UMBRELLA ENVIRONMENTAL

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Environmental Risk Assessment

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CONTENTS

Tables

Figures

Drawings

Appendices

1 INTRODUCTION

This Environmental Risk Assessment (ERA) accompanies the application for a bespoke waste permit EPR/MB3002CR at Unit 1-3 Tollgate Business Park, Salisbury, SP1 2JJ. The site location is shown on plan 004.20_09_001 permit boundary with an aerial view shown in Figure 1 Site Location .

The site is an industrial unit with a history of light commercial use. The site is now to be used as a council depot with a small scale bespoke waste treatment/transfer station attached with the main focus being on bulking of waste material prior to ongoing treatment at another appropriately authorised site.

The only waste to be accepted is detailed in section 12 of this application pack 004.20_05_009 LoW. This waste material will be stored in either a purpose built bay or in a metal container e.g skip/ Roll on Roll off (RORO) container. Waste will arrive on site via the councils own fleet or approved sub-contractors (registered waste carriers) it will arrive via the southerly entrance.

This document summarises the application for a bespoke waste permit allowing for the non-hazardous waste to be accepted, treated and stored prior to onwards transportation for recovery or final disposal.

Figure 1 Site Location

1.1 Scope

This risk assessment is based on the source-pathway-receptor approach. All potential sources of pollution associated with the acceptance, treatment and storage of permitted inert and non-hazardous waste activities have been assessed against the principle receptor types identified within the site's vicinity.

The requirement for risk management measures is then dependent on a viable pathway being present between the source and the receptor. Where such a pathway exists, management measures are required to reduce risk.

1.2 Aims

This assessment aims to consider potential environmental hazards associated with the activity, to identify sensitive receptors which these may impact, and determine the influence management practice has on reducing risk.

2 SITE SETTING

2.1 Location

The site is located at National Grid Reference (NGR) SU 15207 29663, Easting: 415207 , Northings: 129663 and what 3 words: front.charge.logo.

2.2 Humans and Property

The site is accessed from the west via the A36 and Tollgate Road. The site is based in the south east of Salisbury approximately 800 m from Salisbury City centre. The site is situated in an historical industrial area that presently encompasses schools,colleges and residential properties.

2.2.1 Historical Land Use

Site has been used as railway sidings from 1879 until 1974. The surrounding industrial area and site have subsequently been used as an industrial/commercial area.

2.3 European Designated Receptors

		Distance	Direction
	DESIGNATED SITES (European)		
1	River Avon System	303 m	S
2	East Harnham Meadows	1185 m	W

2.4 Designated Receptors

		Distance	Direction
	NON DESIGNATED SITES (but of impact to permitting)		
1	Medieval Pottery Kilns at Milford Farm	562 m	E
2	Milford Hill Bridge	476 m	E
3	Woodbury Ancient Village	1600 m	S
4	City Rampart East of Council House	718 m	NW

2.5 Geology

Table 1 Geology

Artificial Ground/Made Ground	On site WGR-VOID Worked Ground (Undivided) Void
Superficial and Drift Geology	On site HEAD1-V Head, 1 - Gravel Gravel
Bedrock and Solid Geology	On site NCK-CHLK Newhaven Chalk Formation - Chalk Campanian Age - Santonian Age

2.6 Hydrogeology

On site Secondary A Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

2.6.1 Superficial

Secondary A Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

2.6.2 Bedrock

On site Principal Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers

2.7 Hydrology

		Distance	Direction
	SURFACE WATER		
-	River Avon	308 m	S
-	River Bourne	288 m	E
-	Multiple Drainage Channels between River Avon & River Bourne	296 m	S
-	River Nadder	1198 m	SW
-	Multiple Drainage Channels within Harnham Watermeadow	1245 m	WSW
-	2 No. Lakes in Clarendon Park	1486 m	SE

2.8 Flood Risk

No flood risk from rivers, sea or surface water flooding.

2.9 Air Quality

Site is not located in an Air Quality Management Area (AQMA).

2.10 Nature of Risk Assessment

This document provides a broad and general assessment of the risk factors considered to be of significance for the site, and an evaluation of the impact from the principle risk factors to receptors within the site vicinity.

3 METHODOLOGY

3.1 Hazard Identification

The Environment Agency's 'H1 Software Tool Version 2.78 April 2017', has been used to undertake a series of risk assessments to reveal the potential impact of the sites waste activities of their releases upon the local environment.

3.2 Types of Waste Activity Hazards

Hazard		Sources	Risk	Further Assessment
Odour	• Odour from storage • Odour from processing • Odour from Transfer	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch	• Non conforming wastes	• Table 8 Odour
Noise and Vibration	• Engine Noise (idling) • Noise from vehicle and plant movement. • Noise form reverse warnings • Noise form waste processing • Vibration from plant and vehicle movements	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch	• Activities occurring outside • Vehicle movement • Waste handling and bulking.	• Table 9 Noise and Vibration
Fugitive Emissions	• Dust from waste processing • Dust from Stored Waste • Litter form waste storage and/or treatment • Litter from vehicle movements • Pest form waste storage • Runoff from site operations	1. Waste delivery 2. Storage area run-off pre and post treatment 3. Treatment Process 4. Material dispatch 5. Fire Water	• Dust and particulate matter liberated from external areas only during dry conditions. • Loss of material during unloading, treatment and dispatch of waste	• Table 10 Fugitive Emissions
Accidents	• Leak from onsite oil storage • Transfer of substances • Plant of Equipment Failure • Fire in waste materials • Flooding • Vandalism	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch 5. Fire Water 6. Flood risk from Rivers, Sea or surface water. 7. Unauthorised access	• Loss of waste from vehicles • Spillages from vehicles transferring waste in to and out of site. • Uncontrolled emissions of fire water and smoke.	• Table 11 Accidents
Sensitive Areas	• Damage to protected ecosystems	1. Waste delivery 2. Storage 3. Treatment Process 4. Material dispatch	• Sensitive receptors located around site impacted by normal operating activities and those during an incident.	• Table 8 Odour • Table 9 Noise and Vibration • Table 10 Fugitive Emissions

Hazard		Sources	Risk	Further Assessment
		5. Fire Water		• Table 11 Accidents

If a hazard has been identified by the H1 screening tool that is may have an environmental impact these have been identified had have been provided mitigation in Section 4 of this document.

3.3 Identify Receptors

Receptors are those sites/activities that are at risk form the hazards that a waste activity may have impact on and are defined as below:

- Protected sites and species
- Anywhere used to grow food or to farm animals or fish
- Drain and sewer systems
- Factories and other businesses
- Fields and allotments used to grow food
- Footpaths
- Groundwater, groundwater source protection zone
- Homes, or groups of homes (such as villages or housing developments
- Playing fields and playgrounds
- Private drinking water supplies
- Regionally important geological
- Schools, hospitals and other public buildings
- Water, for example ponds, streams, rivers, lakes or the sea –
- Conservation and habitats protected areas and areas of scientific interest

The receptors most likely to be impacted by the waste sites activities are listed below in Table 2 Key Receptors

Table 2 Key Receptors

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
		SITE		
HUMANS AND PROPERTY		Site Workers	On site	-
		Site Visitors	On site	-
		COMMERCIAL		
	1	Remaining Units of Tollgate Business Park	0 m	W, S
	2	Multiple Industrial Units off Blakey Road	0 m	E
	3	Southampton Road Industrial Estate	271 m	SSE
	4	Multiple City Centre Establishments east of Castle Street	423 m	WNW
	5	Multiple Retail Units off Southampton Road	441 m	SE
	6	Multiple City Centre Establishments between Bridge Street & North Walk	531 m	W
	7	Multiple City Centre Establishments between Scots Lane & Castle Street	830 m	NW
	8	Multiple City Centre Establishments west of Castle Street	904 m	WNW
	9	Multiple Commercial Units off Fisherton Street	969 m	WNW
	10	Salisbury WWTW	999 m	SE
	11	Multiple Retail Units off Churchill Way West	1401 m	NW
	12	Salisbury Railway Station	1455 m	WNW
	13	Multiple Office Buildings off Wilton Road	1464 m	WNW

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	14	Churchfields Industrial Estate	1872 m	WNW
		RESIDENTIAL		
	1	Residents of Bugmore east of A36	57 m	WSW
	2	Residents of Laverstock south west of River Bourne	122 m	ENE
	3	Residents of Bugmore west of A36	271 m	WSW
	4	Caravan Site off Hatches Lane	409 m	ESE
	5	Residents of Laverstock north east of River Bourne	541 m	NE
	6	Barchester Milford House (Care Home)	570 m	ESE
	7	Residents of Central Salisbury south of A36	718 m	NNW
	8	Residents of Harnham	905 m	SW
	9	St. Nicholas Road Care Home	914m	SW
	10	Residents of Petersfinger	923 m	ESE
	11	Residents of Central Salisbury north of A36	1161 m	NNW
	12	Residents of East Harnham	1189 m	SW
	13	Residents of Britford	1280 m	SSE
	14	Residents of Bemerton	1298 m	WNW
	15	Residents of Bishopdown	1418 m	NNE
	16	Residents of West Harnham	1599 m	WSW
		PUBLIC USE		
	1	St. Martins C of E Primary School	32 m	NNE
	2	Wiltshire College & University Centre	72 m	SW
	3	Godolphin School	191 m	NNE
	4	Salisbury Cathedral & The Cathedral School	639 m	WSW
	5	Chafyn Grove School	711 m	NNE
	6	Salisbury Arts Centre	742 m	NNW
	7	Bishop Wordsworth School Playing Fields	770 m	SSW
	8	Mompesson House (National Trust)	895 m	W
	9	Petersfinger Park & Ride	905 m	ESE
	10	Salisbury Central & Riverside Car Parks	1099 m	WNW
	11	Leehurst Swan School	1118 m	NNW
	12	St. Andrews Church (Laverstock)	1385 m	NNE
	13	St. Peters Church (Britford)	1427 m	SE
	14	Britford Park & Ride (South)	1556 m	S
	15	Wyvern College & St. Joseph School	1586 m	NNE
	16	Exeter House School	1602 m	NNW

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	17	Salisbury Crematorium	1648 m	NNE
	18	Harnham C of E junior School	1684 m	WSW
	19	South Wiltshire Grammar School	1704 m	NNW
	20	Manor Fields Primary School	1944 m	WNW
	21	St. Pauls C of E Primary School	1958 m	NW
		ROADS & RAILWAYS		
	-	Blakey Road	47 m	S
	-	West of England Railway Line	105 m	ENE
	-	A36	335 m	S
	-	A30	946 m	N
	-	A354	1166 m	SSE
		RECREATIONAL		
	1	Salisbury Snooker Club	26 m	WNW
	2	Churchill Gardens	303 m	SW
	3	Greencroft Park	552 m	NW
	4	Wyndham Park Open Space	862 m	NNW
	5	Queen Elizabeth Gardens	1052 m	WNW
	6	Salisbury Tennis Club	1377 m	WSW
	7	Edgcombe Park	1377 m	NNE
	8	Laverstock & Ford Sports Club	1456 m	NNE
	9	Harnham Cricket Pitch	1477 m	WSW
	10	Victoria Park	1616 m	NNW
	11	Ashley Road Play Park	1708 m	NW
	12	Castle Hill Country Park	1727 m	NNW
	13	Five Rivers Leisure Centre	1765 m	NW
	14	Middle Street Meadow	1792 m	W
	15	Harnham Community Sports & Social Club	1802 m	WSW
	16	Fisherton Recreation Ground	1864 m	NW
	17	Bishopdown Sports Field	1893 m	NNE
		AGRICULTURAL		
	1	Packet of Arable Land off Milford Mill Road	320 m	E
	2	River Bourne Community Farm (Allotment Gardens)	540 m	NNE
	3	Packets of Arable Land west of Laverstock	559 m	NNE
	4	Packets of Arable Land south of Bugmore	624 m	SSW
	5	Packets of Arable Land north of Petersfinger	614 m	E

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	6	Packets of Arable Land south of Petersfinger	632 m	SE
	7	Packets of Arable Land south of River Avon	752 m	S
	8	Packets of Arable Land east of Laverstock	816 m	ENE
	9	Packets of Arable Land surrounding Britford	1152 m	SSE
	10	London Road Allotment Gardens	1201 m	NNE
	11	Tunnel Allotment Gardens	1246 m	N
	12	Packets of Arable Land south of The Harnhams	1442 m	SSW
	13	Warres Acre Allotment Gardens	1743 m	WSW
	14	Ashley Road Allotment Gardens	1768 m	NW
		ATMOSPHERE		
	-	AQMA for Nitrogen dioxide (NO2)	250 m	W
WATER		**SURFACE WATER**		
	-	River Avon	308 m	S
	-	River Bourne	288 m	E
	-	Multiple Drainage Channels between River Avon & River Bourne	296 m	S
	-	River Nadder	1198 m	SW
	-	Multiple Drainage Channels within Harnham Watermeadow	1245 m	WSW
	-	2 No. Lakes in Clarendon Park	1486 m	SE
		GROUNDWATER		
	-	Bedrock Geology - Principal Aquifer	On site	-
	-	Superficial Layer - Secondary A Aquifer	On site	-
ENVIRONMENTALLY SENSITIVE		**DESIGNATED SITES (European)**		
	1	River Avon System	303 m	S
	2	East Harnham Meadows	1185 m	W
		NON DESIGNATED SITES (but of impact to permitting)		
	1	Medieval Pottery Kilns at Milford Farm	562 m	E
	2	Milford Hill Bridge	476 m	E
	3	Woodbury Ancient Village	1600 m	S
	4	City Rampart East of Council House	718 m	NW
HERITAGE LOATIONS		**LISTED BUILDINGS AND PARKS**		
	1	CHURCH OF ST MARTIN	160 m	SW
	2	18-24, ST MARTIN'S CHURCH STREET	200 m	WSW
	3	Sluice House	626 m	S
	4	SUMMER HOUSE AT MILFORD MANOR	334 m	E
	5	MILFORD HOUSE AND FLATS A, B AND C	659 m	E
	6	WALL EXTENDING EAST FROM MILFORD MANOR	340 m	NE

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	7	LITTLE MANOR	298	NE
	8	THE WILDERNESS	216	NNW
	9	16, ST MARTIN'S CHURCH STREET	201	WSW
	10	14, ST MARTIN'S CHURCH STREET	206	WSW
	11	23-35, ST MARTIN'S CHURCH STREET	195	W
	12	1-7, ST MARTIN'S CHURCH STREET	231	W
	13	THE TOLLGATE INN TOLLGATE INN	240	W
	14	59-65, RAMPART ROAD	361	NW
	15	94 AND 96, MILFORD HILL	363	NW
	16	93, MILFORD HILL	357	NW
	17	MILFORD HILL HOUSE (YOUTH HOSTEL)	352	NW
	18	LONDON ROAD INN	471	NW
	19	HILLCOTE	652	NNW
	20	82, ST ANN STREET	286	W
	21	78 AND 80, ST ANN STREET	303	W
	22	70-74, ST ANN STREET	318	W
	23	68, ST ANN STREET	326	W
	24	60-66, ST ANN STREET	336	W
	25	JOINERS HALL	352	W
	26	54, ST ANN STREET	360	W
	27	CONSERVATIVE CLUB	371	W
	28	OLD PORCH IN GARDEN OF NO 44	385	WSW
	29	48, ST ANN STREET	381	W
	30	46, ST ANN STREET	388	W
	31	VALE HOUSE	397	W
	32	SALISBURY MUSEUM	418	W
	33	THE BLACKMORE MUSEUM TO THE REAR OF THE SALSBURY MUSEUM	430	WSW
	34	34 AND 36, ST ANN STREET (See details for further address information)	450	W
	35	ALBION HOTEL	465	W
	36	22, ST ANN STREET (See details for further address information)	482	W
	37	CRADDOCK HOUSE FRIARS COTTAGE FRIARY COTTAGE FRIARY COURT	516	W

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	38	18, ST ANN STREET	527	W
	39	12-16, ST ANN STREET	540	W
	40	ST ANNE'S MANOR	563	W
	41	4, ST ANN STREET	573	W
	42	2, ST ANN STREET	577	W
	43	OLD BELL INN ST ANE'S GARAGE	585	W
	44	76 AND 77, EXETER STREET	595	WSW
	45	81 AND 82, EXETER STREET	603	WSW
	46	83-85, EXETER STREET	603	WSW
	47	86 AND 87, EXETER STREET	610	WSW
	48	90 AND 91, EXETER STREET	620	WSW
	49	THE CLOSE WALL	634	WSW
	50	CHURCH OF ST OSMUND (ROMAN CATHOLIC)	626	WSW
	51	95 AND 96, EXETER STREET	637	WSW
	52	99 AND 100, EXETER STREET	647	WSW
	53	101-104, EXETER STREET	650	WSW
	54	105-107, EXETER STREET	649	WSW
	55	108 Exeter Street	667	WSW
	56	109A 109B AND 109, EXETER STREET	665	WSW
	57	BISHOP'S GATE	681	WSW
	58	110, EXETER STREET	663	SW
	59	111 AND 112, EXETER STREET	666	SW
	60	ST OSMUND'S CHURCH SCHOOL	749	SW
	61	ST ELIZABETH'S CONVENT AND ST OSMUND'S ROMAN CATHOLIC PRIMARY SCHOOL	782	SW
	62	ST NICHOLAS'S HOSPITAL	921	SW
	63	HARNHAM LODGE	1117	SW
	64	ROSE AND CROWN TERRACE	1212	SW
	65	7, ST NICHOLAS'S ROAD	962	SW
	66	9 AND 11, ST NICHOLAS'S ROAD	977	SW
	67	16 AND 18, ST NICHOLAS'S ROAD	996	SW
	68	AYLESWADE BRIDGE OLD HARNHAM BRIDGE	1000	SW
	69	2-14, HARNHAM ROAD	1062	SW
	70	THE ROSE AND CROWN INN	1100	SW
	71	ALL SAINTS SCHOOL	1279	SW

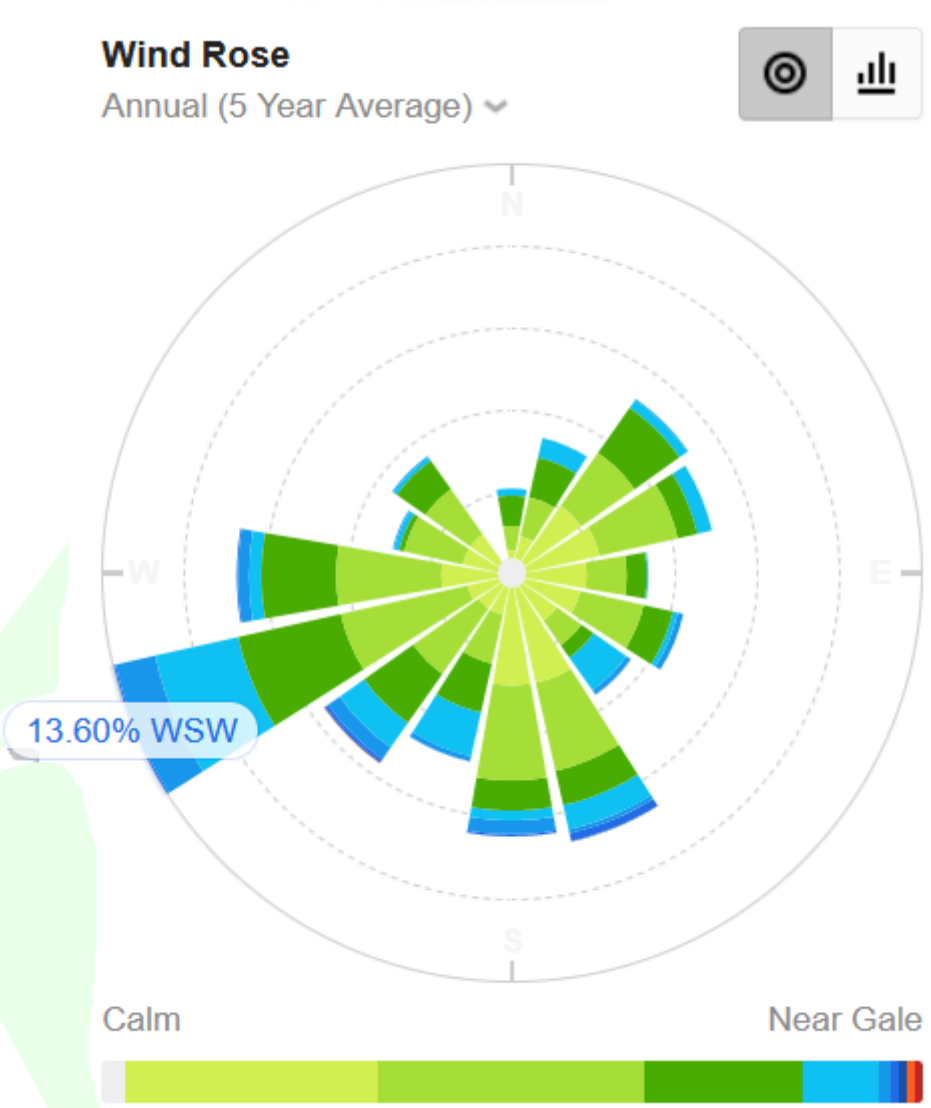
TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	72	CHURCHYARD WALL TO ROAD OF ALL SAINTS CHURCH	1303	SW
	73	CHURCH OF ALL SAINTS	1308	SW
	74	OUTBUILDING TO EAST OF OLD PARSONAGE	1651	WSW
	75	OLD PARSONAGE	1664	WSW
	76	OLD SCHOOL	1715	WSW
	77	OUTBUILDING TO WEST OF OLD PARSONAGE	1691	WSW
	78	THE COTTAGES	1699	WSW
	79	MANOR FARMHOUSE	1723	WSW
	80	CHURCH OF ST GEORGE	1781	WSW
	81	ELIM HUNTERS COTTAGE THE OLD COTTAGE	1718	WSW
	82	OLD MILL FLATS THE THREE CROWNS PUBLIC HOUSE	1716	WSW
	83	OLD MILL COTTAGE	1723	WSW
	84	THE LAURELS	1789	WSW
	85	MILL HOUSE AND OLD MILL	1643	WSW
	86	ROSE COTTAGE	1636	WSW
	87	The South Canonry, now Bishop's House	1130	WSW
	88	Entrance of 71 The Close from West Walk into screen walls gate piers and overthrow	1071	WSW
	89	71A and 71B, The Close	1081	WSW
	90	2, ST NICHOLAS'S ROAD (See details for further address information)	889	SW
	91	DE VAUX HOUSE	911	SW
	92	8, ST NICHOLAS'S ROAD	933	SW
	93	10 AND 12, ST NICHOLAS'S ROAD	960	SW
	94	REAR GARDEN WALL OF NO 9	973	SW
	95	DE VAUX LODGE	948	SW
	96	7, DE VAUX PLACE	906	SW
	97	1-6, DE VAUX PLACE	963	SW
	98	73, THE CLOSE	983	SW
	99	72, THE CLOSE	991	SW
	100	SOUTH OR HARNHAM GATE AND SOUTH GATE HOUSE	977	SW
	101	CATHEDRAL SCHOOL	816	SW
	102	53-69, ST ANN STREET	314	W

TYPE OF RECEPTOR	ID #	DESCRIPTION	DISTANCE FROM BOUNDARY (M) APPROX	DIRECTION
	103	117 AND 119, DOLPHIN STREET	338	W
	104	DOLPHIN'S COTTAGE	381	W
	105	ST MARTIN'S HOUSE	390	W
	106	111-115, DOLPHIN STREET	343	W
	107	109, DOLPHIN STREET	344	W
	108	11, ST ANN STREET	491	W
	109	TRAINING COLLEGE	377	W
	110	50-56, BARNARD STREET (See details for further address information)	413	W
	111	97A, BROWN STREET (See details for further address information)	497	W
	112	5, ST ANN STREET	529	W
	113	THE PRIORY	489	W
	114	PRIORY LODGE	500	W
	115	89 AND 91, BROWN STREET	504	W
	116	87, BROWN STREET	505	W
	117	81, BROWN STREET	509	W
	118	77 AND 79, BROWN STREET	512	W
	119	71A AND 75, BROWN STREET	514	W
	120	14-20, TRINITY STREET	500	W

3.4 Wind Rose

Wind rose shown below in Figure 2 Wind Rose shows that the prevailing wind in west south westerly (WSW). This wind rose is an annual average for the last 5 years. The weather station this information is taken from is located in the centre of Salisbury SP1 1 approx. 876 M west north west of the site.

Figure 2 Wind Rose



(www.willyweather.co.uk)

3.5 Pathways

Table 3 Potential Pathways

Hazard	Potential Receptors	Pathway
Odour	Humans/Property/ Sensitive Areas (Designated)	Atmosphere
Noise and Vibration		Atmosphere, Physical
Fugitive Emissions	Ground Water/Humans/Property/ Sensitive Areas (Designated)	Atmosphere, Physical
Fire, Spills and Contaminated surface water.		Atmosphere, Physical, Infiltration via the ground
Vermin, Birds, Insects	Humans/Property/ Sensitive Areas (Designated)	Atmosphere, Physical

3.6 Risk

Environmental Risk is the probability of an receptor being exposed to an environmental hazard and the impact of such exposure. The Primary risk is assessed with no mitigation in place such as managerial procedures and physical engineering.

To assess risk the probability and the consequence of exposure have to be assessed see below tables.

Table 4 Probability of Exposure

Probability of exposure
HIGH – exposure is probable: direct exposure likely with no / few barriers between hazard, source and receptor.
MEDIUM – exposure is fairly probable: feasible exposure possible, barriers to exposure less controllable.
LOW – exposure is unlikely: several barriers exist between hazards source and receptors to mitigate against exposure.
VERY LOW – exposure is very unlikely; effective, multiple barriers in place to mitigate against exposure.

Table 5 Consequence of Exposure

Consequences of Exposure
HIGH – the consequences are severe: sufficient evidence that short or long term exposure may result in serious damage.
MEDIUM – consequences are significant; sufficient evidence that exposure to hazard may result in damage that is not severe in nature and reversible once exposure ceases (e.g. irritant).
LOW – consequences are minor; damage not apparent though reversible adverse changes may occur.
VERY LOW – consequences are negligible; no evidence of adverse changes following exposure.

Application of the probability and consequences of a hazard gives a risk rating as shown by the matrix below in

Table 6 Risk Matrix

		Consequences			
		Very Low	Low	Medium	High
Likelihood	High	Low	Medium	High	High
	Medium	Low	Medium	Medium	High
	Low	Low	Low	Medium	Medium
	Very Low	Very Low	Low	Low	Low

3.7 Management of Risk

For all the hazards identified in section 3.2 above, managerial procedures and hard infrastructure engineering have been developed in accordance with relevant guidance documents[1][2][3][4]

Residual risk will remain and these are detailed in the activity risk tables.

Table 7 Activity Risks

Reference	Process
AR1	Waste receipt
AR2	Waste storage pending treatment or recovery/disposal
AR3	Waste treatment processes
AR4	Material dispatch for recovery/disposal

[1] https://www.gov.uk/guidance/control-and-monitor-emissions-for-your-environmental-permit#odour-management-plan
[2] Sector Guidance Note S5.06: Recovery and disposal of hazardous and non-hazardous waste
[3] H3 Noise Assessment and Control (Part 2)
[4] H1 Software Tool Version 2.78 April 2017'

Table 8 Odour

Odour							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting	**Humans & Property** **Protected Nature Conservation Sites** **Atmosphere** *Inhalation of particles.* *Deposition of dust/particles on property and land.*	**Air**	**LOW**	**MEDIUM**	**MEDIUM**	• All vehicles delivering and collecting materials to/from the site are covered. • Daily maintenance and inspection of storage areas. • All vehicles, plant and machinery would be operated and maintained in accordance with manufacturer's specifications. • All plant based on the site would be equipped with upward facing exhausts. • Vehicle speeds are restricted to a maximum of 10 mph. • 004.20_05_006 OMP provides managerial procedures to prevent odour.	**LOW**

only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)							

Table 9 Noise and Vibration

Noise and Vibration							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2**	**Noise sensitive locations**[5] **Protected Nature Conservation Sites** .	**Air,** **Land**	**LOW**	**MEDIUM**	**MEDIUM**	• Machinery is inspected and maintained regularly in line with manufacturer's recommendations. • Daytime operations only. • See Appendix 1 317157 Salisbury City Council Depot Noise Impact Assessment NIA (Oct 24, 1.0) for as long as certain activities happen at restricted times then a LOW Impact can be achieved. • See 317157 Salisbury City Council Depot Noise	**LOW**

[5] **Notes:** Noise–sensitive location defined in H3 *Horizontal Guidance for Noise Part 2 – Noise Assessment and Control* published by the Environment Agency as - *'Any dwelling, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity, which for its proper enjoyment requires the absence of noise at nuisance levels'.* Part 1 of H3 suggests that '*commercial premises may be* [noise sensitive]*, depending upon the activities undertaken there'.*

Storage (Secure Storage) **AR3** **Treatment processes** (Treatment consisting only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)						Management Plan NMP (Oct 24, 1.0).	

Table 10 Fugitive Emissions

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting	**Humans & Property** **Protected Nature Conservation Sites** *Litter Nuisance*	**Air;** **windblown, physical transport and deposition**	**LOW**	**LOW**	**LOW**	• All vehicles delivering and collecting materials to/from the site are covered. • Waste types accepted are pre sorted reducing risk of litter and debris • Daily housekeeping of site surfaces to remove litter and debris and prevent spread. • Daily maintenance and inspection of storage areas. • Training provided to all relevant staff to collect loose litter and debris on a see it pick it up basis. • All waste activities occur as set out in Drawing 2 Site Plan 004.20_09_003	**VERY LOW**

Litter and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)						• 004.20_05_003 EMS provides managerial procedures to prevent litter and debris	

Water							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting only of minimal manual sorting).	**Protected Nature Conservation Sites** **Surface Water** **Groundwater** *Contamination*	**Land, water, runoff**	**LOW**	**LOW**	**LOW**	• All waste transfers are overseen by a competent person. • Daily site inspections and good housekeeping procedures in place – recorded in site diary. • Spill kits on site and employees are trained in their use and disposal. • Fuel/oil storage is in accordance with the Oil Storage Regulations and provided with secondary containment. • No waste stored within 10 m of a water course • No waste stored within 50 m of any spring or borehole • Separate drainage system for roof water.	**VERY LOW**

Water							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR4 **Material Dispatch** (Recovery/disposal)						• Waste stored on impermeable surface.	

Mud and Debris							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR4** **Material Dispatch** (Recovery/disposal)	**Humans & Property** *Amenity impact*	**Direct deposition**	**LOW**	**MEDIUM**	**MEDIUM**	• Daily inspections by site staff and records kept. • Road sweeping as required. • Transport vehicles inspected when leaving site and cleaned as required. • Waste is not known to originate from locations that are muddy. • Waste is inherently non muddy. • 004.20_05_003 EMS provides managerial procedures to prevent mud and debris escaping.	**LOW**

Pest, Vermin, Scavengers							
Identifying the harm and what could be harmed			**Assessing the risk**			**Managing the risk**	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting only of minimal manual sorting).	**Humans & Property** **Protected Nature Conservation Sites**	**Air; Ground depending on vector**	**LOW**	**MEDIUM**	**LOW**	• Daily site inspections and good housekeeping procedures in place. • Waste stored in bays and containers. • Pest control used on site. • 004.20_05_003 EMS provides managerial procedures to prevent pest and vermin.	**VERY LOW**

AR4 **Material Dispatch** (Recovery/disposal)							

Table 11 Accidents

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
TRANSFERRING SUBSTANCES							
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting	**Humans & Property** **Protected Nature Conservation Sites** **Surface Water** **Groundwater** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**LOW**	**MEDIUM**	• All vehicles delivering and collecting materials to/from the site are covered. • All waste that arrives is either containerised or on pallets • All waste transfers are overseen by a competent person. • Fuel/oil storage is in accordance with the Oil Storage Regulations and provided with secondary containment. All stored within secured perimeter. • Limited vehicle movements on site and 10 mph speed limit • Spill kits on site and employees are trained in their use and disposal.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)						• Deposit of waste occurs within a designated area. • 004.20_05_003 EMS provides managerial procedures to prevent accidents	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
PLANT OR EQUIPMENT FAILURE							
AR1 **Reception** (delivery of waste to the site) Vehicle Movements	**Humans & Property** **Protected Nature Conservation Sites**	**Land, air, water**	**LOW**	**MEDIUM**	**MEDIUM**	• Limited vehicle movements within site reduces risk of accident. • Critical spares held on site	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
(waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)	**Surface Water** **Groundwater** **Atmosphere** *Adverse impact*					• Planned maintenance program limits failure of key process components. • Daily inspections of plant, equipment and site infrastructure • 004.20_05_003 EMS provides managerial procedures to prevent plant or equipment failure. • A wide range of contingency plant and equipment available from within the Council stock.	

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
FLOODING							
N/A – the site is not identified as being at risk from flooding							
VANDALISM							
Entire Process	**Humans & Property** **Protected Nature Conservation Sites** **Surface Water** **Groundwater** **Atmosphere** *Adverse impact*	**Land, air, water**	**LOW**	**MEDIUM**	**MEDIUM**	• Site is secured by fencing and gated. • CCTV • 004.20_05_003 EMS provides managerial procedures to prevent vandalism.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
FIRE							
AR1 **Reception** (delivery of waste to the site) Vehicle Movements (waste delivery, movement of waste within the site and transfer of waste out of site) **AR2** **Storage (Secure Storage)** **AR3** **Treatment processes** (Treatment consisting	**Humans & Property** **Protected Nature Conservation Sites** **Atmosphere** *Loss of life and property, loss of habitat, destruction and loss of amenity*	**Spread through physical contact; fanned by winds**	**LOW**	**HIGH**	**MEDIUM**	• Fire Prevention Plan in operation, 004.20_05_004 • Waste storage areas will be separated with appropriate fire breaks or fire resistant barriers between combustible materials. • CCTV. • Potential ignition sources will be removed from waste storage areas. • The operational section of the site is a no smoking area. • All areas are subject to daily housekeeping. • 004.20_05_003 EMS provides managerial procedures to prevent fire.	**LOW**

Identifying the harm and what could be harmed			Assessing the risk			Managing the risk	
Hazard	**Receptor**	**Pathway**	**Probability of exposure**	**Consequence**	**Overall risk**	**Risk Management**	**Residual risk**
Potential to cause harm?	*What's the risk? What do I wish to protect?*	*Route of hazard to the receptor?*	*Likelihood of this contact?*	*Harm that can be caused?*	*Remaining Risk*	*Measures to reduce the risk?*	*Residual risk after the application of managerial procedures?*
only of minimal manual sorting). **AR4** **Material Dispatch** (Recovery/disposal)							

4 APPENDICES

Appendix 1 317157 Salisbury City Council Depot Noise Impact Assessment NIA (Oct 24, 1.0)

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Project No: 317157

Noise Impact Assessment – Salisbury City Council Depot

Prepared for:

Elleteq Ltd

Lansdowne House
Long Street
Devizes
SN10 1NJ

Contents Amendment Record

This report has been issued and amended as follows:

Revision	Description	Date	Signed
1.0	First Issue	15 October 2024	R. Sargent

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Acknowledgement

This report has been prepared for the sole and exclusive use of Elleteq Limited (Elleteq) in accordance with the scope of work presented in Mabbett & Associates Ltd (Mabbett) Letter Agreement 317157/RS/170924/4.0 (dated 17 September 2024). This report is based on information and data collected by Mabbett. Should any of the information be incorrect, incomplete or subject to change, Mabbett may wish to revise the report accordingly.

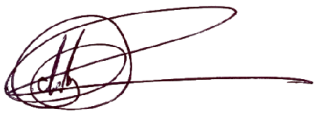
This report has been prepared by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD

Ruth Sargent, BSc(Hons), MSc, MIOA
Principal Environmental Consultant (Acoustics)

This report has been reviewed and approved by the following Mabbett personnel:

MABBETT & ASSOCIATES LTD



Chris Turner BSc(Hons) MSc IEng MIOA MIoD MInstP
Technical Director (Acoustics, Noise and Vibration)

Table of Contents

Section 1.0: Introduction

1.1 Background

Mabbett & Associates Limited have been commissioned to undertake a Noise Impact Assessment (NIA) for a site located at Unit 1-3 Tollgate Business Park, Salisbury, SP1 2JG.

Salisbury City Council propose to use the site as a waste transfer depot, with operations at the depot primarily comprising the storage of vehicles and materials associated with the Street Scene and Parks teams.

This noise assessment is focussed on the evaluation of potential impacts on the nearest noise sensitive receptors as a result of the operation of the proposed waste transfer depot and recommends mitigation measures, where needed.

A summary of sound terminology is given in Appendix A.

1.2 Consultants Experience

This assessment has been carried out by Chris Turner and Ruth Sargent for and on behalf of Mabbett.

Chris Turner is an Incorporated Engineer registered with the Engineering Council and has nearly 20 years of post-graduate consultancy experience.

Chris has an undergraduate degree in Physics and Computer Science from the University of Wales Swansea and a post-graduate degree in Applied Acoustics and Noise Control from the University of Surrey. He is a full corporate member of the Institute of Acoustics, the Institute of Directors, and the Institute of Physics.

Ruth Sargent has worked on sound and vibration related projects for 20 years. Since completing a Bachelors Degree in Environmental Science, a Masters in Environmental Management, and a Diploma in Acoustics and Noise Control, she has gained a wide range of practical experience in Environmental acoustics and vibration in a consultancy role. Ruth is a Member of the Institute of Acoustics.

The majority of Ruth's experience relates to the provision of sound and vibration impact assessments to support planning applications and full Environmental Impact Assessments. These include large residential and mixed use schemes, waste management facilities, power generation schemes and mineral/quarry facilities.

She is experienced in the use of environmental sound modelling software SoundPLAN, which implements a range of methodologies including Calculation of Road Traffic Sound (CRTN), Calculation of Railway Sound (CRN), BS 5228 and ISO 9613-2.

On this basis, Chris and Ruth are considered as suitably qualified acousticians for undertaking this type of assessment.

1.3 Site Description

The site is located to the north of Tollgate Road, Salisbury at Units 1-3 Tollgate Business Park. The national grid reference for the site is SU 15222 29653.

The proposed operations will primarily comprise of the storage of vehicles and materials associated with the Street Scene and Parks teams.

The proposed development lies within a mixed commercial/residential area, with the units adjoining an antique shop with associated café.

Additional land uses within the vicinity of the site include a storage depot to the east, mixed offices to the south, Salisbury Snooker Club and Indoor Bowls Club to the west. Salisbury 6th Form College is located

south of Tollgate Road whilst St. Martins CofE Primary School and associated playing fields lies to the north of the site.

The nearest residential receptors within the vicinity of the site comprise a block of apartments and associated external amenity areas adjacent to the south-west of the site boundary. Additionally, to the north is a primary school and associated playing fields.

1.4 Hours of Operation

The site is typically operational between the hours of 06:00-16:30, Monday to Sunday.

The Street Scene team arrive on site at 6am and leave with caged vehicles and sweepers at 6:30am. On average there would be a once a day return for the cage vehicles and twice a day return for the road sweepers.

The Grounds team arrive on site from 06:30 with caged vehicles and mowers and leave between 07:00 and 07:30. These will return once a day.

The Markets team have 1no. electric van stored at the depot and on Tuesday and Saturdays (market days) leave the site between 4:30am and 5:30am. However, considering that this vehicle is electric, has only two occurrences throughout the week and is not part of the waste related activities, it is not deemed necessary to include within the noise assessment.

Operations typically commence with the egress of bin collection vehicles at 06:30, these return at 14:30 to deposit waste collected throughout the day. Similarly, the Grounds team leave at 07:00 and are expected to return at approximately 16:00.

Remaining onsite noise sources will comprise very limited use of the onsite green waste shredder and jetwash.

It is important to note that the site does not have parking for employees' cars on site so staff park at nearby Churchill Gardens Park and walk to the Depot.

The layout of the Depot site is given in Figure B.1 in Appendix B.

Section 2.0: Guidance

2.1 Environment Agency Guidance

This document has been produced in accordance with the EA's guidance "Noise and vibration management: environmental permits" updated 31 January 2022.

2.2 Noise Policy Statement for England

The National Policy Statement for England sets out the long-term vision of the government's noise policy, which is to 'promote good health and a good quality of life through the effective management of noise within the context of policy on sustainable development'.

There are three aims to support this long-term vision:

- 'avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvements of health and quality of life.'

The long-term policy vision and aims are designed to enable decisions to be made regarding what is an acceptable noise burden to place on society.

The 'Explanatory Note' within the NPSE provides further guidance on defining 'adverse effects' and 'significant adverse effects' using the following concepts:

- No Observed Effect Level (NOEL) - the level below which no effect can be detected. Below this level no detectable effect on health and quality of life due to noise can be established;
- Lowest Observable Adverse Effect Level (LOAEL) - the level above which adverse effects on health and quality of life can be detected; and
- Significant Observed Adverse Effect Level (SOAEL) - the level above which significant adverse effects on health and quality of life occur.

The three aims can therefore be interpreted as follows:

- the first aim is to avoid noise levels above the SOAEL;
- the second aim considers situations where noise levels are between the LOAEL and SOAEL. In such circumstances, all reasonable steps should be taken to mitigate and minimise the effects. However, this does not mean that such adverse effects cannot occur; and
- the third aim considers situations where noise levels are between the LOAEL and NOEL. In these circumstances, where possible, reductions in noise levels should be sought through the pro-active management of noise.

The NPSE recognises that it is not possible to have single objective noise-based measures that define the SOAEL, LOAEL and NOEL that are applicable to all sources of noise in all situations. The levels are likely to be different for different noise sources, receptors and at different times of the day.

Furthermore, Government policy does not say that events occurring between the LOAEL and the SOAEL cannot, at any time, occur.

2.2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was introduced in March 2012 and revised in July 2018, with further updates in February and June 2019, July 2021 and December 2023[1]. The document sets out the Government's planning policies for England and how these are expected to be applied.

[1] Department for Communities and Local Government (2021) National Planning Policy Framework, DCLG, London

Applications for planning permission must be determined in accordance with the Local Authority development plan unless material considerations indicate otherwise. The development plan also includes any local plan or neighbourhood plans which have been adopted for the area.

The planning system is required to enhance the natural and local environment. Consequently, the aim is to prevent both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of noise pollution.

The NPPF states that planning policies and decisions should aim to:

- 'mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise from giving rise to significant adverse impacts on health and quality of life; and
- identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason'.

With regards to 'adverse effects' and 'significant adverse effects' the NPPF refers to the Noise Policy Statement for England Explanatory Note (NPSE)[2].

2.2.2 Planning Practice Guidance web-based Resource

In March 2014, the Department for Communities and Local Government (DCLG) released its Planning Practice Guidance (PPG) web-based resource[3] to support the NPPF. The guidance advises that local planning authorities should consider:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

This guidance introduced the additional concepts of NOAEL (No Observed Adverse Effect Level), and UAEL (Unacceptable Adverse Effect Level). Full details of the Planning Practice Guidance on effects are provided in Table 2.1

[2] Department for the Environment Food and Rural Affairs (2010) Noise Policy Statement for England, Defra.

[3] http://planningguidance.planningportal.gov.uk/blog/guidance/noise/noise-guidance/

Table 2.1: PPG Guidance

Perception	Examples of Outcome	Increasing Effect Level	Action
No Observed Adverse Effect Level (NOAEL)			
Not noticeable	No Effect	No Observed Effect	No specific measures required
Noticeable and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level (LOAEL)			
Noticeable and intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Noticeable and disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Noticeable and very disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

Factors to be considered in determining if noise is a concern are identified including the absolute noise level of the source, the existing ambient noise climate, the time of day, duration, frequency of occurrence, the character of the noise and cumulative impacts.

2.3 Other Guidance

2.3.1 British Standard 7445-1:2003 and 7445-2:1991

BS 7445 'Description and measurement of environmental noise'[4] defines parameters, procedures and instrumentation required for noise measurement and analysis.

[4] BS 7445: 2003 'Description and Measurement of Environmental Noise'. British Standards Institution.

2.3.2 British Standard 5228:2009+A1:2014

BS 5228-1 'Code of practice for noise and vibration control on construction and open sites. Noise'[5] provides a 'best practice' guide for noise control and provides a calculation method for noise from construction activities as well as Sound Power Level (L_w) data for individual plant. BS 5228-2 'Code of practice for noise and vibration control on construction and open sites. Vibration'[6] provides comparable 'best practice' for vibration control, including guidance on the human response to vibration.

2.3.3 British Standard 8233:2014

BS 8233 'Guidance on sound insulation and noise reduction for buildings'[7] provides acceptable internal noise levels for various spaces during daytime and night-time periods, including residential, offices, places of worship, hospitals and educational establishments.

2.3.4 World Health Organisation

The World Health Organisation's (WHO) 'Guidelines for Community Noise'[8] recommends external daytime and evening environmental noise limits, and internal night-time limits to avoid sleep disturbance.

The WHO 'Night Noise Guidelines for Europe'[9] recommend updated guidelines on night-time noise limits to avoid sleep disturbance.

[5] BS 5228: 2009+A1:2014 Code of Practice for Noise and Vibration on Construction and Open Sites, Part 1: Noise. British Standards Institution.
[6] BS 5228: 2009+A1:2014 Code of Practice for Noise and Vibration on Construction and Open Sites, Part 2: Vibration. British Standards Institution.
[7] BS 8233:2014. Guidance on sound insulation and noise reduction for buildings. British Standards Institution.
[8] Guidelines for Community Noise', World Health Organisation, 1999.
[9] World Health Organisation (WHO) (2009) Night Noise Guidelines for Europe.

Section 3.0: Noise Assessment Methodology and Noise Criteria

3.1 Sound Measurements

The baseline sound monitoring was undertaken by others, Oaktree Environmental Ltd. It has been assumed that all measurements undertaken were carried out in general accordance with the guidance in British Standard BS 7445: 2003 'Description and Measurement of Environmental Noise'[10], and British Standard BS 4142: 2014+A1:2019: 'Methods for rating and assessing industrial and commercial sound'[11]..

Further information on the baseline sound monitoring is provided in Section 4.

3.2 Calculations and Assessment

3.2.1 BS 4142 Assessment

Response to sound is subjective and affected by many factors, both acoustic and non-acoustic. In general, the likelihood of complaints in response to sound depends on factors, including:

- the margin by which it exceeds the background sound level;
- the absolute sound level;
- the character of the sound;
- the time of day;
- the change in the sound environment; and
- the nature of the local area.

The standard used for assessing industrial sound and determining community reaction is British Standard BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound' According to the standard, it can be used for:

- "investigating complaints;
- assessing sound from proposed, new, modified or additional source(s) of sound of an industrial and/or commercial nature; and
- assessing sound at proposed new dwellings or premises used for residential purposes."

The basis of BS 4142 is a comparison between the rating level of the noise source under consideration and the background sound level in the vicinity of residential locations. The relevant parameters in this instance are as follows:

- Background Sound Level – $L_{A90,T}$ – defined as the 'A' weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T. This is measured using time weighting F and quoted to the nearest whole number of decibels;
- Specific Sound Level – $L_{Aeq,Tr}$ – the equivalent continuous 'A' weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T;
- Residual Sound Level - $L_{Aeq,T}$ - the equivalent continuous 'A' weighted sound pressure level at the assessment location in the absence of the specific sound source under consideration, over a given time interval, T; and
- Rating Level – $L_{Ar,Tr}$ – the specific sound level plus any penalties applied for the characteristic features of the specific sound source such as tonality, impulsivity and intermittency.

To determine the overall Rating Level, characteristics of the specific sound need to be considered and corrections applied (if deemed appropriate). These corrections can include the following:

Subjective Assessment of Tonality:

- +2 dB if tonal noise was slightly perceptible;
- +4 dB if tonal noise was clearly perceptible; and
- +6 dB if tonal noise was highly perceptible.

[10] BS 7445: 2003 'Description and Measurement of Environmental Noise'. British Standards Institution.
[11] BS 4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. British Standards Institution.

Impulsivity:

- +3 dB if impulsive noise was slightly perceptible;
- +6 dB if impulsive noise was clearly perceptible; and
- +9 dB if impulsive noise was highly perceptible.

Intermittency:

When the specific sound is identified as being of an inherently intermittent in nature, and the intermittency is perceived to be distinctive against the residual acoustic environment, a correction of +3 dB can be applied to the specific noise level.

Other Sound Characteristics:

Where the specific sound features characteristics that are neither tonal nor impulsive but is perceived to be distinctive against the residual acoustic environment, a correction of +3 dB can be applied to the specific noise level.

Following the calculation of the rating level, this is then compared to the background noise level in order to estimate the potential impact of the noise on the receptor. Generally, as the margin by which the rating level exceeds the background level increases, the magnitude of impact also increases.

Section 11 of BS 4142 provides the following guidance:

Table 3.3: BS 4142 Magnitude of Impact from Industrial Noise

Excess of Rating Level over Background Level	Indicative Outcome	Mabbett Assessment
Around +10 dB	Likely to be an indication of a significant adverse impact, depending upon the context.	Significant Adverse Impact
Around + 5 dB	Likely to be an indication of an adverse impact, depending upon the context.	Adverse Impact
≥ 0 ≤ 5 dB	Some impact, but less likely to be an adverse impact, depending upon the context.	Low Impact
≤ 0 dB	Indication of no/low impact, depending on the context.	Negligible/No Impact

Importantly, BS 4142:2014+A1:2019 also requires that the rating level of the sound source under assessment is considered in the context of the environment when defining the overall significance of the impact. The standard suggests that in assessing the context, all relevant factors should be taken into consideration, including the following:

- "The absolute level of sound;
- The character and level of the residual sound compared to the character and level of the specific sound; and
- The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions."

3.2.2 BS 8233: 2014 'Guidance on Sound Reduction and Noise Insulation for Buildings'

BS 8233: 2014[12] provides criteria for the assessment of internal and external noise levels for various uses including dwellings. The criteria for residential properties are shown in Table 3.4. These criteria apply to general ambient noise such as road traffic, as defined as "sources without a specific character, previously termed 'anonymous noise'".

[12] British Standard 8233: 2014 'Guidance on sound insulation and noise reduction for buildings', British Standards Institute, 2014

Table 3.4: Indoor Ambient Noise Levels for Residential Properties

Criterion	Typical Situation	07:00 – 23:00	23:00 – 07:00
Resting	Living Room	35 dB $L_{Aeq,16h}$	-
Dining	Dining Room	40 dB $L_{Aeq,16h}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16h}$	30 dB $L_{Aeq,8h}$

BS 8233 also provides guidance on acceptable levels within external areas such as gardens and patios. BS 8233 states that "it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments".

BS8233:2014 also "*provides guidance on the control of noise in and around buildings*" and recommends appropriate criteria and limits for different situations.

It is primarily intended to guide the design of new or refurbished buildings undergoing a change of use, rather than to assess the effect of changes in the external noise climate. BS8233:2014 states that for spaces in non-domestic buildings when they are unoccupied the ambient noise levels should not normally exceed the design ranges given in Table 3-5. These are reproduced from Table 2 of the standard. The standard states that "*In some cases, such as open-plan offices and restaurants, a moderate noise level might provide masking for acoustic privacy in shared spaces without causing disturbance, so upper and lower noise levels should be considered.*"

Table 3.5: Indoor Ambient Noise Levels for Different Spaces

Objective	Location	Design Range dB $L_{Aeq,T}$
Typical noise levels for acoustic privacy in shared spaces	Restaurant	40 - 55
	Open plan office	45 - 50
	Bedroom	40 - 45
	Ballroom, banqueting hall	35 - 40
	Living room	35 - 40

Whilst it may be considered desirable to achieve these internal noise levels with windows open (or rapid or purge ventilation, or occupants' choice), this is not stipulated within the guidance of BS8233:2014 which states:

"*If relying on closed windows to meet the guide values, there needs to be appropriate ventilation that does not compromise the façade insulation or the resulting noise level.*"

BS8233:2014 suggests that the level of noise reduction for a partially open window (for ventilation) would be approximately 15dB[13].

BS 8233:2014 also adopts external noise values provided in Guidelines for Community Noise, World Health Organisation (WHO)[14] for external amenity areas such as gardens and patios. The Standard states that it is "desirable" that the external noise does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$ whilst recognising that development in higher noise areas such as urban areas or those close to the transport network may require a compromise between elevated noise levels and other factors that determine if development in such areas is warranted. In such circumstances, the development should be designed to achieve the lowest practicable noise levels in external amenity areas.

[13] BS8233:2014, Annex G.1, "*if partially open windows were relied upon for background ventilation, the insulation would be reduced to approximately 15dB*".
[14] Guidelines for Community Noise, World Health Organisation (WHO), B Berglund et al, 1999

Section 4.0: Baseline Conditions

4.1 Procedure and Sound Monitoring Locations

A background sound survey was undertaken by others, Oaktree Environmental Ltd. The details of the monitoring and resulting measured levels given in this section have been taken directly from the Oaktree Environmental Ltd report ref. 'Noise Impact Assessment' Version 1.3 dated 30 July 2024 the relevant sections of which have been reproduced below.

A background sound survey was undertaken and completed on the Wednesday 16 August 2023 and Saturday 26 August 2023 in accordance with BS 7445-1: 2003. Locations were chosen to be representative of the nearest noise sensitive receptors.

The measurement locations are shown in Figure 4.1, below:

Figure 4.1 - Noise monitoring position

4.2 Equipment Used During the Survey

Details of the equipment used during the survey are shown in the table below:

Table 4.2 - Survey Equipment

Description	*Model*	Manufacturer	Serial No.	Calibration Date
Class 1 Sound Analyser	*NOR 150*	Norsonic	*15030504*	October 2022
Microphone	Norsonic Type 1225	Norsonic	305208	October 2022
Field Calibrator	NOR 1251	Norsonic	35205	March 2022

4.3 Weather

The weather during the background surveys is summarised in the table below:

Table 4.3 – Weather Conditions during noise monitoring

Date	Wind Speed (max)	Cloud Cover	Temperature	Precipitation
16/08/2023	Max gusts of 1m/s	0-25-%	18°C - 24°C	None recorded whilst onsite.
26/08/2023	Still with gentle gusts of between 1-3m/s	0-50%	12°C - 19°C	None recorded whilst onsite.

4.4 Results

The results of the background noise monitoring survey are tabulated below in Table 4.4-4.5. Commentary on the background level and survey is included further on in Section 4.5.

Table 4.4 -Weekday background monitoring results for NMP 1

Measurement Time	LA_{eq} (dB)	LA_{90} (dB)	LA_{10} (dB)	LA_{max} (dB)
06:50-07:50 16/08/2023	50.3	38.8	55.0	69.4
07:55-08:55 16/08/2023	51.6	37.5	56.2	75.8
09:00-10:00 16/08/2023	52.4	38.5	56.5	72.3
10:20-11:20 16/08/2023	52.7	37.9	56.7	71.9
11:20-12:20 16/08/2023	53.2	38.2	56.9	78.3

Table 4.5 -Weekend background monitoring results for NMP 1

Measurement Time	LA_{eq} (dB)	LA_{90} (dB)	LA_{10} (dB)	LA_{max} (dB)
06:55-07:55 26/08/2023	49.0	39.4	52.5	67.5
07:55-08:55 26/08/2023	50.9	38.8	55.9	64.8

4.5 Existing Noise Climate

During the monitoring, contributors to the background sound level were observed by Oakfield Environmental to include the following within the vicinity of the site:

- Road traffic along Tollgate Road mainly comprising smaller private vehicles but also sporadically larger vehicles,
- Occasional movements and activities associated with the Pheonix Emporium antique centre adjacent to the proposed operations as well as Salisbury Snooker Centre to the west.
- Birdsong.

Construction activities associated with Units 1-3 was also observed, however this was very limited. This led Oaktree Environmental to decide to place the microphone at such a distance to minimise the impact of these noise sources and therefore their contribution to the overall L_{Aeq} and L_{A90} figures is considered to be negligible.

4.6 Control of Uncertainty

Uncertainty in this assessment was controlled via the following precautions/procedures:

- Both the sound level meter and calibrator have a traceable laboratory calibration and the meter was field-calibrated both before and after the measurements. The Field calibrator has a traceable reference value of 114.0dB at a frequency of 1kHz.
- The measurement locations are considered representative of the existing noise climate outside the nearest residential dwellings to the proposed development.

Background monitoring was undertaken during favourable weather conditions (e.g. dry and under 5m/s wind speed).

On this basis, Mabbett consider the uncertainty in the reported numerical background sound levels and residual sound levels to be in the order of ±1dB as per Annex A of BS EN IEC 61672-1:2013.

Section 5.0: Sound Assessment

5.1 Introduction

It is considered the most significant noise sources associated with the development comprise:

- Street Scene - Includes the use of caged vehicles which leave at 06:30am and return once a day at the end of the day, of which there're 3no. All vehicle are diesel driven. Also included within the Street Scene team are road sweepers, of which there are 4no. vehicles with currently 1no. being electric. Street sweepers return to site twice during the day.
- Grounds team - vehicles arrive at 06:30am and leave between 07:00-07:30am and return once a day. This includes the use of transit vans of which there are 5no. with 4no. being electric and the other hybrid. These carry the lawnmowers in the back of the vans.
- Sporadic use of the green waste shredder. It is understood from site management personnel that this is operated once a fortnight with the maximum on-time being 1 hour per day, usually at the end of the day.
- Limited jet washing of vehicles and containers. It is understood from site management personnel that these are operated for 30 minutes a day usually between 2-2:30pm.
- A tractor on site to move waste when needed.

Noise from within the enclosed units is likely to be limited to noise arising from members of staff and very occasionally minor repairs and is therefore considered to be negligible.

5.1.1 Operational Scenarios

The following Operational scenarios have been modelled and assessed:

- Scenario 1: Vehicle movements only
- Scenario 2: All activities, excluding vehicle movements - jet washing, wood-chipping/shredding, tractor usage
- Scenario 3: Typical site activities - jet washing and tractor usage only

Sound data for the operational plant modelled are provided in Appendix C.

5.1.2 Operational Sound Predictions

An acoustic model of the proposed development and the surrounding area has been developed using the CadnaA sound modelling software. The software implements the standard sound prediction methodology detailed in ISO 9613:1996[15].

The model has been used to calculate the specific sound levels at representative sensitive receptors and an assessment carried out in accordance with BS 4142 to determine if the calculated rating levels could result in a noise impact upon the closest receptors.

The acoustic model includes the ground topography, all buildings within and surrounding the site, and all of the sound sources as detailed in the operational scenarios above.

5.1.3 Modelling Parameters and Assumptions

The CadnaA noise models were constructed using the following data sources:

Base Mapping - OS Opendata mapping
- Google Earth satellite imagery

Topographical data - Digital Terrain Model (DTM) obtained from DEFRA

The model has been based on the drawings provided by Salisbury City Council.

[15] International Organization for Standardization (1996) ISO 9613: 1996 Part 2 Attenuation of sound during propagation outdoors, ISO.

The following assumptions/parameters are made within the models:

- The intervening land between the site boundary and residential properties was modelled with G = 0.0 i.e. acoustically reflective with the exception of the playing field to the north.
- Noise sources were not assumed to be constant, Table C.1 in Appendix C details the assumed "on-times" as well as the assumptions with regards to geometry of the noise source (height, point or area source etc.).
- Buildings were set as acoustically reflective, with a reflection loss of 2 dB. A maximum order of reflection of 3 has been assumed, which is associated with brick-built building fabric.
- Noise levels were determined at residential properties representing the nearest residential facades. This has been calculated via a receiver placed at 1.5m. This methodology has been agreed with the AQMAU team as part of separate permit applications. The receivers have been placed at a distance greater than 3.5m away from any reflecting surface so that the sound pressure levels calculated do not incur any effect from reflecting surfaces, additional receivers placed at the facades of the flats at a height of 4.0m following on from the comments made by the Environment Agency as a worst case location.
- The predicted grid noise levels were free-field, A-weighted, sound pressure levels. The noise contours generated within the model are also at a height of 1.5 m, assumed to be the worst-case scenario.
- Surrounding residential properties were modelled at a height of between 4m and 7m for the majority of residential dwellings with the exception of the residential apartments which have been modelled as 6m in height. Commercial building heights have been taken from observations and information taken from planning public access where available.
- Onsite barriers/ waste bays have been modelled as being hard and reflective (I.e. concrete).
- The onsite proposal for the closed bordered gate is proposed to be 3.0m in height.

5.1.4 Operational Sound Level Data

Measurements of operational activities/equipment at the proposed site were undertaken by Oaktree Environmental Ltd and was provided to Mabbett for further analysis and subsequently used in the revised noise model. The data input to the model are summarised in Table 5.1 below.

Table 5.1: Summary of Measured Levels – Specific Plant/Activities

Activity/Equipment	Measured Level L_{Aeq}	Calculated Sound Power Level Lw	Source of Data
Measured Activities			
Jet washing	80.3 dB(A) at 2m	94.3 dB(A)	Measured by Oaktree Environmental, analysed by Mabbett
Caged van pass-by	76.7 dB(A) at 4m	96.7 dB(A)	Measured by Oaktree Environmental, analysed by Mabbett
Street Sweeper pass-by	73.0 dB(A) at 5m	95.0 dB(A)	Measured by Oaktree Environmental, analysed by Mabbett
Loading and removing of container	82.2 dB(A) @ 8m	104.0 dB(A)	From Oaktree Environmental Report
Shredding of green waste	80.0 dB(A) at 10m*	108.1 dB(A)	Taken from BS 5228, Table C.4, no. 74
Tractor movements	-	94.7 dB(A)	From Oaktree Environmental Report

*Taken from BS 5228, Table C.4, no. 74

Observations by Oaktree personnel determined that noise breakout from activities within the building was negligible, and tipping, which is done by hand, was also negligible, and therefore these have not been included in the noise model. Noise from the Market team is also considered negligible as this involves the use of 1no. electric van on market days only and is only operational for approximately 5 minutes.

Full details on the operational sound data used in the noise models are provided in Appendix C.

5.2 BS 4142 Penalties

Due to the intermittent nature of the noise associated with the site, and the noise being just perceptible at the closest receptors, +3dB penalty has been applied. As many of the activities have short on-times, and as there are other commercial activities in the surrounding area, it would be difficult to justify a +6dB penalty. Whilst the use of the jet wash and the shredding activities are tonal when in use, as these are located behind the site building, it is considered that no penalty should be applied for tonality.

The penalty for vehicle movements at the site has been quantified as being a +2dB penalty for tonality.

5.3 BS 4142 Operational Noise Assessment

The results of the modelling are given in Tables 5.2 to 5.4 for each of the operational scenarios detailed in Section 5.1.1.

Table 5.2: Scenario 1: Vehicle Movements Only

Receptor	Floor	Calculated Level L_{Aeq}	Addition of Relevant Penalties as per BS4142: 2014	Resulting Rating Level $L_{A,Tr}$	Measured Background Level L_{A90}	Difference with Background level	BS4142 Impact
		dB	dB	dB	dB	dB	
1 – Southern Flats	GF	31	+2	33	39	-6	No Impact
	1F	21	+2	23	39	-16	No Impact
	2F	21	+2	23	39	-16	No Impact
2 – Southern Flats	GF	29	+2	31	39	-8	No Impact
	1F	19	+2	21	39	-18	No Impact
	2F	19	+2	21	39	-18	No Impact
3 – Southern Flats	GF	27	+2	29	39	-10	No Impact
	1F	18	+2	20	39	-19	No Impact
	2F	18	+2	20	39	-19	No Impact
4 – Southern Flats	GF	25	+2	27	39	-12	No Impact
	1F	26	+2	28	39	-11	No Impact
	2F	31	+2	33	39	-6	No Impact
5 – Southern Flats	GF	32	+2	34	39	-5	No Impact
	1F	18	+2	20	39	-19	No Impact
	2F	21	+2	23	39	-16	No Impact
6 – Southern Flats	GF	26	+2	28	39	-11	No Impact
	1F	20	+2	22	39	-17	No Impact
	2F	24	+2	26	39	-13	No Impact
7 – Southern Flats Amenity	GF	26	+2	28	39	-11	No Impact
8 – School Building	GF	34	+2	36	39	-3	No Impact
	1F	33	+2	35	39	-4	No Impact
9 – School Playing Field	GF	34	+2	36	39	-3	No Impact

10 – Southern Dwelling	GF	41	+2	43	39	4	No Impact
	1F	30	+2	32	39	-7	No Impact
11 – Bowling Club	GF	31	+2	33	39	-6	No Impact
	1F	27	+2	29	39	-10	No Impact
12 – Southern Dwelling	GF	31	+2	33	39	-6	No Impact
	1F	29	+2	31	39	-8	No Impact
13 – 6th Form College	GF	30	+2	32	39	-7	No Impact
	1F	21	+2	23	39	-16	No Impact
	2F	22	+2	24	39	-15	No Impact

As illustrated in Table 5.2, the operation of vehicles between the hours of 06:30 and 07:30 within the permit boundary will not result in an impact upon the closest noise sensitive receptors.

Table 5.3: Scenario 2: Typical Daytime Noise Associated with All Activities on Site (excluding vehicle movements)

Receptor	Floor	Calculated Level L_{Aeq}	Addition of Relevant Penalties as per BS4142: 2014	Resulting Rating Level $L_{A,Tr}$	Measured Background Level L_{A90}	Difference with Background level	BS4142 Impact
		dB	dB	dB	dB	dB	
1 – Southern Flats	GF	29	3	32	39	-7	No Impact
	1F	29	3	32	39	-7	No Impact
	2F	39	3	42	39	3	No Impact
2 – Southern Flats	GF	28	3	31	39	-8	No Impact
	1F	28	3	31	39	-8	No Impact
	2F	36	3	39	39	0	No Impact
3 – Southern Flats	GF	28	3	31	39	-8	No Impact
	1F	28	3	31	39	-8	No Impact
	2F	35	3	38	39	-1	No Impact
4 – Southern Flats	GF	31	3	34	39	-5	No Impact
	1F	34	3	37	39	-2	No Impact
	2F	39	3	42	39	3	No Impact
5 – Southern Flats	GF	28	3	31	39	-8	No Impact
	1F	31	3	34	39	-5	No Impact
	2F	33	3	36	39	-3	No Impact
6 – Southern Flats	GF	29	3	32	39	-7	No Impact
	1F	30	3	33	39	-6	No Impact
	2F	34	3	37	39	-2	No Impact
7 – Southern Flats Amenity	GF	37	3	40	39	1	No Impact
8 – School Building	GF	46	3	49	39	10	Significant adverse
	1F	49	3	52	39	13	Significant adverse

9 – School Playing Field	GF	53	3	56	39	17	Significant adverse
10 – Southern Dwelling	GF	39	3	42	39	3	No Impact
	1F	40	3	43	39	4	No Impact
11 – Bowling Club	GF	35	3	38	39	-1	No Impact
	1F	40	3	43	39	4	No Impact
12 – Southern Dwelling	GF	40	3	43	39	4	No Impact
	1F	43	3	46	39	7	Adverse
13 – 6th Form College	GF	31	3	34	39	-5	No Impact
	1F	34	3	37	39	-2	No Impact
	2F	37	3	40	39	1	No Impact

An assessment of all activities on site (jet washing, wood chipping/shredding, but excluding vehicle movements), indicates that at one residential receptor located to the south of the application site is likely to experience an adverse impact. In addition, there is likely to be a significant noise impact upon the school located to the north of the site. The dominant noise source is from wood chipping/shredding activities.

Oaktree consulted with the applicant, who informed them that most of the wood chipping/shredding is done off site, with very rare instances where it needs to be carried out on site (approximately twice per year). They also advised that when chipping/shredding is carried out on site that this is done outside of school hours, to reduce the impact to the school to the north of the site. As such, it is deemed reasonable to discount that activity and only include the more frequent sources on site. The assessment of the more frequent noise sources (jet washing and tractor) is given in Table 5.4 below.

Table 5.4: Scenario 3: Typical Daytime Noise Associated with Jetwash and Tractor

Receptor	Floor	Calculated Level L_{Aeq}	Addition of Relevant Penalties as per BS4142: 2014	Resulting Rating Level $L_{A,Tr}$	Measured Background Level L_{A90}	Difference with Background level	BS4142 Impact
		dB	dB	dB	dB	dB	
1 – Southern Flats	GF	25	3	28	39	-11	No Impact
	1F	25	3	28	39	-11	No Impact
	2F	34	3	37	39	-2	No Impact
2 – Southern Flats	GF	23	3	26	39	-13	No Impact
	1F	23	3	26	39	-13	No Impact
	2F	31	3	34	39	-5	No Impact
3 – Southern Flats	GF	23	3	26	39	-13	No Impact
	1F	24	3	27	39	-12	No Impact
	2F	29	3	32	39	-7	No Impact
4 – Southern Flats	GF	26	3	29	39	-10	No Impact
	1F	31	3	34	39	-5	No Impact
	2F	33	3	36	39	-3	No Impact
5 – Southern Flats	GF	23	3	26	39	-13	No Impact
	1F	26	3	29	39	-10	No Impact
	2F	29	3	32	39	-7	No Impact
	GF	25	3	28	39	-11	No Impact

6 – Southern Flats	1F	26	3	29	39	-10	No Impact
	2F	30	3	33	39	-6	No Impact
7 – Southern Flats Amenity	GF	34	3	37	39	-2	No Impact
8 – School Building	GF	38	3	41	39	2	No Impact
	1F	40	3	43	39	4	No Impact
9 – School Playing Field	GF	41	3	44	39	5	Adverse
10 – Southern Dwelling	GF	36	3	39	39	0	No Impact
	1F	37	3	40	39	1	No Impact
11 – Bowling Club	GF	34	3	37	39	-2	No Impact
	1F	39	3	42	39	3	No Impact
12 – Southern Dwelling	GF	33	3	36	39	-3	No Impact
	1F	34	3	37	39	-2	No Impact
13 – 6th Form College	GF	28	3	31	39	-8	No Impact
	1F	32	3	35	39	-4	No Impact
	2F	34	3	37	39	-2	No Impact

As illustrated in Table 5.4, when assessing the noise impact of the more frequent activities on the site (jet washing and tractor), the level of impact is reduced to 'no impact' at the residential receptors. However, there is predicted to be an adverse impact upon part of the school located to the north.

It must be considered that for the majority of the day, the site will remain inactive with little to no noise emissions. Any activities undertaken on the site are only active for limited times during the day, and in the case of the wood chipper, very infrequently.

Whilst there is an adverse impact when compared to the background noise level, the actual predicted level is not excessively loud, and it is more than likely that noise generated by children playing on the playing field will outweigh any noise generated by the use of the jetwash.

When also considering the predicted noise levels incident on the closest façade of the school building of 41 dB(A), with open windows the internal level would be roughly 31 dB(A) (assuming a partially open window provides an attenuation of 10 dB, for a conservative approach). This value is within the design range in BS 8233:2014 for 'Study and work requiring concentration' of 35-45dB and less than the statutory guidance level of 40 dB found within Building Bulletin 93. Therefore, using BS 8233 in lieu of a BS 4142 assessment, the noise levels may be considered acceptable from the use of the jetwash at an educational establishment. It is also considered that BS 4142 may not be strictly applicable at an educational receptor as it is not a residential receptor as noted in the scope of the standard. Furthermore, jet washing activities are only undertaken for a half an hour period in a single day and within a concealed bay.

Section 6.0: Mitigation

6.1.1 Best Available Techniques (BAT)

The following will be considered when operating the site:

- Machinery will not be permitted to idle when not in use.
- All operatives will be informed during induction about the need to minimise noise.
- Noisy operations will be completed as promptly as possible.
- All plant and machinery will be well maintained with inspection and testing records.
- Communication with local residents, listening to concerns raised and investigate any noise complaints as required. Feedback to group or individual once investigation has been completed.
- If new plant is to be used on site (i.e,. replacement of old plant), such plant will be of a low-noise producing model. If any new plant does generate higher noise levels then this assessment should be reviewed and revised as necessary.
- Replacement of existing petrol/diesel powered vehicles with electric powered vehicles.

6.1.2 Specific Mitigation

The following mitigation measures are recommended to reduce noise impacts upon the school located to the north, and to minimise noise impacts upon all receptors over the weekend period:

- Restriction of the operational hours for jet washing and shredding/wood chipping activities to outside of typical school hours to minimise noise impacts upon the school.
- Restriction of the operational hours for wood chipping/shredding activities to weekdays only (excluding Public holidays).

Section 7.0: Conclusions and Recommendations

Mabbett & Associates Limited have undertaken a NIA for Salisbury City Council's site situated at Unit 1-3 Tollgate Business Park, Salisbury, SP1 2JG.

The primary receptors are flats located adjacent to the site on the south. Receivers in the NIA have been placed at a height of 4.0m and 7.0m indicative of a first storey and second storey receptors. Receivers have also been placed at other receptors in the vicinity of the site within the NIA, namely the primary school located to the north of the site.

Noise levels incident upon the closest receptors has been predicted using noise modelling software. Three operational scenarios have been assessed. The resulting levels have been used to inform the BS 4142 assessment.

The BS 4142 assessment of vehicles associated with the operation of the site indicates that there will be no impact upon any of the closest noise sensitive receptors to the permit boundary for the site.

An assessment of all activities (other than vehicle movements) indicates that there will be a significant adverse noise impact upon the school to the north, and upon a residential property located to the south. The dominant noise source is from wood chipping/shredding activities.

An assessment of the typical activities undertaken on the site (jet washing and a tractor), indicates that there will be no impact upon the closest residential receptors. However, there is still predicted to be a significant adverse impact upon the school located to the north of the site.

For most of the day, the site will remain inactive with little to no noise emissions. Any activities undertaken on the site are only active for limited times during the day, and in the case of the wood chipper, very infrequently.

To reduce noise impacts upon the closest noise sensitive receptors, Jet washing activities will be restricted to between 15:30-16:30hrs. In addition, the use of the wood chipper/shredding machine will be restricted to between 15:30- 16:30hrs, Monday to Friday only (excluding Public holidays).

Appendix A: Acoustic Terminology

Decibel dB
From the lowest audible sound to the loudest tolerable sound there is a million to one ratio in sound pressure (measured in pascals, Pa). Because of this wide range a sound level scale based on logarithms is used in sound measurement called the decibel (dB) scale. Audibility of sound covers a range of approximately 0 to 140 dB. Humans generally can only notice changes in sound levels of no less than 3 dB(A). It is generally accepted that a change of 10 dB(A) in an overall, steady sound level is perceived to the human ear as a doubling (or halving) of the sound level.

A-Weighting
The human ear system does not respond uniformly to sound across the detectable frequency range and consequently instrumentation used to measure sound is weighted to represent the performance of the ear. This is known as the 'A weighting' and annotated as dB(A) or L_{pA} dB.

Ambient or Activity Sound Levels
The equivalent continuous A-weighted sound pressure level, L_{Aeq} (or L_{eq} dB(A)) is the single number that represents the total sound energy measured over that period. L_{Aeq} is the sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period. It is commonly used to express the energy level from individual sources that vary in level over their operational cycle.

Background Sound Levels
The parameter that reflects the human perception of the ambient sound is the background sound level, L_{90}, this is usually A weighted and can be displayed as L_{90} dB(A) or L_{A90} (dB). This is the sound level exceeded for 90% of the measurement period and generally reflects the sound level in the lulls between individual sound events. Over a one hour period, the L_{A90} will be the sound level exceeded for 54 minutes.

Sound Power
Sound power is the rate per unit time at which airborne sound energy is radiated by a source. It is expressed it watts (W). Sound power level or acoustic power level is a logarithmic measure of the sound power in comparison to the reference level of 1 pW (picowatt). The sound power level is given the letter "L_w" or SWL. It is not the same thing as sound pressure (Lp). Any L_p value is dependent of the distance from the sound source and the environment in which it was measured. L_w values are preferred for noise prediction purposed as their value is independent of distance or environment. There are recognised formulas for converting L_w to L_p. A-weighted sound power levels are usually denoted L_{wA} (dB) or sometimes L_w (dBA) or SWL (dBA).

Lmax
The $L_{Amax,slow}$ and $L_{Amax,fast}$ measurement parameters are the maximum instantaneous sound pressure level attained during the measurement period (30 seconds, 5 minutes etc.), measured on the 'slow' or 'fast' response setting of the sound level meter. This is sometimes expressed as L_{Amax} dB or L_{max} dB(A). Even though sounds appear fairly steady to the human ear they are seldom if ever steady in level. To accommodate this factor, sound level meters (SLMs) are generally provided with at least two meter responses or exponential averaging circuits. Fast meter response has a time constant of 1/8th of a second (125ms) and approximates the integration time of human hearing. The slow time response (time constant = 1 second) is intended to obtain an approximate average value of rapidly fluctuating levels from simple meter readings.

Internal Sound Levels
In an enclosed space such as an individual room, or a building, the sound from a source cannot propagate in the same way as outdoors because the propagation of the sound is obstructed by the boundaries (walls, ceiling and floor) of the building. These surfaces together with the contents of the building reflect a proportion of the sound back inside the building or room, the amount depending on the absorption coefficient of the various surfaces. Therefore the overall sound level at a position within the building is a combination of the sound received directly from the source (the direct sound field) and the sound received from reflections from the internal surfaces (the reverberant sound field). The more absorptive the surfaces in a building the less sound is reflected and the lower the contribution of the reverberant sound field to the overall noise level.

Sound Reduction Index
The sound insulation properties of a material are described by the term 'sound reduction index' (R) i.e. it is a measure of the reduction in the amount of sound transmitted through a material. The higher the sound reduction index the greater the attenuation provided by the material. The value of R depends on a range of factors, in particular the mass of the material, the nature of the material, and the frequency of the sound. The R values for individual octave bands can be combined into an overall single figure, the weighted sound reduction index R_w.

Frequency Spectrum
Frequency is the rate at which the air particles vibrate. The more rapid the vibrations, the higher the frequency and perceived pitch. Frequency is measured in Hertz (Hz). A young person with average hearing can generally detect sounds in the range 20 Hz to 20,000 Hz (20 kHz). Human speech is predominantly in the range 250 Hz - 3000 Hz.
The musical term 'octave' is the interval between the first and eighth note in a scale and represents a doubling of frequency. A series of octave and one-third octave bands have been derived, and these are commonly used in sound measurements where it is necessary to describe not only the level of the sound source but also the frequency content. The frequency content of a sound source can be useful for identifying acoustic features such as a whine, hiss or screech.

Appendix B: Site Layout

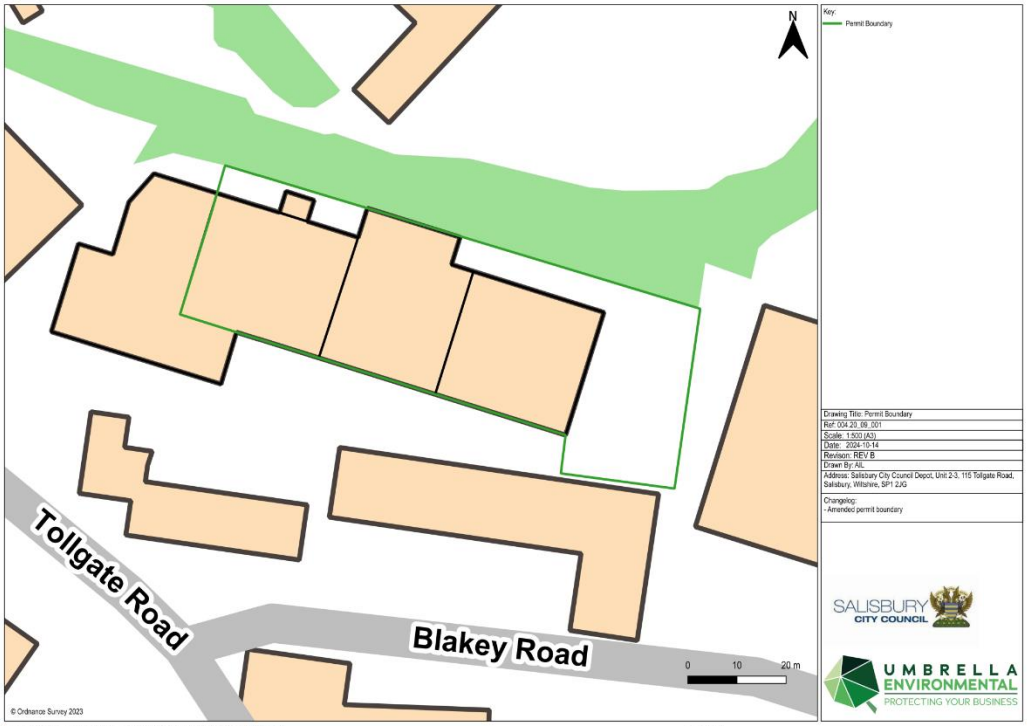


Figure B.1: Site Layout

Appendix C Sound Model Inputs

Data sources

OS mapping: OS mapping Opendata.
Google Earth satellite imagery

Terrain data: DEFRA

Modelling assumptions & parameters

Ground Absorption: 0.0 for site, roads, industrial areas etc.

Ground Absorption: 0.6 for all other areas

(Note: Acoustically Soft = 1, Acoustically Hard = 0)

Calculation grid size: 3m

Other Settings

Order of Reflections = 3

ISO 9613 prediction methodologies

Grid height = 1.5 metres for ground floor height

Grid height = 4 metres for first floor height

Information from Oaktree Environmental Ltd

Table C.1: Oaktree Environmental Noise Source Information

Activity	Source/comments
Jet washing	Onsite measurement by Oaktree Environmental at the existing council facility. The jet washing is modelled as a point source 1m in height and operational for 30 minutes a day based on conversations with site management. Typically, this will not be operated every day. Octave bands have been utilised within the model.
Caged van pass-by	Onsite measurement by Oaktree Environmental at the existing council facility. Despite the noise source having an LAeq of 67.9dB (A), this is the point at which the vehicle is closest to the measurement point. The movement of this vehicle is modelled as a line source 1m in height. Based on comments made by the EA during similar applications, it was decided that a correction of on time would be more appropriate with the use of a power level of L_w=88.0dB

	As vehicles will travel approximately 117m at 5mph, of which there is a total of 3no. caged vans for the grounds team which combined will equate to an estimated 10 minutes an hour for the worst-case hour. This is based on 3 vehicles leaving the Depot at 06:30 and coming back to the Depot at 16:00.
Streetsweeper pass-by	Onsite measurement by Oaktree Environmental at the councils existing facility. Despite the noise source having an LAeq of 66.3dB (A), this is the point at which the vehicle is closest to the measurement point. Therefore, a power level of 88.3 is used. There are a total of 4no. sweeper vehicles with one being electric and therefore discounted from the assessment. The movement of these vehicles are modelled as a line source 1m in height. As there will be 3no. vehicles discounting the electric vehicle, a single on time correction has been added using the resultant power level, which is for 15 minutes an hour for the worst case hour. This takes into account the vehicles leaving the site at 06:30am and coming back to site twice during the operational hours. This is considered an over estimation as the vehicles will not be coming into and leaving the site within the hour. As vehicles will travel approximately 117m at 5mph (2.2m/s or 7.9km/h).
Loading and removal or container	Measurement taken by Oaktree Environmental of a similar activity. The noise source will generally only be active for 10 minutes every other week. However it has been included within the model in order to ensure a robust assessment. It is present as a noise source 1m in height.
Shredding of green waste	This activity comprises a small shredder attachment to a tractor. It is a seasonal activity and generally will only take place for one hour around once every 2 weeks. However, again it is included in order to ensure a robust assessment. In lieu of an onsite measurement, the octave band data has been taken from BS5228:2014. The activity is listed as “Tractor towing equipment” (Table C.4 - 74) and is likely an over estimation of noise from this activity. The source is present within the model as a point source 1m in height and active for 60 minutes per hour.
Tractor movements	Modelled as a point source close to the bays, with an on time of 30 minutes per hour.

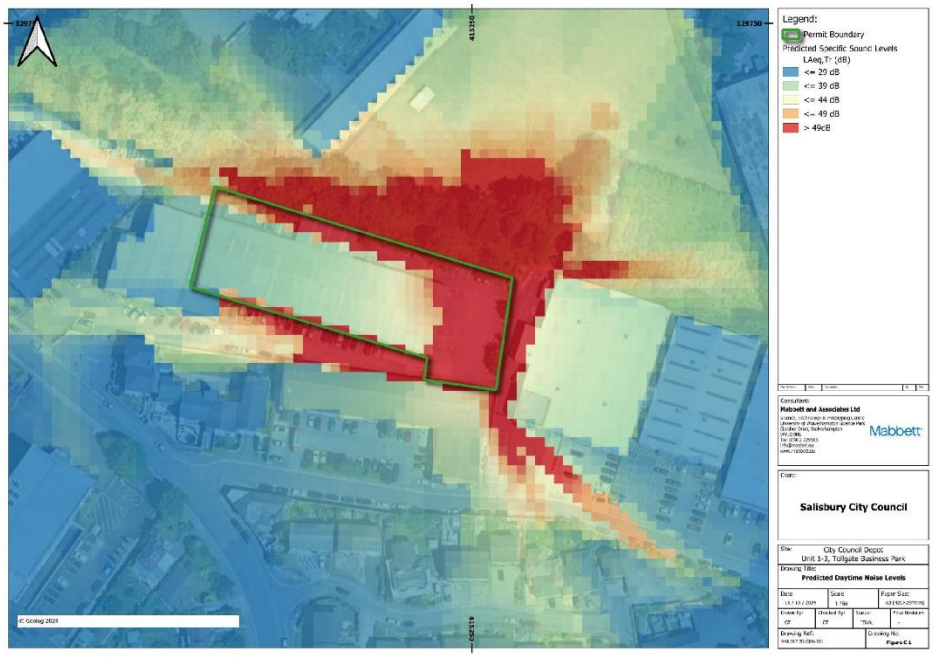
Noise Source Data

Table C.2: Operational Noise Source Data

Plant/ Equipment	Type of Source	Height Above Ground (m)	Octave Band Centre Frequency (Hz)								LwA dB
			63	125	250	500	1,000	2,000	4,000	8,000	
Jet washing	Point	1.0	105.3	96.4	88.4	88.3	86.2	87.0	87.2	86.8	94.3
Caged Van Pass-by (SEL)	Moving Point Source	1.0	99.9	94.1	87.3	85.6	89.9	92.0	89.8	80.9	96.7
Street Sweeper Pass-by (SEL)	Moving Point Source	1.0	87.4	90.8	91.8	96.5	86.6	83.2	76.3	67.7	95.0
Loading and removing of container	Point Source	1.0	115.7	103.6	99.3	96.8	106.4	98.5	93.6	86.7	107.9
Shredding of green waste	Point Source	1.0	107	99	106	103	106	98	89	83	108.1
Tractor movements	Moving point source within an area	1.0	92.1	90.4	85.4	82.2	80.8	86.0	79.4	80.0	94.7

Noise Contour Maps

Figure C.1: Noise Propagation Map, all Sources – Daytime



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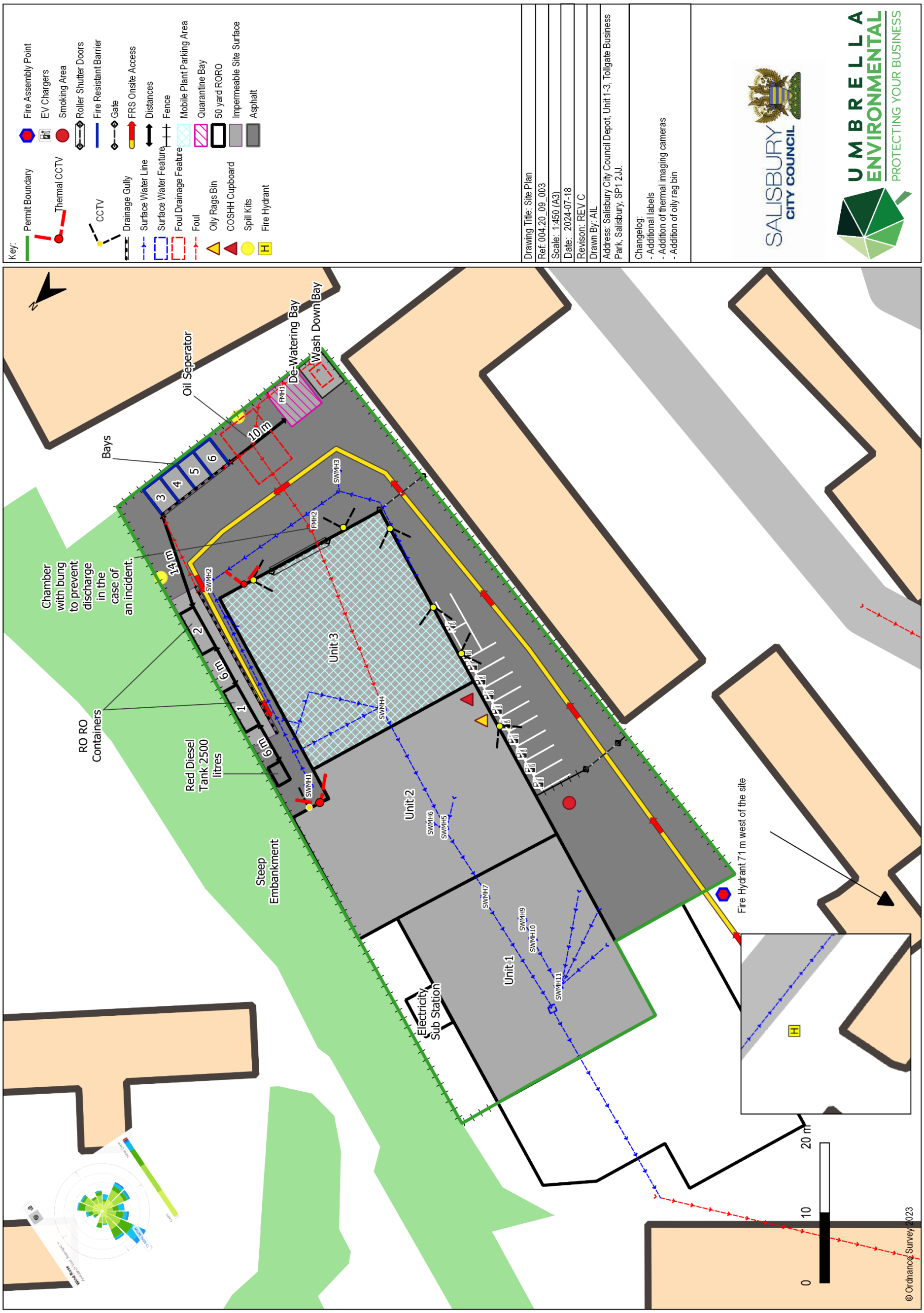
5 DRAWINGS

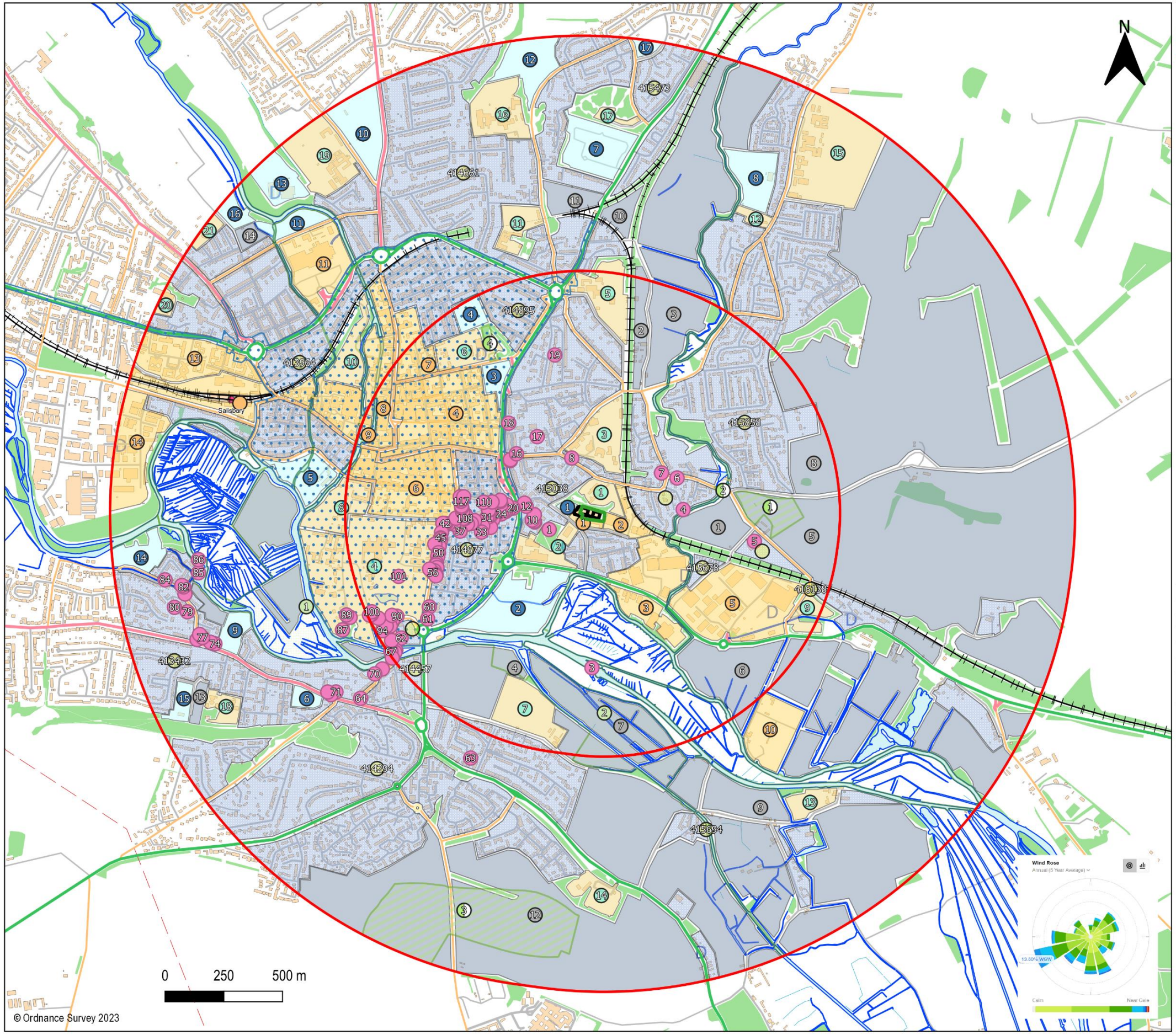
Drawing 1 004.20_09_001 Permit Boundary

Drawing 2 Site Plan 004.20_09_003



Environmental Risk Assessment

Drawing 3 Sensitive Receptors 2 km 004.20_09_005



Key:

- Permit Boundary
- 1 and 2 km Buffer
- Residential ID
- Commercial ID
- Agricultural ID
- Public Use ID
- Recreational ID
- Designated Site ID
- Non Designated Site ID
- Listed Building ID
- AQMA Area
- Public Use Area
- Non Designated Sites Area
- Commercial Area
- Designated Sites Area
- Residential Area
- Agricultural Area
- Recreational Areas

Drawing Title: 2 km Sensitive Receptors
Ref: 004.20_09_005
Scale: 1:1500(A3)
Date: 2023-12-13
Revison: REV A
Drawn By: AIL
Address: Salisbury City Council Depot, Unit 2-3, 115 Tollgate Road, Salisbury, Wiltshire, SP1 2JG
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