire
Reason for Hazard:	The potential for fire from materials stored on-site if proper handling is neglected, and in the event of a fire the firewater run-off could be contaminated and cause harm to the environment if measures are not put in place
Possible Pathways:	Air/wind & materials can spread fire, and firewater run-off can transport potentially contaminated water via watercourses
Possible Receptors:	Workforce Nearby businesses Local flora/fauna Local watercourses
Consequences:	- Nuisance to local environment if dust is not contained. - In the long term, dust has the potential to cause respiratory issues in workforce or people at nearby businesses
Control Measures:	- Separation of incompatible / combustible materials and ignition sources to remove potential ignition sources - No smoking policy on-site - Minimise stockpile, incorporate fire-breaks in material storage - Fire training and emergency drills - Provision of fire extinguishers and fire safety equipment - Store materials on an impermeable surface within a bunded area in close proximity to foul drainage in order to prevent firewater run-off reaching the environment
Likelihood of Hazard:	Highly unlikely
Level of Risk to Receptors:	**Very low** when control measures are applied
Further notes:	**Refer to the fire procedure**

3. Site Layout

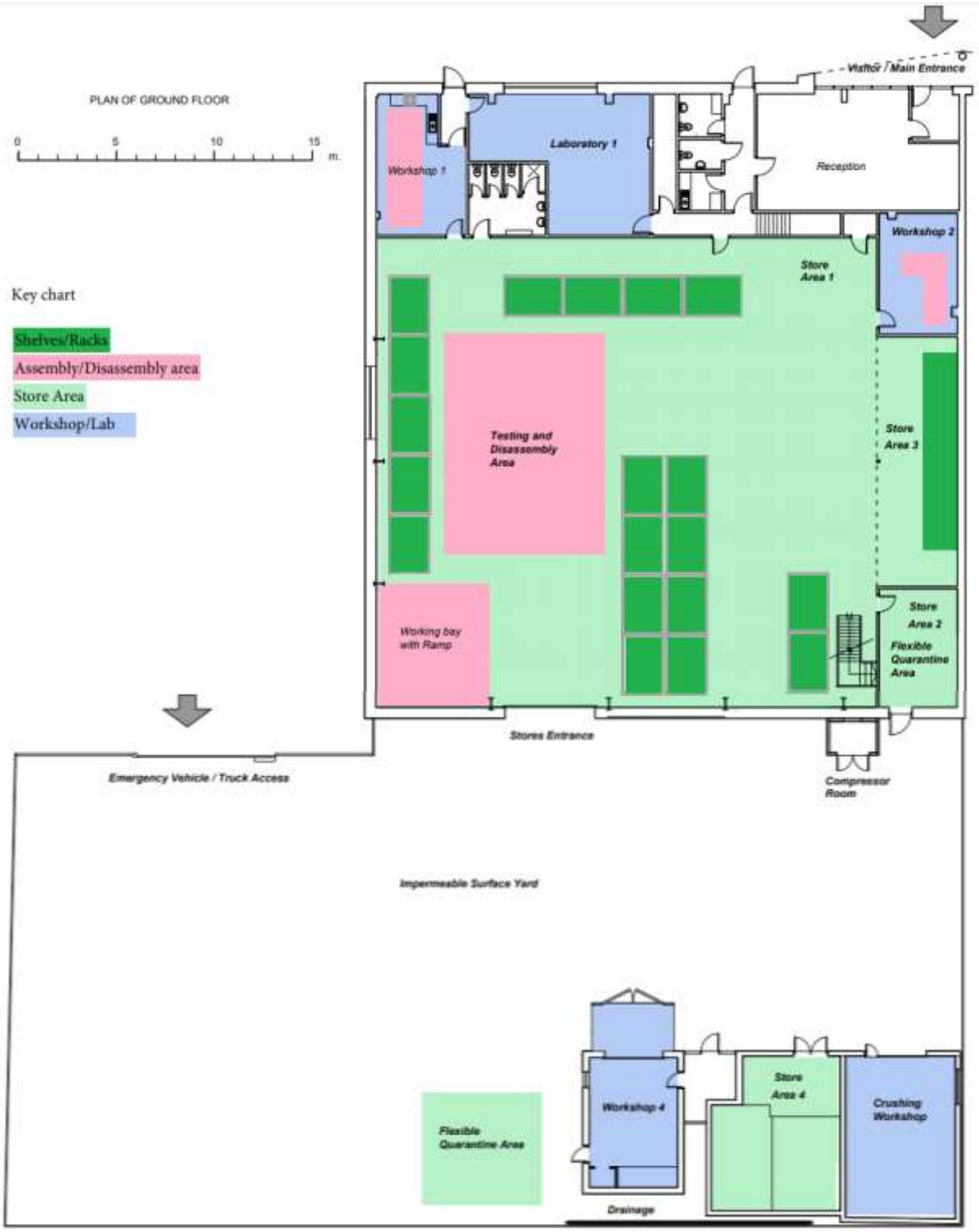
Site Address: *EV Recycling, Unit 12, Llanelli Gate, Dafen, Llanelli, Carmarthenshire, UK, SA14 8LQ*

3.1. Site entrances & exits and recycling & storage areas

The image below is a general overview of the site, pinpointing the key areas. Muster stations / Assembly points are depicted on-site using green signs (located at the off-site car park)

The image below is a general overview of the site, pinpointing the key areas.

CONFIDENTIAL



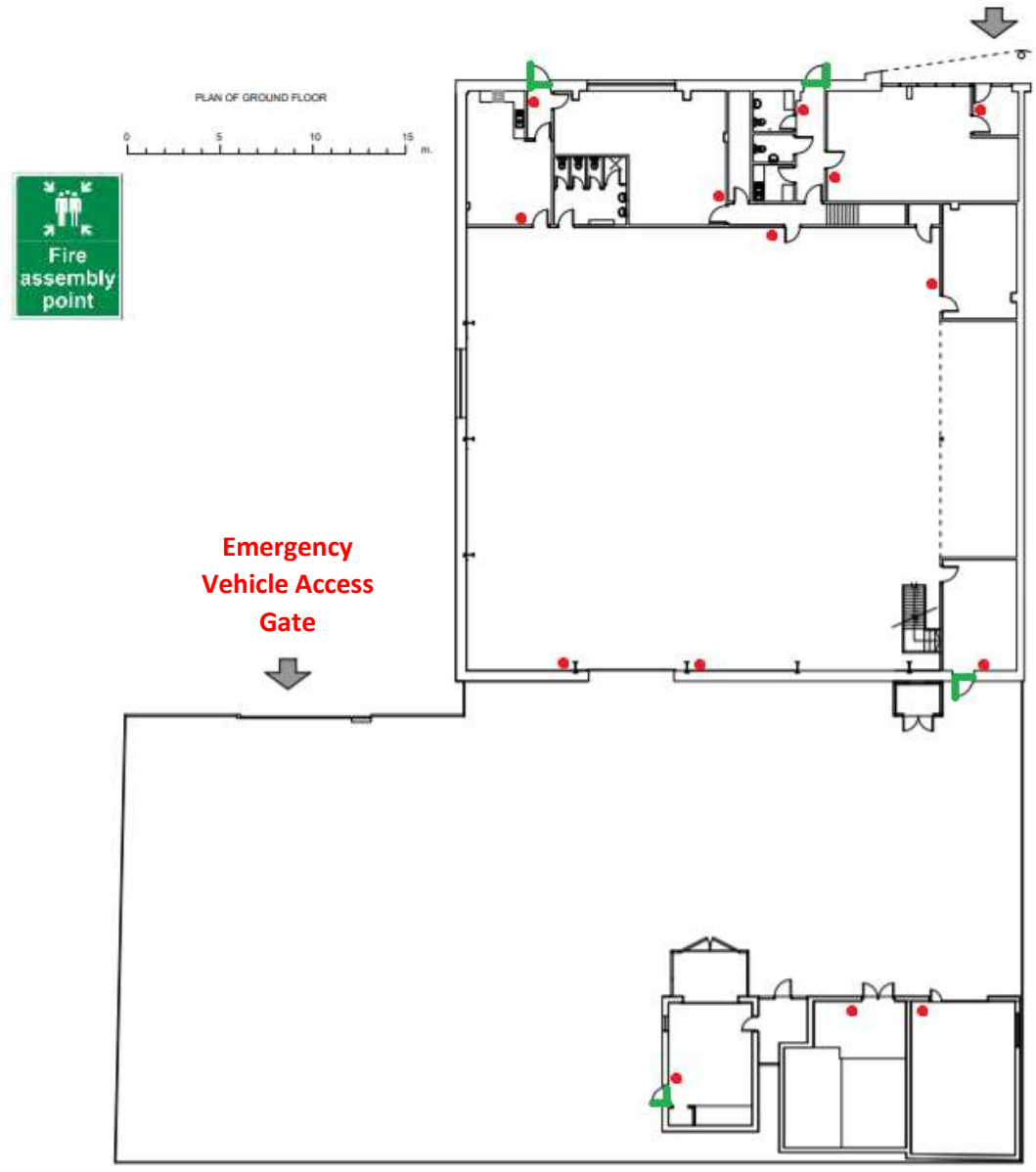
3.1.1. Fire Vehicle Access, Assembly Point & Fire Fighting Equipment

Key:

Fire Door

Fire Extinguisher (C02 and/or Foam)

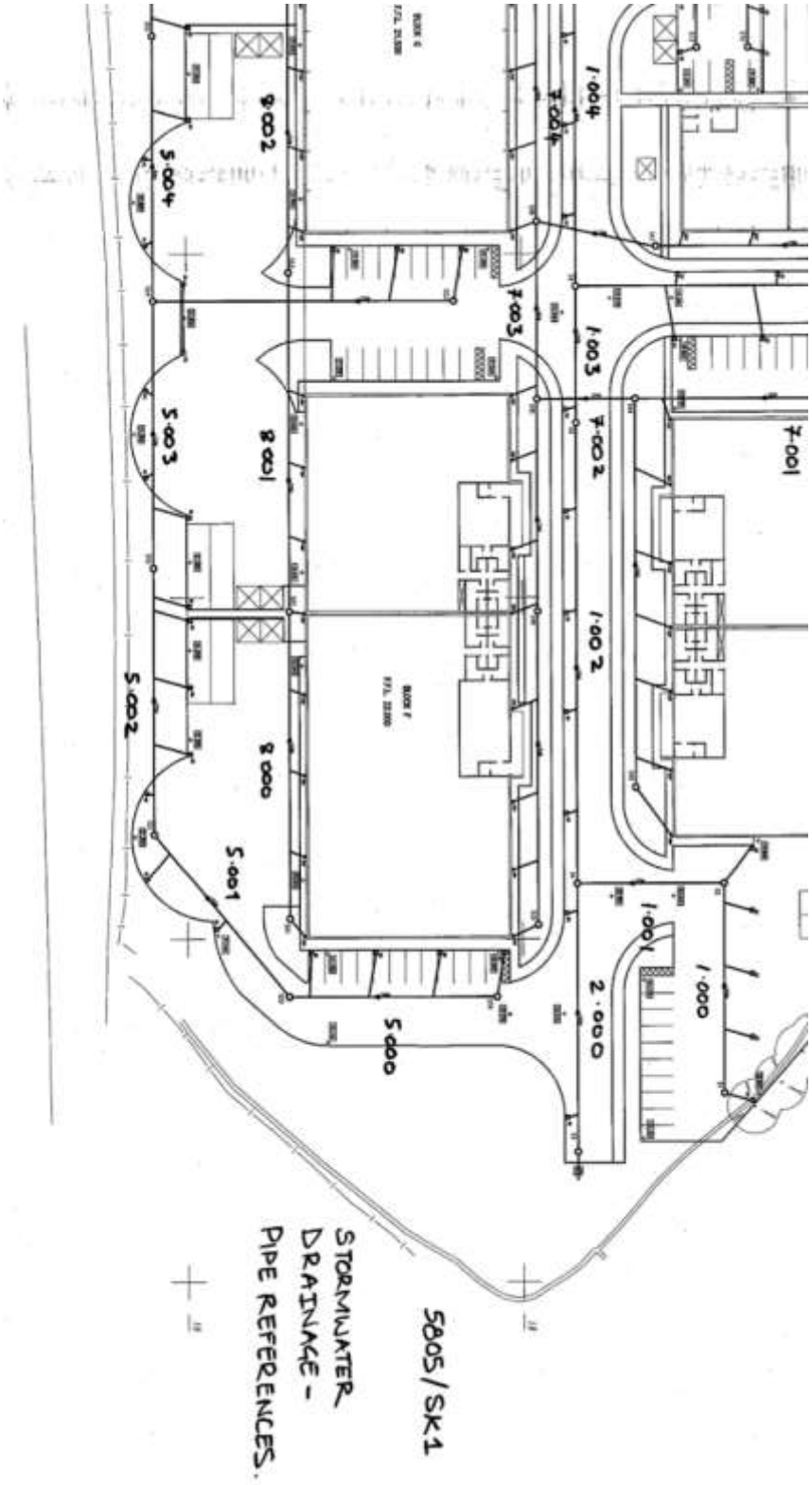
The Fire Assembly Point is located in the car parking area opposite the building, as illustrated below.



3.1.2. Storage Quantities and Area Sizes

3.2. Drainage Plan

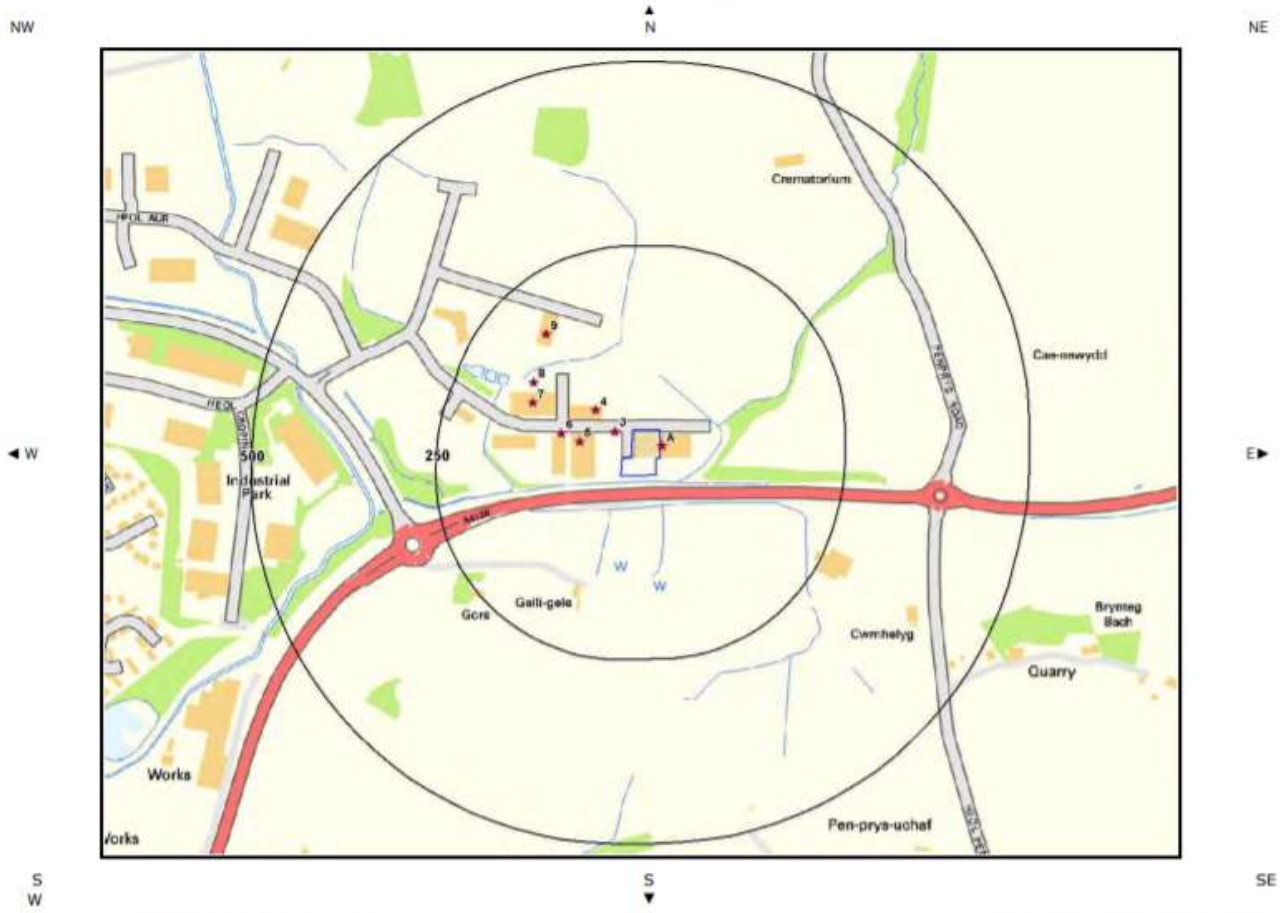
Below is a screenshot of the drainage plan. Please see the separate drainage plan documents for further detail.



3.3. Nearby receptors & contact details

Groundsure
LOCATION INTELLIGENCE

4 Current Land Use Map



Current Land Use Legend

- Site Outline
- Search Buffers (m) 250 500
- Petrol & Fuel Sites
- Dangerous Substances (List 1)
- Dangerous Substances (List 2)
- Red List Discharge Consents
- Current Industrial Sites
- Part A(1) Authorised Processes and Historic IPC Authorisations
- Part A(2) and Part B Authorised Processes

Records of potentially contaminative industrial sites within 250m of the study site: 9

The following Industrial records are represented as points on the Current Land Use map:

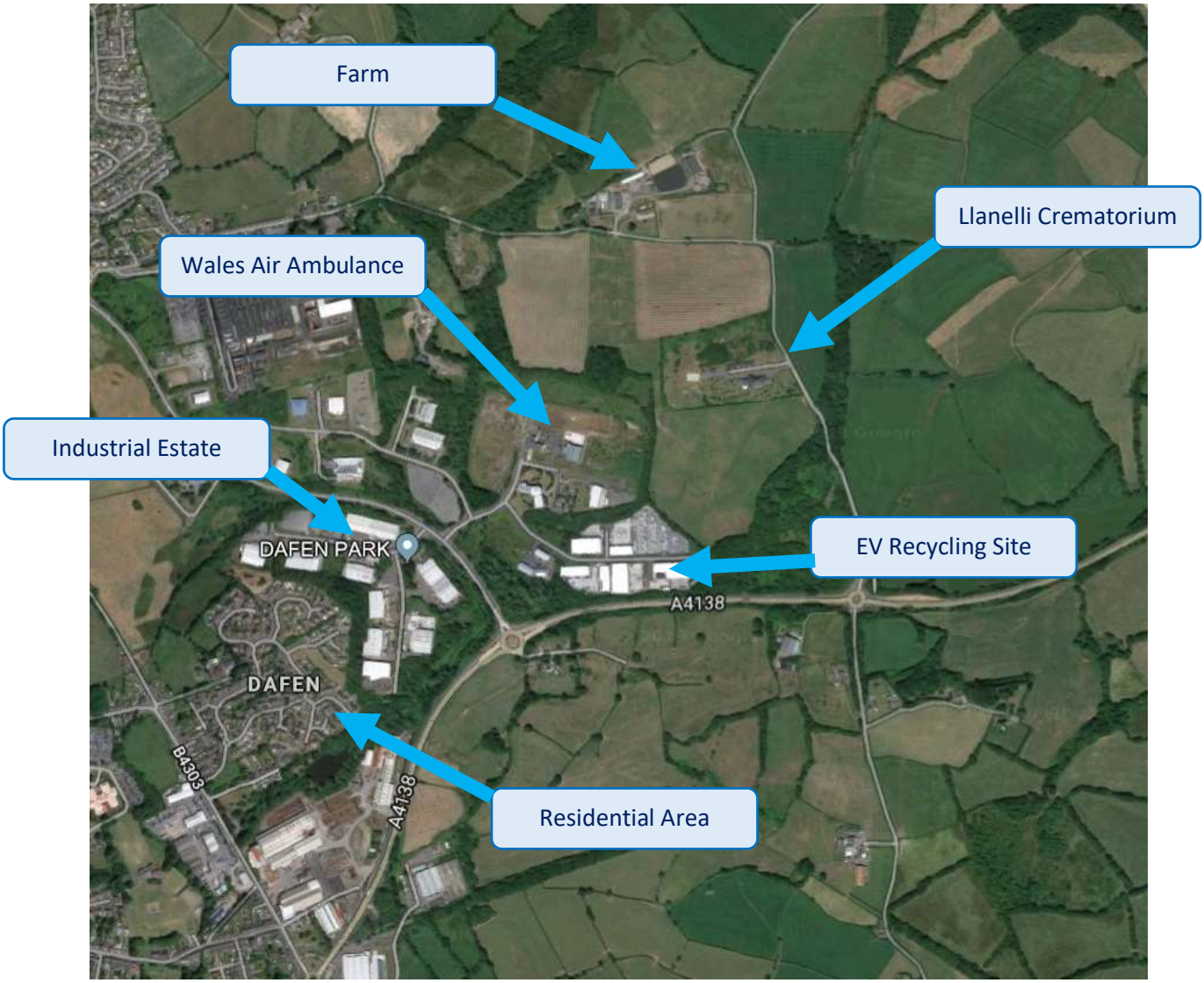
ID	Distance [m]	Direction	Company / Description	Address	Activity	Category
1A	2.0	E	DX	Unit 13 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	Distribution and Haulage	Transport, Storage and Delivery
2A	2.0	E	Total Flood Solutions	Unit 12 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	Civil Engineers	Engineering Services
3	24.0	W	Electricity Sub Station	SA14	Electrical Features	Infrastructure and Facilities
4	57.0	NW	GMF Motor Factors Ltd	Unit 4 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	Vehicle Parts and Accessories	Motoring
5	62.0	NW	At Cost	Unit 10 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	General Construction Supplies	Industrial Products
6	90.0	NW	Electricity Sub Station	SA14	Electrical Features	Infrastructure and Facilities
7	140.0	W	Dividers Folding Partitions Ltd	Unit 1 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	General Construction Supplies	Industrial Products
8	149.0	NW	Cymru Autoglazing	Unit C3 Llanelli Gate, Dafen, Llanelli, SA14 8LQ	Vehicle Repair, Testing and Servicing	Repair and Servicing
9	175.0	NW	Treharne Automotive Engineering	Beacon Centre Llanelli Gate, Dafen, Llanelli, SA14 8LQ	Business Parks and Industrial Estates	Industrial Features

3.4. Key site contacts & emergency contacts

SITE DETAILS			
Location: EV Recycling, Unit 12, Llanelli Gate, Dafen, Llanelli, Carmarthenshire, UK, SA14 8LQ			
Post Code: SA14 8LQ			
Site Access Grid Reference: 253813, 201833			
SITE CONTACTS	Name	Office Hours	Out of hours
Owner:	Jason Treharne	01554 775938	07773291424
General Manager:	Clare Treharne	01554 775938	07773291424
Site Manager:	Clare Treharne	01554 775938	07773291424
Site Supervisor:	Clare Treharne	01554 775938	07773291424
Security Contact:	Clare Treharne	01554 775938	07773291424
Landowner / Agent:	Treharne Holdings Ltd	01554 775938	07773291424
EMERGENCY SERVICES		Office Hours	Out of hours
Emergency		999	999
Medical: Welsh Ambulance Services NHS Trust		01792 562900	999
Police: Felinfoel, Dafen and Swiss Valley		101	101
Fire: Llanelli Fire Station		0370 6060699	999
REGULATORS		Office Hours	Out of hours
Health and Safety Executive (HSE)		01554 775938	07773291424
Local Authority: Carmarthenshire County Council		01267 234567	01267 234567
Natural Resources Wales (Local)		0300 065 3000	0300 065 3000
EA (24 hour emergency hotline)		0800 80 70 60	0800 80 70 60
UTILITY SERVICES	Name	Office Hours	Out of hours
Water undertaker:	Welsh Water	0800 052 0130	0800 052 0130
Sewerage undertaker:	Welsh Water	0800 085 3968	0800 085 3968
Gas supplier:	SSE	01256 304244	n/a
Electricity supplier:	Haven Power	0800 052 0400	0800 052 0400

3.5. Map of human receptors within 1km

The map below shows the human receptors within 1km of the recycling site.



3.6. Map of environmental receptors within 1km

The map below shows the environmental receptors within 1km of the site.

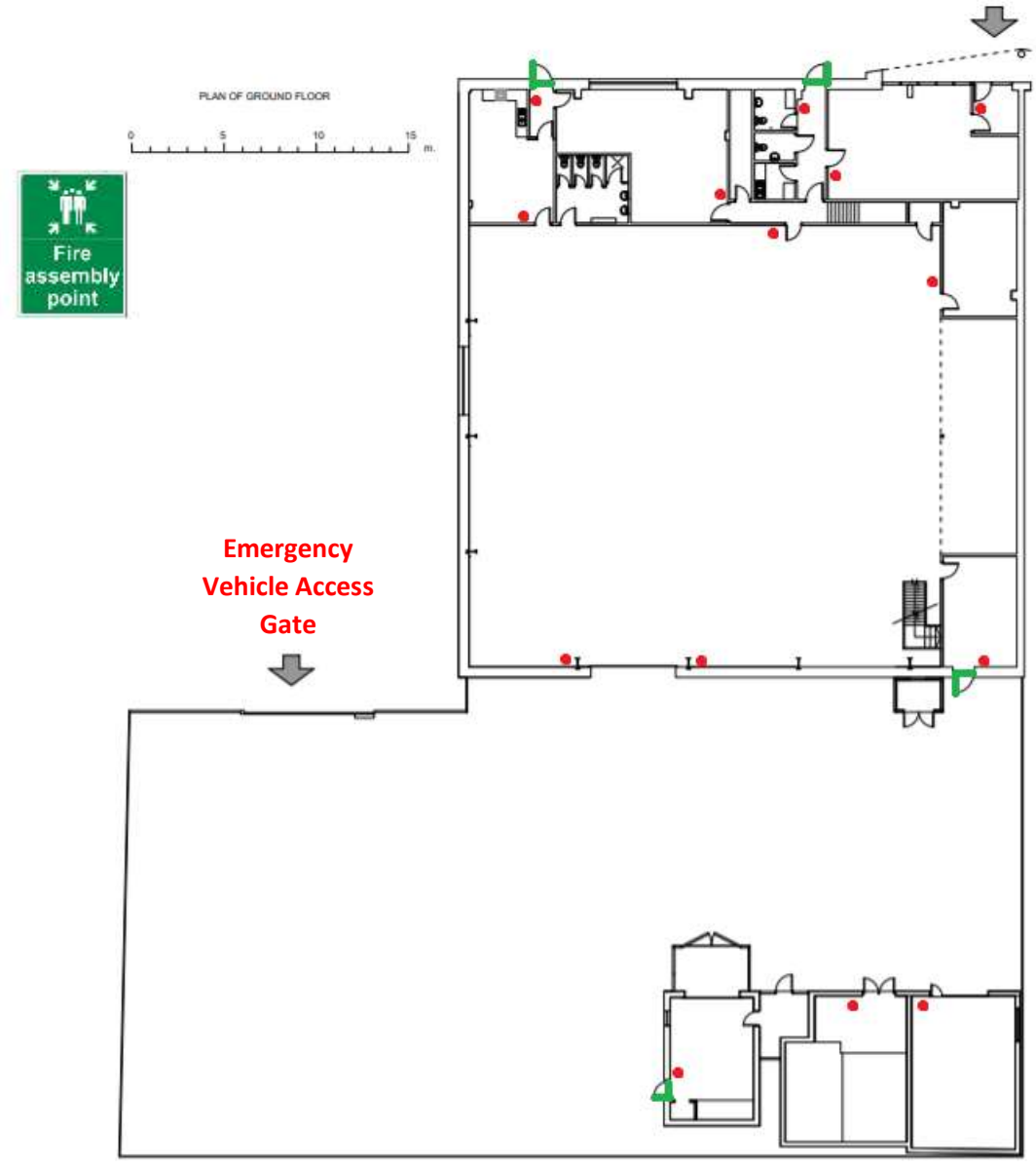
5. Fire Extinguisher Locations & Utility Isolation Points

Key:

Fire Door

Fire Extinguisher(s) Location (C02 and/or Foam)

The Fire Assembly Point is located in the car parking area opposite the building, as illustrated below.



Isolation points:

- Electricity isolation point(s) located: **Server Room**
- Gas isolation point(s) located: **Externally within the gas meter housing**

6. Specific Detail Referring to FPMP Guidance on NRW Website

As part of the guidance from NRW (Natural Resources Wales), the following points have been outlined here for ease of access. Note that some points may be repeated from previously in this document.

6.1. Common Causes of Fire & Prevention Measures (Section 6 of Guidance)

Common Causes of Fire & Preventative Measures	
Cause	**Preventative Measure**
Arson / Vandalism	The proposed site has security fencing, intruder alarms and CCTV to deter against criminal activity.
Visitors / Contractors	All persons on-site are made aware of the fire safety procedures and assembly points. This is reinforced on-site through the use of suitable signs.
Ignition Sources	Sources of heat on-site are kept at least 6 metres away from - and/or in a different room to - any flammable materials. This includes recycling equipment.
Self-Combustion	The risk of self-combustion is negligible with the materials stored on-site. However, visual checks & temperature monitoring will be carried out as part of the acceptance and/or storage procedures
Plan / Equipment Failure	All equipment on site will be serviced and maintained according to manufacturer's guidelines.
Discarded Smoking Materials	The site is strictly non-smoking. Smoking activities must be carried out off-site at a safe distance away, for example at the fire assembly points.
Hot works (Welding, Cutting, etc.)	If these activities are required on-site, a risk assessment must be performed and a permit to work be granted by a senior authorised person.

Industrial heaters	On-site heating is maintained to standard guidelines.
Plant & Hot Exhausts	At the end of each day, a visual check is carried out on the building and storage areas and includes checking for signs of potential fire hazards. These procedures are outlined in the EMS.
Damaged / Exposed Electrical Cables	All electrical equipment is tested annually by a qualified electrician and certified for use.
Reactions Between Waste	Please see the waste acceptance procedure in the EMS. The flexible quarantine area is clearly indicated in both the site plans in the FPMP and EMS should issues arise.
Hot Loads Deposited On-Site	The flexible quarantine area is clearly indicated in both the site plans in the FPMP and EMS should issues arise.
Build-up of Loose Combustible Material, Dust & Fluff	At the end of each day, a visual check is carried out on the building and storage areas and includes checking for signs of potential fire hazards; as outlined in the EMS. The site should be regularly cleaned.
'Tramp' Metal	The machinery should be checked before and after each use to ensure function and prevent build-up of internal material. Pre-sorting certain materials can help reduce this risk.
Batteries within Waste Deposits	N/A - The processing activities are directed towards batteries.
Batteries in ELV's	N/A - All batteries accepted on-site will have been separated from the vehicle prior to arrival.
Cylinders Stored On-Site	N/A - No Cylinders are not used on-site. If this changes, NRW will be notified of intentions prior.
Leaks / Spillages of Oils & Fuels	Flexible Quarantine Area, spill kits and isolation will reduce the risk from leaks / spillages on-site.

6.2. Storage Times & Self-Combustion Factors

"Many materials can self-combust, and the risk general increases when materials are stored for prolonged periods." – NRW (Natural Resources Wales) guidance.

The items/materials stored on-site by EV Recycling will have a negligible risk of self-combustion. High Voltage battery packs, for example, are flammable if damaged. However proper handling procedures we have put in place (EMS) make the risk very low. The same applies to modules and crushed material.

Therefore, storage times can be indefinite; although of course form a business perspective we plan to turnover as many items / materials as possible. Nevertheless, it is good practice to know how long certain items have been stored on site and this will be traced via our internal tracker – starting with the on-site acceptance procedure.

6.3. Managing Waste Material Stacks & Separation Distances

In order to reduce risks – and for safety reasons – waste stack sizes and separation distances have been provided in the FPMP. Stack sizes are kept small so separation distances can also be kept to a safe minimum. These are shown on the site layout plans in the EMS and FPMP.

6.4. Enclosing Stacks using Bays / Walls

This section is not relevant to EV Recycling, because any waste stacks are not separated using walls or bays.

6.5. Waste Stored Within a Building

All waste will be stored within buildings. This is for a number of reasons, including practicality and environmental factors. As mentioned previously, in order to reduce risks – and for safety reasons – waste stack sizes and separation distances have been provided in the FPMP. Stack sizes are kept small so separation distances can also be kept to a safe minimum. These are shown on the site layout plans in the EMS and FPMP.

The building is fully equipped with firefighting equipment – such as extinguishers – and the locations of these are shown in the FPMP. Escape routes / fire exits and assembly areas are also shown. Any office areas are segregated away from waste storage areas. There is also a roller shutter door which can be used for emergency access and for clearing smoke from the building to aid firefighting.

6.6. Waste Stored in Containers

Waste will be stored in containers much smaller than the specified 1,100 litres in the guidance. As such, the appropriate stack sizes apply. These stack sizes are included in the FPMP 'storage quantities and area sizes' table.

6.7. Layout of Waste Stacks On-Site

The layout of waste stacks on-site are shown in the FPMP 'storage quantities and area sizes'; these are also referred to throughout the document. For example, details are provided on all the relevant topics such as; Permitted amounts of waste on-site, location of quarantine area(s), operational practicalities (such as emergency vehicle access), locations of firefighting equipment, hazardous waste (if any) locations. The location of the building and affected nearby businesses / infrastructure is also provided in the FPMP.

6.8. Seasonality & Waste Stack Management

This section is irrelevant to the activities of EV Recycling, because seasonal variations in the quantity of lithium ion batteries being accepted on-site is not accepted.

6.9. Monitoring & Turning of Stacks

Whilst the storage areas will be monitored on a daily basis, the 'turning of stacks' is irrelevant to the activities of EV Recycling. This is because materials and wastes stored on-site are not self-combustible. Training will be provided to check for hot spots using thermal imaging equipment (thermal camera, for example). The stack piles are small enough for this to be sufficient.

6.10. Fire Detection

Fire detection system is applied, such as the use of CCTV (visual) and smoke/heat detectors (instrumental). Maintenance of these systems will be carried out at regular intervals in accordance with a certified body; such as UKAS-accredited third part certification schemes. This information will be discussed with any potential future insurance companies in order to seek approval.

6.11. Fire Suppression Systems

Due to the fact that waste is stored inside a building, there is potential for installation of a fire suppression system. This system should be proportionate to the nature and scale of waste management activities carried out and the associated risks. In accordance with NRW guidance; materials must be kept a minimum of 3m below the level of spray or sprinklers.

If a fire suppression system is intended to be installed, the design, installation and maintenance of such equipment must be covered by an appropriate UKAS-accredited third part certification scheme.

Note: Insurers may have specific requirements for fire alarms, detection and suppression/extinguishing systems. This information will therefore be discussed with any potential future insurance companies in order to seek approval.

6.12. Water Supply & Fire Water Management

Water is supplied to the site through the mains system. This can be used in the event of a fire.

Fire water run-off is contained using an impermeable surface building and yard. The yard slopes towards drains. This is outlined in the drainage plan.

The containment ensure that fire water does not enter and contaminate local environmental receptors. These are detailed in the FPMP, Environmental Risk Assessment (ERA) and EMS. Primary and Secondary containments are provided.

Document Details:	
Author:	**Sam Joseph**
Date:	**16/03/2020**
Checked by:	**George Chamberlain**