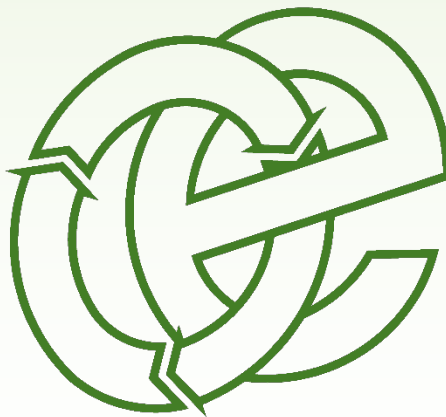


ENVIRONMENTAL RISK ASSESSMENT

Environmental Innovation Centre, Campbeltown Road, Birkenhead, Wirral, CH41 9HP

Smart Creative Technologies

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Waste, Planning & Environmental Consultants



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Appendix I - Drawings

1 Introduction

- 1.1 This Environmental Risk Assessment considers the potential and actual risks associated with the use of the site at Environmental Innovation Centre, Campbelltown Road, Birkenhead, Wirral, CH41 9HP to be used as an End-of-Life tyre recycling facility and be operated by Smart Creative Technologies.
- 1.2 The site will be operated in accordance with a fully comprehensive Environmental Management System (EMS) and Environmental Permit, regulated by the Environment Agency.
- 1.3 All site staff should be provided with a copy of this ERA and be aware of where it is located on site.
- 1.4 All environmental risks identified in this document should be acted upon accordingly by site management to ensure all environmental risks can be appropriately managed/controlled.
- 1.5 This document primarily considers environmental risks associated with the site. This does not aim to provide detailed Health and Safety risk assessments as required separately through the necessary legislation.
- 1.6 Specified waste management operations include waste disposal and waste recovery operations listed Annex IIA and IIB of The Waste Framework Directive 2008/98/EC and are listed in summary below:
- R3: Recycling/reclamation of organic substances which are not used as solvents
 - R4: Recycling/reclamation of metals and metal compounds
 - R5: Recycling or reclamation of other inorganic materials D15:
 - R13: Storage of waste pending recovery.

- 1.7 The EP is required for the storage (keeping) prior to removal, and treatment (all types of handling/processing) of waste. Waste treatment processes to be carried out on site will include chemically treating scrap printed circuit boards (PCBs) and x-ray film using nitric acid and ferric chloride in a batch process. The PCBs and x-ray film are immersed in processing liquor and then the solution is neutralised with sodium hydroxide to precipitate the metals from the solution. The precipitate is filtered, washed and then oven dried. The remaining components are segregated and then dispatched for further processing and recycling off site.

2 Sensitive Receptors

2.1 Receptor Plan

- 2.1.1 A Receptor Plan has been produced to accompany this ERA and is shown in Appendix I referenced as on Drawing No. SCT/3020/04. The receptors highlighted are those which are considered to be at risk from the site.

3 Environmental Risk Assessment Model

3.1 Fundamental considerations

3.1.1 **Source/Hazard:** A property or situation that in particular circumstances could lead to harm.

3.1.2 **Consequences:** The adverse effects or harm as the result of realising a hazard which causes the quality of human health or the environment to be impaired in the short or long term.

3.1.3 **Risk:** A combination of the probability of occurrence of a defined hazard and the magnitude of the consequences of the occurrence.

3.2 Pathway

3.2.1 Important in the assessment of a particular risk(s) and to inform the subsequent management of the risk(s) is the identification of the pathway(s) through which the risk may affect the identified receptor(s). The following are examples of pathways:

- Air (windblown dust etc.)
- Ground (leaching of contaminants into underlying aquifers).
- Water (hydrocarbon run off into surface waters)
- Direct contact / exposure

3.3 **Consequences**

3.3.1 The following table highlights the consequences of the hazard(s) identified and the abbreviations for each as used in the Risk Assessment Table in Section 3:

Abbreviation	Consequences
A	MINOR INJURY
B	MAJOR INJURY
C	DEATH
D	AIR POLLUTION
E	WATER POLLUTION
F	POLLUTION OF LAND

3.4 **Effects of consequences**

3.4.1 In order to quantify the level of risk and identify the appropriate management procedures, the potential effects must be considered, as outlined in the table below:

Abbreviation	Effect of Consequences	Management Required?
S	SEVERE	In all cases
Mo	MODERATE	In most cases
Mi	MILD	Occasionally
N	NEGLIGIBLE	No

Note: "Management" is the action required to reduce the risk of a hazard causing a problem on site. Contingency measures are procedures which are in place to reduce the consequences of a hazard.

3.5 **Risk estimation and evaluation (probability/frequency of occurrence of hazard)**

3.5.1 The following table allows the likelihood of an occurrence of an identified risk to be assessed:

	Probability	Evaluation
1	Very likely	Could occur during any working day
2	Likely	Could occur regularly
3	Possible	Event possible
4	Unlikely	Event very unlikely

3.6 **Risk assessment outcome (combination of probability & consequence)**

3.6.1 The following table shows the resultant risk of an identified hazard or potential situation. This uses the hierarchy of both probability and consequence to assess the level of risk. The level of risk determines what level of management would be required in order to reduce the risk of occurrence and/or scale.

		Consequence			
		S	Mo	Mi	N
Probability	1	High	High	Medium	Low
	2	High	Medium	Low	Near-Zero
	3	Medium	Low	Near-Zero	N/A
	4	Low	Near-Zero	N/A	N/A

3.6.2 Where the risk assessment outcome is high, first-level management of the risk is essential, i.e. removal of hazard, implementation of major infrastructure/structural design measures to contain the risk/hazard and company policy changes to incorporate the management of the risk. All risk management measures must be supplemented with detailed induction training, spot training and tool-box talks to ensure all site staff and users are made fully aware of the risk/hazard, all potential consequences and necessary management and contingency procedures.

- 3.6.3 Where the risk assessment outcome is medium, the management of the risk should be tackled by management or delegates. If removal of the hazard is not possible, management will normally be met through implementing minor structural design measures or by imposing procedures for the prevention of occurrences which will be conveyed to all site staff through the appropriate training, including any contingency measures/procedures.
- 3.6.4 Where the risk assessment outcome is low, the management of the risk can be done wholly through appropriate training to site staff including any contingency measures/procedures.
- 3.6.5 Where the risk assessment outcome is near-zero, site staff should be made aware of the possibility of an occurrence and contingency measures should be readily available to all staff should they be required.

4 Risk assessment table

- 4.1 The following pages contain the site-specific risk assessment for the site with appropriate remedial actions, recommendations and comments included for each identified hazard, potential contaminant or situation.
- 4.2 The table also contains references to the appropriate section(s) of the site's EMS for additional management procedures.
- 4.3 As discussed in Section 3.6 above, all situations which identify a risk from Low –High should be incorporated into the staff/visitor training schedule, where appropriate and acted on as required.

SEE TABLES BELOW

Hazard / Potential Contaminant or Situation	Source(s)	Pathway	Receptor(s)	Consequences	Effect	Probability	Assessment Outcome	Remedial Action/ Recommendations/ Comments
Dust / particulates	<p>Formation of dust on site surfaces during dry and windy weather on both areas of the site.</p> <p>Waste delivery vehicles depositing and collecting potentially dusty waste during dry and windy weather conditions</p> <p>Processing waste through treatment plants</p> <p>Accumulation of dust/fluff on fixed and mobile plant</p>	Air	<p>Site personnel/ visitors</p> <p>Surrounding site users/occupiers</p> <p>River Mesey and other surface waters</p> <p>Priority Habitat - Deciduous Woodland</p> <p>Liverpool Bay Special Protection Area (SPA)</p> <p>Mersey Estuary SPA,</p> <p>Mersey Estuary Ramsar site</p> <p>New Ferry Site of Site of Special Scientific Interest (SSSI)</p> <p>Schools</p> <p>Care homes</p> <p>Residential receptors</p> <p>St Catherine's Health Centre</p>	A, B, D, E	Mo	3	Low	<p>All operations with the potential to create dust take place inside an industrial building.</p> <p>All areas with store and treat waste benefit from an impermeable concrete surface with sealed drainage system.</p> <p>No dusty wastes accepted or produced at the site.</p> <p>Reference should be made to Section 2.6 of the operator's FPMP in relation to preventative maintenance check to reduce the likelihood of fixed or mobile plant failure.</p> <p>Reference should be made to Section 4.5 of the EMS (Doc Ref. CAM-3020-A in terms of dust control</p> <p>Use the complaint's procedure from the EMS (Section 4.10) to ensure any dust complaints are addressed and substantiated.</p>

Hazard / Potential Contaminant or Situation	Source(s)	Pathway	Receptor(s)	Consequences	Effect	Probability	Assessment Outcome	Remedial Action/ Recommendations/ Comments
Odour	<p>Odours from storage of liquids/hazardous substances and residues of the treatment process i.e. nitric acid/ferric chloride solution and other acid vapours</p> <p>Cracks in concrete leading to trapped waste in both areas of the site</p> <p>Dry/hot weather conditions exceeding three dry days</p> <p>Prevailing wind to towards residential receptor locations</p> <p>Staff negligence leading to odour releases from unauthorised waste acceptance and treatment</p>	Air	As above	A, D	Mi to Mo	3	Low	<p>Strict waste acceptance procedures into both areas of the site to identify potentially odorous wastes and their containment. Refer to sections 3.3 and 3.4 of EMS for reference.</p> <p>The site does not receive any waste types which would be regarded as having significant odour potential. The site will only be storing potentially odorous substances used for the physical/chemical treatment of these waste types. In addition to the above:</p> <ul style="list-style-type: none"> The containment of all liquids within the building and the strict waste acceptance criteria presents a very low risk of odour nuisance. All doors will be fully locked during any treatment process If malodorous waste is detected after deposit it will remain inside the container and marked as rejected and placed in quarantine for removal off site as soon as practicable. The containment of the recovery process within a purpose-built industrial building will reduce the likelihood of such a hazard occurring. All liquids are stored in sealed containers. <p>The air above the extraction bath and the exhaust air from the mixing tank is routed through a gas scrubber. The efficiency of the elimination process is to be demonstrated by means of continuous, quantitative analysis for nitrous gases, chlorine and nitrosyl chloride on a quarterly basis and consecutive production days at the gas scrubber outlet. The scrubber is capable to scrub 2,500m³/hr of the gas containing these acidic fumes.</p> <p>Any rejected wastes found on site to be removed off site as soon as practicable. Low residence times for all wastes.</p> <p>Reference should be made to Section 4.6 of EMS with regards to odour control.</p> <p>Use the complaint's procedure from the EMS (Section 4.10) to ensure any odour complaints are addressed and substantiated.</p> <p>The site will not mix or treat the PCBs and film, they would be processed on separate occurrences to prevent cross contamination of residual wastes arising from the physical/chemical treatment process.</p>
Litter	<p>Vehicles delivering / removing and waste during dry and windy weather conditions including unsheeted / poorly sheeted skips on delivery / removal vehicles</p> <p>Poor housekeeping</p> <p>Staff negligence leading to litter escaping off site</p>	AIR	As above	A to C E,F	Mi to Mo	4	Low	<p>Reference should be made to section 4.7 of the EMS regarding litter control.</p> <p>No light wastes generally accepted at the site.</p> <p>All waste storage and treatment takes place inside a building.</p> <p>Use the complaint's procedure from the EMS (Section 4.10) to ensure any odour complaints are addressed and substantiated.</p>

Hazard / Potential Contaminant or Situation	Source(s)	Pathway	Receptor(s)	Consequences	Effect	Probability	Assessment Outcome	Remedial Action/ Recommendations/ Comments
Noise/ vibration	Fixed and mobile plant and machinery breakdowns or malfunctions Operating mechanical treatment plants	Air or ground by vibration	Site personnel/ visitors Workers on adjacent sites Public Surrounding site users/occupiers Restored Ancient Woodland Local Wildlife Sites	A, D	Mo	3	Low	Reference should be made to Section 2.6 of the operator's FPMP in relation to preventative maintenance checks to reduce the likelihood of fixed or mobile plant failure. All waste treatment or any other noise activities will take place inside an industrial building. Sensitive Receptors are located >150m from the site with large industrial properties and busy railway line between them. Operational hours are Mon-Fri and between 08:00 and 17:30 which are standard hours of a working site in an industrial location. The building doors are shut when treatment operations are taking place. Use the complaint's procedure from the EMS (Section 4.10) to ensure any noise complaints are addressed and substantiated.
Vermin causing leptospirosis and other respiratory diseases	Poor housekeeping Staff negligence leading to acceptance of unauthorised waste giving rise to pests Storing trade waste bins for excessive time periods.	Water, direct contact with waste	As above	A to C	Mi to Mo	4	Near zero	Wear PPE - gloves and masks as appropriate Site inspections daily Rejected waste procedures (Section 2.8 of EMS) Strict waste acceptance procedures (Sections 3.3 & 3.4 of EMS for plastic containers and baled material). Refer to Section 4.2 of in terms of daily inspections EMS Reference should be made to Section 4.8 of EMS with regards to pest control, however, the site does not receive any waste types which would be regarded as putrescible/ biodegradable and attract such pests. Pest controller called in the event of pests being present at the site or complaints received from receptors
Fire/ smoke / particulates	Refer to Section 2.1 of operator's FPP	Air, direct contact, water	As above	A to F	Mi to S	3	Medium	Reference should be made to the operator's FPP which references all potential fire risks from the site including mitigation to reduce the impact pollution to human health and the environment. Reference should be made to Section 2.6 of the FPP in relation to preventative maintenance checks to reduce the likelihood of fixed or mobile plant failure which is considered to be source of most fires from waste sites.
Release of gases / fumes / vapours / volatiles	Poor housekeeping Staff negligence leading to lack of PPE and H&WS requirements Storage tanks/containers leaking	Air, direct contact, water	As above	A to F	Mi to S	3	Low	Wear PPE - gloves and masks as appropriate Good housekeeping (Refer to Section 4.2 of in terms of daily inspections EMS).

Hazard / Potential Contaminant or Situation	Source(s)	Pathway	Receptor(s)	Consequences	Effect	Probability	Assessment Outcome	Remedial Action/ Recommendations/ Comments
Contamination of surface / ground waters Leachate	Storage and treatment of hazardous waste comprising POPs Storage of hazardous substances comprising acids for the treatment process							<p>Good vehicle management and refer to Section 2.6 of the operator's FPMP in relation to preventative maintenance check to reduce the likelihood of fixed or mobile plant failure.</p> <p>Ensure all waste storage areas are in the correct locations and access areas are kept clear as shown on Drawing No. CAM/3020/03.</p> <p>The air above the extraction bath and the exhaust air from the mixing tank is routed through a gas scrubber. The efficiency of the elimination process is to be demonstrated by means of continuous, quantitative analysis for nitrous gases, chlorine and nitrosyl chloride on a quarterly basis and consecutive production days at the gas scrubber outlet. The scrubber is capable to scrub 2,500m³/hr of the gas containing these acidic fumes.</p> <p>The main materials produced from the process include used PCBs, films, microchips, wire, copper coils, aluminum, plastic, silver and mixed filter cake. These are then sent off site for further processing and recovery. The plastic and filter cake are likely to comprise hazardous waste so this will be sent to a suitable permitted hazardous waste facility, all other waste is considered non-hazardous and will be sent to a suitably permitted metal recycling site. The material produced from x-ray film is likely to comprise silver which will also be sold, exported or sent to a suitably permitted site.</p> <p>All residual waste produced following the treatment of PCBs which could contain POPs will be stored in sealed containers prior to being disposed of at a suitably permitted incineration facility</p> <p>An accident logbook is kept in the site office so all new and existing staff members can review previous accidents.</p> <p>Encouragement for staff for greater number of "accident-free days" to encourage a safer working environment</p> <p>HSE compliant risk assessments and ISO 14001 EMS systems for all site activities to identify situations which may lead to harm for site users (employees, visitors and management)</p> <p>Appropriate signage throughout the site.</p> <p>The operator has trained staff who control vehicle movements throughout the site.</p> <p>Vehicle movements on site restricted to 5mph.</p> <p>Storage of hazardous substances within bunded area and all treatment takes place inside a sealed building.</p> <p>The physical treatment will be filtered and neutralised every 2 weeks.</p> <p>The site will not mix or treat the PCBs and film, they would be processed on separate occurrences to prevent cross contamination of residual wastes arising from the physical/chemical treatment process.</p>

Hazard / Potential Contaminant or Situation	Source(s)	Pathway	Receptor(s)	Consequences	Effect	Probability	Assessment Outcome	Remedial Action/ Recommendations/ Comments
Vehicle collision/ accidents including impacts and injury	<p>Poor visibility</p> <p>Spillages of oils/fluids causing vehicles to skid</p> <p>Lack of PPE worn by staff</p> <p>Staff negligence i.e. mobile plant operators</p>	Direct contact	<p>Site personnel / visitors</p> <p>Vehicle users</p> <p>Pedestrians</p>	A to F	Mi to S	3	Low	<p>Good housekeeping (Refer to Section 4.2 of in terms of daily inspections EMS).</p> <p>Good vehicle management and refer to Section 2.6 of the operator’s FPMP in relation to preventative maintenance check to reduce the likelihood of fixed or mobile plant failure.</p> <p>Ensure all free-standing waste storage areas are in the correct locations and access areas are kept clear as shown on Drawing No. CAM/3020/03.</p> <p>An accident logbook is kept in the site office so all new and existing staff members can review previous accidents.</p> <p>Encouragement for staff for greater number of “accident-free days” to encourage a safer working environment</p> <p>HSE compliant risk assessments and ISO 14001 EMS systems for all site activities to identify situations which may lead to harm for site users (employees, visitors and management)</p> <p>Appropriate signage throughout the site.</p> <p>All staff have radio’s and use horns / alarms on equipment to alert them of their presence</p> <p>The operator has trained staff who control vehicle movements throughout the site.</p> <p>Vehicle movements on site restricted to 5mph.</p> <p>Dedicated staff & visitor parking areas as shown on Drawing No. CAM/3020/03.</p> <p>Staff training procedures shown in Section 6 of the EMS.</p>

Appendix I

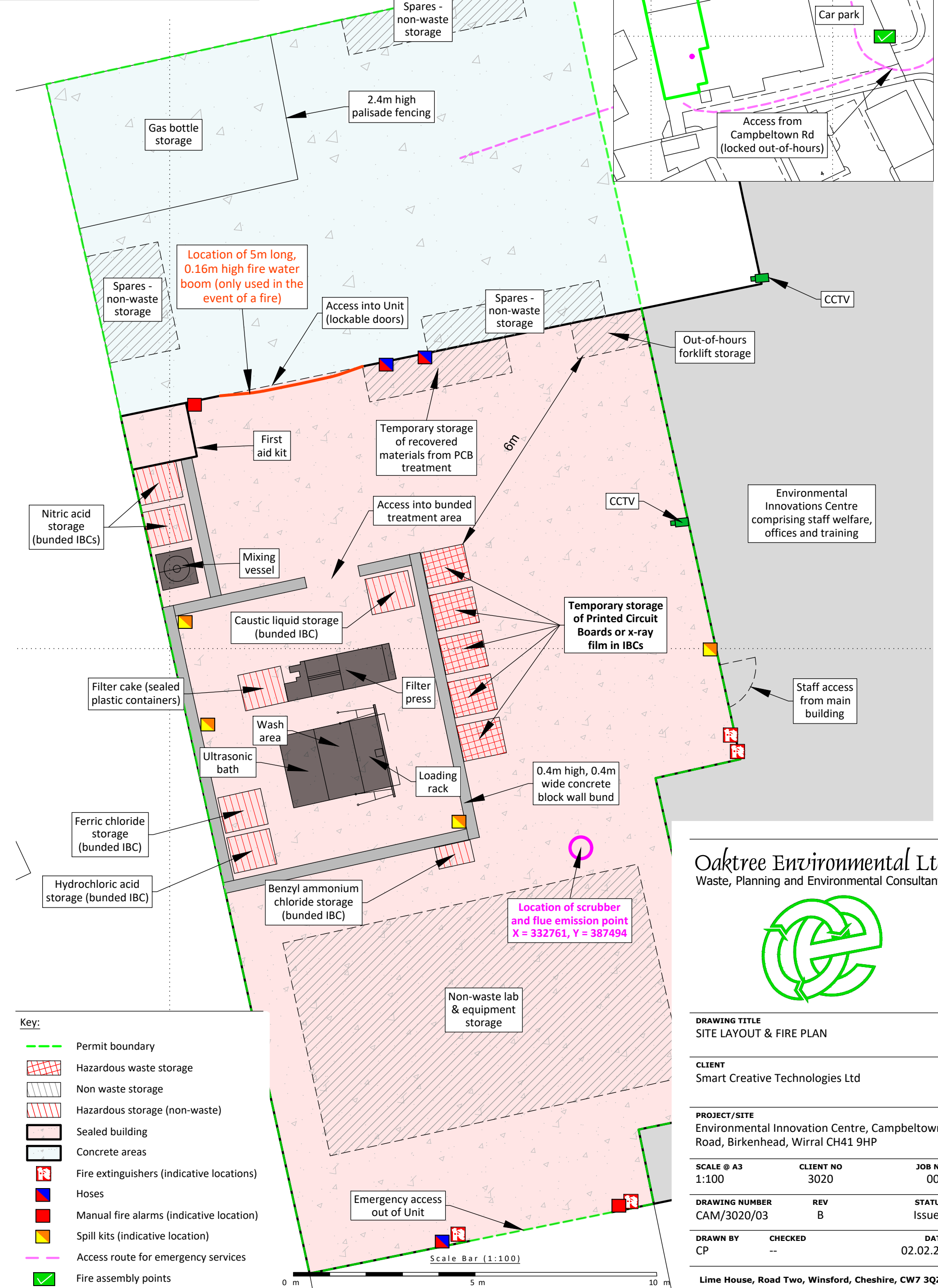
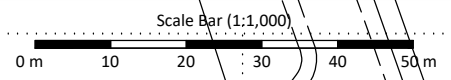
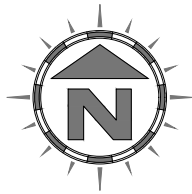
Drawings

NOTES

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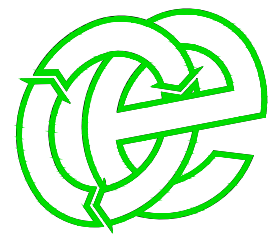
REVISION HISTORY

Rev:	Date:	Init:	Description:
-	28.03.22	CP	Initial drawing
A	30.03.22	CP	Client comments
B	02.02.23	CP	EA / operator comments



- Key:**
- Permit boundary
 - Hazardous waste storage
 - Non waste storage
 - Hazardous storage (non-waste)
 - Sealed building
 - Concrete areas
 - Fire extinguishers (indicative locations)
 - Hoses
 - Manual fire alarms (indicative location)
 - Spill kits (indicative location)
 - Access route for emergency services
 - Fire assembly points

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DRAWING TITLE
SITE LAYOUT & FIRE PLAN

CLIENT
Smart Creative Technologies Ltd

PROJECT/SITE
Environmental Innovation Centre, Campbeltown Road, Birkenhead, Wirral CH41 9HP

SCALE @ A3 1:100 **CLIENT NO** 3020 **JOB NO** 001

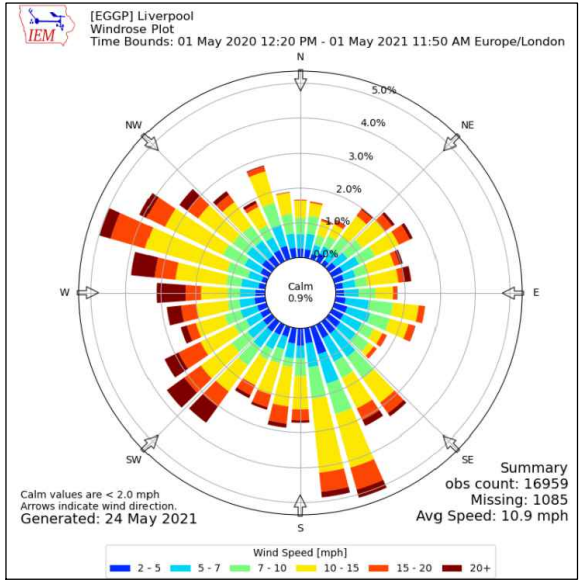
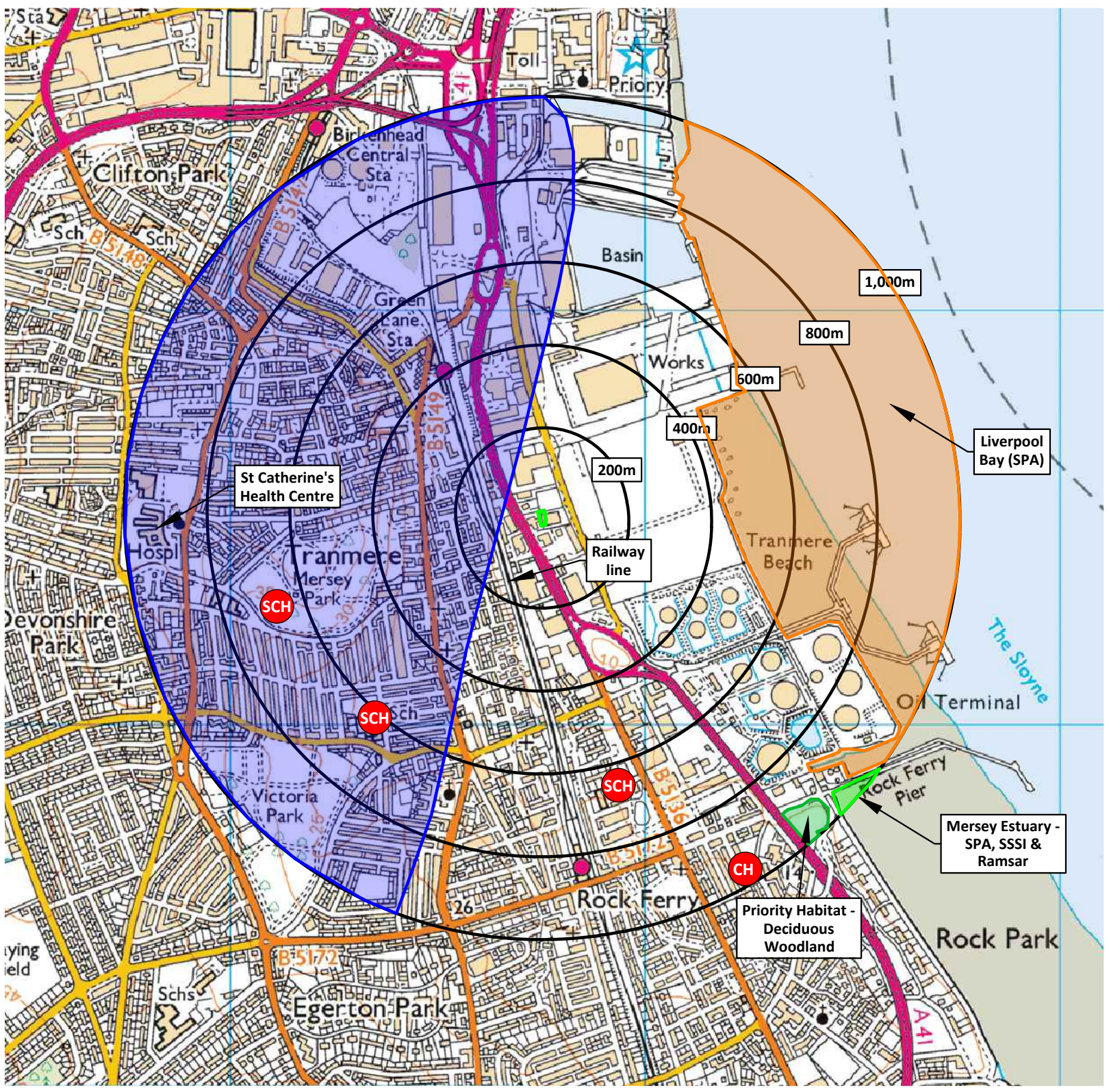
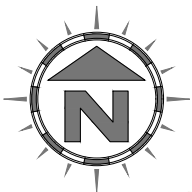
DRAWING NUMBER CAM/3020/03 **REV** B **STATUS** Issued

DRAWN BY CP **CHECKED** -- **DATE** 02.02.23

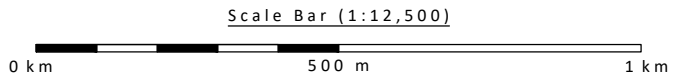
Lime House, Road Two, Winsford, Cheshire, CW7 3QZ
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KEY:

- Permit boundary
- Surface water body (pond / pool / lake)
- Stream, river, beck
- Buildings includes Agricultural, industry, commerce and retail - could also include small houses)
- Residential blocks
- Class A roads
- Class B roads
- Class C roads
- Priority Habitat - Deciduous Woodland
- SCH Schools including primary, high, colleges and Universities
- CH Care homes
- + Places of worship
- Zone 3 of GWSPZ
- Mersey Estuary (SPA & Ramsar) and New Ferry SSSI
- Liverpool Bay SPA



Compass Wind Rose for Liverpool (EGGP)
Period 2021
- source: Iowa State University

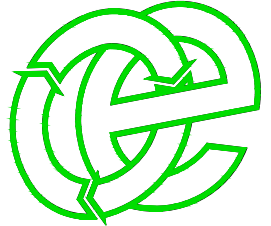


- NOTES**
1. Boundaries are shown indicatively.
 2. Wind rose data shows the prevailing wind direction to be blowing from the north-west.

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REVISION HISTORY			
Rev:	Date:	Init:	Description:
-	28.03.22	CP	Initial drawing
A	01.02.23	CP	Added additional receptors

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants



DRAWING TITLE RECEPTOR PLAN		
CLIENT Smart Creative Technologies Ltd		
PROJECT/SITE Environmental Innovation Centre, Campbeltown Road, Birkenhead, Wirral CH41 9HP		
SCALE @ A3 1:12,500	CLIENT NO 3020	JOB NO 001
DRAWING NUMBER CAM/3020/04	REV A	STATUS Issued
DRAWN BY CP	CHECKED --	DATE 01.02.23
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