SHARPS REDMORE

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Report

KLON-06 Data Centre, Galvin Road, Slough

Generator noise assessment

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Date 14th September 2023
Project No 2221031

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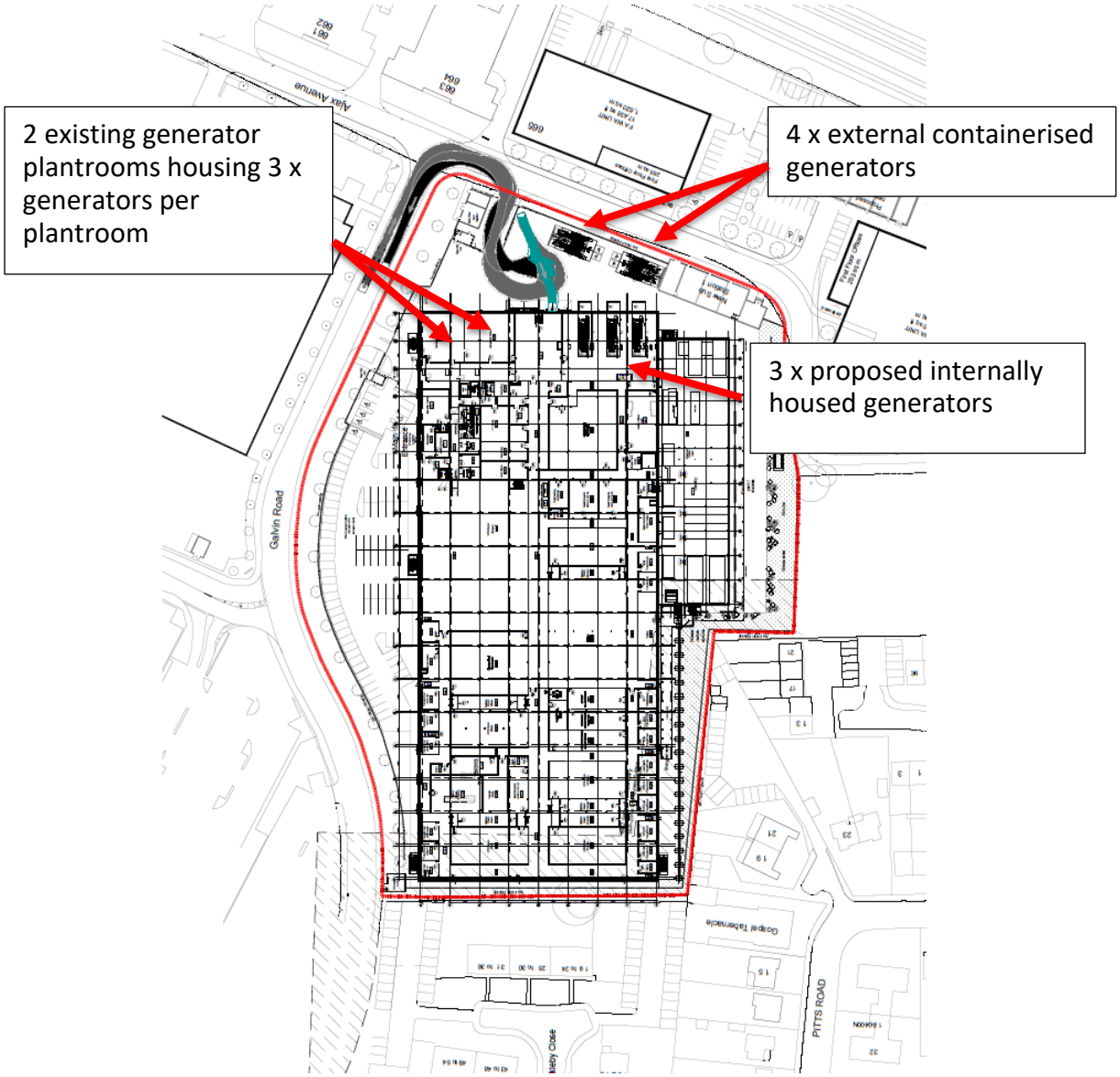
Appendices

1.0 Introduction

1.1 Sharps Redmore has been appointed by KAO Data (the operator) to undertake a noise assessment of the proposed standby generators to accompany the Environmental Permit application (ref: JP3647JU) to operate the KLON06 Data Centre located in Slough Trading Estate, Galvin Road, SL1 4AN. See Appendix D for the site layout drawing.

1.2 The site is currently operating as a data centre, and includes 6 x standby generators housed within 2 purpose built plantrooms. As part of the development of the data centre, the proposal is to install an additional 3 x standby generators within a purpose built plantroom, and 4 x external containerised generators to be installed close to the site boundary with Ajax Avenue. See Figure 1 below:

Figure 1: Site Layout



1.3 The available methods of assessment and assessment criteria are presented at section 2.

1.4 Details of an Environmental noise survey undertaken are presented in section 3, and an assessment of predicted plant noise levels is contained at section 4.

1.5 Details of the noise model methodology are presented in Section 5.0

2.0 Assessment methodology and criteria

2.1 The National Planning Policy Framework (NPPF), 2021, sets out the Government's planning policies for England and "these policies articulate the Government's vision of sustainable development." In respect of noise, Paragraph 185 of the NPPF states the following:

"Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and

c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation".

2.2 Guidance on the interpretation of the policy aims contained within the NPPF is contained within National Planning Policy Guidance (NPPG). The NPPG introduces the concept of a noise exposure hierarchy based on likely average response. The guidance contained in the NPPG is summarised in the table below:

Table 1: Noise Exposure Hierarchy

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not noticeable	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, 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 small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate ad reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, 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
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

2.3 The NPPF and NPPG reinforces the March 2010 DEFRA publication, "Noise Policy Statement for England" (NPSE), which states three policy aims, as follows:

"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- *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 improvement of health and quality of life."*

2.4 Together, the first two aims require that no significant adverse impact should occur and that, where a noise level which falls between a level which represents the lowest observable adverse effect and a level which represents a significant observed adverse effect, then according to the explanatory notes in the statement:

"… all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life whilst also taking into consideration the guiding principles of sustainable development. This does not mean that such effects cannot occur."

2.5 Taking an overview of national policy aims and guidance it is clear that when considering the impact of noise, the fact noise can be heard and causes impact, is not a reason to refuse an application as consideration should also be given to the significance of the impact and the mitigation measures available.

2.6 It is standard and good practice to apply objective standards to the assessment of noise and the effect produced by the introduction of a certain noise source may be determined by several methods, as follows:

i) The effect may be determined by reference to guideline noise values, such as those contained in the World Health Organisation (WHO) "*Guidelines for Community Noise"*.

ii) Alternatively, the impact may be determined by considering the change in noise level that would result from the proposal, in an appropriate noise index for the characteristic of the noise in question. There are various criteria linking change in noise level to effect. This is the method that is suited to, for example, the assessment of noise from road traffic because it is capable of displaying impact to all properties adjacent to a road link irrespective of their distance from the road.

iii) Another method is described within BS 4142:2014+A1:2019 which focuses on determining the significance of sound impact from sources of industrial and/or commercial nature. The sources that the newly revised standard is intended to assess are sound from industrial and manufacturing processes, sound from fixed plant installations, sound from loading and unloading of goods at industrial and/or commercial premises and the sound from mobile plant and vehicles, such as forklift, train or ship movements.

2.7 The assessment of fixed plant noise is principally undertaken in accordance with the methodology in BS 4142:2014. The scope of this standard states that it is suitable for the assessment of:

"a) sound from industrial and manufacturing processes;

b) sound from fixed installations which comprise mechanical and electrical plant and equipment;

c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises; and

d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site."

2.8 The significance of sound impact is to be determined according, in summary, to the following process:

i) Determine the typical background sound levels, in terms of the index L_{A90}, at the receptor locations of interest.

ii) Determine the specific sound level of the source being assessed, in terms of its L_{AeqT} level (T = 1 hour for day or 15 minutes for night), at the receptor location of interest.

iii) Apply a rating level acoustic feature correction if the source sound has tonal, impulsive, intermittent, or other characteristics which attract attention.

iv) Compare the rating sound level with the background sound level; the greater the difference between the two, the higher the likelihood of adverse impact.

v) A difference (rating – background) of around +10 dB is an indication of significant adverse impact, depending on the context; a difference of +5 dB is an indication of an adverse impact, depending on the context. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending upon context.

2.9 Based on the guidance available, the assessment of noise from the proposed plant has been undertaken in accordance with BS 4142:2014+A1:2019,

3.0 Environmental noise survey details

3.1 It is usual in dealing with fixed sources of plant to use BS 4142:2014+1:2019 "Method for rating and assessing industrial and commercial noise" as a means of establishing the potential impact from the new sources to the nearest residential properties.

3.2 To establish the background noise climate, an environmental noise survey was undertaken between 17th and 18th February 2022, at 4 locations around the site:

Figure 2: Environmental noise survey locations

3.3 To establish the background noise climate, an environmental noise survey was undertaken between 17th and 18th February, at 4 locations around the site:

Table 2: Environmental noise survey locations

Location		OS Grid reference
Location 1	Boundary with Ajax Avenue	SU 96108 80656
Location 2	Boundary with Hadlow Court	SU 96169 80528
Location 3	Boundary with Pitts Road	SU 96151 80452
Location 4	Boundary with Galvin Road	SU 96030 80555

3.4 The survey was undertaken using Norsonic 118 and 140 Type 1 sound level meters, which were set-up to take sample measurements every 5 minutes. All meters were calibrated before and after the survey with no sign of any drift.

3.5 During the noise survey the weather conditions were generally dry, and wind speeds during the critical period of the day (evening) and night (early hours of the morning) were generally at or below 5m/s (11 mph), which would be considered to be in accordance with the guidance in BS 4142 and suitable for taking noise measurements. Historic weather data is presented in Appendix I attached, which ties up with on-site observations made around the site perimeter at midnight.

3.6 The sound level meters were collected at around 6am on 18th February, as high wind speed were forecast for later that day.

3.7 A summary of the survey results are shown in Table 3 below.

Table 3: Summary of typical background noise levels

Survey location	Typical background noise level L_{A90} (dB)	
	Daytime (0700-2300)	Night (2300-0700)
Location 1	50 dB	49 dB
Location 2	50 dB	49 dB
Location 3	43 dB	38 dB
Location 4	54 dB	51 dB

3.8 Based on our site observations, the existing noise climate is generally influenced by distant traffic, aircraft, and plant serving this site and other surrounding commercial sites in the area. Based on our site observations, the background noise climate at the Location 3, would be considered as typical for the surrounding residential properties.

4.0 The fixed plant noise control scheme – conclusions and recommendations

4.1 The existing generators are bare engines installed within purpose built plantrooms, with an acoustically treated façade, and ventilation inlet and outlet and engine exhaust attenuators. The proposed additional generators are to be supplied in acoustic enclosures, complete with and ventilation inlet and outlet and engine exhaust attenuators

4.2 Based on the environmental noise model (see Section 5.0), the predicted noise levels without any additional mitigation are as follows:

Table 4: Predicted noise levels

Receptor	Day (0700-2300)		Night (2300-0700)	
	Predicted specific L_{Aeq}	Background L_{A90}	Predicted specific L_{Aeq}	Background L_{A90}
Frank Sutton Way	35 dB	43 dB	35 dB	38 dB
Flats on Whitby Road	35 dB	43 dB	35 dB	38 dB
Carlisle Road	34 dB	43 dB	34 dB	38 dB
Hadlow Court	33 dB	43 dB	33 dB	38 dB
Lake Avenue	33 dB	43 dB	33 dB	38 dB
Whitby Road	32 dB	43 dB	32 dB	38 dB
Farnham Road	32 dB	43 dB	32 dB	38 dB

4.3 The comparison in Table 4 demonstrates that the predicted specific noise from the existing and proposed generators is below the background noise climate at the surrounding receptors, and in accordance with BS 4142:2014,+A1:2019, is considered to be a low impact.

4.4 It is noted that noise from standby generators, particularly the engine exhaust, can have a tonal characteristic. On the basis that the predicted specific noise level is below the background noise climate, a +4 dB correction can be applied for a tone that is clearly perceptible at the receptor.

4.5 With the +4 dB correction, the predicted rating noise level is below the background noise climate during the day, and +1 dB above the background noise climate at night.

4.6 For routine testing during daytime sociable hours, it would be considered appropriate to avoid a significant adverse impact, i.e. not to exceed 5 dB above the background, (an adverse impact), subject to context. In the event of a power outage, which would be a rare occurrence, and only likely to last for a relatively short period of time, a significant adverse impact may be accepted by the LPA, with a difference between the rating noise level and the background noise level of around +10 dB or more.

4.7 The predicted rating noise levels are considered to be a low impact during the day (testing and potential power outage), and based on the context of only occurring during a power outage, would also be considered as a low impact at night.

4.8 In terms of the generators operating during a power outage, as this is a rare occurrence and only likely to last for a relatively short period of time, typically rather than assess against the existing background noise climate in accordance with BS 4142, we would normally assess against the guidelines in BS 8233:2014 and recommendations in World Health Organisation “Guidelines for community noise,” 1999.

4.9 BS 8233:2014 is based on the data and recommendations contained in the World Health Organisation "Guidelines for Community Noise," 1999. SRP consider that the WHO guidelines are more helpful in that as well as presenting suitable internal levels, their document also indicates equivalent external level.

The World Health Organisation's "Guidelines for community noise" takes a loss of 15 dBA through a partially open window, to convert from an external noise level to an internal noise level.

Table 5: Summary of the World Health Organisation's guidelines and BS 8233:1999 guidelines

Document	Limit	Guidance
World Health Organisation "Community Noise 2000"	L_{AeqT} = 55 dB	Serious annoyance, daytime and evening. (Continuous noise, outdoor living areas)
	L_{AeqT} = 50 dB	Moderate annoyance, daytime and evening. (Continuous noise, outdoor living areas).
	L_{AeqT} = 35 dB	Moderate annoyance, daytime and evening. (Continuous noise, dwellings, indoors)
	L_{AeqT} = 45 dB	Sleep disturbance, window open at night. (Continuous noise, outside bedrooms, outdoor values)
	L_{AeqT} = 30 dB	Sleep disturbance at night. (Continuous noise, bedrooms, indoors)
	L_{AMAX} = 60 dB	Sleep disturbance, window open at night. (Noise peaks, outside bedrooms, outdoor values)
	L_{AMAX} = 45 dB	Sleep disturbance at night. (Noise peaks, bedrooms, indoors)
BS 8233:2014 "Sound Insulation and noise reduction for buildings"	L_{AeqT} = 35 dB	Living rooms during the day (Internal – steady noise)
	L_{AeqT} = 40 dB	Dining room during the day (Internal – steady noise)
	L_{AeqT} = 35 dB	Bedroom – resting during the day (Internal – steady noise)
	L_{AeqT} = 30 dB	Bedroom, sleeping at night. (Internal – steady noise)

4.10 Based on the above guidance, the following criteria for the standby power plant at the nearest residential properties, could also be applied:

Table 6: Proposed criteria at nearest residential properties (standby power plant) BS 8233:2014, partially open windows

Time	BS 8233:2014 Criteria L_{Aeq}
Daytime (0700-2300)	50 dB (35+15)
Night (2300-0700)	45 dB (30+15)

4.11 It is noted that the predicted rating noise level from the existing and proposed generators is below the target criteria based on the guidance in BS 8233:2014.

4.12 The assessment has been undertaken based on manufacturers noise data for the proposed generators, and on-site noise measurements of the existing generators.

4.13 Noise from a standby generator is typically based on; the engine (bare engine or containerised), combustion air inlet, combustion air outlet, and the engine exhaust.

4.14 In this case, the existing generators are bare engines within a purpose built, acoustically treated plantroom, with the combustion air inlet and outlet both ducted to the façade of the plantroom, with the engine exhaust ducted to roof level. The system layout and engines for all 6 of the existing generators are the same – see Appendix E. The layout for the proposed generators is presented in Appendix F.

4.15 The following noise levels were measured on site with existing generator 1 operating:

Table 7: On-site generator noise measurements

Survey location	Noise level (dB)								Overall
	63	125	250	500	1k	2k	4k	8k	dBA
1m from air inlet	69	69	62	55	54	51	43	46	60
1m from air outlet	65	62	59	53	51	52	52	48	59
1m from engine	96	98	101	102	104	99	94	90	107
1m from exhaust*	80	81	80	78	77	75	70	59	82

*Noise levels on the roof adjacent to the engine exhaust stacks were dominated by noise from roof mounted condensers, therefore it was not possible to establish noise levels for the engine exhausts. Based on our site observations, noise levels from the engine exhaust was not audible, indicating that noise from the exhaust was at least 10 dB below the overall noise level measured on the roof, i.e. no greater than 72 dBA at 1m.

4.16 Noise from the proposed generators has been provided by the manufacturer:

Table 8: Noise data for proposed generator (internal)

NOISE DATA FOR PROPOSED GENERATOR SET, CANOPY. Housing a KD400-E / KD103-V20 ENGINE RUNNING @ 1500RPM Canopy designed to achieve 65dB(A)@1m under free field conditions									
FREQUENCY (Hz)	Octave band Centres (dB).								OVERALL dB(A)
	63	125	250	500	1000	2000	4000	8000	
UNSILENCED ENGINE NOISE L_W (Calculated)	113	122	119	115	115	114	111	110	121
UNSILENCED Radiator fan Lw (Calculated)	111	116	120	118	113	111	108	105	118
CANOPY PREDICTED L_P @1m	50	62	58	51	50	42	39	32	64
INLET ATTN PREDICTED L_P @1m	84	77	47	41	39	38	35	34	63
DISCHARGE Atten & lined turn PREDICTED L_P @1m	87	75	59	57	52	51	48	49	65

NOTES: Grey areas above denote source data stated in L_W Sound Power levels.
White areas above denote calculated data, stated in L_P Sound Pressure levels at 1m from the unit.

Calculations for noise within the unit is carried out using both the engine and radiator fan as noise sources to ensure "Beaming" from fan Pure Tones is prevented in the discharge attenuator.

Table 9: Noise data for proposed generator (external)

NOISE DATA FOR PROPOSED GENERATOR SET, CANOPY AND EXHAUST GAS SILENCERS. WITH A Kohler KD4500-E (Kohler KD103V20 Diesel Engine) RUNNING @ 1500RPM									
FREQUENCY (Hz)	Octave band Centres (dB).								OVERALL dB(A)
	63	125	250	500	1000	2000	4000	8000	
UNSILENCED ENGINE NOISE L_W Kohler Data	114.2	122.3	119.3	115.6	114.6	114.0	111.2	111.0	120.7
UNSILENCED Radiator fan L_W (Calculated)	111.1	116.1	120.1	118.1	113.1	111.1	108.1	105.1	118.1
CANOPY PREDICTED L_P @1m	76.02	77.91	66.74	54.05	49.98	40.85	38.01	33.33	63.90
INLET ATTN & internal bend PREDICTED. L_P @1m	84.19	77.72	49.54	39.90	37.48	36.47	33.91	32.56	63.25
DISCHARGE Attn & External lined bend PREDICTED. L_P @1m	83.07	76.58	57.72	55.63	50.9	49.06	46.10	43.42	63.34
UNSILENCED EXHAUST NOISE L_W Kohler Data	129.8	143.7	135.9	129.6	126.3	125.8	126.3	123.9	..
Agriemach PREDICTED EXHAUST & SCR L_P @1m	50.9	60.2	60.3	55.5	57.4	44.9	49.1	52.7	64.7

NOTES: Grey areas above denote source data stated in L_W Sound Power levels.
White areas above denote calculated data, stated in L_P Sound Pressure levels at 1m from the unit.

Calculations for noise within the unit is carried out using both the engine and radiator fan as noise sources to ensure "Beaming" from fan Pure Tones is prevented in the discharge attenuator.

4.17 With containerised generators, manufacturers typically issue noise data at 1m, as is the case here, 65 dBA at 1m, under free field conditions. As the container is relatively large, the quoted noise level at 1m, does not follow the standard 20 log ratio to establish noise levels at greater distances. To assess the potential impact of noise from the container, we have used the "box method" which can be used to establish an apparent sound power level, based on equal acoustic energy breaking out of the container. This method uses an expansion of the physical size of the container, in this case 12 x 4 x 4m, to an equivalent box 1m larger, i.e. 14 x 6 x 5m, and applying a correction based on 10 log the expanded surface area, in this case 284m2, resulting in a correction of +25 dB to establish the sound power level of the complete container. For the sound pressure levels at 1m from the inlet, outlet and exhaust we have applied a simple +11 dB correction to convert from 1m, to a sound power level. Based on this methodology the following sound power level has been used in this assessment:

Table 10: Sound power level data assessed

Plant	Sound power level (dB)							
	63	125	250	500	1k	2k	4k	8k
Existing Generator inlet	80	80	73	66	65	62	54	57
Existing Generator outlet	76	73	70	64	62	63	63	59
Existing Generator exhaust*	84	91	86	70	65	63	60	42
Proposed Generator inlet (internal)	95	88	58	52	50	49	46	45
Proposed Generator outlet (internal)	98	86	70	68	63	62	59	60
Proposed Generator exhaust (internal)	88	87	80	70	68	55	59	65
Proposed Generator container (internal)	101	103	92	79	75	66	63	58
Proposed Generator inlet (external)	95	89	61	51	49	48	45	44
Proposed Generator outlet (external)	94	88	69	67	62	60	54	54
Proposed Generator exhaust (external)	88	87	80	70	68	55	59	65
Proposed Generator container (external)	101	103	92	79	75	66	63	58

*Based on typical spectrum for 72 dBA at 1m

4.18 For the proposed internal generators, whilst the air outlet is ducted to atmosphere, the combustion air is provided via open louvres to the façade of the plantroom. Therefore additional calculations have been undertaken to establish an apparent sound power level at the inlet louvre to the plantroom. See Appendix G.

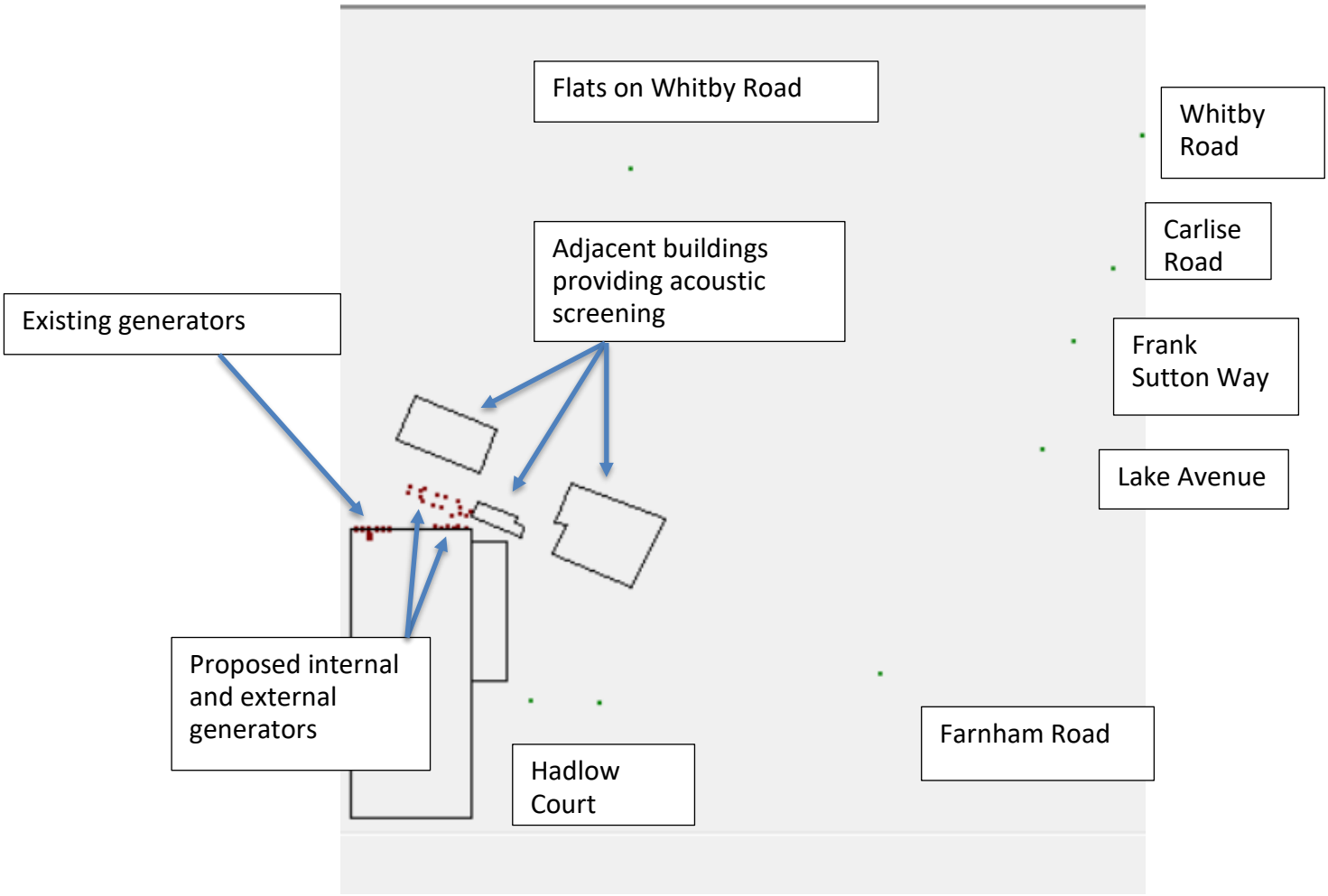
Table 11: Sound power level for inlet louvre to internal generators

Plant	Sound power level (dB)							
	63	125	250	500	1k	2k	4k	8k
Proposed internal Generator inlet louvre	95	97	85	72	68	60	57	52

4.19 To assess noise from the existing and proposed generators, we have used an in-house noise model, the methodology of which is presented in Section 5.0

4.20 Detailed below is a sketch from the model, detailing the location of the data centre itself, the location of the noise sources associated with the generators, the receptors, and adjacent buildings providing some acoustic screening:

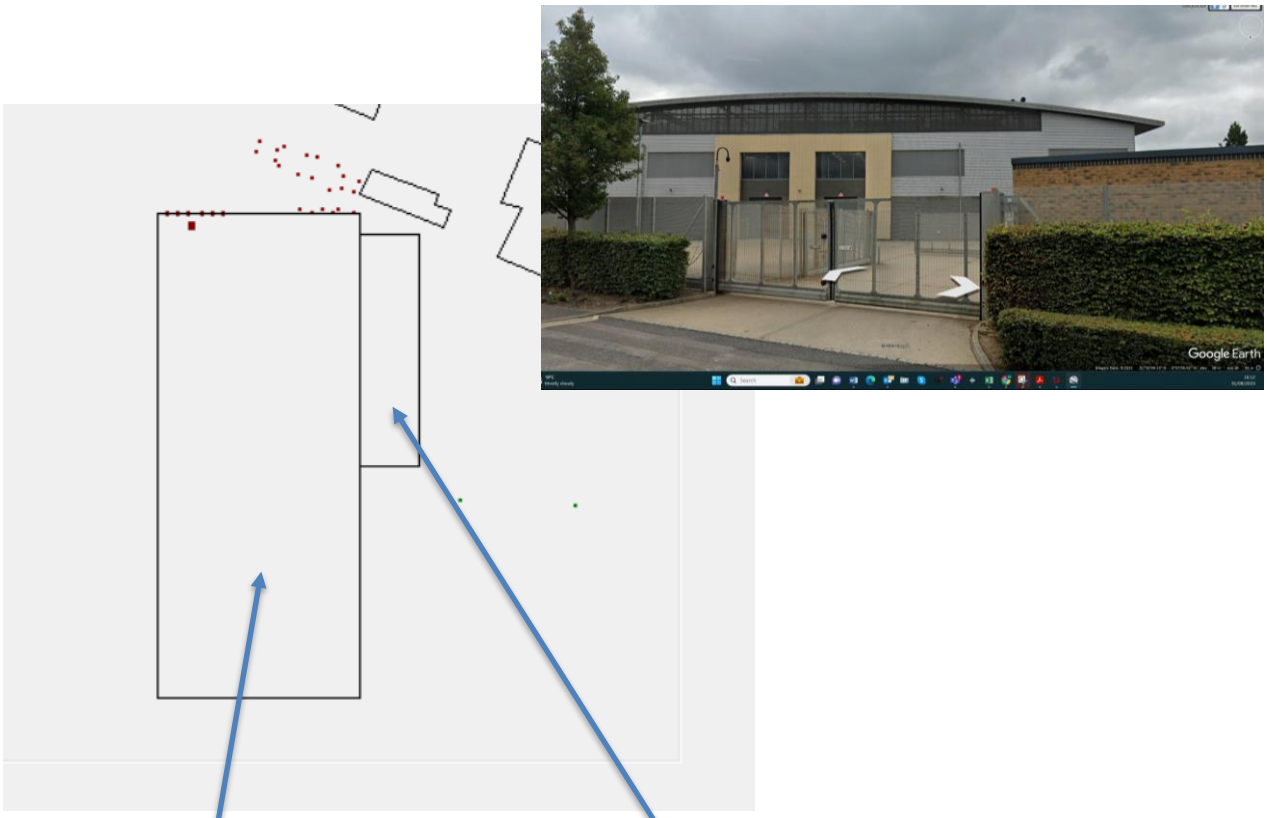
Figure 3: Sketch from noise model



4.21 As stated above, the acoustic model has taken into account screening provided by the adjacent buildings. It is noted that there are a number of additional buildings between the data centre and residential properties which have not at this stage been taken into account, therefore the predicted noise levels should be considered as a worst case scenario, as any additional screening from buildings not currently assessed will reduce noise levels further.

4.22 The details of the buildings assessed are as follows:

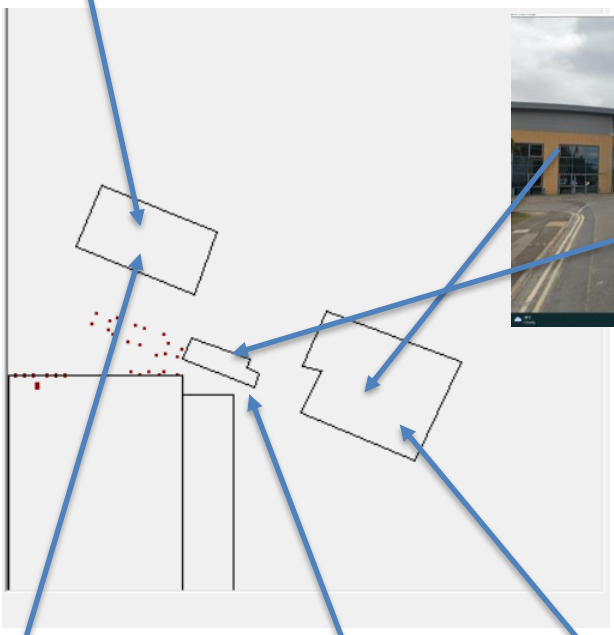
Figure 4: Building details



Grid references for main building +13.7m
SU 96136 80228
SU 96055 80627
SU 96059 80444
SU 96142 80445

Grid references for plantwell +11.6m
SU 96138 80621
SU 96160 80622
SU 96162 80535
SU 96140 80532

Figure 5: Adjacent building details



Grid references for main building +10.0m
SU 96104 80732
SU 96085 80683
SU 96159 80711
SU 96141 80663

Grid references for main building +12.0m
SU 96198 80662
SU 96254 80640
SU 96236 80593
SU96181 80615

Grid references for main building +4.0m
SU 96140 80646
SU96137 80636
SU 96169 80624
SU 96173 80634

5.0 The noise model and prediction methodology

5.1 The noise model employed has been written in-house to provide an accurate prediction method for assessing environmental noise from, in particular, plant and equipment items which can be perceived as being point sources. It has been mainly used for the prediction of noise emanating from superstores.

5.2 There are three input spreadsheets containing:

- noise sources data
- receiver data
- acoustic screening data

These are included in Appendix A.

5.3 The noise sources data include one of the following forms for each item of plant:

- either, octave band sound power levels in the range of 63 to 8000Hz – this being available from manufacturer of many of the supply and extract fans.
- or, octave band sound pressure levels in the range of 63 to 8000Hz – this is available usually for the small, externally mounted split units' condenser fans from the manufacturer's product catalogue when measured at one metre in anechoic conditions, thus allowing straight forward calculation of the equivalent sound power levels.
- or, single value sound pressure levels at a stated distance

5.4 The relative location of the plant using X and Y co-ordinates with an arbitrary datum point and a Z (height) co-ordinate based on supporting steel and screening heights from the main contractor and then the equipment heights based, in this case, on the mechanical services contractor drawings.

5.5 Where known, the area and orientation of the noise outlet is entered together with its location adjacent to either one, two or three reflective surfaces so that the calculation can establish the directivity pattern and outlet reflection losses.

5.6 The receiver data needed are the X, Y and Z co-ordinates so that the relative distance and angle can be calculated between the source and the receiver.

5.7 Finally, several types of acoustic screening may be entered. In this case, this is designated "R" indicating a ring barrier, used to indicate the façade of the building itself.

5.8 The noise model carries out "text book" atmospheric side calculations at each receiver position from each source allowing for the attenuation from such as the calculated distance and screening. The calculations are performed in eight Octave bands from 63 to 8000Hz but can then be summarised as dBA, NR or NC for convenience. In this case, the overall summary levels are in dBA. Calculations for the plant are included in Appendix C. The computer maintains a logarithmic total of the noise levels in Octave bands.

5.9 At the end of each program “run”, the overall day or night time noise level at each receiver position are calculated and ranked in descending order of noise level. Where this ranking shows that the receiver position’s noise level exceeds the noise criterion, each calculation can be interrogated to determine the plant items needing more detailed inspection to establish the attenuation needed. The process is repeated until either the noise level meets the noise criterion or the program demonstrates that other noise control methods are needed. This may take the form of restricting the offending plant’s period of operation or improving the screening or re-selection to give quieter plant.

5.10 Plant noise predictions are shown in summary form; full calculations of noise from each source to each receptor have been provided under separate cover.

6.0 Assessment conclusions

6.1 This assessment has been undertaken in accordance with BS 4142:2014+A1:2019, and BS 8233:2104.

6.2 The generators will only be operational during routine testing, and in the event of a mains power failure.

6.3 The existing generators have been installed within purpose built acoustically treated plantroom, and inlet, outlet and exhaust attenuators.

6.4 The proposed generators will be supplied in purpose built acoustic enclosures, complete with inlet outlet and exhaust attenuators.

6.5 Based on the assessment undertaken, the predicted rating noise level from the existing and proposed generators is +1 dB above the night time background noise climate, with all generators operating in the event of a power outage. Based on the context of this only occurring during a power outage, this would be considered as a low impact at night.

6.6 To further limit the impact of noise from the generators, it is suggested that the routine testing is carried out during sociable daytime hours only.

6.7 This assessment objectively demonstrates that noise arising from the generators, complies with the requirement of paragraph 185 of the NPPF to avoid a significant adverse impact.

APPENDIX A

NOISE SOURCE DATA

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PROJECT :KLON-06	PROJECT No:2221031
CONSULTANT:MT	DATE :05 September 2023

SOUND POWER LEVELS (Lw) & SOUND PRESSURE LEVELS (Lp)
FOR FANS AND OTHER EQUIPMENT

EQUIPMENT NAME/REFERENCE	Lw/Lp	DIST. (m)	OP. TIME DNA	MID FREQUENCY OCTAVE BANDS (HZ) 63	125	250	500	1k	2k	4k	8k
Existing Gen1 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 2 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 3 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 4 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 5 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 6 inlet	Lw		A	80	80	73	66	65	62	54	57
Existing Gen 1 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 2 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 3 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 4 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 5 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 6 outlet	Lw		A	76	73	70	64	62	63	63	59
Existing Gen 1 exhaust	Lw		A	84	91	86	70	65	63	60	42
Existing Gen 2 exhaust	Lw		A	84	91	86	70	65	63	60	42
Existing Gen 3 exhaust	Lw		A	84	91	86	70	65	63	60	42
Existing Gen 4 Exhaust	Lw		A	84	91	86	70	65	63	60	42
Existing Gen 5 exhaust	Lw		A	84	91	86	70	65	63	60	42
Existing Gen 6 exhaust	Lw		A	84	91	86	70	65	63	60	42
Future internal 1 inlet	Lw		A	96	97	86	73	69	60	57	52
Future internal 2 inlet	Lw		A	96	97	86	73	69	60	57	52

NOTES:

1. Lw/Lp:
   Lw means sound power level (dB)
   Lp means sound pressure level at stated distance (dB/m)
2. Operational time (OP.TIME D/N/A):
   D (Day) - could operate at any time between 0700 & 2300
   N (Night) - could operate at any time between 2300 & 0700
   A (All) - could operate at any time during the day and night

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CLIENT :KAO	A Sht: 2 of 3
PROJECT :KLON-06	PROJECT No:2221031
CONSULTANT:MT	DATE :05 September 2023

SOUND POWER LEVELS (Lw) & SOUND PRESSURE LEVELS (Lp)
FOR FANS AND OTHER EQUIPMENT

EQUIPMENT NAME/REFERENCE	Lw/Lp	DIST. (m)	OP. TIME DNA	MID FREQUENCY OCTAVE BANDS (HZ) 63	125	250	500	1k	2k	4k	8k
Future inlternal 3 inlet	Lw		A	96	97	86	73	69	60	57	52
Future internal 1 outlet	Lw		A	98	86	70	68	63	62	59	60
Future internal 2 outlet	Lw		A	98	86	70	68	63	62	59	60
Future internal 3 outlet	Lw		A	98	86	70	68	63	62	59	60
Future internal 1 exhaust	Lw		A	88	87	80	70	68	55	59	65
Future internal 2 exhaust	Lw		A	88	87	80	70	68	55	59	65
Furure internal 3 exhaust	Lw		A	88	87	80	70	68	55	59	65
Future external 4 inlet	Lw		A	95	89	61	51	49	48	45	44
Future external 4 outlet	Lw		A	94	88	69	67	62	60	54	54
Future external 4 container	Lw		A	101	103	92	79	75	66	63	58
Future external 4 exhaust	Lw		A	88	87	80	70	68	55	59	65
Future external 5 inlet	Lw		A	95	89	61	51	49	48	45	44
Future external 5 outlet	Lw		A	94	88	69	67	62	60	54	54
Future externall 5 container	Lw		A	101	103	92	79	75	66	63	58
Future external 5 exhaust	Lw		A	88	87	80	70	68	55	59	65
Future external 6 inlet	Lw		A	95	89	61	51	49	48	45	44
Future external 6 outlet	Lw		A	94	88	69	67	62	60	54	54
Future external 6 container	Lw		A	101	103	92	79	75	66	63	58
Future external 6 exhaust	Lw		A	88	87	80	70	68	55	59	65
Future external 7 inlet	Lw		A	95	89	61	51	49	48	45	44

NOTES:

1. Lw/Lp:
   Lw means sound power level (dB)
   Lp means sound pressure level at stated distance (dB/m)
2. Operational time (OP.TIME D/N/A):
   D (Day) - could operate at any time between 0700 & 2300
   N (Night) - could operate at any time between 2300 & 0700
   A (All) - could operate at any time during the day and night

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CLIENT :KAO	A Sht: 3 of 3
PROJECT :KLON-06	PROJECT No:2221031
CONSULTANT:MT	DATE :05 September 2023

SOUND POWER LEVELS (Lw) & SOUND PRESSURE LEVELS (Lp)
FOR FANS AND OTHER EQUIPMENT

EQUIPMENT NAME/REFERENCE	Lw/Lp	DIST. (m)	OP. TIME DNA	MID FREQUENCY OCTAVE BANDS (HZ) 63	125	250	500	1k	2k	4k	8k
Future external 7 outlet	Lw		A	94	88	69	67	62	60	54	54
Future external 7 container	Lw		A	101	103	92	79	75	66	63	58
Future external 7 exhaust	Lw		A	88	87	80	70	68	55	59	65

NOTES:

1. Lw/Lp:
   Lw means sound power level (dB)
   Lp means sound pressure level at stated distance (dB/m)
2. Operational time (OP.TIME D/N/A):
   D (Day) - could operate at any time between 0700 & 2300
   N (Night) - could operate at any time between 2300 & 0700
   A (All) - could operate at any time during the day and night

APPENDIX B

NOISE MODEL INPUT DATA

SHARPS REDMORE PARTNERSHIP

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Filename : P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1

Date : 05 September 2023

Entries by : MT

Project number : 2221031

Project title : KLON-06

Client's name : KAO

Map/plot details :

Length :3200
Width :3200
Height :250

SHARPS REDMORE PARTNERSHIP

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Source data - description, coordinates, outlet size, percentage to atmosphere, directivity, sound levels and running period.

Filename : P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1

Source Description	Coordinates X(m)	Y(m)	Z(m)	Outlet details A(mm)	B(mm)	Ang.	%	Q	Run DNA	Lp/ Lw	dBA Y/N	Dist. (m)	Mid frequency octave bands 63	125	250	500	1k	2k	4k	8k
Existing Gen1 inlet	128.4	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 2 inlet	132.4	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 3 inlet	136.1	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 4 inlet	141.8	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 5 inlet	145.6	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 6 inlet	149.4	300.2	2.5	0	0	0	100	1	A	W	N	0.0	80	80	73	66	65	62	54	57
Existing Gen 1 outlet	128.4	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 2 outlet	132.4	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 3 outlet	136.1	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 4 outlet	141.8	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 5 outlet	145.6	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 6 outlet	149.4	300.5	8.0	0	0	0	100	1	A	W	N	0.0	76	73	70	64	62	63	63	59
Existing Gen 1 exhaust	137.0	297.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Existing Gen 2 exhaust	137.0	296.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Existing Gen 3 exhaust	137.0	295.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Existing Gen 4 Exhaust	138.0	297.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Existing Gen 5 exhaust	138.0	296.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Existing Gen 6 exhaust	138.0	295.0	14.0	0	0	0	100	1	A	W	N	0.0	84	91	86	70	65	63	60	42
Future internal 1 inlet	198.0	300.5	2.5	0	0	0	100	1	A	W	N	0.0	96	97	86	73	69	60	57	52
Future internal 2 inlet	190.0	300.5	2.5	0	0	0	100	1	A	W	N	0.0	96	97	86	73	69	60	57	52
Future inlternal 3 inlet	182.0	300.5	2.5	0	0	0	100	1	A	W	N	0.0	96	97	86	73	69	60	57	52
Future internal 1 outlet	192.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	98	86	70	68	63	62	59	60
Future internal 2 outlet	186.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	98	86	70	68	63	62	59	60
Future internal 3 outlet	178.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	98	86	70	68	63	62	59	60
Future internal 1 exhaust	192.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Future internal 2 exhaust	186.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Furure internal 3 exhaust	178.0	302.0	14.5	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Future external 4 inlet	184.0	321.0	2.5	0	0	0	100	1	A	W	N	0.0	95	89	61	51	49	48	45	44
Future external 4 outlet	200.0	312.0	2.5	0	0	0	100	1	A	W	N	0.0	94	88	69	67	62	60	54	54
Future external 4 container	192.0	318.0	3.0	0	0	0	100	1	A	W	N	0.0	101	103	92	79	75	66	63	58

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Source data - description, coordinates, outlet size, percentage to atmosphere, directivity, sound levels and running period.

Filename : P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1

Source Description	Coordinates X(m)	Y(m)	Z(m)	Outlet details A(mm)	B(mm)	Ang.	%	Q	Run DNA	Lp/ Lw	dBA Y/N	Dist. (m)	Mid frequency octave bands 63	125	250	500	1k	2k	4k	8k
Future external 4 exhaust	194.0	314.0	4.0	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Future external 5 inlet	182.0	313.5	2.5	0	0	0	100	1	A	W	N	0.0	95	89	61	51	49	48	45	44
Future external 5 outlet	198.0	308.5	2.5	0	0	0	100	1	A	W	N	0.0	94	88	69	67	62	60	54	54
Future externall 5 container	189.0	309.0	3.0	0	0	0	100	1	A	W	N	0.0	101	103	92	79	75	66	63	58
Future external 5 exhaust	193.0	310.0	4.0	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Future external 6 inlet	180.0	322.0	2.5	0	0	0	100	1	A	W	N	0.0	95	89	61	51	49	48	45	44
Future external 6 outlet	163.0	327.0	2.5	0	0	0	100	1	A	W	N	0.0	94	88	69	67	62	60	54	54
Future external 6 container	172.0	325.5	3.0	0	0	0	100	1	A	W	N	0.0	101	103	92	79	75	66	63	58
Future external 6 exhaust	169.0	324.0	4.0	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65
Future external 7 inlet	177.0	315.0	2.5	0	0	0	100	1	A	W	N	0.0	95	89	61	51	49	48	45	44
Future external 7 outlet	161.5	323.0	2.5	0	0	0	100	1	A	W	N	0.0	94	88	69	67	62	60	54	54
Future external 7 container	170.0	318.0	3.0	0	0	0	100	1	A	W	N	0.0	101	103	92	79	75	66	63	58
Future external 7 exhaust	168.5	320.0	5.0	0	0	0	100	1	A	W	N	0.0	88	87	80	70	68	55	59	65

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Receptor data - description and coordinates

Filename : P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1

Receptor Description	Coordinates X(m)	Y(m)	Z(m)	DNA
21 Hadlow Court (grid ref SU 96177 80520)	237.0	194.0	4.5	A
36 Hadlow Court (grid ref SU 96221 80521)	280.0	192.0	4.5	A
92 Farnham Road (grid ref SU 96400 80543)	455.0	210.0	4.5	A
69 Lake Avenue (grid ref SU 96493 80692)	555.0	350.0	4.5	A
2 Frank Sutton Way (grid ref SU 96516 807	575.0	417.0	4.5	A
48 Carlise Road (grid ref SU 96536 80802)	600.0	463.0	4.5	A
70 Whitby Road (grid ref SU 96554 80878)	618.0	545.0	4.5	A
Flats Whitby Road (grid ref SU 96233 8086	300.0	525.0	7.5	A

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Barrier data - description and coordinates

Filename : P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1

Barrier type	Coordinates Start X(m)	Start Y(m)	Start Z(m)	Finish X(m)	Finish Y(m)	Finish Z(m)
R	200.0	300.0	13.7	200.0	120.0	13.7
R	200.0	120.0	13.7	125.0	120.0	13.7
R	125.0	120.0	13.7	125.0	300.0	13.7
R	125.0	300.0	13.7	200.0	300.0	13.7
F	200.0	292.0	11.6	222.0	292.0	11.6
F	222.0	292.0	11.6	222.0	206.0	11.6
F	222.0	206.0	11.6	200.0	206.0	11.6
F	200.0	307.0	4.0	204.0	316.0	4.0
F	204.0	316.0	4.0	229.0	307.0	4.0
F	229.0	307.0	4.0	227.5	303.0	4.0
F	227.5	303.0	4.0	233.0	301.0	4.0
F	233.0	301.0	4.0	231.0	295.0	4.0
F	231.0	295.0	4.0	200.0	307.0	4.0
F	205.0	335.0	10.0	215.0	362.0	10.0
F	215.0	362.0	10.0	165.0	382.0	10.0
F	165.0	382.0	10.0	154.0	356.0	10.0
F	154.0	356.0	10.0	205.0	335.0	10.0
F	300.0	263.0	12.0	251.0	284.0	12.0
F	251.0	284.0	12.0	260.0	302.0	12.0
F	260.0	302.0	12.0	252.0	304.0	12.0
F	252.0	304.0	12.0	262.0	328.0	12.0
F	262.0	328.0	12.0	320.0	306.0	12.0
F	320.0	306.0	12.0	300.0	263.0	12.0

APPENDIX C

PREDICTED NOISE LEVEL – SUMMARY

SHARPS REDMORE PARTNERSHIP

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Night-time overall receptor listings

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Flats Whitby Road (grid ref SU 96233 80860)	51	49	38	25	22	15	13	16	35
2 Frank Sutton Way (grid ref SU 96516 80754)	49	49	38	26	22	14	12	12	35
48 Carlise Road (grid ref SU 96536 80802)	48	48	37	24	20	12	10	11	34
36 Hadlow Court (grid ref SU 96221 80521)	51	47	36	22	17	7	4	8	33
69 Lake Avenue (grid ref SU 96493 80692)	48	47	36	22	18	6	3	5	33
21 Hadlow Court (grid ref SU 96177 80520)	50	47	34	19	12	0	0	0	33
70 Whitby Road (grid ref SU 96554 80878)	47	46	35	23	19	8	6	10	32
92 Farnham Road (grid ref SU 96400 80543)	48	46	35	21	14	0	0	3	32

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Night-time source sound pressure levels at receptor: 21 Hadlow Court (grid ref SU 96177 80520)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 4 container	41	40	26	10	5	0	0	0	25
Future externall 5 container	40	40	26	10	5	0	0	0	25
Future external 6 container	39	39	25	9	4	0	0	0	24
Future external 7 container	38	37	23	8	4	0	0	0	22
Future internal 1 outlet	42	29	11	6	0	0	0	0	18
Future internal 1 inlet	34	32	18	4	0	0	0	0	18
Future internal 1 exhaust	32	30	21	8	4	0	0	0	17
Future internal 2 outlet	41	27	9	5	0	0	0	0	17
Future internal 3 outlet	40	27	8	4	0	0	0	0	16
Future internal 2 inlet	32	30	17	4	0	0	0	0	16
Existing Gen 5 exhaust	24	29	21	2	0	0	0	0	16
Existing Gen 3 exhaust	24	29	21	2	0	0	0	0	16
Existing Gen 2 exhaust	24	29	21	2	0	0	0	0	16
Existing Gen 1 exhaust	24	29	21	2	0	0	0	0	16
Existing Gen 4 Exhaust	24	29	21	2	0	0	0	0	16
Existing Gen 6 exhaust	24	29	21	2	0	0	0	0	16
Future internal 2 exhaust	31	28	19	7	2	0	0	0	15
Furure internal 3 exhaust	30	28	18	6	1	0	0	0	15
Future inlternal 3 inlet	30	28	16	3	0	0	0	0	14
Future external 4 inlet	35	26	0	0	0	0	0	0	13
Future external 5 exhaust	29	25	16	3	0	0	0	0	12
Future external 6 inlet	34	25	0	0	0	0	0	0	12
Future external 5 inlet	33	25	0	0	0	0	0	0	11
Future external 4 outlet	33	25	3	0	0	0	0	0	11
Future external 5 outlet	33	24	2	0	0	0	0	0	11
Future external 4 exhaust	28	24	14	2	0	0	0	0	11
Future external 7 inlet	32	23	0	0	0	0	0	0	10
Future external 6 outlet	31	22	0	0	0	0	0	0	9
Future external 7 outlet	31	22	0	0	0	0	0	0	9
Future external 6 exhaust	26	22	13	0	0	0	0	0	9
Future external 7 exhaust	26	22	12	0	0	0	0	0	8
Existing Gen 6 inlet	11	9	2	0	0	0	0	0	0
Existing Gen 4 inlet	11	9	2	0	0	0	0	0	0
Existing Gen 6 outlet	10	4	0	0	0	0	0	0	0
Existing Gen 3 inlet	11	9	2	0	0	0	0	0	0
Existing Gen 5 inlet	11	9	2	0	0	0	0	0	0
Existing Gen1 inlet	10	8	1	0	0	0	0	0	0
Existing Gen 1 outlet	9	3	0	0	0	0	0	0	0
Existing Gen 2 outlet	10	4	0	0	0	0	0	0	0
Existing Gen 4 outlet	10	4	0	0	0	0	0	0	0
Existing Gen 2 inlet	11	9	2	0	0	0	0	0	0
Existing Gen 5 outlet	10	4	0	0	0	0	0	0	0
Existing Gen 3 outlet	10	4	0	0	0	0	0	0	0
Total Free field Lp and dBA	50	47	34	19	12	0	0	0	33

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Night-time source sound pressure levels at receptor: 36 Hadlow Court (grid ref SU 96221 80521)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 4 container	41	40	26	11	4	0	0	0	25
Future external 6 container	40	40	26	10	3	0	0	0	25
Future externall 5 container	40	39	25	9	4	0	0	0	24
Future external 7 container	39	38	24	9	3	0	0	0	23
Future internal 1 exhaust	32	31	24	14	12	0	1	6	20
Future internal 2 outlet	43	30	14	11	5	3	0	0	20
Future internal 2 exhaust	33	31	24	13	10	0	0	2	20
Future internal 1 outlet	42	30	14	12	7	5	1	1	19
Existing Gen 4 Exhaust	25	31	24	6	0	0	0	0	18
Existing Gen 6 exhaust	25	31	24	6	0	0	0	0	18
Existing Gen 5 exhaust	25	31	24	6	0	0	0	0	18
Existing Gen 3 exhaust	25	31	24	6	0	0	0	0	18
Existing Gen 2 exhaust	25	31	24	6	0	0	0	0	18
Existing Gen 1 exhaust	25	31	24	6	0	0	0	0	18
Furure internal 3 exhaust	31	30	22	11	7	0	0	0	18
Future internal 3 outlet	41	29	12	9	2	0	0	0	18
Future internal 1 inlet	33	31	17	2	0	0	0	0	16
Future internal 2 inlet	32	30	16	2	0	0	0	0	15
Future inlternal 3 inlet	30	28	15	2	0	0	0	0	14
Future external 4 outlet	35	26	5	0	0	0	0	0	13
Future external 5 inlet	34	26	0	0	0	0	0	0	12
Future external 6 inlet	34	25	0	0	0	0	0	0	12
Future external 4 inlet	34	25	0	0	0	0	0	0	12
Future external 4 exhaust	29	25	15	2	0	0	0	0	12
Future external 5 outlet	33	25	3	0	0	0	0	0	11
Future external 7 inlet	33	25	0	0	0	0	0	0	11
Future external 5 exhaust	28	24	14	1	0	0	0	0	11
Future external 6 exhaust	27	23	14	1	0	0	0	0	10
Future external 6 outlet	32	23	2	0	0	0	0	0	10
Future external 7 outlet	31	22	0	0	0	0	0	0	9
Future external 7 exhaust	26	22	12	0	0	0	0	0	8
Existing Gen 6 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 4 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 6 outlet	8	2	0	0	0	0	0	0	0
Existing Gen 3 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 5 inlet	10	7	0	0	0	0	0	0	0
Existing Gen1 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 1 outlet	8	2	0	0	0	0	0	0	0
Existing Gen 2 outlet	8	2	0	0	0	0	0	0	0
Existing Gen 4 outlet	8	2	0	0	0	0	0	0	0
Existing Gen 2 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 5 outlet	8	2	0	0	0	0	0	0	0
Existing Gen 3 outlet	8	2	0	0	0	0	0	0	0
Total Free field Lp and dBA	51	47	36	22	17	7	4	8	33

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Night-time source sound pressure levels at receptor: 92 Farnham Road (grid ref SU 96400 80543)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future externall 5 container	40	40	28	12	6	0	0	0	26
Future external 7 container	39	39	26	11	4	0	0	0	24
Future external 4 container	38	38	24	8	1	0	0	0	23
Future external 6 container	38	37	24	8	2	0	0	0	23
Future internal 1 inlet	36	36	24	10	5	0	0	0	22
Future internal 2 inlet	32	31	17	2	0	0	0	0	16
Existing Gen 5 exhaust	21	28	22	6	0	0	0	0	16
Existing Gen 1 exhaust	21	28	22	6	0	0	0	0	16
Existing Gen 4 Exhaust	21	28	22	6	0	0	0	0	16
Existing Gen 6 exhaust	21	28	22	6	0	0	0	0	16
Existing Gen 2 exhaust	21	28	22	6	0	0	0	0	16
Existing Gen 3 exhaust	21	28	22	6	0	0	0	0	16
Furure internal 3 exhaust	28	26	19	9	6	0	0	3	15
Future internal 3 outlet	38	25	9	7	1	0	0	0	15
Future inlternal 3 inlet	30	29	15	0	0	0	0	0	14
Future internal 1 exhaust	26	25	18	8	5	0	0	0	14
Future internal 2 exhaust	26	25	17	7	4	0	0	0	13
Future internal 1 outlet	36	24	8	6	0	0	0	0	13
Future internal 2 outlet	36	24	7	5	0	0	0	0	13
Future external 7 inlet	34	26	0	0	0	0	0	0	12
Future external 5 inlet	33	26	0	0	0	0	0	0	12
Future external 6 inlet	32	24	0	0	0	0	0	0	11
Future external 4 inlet	32	24	0	0	0	0	0	0	11
Future external 5 exhaust	26	24	15	2	0	0	0	0	11
Future external 5 outlet	32	24	3	0	0	0	0	0	11
Future external 7 outlet	31	24	3	0	0	0	0	0	10
Future external 7 exhaust	26	23	14	2	0	0	0	0	10
Future external 6 outlet	31	23	2	0	0	0	0	0	10
Future external 4 exhaust	26	23	13	1	0	0	0	0	9
Future external 6 exhaust	25	22	13	0	0	0	0	0	9
Future external 4 outlet	30	22	1	0	0	0	0	0	9
Existing Gen 6 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 4 inlet	10	7	0	0	0	0	0	0	0
Existing Gen 6 outlet	7	1	0	0	0	0	0	0	0
Existing Gen 3 inlet	9	7	0	0	0	0	0	0	0
Existing Gen 5 inlet	10	7	0	0	0	0	0	0	0
Existing Gen1 inlet	8	5	0	0	0	0	0	0	0
Existing Gen 1 outlet	5	0	0	0	0	0	0	0	0
Existing Gen 2 outlet	5	0	0	0	0	0	0	0	0
Existing Gen 4 outlet	7	1	0	0	0	0	0	0	0
Existing Gen 2 inlet	8	5	0	0	0	0	0	0	0
Existing Gen 5 outlet	7	1	0	0	0	0	0	0	0
Existing Gen 3 outlet	7	1	0	0	0	0	0	0	0
Total Free field Lp and dBA	48	46	35	21	14	0	0	3	32

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Night-time source sound pressure levels at receptor: 69 Lake Avenue (grid ref SU 96493 80692)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 6 container	41	43	32	19	15	6	3	0	29
Future external 7 container	38	39	27	12	7	0	0	0	25
Future external 4 container	38	39	26	11	4	0	0	0	24
Future externall 5 container	36	35	22	6	0	0	0	0	21
Future external 6 exhaust	28	27	20	10	8	0	0	5	16
Existing Gen 4 Exhaust	20	27	21	5	0	0	0	0	15
Existing Gen 5 exhaust	20	27	21	5	0	0	0	0	15
Existing Gen 1 exhaust	20	27	21	5	0	0	0	0	15
Existing Gen 6 exhaust	20	27	21	4	0	0	0	0	15
Existing Gen 2 exhaust	20	27	21	4	0	0	0	0	15
Future external 6 inlet	35	29	1	0	0	0	0	0	15
Future external 6 outlet	34	28	9	7	2	0	0	0	14
Future external 7 outlet	34	28	9	7	2	0	0	0	14
Existing Gen 3 exhaust	19	26	20	3	0	0	0	0	14
Future internal 2 inlet	29	28	14	0	0	0	0	0	13
Future inlternal 3 inlet	29	27	14	0	0	0	0	0	13
Future internal 1 inlet	29	27	14	0	0	0	0	0	13
Future internal 2 exhaust	25	24	16	6	4	0	0	0	12
Future internal 1 exhaust	25	24	16	6	4	0	0	0	12
Future external 4 inlet	33	26	0	0	0	0	0	0	12
Future external 7 exhaust	25	24	16	5	3	0	0	0	12
Future internal 1 outlet	35	23	6	4	0	0	0	0	12
Future internal 2 outlet	35	23	6	4	0	0	0	0	12
Furure internal 3 exhaust	24	23	15	5	3	0	0	0	11
Future internal 3 outlet	34	22	5	3	0	0	0	0	11
Future external 7 inlet	31	23	0	0	0	0	0	0	10
Future external 5 inlet	31	23	0	0	0	0	0	0	10
Future external 4 exhaust	24	21	11	0	0	0	0	0	8
Future external 4 outlet	28	20	0	0	0	0	0	0	7
Future external 5 exhaust	23	20	10	0	0	0	0	0	7
Future external 5 outlet	28	19	0	0	0	0	0	0	7
Existing Gen 6 inlet	14	12	2	0	0	0	0	0	0
Existing Gen 4 inlet	14	12	3	0	0	0	0	0	0
Existing Gen 6 outlet	11	7	2	0	0	0	0	0	0
Existing Gen 3 inlet	13	11	2	0	0	0	0	0	0
Existing Gen 5 inlet	14	12	2	0	0	0	0	0	0
Existing Gen1 inlet	13	11	2	0	0	0	0	0	0
Existing Gen 1 outlet	11	6	2	0	0	0	0	0	0
Existing Gen 2 outlet	11	6	1	0	0	0	0	0	0
Existing Gen 4 outlet	11	7	2	0	0	0	0	0	0
Existing Gen 2 inlet	13	11	2	0	0	0	0	0	0
Existing Gen 5 outlet	11	7	2	0	0	0	0	0	0
Existing Gen 3 outlet	11	6	1	0	0	0	0	0	0
Total Free field Lp and dBA	48	47	36	22	18	6	3	5	33

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Night-time source sound pressure levels at receptor: 2 Frank Sutton Way (grid ref SU 96516 80754)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 6 container	41	43	32	19	15	6	3	0	29
Future external 7 container	41	43	32	19	15	6	3	0	29
Future external 4 container	41	43	32	19	15	6	3	0	29
Future externall 5 container	38	40	28	13	8	0	0	0	26
Future inlternal 3 inlet	32	32	19	4	0	0	0	0	17
Future internal 2 inlet	31	31	18	2	0	0	0	0	16
Future external 7 exhaust	28	27	20	10	8	0	0	5	16
Future external 6 exhaust	28	27	20	10	8	0	0	5	16
Future external 4 exhaust	28	27	20	10	8	0	0	5	16
Future external 7 inlet	35	29	1	0	0	0	0	0	15
Future external 6 inlet	35	29	1	0	0	0	0	0	15
Future external 4 inlet	35	29	1	0	0	0	0	0	15
Future external 5 inlet	35	29	1	0	0	0	0	0	15
Future internal 1 inlet	30	29	16	0	0	0	0	0	15
Furure internal 3 exhaust	26	25	18	8	5	0	0	2	14
Existing Gen 5 exhaust	18	25	20	4	0	0	0	0	14
Existing Gen 1 exhaust	18	25	20	4	0	0	0	0	14
Existing Gen 2 exhaust	18	25	20	4	0	0	0	0	14
Existing Gen 4 Exhaust	18	25	20	4	0	0	0	0	14
Existing Gen 3 exhaust	18	25	20	4	0	0	0	0	14
Existing Gen 6 exhaust	18	25	20	4	0	0	0	0	14
Future internal 2 exhaust	26	25	17	7	4	0	0	3	13
Future external 7 outlet	33	27	8	6	1	0	0	0	13
Future internal 1 exhaust	26	24	17	6	4	0	0	4	13
Future internal 3 outlet	36	24	8	6	0	0	0	0	13
Future internal 2 outlet	36	24	7	5	0	0	0	0	13
Future internal 1 outlet	36	23	7	4	0	0	0	0	12
Future external 5 exhaust	25	24	16	6	4	0	0	0	12
Existing Gen 2 inlet	19	19	12	5	4	1	0	0	10
Existing Gen 3 inlet	19	19	12	5	4	1	0	0	10
Existing Gen1 inlet	19	19	12	5	4	1	0	0	10
Existing Gen 5 inlet	19	19	12	5	4	1	0	0	10
Existing Gen 4 inlet	19	19	12	5	4	1	0	0	10
Future external 6 outlet	29	23	3	0	0	0	0	0	9
Existing Gen 3 outlet	15	12	9	3	1	2	2	0	8
Existing Gen 6 outlet	14	12	9	3	1	2	2	0	8
Existing Gen 5 outlet	15	12	9	3	1	2	2	0	8
Existing Gen 1 outlet	15	12	9	3	1	2	2	0	8
Existing Gen 2 outlet	15	12	9	3	1	2	2	0	8
Existing Gen 4 outlet	15	12	9	3	1	2	2	0	8
Future external 4 outlet	29	21	0	0	0	0	0	0	8
Future external 5 outlet	28	20	0	0	0	0	0	0	7
Existing Gen 6 inlet	17	17	10	2	1	0	0	0	7
Total Free field Lp and dBA	49	49	38	26	22	14	12	12	35

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Night-time source sound pressure levels at receptor: 48 Carlise Road (grid ref SU 96536 80802)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 4 container	40	42	31	18	14	5	2	0	28
Future external 7 container	40	42	31	18	14	5	2	0	28
Future externall 5 container	38	39	28	14	8	0	0	0	25
Future external 6 container	36	38	26	12	7	0	0	0	24
Future inlternal 3 inlet	31	31	19	5	0	0	0	0	17
Future internal 2 inlet	30	31	18	4	0	0	0	0	16
Future internal 1 inlet	30	30	17	3	0	0	0	0	15
Future external 7 exhaust	27	26	19	9	7	0	0	4	15
Future external 4 exhaust	27	26	19	9	7	0	0	4	15
Future internal 1 exhaust	27	26	19	9	7	0	0	4	15
Future internal 2 exhaust	27	26	19	9	7	0	0	4	15
Furure internal 3 exhaust	27	26	19	9	7	0	0	4	15
Future internal 1 outlet	37	25	9	7	2	1	0	0	14
Future internal 2 outlet	37	25	9	7	2	1	0	0	14
Future internal 3 outlet	37	25	9	7	2	1	0	0	14
Future external 4 inlet	34	28	0	0	0	0	0	0	14
Future external 7 inlet	34	28	0	0	0	0	0	0	14
Future external 5 inlet	34	28	0	0	0	0	0	0	14
Future external 6 inlet	34	28	0	0	0	0	0	0	14
Existing Gen 1 exhaust	17	24	19	3	0	0	0	0	12
Existing Gen 6 exhaust	17	24	19	3	0	0	0	0	12
Existing Gen 4 Exhaust	17	24	19	3	0	0	0	0	12
Existing Gen 3 exhaust	17	24	19	3	0	0	0	0	12
Existing Gen 2 exhaust	17	24	19	3	0	0	0	0	12
Existing Gen 5 exhaust	17	24	19	3	0	0	0	0	12
Future external 5 exhaust	25	23	16	5	3	0	0	0	12
Future external 6 exhaust	24	22	15	4	2	0	0	0	11
Future external 7 outlet	29	23	3	0	0	0	0	0	9
Existing Gen 2 inlet	18	18	11	4	3	0	0	0	9
Existing Gen 3 inlet	18	18	11	4	3	0	0	0	9
Existing Gen1 inlet	18	18	11	4	3	0	0	0	9
Existing Gen 5 inlet	18	18	11	4	3	0	0	0	9
Existing Gen 4 inlet	18	18	11	4	3	0	0	0	9
Existing Gen 6 inlet	18	18	11	4	3	0	0	0	9
Future external 4 outlet	28	20	0	0	0	0	0	0	7
Future external 6 outlet	28	20	0	0	0	0	0	0	7
Future external 5 outlet	27	20	0	0	0	0	0	0	7
Existing Gen 1 outlet	14	11	8	2	0	1	1	0	6
Existing Gen 2 outlet	14	11	8	2	0	1	1	0	6
Existing Gen 4 outlet	14	11	8	2	0	1	1	0	6
Existing Gen 3 outlet	14	11	8	2	0	1	1	0	6
Existing Gen 6 outlet	14	11	8	2	0	1	1	0	6
Existing Gen 5 outlet	14	11	8	2	0	1	1	0	6
Total Free field Lp and dBA	48	48	37	24	20	12	10	11	34

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Night-time source sound pressure levels at receptor: 70 Whitby Road (grid ref SU 96554 80878)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future external 4 container	39	41	30	17	13	4	1	0	27
Future externall 5 container	39	41	30	17	13	4	1	0	27
Future external 7 container	36	37	26	12	8	0	0	0	23
Future external 6 container	33	33	19	4	0	0	0	0	18
Future inlternal 3 inlet	31	32	20	5	0	0	0	0	18
Future internal 2 inlet	30	30	17	2	0	0	0	0	15
Future internal 1 inlet	29	29	16	1	0	0	0	0	14
Future internal 2 exhaust	26	25	18	8	6	0	0	3	14
Future external 4 exhaust	26	25	18	8	6	0	0	3	14
Future internal 1 exhaust	26	25	18	8	6	0	0	3	14
Future external 5 exhaust	26	25	18	8	6	0	0	3	14
Furure internal 3 exhaust	26	25	18	8	6	0	0	3	14
Future internal 2 outlet	36	24	8	6	1	0	0	0	13
Future internal 3 outlet	36	24	8	6	1	0	0	0	13
Future internal 1 outlet	36	24	8	6	1	0	0	0	13
Future external 4 inlet	33	27	0	0	0	0	0	0	13
Future external 7 inlet	33	27	0	0	0	0	0	0	13
Future external 5 inlet	33	27	0	0	0	0	0	0	13
Future external 6 inlet	33	27	0	0	0	0	0	0	13
Existing Gen 5 exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 6 exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 4 Exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 3 exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 2 exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 1 exhaust	16	23	18	2	0	0	0	0	11
Existing Gen 6 inlet	18	18	11	4	3	0	0	0	9
Future external 4 outlet	28	21	0	0	0	0	0	0	8
Future external 7 exhaust	22	20	12	0	0	0	0	0	7
Existing Gen 4 inlet	17	17	10	3	2	0	0	0	7
Existing Gen 5 inlet	17	17	10	3	2	0	0	0	7
Future external 5 outlet	27	19	0	0	0	0	0	0	6
Existing Gen 6 outlet	14	11	8	2	0	1	1	0	6
Future external 6 exhaust	21	18	8	0	0	0	0	0	4
Future external 7 outlet	26	17	0	0	0	0	0	0	4
Existing Gen 3 inlet	14	14	6	0	0	0	0	0	0
Future external 6 outlet	24	16	0	0	0	0	0	0	0
Existing Gen 2 inlet	14	13	5	0	0	0	0	0	0
Existing Gen 1 outlet	11	7	3	0	0	0	0	0	0
Existing Gen 2 outlet	11	8	4	0	0	0	0	0	0
Existing Gen 4 outlet	13	10	7	1	0	0	0	0	0
Existing Gen 3 outlet	11	8	4	0	0	0	0	0	0
Existing Gen1 inlet	14	13	4	0	0	0	0	0	0
Existing Gen 5 outlet	13	10	7	1	0	0	0	0	0
Total Free field Lp and dBA	47	46	35	23	19	8	6	10	32

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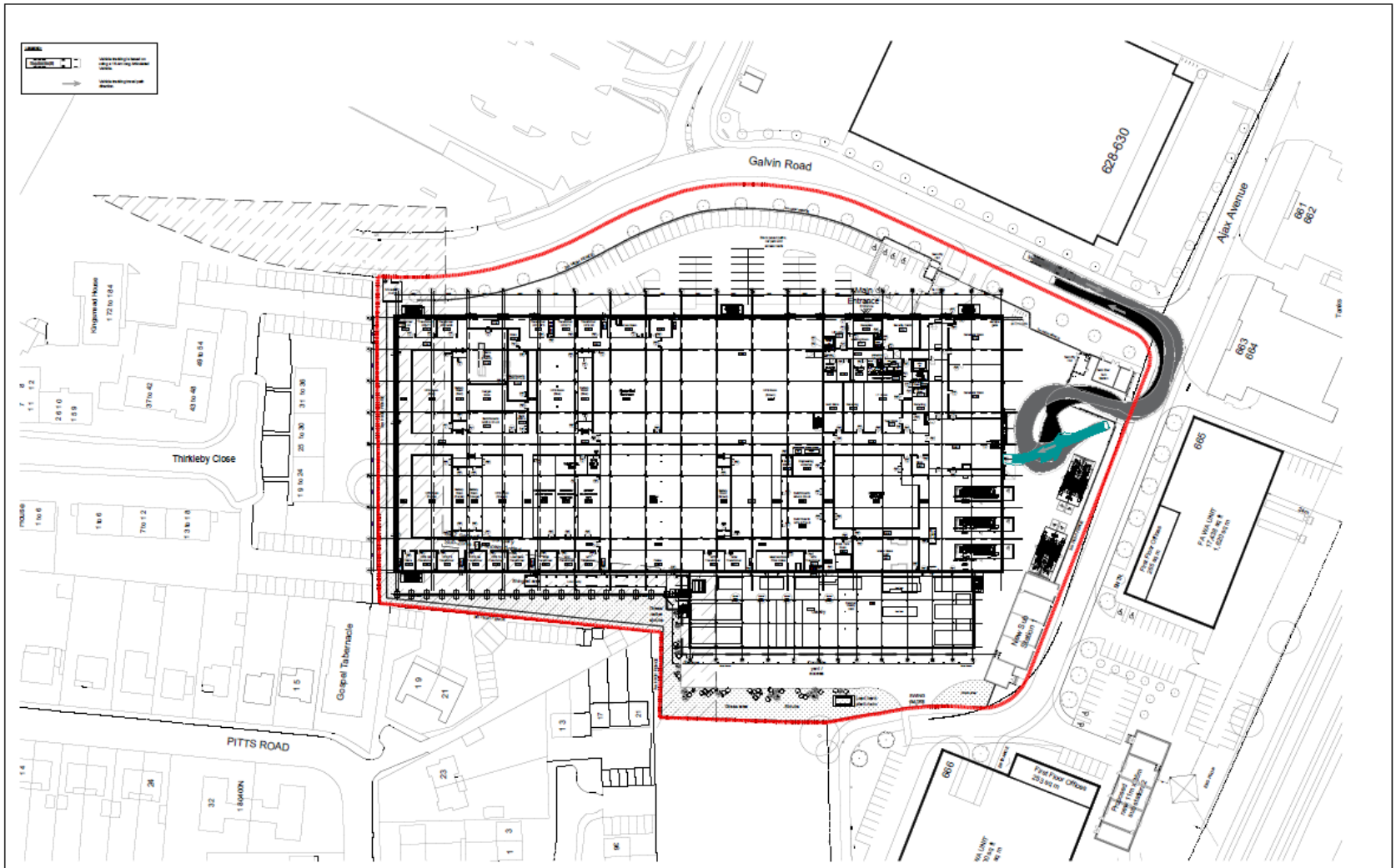
Night-time source sound pressure levels at receptor: Flats Whitby Road (grid ref SU 96233 80860)

Filename: P:\22 - Projects\2221031 Galvin Road Data Centre-MOT\290823_1 rev 1
Date: 05/09/2023

	Mid frequency Octave bands (Hz)								
	63	125	250	500	1k	2k	4k	8k	dBA
Future externall 5 container	41	42	29	14	8	0	0	0	27
Future internal 2 inlet	40	41	30	17	13	4	1	0	27
Future external 4 container	40	40	27	12	5	0	0	0	25
Future internal 1 inlet	37	38	26	11	5	0	0	0	24
Future external 7 container	36	36	22	7	0	0	0	0	21
Future external 6 container	36	36	22	6	0	0	0	0	21
Future inlternal 3 inlet	35	35	21	6	0	0	0	0	20
Future internal 2 exhaust	32	31	24	14	12	0	3	9	20
Future external 5 exhaust	32	31	24	14	12	0	3	9	20
Future internal 1 exhaust	32	31	24	14	12	0	3	9	20
Future internal 1 outlet	42	30	14	12	7	6	3	4	20
Future internal 2 outlet	42	30	14	12	7	6	3	4	20
Future external 4 outlet	39	33	14	12	7	5	0	0	20
Furure internal 3 exhaust	29	28	24	14	12	0	3	9	19
Existing Gen 4 Exhaust	22	29	25	9	4	4	3	0	19
Existing Gen 1 exhaust	22	29	25	9	4	4	3	0	19
Future external 5 outlet	38	32	13	11	6	4	0	0	19
Existing Gen 2 exhaust	22	29	24	9	4	3	2	0	18
Existing Gen 5 exhaust	22	29	24	9	4	3	2	0	18
Existing Gen 3 exhaust	22	29	24	8	4	2	0	0	18
Existing Gen 6 exhaust	22	29	24	8	4	2	0	0	18
Future internal 3 outlet	39	27	14	12	7	6	3	4	18
Future external 4 exhaust	30	28	21	10	8	0	0	2	17
Future external 5 inlet	31	23	0	0	0	0	0	0	10
Future external 7 inlet	31	22	0	0	0	0	0	0	9
Future external 6 inlet	31	22	0	0	0	0	0	0	9
Future external 4 inlet	31	22	0	0	0	0	0	0	9
Future external 7 exhaust	25	22	12	0	0	0	0	0	8
Future external 7 outlet	29	20	0	0	0	0	0	0	7
Future external 6 outlet	28	20	0	0	0	0	0	0	7
Future external 6 exhaust	23	20	11	0	0	0	0	0	7
Existing Gen 6 inlet	16	14	4	0	0	0	0	0	0
Existing Gen 4 inlet	16	14	4	0	0	0	0	0	0
Existing Gen 6 outlet	14	11	7	0	0	0	0	0	0
Existing Gen 3 inlet	16	14	5	0	0	0	0	0	0
Existing Gen 5 inlet	16	14	4	0	0	0	0	0	0
Existing Gen 2 inlet	16	14	5	0	0	0	0	0	0
Existing Gen 1 outlet	14	11	7	0	0	0	0	0	0
Existing Gen 2 outlet	14	11	7	0	0	0	0	0	0
Existing Gen 4 outlet	14	11	7	0	0	0	0	0	0
Existing Gen 3 outlet	14	11	7	0	0	0	0	0	0
Existing Gen1 inlet	16	14	5	0	0	0	0	0	0
Existing Gen 5 outlet	14	11	7	0	0	0	0	0	0
Total Free field Lp and dBA	51	49	38	25	22	15	13	16	35

APPENDIX D

SITE LAYOUT DRAWING



Notes:
1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ANY RELEVANT STRUCTURAL, ARCHITECTURAL AND CONSULTANTS DRAWINGS.
2. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE SERVICES SPECIFICATIONS.
3. ALL DIMENSIONS STATED IN mm, WRITTEN DIMENSIONS TO BE CHECKED ON SITE.
4. REFER TO M&E ENGINEERS DRAWINGS FOR DETAILS OF PLANT AND EQUIPMENT. INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE ONLY.
5. THIS DRAWING MUST NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT.

Revision	Notes	Date	Drawn By	Checked By
A	First Issue	28/05/22	RM	NW

Project	Project Eagle
Client	Kao Data
Date	26.02.2022
Title	Vehicle Tracking
Drawn	RM
Checked	NW
Status	Preliminary
Scale	1:250
Drawing	0507-A-20-100
Rev	A

Nicholas Webb Architects plc
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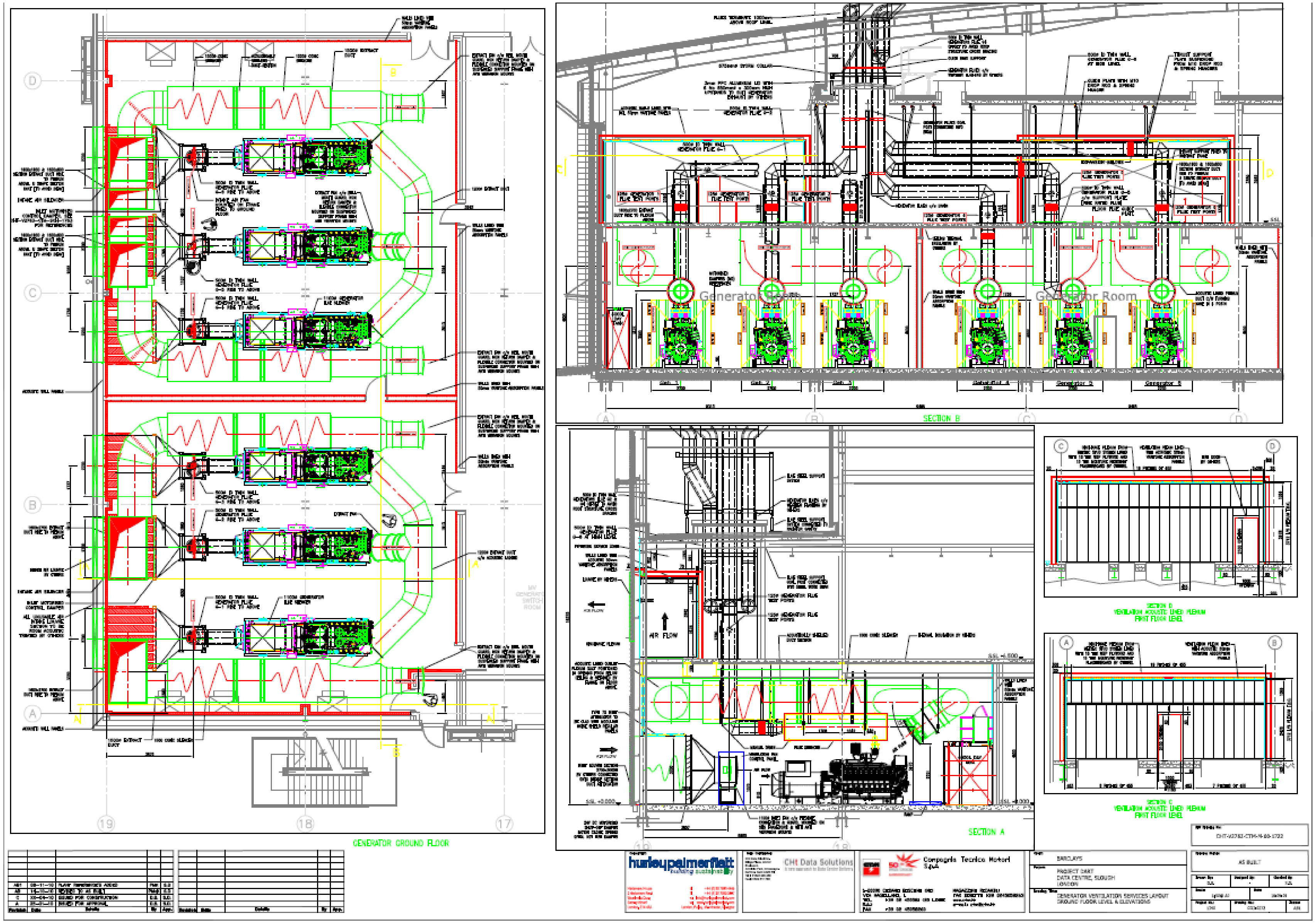
Harpenden Bury Farm
Redbourn
Hertfordshire AL3 7QA
Tel: 01582 791500
Email: admin@nwarchitects.co.uk
www.nwarchitects.co.uk

APPENDIX E

EXISTING GENERATOR LAYOUT DRAWINGS



GENERATOR GROUND FLOOR
SECTION B
Generator Room
Generator Room
SECTION A
AIR FLOW
SECTION D
VENTILATION ACOUSTIC LINED PLENUM
FIRST FLOOR LEVEL
SECTION C
VENTILATION ACOUSTIC LINED PLENUM
FIRST FLOOR LEVEL
hurleypalmerflatt
building sustainability
CHt Data Solutions
Compagnia Tecnica Motori S.p.A
BARCLAYS
PROJECT DART
DATA CENTRE, SLOUGH
LONDON
GENERATOR VENTILATION SERVICES LAYOUT
GROUND FLOOR LEVEL & ELEVATIONS
AS BUILT

APPENDIX F

PROPOSED GENERATOR LAYOUT DRAWINGS


OIL FILL LINE/SUMP LEAK DETECTION
DOUBLE TRENCH DETAIL
TYPICAL OIL TRENCH DETAIL
EXISTING FUEL FILL CABINET DETAILS
3m HIGH FENCE
S&S Elec Sub Station
Security Hut
EXTERNAL SERVICES

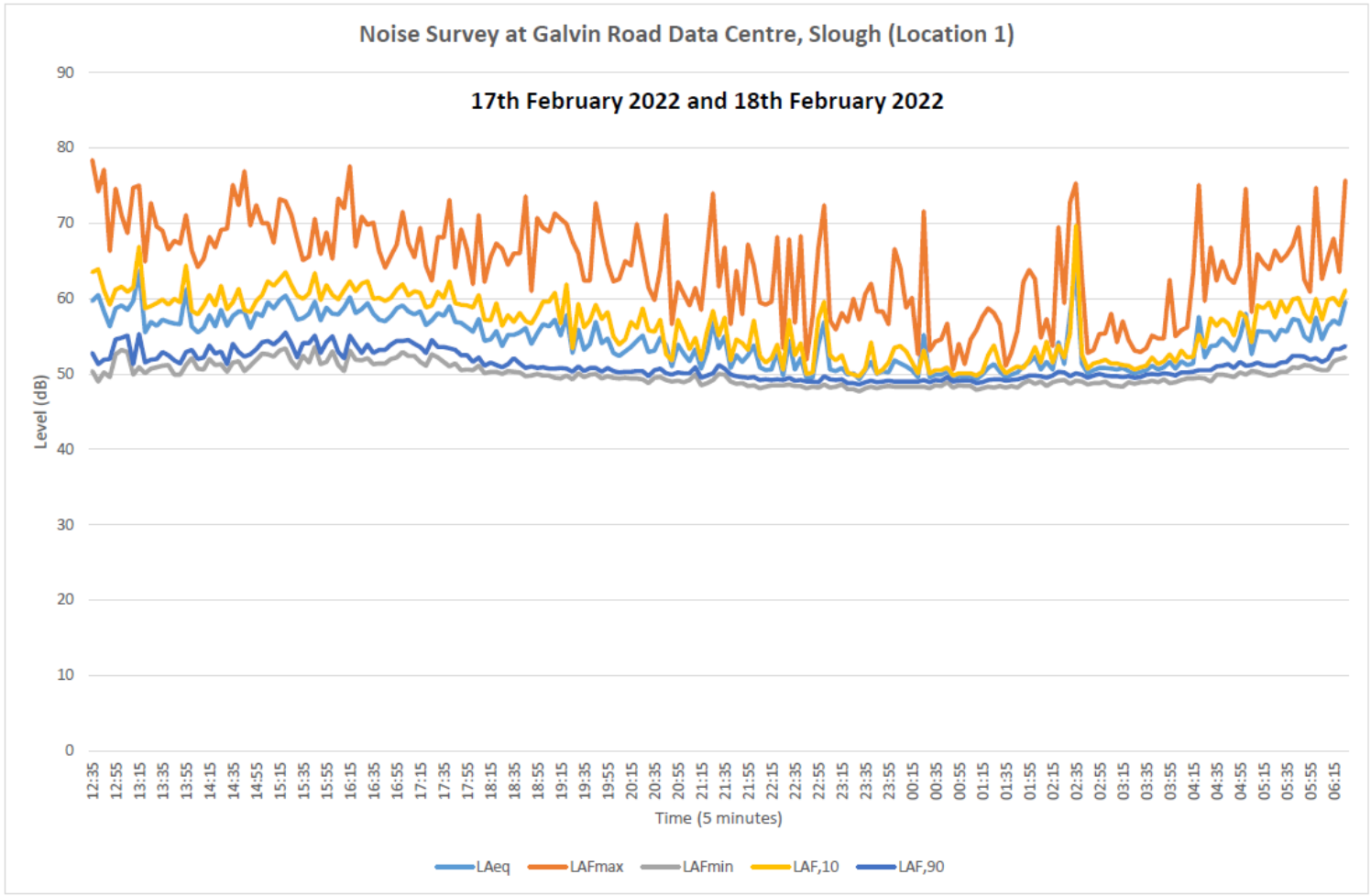
APPENDIX G

CALCULATION TO DETERMINE BREAKOUT FROM INLET LOUVRE

		63	125	250	500	1k	2k	4k	8k
Generator container Lw		101	103	92	79	75	66	63	58
Generator inlet Lw		95	88	58	52	50	49	46	45
Combined Lw		102	103.1	92	79	75	66.1	63.1	58.2
Direct Lp Container									
Directivity		3	3	3	3	3	3	3	3
Distance m	3	-21	-21	-21	-21	-21	-21	-21	-21
Sum of direct attenuation		-18	-18	-18	-18	-18	-18	-18	-18
Direct Lp Inlet									
Directivity		3	3	3	3	3	3	3	3
Distance m	10	-31	-31	-31	-31	-31	-31	-31	-31
Sum of direct attenuation		-28	-28	-28	-28	-28	-28	-28	-28
Reverberant Lp									
Percentage to room %	300	4.77	4.77	4.77	4.77	4.77	4.77	4.77	4.77
Room volume m3	3600	-22	-22	-22	-22	-22	-22	-22	-22
Rev time secs	1	0	0	0	0	0	0	0	0
Sum of Rev attenuation		-16.84	-16.84	-16.84	-16.84	-16.84	-16.84	-16.84	-16.84
Direct Lp Container		83	85	74	61	57	48	45	40
Direct Lp Inlet		67	60	30	24	22	21	18	17
Reverb Lp Combined		85	86	75	62	58	49	46	41
Overall Combined Lp		87	89	78	65	61	52	49	44
Apparent Lw louvre	24	**95**	**97**	**85**	**72**	**68**	**60**	**57**	**52**
based on 10logS-6									

APPENDIX H

ENVIRONMENTAL NOISE SURVEY DATA


Noise Survey at Galvin Road Data Centre, Slough (Location 1)
17th February 2022 and 18th February 2022
Level (dB)
90
80
70
60
50
40
30
20
10
0
12:35
12:55
13:15
13:35
13:55
14:15
14:35
14:55
15:15
15:35
15:55
16:15
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00:15
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01:15
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02:15
02:35
02:55
03:15
03:35
03:55
04:15
04:35
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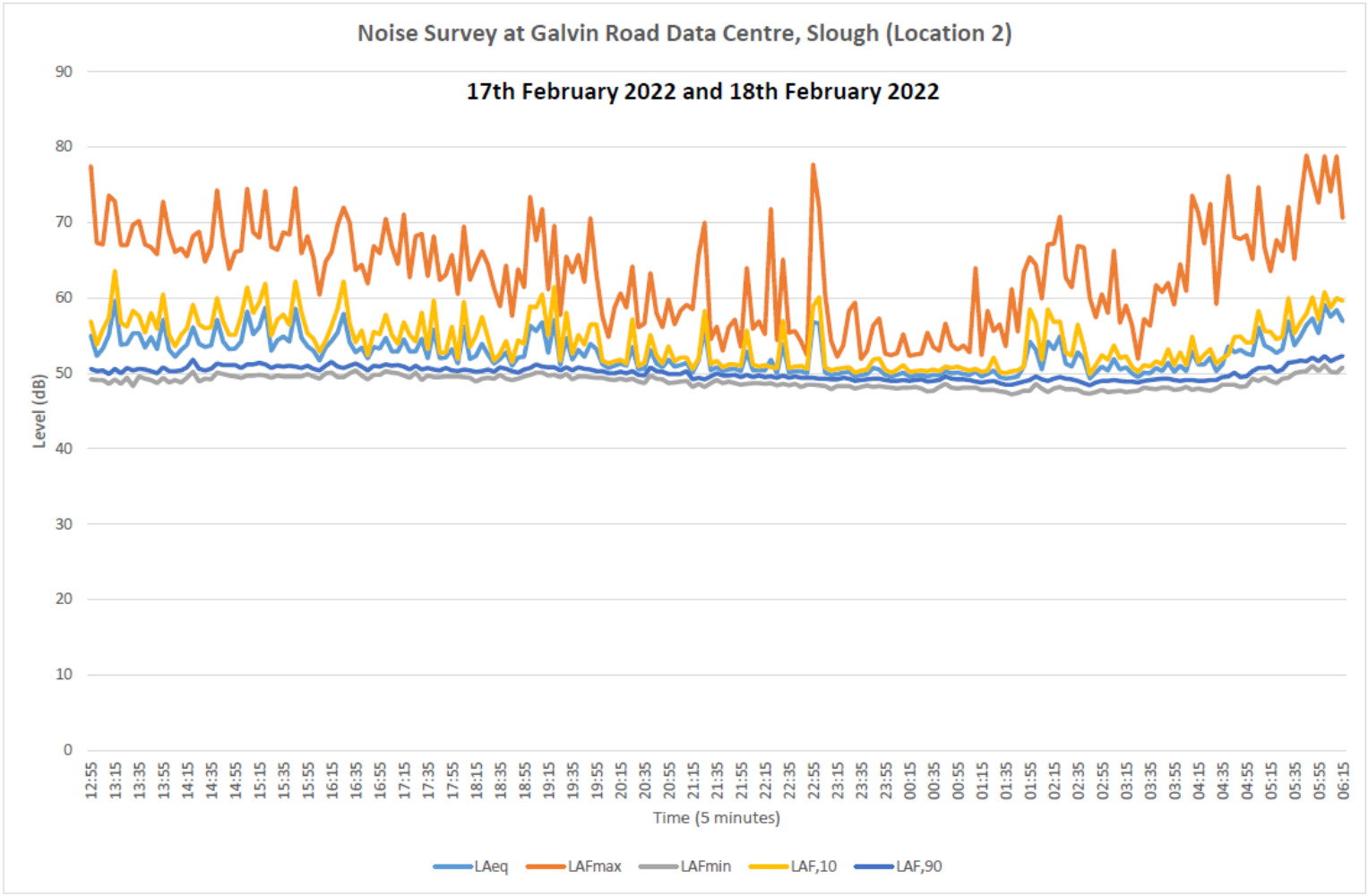
05:15
05:35
05:55
06:15
Time (5 minutes)
LAeq
LAFmax
LAFmin
LAF,10
LAF,90


Noise Survey at Galvin Road Data Centre, Slough (Location 2)
17th February 2022 and 18th February 2022
Level (dB)
90
80
70
60
50
40
30
20
10
0
12:55
13:15
13:35
13:55
14:15
14:35
14:55
15:15
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16:15
16:35
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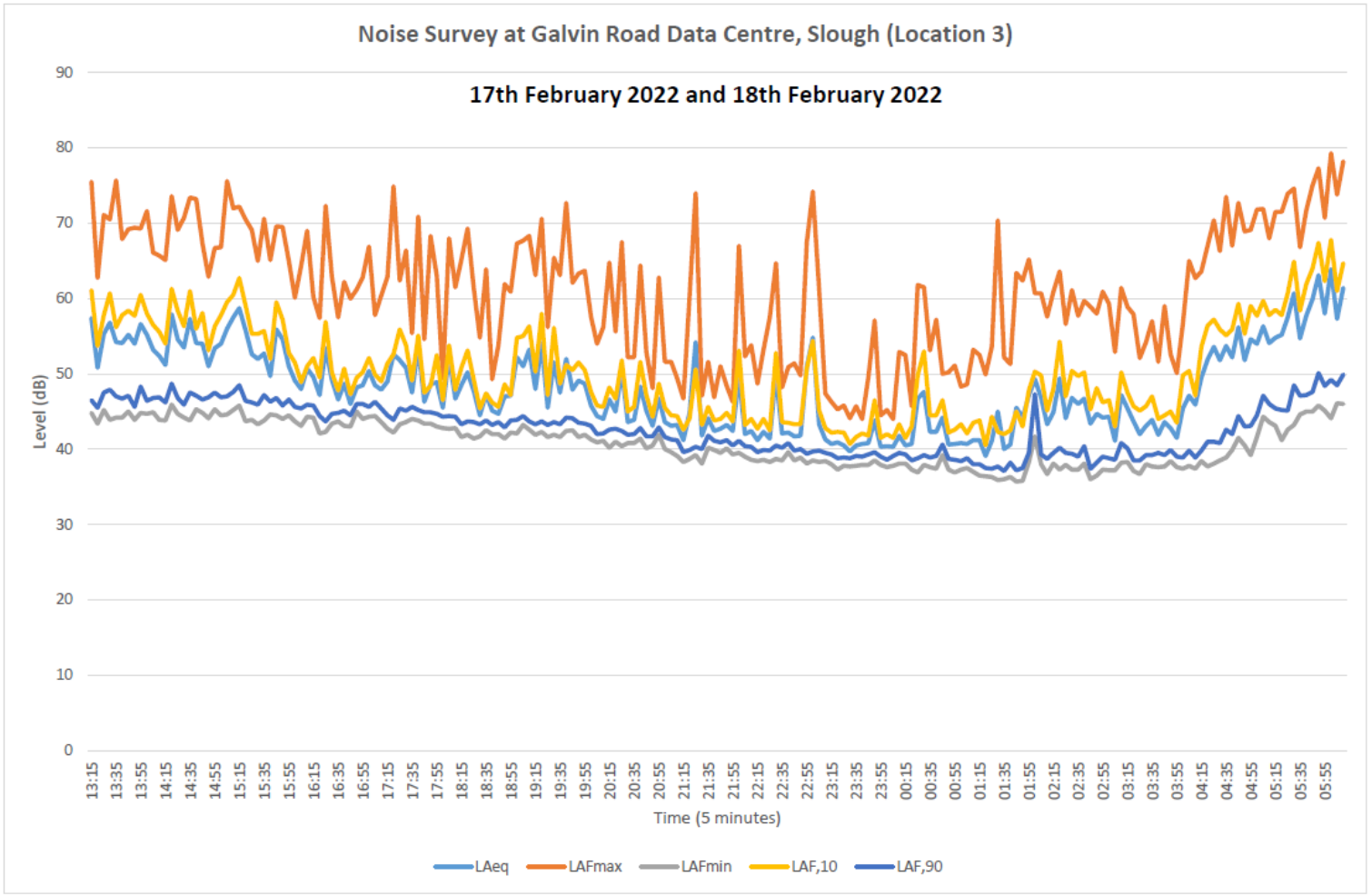
03:15
03:35
03:55
04:15
04:35
04:55
05:15
05:35
05:55
06:15
Time (5 minutes)
LAeq
LAFmax
LAFmin
LAF,10
LAF,90


Noise Survey at Galvin Road Data Centre, Slough (Location 3)
17th February 2022 and 18th February 2022
Level (dB)
90
80
70
60
50
40
30
20
10
0
13:15
13:35
13:55
14:15
14:35
14:55
15:15
15:35
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02:15
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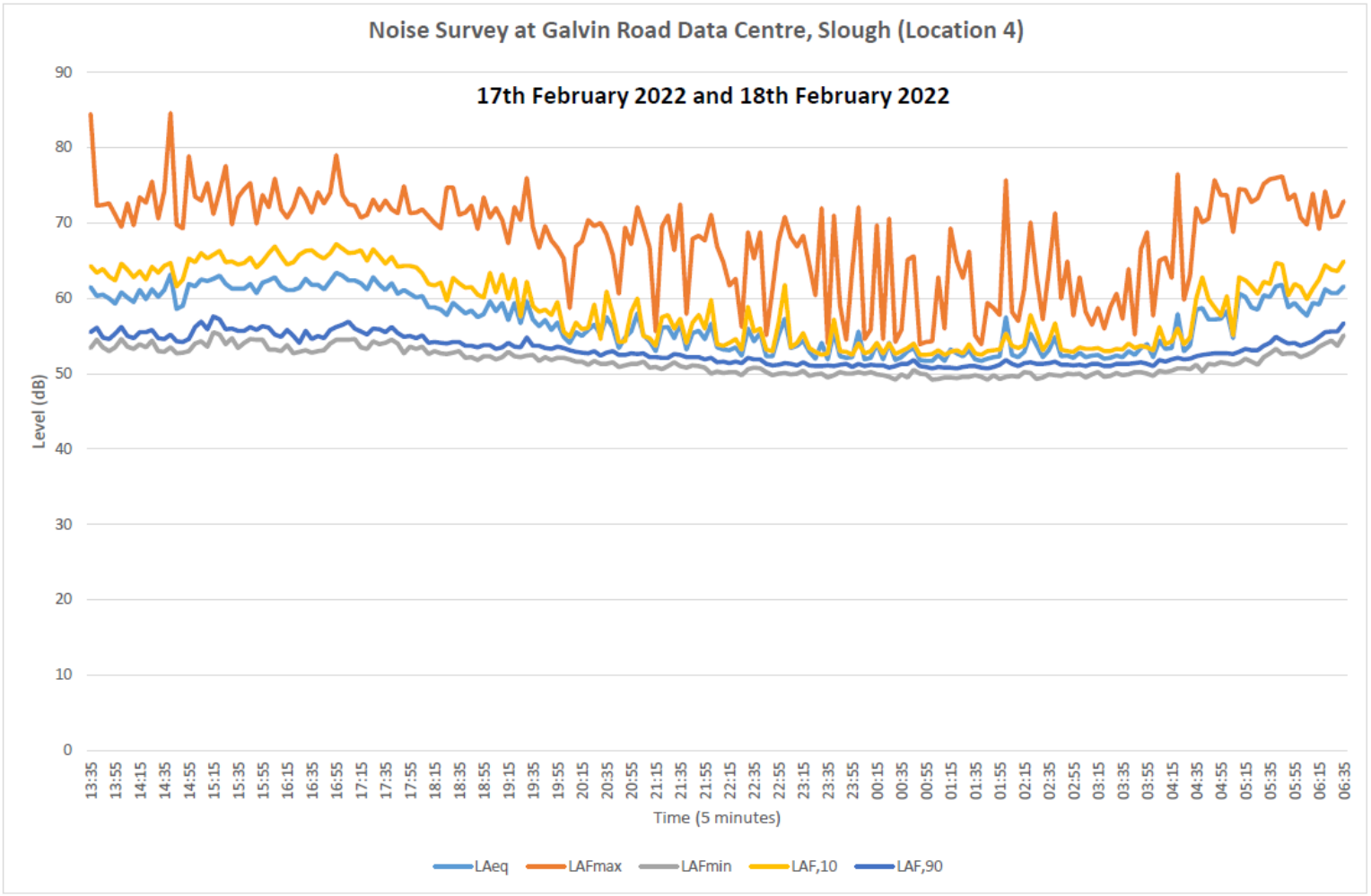
02:55
03:15
03:35
03:55
04:15
04:35
04:55
05:15
05:35
05:55
Time (5 minutes)
LAeq
LAFmax
LAFmin
LAF,10
LAF,90


Noise Survey at Galvin Road Data Centre, Slough (Location 4)
17th February 2022 and 18th February 2022
Level (dB)
90
80
70
60
50
40
30
20
10
0
13:35
13:55
14:15
14:35
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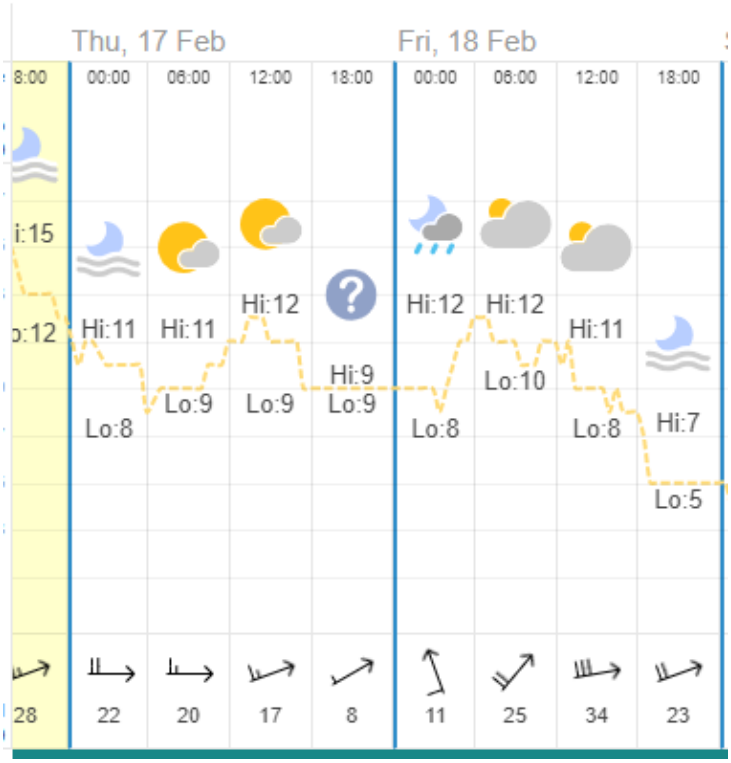
03:35
03:55
04:15
04:35
04:55
05:15
05:35
05:55
06:15
06:35
Time (5 minutes)
LAeq
LAFmax
LAFmin
LAF,10
LAF,90

APPENDIX I

ENVIRONMENTAL NOISE SURVEY – WEATHER DATA

Recorded weather data for Slough



51.48 °N, 0.41 °W

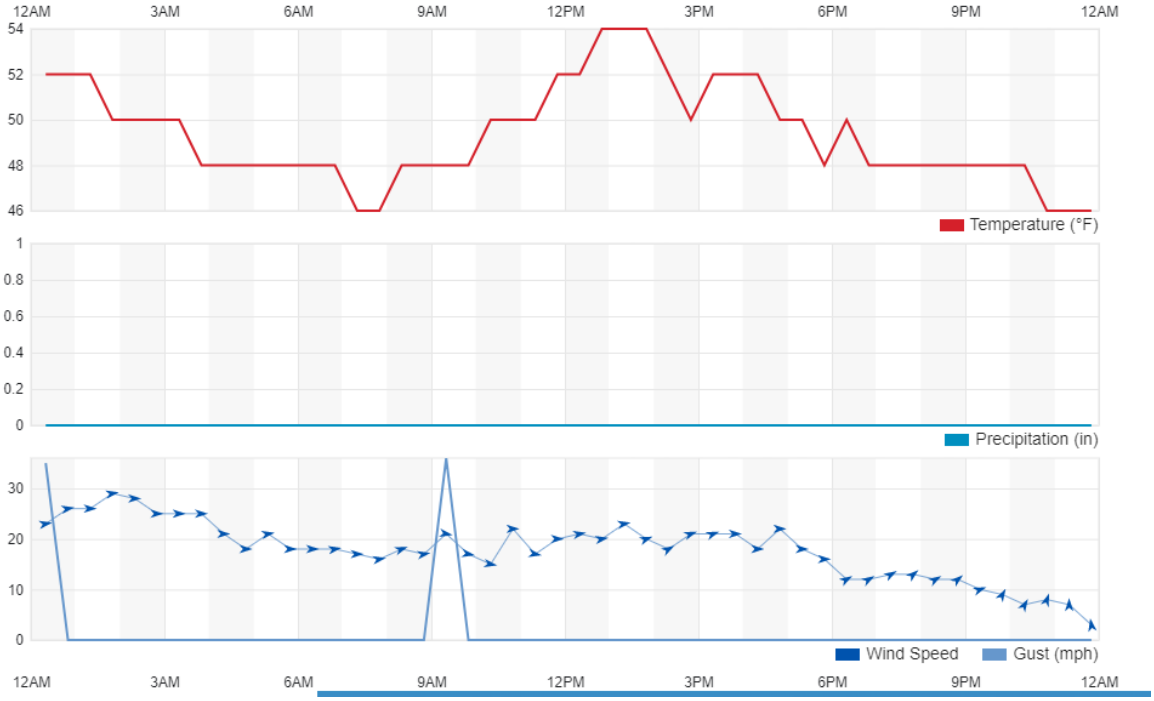
Hounslow, England, United Kingdom Weather History

47° **LONDON HEATHROW AIRPORT STATION** | CHANGE

TODAY | HOURLY | 10-DAY | CALENDAR | **HISTORY** | WUNDERMAP

Daily | Weekly | Monthly

February | 17 | 2022 | View



51.48 °N, 0.41 °W

Hounslow, England, United Kingdom Weather History

47° LONDON HEATHROW AIRPORT STATION | CHANGE

TODAY | HOURLY | 10-DAY | CALENDAR | HISTORY | WUNDERMAP

Daily | Weekly | Monthly

February | 18 | 2022 | View