



Port Talbot ATE

Noise impact assessment

11730.1

22nd May 2024

Revision A



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2 Summary

- 2.1 This report has been prepared to accompany a Planning Application for a proposed new telecommunications site at Port Talbot, West Glamorgan.
- 2.2 Background sound levels have been measured at positions considered representative of the identified noise-sensitive receptors; representative background sound levels have been determined.
- 2.3 Specific details for the plant associated with the development have been provided.
- 2.4 Noise emission from the plant has been determined and noise propagation modelled with proprietary software CadnaA.
- 2.5 The potential noise impact is calculated and rated in accordance with BS 4142.
- 2.6 Considering the context of the existing acoustic environment, the BS 4142 assessment results indicate the likelihood of a low impact.

3 Introduction

- 3.1 A development comprising of a new telecommunications site is proposed at Port Talbot, West Glamorgan; the site location is shown in Figure 1.
- 3.2 Apex Acoustics has been commissioned to undertake a noise survey and feasibility assessment of the noise from plant associated with the development to accompany the Planning Application.
- 3.3 The scope of our instruction includes:
- Measurement of the existing noise environment at a location representative of the nearest noise-sensitive receptors and determine representative background sound levels;
 - Analysis of source noise levels based on data provided by the client;
 - Calculate noise propagation using proprietary noise modelling software to the noise-sensitive receptors and assess the impact in accordance with BS 4142: 2014; and
 - Advise on a rating noise limit and the feasibility of a scheme for noise mitigation to satisfy Local Authority requirements.
- 3.4 This report presents the evaluation of the potential noise impact from plant associated with the proposed development on the identified nearest noise-sensitive receptors (NSRs), to accompany a Planning Application.
- 3.5 The NSRs are identified as Plas Cwm Carw Care Home to the west and the residential properties to the east off Tanygroes Street and Eagle Street, as shown in Figure 1. The closest noise sensitive receptor is adjacent to the site (NSR1).
- 3.6 The potential noise impact from the sources identified is calculated and rated according to the BS 4142 methodology, Reference 1.



Figure 1: Site location plan (approx. site boundary in red, monitoring location in blue, sensitive receptors in orange)

4 Planning policy and noise criteria

4.1 Planning Policy Wales

4.2 Planning Policy Wales (PPW), Reference 2, sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

4.3 In respect of noise, PPW stresses the need to reduce population exposure and mitigate noise pollution, as well as considering a soundscape approach to development.

4.4 In regard to soundscape, PPW states the following which are relevant to this assessment:

4.5 Paragraph 6.7.3:

“Certain sounds, such as those created by trees, birds or water features, can contribute to a sense of tranquillity whilst others can be reassuring as a consequence of their association with the normality of everyday activities. Problematic forms of sound are generally experienced as noise pollution and can affect amenity and be prejudicial to health or a nuisance. Noise action plans drawn up by public bodies aim to prevent and reduce noise levels where necessary and preserve soundscape quality where it is good. Noise levels used to identify priority areas contained in noise action plans are usually set quite high in order to focus resources on the most polluted areas and noise must meet a number of tests before it qualifies as a statutory nuisance. Lower levels of noise, however, can still be annoying or disruptive and impact on amenity and as such should be protected through the planning process wherever necessary. The planning system must protect amenity and it is not acceptable to rely on statutory nuisance under the Environmental Protection Act 1990 to do so.”

4.6 Paragraph 6.7.4

“The planning system should maximise its contribution to achieving the well-being goals, and in particular a healthier Wales, by aiming to reduce average population exposure to air and noise pollution alongside action to tackle high pollution hotspots. In doing so, it should consider the long-term effects of current and predicted levels of air and noise pollution on individuals, society and the environment and identify and pursue any opportunities to reduce, or at least, minimise population exposure to air and noise pollution, and improve soundscapes, where it is practical and feasible to do so.”

4.7 Paragraph 6.7.5:

“In taking forward these broad objectives the key planning policy principle is to consider the effects which proposed developments may have on air or soundscape quality and the effects which existing air or soundscape quality may have on proposed developments. Air Quality and

soundscape influence choice of location and distribution of development and it will be important to consider the relationship of proposed development to existing development and its surrounding area and its potential to exacerbate or create poor air quality or inappropriate soundscapes. The agent of change principle says that a business or person responsible for introducing a change is responsible for managing that change. In practice, for example, this means a developer would have to ensure that solutions to address air quality or noise from nearby pre-existing infrastructure, businesses or venues can be found and implemented as part of ensuring development is acceptable.”

4.8 Paragraph 6.7.6:

“In proposing new development, planning authorities and developers must, therefore:

- address any implication arising as a result of its association with, or location within, air quality management areas, noise action planning priority areas or areas where there are sensitive receptors; [...]
- seek to incorporate measures which reduce overall exposure to air and noise pollution and create appropriate soundscapes.”

4.9 Paragraph 6.7.7:

“To assist decision making it will be important that the most appropriate level of information is provided and it may be necessary for a technical air quality and noise assessment to be undertaken by a suitably qualified and competent person on behalf of the developer.”

4.10 Paragraph 6.7.8:

“Good design, for example setting back buildings from roads to avoid canyon effects and using best practice in terms of acoustic design¹⁶³ to ensure the appropriate and intended acoustic environment of completed developments should be incorporated at an early consideration in the design and planning process. Other mitigation measures must be capable of being effectively implemented for their intended purpose, and could include those related to: [...]

- incorporating green infrastructure, where it can improve air quality by removing air pollution and aiding its dispersal, reduce real or perceived noise levels by absorbing and scattering noise and introducing natural sounds to soften man-made noise, provide areas of relative tranquillity, and reduce exposure by putting a buffer between sources of pollution and receptors.”

4.11 Paragraph 6.7.9:

“When proposing new strategies for development and when allocating sites in development plans it will be important to avoid instances where incremental development of infrastructure, housing, commercial and industrial development creates or exacerbate health and amenity inequalities by

introducing more sensitive receptors into an area or by making existing occupiers more vulnerable to poor air quality or noise. [...]"

4.12 Paragraph 6.7.10:

"Taking a sustainable approach will mean balancing short-term needs against long-term objectives to reduce public exposure to airborne pollution and giving particular consideration to the presence of air quality management areas, noise action planning priority areas and areas with sensitive receptors when proposing new development and particularly when preparing development plans. It will be important to identify wider mitigation solutions to reduce air and noise pollution and to avoid exacerbating problems in existing air quality management areas or noise hotspots [...]"

4.13 Paragraph 6.7.12:

"Planning authorities must consider current and future sources of air and noise pollution as part of developing their strategies for locating new development. The pattern of proposed development should be informed by the sensitivity of, and compatibility of, uses in relation to the sources of airborne pollution and the importance of ensuring appropriate soundscapes. [...]"

4.14 Paragraph 6.7.14:

"Proposed development should be designed wherever possible to prevent adverse effects to amenity, health and the environment but as a minimum to limit or constrain any effects that do occur. In circumstances where impacts are unacceptable, for example where adequate mitigation is unlikely to be sufficient to safeguard local amenity in terms of air quality and the acoustic environment it will be appropriate to refuse permission."

4.15 **Technical Advice Note (Wales) 11, Noise - October 1997 (TAN11)**

4.16 TAN11, Reference 3, provides advice on how the planning system can be used to minimise the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of business.

4.17 The note uses Noise Exposure Categories (NECs) to assist local planning authorities in their consideration of planning applications for residential development near transport related noise sources. Although the development is of a commercial nature, it is still important to have consideration of TAN.

4.18 When assessing a proposal for residential development near a source of noise, local planning authorities should determine into which of the four noise exposure categories (NECs) (Table 1) the proposed site falls, taking account of both day and night-time noise levels. Local planning authorities should then have regard to the advice in the appropriate NEC, as below:

Category	Description
A	Noise need not be considered as a determining factor in granting planning permission, although the noise level at the high end of the category should not be regarded as desirable.
B	Noise should be taken into account when determining planning applications and, where appropriate, conditions imposed to ensure an adequate level of protection.
C	Planning permission should not normally be granted. Where it is considered that permission should be given, for example, because there are no alternative quieter sites available, conditions should be imposed to ensure a commensurate level of protection against noise.
D	Planning permission should normally be refused.

Table 1: Noise Exposure Categories

4.19 A recommended range of noise levels is given in Table 2 for each of the NECs for dwellings exposed to noise from road, rail, air and mixed sources. Where there is a clear need for new residential development in an already noisy area some or all NECs might be increased by up to 3 dB(A) above the recommended levels.

Noise Source	Time Period	TAN 11 NECs			
		A	B	C	D
Road Traffic	0700 - 2300	< 55	55-63	63-72	> 72
	2300 - 0700	< 45	45-57	57-66	> 66
Rail Traffic	0700 - 2300	< 55	55-66	66-74	> 74
	2300 - 0700	< 45	45-59	59-66	> 66
Mixed Sources	0700 - 2300	< 55	55-63	63-72	> 72
	2300 - 0700	< 45	45-57	57-66	> 66

Table 2: Noise levels corresponding to NECs for new dwellings $L_{Aeq,T}$ dB

4.20 **BS 4142**

4.21 BS 4142, Reference 1, defines an assessment method to quantify the potential level for adverse impact from commercial and / or industrial noise sources impacting upon sound sensitive receptors i.e. residential development.

4.22 The method provides an initial estimate of the impact significance by comparing the Rated noise against the background sound levels, as summarised below:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around + 5dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound sources having a low impact, depending on the context.

4.23 With regards to context, BS 4142 notes that where the initial estimate of the impact needs to be modified due to the context, all pertinent factors should be taken into consideration, including the absolute level of the sound:

“Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night”.

5 Existing acoustic environment

5.1 Measurements of the existing noise environment were undertaken at one location between 14:38 hours on the 16th May 2024 and 14:52 hours on the 17th May 2024. The location of the noise measurement is shown on Figure 1.

5.2 The microphone was located at 1.5m above ground level, away from other reflecting surfaces, such that the measurements are considered to be free-field.

5.3 The equipment used is listed in Table 3.

Equipment	Model	Serial no.
Sound Level Meter	NTi XL2	A2A-20287-E0
Calibrator	Larson Davis CAL 200	19379

Table 3: Equipment used

5.4 Both meter and calibrator have current calibration certificates traceable to national standards. The sound level meter has been calibrated within the last two years and calibrator has been calibrated within the last year in accordance with the guidance of BS 4142; calibration certificates are available on request.

5.5 Weather conditions were dry and wind speeds below 5 m/s.

5.6 The time histories of the $L_{Aeq,T}$ recorded are shown in Appendix A. Daytime hours are taken to be 07:00 hours to 23:00 hours, and night time hours 23:00 hours to 07:00 hours.

5.7 Noise sources

5.8 The most significant noise sources affecting the area during the daytime and night-time was road traffic and bird noise. Plant noise from Plas Cwm Carw Care Home was clearly audible on site and at the nearest sensitive receptors, however the noise meter was positioned at a location where plant noise was not dominant.

5.9 Residual sound level, L_r

5.10 As the specific sound source under assessment is not yet operating on-site, the existing acoustic environment measured during the survey period is the L_r .

5.11 A time history of the measured L_r is shown in Appendix A and a summary shown in Table 4.

Assessment period	Noise Level
Daytime (07:00 – 23:00 hrs)	53 dB $L_{Aeq, 16 \text{ hour}}$
Night time (23:00 – 07:00 hrs)	47 dB $L_{Aeq, 6 \text{ hour}}$

Table 4: Residual sound levels representative of the assessment periods

5.12 Background sound levels

5.13 Measured background $L_{A90,15\text{min}}$ sound levels captured are shown in Table 5 and the analysis of the selected representative background sound level is shown in Appendix B.

Measurement Position	Background sound level, dB $L_{A90, 15 \text{ min}}$	
	Daytime	Night-time
P1	44	42

Table 5: Representative background sound levels

6 Noise sources

6.1 Proposed plant and associated noise levels

6.2 The plant assessed is based on information provided by the client.

6.3 The location of the all the sources have been taken from the site layout drawings found in Appendix F.

6.4 The proposed plant which produces noise is understood to comprise of that summarised in Table 6.

Plant	Manufacturer and Model	No. proposed
Antenna	ERICSSON MAS 32 HYBRID AIR 3268 B78K	2
Antenna	ERICSSON AIR 3268	2
Radio	ERICSSON 4490ERS	3
Cabinet	ERICSSON 6130	2
Cabinet	CL Controls MK5B LINK AC	1
Cabinet	VERTIV BFK222023512C/005 20kW OUTDOOR POWER SUPPLY	1

Table 6: Proposed plant

6.5 Datasheets for each piece of plant were provided by the client. The noise levels are included in Appendix C.

6.6 Operation times

6.7 The site is to be operational for a 24 hour period, 7 days a week.

6.8 Noise transmission and propagation

6.9 Noise transmission and propagation is modelled to the NSR based on the noise source data detailed, using proprietary software, CadnaA, Reference 5.

6.10 This models noise propagation outdoors according to ISO 9613, Reference 6.

6.11 The model parameters and assumptions are summarised in Appendix D.

7 Assessment results – based on architects proposals

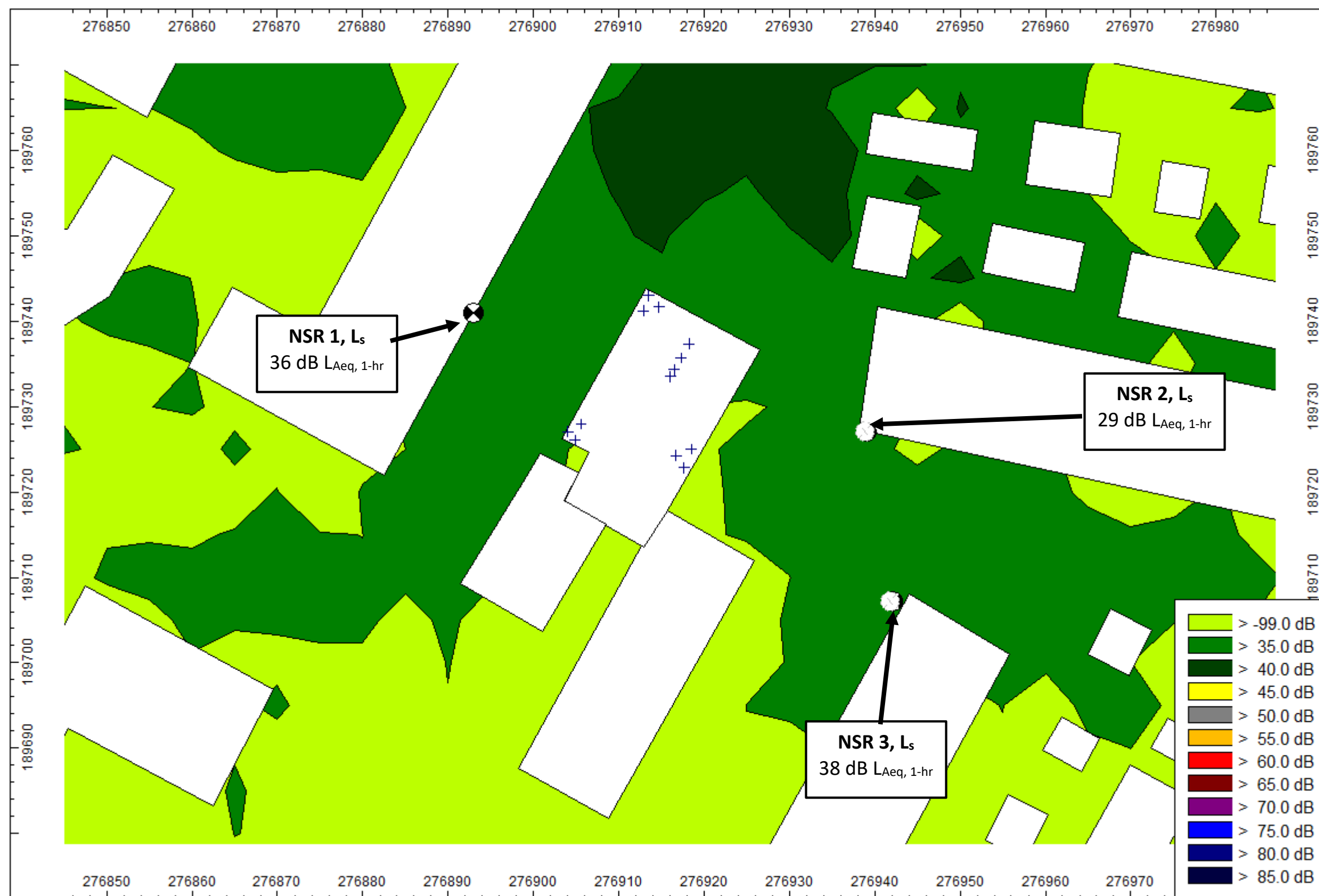


Figure 2: Sound contours at 1.5 m, showing the calculated specific sound level, $L_{Aeq, 1-hr}$ based on current proposals

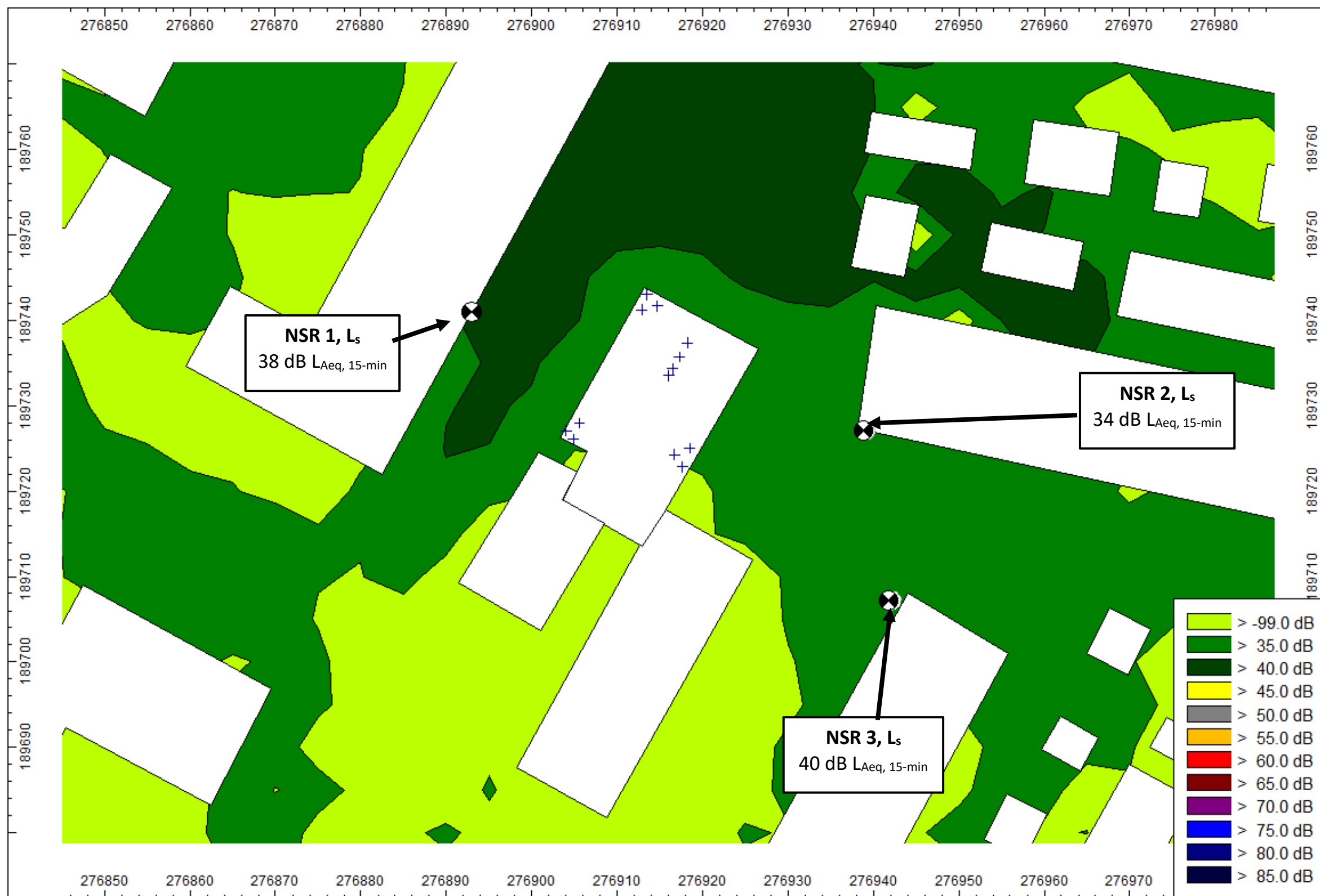


Figure 3: Sound contours at 4 m, showing the calculated specific sound level, $L_{Aeq 15 min}$ based on current proposals

Parameter	Daytime assessment			Night-time assessment			Relevant clause of BS 4142	Commentary
	NSR 1	NSR 2	NSR 3	NSR 1	NSR 2	NSR 3		
Measured residual sound level L_r	53 dB L_{Aeq} , 16 hrs			47 dB L_{Aeq} , 6 hrs			7.3.2	The L_r was measured at a proxy location, where the L_r is considered representative of the assessment position.
Background sound level	44 dB L_{A90} , 15 min			42 dB L_{A90} , 15 min			8.1.4	Considered representative of the assessment period based on statistical analysis detailed in Appendix B
Specific sound level L_s , due to all sources for the required assessment interval	36 dB L_{Aeq} , 1-hr	29 dB L_{Aeq} , 1-hr	38 dB L_{Aeq} , 1-hr	38 dB L_{Aeq} , 15-min	34 dB L_{Aeq} , 15-min	40 dB L_{Aeq} , 15-min	7.3.6	The calculated L_s contours across the site due to all sources during the assessment period are shown in Figure 2 and 3.
Acoustic feature correction	+ 2 dB						9.2	Noise from the plant will be continuous and steady in nature, therefore no penalties for impulsivity or intermittency are considered. There is assumed to be a tonal element due to the noise emanating from the internal fans. A +2 dB penalty has been applied for tonality, which is just perceptible at the receptor location (due to the height difference between the development building and receptor locations).
Rating level, $L_{Ar,Tr}$	38 dB	31 dB	40 dB	40 dB	36 dB	42 dB		
Uncertainty of assessment							10	Background data was obtained over a minimum 16-hr period, accounting for the changing acoustic environment during the daytime and night-time period. The locations are representative of all NSRs in proximity to the proposed development. Weather conditions were favourable during the measurement period. Uncertainty in the calculated impact has been reduced by the use of a calculation method in accordance with ISO 9613-2.
Excess of $L_{Ar,Tr}$ over background sound level (dB)	- 6	- 13	- 4	- 2	- 6	± 0	11	The assessment result indicates the likelihood of a low impact during the daytime and night-time period . When considering the context, a low impact is still concluded.

Table 7: BS 4142 Assessment

7.1 Assessment of context

BS 4142 states the **ALL** of following factors are to be considered for 'context':

1. The absolute sound level e.g. a where the residual level are higher than the rating levels, the rating levels might have less significance.
2. The character and level of residual sound compared to character of the specific sound – this might include acoustic features such as frequency content, but also existing soundscape features e.g. An agricultural soundscape, industrial soundscape etc.
3. The sensitivity of the receptor

7.2 Absolute sound level

7.3 To determine the first context test in BS 4142 it is necessary to determine whether the residual and background sound levels are high or low. Section 11 of BS4142 states:

"For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse."

7.4 During the daytime and night-time period, the residual level is higher than the rating level, and therefore the rating level has less significance. During the daytime, the rating level is below the background at all receptors. The absolute level will be the same as the residual level, as there is more than a 10 dB difference between the specific and residual at all receptors.

7.5 During the night-time, the rating level is below the background at NSR 1 and 2, and equal to the background at NSR 3. When considering each receptor during the daytime:

- At NSR1 and 2, the absolute level will be the same as the residual level, as there is more than a 10 dB difference between the specific and residual.
- At NSR3, the absolute level is likely to be around 1 dB higher than the residual sound, due to the impact of the proposed development. This increase is unlikely to be noticed by receptors.

7.6 Character and level of residual and specific sound

7.7 The specific sound from the proposed development (i.e. fan noise) is similar in character to the residual sound, which although mainly contains road traffic noise, also includes plant noise from Plas Cwm Carw Care Home.

7.8 The residual noise levels at the NSRs are 53 dB during the daytime, and 47 dB during the night-time. As discussed, the specific sound levels are below the residual level, and will have minimal impact on the absolute level.

7.9 When taking the above into consideration the noise impact is likely to be slightly less than identified.

7.10 Sensitivity of Receptor

7.11 With regard to pertinent factors to be taken into consideration, Section 11 of BS 4142 states;

"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, such as:

i) facade insulation treatment;

ii) ventilation and/or cooling that will reduce the need to have windows open so as to provide rapid or purge ventilation; and

iii) acoustic screening."

7.12 During the daytime, when residents are more likely to be outside, they will not benefit from any attenuation via the façade. Predicted noise levels are well below guideline levels outdoors, and unlikely to be audible above the residual sound level. At night, residents are usually indoors, and will therefore benefit from attenuation via the façade of the dwelling. Assuming an open window provides 13dB attenuation, internal noise levels would be below guideline noise levels, and unlikely to be audible against the residual levels.

7.13 In regard to TAN, noise from the proposed development would meet Category A for 'mixed sources' and therefore noise need not be considered as a determining factor in granting planning permission.

7.14 When considering the sensitivity of the receptor and typical use of a dwelling, the noise impact is likely to be less than identified.

7.15 Summary

7.16 The calculated $L_{A,T,r}$ is below the background sound level during the daytime. The noise from the proposed development is somewhat in keeping with the existing environment and unlikely to be audible when considering the current residual sound levels. During the night-time the calculated

$L_{A,T,r}$ is below the background sound level at NSR1 and 2, and equal to the background at NSR3, however will have minimal impact on the overall absolute level.

7.17 The proposed development is considered to have a low impact at assessment locations.

8 Conclusion

- 8.1 Based on the current development proposals it is calculated that the proposed development would cause a low impact at noise sensitive receptors.
- 8.2 The worst case calculated BS 4142 rating level at the NSRs is 4dB below the measured background level during the daytime period and equal to the background level during the night-time period, which indicates a low impact.
- 8.3 Considering the context of the existing acoustic environment the assessment result indicates the likelihood of a low impact, on the basis of implementing the proposed noise control measures.



9 References

- 1 BS 4142 2014: A1+2019, Method for rating and assessing industrial and commercial sound.
- 2 Planning Policy Wales, Welsh Government, February 2024.
- 3 Planning Guidance (Wales), Technical Advice Note (Wales) 11, Noise – October 1997.
- 4 BS 8233: 2014, Guidance on sound insulation and noise reduction for buildings.
- 5 CadnaA environmental noise modelling software, version 2017, Datakustik GmbH.
- 6 ISO 9613: Acoustics - Attenuation of sound during propagation outdoors.



Appendix A Time Histories

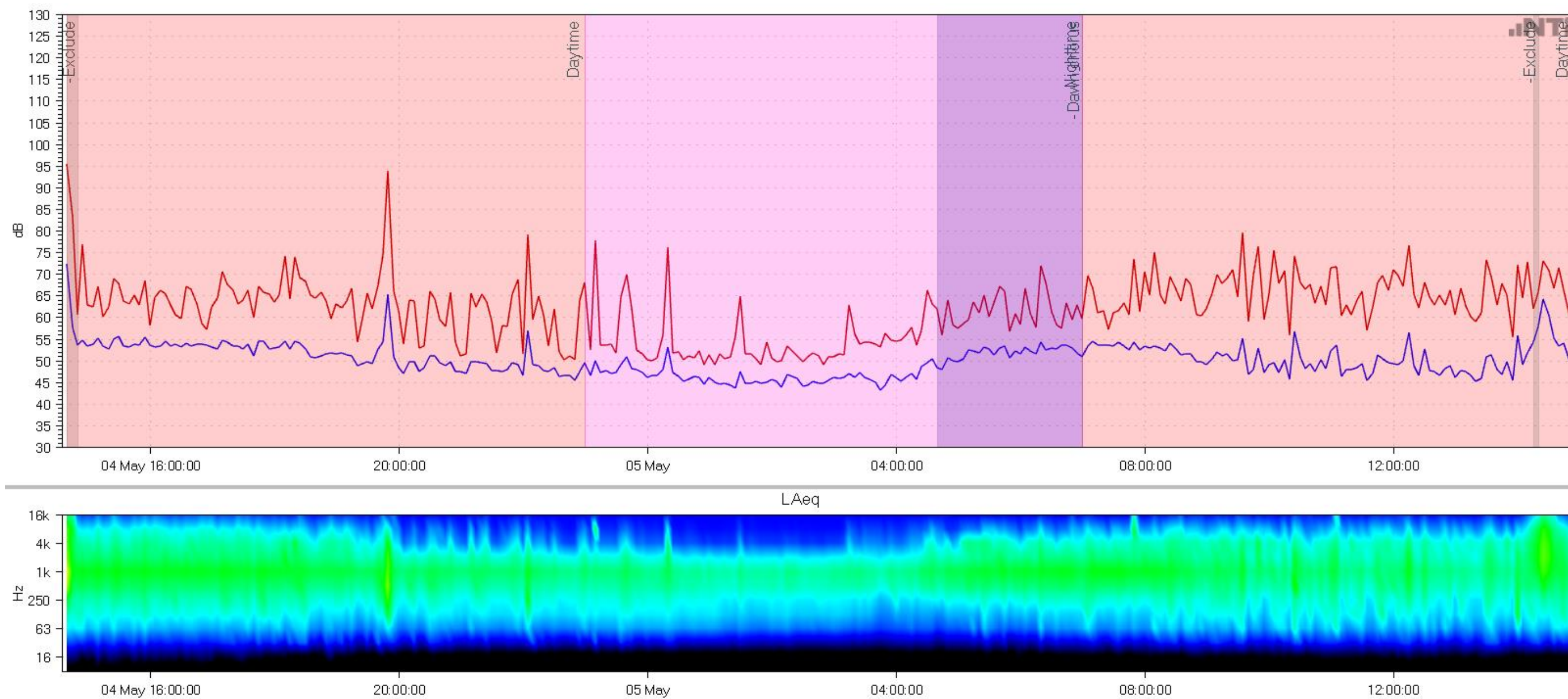


Figure 4: Time history of the recorded $LA_{eq,5min}$ (blue) and LA_{fmax} (red), and spectrograph – P1

Appendix B Background sound levels

B.1 The measured daytime and night time $L_{A90,15min}$ levels at P1 are shown in Table 8.

Time (hh:mm)	$L_{A90, 15min}$ (dB)	Time (hh:mm)	$L_{A90, 15min}$ (dB)	Time (hh:mm)	$L_{A90, 15min}$ (dB)
14:45	52	22:00	46	07:30	52
15:00	52	22:15	45	07:45	51
15:15	51	22:30	45	08:00	51
15:30	51	22:45	45	08:15	50
15:45	52	23:00	45	08:30	47
16:00	52	23:15	45	08:45	46
16:15	52	23:30	46	09:00	45
16:30	51	23:45	45	09:15	45
16:45	52	00:00	45	09:30	44
17:00	51	00:15	45	09:45	45
17:15	51	00:30	44	10:00	44
17:30	50	00:45	44	10:15	44
17:45	51	01:00	42	10:30	44
18:00	50	01:15	42	10:45	44
18:15	49	01:30	42	11:00	44
18:30	48	01:45	43	11:15	44
18:45	50	02:00	42	11:30	44
19:00	49	02:15	43	11:45	44
19:15	47	02:30	42	12:00	44
19:30	48	02:45	43	12:15	43
19:45	46	03:00	44	12:30	43
20:00	46	03:15	42	12:45	43
20:15	46	03:30	39	13:00	44
20:30	47	03:45	41	13:15	44
20:45	46	04:00	41	13:30	44
21:00	46	04:15	43	13:45	44
21:15	46	04:30	44	14:00	45
21:30	46	07:00	51	14:15	56
21:45	45	07:15	52	14:30	48

Table 8: Measured background sound levels, $L_{A90, 15 min}$ – P1

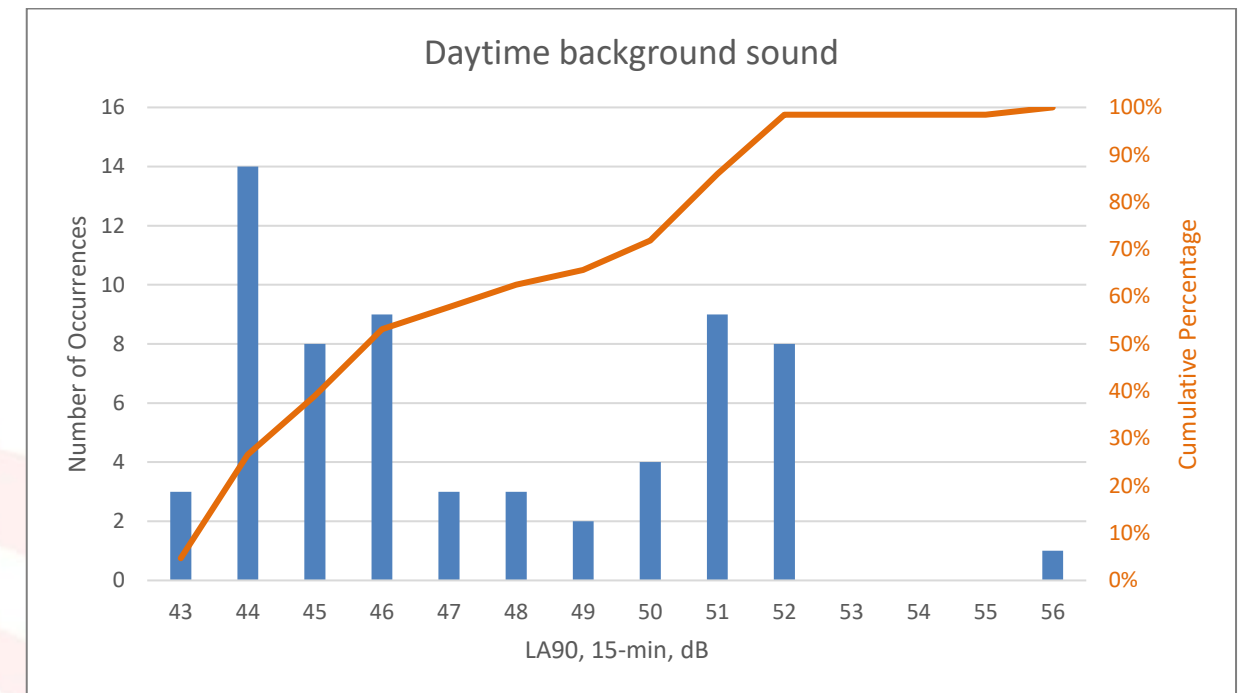


Figure 5 Analysis of daytime background levels, $L_{A90, 15 min}$ – P1

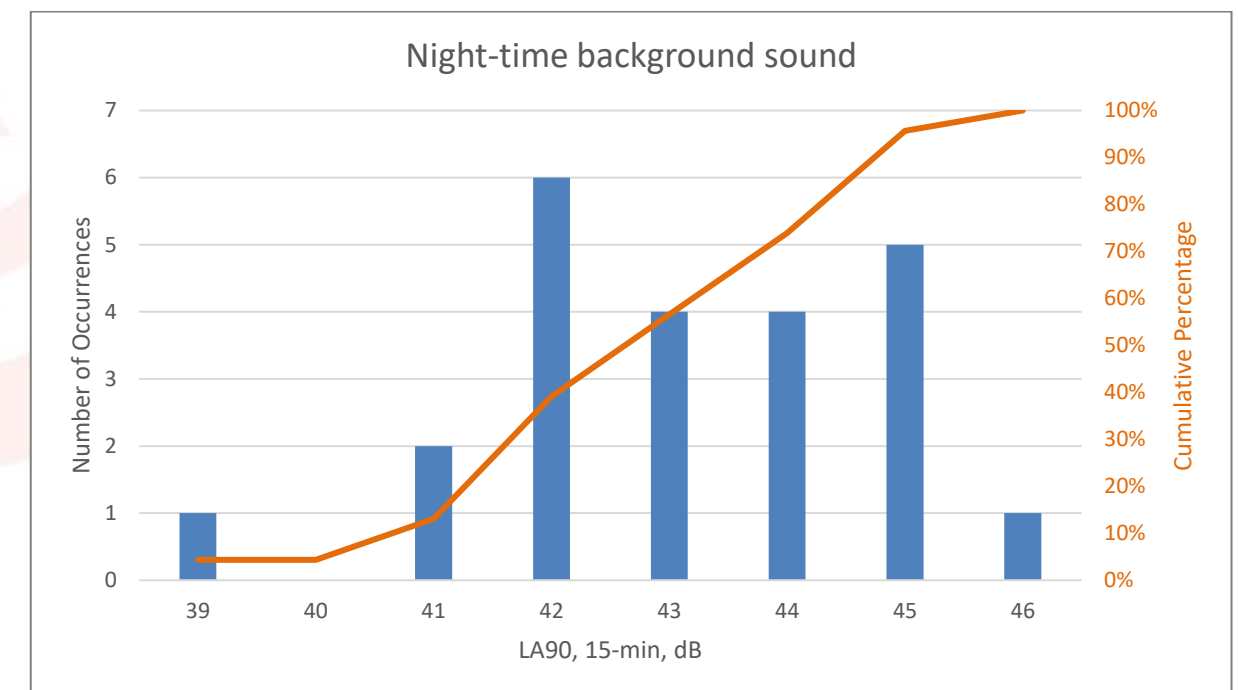


Figure 6 Analysis of night-time background levels, $L_{A90, 15 min}$ – P1

Appendix C Plant noise data

C.1 The whole list of proposed plant is shown in Table 9. The locations of the plant are shown in Figure 7 and Appendix F.

Location	Source	Number	Generate noise? (Y/N)
Red boxes	ERICSSON MAS 32 HYBRID AIR 3268 B78K ANTENNA	1	Y
	ERICSSON AIR 3268 ANTENNA	1	Y
	COMMSCOPE RRZZHHTT65A-R6H4 ANTENNA	1	N
	COMMSCOPE VHLP2-X8023	2	N
	ERICSSON 2460ERS	2	N
	ERICSSON 4490ERS	2	Y
	ERICSSON 4419ERS	1	N
	ERICSSON 4020ERS	1	N
	COMMSCOPE FE-12106-R11	1	N
	ICD 11752 Remote DC Connection BOB	1	N
	ICD 11751 Remote Fibre Connection BOB	1	N
Green box	ERICSSON MAS 32 HYBRID AIR 3268 B78K ANTENNA	1	Y
	ERICSSON AIR 3268 ANTENNA	1	Y
	COMMSCOPE RRZZHHTT65A-R6H4 ANTENNA	1	N
	ERICSSON 2460ERS	2	N
	ERICSSON 4490ERS	1	Y
	ERICSSON 4419ERS	1	N
	ERICSSON 4020ERS	1	N
	COMMSCOPE FE-12106-R11	1	N
Purple box	ICD 11752 Remote DC Connection BOB	1	N
	ICD 11751 Remote Fibre Connection BOB	1	N
	ERICSSON 6130 CABINET	2	Y
	CL Controls MK5B LINK AC CABINET	1	Y
	VERTIV BFK222023512C/005 20kW OUTDOOR POWER SUPPLY CABINET	1	Y
	COMMSCOPE FE-12106-R11	3	N
	ICD 11751 Rev2 - Local Fibre Distribution BoB	1	N

ICD 11748 V2 Rev0 - Local DC Distribution BoB	1	N
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Table 9: Plant list

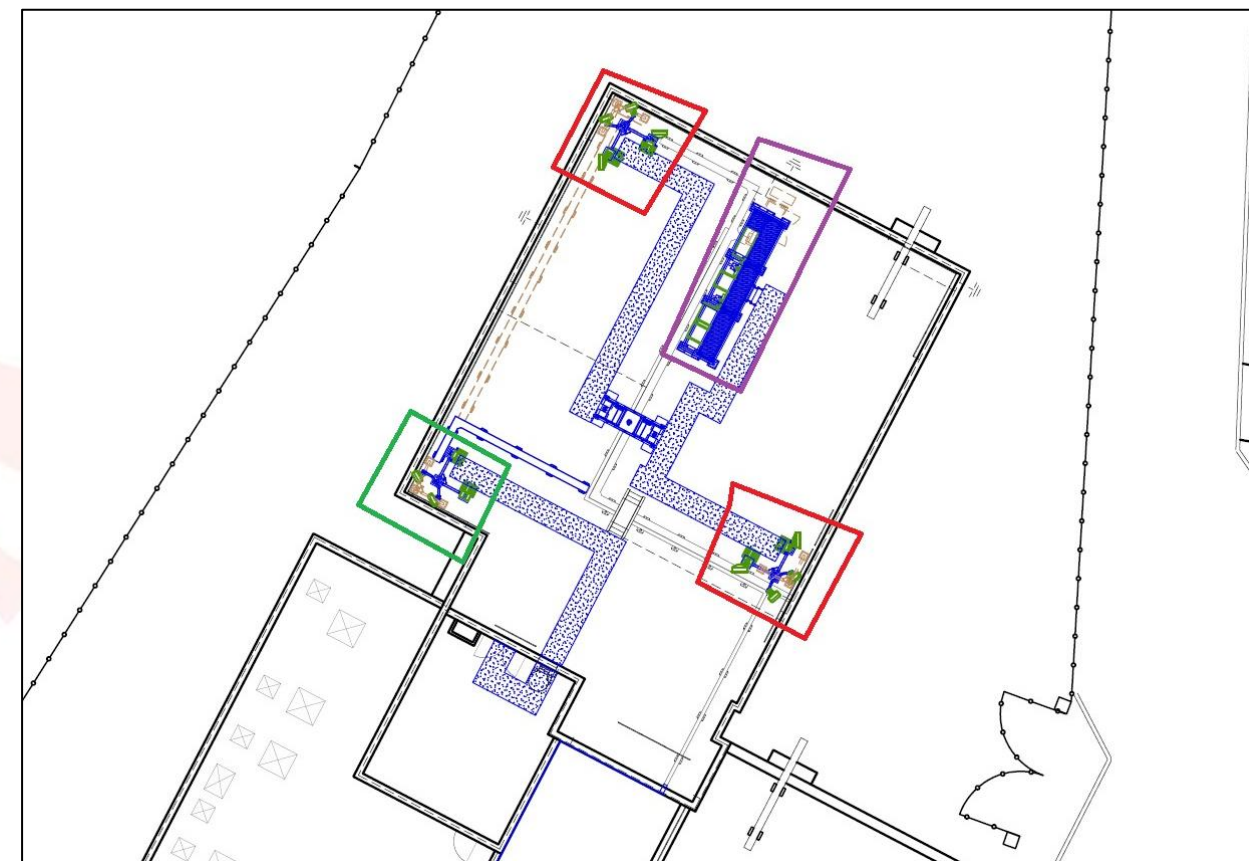


Figure 7: Plant locations

C.2 Of those that produce noise, the following noise data was provided, as shown in

Source	Data type	Noise level
ERICSSON MAS 32 HYBRID AIR 3268 B78K ANTENNA	Sound pressure @ 1m	25 dB(A)
ERICSSON AIR 3268 ANTENNA	Sound pressure @ 1m	25 dB(A)
ERICSSON 4490ERS	Sound pressure @ 1m	57 dB(A) @ 25°C
ERICSSON 6130 CABINET	Sound pressure @ 1m	65 dB(A) @ 30°C
CL Controls MK5B LINK AC CABINET	Sound pressure @ 3m	59 dB(A)*
VERTIV BFK222023512C/005 20kW OUTDOOR POWER SUPPLY CABINET	Sound pressure @ 1m	55dB(A)**

*sound pressure measured on three sides of plant as 60.3, 56.8 and 58 dB(A). The log average was taken to obtain 59 dB(A)
 **Sound pressure attributable to 1x rectifier within cabinet. Cabinet contains 10 of these

Table 10: Plant noise levels

C.3 Liquid cooling energy storage system

C.4 The sound power level for the plant was not provided, only the sound pressure level at a distance from the plant surface, therefore the sound power of each side of the unit was calculated using the following equation:

$$L_w = L_p + 10 \log_{10} \left(\frac{S}{S_0} \right)$$

C.5 Where:

L_p = average sound pressure level measured of each unit side

S = surface area of unit side

S_0 = the reference area, 1 m²

C.6 The sound power attributable to the plant is calculated in Table 11.

Source	Dimensions (in meters)				Sound power level
	H	W	D	S	
ERICSSON MAS 32 HYBRID AIR 3268 B78K ANTENNA	2.290	0.448	0.232	51.08	42
ERICSSON AIR 3268 ANTENNA	0.539	0.37	0.111	32.76	40
ERICSSON 4490ERS	0.553	0.398	0.19	33.93	71
ERICSSON 6130 CABINET	1.1	0.65	0.7	47.48	82
CL Controls MK5B LINK AC CABINET	1.6	1.2	0.6	304.8	84
VERTIV BFK222023512C/005 20kW OUTDOOR POWER SUPPLY CABINET	0.041	0.0645	0.2525	26.92	79*
*calculated for all 10 rectifiers. 1 rectifier has a sound power of 69 dB(A)					

Table 11: Calculated sound power attributable to each side of LCESS unit

Appendix D Noise transmission and propagation

D.1 Noise transmission and propagation is modelled using proprietary software, CadnaA. This models noise propagation outdoors according to ISO 9613. The parameters used, source of data and details are described in Table 12.

Parameter	Source	Details
Model dimensions	Google Earth	British Transverse Mercator coordinates
Site location and layout	Architects' drawings	Architects' drawings, Appendix F
Topography –within and outside site	DEFRA Lidar	Modelled with no changes in topography
Building heights – proposed buildings	Drawings	Architects' drawings, Appendix F
Building heights – outside of site	Site observations and Google Street view	3 m per storey + 3 m roof (residential properties)
Receptor positions	Site observations and Google Street view	On the NSR façade closest to the source at a height of 1.5 m and 4 m to represent ground and first floor window heights respectively.
Building and barrier absorption coefficient	ISO 9613-2	0.21 to represent a reflection loss of 1 dB
G, Ground factor	ISO 9613-2	Hard ground, G = 0; Porous ground, G = 1; Mixed ground = 0.5
Max. order of reflections	Apex Acoustics	Three

Table 12: Modelling parameters and assumptions

9.1 Plan and 3D views of the CadnaA model are shown in Figure 8 and Figure 9 respectively.



Figure 8: Plan view of CadnaA model



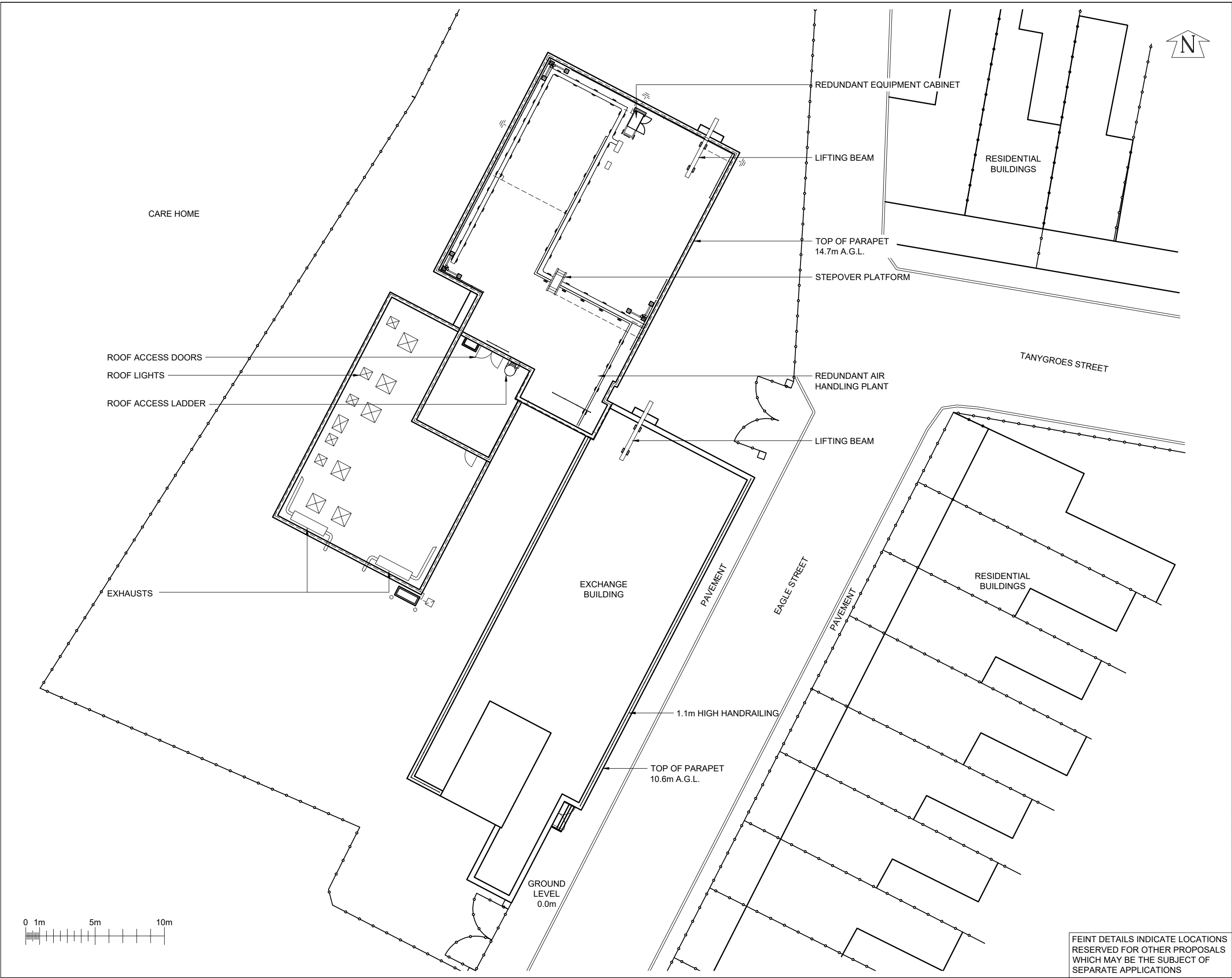
Figure 9: 3D view of CadnaA model

Appendix E Professional qualifications and competence

- E.1 All Apex Acoustics consultants work under the close supervision of a member who holds qualification in acoustics and is a member of the IOA.
- E.2 This can be verified by searching the Institute of Acoustics' list of Members, available here, with the surname of the consultant.
<http://www.ioa.org.uk/membership-check>
- E.3 Apex Acoustics is a member of the Association of Noise Consultants (ANC). The ANC is a trade organisation which seeks to raise the standards of acoustic consultancy and as such there are barriers to entry to ensure member's competency.
- E.4 This report has been prepared and checked by an appropriately qualified and experienced acoustic consultant.

Appendix F Site Layout





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NOTES

UNDERGROUND SERVICES

UNDERGROUND SERVICES ARE INDICATIVE ONLY. POSITIONS SHOULD BE CONFIRMED ON SITE PRIOR TO ANY DEVELOPMENT

DRAINAGE

DUCTS

FEEDERS

FENCE PLAN

GAS

LIGHTNING PROTECTION - EARTHING

POWER

SERVICES UNKNOWN

TELECOMS

WATER

ACCESS ARRANGEMENTS

KEYS:-

ARQIVA GATE KEY

B KEY

C KEY

LEGGE KEY

SURVEY REQUIRED TO CONFIRM ACCESS KEYS FOR REMAINING ROOMS AND SITE ENTRANCE

PROJECT No.	NCO-0008030		
MBNL CELL No.	NPT079		
T-MOB CELL No.	97010		
H3G CELL No.	SA0771		
BT SKYLINE No.	SA0023		
PROJ No			
PROJ No			
C	PROJ No 0008030 MINOR AMEND	08/02/2024	HFC HFC
B	PROJ No 0008030 MINOR AMEND	17/08/23	HFC HFC
A	PROJ No 0008030 CONSTRUCTION	11/07/23	HFC HFC
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EAGLE STREET

PORT TALBOT

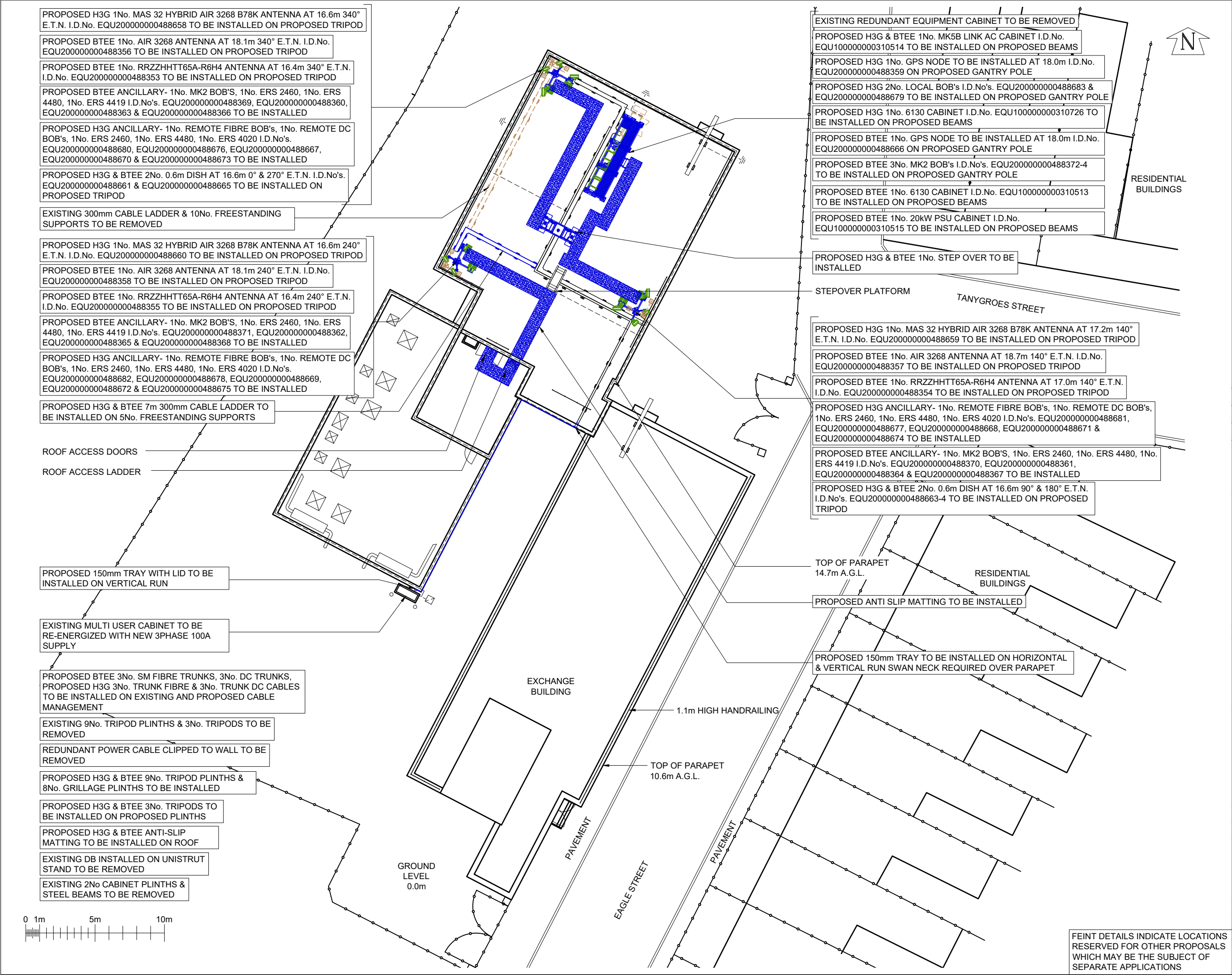
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SA13 1AA

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APPROVED	HFC	12/05/23
DRG No.	Sheet 1 of 1	Rev
167514-06-210-MD004		C

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DRAINAGE
DUCTS
FEEDERS
FENCE PLAN
GAS
LIGHTNING PROTECTION - EARTHING

POWER
SERVICES UNKNOWN
TELECOMS
WATER

ACCESS ARRANGEMENTS

KEYS:-

ARQIVA GATE KEY

B KEY

C KEY

LEGGE KEY

SURVEY REQUIRED TO CONFIRM ACCESS KEYS FOR REMAINING ROOMS AND SITE ENTRANCE

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PROJ No			
PROJ No			
C	PROJ No 0008030 MINOR AMEND	08/02/2024	HFC HFC
B	PROJ No 0008030 MINOR AMEND	17/08/23	HFC HFC
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PORT TALBOT
WEST GLAMORGAN
SA13 1AA

NGR SS 76913 89729

OS GRID 276913 189729

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PROPOSED
MBNL

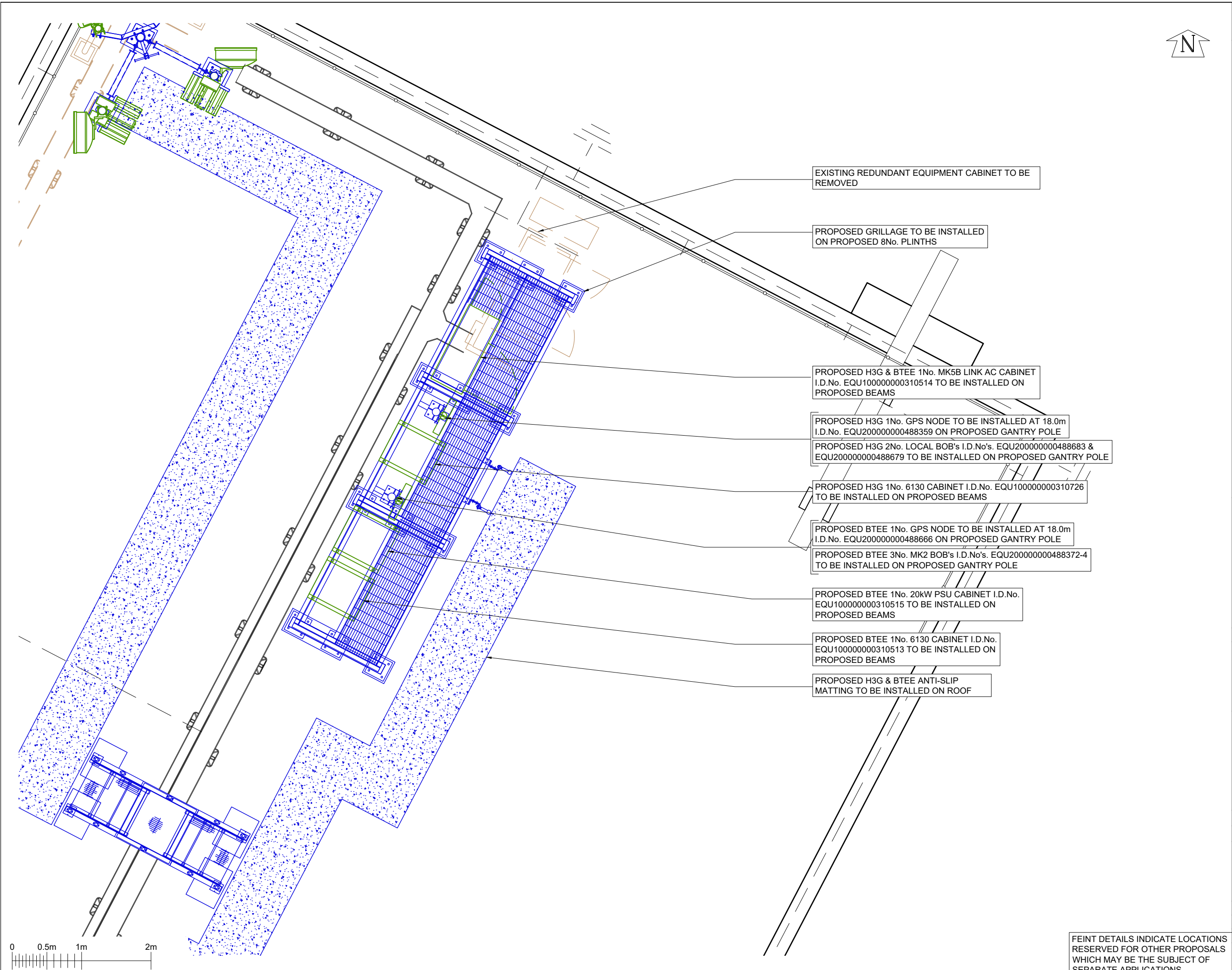
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PROJ No			
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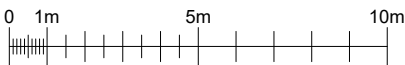
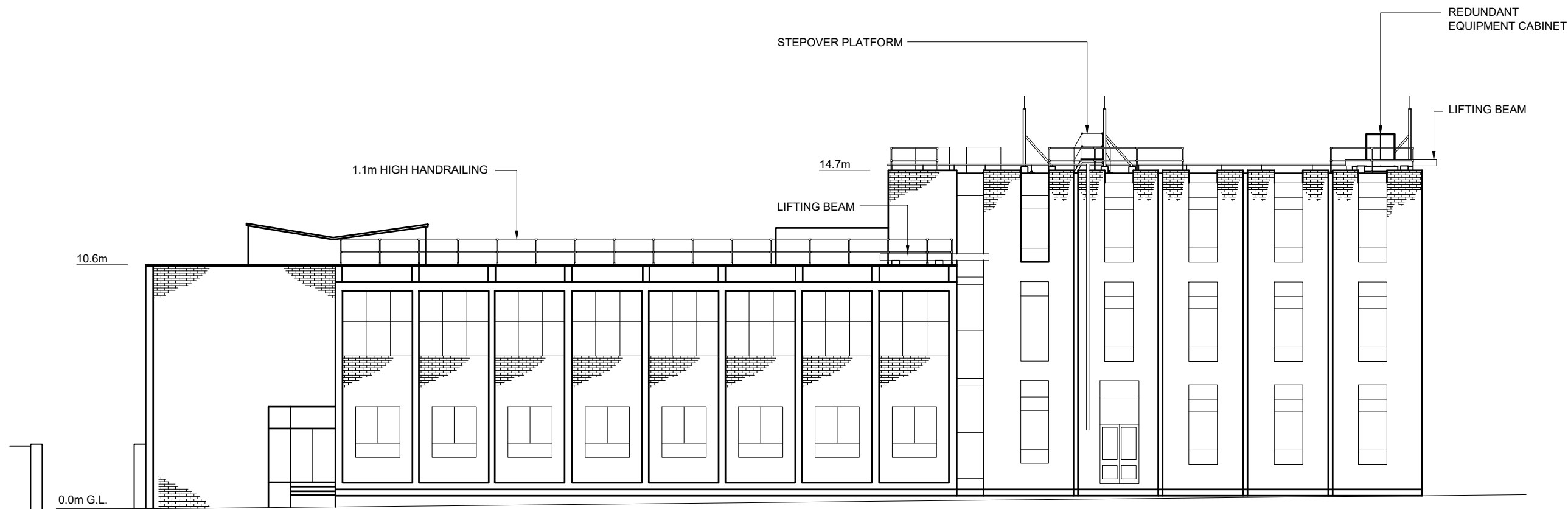
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WEST GLAMORGAN

SA13 1AA

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BT SKYLINE No.	SA0023
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OS GRID	276913 189729

TITLE
EXISTING SITE ELEVATION
SOUTH EAST
MBNL

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SCALE 1:200

DRG No.	Sheet 1 of 1	Rev
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