



U M B R E L L A
ENVIRONMENTAL
PROTECTING YOUR BUSINESS

Noise and Vibration Management Plan

Umbrella Environmental
9 Goldington Road
Bedford
MK40 3JY
Company Number:
13446157

Website: www.umbrella-environmental.co.uk
Email: andrew@umbrellaenvironmental.co.uk
Mob: 07498 671713



CIWM

Affiliated Organisation 2022

Together, we stand for a world beyond waste

Site Address:

Vision Recycling U.K. Ltd
Park House Farm,
Lower Hordley,
Ellesmere,
Shropshire,
SY12 9BL1



Registered Office:

Offices At Park House Farm,
Lower Hordley,
Ellesmere,
Shropshire,
England,
SY12 9BL

Application Reference:

EPR/CP3046QE

Document Reference:

010.1_05_005

Issue Date:

26/10/2022

Document Control

Document Title	Reference	Client	Status
Noise and Vibration Management Plan	010.1_05_005	Vision Recycling U.K. Ltd	FINAL

Document History

Version	Issue date	Author	Checked	Description
D1	01/09/2022	AIL	AIL	Drafted for installation permit application. Submitted to client for review.
V1	26/10/2022	AIL	AIL	V1 approved by Vision Recycling U.K. Ltd for submission/.

CONTENTS

1 Introduction..... 5

 1.1 Sensitive Receptors..... 6

2 Operations..... 9

 2.1 Waste Handling and Processing..... 9

3 Noise Management 11

 3.1 Responsibility for Implementation..... 11

 3.2 Sources and Control of Noise..... 11

 3.2.1 Delivery and Removal of Waste 11

 3.2.2 Processing of Waste 11

 3.3 Site Noise Monitoring 12

 3.3.1 Monitoring Location..... 15

 3.4 Mitigation 15

4 Actions when Alarm Level is Triggered 16

5 Reporting and Complaints Response..... 17

 5.1 Engagement with the Community..... 17

 5.2 Reporting of Complaints 18

 5.3 Management Responsibility..... 18

6 Site and Equipment Maintenance..... 19

7 Record Keeping..... 20

8 Management Plan Review 21

9 Availability OF nvmp..... 22

10 Summary 23

Tables

Table 1 Receptors in Prevailing Wind Direction Within <1 km 6

Table 2 Distance of Receptor to Site Boundary (<1 km)..... 7

Table 3 Most at Risk Receptors 8

Table 4 Permitted activities 9

Table 5 Components to be removed 10

Table 6 Separately collected fractions 10

Table 7 Control of Noise Impacts 13

Table 8 Source-Pathway-Receptor 14

Table 9 Trigger volumes 16

Figures

Figure 1 Aerial view..... 6

Figure 2 Wind Rose 6

Figure 3 Mitigation, proposed gate location 15

Drawings

Title	Reference
Permit Boundary	010.1_09_001
Site Plan	010.1_09_004
Sensitive Receptors 1 km Plan	010.1_09_005
Sensitive Receptors 2 km Plan	010.1_09_006

Appendices

Appendices	Title
Appendix A	7817VR - V2 - Noise Impact Assessment
Appendix B	App B 7817VR Data for EA
Appendix C	010.1_05_009 Complaint Form

1 INTRODUCTION

This Noise and Vibration Management Plan (NVMP) accompanies the application for a bespoke waste installation EPR/CP3046QE at Park House Farm, Lower Hordley, Ellsmere, Shropshire, SY12 9BL. The site location is shown on plan 010.1_09_001.

The site was historically a farm with the previous residence utilising the industrial units and associated buildings as a livery. The site is now to be used as a waste treatment facility to recover, recycle and reduce the disposal of WEEE waste to landfill through a process of reverse manufacturing.

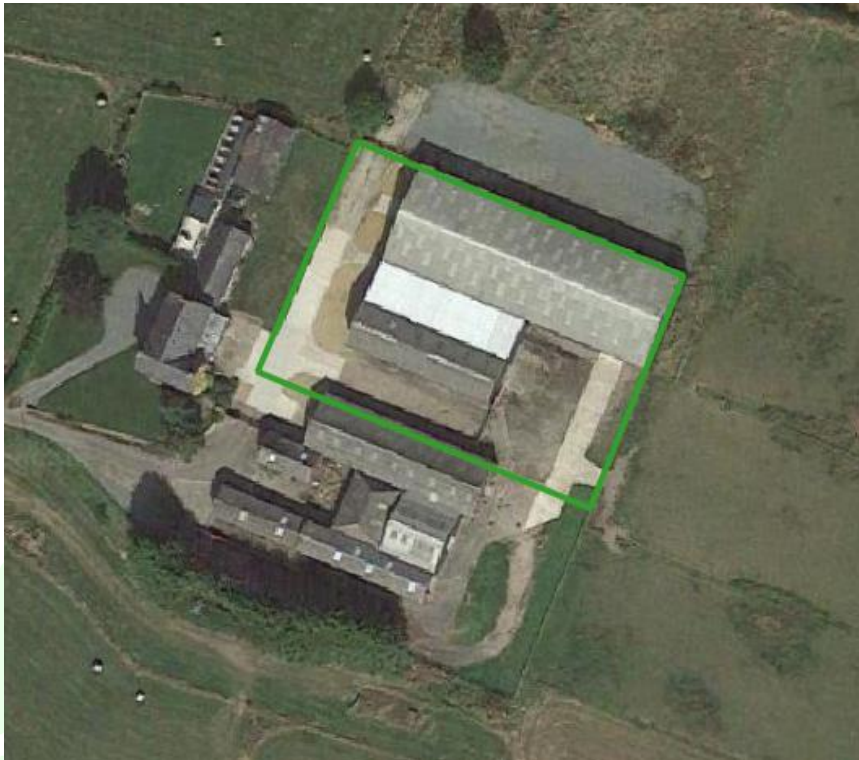
The only waste to be accepted on site is Waste Electrical and Electronic Equipment (WEEE) (televisions, batteries, etc.). The site receives waste via the main entrance located on the south eastern boundary. Waste will be brought in by approved local contractors (registered waste carriers), generally on articulated lorries. A 3.5 tonne box van is stored off-site and used on occasion.

The waste activities on site are based on Standard rules SR2015 No15 Waste electrical and electronic equipment authorised treatment facility (ATF) excluding ozone-depleting substances. Certain activities on site are above the limits of this permit and raises the regulatory level of the site. The site will operate to 30 tonnes of hazardous waste to be shredded in a 24 hour period, 100 tonne of hazardous waste stored at any one time of which only up to 10 tonnes will go for disposal see Table 4 Permitted activities.

The site is approximately 2238 m² and is located at Park House Farm, Lower Hordley, Ellsmere, Shropshire, SY12 9BL.

The Noise Impact Assessment (NIA) in appendix A, show's that with the mitigation shown in Figure 3 Mitigation, proposed gate location and waste being delivered to the west side of the warehouse in between the ware house and park farm house there is no adverse impact on the receptors see appendix B.

Figure 1 Aerial view



1.1 Sensitive Receptors

Table 1 Receptors in Prevailing Wind Direction Within <1 km

Receptor Type	ID	Name	Distance	Direction
Human	5	Bowers J R & R A	733	ENE
	6	Reynolds Cottage	874	NNE
	19	Kenwick Oak	940	E
Infrastructure		Minor Roads	367-2000	N,E,S,W
Agricultural	1	Arable Farm Land	0- 2000	N,E,S,W
Water		Unammed Pond	631	NE
		Unammed Ponds	532	ENE

Sensitive receptors have been identified up to 2 km and are shown on the sensitive receptors plan 010.1_09_005. A full list of receptors is shown above. The sensitive receptors shown are in all directions of the site. The closest observing station where weather data is available is from Cockshutt WM SY12 0. 3.3 km east of the site (based

on observations between 2017 – present). Figure 2 Wind Rose below shows the wind rose for Cockshut which indicates the prevailing wind is west south west.

Figure 2 Wind Rose

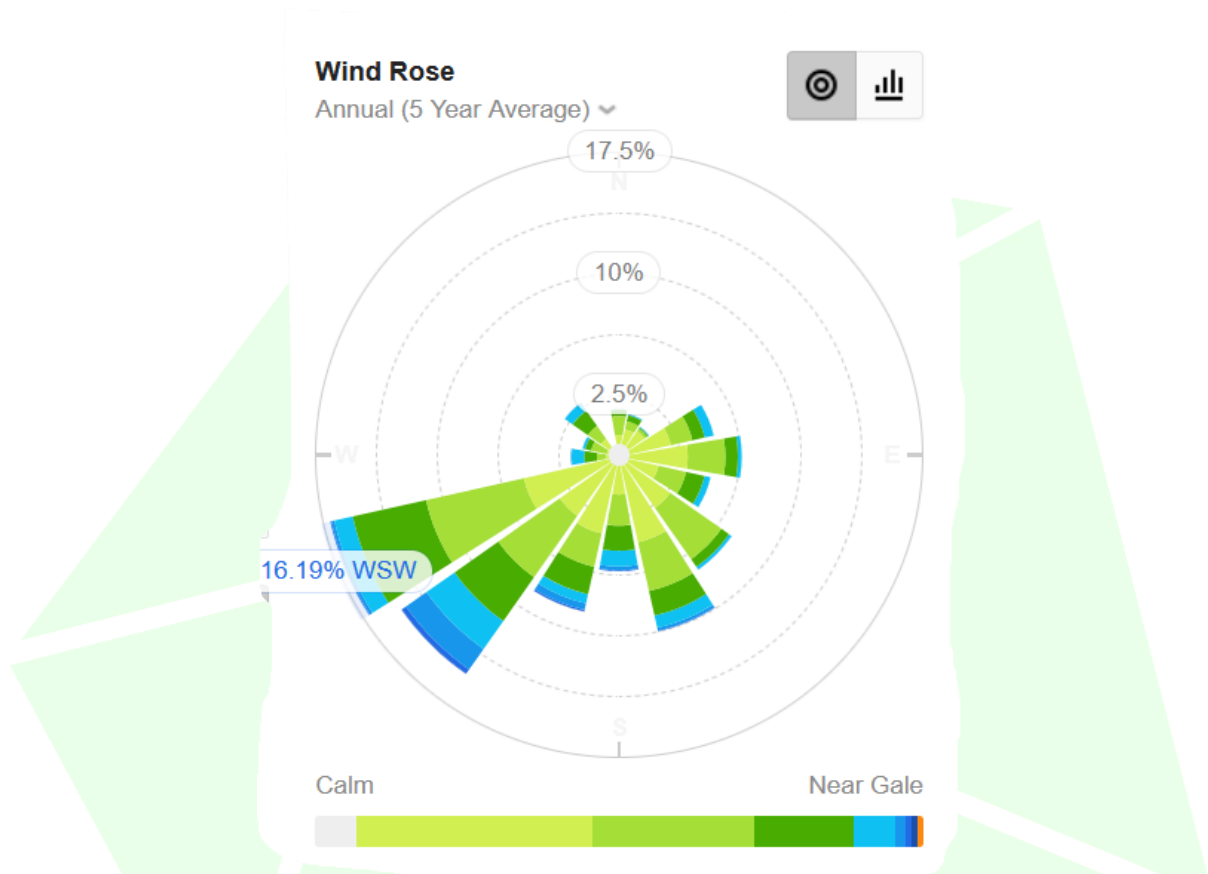


Table 2 Distance of Receptor to Site Boundary (<1 km)

Receptor Type	ID	Description	Distance from Site Boundary (Approx.)	Direction from Site
Commercial	1	ABP Food Group	401	W
	2	Commercial Farming Units	462	SSW
	5	Bowers J R & R A	733	ENE
	9	Alistair Duncan Machinery	409	WSW
	12	Commercial Farming Unit	541	NW
	14	Commercial Farming Unit	973	S

	1	Arable Farm Land	0- 2000	N,E,S,W
Residential	1	Bagley Marsh properties	764	SSW
	6	Reynolds Cottage	874	NNE
	12	Lower Hordley	763	NW
	13	Oak View Residential	588	W
	14	The Oaklands	528	SE
	15	Residential	990	SE
	18	Park Cottage	208	SE
	19	Kenwick Oak	940	E
Public Right of way	1	PROW 1	428	SW
Critical Infrastructure		Minor Roads	367-2000	N,E,S,W
Surface Water	Unammed Ponds/Lakes	290	NW	
	Unammed Pond	631	NE	
	Unammed Ponds	532	ENE	
	Unammed Pond	354	S	
	Unammed river near Bagley	305	S	

Table 3 Most at Risk Receptors

Receptor type	Receptor ref (nia)	Description	Distance from site m (approx.)	Direction
HUMANS AND PROPERTY	NSR1	Park Cottage	215	SE
	NRS2	The Oaklands	540	SW
	NRS3	Commercial Farming Unit	541	NW

	NRS4	Bowers J R & R A	733	ENE
--	------	------------------	-----	-----

2 OPERATIONS

Table 4 Permitted activities

Activity Reference	Disposal and Recovery Codes
Section 5.4 A(1) (a)(v) and/or (b)(iv) - non-hazardous waste installation – treatment in shredders of metal waste, including WEEE and end of life vehicles and their components.	R13: Storage of wastes pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection, on the site where it is produced) R3: Recycling/reclamation of organic substances which are not used as solvents
Section 5.3 A(1)(a)(ii) -Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.	R4: Recycling/reclamation of metals and metal compounds
Section 5.6 (A)(1) - temporary or underground storage of hazardous waste.	R5: Recycling/reclamation of other inorganic materials D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where it is produced)

2.1 Waste Handling and Processing

Normal operating conditions WEEE will be stored on average for 5 days from arrival and processing, to removal from site.

The internal treatment area is surfaced with impermeable reinforced concrete with provision of spillage collection facilities.

Waste will be managed on a 'First In, First Out' (FIFO) basis. WEEE is accepted at the site and stored prior to treatment in accordance with site plan 010.1_09_004. FIFO is enforced, once storage area 1 is full waste is processed by hand in the CRT, LCD and automated monitor processing, storage area 2 is filled with partially processed waste. Waste is the processed 'reverse engineered' mechanically prior to separate fractions being separated as per site plan 010.1_09_004 . and stored in locations 3, 4, 5 and 6.

All fluids contained within any WEEE shall be removed prior to further treatment.

WEEE will be disassembled by shredding, screening into difference component by shredder and infeed conveyor. Disassembled spare parts and components that may be re-used or may be used to provide spare parts.

Residues from any shredding or granulating operation will be segregated to non-hazardous and hazardous waste.

Metal waste is produced from the treatment process. Metal waste is stored in the external 40yd3 Ro-Ro skip and is turned around every 2-3 days.

All WEEE treatment activities, particularly shredding, will cease 30 minutes to 1 hour before the end of the day.

As a minimum, the substances, preparations and components specified in Table 5 Components to be removed and Table 6 Separately collected fractions below shall be removed from any separately collected WEEE.

Table 5 Components to be removed

Substances, Preparations & Components to be Removed from Separately Collected WEEE
<ul style="list-style-type: none"> • Capacitors containing Polychlorinated biphenyls (PCB); • Mercury-containing components, such as switches or backlighting lamps; • Batteries; • Printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimetres; • Toner cartridges, liquid and paste, as well as colour toner; • Plastic containing brominated flame retardants; • Asbestos waste and components which contain asbestos; • Cathode Ray Tubes (CRTs); • Hydrofluorocarbons (HFC), or hydrocarbons (HC); • Gas discharge lamps; • Liquid Crystal Displays (LCDs) (together with their casing where appropriate) of a surface greater than 100 square centimetres and all those backlit with gas discharge lamps; • External electric cables; • Components containing refractory ceramic fibres; • Components containing radioactive substances with the exception of components that are below the exemption thresholds set in Article 3 of and the Annex I to Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation; and • Electrolytic capacitors containing “substances of concern” (height > 25mm, diameter > 25 mm or proportionately similar volume.

Table 6 Separately collected fractions

Component	Specified Treatment
CRTs	The fluorescent coating shall be removed.
Equipment containing hydrofluorocarbons (HFCs) or hydrocarbons such as refrigeration and cooling equipment	The gases must be properly extracted and properly treated
Gas discharge lamps	The mercury shall be removed.

3 NOISE MANAGEMENT

3.1 Responsibility for Implementation

Responsibility for the implementation of the NVMP is the Technically Competent Manager (TCM) and Senior management and in their absence an appropriately designate and trained person.

The effectiveness of the plan will be monitored on a daily basis and reviewed as required in the event it is shown not to be adequately limiting noise levels experienced at the nearest noise sensitive properties.

All staff will be made aware, via toolbox talks and by training as required of the NVMP, its requirements and their role within it..

3.2 Sources and Control of Noise

3.2.1 Delivery and Removal of Waste

The speed of passage, the nature and condition of surfaces and proximity of haul routes to sensitive receptors all affect the level of noise generated and experienced at noise sensitive receptors.

The most effective way of reducing noise generation is to limit site speeds and ensure that haul roads are maintained. The location of haul routes reduces the noise experienced beyond the site in this case, routes need to be kept as far as possible from sensitive receptors.

Waste will arrive and either be containerised or on pallets and removed from the vehicle using fork lifts. Unloading of waste externally has been identified as the biggest contribute to noise.

The hours of operations are limited to periods when background noise levels are higher to reduce the noise impact of operations conducted within the site.

Mobile plant and machinery should be well maintained and effectively silenced. In addition, it needs to be operated by, for example, shutting down equipment not being used and avoiding excessive revving so that noise generation is minimised. The use of broadband reversing alarms also reduces the overall level of disturbance.

Weather conditions, including in particular wind speed and direction, have an impact on the noise experienced beyond the site and management of the site needs to consider this when the wind direction is towards the noise sensitive receptors.

Waste is removed in the same way with exception to the scrap metal skip which is collected by a third party using a hook loader.

3.2.2 Processing of Waste

Processing of waste all happened internally site plan 010.1_09_004 Site disassembles component parts of WEEE then feeds them in to the mechanical processing line. The waste goes through various crushers, shaker decks and electromagnets until it is separated in to separate fractions for onward disposal and or recovery.

3.3 Site Noise Monitoring

Noise monitoring is carried out daily. An audial inspection of operations within the site along the nearest boundary to noise sensitive receptors.

Detection of any unusually loud or tonal noises will be investigated, the source identified, and remedial measures put in place to minimise if not eliminate the source.

Record of the results of the monitoring together with any mitigation measures, required will be recorded in the Site Diary.

Table 7 Control of Noise Impacts

Abatement measure	Description / effect	Overall consideration and implementation
Site / process layout in relation to receptors	All noisy operations are to be carried out within a building.	<ul style="list-style-type: none"> The site layout has the advantage of the fact that operations will internally accept for unloading and loading of waste which will be in containers or on pallets. All processing activities will take place inside.
Hours of operation	Daylight working hours only and no operations to take place when ambient noise levels are low	<ul style="list-style-type: none"> Internal operations and HGV collections/deliveries – 07:00 to 17:00, Monday to Thursday and 07:00 – 16:00 on Fridays.
Reversing alarms	Broadband reverse alarms/Peaks in noise emissions	<ul style="list-style-type: none"> All vehicles will be fitted with broadband reverse alarms.
Operation and maintenance of plant and machinery	Poorly maintained and operated machinery has the potential to increase noise emissions	<ul style="list-style-type: none"> All vehicles, plant and machinery will be operated and maintained in accordance with manufacturer's specifications to keep noise generation to a minimum Equipment should be shut down when not in use, where this is practicable
Access road use and maintenance Internal haul roads	Limiting noise generated within the site	<ul style="list-style-type: none"> The access roads should be well maintained and vehicles using the road should limit their speed to below 10 mph and avoid any excessive revving.

Table 8 Source-Pathway-Receptor

Source	Pathway	Receptor	Type of impact	Where relationship can be interrupted
Delivery of waste	Atmospheric dispersion	Residential properties, local ecology	Disturbance by significant increase in noise levels above background levels	<ul style="list-style-type: none"> • Limiting hours of operation • Restricting Site layout so that processing is limited to within a building. • Using broadband reversing alarms • Maintaining plant and equipment • Operating plant and equipment in such a way as to minimise noise emissions

3.3.1 Monitoring Location

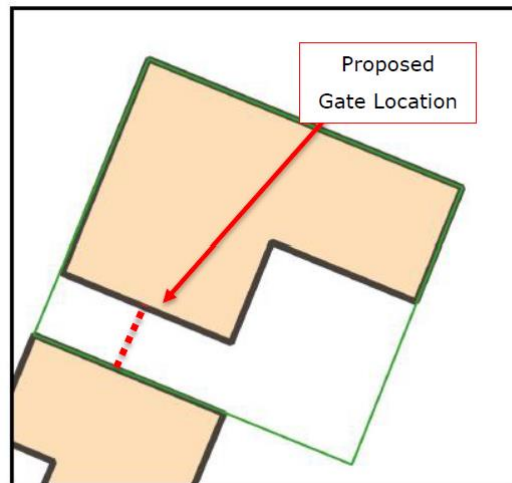
Noise monitoring will be carried out on a daily basis by an audial inspection of operations within the site along the nearest boundary to noise sensitive receptors. Detection of any unusually loud or tonal noises will be investigated, the source identified, and remedial measures put in place to minimise if not eliminate the source.

Record of the results of the monitoring together with any mitigation measures, required will be recorded.

3.4 Mitigation

To prevent noise having and adverse impact waste will be unloaded on the western boundary of the building in between the warehouse and park house, Whilst a gate will be constructed as shown in Figure 3 Mitigation, proposed gate location.

Figure 3 Mitigation, proposed gate location



4 ACTIONS WHEN ALARM LEVEL IS TRIGGERED

If noise levels on site receive complaints and are substantiated by the operator and or EA officer operations creating that noise will be ceased until appropriate mitigation is provided.

Table 9 Trigger volumes shows the excess rating over background levels if these are exceeding extra mitigation shall be taken.

Table 9 Trigger volumes

Results	NSR1 (dBA)	NSR2 (dBA)	NSR3 (dBA)	NSR4 (dBA)
Rating Sound Level	42.0	37.0	30.0	32.0
Background Sound Level	38.0	38.0	38.0	38.0
Excess of Rating Level Over Background Sound Level	+4.0	-1.0	-8.0	-6.0

5 REPORTING AND COMPLAINTS RESPONSE

The nominated person responsible for responding to complaints and implementing the complaint procedure is the TCM.

If complaints are received in relation to the activities covered by the Environmental Permit e.g. noise, dust etc., these will be discussed with the TCM and, where necessary, action taken to deal with immediate consequences.

In the event that a complaint is received either directly from a neighbouring resident or indirectly via a regulatory body. The name, address and contact details of the complainant will be sought.

- name;
- address;
- contact details;
- date(s) and time(s) to which the complaint relates; and
- nature of the complaint and any other details which may assist in the identification of the source, activity or circumstances which prompted the complaint.

The Operations TCM will then investigate the complaint to determine the cause and implement any corrective and preventative actions.

Timescales will be determined for follow-up of the corrective actions and determination of their effectiveness.

The complaints information and subsequent investigation will be recorded in Vision Recycling U.K. Ltd Complaint Form (Appendix c).

The timings and description of the complaint will be analysed in conjunction with the activities and meteorological conditions logged on site within 1 working days to identify the offending source or activity. The complainant may be asked to keep an ongoing log for correlation with the site operational log. Once the source or activity is identified suitable mitigation measures will be implemented without delay.

Where the complaint relates to noise, mitigation measures will ensure noise levels as set out in Table 9 Trigger volumes are not exceeded. Where the complaint relates to vibration mitigation measures will be introduced as necessary to minimise any impacts. Where these levels are not exceeded but complaints continue, a review of noise and vibration mitigation measures will be undertaken to ensure the operations are as quiet as possible and do not cause unreasonable disturbance.

The complainant will be contacted to check that the mitigation has been effective.

5.1 Engagement with the Community

If issues occur they the local community groups such as parish council etc... will be contacted an informed of the situation and what the operator is doing to rectify the issue.

5.2 Reporting of Complaints

If a complaint is substantiated by the operator it shall be reported to the Environment Agency via the incident hot line: 0800 80 70 60.

5.3 Management Responsibility

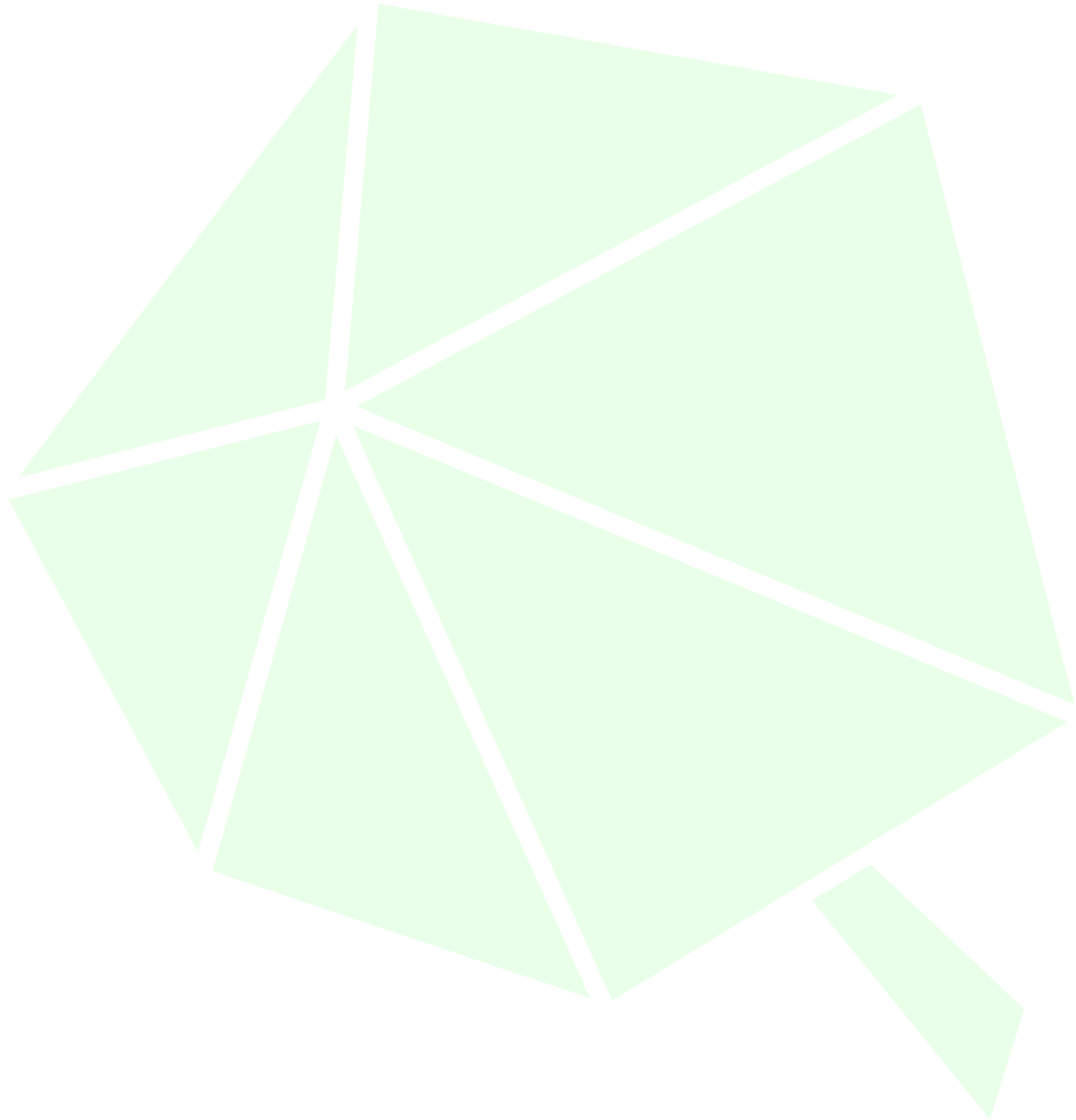
The nominated person responsible for responding to complaints and implementing the complaint procedure is the Technically Competent Manger.

Contact Details:

Name	Contact details
Daniel Yeomans	Tel: 07547 832 196 Email: dan@visionrecycling.co.uk

6 SITE AND EQUIPMENT MAINTENANCE

All site equipment will be maintained as per manufacturer's guidelines or at least annually and records kept, as a minimum. For further maintenance scheduling see Environmental Management System (EMS) 010.1_05_004.



7 RECORD KEEPING

As a minimum, the following records must be kept to ensure compliance with the requirements of the Environmental Permit:

- A copy of the permit
- Risk assessments
- Competence and training records
- Duty of Care documentation and Environment Agency waste returns
- Other legally required documents
- Operational procedures
- Compliance records
- Complaints Record

Records must be retained for 6 years unless they relate to off-site environmental or health effects, or the condition of the land or groundwater when they shall be retained until permit surrender.

8 MANAGEMENT PLAN REVIEW

The NVMP will be reviewed as a minimum at least annually or following any substantial change in site operations or complaint of dust, particulate matter emissions or at the request of the Environment Agency.

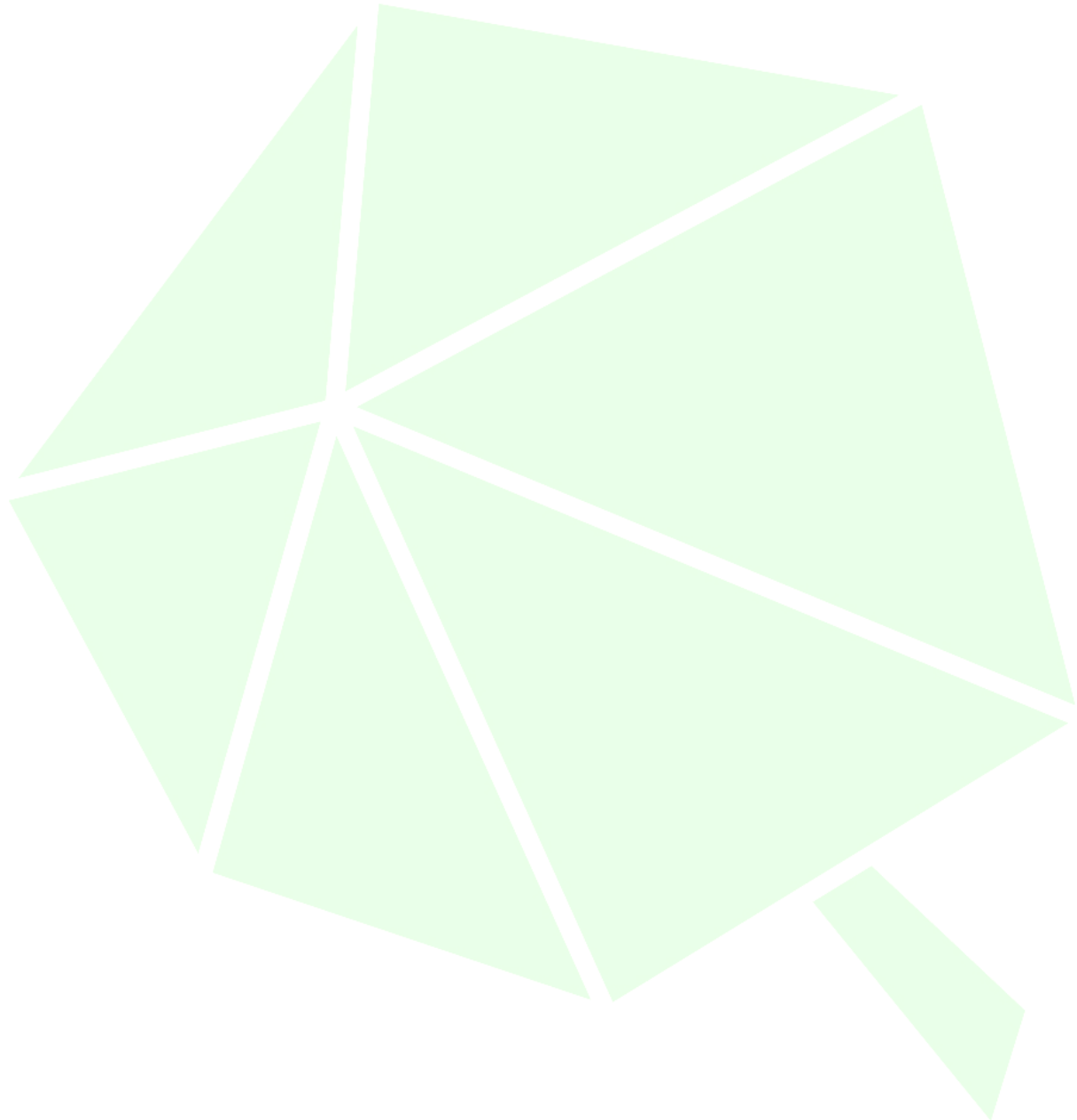
Other activities which may prompt review of the NVMP are variations to the environmental permit, accident, complaint, breach or a change in the site setting or sensitive receptors.

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

9 AVAILABILITY OF NVMP

All site operational staff will be trained in the contents of the NVMP to ensure compliance and consistent operation of waste activities.

A copy of the NVMP will be made available at the site for reference purposes and is available on request to the Environment Agency and other interested parties.



10 SUMMARY

The NVMP seeks to ensure that by the adoption of industry best practice and appropriate measures, dust emissions are adequately controlled within the site and do not cause any significant impacts on amenity or the environment beyond the permit boundary.

This NVMP describes how the operator is fully committed to operating responsibly and in compliance with the Environmental Permit.

The NVMP will be reviewed annually and in the event of any complaint regarding noise or vibration to ensure its provisions remain effective.



U M B R E L L A
ENVIRONMENTAL

PROTECTING YOUR BUSINESS

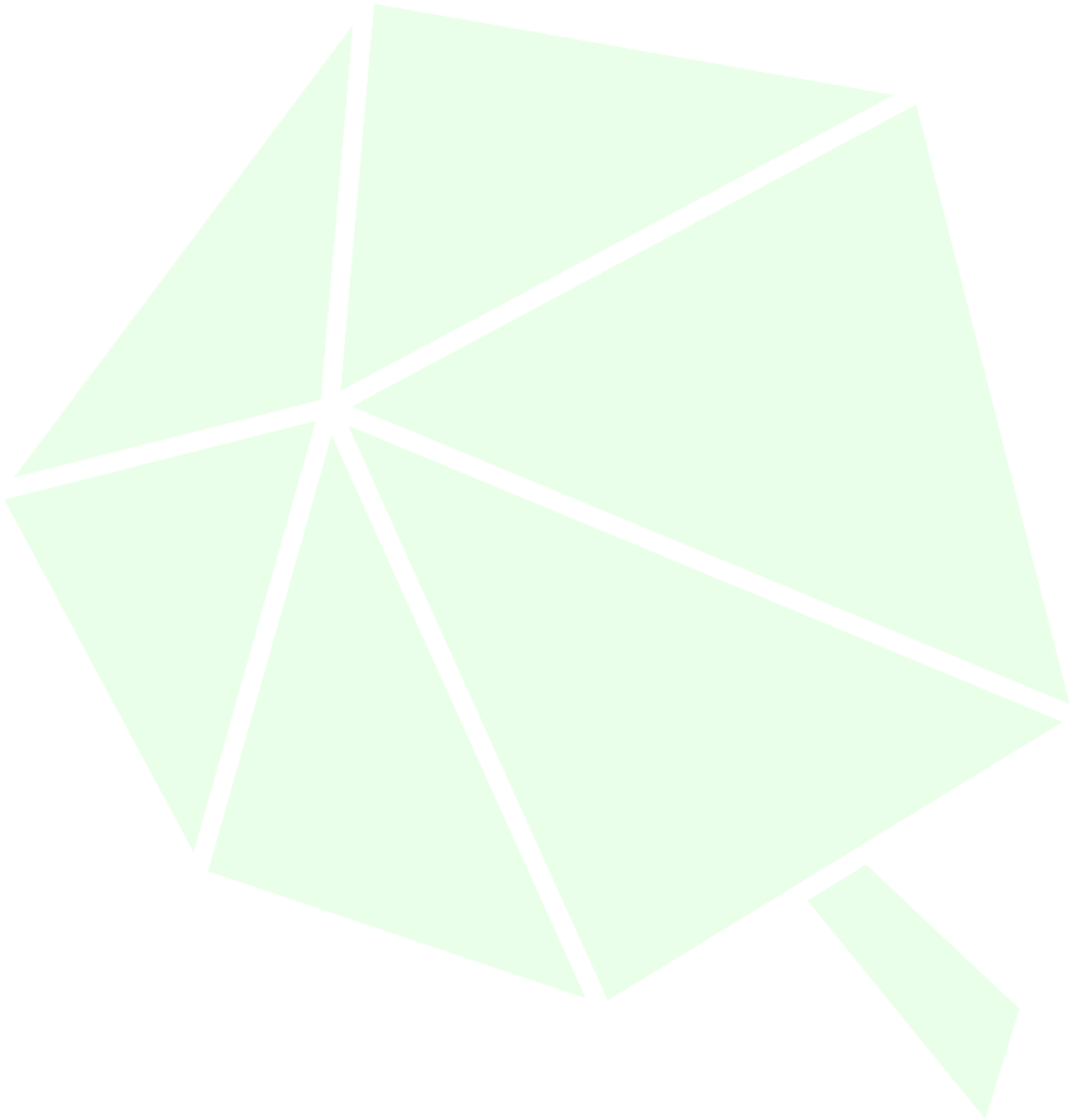
9 Goldington Road Bedford MK40 3JY

www.umbrella-environmental.co.uk

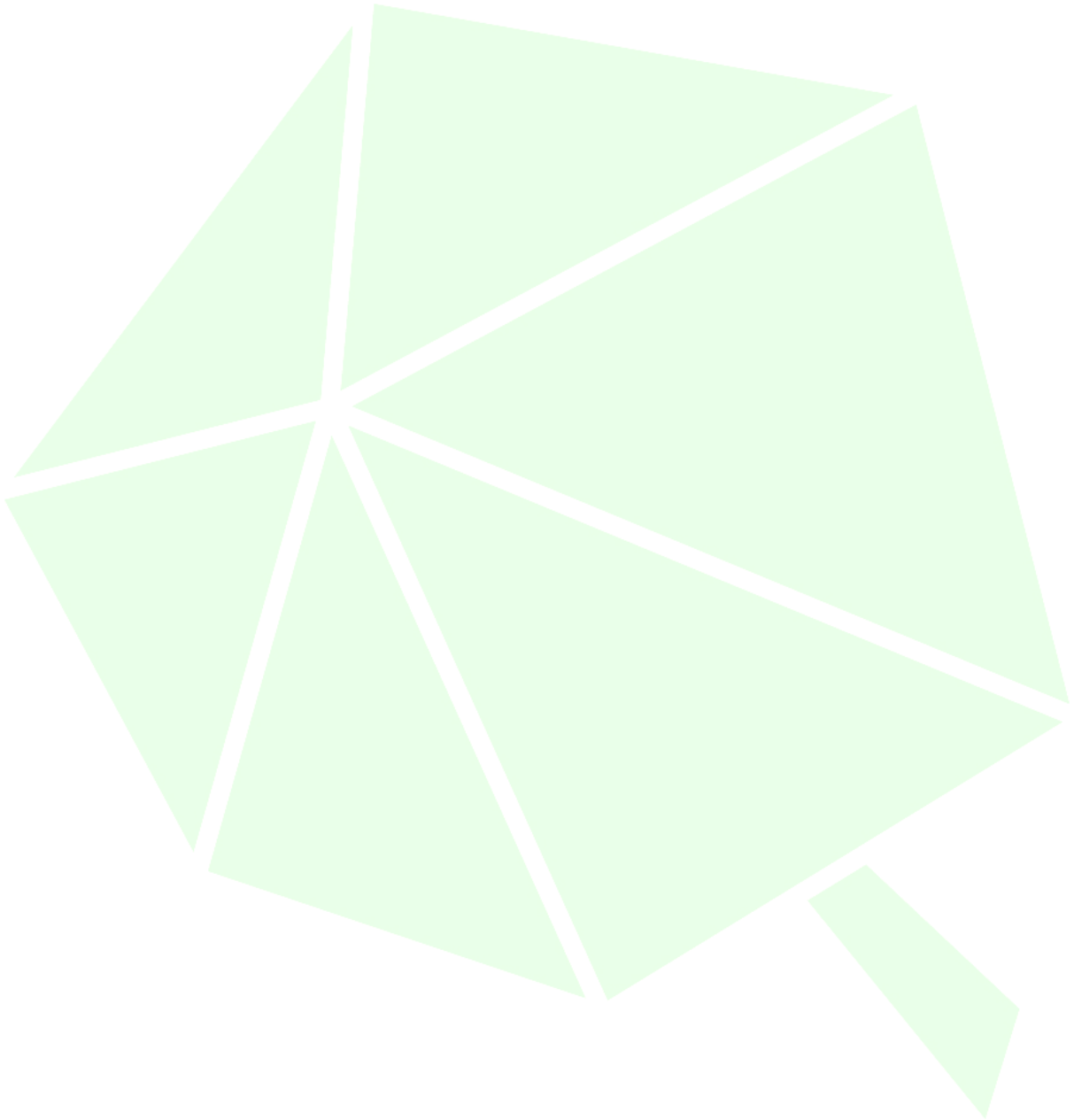
andrew@umbrellaenvironmental.co.uk

Mob: 07498 671713

Appendices



App A



NOVA

ACOUSTICS

Noise Impact Assessment for a Proposed Industrial Development

Client Name: Vision Recycling UK Ltd.

Client Address: Unit 67c, Blackpole Trading Estate West, Worcester, WR3 8TJ

Site Address: Land Adjacent to Park House, Hordley, Shropshire, SY12 9BL

Date: 22/06/2022



Authorisation and Version Control

Report Prepared By	Mr. M Caley, MSc, MIOA
Report Checked By	Mr. J Barratt-Gibson, MSc, MIOA, MIET
Report Approved By	Mr. A T Martin, MSc, MIOA, MCIEH, MIET, MInstSCE
Date	22/06/2022
Project Number	7817VR
Version Reference	002

Disclaimer

The opinions and interpretations presented in this report represent our best technical interpretation of the data made available to us. However, due to uncertainty inherent in the estimation of all parameters, we cannot, and do not guarantee the accuracy or correctness of any interpretation and we shall not, except in the case of gross or wilful negligence on our part, be liable or responsible for any loss, cost, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. The findings and opinions expressed are relevant to the dates of the site works and should not be relied upon to represent conditions at substantially later dates. If additional information becomes available which may affect our comments, conclusions or recommendations, the author reserves the right to review the information, reassess any new potential concerns and modify our opinions accordingly. Except for the provision of professional services on a fee basis, NOVA Acoustics Ltd does not have a commercial arrangement with any person or company involved in the interests that are the subject of this report. NOVA Acoustics Ltd cannot accept any liability for the correctness, applicability or validity for the information they have provided, or indeed for any consequential costs or losses in this regard. Our efforts have been made on a "best endeavours" basis and no responsibility or liability is warranted or accepted by NOVA Acoustics Ltd.

Copyright © The material presented within this report is confidential. This report has been prepared for the exclusive use of the client and shall not be distributed or made available to any other company or person without the knowledge and written consent of NOVA Acoustics Ltd and the client. All works undertaken by NOVA Acoustics Ltd are carried out in accordance with NOVA Acoustics Ltd's terms and conditions found at www.novaacoustics.co.uk.



CONTENTS

AUTHORISATION AND VERSION CONTROL 2

EXECUTIVE SUMMARY 5

1. INTRODUCTION..... 6

 Overview 6

 Scope & Objectives 6

2. ENVIRONMENTAL NOISE SURVEY..... 7

 Context & Subjective Impression 7

 Background 8

 Environmental Noise Survey Results 8

3. BS4142:2014 NOISE ASSESSMENT 9

 Specific Sound Levels..... 9

 Rating Penalty Assessment 13

 Rating Sound Levels 14

 BS4142:2014 Assessment 14

 Rating Sound Levels 16

 BS4142:2014 Assessment 17

4. NOISE MANAGEMENT PLAN 19

APPENDIX A – ACOUSTIC TERMINOLOGY..... 23

APPENDIX B – LEGISLATION, POLICY AND GUIDANCE 26

 B.1 – British Standard BS 4142:2014+A1:2019 - Methods for rating and assessing industrial and commercial sound..... 26

APPENDIX C – ENVIRONMENTAL SURVEY 29

 C.1 – Tabulated Summary Noise Data 29

 C.2 – Surveying Equipment 29

 C.3 – Meteorological Conditions..... 30

APPENDIX D – SITE PLANS 31

APPENDIX E – B.A.T. 32

Tables

Table 1.0 – Background Sound Level Summary Results 8

Table 2.0 – Internal Ambient Noise Level 9

Table 3.0 – Noise Breakout Analysis 10

Table 4.0 – Conveyer Belt Measurement 10

Table 5.0 – Collection Noise Data 11

Table 6.0 – Unloading Noise Data..... 11

Table 7.0 – HGV Pass-by Noise Data 11

Table 8.0 – HGV Access Road Movement Calculations 12

Table 9.0 – Specific Sound Levels 13

Table 10.0 – Rating Penalty Assessment 13

Table 11.0 – Rating Sound Levels 14

Table 12.0 – BS4142:2014 Noise Assessment 14

Table 13.0 – Specific Sound Levels..... 16

Table 14.0 – Rating Sound Levels 17

Table 15.0 – BS4142:2014 Noise Assessment 17

Table 16.0 – Sound Survey Summary Results..... 29

Table 17.0 – Measurement Equipment 29

Table 18.0 – Weather Summary 30

Figures

Figure 1.0 – Indicative Site Layout 7

Figure 2.0 – Existing Building 9

Figure 3.0 – Specific Sound Level Map – 1.5m Grid Map Height 13

Figure 4.0 – Proposed Gate Location 15

Figure 5.0 – Specific Sound Level Map with Mitigation – 1.5m Grid Map Height 16

Figure 6.0 – MP1 Noise Survey Time History..... 29

Executive Summary

An environmental noise survey and noise impact assessment have been undertaken on land adjacent to Park House, Hordley, Shropshire, SY12 9BL to assess the noise emissions from a proposed industrial development. The measured background sound levels have allowed for a BS4142:2014 noise impact assessment to be carried out. A summary of the assessment results can be seen below.

BS4142:2014 Noise Assessment:

Providing the proposed development is operated as specified within this report, the BS4142:2014 Rating Sound Level is predicted to exceed the prevailing background sound level at the most affected NSR (Noise Sensitive Receptors) by 1 dB, this exceedance is deemed negligible. Noise levels at all other surrounding NSRs fall below the background sound level. This is classed as 'Low Impact' in accordance with BS4142:2014, and 'No Observed Effect Level' ('NOEL') when assessed with the NPSE and NPPF.

It should be noted that the assessment has been undertaken considering the time periods when the impact is expected to be the highest (as per Environment Agency Guidelines) and that for all other time periods, a lower level of impact is expected.

An overview of the recommendations can be found below:

Recommendations and Mitigation Overview

- In order to achieve 'Low Impact', it is recommended that a gate or fence is installed on site as shown in Figure 4.0.
- The gate/fence must have no holes or gaps, should have a minimum height of 3m, and must have a minimum surface mass of 10 kg/m².
- If a gate is installed, it must stay closed at all times during collections.
- The opening where the conveyer belt exits the building must be covered with a flexible rubber / PVC sheet.

The findings of this report will require written approval from the Environment Agency prior to work commencing.

1. Introduction

Overview

NOVA Acoustics Ltd has been commissioned to prepare a noise assessment for a proposed industrial development ('the Proposed Development') on land adjacent to Park House, Hordley, Shropshire, SY12 9BL ('the Site').

Vision Recycling UK Ltd is preparing an application to be submitted to the Environment Agency.

The following technical noise assessment has been prepared to support the application to the Environment Agency. The report details the existing background sound climate at the nearest Noise Sensitive Receptors, as well as the noise emissions associated with the site and recommends mitigation measures where necessary.

This noise assessment is necessarily technical in nature; therefore, a glossary of terms is included in Appendix A to assist the reader.

Scope & Objectives

The scope of the noise assessment can be summarised as follows:

- Baseline sound monitoring survey to evaluate the prevailing background sound levels at the nearest Noise Sensitive Receptor ('NSR') to Site;
- Sound monitoring at the site to measure specific noise emissions from any noise-generating equipment deemed to be a cause for concern.
- Detailed sound modelling, acoustic calculation and analysis in accordance with: ISO9613-1 & ISO 9613-2 – 'Attenuation of sound propagation outdoors prediction methodology', to predict the sound levels at the NSR;
- Recommendation of mitigation measures, where necessary, to comply with the requirements of the Environment Agency Guidance and British Standard BS4142:2014+A1:2019 – 'Methods for rating and assessing industrial and commercial sound'. Further information on the legislation can be found in Appendix B.

2. Environmental Noise Survey

Measurement Methodology

To characterise the sound profile of the area at the closest Noise Sensitive Receptor (NSR), an environmental sound survey was carried out from 23/05/22 to 24/05/22. For the long-term sound monitoring, a sound level meter was attached to a drainpipe on the eastern façade of 'Park Cottage'. The microphone was positioned at 1st floor level approximately 4m above the ground and due to the proximity to the façade of the building an appropriate façade correction has been applied to the measured results. The long-term monitoring position was chosen in order to collect representative sound levels at the closest NSRs during the typical operational periods of the proposed development. The monitoring location is shown in Figure 1.0 below.

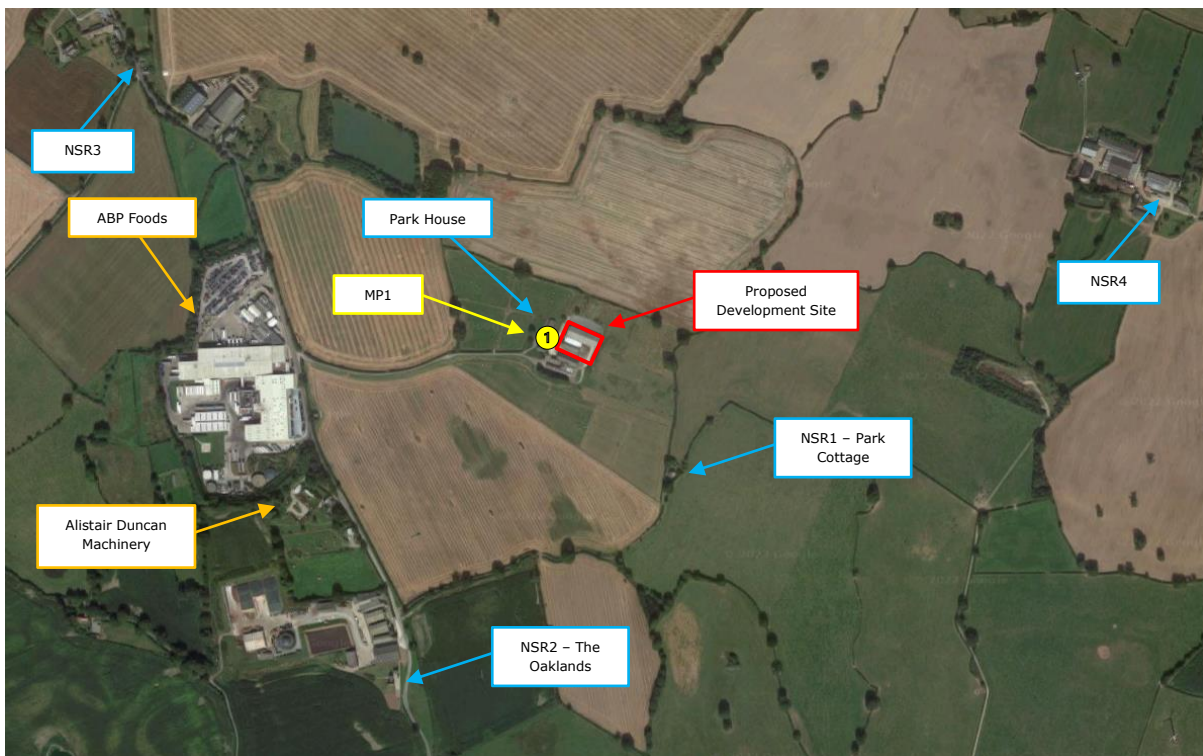


Figure 1.0 – Indicative Site Layout

Context & Subjective Impression

The area surrounding the site is mixed in nature with farmland and commercial/industrial premises in close proximity to the Proposed Development. The acoustic environment of the area is deemed to be low in level, and the noise profile is dominated by intermittent farming and agricultural noise emissions.

The closest Noise Sensitive Receptors to the site are located at Park Cottage approximately 215m to the south-east and 'The Oaklands' approximately 540m to the south-west. The residence directly adjacent to the site, 'Park House', is owned by the operator of the site, and as such is thought to be classed as an associated property. For this reason, this property will not be included in the assessment. The topography of the ground between the proposed development and NSRs is relatively flat and would be classed as acoustically 'soft'.

Background

The site will be used to process waste electricals via mechanical and manual processes.

The main equipment that will be used inside the building is as follows:

- Manual cutter
- Shredder
- Hammer Mill
- Shaker deck
- Eddy current separator
- Optical sorter

After the shredder, the metal waste is ejected from the process via a conveyor belt out of the building at a height of approximately 3m from the ground. Material is then dropped into a waiting metal container (either a skip or a roll-on-roll-off trailer). Deliveries of raw waste are moved from HGVs and smaller vehicles via forklift trucks inside the warehouse.

The applicant has informed NOVA Acoustics of the following proposed operational hours:

- Internal operations and HGV collections/deliveries – 07:00 to 17:00, Monday to Thursday and 07:00 – 16:00 on Fridays.

Environmental Noise Survey Results

The table below outlines the background sound levels measured during the most sensitive operational periods of the Proposed Development that will be used as the baseline for the noise assessment. Further summary results for the entire measurement period can be found in Appendix C.

Measurement Position MP1				
Measurement Period ('t')	L _{A90,15min}	*SMR L _{A90,15min}	Min. L _{A90,15min}	Max. L _{A90,15min}
Day 1: 10:00 – 17:00	41.0	38.0	36.0	45.0

Table 1.0 – Background Sound Level Summary Results

**Statistically Most Repeated*

As can be seen in the table above, the statistically most repeated L_{A90,15min} value is 38.0 dB for the operational period. The range of measured background sound levels is relatively low and the statistical value sits towards the lower end of the range. As such, the statistically most repeated L_{A90,15min} value is deemed 'typical' and will be used in the following assessment.

3. BS4142:2014 Noise Assessment

The following section of the report analyses the impact of the internal and external activities taking place on site.

Specific Sound Levels

Internal Noise Levels:

Spot measurements of processes and ambient noise levels within the applicant's existing unit were undertaken on 24/05/22. The measured internal ambient noise level is shown in the table below. During the measurement, the site was operating at typical levels and the measurement was taken at a height of 1.5m in the centre of the building.

Description	L _{Aeq,t} (dB)
Internal Ambient Noise Level Measurement – 24/05/22 – 13:45 – 13:55	80.0

Table 2.0 – Internal Ambient Noise Level

Internal Noise Breakout Analysis:

The figure below shows the existing building on site.



Figure 2.0 – Existing Building

The following construction details are assumed for the building:

- The façades and roof are constructed from single skin steel, thought to have a minimum gauge of 0.7mm. This is predicted to provide a minimum sound reduction of **25.0 dB R_w**.
- All roller shutter doors are also assumed to be constructed from a minimum of 0.7mm steel, again providing a minimum **25.0 dB R_w** of sound reduction.
- As per Environment Agency guidelines, an 'as built' correction of -5.0 dB will be applied to all sound reduction values. As such, the façade and roof elements are predicted to provide a minimum sound reduction of **20.0 dB R_w**.

The predicted noise breakout from the structure is calculated considering the following criteria:

- The predicted internal noise level as shown in Table 2.0 and the proposed construction as specified above.
- The noise emissions breaking out of the structure are calculated considering the sound reduction provided by building fabric elements (R_w).
- All roller shutter and pedestrian doors will remain closed for the duration of any noisy internal operations.
- A correction to account for the change from internal reverberant conditions to external non-reverberant conditions (-6.0 dB).
- The open section of the building where the conveyor belt exits is expected to be approximately 1m² in size. The opening will be covered by a rubber sheet, providing partial acoustic shielding (-5.0 dB).

The table below shows the calculated external noise levels at the façade, roof, and doors of the structure.

Noise Breakout Calculations				
Description	Internal Noise Level (dBA)	Façade Sound Reduction (R_w , dB)	Internal to External Correction (dB)	Noise level (dBA)
Façades	80.0	-20.0	-6.0	54.0
Roof		-20.0		54.0
Closed Roller Shutter Door		-20.0		54.0
Open Section		-5.0		69.0

Table 3.0 – Noise Breakout Analysis

Conveyer Belt:

The conveyer belt noise emissions were also measured on 24/05/22. The measurement was taken within the building at the existing site, and the microphone was placed 1.5m from the ground and 1m from the side of the conveyer. The results are shown in the table below.

Description	$L_{Aeq,t}$ (dB)
Conveyer Belt Measurement – 24/05/22 – 12:40 – 12:50	71.0

Table 4.0 – Conveyer Belt Measurement

HGV Collections:

The following table presents the predicted noise level of the collection operations on site. The applicant has informed NOVA Acoustics that the metal that is collected from the site has a maximum shredded thickness of 0.7mm, and once the initial portion of a trailer is filled, the collection noise is minimal as it is light metal being dropped on top of light metal. Each collection typically takes a maximum of 2 hours as the material is slowly dropped from the conveyer into RO-RO vehicles or skips.

The noise data has been taken from a previous report compiled by NOVA Acoustics for a similar development (report ref: 7041RL). The measurement was taken at a distance of 7m from the source and includes metal fines being dropped by a picking shed conveyor.

Description	Value (dBA)
Metal Fines Drop at 7m (L _p)	73.0
Calculated Sound Power Level (L _w)	98.0

Table 5.0 – Collection Noise Data

HGV Deliveries:

The applicant has stated that all deliveries will be unloaded externally. All waste delivered to the site will be containerised in IBC's or on a pallet. Given this, it will be unloaded and brought into the building via a forklift. The table below presents the sound power levels of two forklifts unloading a HGV taken from a previous report undertaken by LF Acoustics Dated June 2021 ref Plot H KBP Noise v1.1 080621. The sound levels have then been corrected to represent the time taken to unload a HGV which is assumed to be 15 mins per hour on average.

Description	Value (dBA)
HGV Loading/Unloading with no. 2 forklifts L _p at 10m	69.0
Calculated Sound Power Level (L _w)	97.0
On-time per hour	15
Time Corrected Sound Power Level (L _w)	91.0

Table 6.0 – Unloading Noise Data

HGV Movements:

The applicant has stated that there are expected to be a maximum of 4 deliveries/collections at the site per day. This equates to a maximum of 1 delivery/collection per hour.

The following table presents the predicted noise level of an HGV pass-by. Again, the noise data has been taken from a previous report compiled by NOVA Acoustics. Measurements were taken for a Farmfoods storage and distribution facility at 3m from an HGV (with no diesel chiller unit) passing by.

Description	Value (dBA)
HGV Pass-by at 3m (L _p)	83.0
Calculated HGV Pass-by (L _w)	101.0

Table 7.0 – HGV Pass-by Noise Data

The following table presents the calculated noise level of the HGVs traversing the access road. Corrections have been applied to account for the movement per 1-hour assessment period (rounded

to the nearest 1-minute), a 10mph (4.5m/sec – 16kph) site speed limit and the distance of each movement.

Description	HGV Entering / Leaving Site
HGV Pass-By (L_W , dBA)	101.0
Approximate Distance (m)	420
Speed (m/sec)	4.5 (10mph)
Total Movement Time (mins/1-hour)	2
Time Corrected Sound Power Level (L_W , dBA)	86.0
Time Corrected Sound Power Level (In and Out, L_W , dBA)	89.0

Table 8.0 – HGV Access Road Movement Calculations

Noise Modelling

The specific sound levels at the NSRs have been calculated using SoundPlan 8.2, which undertakes its calculations in accordance with the guidance provided in ISO 9613-1:1996.

The following assumptions have been made within the calculation software:

- To accurately model the land surrounding the development the topographical data has been taken from Google Maps, it is assumed this has an accuracy within the last 3 years.
- For the purpose of the assessment, the ground between the source and receiver comprises mostly acoustically 'soft' surfaces.
- The sound map grid height has been set to 1.5m, however, the noise levels used in the assessment will be taken from the most exposed point on each NSR façade.
- The building façade and roof elements of the Proposed Development are assumed to behave as area noise sources which are calculated within the SoundPlan software considering the formula; $L_W = L_{P1m} + 10 * \text{Log}(S)$, where S is the surface area of the building element.
- The HGV movement noise is modelled as a line source emitter at a height of 1m (approximate engine height).
- The collection noise is modelled at a height of 1.5m.
- The forklifts unloading HGVs have been modelled as an area source 1m from the ground. The area source has been inputted into the model as sound power per unit to represent the moving point sources of the forklifts. It is assumed the unloading area will be situated at the front of the building adjacent to the access doors.
- The conveyer belt exiting the building is modelled at a maximum height of 3m.
- The conveyer belt is modelled as a line source with a sound power level of 71 dB/m.

The sound map showing the specific sound level emissions from the Proposed Development can be seen in the figure below.

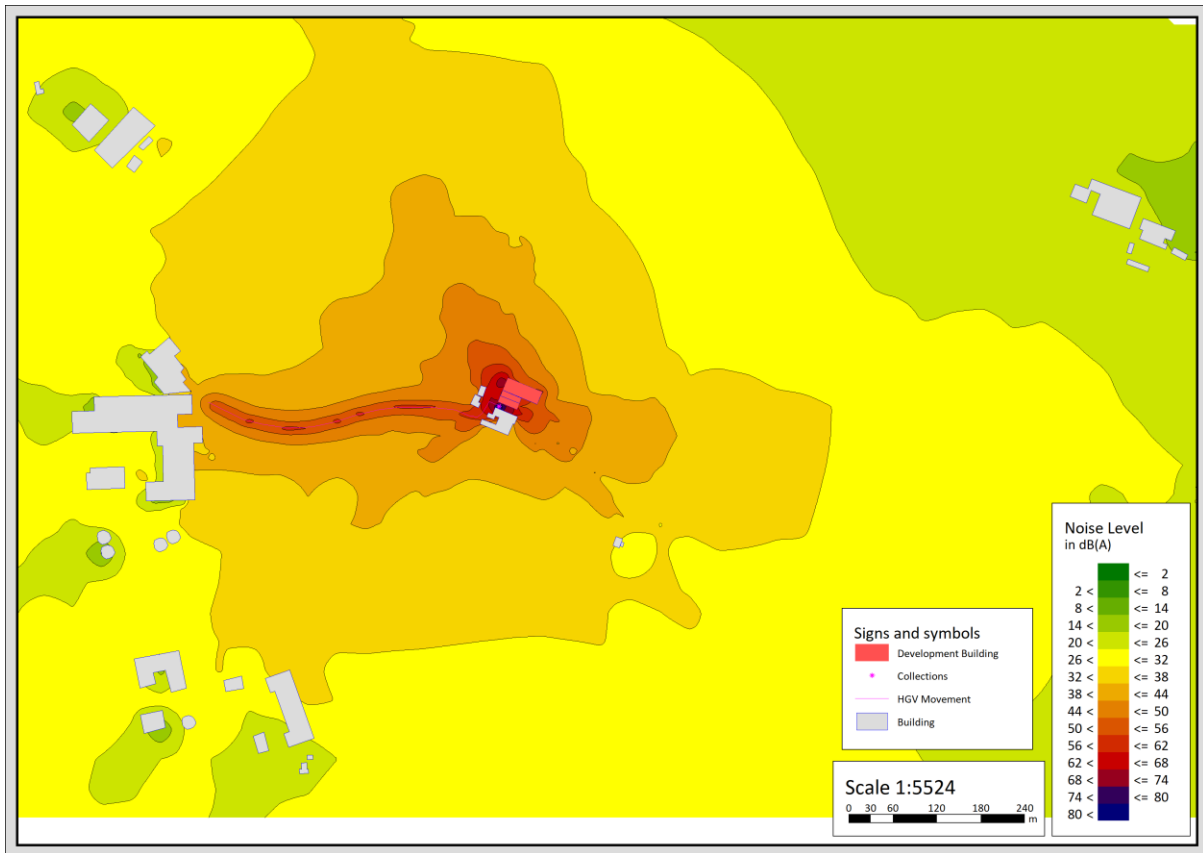


Figure 3.0 – Specific Sound Level Map – 1.5m Grid Map Height

A summary of the specific sound levels at the most affected NSRs, based on the sound map shown in Figure 3.0 can be seen in the table below.

NSR	Specific Sound Level (dBA)
1	36.0
2	31.0
3	24.0
4	26.0

Table 9.0 – Specific Sound Levels

Rating Penalty Assessment

Considering the requirements of the rating penalty, an assessment of the various sound sources associated with the Proposed Development has been detailed in the following table.

Description	Tonality	Impulsivity	Intermittency
Day Time Operations	--	+3.0	+3.0

Table 10.0 – Rating Penalty Assessment

As can be seen in the rating penalty assessment above, a +3.0 dB penalty has been applied to the specific sound level to account for the potential intermittent internal operations and a +3.0 dB penalty has been applied to account for the impulsive noise emissions that may be generated by HGV collections.

Rating Sound Levels

Incorporating the rating penalties with the specific sound level, the rating sound level has been derived and detailed in the following table.

NSR	Rating Sound Level (dBA)
1	42.0
2	37.0
3	30.0
4	32.0

Table 11.0 – Rating Sound Levels

BS4142:2014 Assessment

The rating sound level has been assessed in accordance with BS4142:2014 at the most affected NSRs.

BS4142:2014 Assessment					
Results	NSR1 (dBA)	NSR2 (dBA)	NSR3 (dBA)	NSR4 (dBA)	Notes
Rating Sound Level	42.0	37.0	30.0	32.0	Acoustic feature corrections as shown in Table 9.0.
Background Sound Level	38.0	38.0	38.0	38.0	As shown in Table 1.0.
Excess of Rating Level Over Background Sound Level	+4.0	-1.0	-8.0	-6.0	The assessment indicates 'Low Impact' at NSRs 2, 3 and 4 and a low level of 'Adverse Impact' at NSR1.

Table 12.0 – BS4142:2014 Noise Assessment

Discussion

The assessment above indicates that the rating sound level is predicted to be 4 dB above the prevailing background sound level at the most affected NSR. This indicates a low level of 'Adverse Impact' in accordance with BS4142:2014 and 'Lowest Observed Adverse Effect Level' ('LOAEL') when assessed in accordance with the NPPF and NPSE. As such, it is recommended that mitigation is employed.

Recommendations and Mitigation

To ensure 'Low Impact', it is recommended that noise levels at NSR1 are reduced by a minimum of 4 dB. The main source of noise at NSR1 is the collections taking place at the southern façade of the building, and as such, it is recommended that mitigation is employed in this area.

The applicant has stated that a gate can be installed between the development building and the adjacent building to the south. The proposed location of the gate is shown in the figure below.

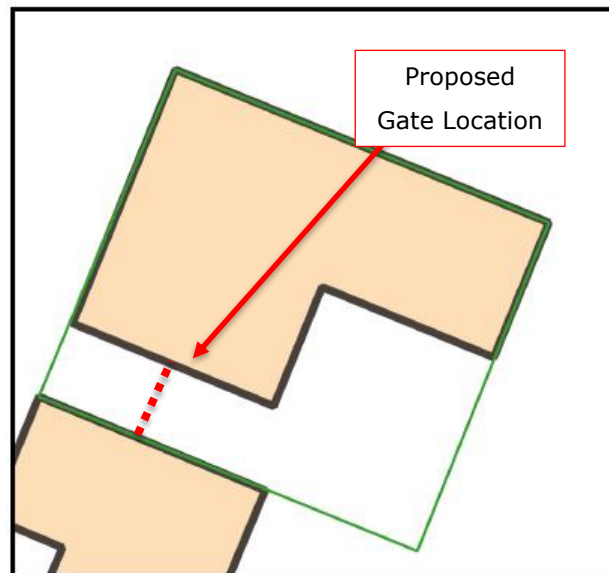


Figure 4.0 – Proposed Gate Location

In order to provide adequate acoustic shielding, the gate must have no holes or gaps, should have a minimum height of 3m, and must have a minimum surface mass of 10 kg/m². The gate must stay closed at all times during collections.

The figure below shows the specific noise map with mitigation.

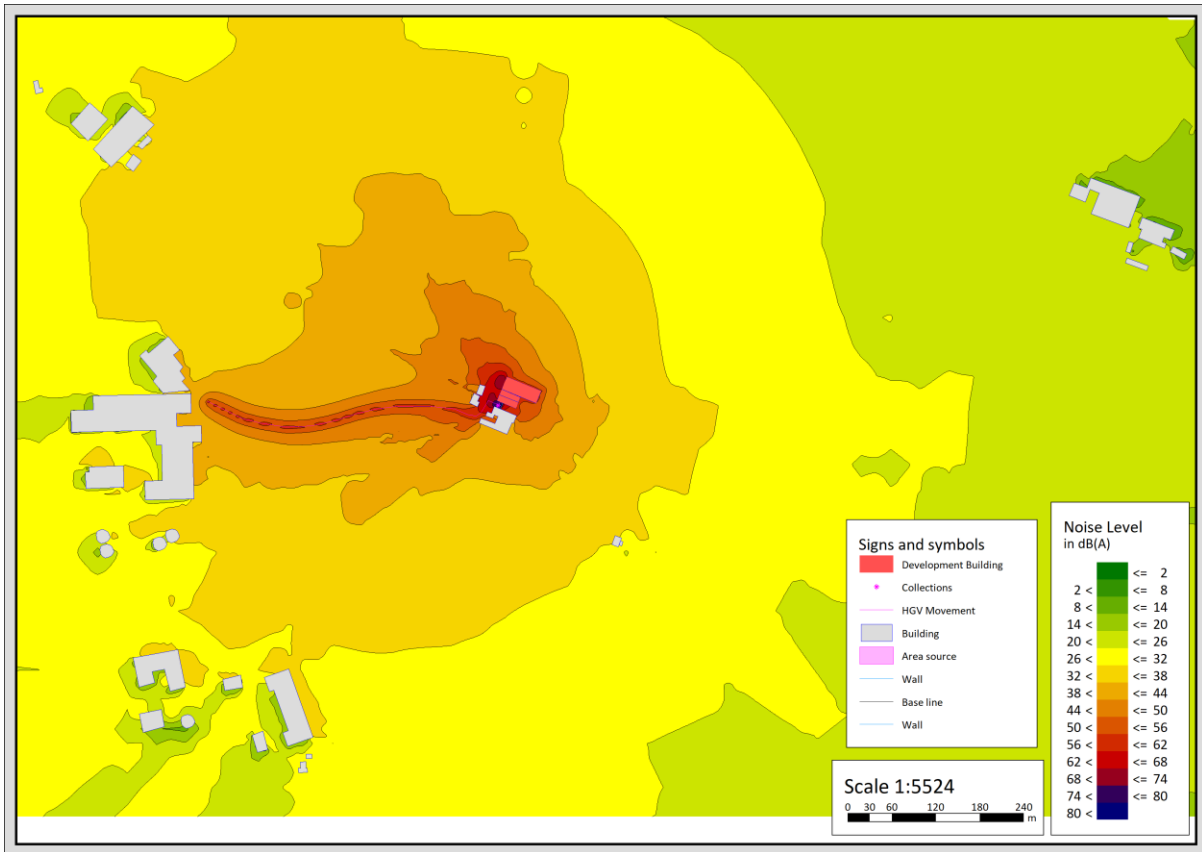


Figure 5.0 – Specific Sound Level Map with Mitigation – 1.5m Grid Map Height

A summary of the specific sound levels at the most affected NSRs, based on the sound map shown in Figure 5.0 can be seen in the table below.

NSR	Specific Sound Level (dBA)
1	33.0
2	31.0
3	21.0
4	28.0

Table 13.0 – Specific Sound Levels

Rating Sound Levels

Incorporating the rating penalties with the specific sound level, the rating sound level has been derived and detailed in the following table.

NSR	Rating Sound Level (dBA)
1	39.0
2	37.0
3	27.0
4	34.0

Table 14.0 – Rating Sound Levels

BS4142:2014 Assessment

The rating sound level has been assessed in accordance with BS4142:2014 at the most affected NSRs.

BS4142:2014 Assessment – with Mitigation					
Results	NSR1 (dBA)	NSR2 (dBA)	NSR3 (dBA)	NSR4 (dBA)	Notes
Rating Sound Level	39.0	37.0	27.0	34.0	Acoustic feature corrections as shown in Table 9.0.
Background Sound Level	38.0	38.0	38.0	38.0	As shown in Table 1.0.
Excess of Rating Level Over Background Sound Level	+1.0	-1.0	-11.0	-4.0	The assessment indicates 'Low Impact' at all NSRs.

Table 15.0 – BS4142:2014 Noise Assessment

Discussion

As can be seen in the table above, the rating sound levels are predicted to exceed the prevailing background sound level at the most affected NSR by 1 dB. This level of exceedance is deemed negligible, noise levels at all other NSRs fall below the background sound level. This indicates 'Low Impact' in accordance with BS4142:2014 and 'No Observed Effect Level' ('NOEL') when assessed in accordance with the NPPF and NPSE.

Uncertainty

Internal Ambient Noise Levels

The internal ambient noise measurement was recorded whilst typical activities were taking place within the building at the applicant's existing site. This has been compared with specific measurements taken of separate processes and is thought to be a realistic internal noise level to be used in the model. The noise level is not thought to vary considering different operators and during the measurement, televisions were being dismantled which is thought to present a worst-case scenario.

The noise breakout from the building has been calculated considering the sound reduction provided by the building envelope. A 5 dB correction was applied to account for 'as built' sound reduction (as per Environment Agency guidelines). Again, this is thought to reduce the uncertainty of the noise break-out model.

External Noise Levels

It is thought that appropriate levels have been used for external operations in the sound model. The level of uncertainty cannot be quantified, however, to ensure noise emissions from external activities are minimised, a noise management plan is presented in Section 4.0.

Sound Level Meter

The sound level meter was calibrated before and after the short-term and long-term monitoring periods. The calibration drift was found to be 0.1 dB. This is a thought to present a negligible level of uncertainty.

4. Noise Management Plan

Introduction

This noise management plan outlines the methods by which the site operator will systematically assess and minimise the potential impacts of noise generated by the site. The noise management plan is a working document with the specific aim to ensure that:

- Noise impact is considered as part of routine inspections.
- Noise is primarily controlled at the source by good operational practices, including physical and management control measures.
- All appropriate measures are taken to prevent or, where that is not reasonably practical, to reduce noise emissions from the site.

The noise management plan addresses the impact of noise and the control measures employed to mitigate the risk. These are supported through monitoring procedures to identify elevated levels and review complaints should they arise. The complaints management procedure including the management responsibilities are also addressed.

Noise Control Measures

The management measures are outlined below. The table in Appendix E outlines the demonstration that the Best Available Techniques will be adopted to ensure that noise emission levels during the operation of the site meet the relevant criteria. The table also includes any additional actions that could be used to help BAT.

Site Management Responsibility

The Site Manager (or designated responsible person) will have responsibility for ensuring that nuisances and hazards arising from the facility due to noise are minimised. Regular meetings will be instigated to discuss current and planned site operations that have the potential to generate elevated noise emissions.

Management Control Measures

a) The following range of management control methods will be implemented at the site

Including:

- All plant equipment will be regularly maintained to ensure that no item will produce excessive noise.
- Traffic movements from HGVs will take place during daytime operational hours of 07:00 – 17:00.
- A speed limit of 10 mph will be in place on site.
- Site staff will be made aware that they are working in the vicinity of noise-sensitive receptors and avoid all unnecessary noise due to misuse of tools and equipment, and unnecessary shouting and radios. Further to this, staff will be trained to operate the equipment and plant without causing excess noise including measures such as not dropping waste from height.
- All roller shutters and doors will be kept closed at all times, except when access is required.

b) If at any time it is necessary to carry out temporary actions that are likely to cause elevated noise levels, the site manager will contact the Environmental Agency and any other interested parties before such actions are taken to inform them of the operations being undertaken and that the elevated levels of noise will be a temporary nature.

c) All operational staff will be responsible for reporting any noise problems immediately to the site manager.

d) No annual quantitative noise monitoring is proposed, however qualitative monitoring of noise levels will be included as a factor to be considered by the site manager as part of daily work on site.

e) Routine maintenance of all plant and equipment, including vehicles, will also identify equipment operating at elevated noise levels and work will be undertaken to repair the defect.

Noise Contingency Measures

Elevated levels of noise may be identified either by receipt of a noise complaint from a third party suggesting that there is excessive noise from the site or by detection of noise as a result of the routine monitoring by site personnel. This section details the contingency measures in place to identify the source of elevated noise levels, bring noise levels back under control and minimise their impact.

Noise Complaint Investigation

An issue management system (IMS) will be implemented and completed by the site manager. This will include a site diary, forms and records of complaints. Further to this, a customer care and complaints procedure will be implemented. This procedure will allow for all complaints, feedback and requests made by third parties regarding the site's operational activities, health and safety performance or quality of service/product.

All complaints received from third parties including external customers, potential customers, statutory authorities, statutory consultees, members of the general public and internal clients will be forwarded to the site manager to action as below and record into the incident database within 72 hours.

The site manager will ensure that:

- The complaint is investigated to identify the cause, if necessary this may involve direct communication with the complainant.
- In the event of elevated noise being detected, the presence of 'abnormal' onsite activity is assessed and if necessary, preventive action is taken that will prevent a reoccurrence of the same problem. These actions must be documented.
- The complainant will be contacted and given information on the investigations conducted and actions taken as appropriate.
- Complaints involving a location with Local Authority Contracts will be reported in line with specific Contract requirements and timescales. Local procedures may need to be in place to ensure these are adhered to.
- All complaints are reported to regional directors and discussed at site meetings.

- Details of other complaints are sent to the other company personnel as appropriate.
- If the investigation indicates that the complaint has not been justified this will be clearly recorded on the incident report. All complaints will be logged.

Elevated Noise Levels

Any elevated levels of noise identified by the qualitative monitoring procedure or the customer care and complaints procedure will be mitigated as follows:

- The site manager will investigate the source of the noise and carry out a range of checks at the identified source of the elevated levels if it is found to be operating within the site. As part of these checks, the site manager will consider the need for quantitative monitoring.
- Any noise monitoring will be completed in accordance with the relevant British Standard, including BS4142:2014. Monitoring locations will be agreed with the Environmental Agency and/or Local Planning Authority prior to undertaking monitoring.
- The results of any noise monitoring will determine whether the site is causing an unacceptable impact at the receptor in question.
- The site manager will then ensure the plant is being operated to the manufacturer's specification, and within the requirements of this management plan and ensure that any improvements required to minimise the noise levels are made.

To further mitigate the elevated noise levels, the following actions shall be considered:

- The replacement of equipment identified as generating excess noise.
- Once the improvement identified by the site manager has been completed, the manager will commission a further set of noise monitoring to ensure that the improvements have met the required standard. If the noise levels are still not being met, then the manager will repeat the request for improvements and subsequent monitoring until the limits are met.

If operational failings are identified, the retraining of employees will take place to ensure that all employees operate to the required standards. If the failings are identified as part of the operating techniques, then the problem will be raised as part of the review of control measures.

The site manager will ensure a close liaison with the Environment Agency throughout all stages of the process following an identified elevated noise level.

Reporting Measures

In the event of elevated levels of noise being identified, the event will be reported into an issue management system (IMS) by a member of operational staff. Upon notification of an environmental incident, the site manager will complete an incident reporting form. The completed form is then distributed throughout the company for review at operational, management and health and safety meetings.

All performance failures will be categorised for input into the IMS as follows:

- Minor event: quick fix possible, locally resolved.
- Medium event: brief disruption into service, management intervention required.
- Major event: significant disruption to service.

Each non-conformance category must have a given deadline for rectification.

The IMS will record any actions taken to rectify the issue, ensure that any necessary actions or review are recorded onto the IMS and ensure that the person reporting the incident is notified. The site manager will investigate the performance failure within 2 hours and, if necessary, will report the event to the Environment Agency. Once the issue has been resolved, the corrective action will be entered onto the system and the issue will be closed.

Emergency Plans

General

This section considers the potential for accidents or incidents which would result in the loss of control of noise emissions and could have an unacceptable short-term impact on the local community. The measures in place to mitigate any emergency situations will generally be the same as the contingency measures identified previously. If the situation is considered to be an emergency by the site manager, then the mitigation measures will be immediately implemented, and the manager will consider limiting the hours of operation or immediately suspending the site operations creating unacceptable levels of noise. These measures will be considered on a case-by-case basis.

Breakdown of Equipment and Plant

Elevated levels of noise may escape from the site due to the breakdown of plant onsite. Machines not operating to the manufacturer's specification may create unacceptable levels of noise and the failure of control equipment such as acoustic cladding or acoustic barriers may allow unacceptable levels of noise to escape from the site. In the event of the equipment or abatement breakdown the mitigation measures to be undertaken are the same as the contingency measures.

Management Review

Noise control measures will be reviewed through internal audits as part of the monitoring and reporting systems. With reference to noise, the internal audits will include but are not limited to the following:

- Monthly spot-check inspections of the paper trail of forms and the IMS to ensure that all data is entered correctly.
- Spot checks on the higher-risk sources of noise to check monitoring and maintenance procedures are being carried out in accordance with this management plan.
- Checks to ensure that any issues entered into the IMS have been resolved correctly.

Appendix A – Acoustic Terminology

Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Pressure Level (Sound Level)	The sound level is the sound pressure relative to a standard reference pressure of 20 μ Pa (20x10 ⁻⁶ Pascals) on a decibel scale.
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log ₁₀ (s1 / s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20 μ Pa.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
L _{eq,T}	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
L _{max,T}	A noise level index defined as the maximum noise level during the period T. L _{max} is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall L _{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
L _{90,T}	A noise level index. The noise level exceeded for 90% of the time over the period T. L ₉₀ can be considered to be the "average minimum" noise level and is often used to describe the background noise.
L _{10,T}	A noise level index. The noise level exceeded for 10% of the time over the period T. L ₁₀ can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m
Facade	At a distance of 1m in front of a large sound reflecting object such as a building façade.
Fast Time Weighting	An averaging time used in sound level meters. Defined in BS 5969.

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided. The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0 dB (the threshold of hearing) to over 120 dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

The ear is less sensitive to some frequencies than to others. The A-weighting scale is used to approximate the frequency response of the ear. Levels weighted using this scale are commonly identified by the notation dB(A).

In accordance with logarithmic addition, combining two sources with equal noise levels would result in an increase of 3 dB(A) in the noise level from a single source. A change of 3 dB(A) is generally regarded as the smallest change in broadband continuous noise which the human ear can detect (although in certain controlled circumstances a change of 1 dB(A) is just perceptible). Therefore, a 2 dB(A) increase would not normally be perceptible. A 10 dB(A) increase in noise represents a subjective doubling of loudness.

A noise impact on a community is deemed to occur when a new noise is introduced that is out of character with the area, or when a significant increase above the pre-existing ambient noise level occurs.

For levels of noise that vary with time, it is necessary to employ a statistical index that allows for this variation. These statistical indices are expressed as the sound level that is exceeded for a percentage of the time period of interest. In the UK, traffic noise is measured as the L_{A10} , the noise level exceeded for 10% of the measurement period. The L_{A90} is the level exceeded for 90% of the

time and has been adopted to represent the background noise level in the absence of discrete events. An alternative way of assessing the time varying noise levels is to use the equivalent continuous sound level, L_{Aeq} .

This is a notional steady level that would, over a given period of time, deliver the same sound energy as the actual fluctuating sound. To put these quantities into context, where a receiver is predominantly affected by continuous flows of road traffic, a doubling or halving of the flows would result in a just perceptible change of 3 dB, while an increase of more than 25%, or a decrease of more than 20%, in traffic flows represent changes of 1 dB in traffic noise levels (assuming no alteration in the mix of traffic or flow speeds).

Note that the time constant and the period of the noise measurement should be specified. For example, BS4142:2014 specifies background noise measurement periods of 1 hour during the day and 15 minutes during the night. The noise levels are commonly symbolised as $L_{A90,1hour}$ dB and $L_{A90,15mins}$ dB. The noise measurement should be recorded using a 'FAST' time response equivalent to 0.125ms

Appendix B – Legislation, Policy and Guidance

This report is to be primarily based on the following legislation, policy and guidance.

B.1 – British Standard BS 4142:2014+A1:2019 - Methods for rating and assessing industrial and commercial sound

Overview

BS4142:2014 sets out a method to assess the likely effect of sound from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises, on people who might be inside or outside a dwelling or premises used for residential purposes in the vicinity.

The procedure contained in BS4142:2014 for assessing the effect of sound on residential receptors is to compare the measured or predicted sound level from the source in question, the $L_{Aeq,T}$ 'specific sound level', immediately outside the dwelling with the $L_{A90,T}$ background sound level.

Where the sound contains a tonality, impulsivity, intermittency and other sound characteristics, then a correction depending on the grade of the aforementioned characteristics of the sound is added to the specific sound level to obtain the $L_{Ar,Tr}$ 'rating sound level'. A correction to include the consideration of a level of uncertainty in sound measurements, data and calculations can also be applied when necessary.

Rating Penalty

Section 9 of BS4142:2014 describes how the rating sound level should be derived from the specific sound level, by deriving a rating penalty.

BS4142:2014 states:

"Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, add a character correction to the specific sound level to obtain the rating level. This can be approached in three ways:

- a) subjective method;*
- b) objective method for tonality;*
- c) reference method."*

Due to the nature of the development the subjective method has been adopted to derive the rating sound level from the specific sound level. This is discussed in Section 9.2 of BS4142:2014, which states:

"Where appropriate, establish a rating penalty for sound based on a subjective assessment of its characteristics. This would also be appropriate where a new source cannot be measured because it is only proposed at that time, but the characteristics of similar sources can subjectively be assessed. Correct the specific sound level if a tone, impulse or other characteristics occurs, or is expected to be present, for new or modified sound sources."

BS4142:2014 defines four characteristics that should be considered when deriving a rating penalty, namely; tonality; impulsivity; intermittency; and other sound characteristics, which are defined as:

a) *Tonality*

A rating penalty of +2 dB is applicable for a tone which is "just perceptible", +4 dB where a tone is "clearly perceptible", and +6 dB where a tone is "highly perceptible".

b) *Impulsivity*

A rating penalty of +3 dB is applicable for impulsivity which is "just perceptible", +6 dB where it is "clearly perceptible", and +9 dB where it is "highly perceptible".

c) *Other Sound Characteristics*

BS4142:2014 states that where "the specific sound features characteristics that are neither tonal nor impulsive, though otherwise are readily distinct against the residual acoustic environment, a penalty of +3 dB can be applied."

d) *Intermittency*

BS4142:2014 states that when the "specific sound has identifiable on/off conditions, the specific sound level ought to be representative of the time period of length equal to the reference time interval which contains the greatest total amount of on time ... if the intermittency is readily distinctive against the residual acoustic environment, a penalty of +3 dB can be applied."

Background Sound Level

The background sound level is the underlying level of sound over a period, T, and is indicative of the relative quietness at a given location. It does not reflect the occurrence of transient and/or higher sound level events and is generally governed by continuous or semi-continuous sounds.

To ensure the background sound level values used within the assessment are reliable and suitably represent both the particular circumstance and periods of interest, efforts have been made to quantify a 'typical' background sound level for a given period. The purpose has not been to simply select the lowest measured value. Diurnal patterns have also been considered as they can have a major influence on background sound levels, for example, the middle of the night can be distinctly different (and potentially of lesser importance) compared to the start or end of the night time period for sleep purposes.

Since the intention is to determine a background sound level in the absence of the specific sound that is under consideration, it is necessary to understand that the background sound level can in some circumstances legitimately include industrial and/or commercial sounds that are present as separate to the specific sound.

Assessment of Impact

BS4142:2014 states: "The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs". An estimation of the impact of the specific sound can be obtained by the difference of the rating sound level and the background sound level and considering the following:

- "Typically, the greater this difference, the greater the magnitude of the impact."

- "A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context."
- "A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context."
- "The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a negligible impact, depending on the context."

Interpreting the guidance given in BS4142:2014, with consideration of the guidance given in the NPSE and NPPG Noise, an estimation of the impact of the rating sound is summarised in the following text:

- A rating sound level that is +10 dB above the background sound level is likely to be an indication of a Significant Observed Adverse Effect Level;
- A rating sound level that is +5 dB above the background sound level is likely to be an indication of a Lowest Observed Adverse Effect Level;
- The lower the rating sound level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating sound level does not exceed the background sound level, this is an indication of the specific sound source having a negligible impact and would therefore classified as a No Observed Adverse Effect Level.

During the daytime, the assessment is carried out over a reference time period of 1-hour. The periods associated with day or night, for the purposes of the Standard, are 07.00 to 23.00 and 23.00 to 07.00, respectively.

Appendix C – Environmental Survey

C.1 – Tabulated Summary Noise Data

Measurement Position MP1				
Measurement Time Period ('t')	L _{Aeq,t} (dB)	L _{Amax,t} (dB)	L _{A90,t} (dB)	L _{A10,t} (dB)
Day 1: 23/05/22 – 10:00 – 23:00	46.0	78.0	39.0	51.0
Night 1: 23/05/22 – 23:00 – 07:00	43.0	73.0	36.0	46.0
Day 2: 24/05/22 – 07:00 – 09:15	43.0	65.0	40.0	44.0

L _{A90} Analysis				
Measurement Period ('t')	L _{A90,t} (dB)	SMR L _{A90,t} (dB)	Min. L _{A90,t} (dB)	Max. L _{A90,t} (dB)
Day 1: 23/05/22 – 10:00 – 23:00	39.0	38.0	34.0	49.0
Night 1: 23/05/22 – 23:00 – 07:00	36.0	40.0	33.0	44.0
Day 2: 24/05/22 – 07:00 – 09:15	40.0	39.0	38.0	40.0

Table 16.0 – Sound Survey Summary Results

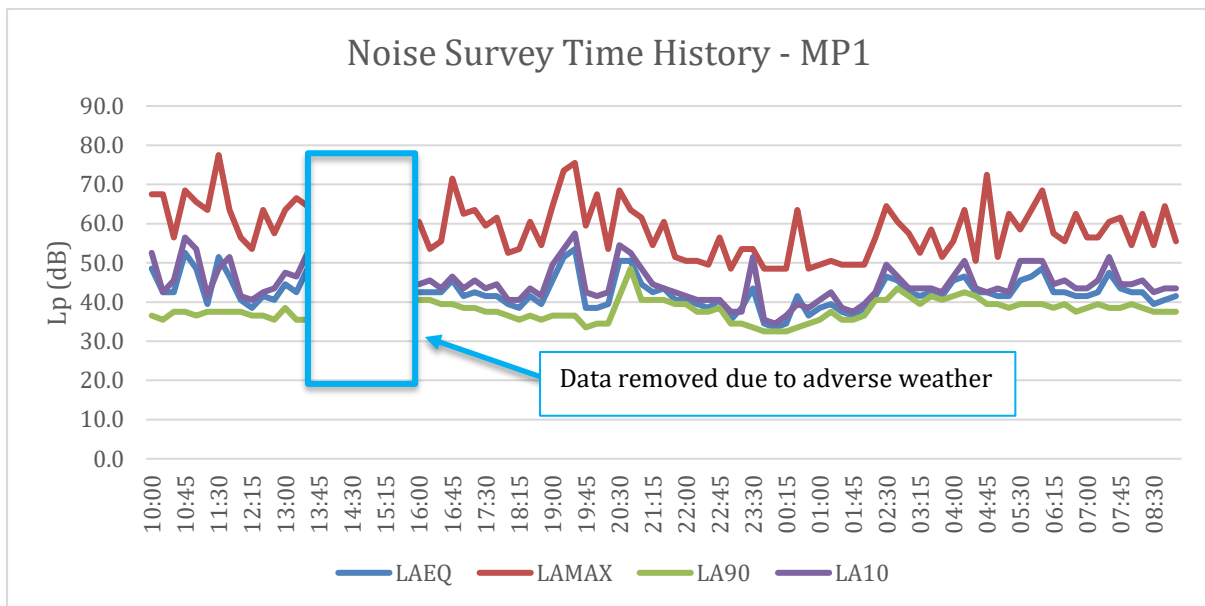


Figure 6.0 – MP1 Noise Survey Time History

C.2 – Surveying Equipment

Piece of Equipment	Serial No.	Calibration Deviation
CESVA SC420 Class 1 Sound Level Meter	T250681	≤0.5
CESVA CB006 Class 1 Calibrator	902442	

Table 17.0 – Measurement Equipment

All equipment used during the survey was field calibrated at the start and end of the measurement period with a negligible deviation of ≤ 0.5 dB. All sound level meters are calibrated every 24 months and all calibrators are calibrated every 12 months, by a third-party calibration laboratory. All microphones were fitted with a protective windshield for the entire measurements period. Calibration certificates can be provided upon request.

C.3 – Meteorological Conditions

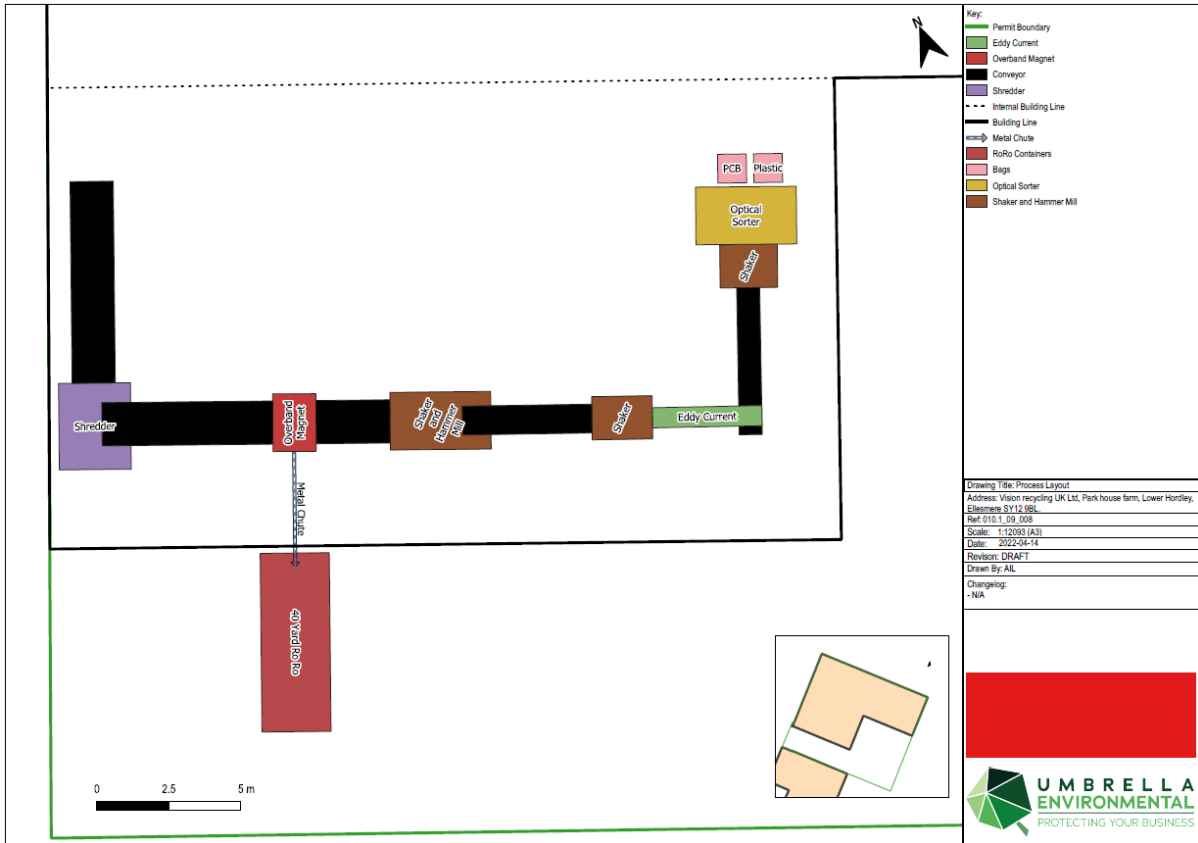
As the environmental noise survey was carried out over a long un-manned period no localised records of weather conditions were taken. However, all measurements have been compared with met office weather data of the area, specifically the closest weather station, and the data from the weather station is outlined in the table below. When reviewing the time history of the noise measurements, any scenarios that were considered potentially to be affected by the local weather conditions have been omitted. The analysis of the noise data includes statistical and percentile analysis and review of minimum and maximum values, which aids in the preclusion of any periods of undesirable weather conditions. The weather conditions were deemed suitable for the measurement of environmental noise in accordance with BS7445 Description and Measurement of Environmental Noise. The table below presents the average temperature, wind speed and rainfall range for each 24-hour period during the entire measurement.

Weather Conditions – Harmer Hill, Shrewsbury (Approx. 12km South-East of Site)				
Time Period	Air Temp (°C)	Rainfall (mm/h)	Prevailing Wind Direction	Wind Speed (m/s)
23/05/22 – 00:00 – 23:59	8.9 – 15.8	0.0 – 9.0*	SW	0.0 – 2.5
24/05/22 – 00:00 – 23:59	8.5 – 17.1	0.0 – 3.0	SW	0.0 – 4.3

Table 18.0 – Weather Summary

**Period on 23/05/22 between 13:45 and 16:00 removed from analysis due to adverse weather conditions affecting the measurement.*

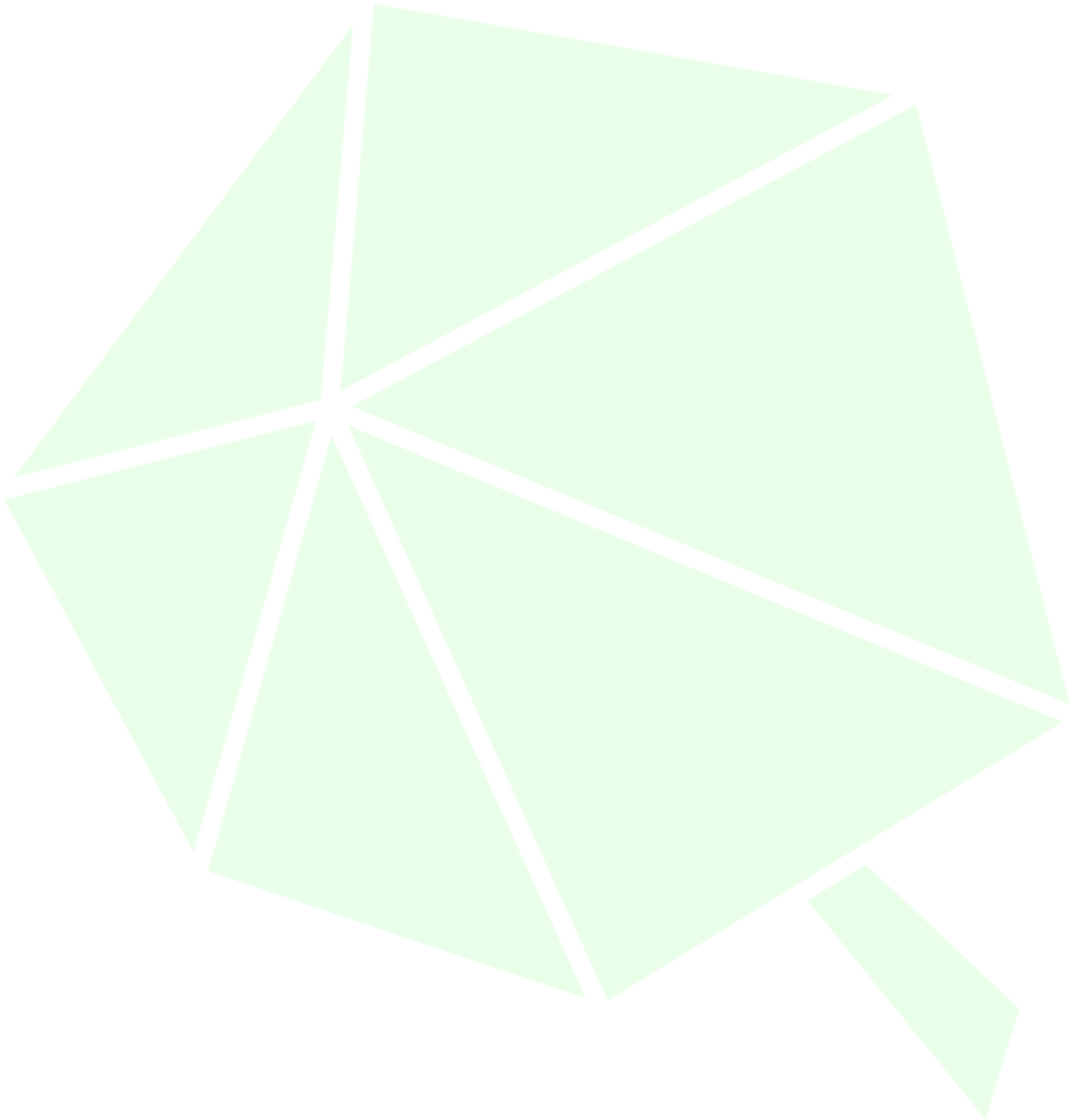
Appendix D – Site Plans



Appendix E – B.A.T.

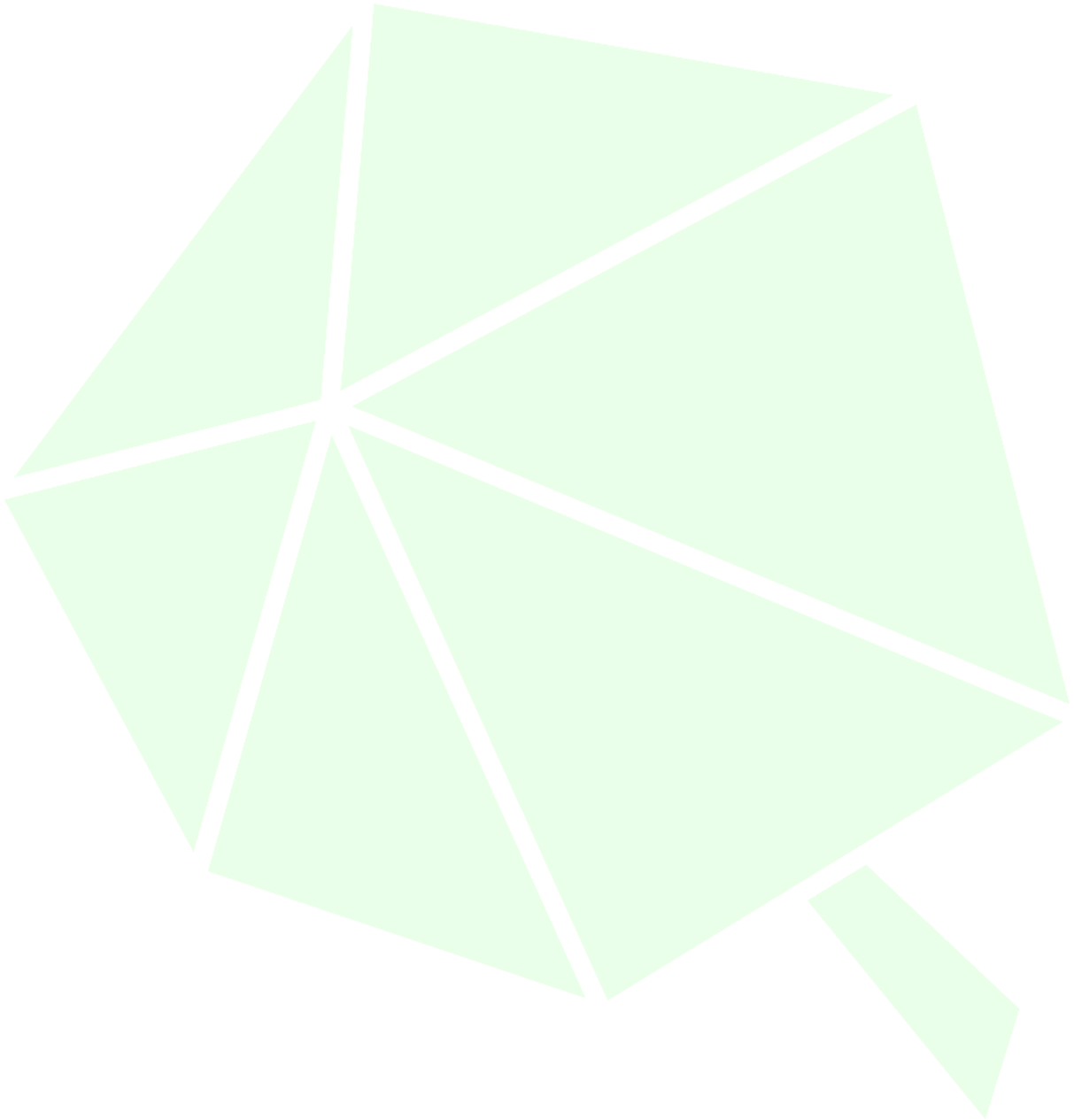
Source Reference	Actions/Abatement to Meet BAT	Timescale
Access Road	Keep in a good state of repair.	Ongoing
Lorry Movements	Ensure ALL drivers are complying with limits and enforce penalties if not.	Ongoing
Site Operations	Ensure ALL site operators comply with minimising the time the doors are open on-site.	Ongoing
General Site Operations		
Training	Site induction and site rules to include details of good working practices to minimise noise emissions from the plant. Information sheet for contractors outlining the requirements for good site practice and good neighbour practice.	Prior to commencement
Plant Maintenance	Plant will be maintained and in a good state of repair.	Ongoing

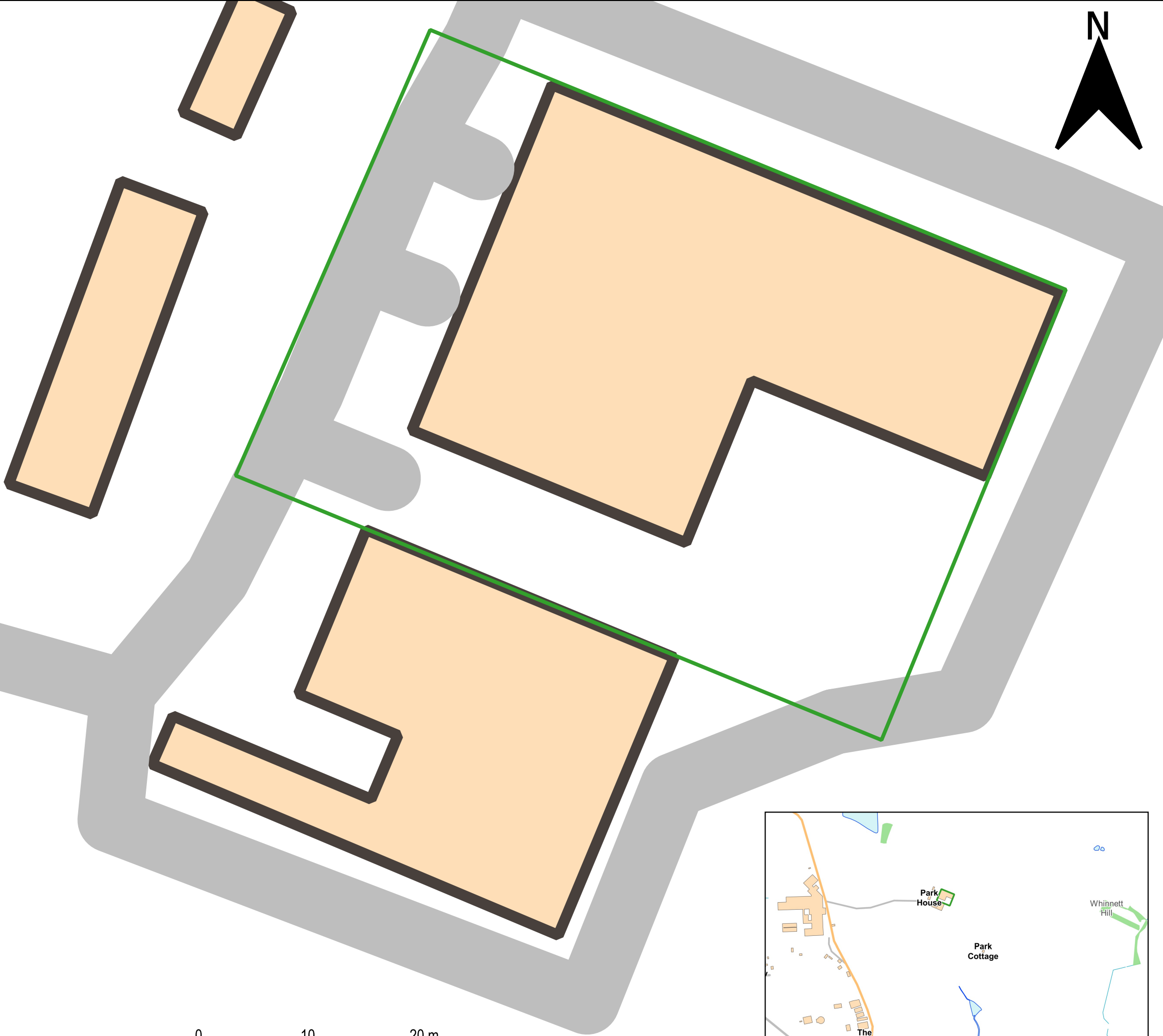
App C



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

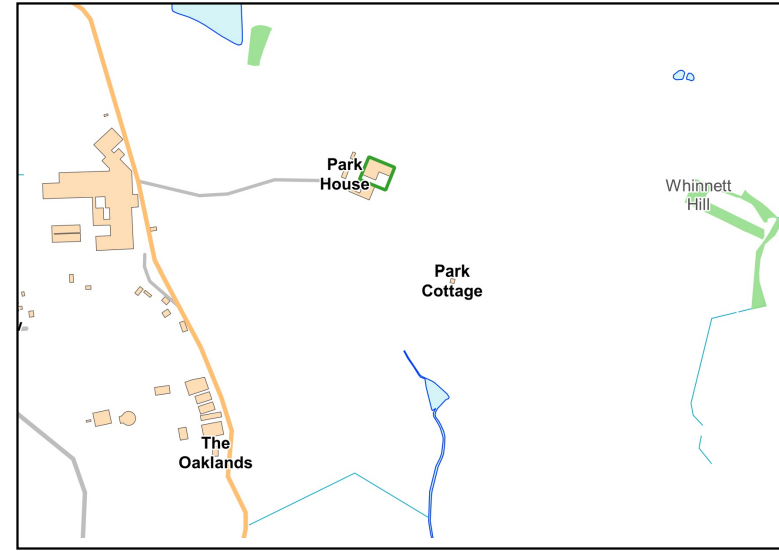
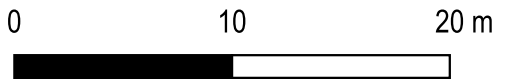
Drawings



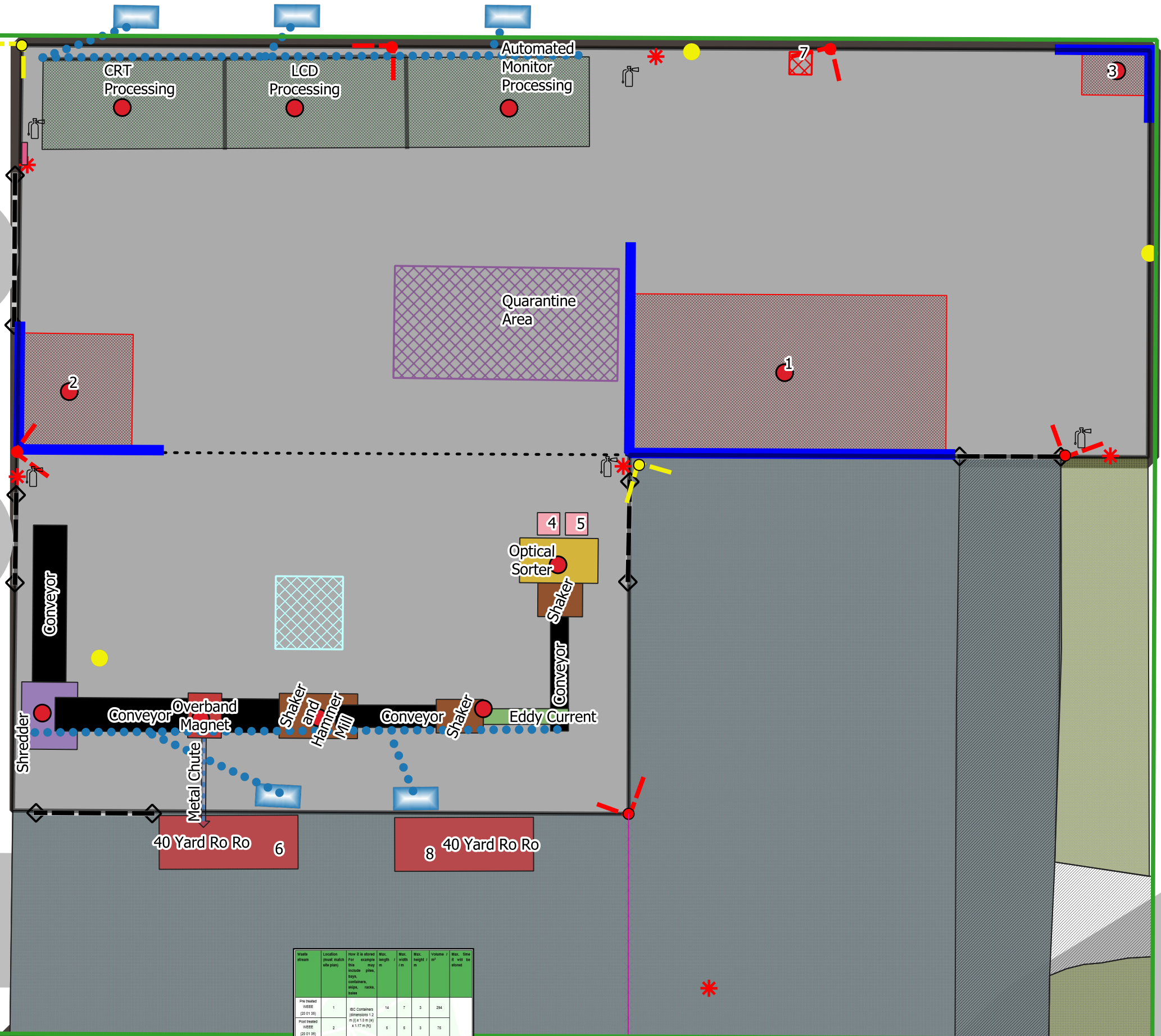


Key:
— Permit Boundary

Drawing Title: Permit Boundary
Address: Vision recycling UK Ltd, Park house farm, Lower Hordley, Ellesmere SY12 9BL.
Ref: 010.1_09_001
Scale: 1:348 (A3)
Date: 2022-10-12
Revison: REV A
Drawn By: AIL
Changelog: - N/A



Pre treatment Area



- Processing Booths
- Fire Resistant Barrier
- Combustible Waste Storage
- Doors
- CCTV
- CCTV T
- Extraction Fan
- Ducting
- Fire Call Points
- Shaker and Hammer Mill
- Impermeable Site Surface
- Mobile Plant Parking
- Fire Water Barrier
- Fire Extinguisher
- Fire Assembly Point
- Suspended Fire Extinguisher
- Spill Kits
- Smoking Area
- Quarantine Area
- Fuse Board
- Hardstanding
- Ramp/Road Way
- Unmade Ground
- Permit Boundary
- Eddy Current
- Overband Magnet
- Conveyor
- Shredder
- Metal Chute
- RoRo Containers
- Bags
- Optical Sorter

Key:

[Grey Box]	[Blue Box]	[Red Box]	[Black Box]	[Yellow Box]	[Green Box]	[Red Box]	[Black Box]	[Purple Box]	[Blue Box]	[Red Box]	[Pink Box]	[Yellow Box]
------------	------------	-----------	-------------	--------------	-------------	-----------	-------------	--------------	------------	-----------	------------	--------------

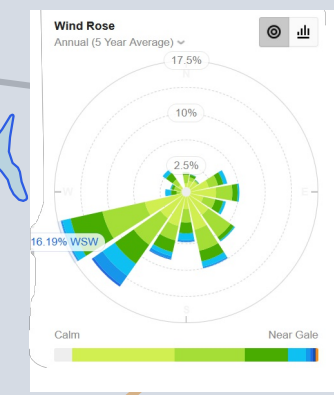
Drawing Title: Site Plan
 Address: Vision recycling UK Ltd, Park house farm, Lower Hordley, Ellesmere SY12 9BL.
 Ref: 010.1_09_004
 Scale: 1:189 (A3)
 Date: 2022-10-12
 Revision: REV A
 Drawn By: AIL
 Changelog: - N/A

Waste stream	Location (plant within site point)	How it is stored	Max. length m	Max. width m	Max. height m	Volume m ³	Max. area m ²
Pne treated WEEE (22 51 36)	1	IBC Containers	14	7	3	294	
Pne treated WEEE (22 51 36)	2	IBC Containers	14	7	3	75	
PCB Wastes (16 02 10)	3	IBC Containers	3	2	2	12	
PCB (16 02 10)	4	IBC Containers	3	2	2	2	
Plastic (16 02 10)	5	IBC Containers	1	1	2	2	
Metal (19 12 02)	6	Container 40 yard	6	2.4	2.4	18	
Non-combustible waste	7	IBC Containers	1.2	1	0.75	0.9	
General Waste (22 03 01)	8	Container 40 yard	6	2.4	2.4	35	



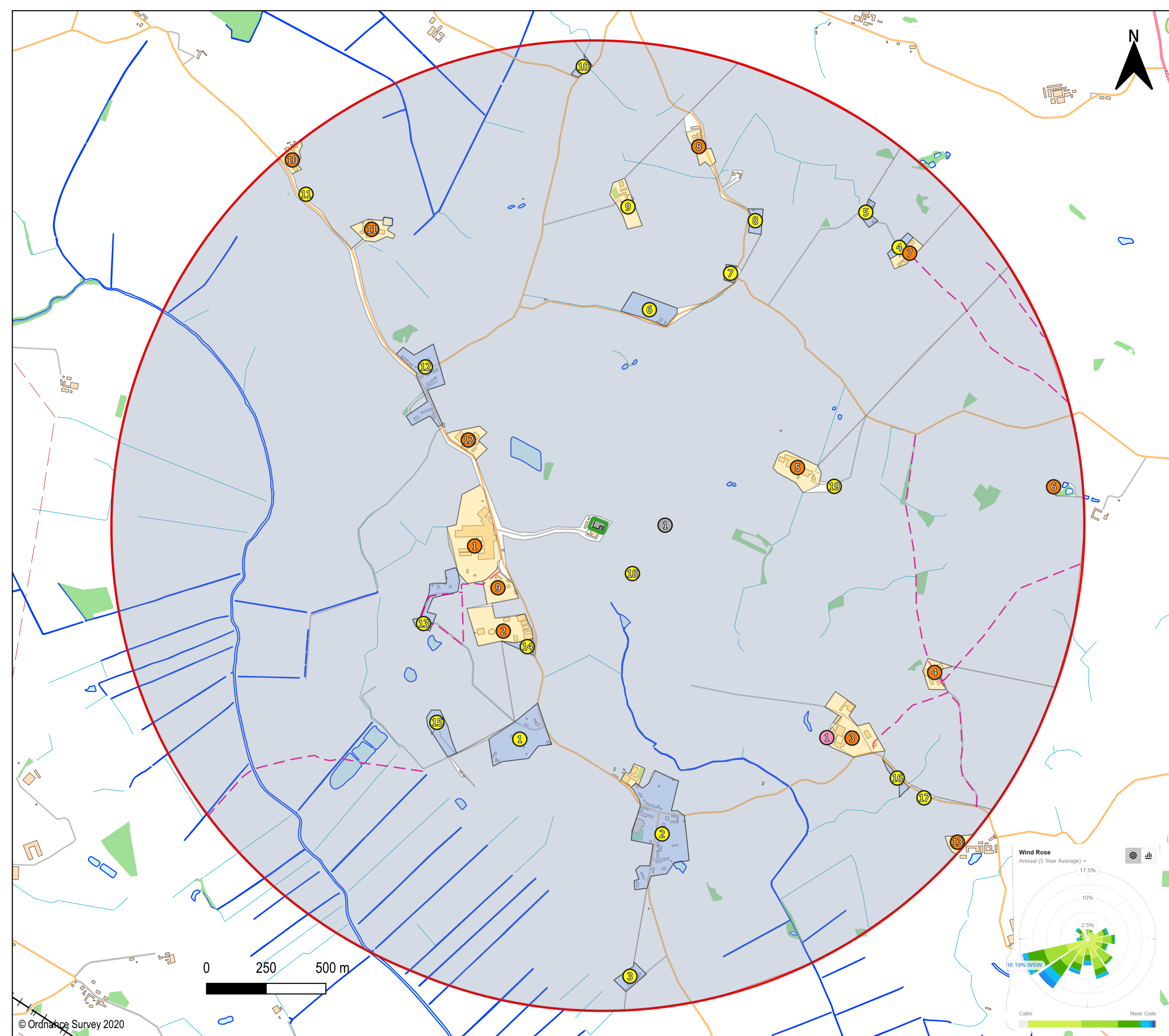
- Key:
- 1 Km Buffer
 - Permit Boundary
 - Heritage Site ID
 - Designated Site ID
 - Agricultural Use ID
 - Commercial ID
 - Residential ID
 - Designated Site Area
 - Agricultural Area
 - Commercial Area
 - PROW
 - Residential Area

Drawing Title: Sensitive Receptors 1 km
 Address: Vision recycling UK Ltd, Park house farm, Lower Hordley, Ellesmere SY12 9BL.
 Ref: 010.1_09_005
 Scale: 1:7363 (A3)
 Date: 2022-10-12
 Revision: REV A
 Drawn By: AIL
 Changelog:
 - N/A



VISION RECYCLING UK LTD
 WEEE Recycling Experts

UMBRELLA ENVIRONMENTAL
 PROTECTING YOUR BUSINESS



- Key:
- Permit Boundary
 - 2 Km Buffer
 - Heritage Site ID
 - Designated Site ID
 - Agricultural Use ID
 - Commercial ID
 - Residential ID
 - Designated Site Area
 - Agricultural Area
 - Public Use Area
 - Commercial Area
 - PROW
 - Residential Area

Drawing Title: Sensitive Receptors 2 km
 Address: Vision recycling UK Ltd, Park house farm, Lower Hordley, Ellesmere SY12 9BL.
 Ref: 010.1_09_006
 Scale: 1:14715 (A3)
 Date: 2022-10-12
 Revision: REV A
 Drawn By: AIL

Changelog:
 - N/A

VISION RECYCLING UK LTD
 WEEE Recycling Experts

UMBRELLA ENVIRONMENTAL
 PROTECTING YOUR BUSINESS