

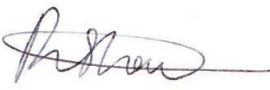
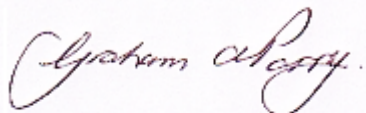
Report for:

**Beacon Communications Services
Ltd**

41 Minster Street, Reading
Noise Impact Assessment

Status: Final

Date: 06.05.2022

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1. INTRODUCTION

1.1. Background

ACCON UK Limited (ACCON) has been commissioned by Beacon Communications Services Ltd (Beacon Comms) to undertake a noise impact assessment for the proposed telecommunication mast at 41 Minster Street, Reading.

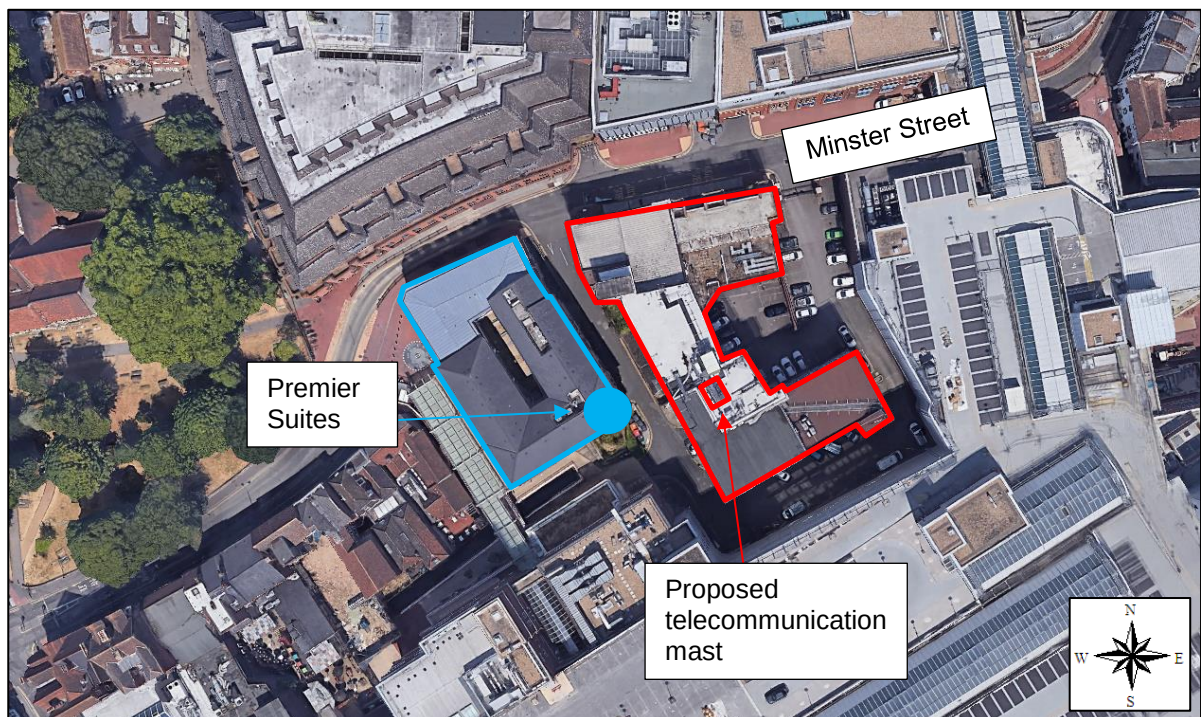
1.2. Existing Site

The proposed telecommunication mast will be installed on the roof of the telephone exchange at 41 Minster Street, a five storey building.

1.3. Proposed Development

The proposed telecommunication mast development comprises: six antenna, two dishes, one stub tower and two cabinets. **Figure 1.1** provides the Site Plan. The nearest noise sensitive receptor (NSR) Premier Suites, is also shown on **Figure 1.1**. The proposed site layout plan is identified in **Figure F.1**.

Figure 1.1: Site Plan



2. THE NATURE, MEASUREMENT AND EFFECT OF NOISE

Noise is often defined as sound that is undesired by the recipient. Whilst it is impossible to measure nuisance caused by noise directly, it is possible to characterise the loudness of that noise. 'Loudness' is related to both sound pressure and frequency, both of which can be measured. The human ear is sensitive to a wide range of sound levels. The sound pressure level of the threshold of pain is over a million times that of the quietest audible sound. In order to reduce the relative magnitudes of the numbers involved, a logarithmic scale of decibels (dB) is normally used, based on a reference level of the lowest audible sound.

The response of the human ear is not constant over all frequencies. It is therefore usual to weight the measured frequencies to approximate the human response. The resulting 'A' weighted decibel, dB (A), has been shown to correlate closely to the subjective human response.

When related to changes in noise, a change of ten decibels, for example, from 60 dB (A) to 70 dB (A), would represent a doubling in 'loudness'. Similarly, a decrease in noise, for example, from 70 dB (A) to 60 dB (A), would represent a halving in 'loudness'. A change of 3 dB (A) is generally considered to be just perceptible¹. **Table 2.1** details typical noise levels.

Table 2.1: Typical Noise Levels

Approximate Noise Level (dB(A))	Example
0	Limit of hearing
30	Rural area at night
40	Library
50	Quiet office
60	Normal conversation at 1 m
70	In car noise without radio
80	Household vacuum cleaner at 1 m
100	Pneumatic drill at 1 m
120	Threshold of pain

A glossary of acoustic terminology is provided in **Appendix 1**.

¹ Institute of Environmental Management and Assessment (2014). Guidelines for environmental noise impact assessment.

3. NOISE ASSESSMENT CRITERIA

3.1. National Planning Policy Framework

The revised National Planning Policy Framework (NPPF as amended in July 2021) supersedes the 2012, 2018 and 2019 versions of the NPPF. The purpose of the planning system is to contribute to the achievement of sustainable development. There are three dimensions to sustainable development: economic, social and environmental. The environmental role is to contribute to protecting and enhancing our natural, built and historic environment; and as part of this, make effective use of land, help to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate to adapt to climate change including moving to a low carbon economy.

One of the core planning principles is to contribute to conserving and enhancing the natural environment and reducing pollution. Allocations of land for development should prefer land of lesser value, where consistent with other policies in the Framework. The planning system should contribute to and enhance the natural and local environment by preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability.

Paragraph 185 of the NPPF states:

“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 (see Explanatory Note to the Noise Policy Statement for England (Department for Environment, Food and Rural Affairs, 2010));*
- 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.”*

Additionally, Paragraph 187 states:

“Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or ‘agent of change’) should be required to provide suitable mitigation before the development has been completed.”

3.2. Noise Policy Statement for England

The Noise Policy Statement for England (NPSE) aims to “*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”.*

Based on concepts from toxicology, it introduces three ‘Effect Levels’ relevant to the assessment of noise. These are:

- **NOEL: No Observed Effect Level:** This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;
- **LOAEL: Lowest Observed Adverse Effect Level:** This is the level above which adverse effects on health and quality of life can be detected; and
- **SOAEL: Significant Observed Adverse Effect Level:** This is the level above which significant adverse effects on health and quality of life occur.

3.3. Planning Practice Guidance

The Planning Practice Guidance for Noise (PPG-N) was published in March 2014 and most recently updated in July 2019. The PPG-N suggests that the most appropriate and cost-effective solutions to potential noise issues are best identified when good acoustic design needs to be considered early in the planning process.

The PPG-N provides the following advice on how to determine the noise impact on development:

“Plan-making and decision making need to take account of the acoustic environment and in doing so consider:

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

In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation. As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy.” (Paragraph 003 Reference ID 30-003-20190722)

The document goes on to acknowledge the levels of noise exposure at which an effect may occur as provided in the NPSE and introduces a fourth effect level:

- UAE: Unacceptable Adverse Effect: Extensive and regular changes in behaviour and/or an inability to mitigate the effect of noise lead to psychological stress or physical effects.

Where residential development is proposed in the vicinity of existing businesses, community facilities or other activities that produce noise, the PPG-N advises that the applicant (or 'agent of change') will need to clearly identify the effects of the existing businesses that may cause a nuisance (including noise) and clearly define the mitigation measures being proposed to address any potential significant adverse effects that are identified. The agent of change needs to not only consider the current activities of the business, but the permitted activities too, even if they are not occurring at the time of the application being made. The PPG-N acknowledges that *"It can be helpful for developers to provide information to prospective purchasers or occupants about mitigation measures that have been put in place, to raise awareness and reduce the risk of post-purchase/occupancy complaints."* (Paragraph 009 Reference ID 30-009-20190722).

It is important to understand that as the PPG-N does not specifically provide any advice with respect to noise levels/limits for different sources of noise, it is appropriate to consider other sources of advice and guidance documents when considering whether new developments would be sensitive to the prevailing acoustic environment and the PPG-N signposts a number of appropriate guidance documents.

3.4. British Standard BS 4142:2014+A1:2019

BS 4142 *Methods for rating and assessing industrial and commercial sound* provides a method for the measurement and rating of industrial type noise sources and background noise levels outside dwellings. The rating level (defined in the BS) is used to rate the noise level of the source (this is defined as the 'specific sound level') outside residential dwellings.

The rating level is determined by assessing the character of the noise and applying an acoustic feature correction, if appropriate, to the specific sound level. Corrections are applied for the tonality, impulsivity and intermittency of the noise source which can all increase the impact of noise.

The initial assessment described in BS 4142 to determine whether an adverse impact is likely is based on establishing the difference between the rating level and the background noise level outside the residential property of interest. The British Standard states that the following points should be considered:

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

sound level, this is an indication of the specific sound source having a low impact, depending on the context.”

Where it is considered that the initial assessment of the impact needs to be modified due to the context in which the noise is occurring, BS 4142 suggests that all pertinent factors are taken into consideration, including:

- 1) *The absolute level of sound. 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 sound² 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.

- 2) *The character and level of the residual sound compared to the character and level of the specific sound. Consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.*
- 3) *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.*

There is also a requirement within BS 4142:2014 to consider the uncertainty in the measurement and assessment procedure.

² The residual sound is defined as the ambient sound level at the assessment location in the absence of the specific sound source

3.5. Target Noise Levels

The target noise levels at the closest noise sensitive receptor (NSR) has been informed by BS 4142. The rating noise level from the proposed plant should not exceed the existing background sound level.

4. NOISE MEASUREMENT SURVEY

4.1. Introduction

Noise measurements were carried out between Thursday 10th March 2022 and Monday 14th March 2022 to determine representative background sound levels for the nearby NSRs. **Table 4.1** details the noise measurement location and the noise sources observed during the survey. The location is also identified on **Figure 4.1**.

Table 4.1: Noise Measurement Location

Location Reference	Location Description	Measurement Duration	Observed Noise Sources
MP1	MP1 was located at the fourth floor level of 41 Minster Street at a distance of 1 m from the façade. A photograph of the measurement position can be identified in Figure 4.2 .	4 Days	• Local road traffic and bus movements along Minster Street • Shutter door for car park of Premier Suites • Plant noise from Premier Suites • HGV movements and unloading/ emptying bins • People talking/singing passing by in Minster Street

The noise measurements utilised a Svantek 971 Class 1 Sound Level Meter. The sound level meter holds a current certificate of calibration. Which is available upon request. The equipment was field calibrated before and after the measurement period to ensure that it had remained within reasonable calibration limits (± 0.5 dB).

The noise measurement position MP1 was chosen in order to obtain sound data suitable for assessing the typical background sound levels representative of Premier Suites.

Figure 4.1: Noise Measurement Positions

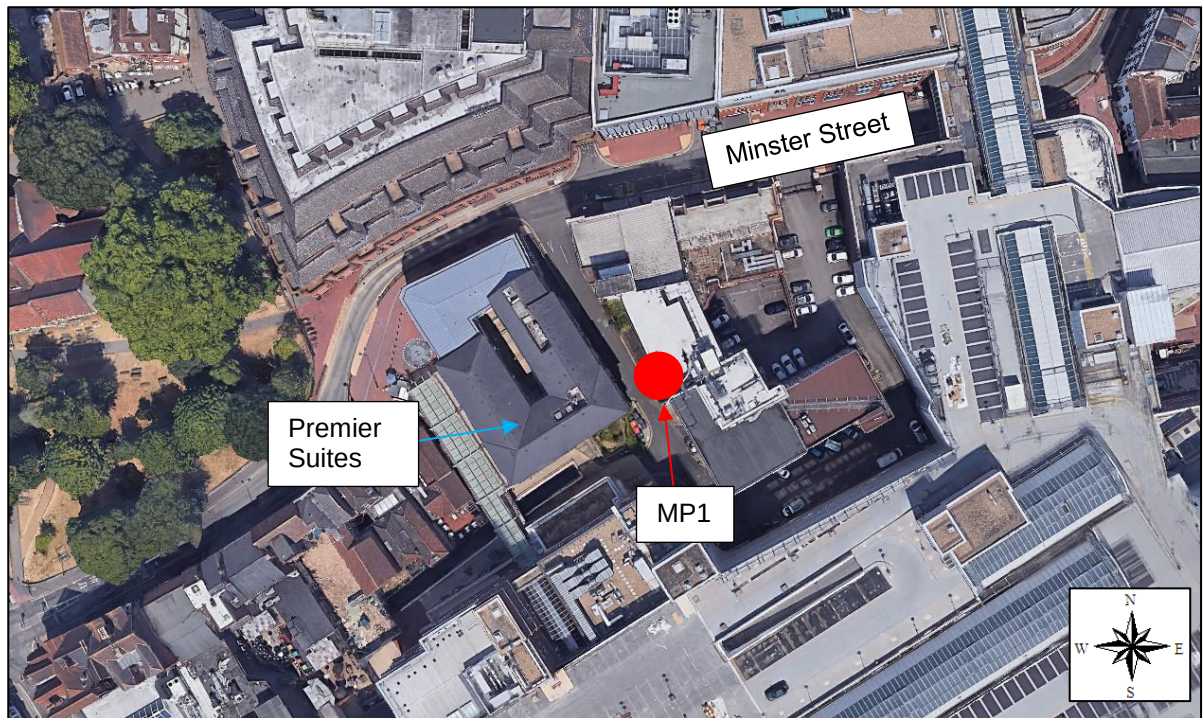


Figure 4.2: MP1 Location



A summary of the weather conditions is presented in **Table 4.2** below.

Table 4.2: Summary of Weather Conditions

Date	Average Temperature	Wind Speed (m/s)	Wind Direction	Precipitation (mm)	Comments
Thursday 10 th March	11	<1	SSE	-	-
Friday 11 th March	9	<1	SSE	11	1200 – 1600 2130 – 0000
Saturday 12 th March	9	<1	SE	7.5	0100 – 0600
Sunday 13 th March	9	<1	SE	3.8	0220 – 0600

Monday 14 th March	7	<1	W	-	-
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Table 4.2 identifies that the weather conditions were suitable for the majority of the noise measurement period. Periods of rain fall have also been identified in **Table 4.2**, these periods have been excluded from the data analysis.

4.2. Noise Measurement Results

A summary of the estimated free-field noise levels are identified in **Table 4.3**. The free-field noise levels are the noise levels measured at 1 m from the building façade, with a correction of -3 dB applied to convert the façade noise levels to free-field noise levels.

Table 4.3: Summary of Free-field Noise Measurements at MP1

Date	Period	L _{Aeq, T} (dB)	Mean L _{A90, T} (dB)	Modal L _{A90, T} (dB)	Typical L _{A90, T} (dB)
Thursday 10 th March	1300 hrs to 2300 hrs	55	51	52	52
	2300 hrs to 0700 hrs	49	45	46	46
Friday 11 th March	0700 hrs to 2300 hrs	55	52	53	53
	2300 hrs to 0700 hrs	51	47	49	49
Saturday 12 th March	0700 hrs to 2300 hrs	55	52	53	53
	2300 hrs to 0700 hrs	51	47	49	45
Sunday 13 th March	0700 hrs to 2300 hrs	54	51	52	52
	2300 hrs to 0700 hrs	47	44	43	42
Monday 14 th March	0700 hrs to 1300 hrs	54	49	47	47
Note: The levels stated are logarithmic averages for L _{Aeq, T} and arithmetic average for mean L _{A90, 5 min} . The typical background sound level has been determined from assessment of the lowest regularly occurring L _{A90, 5min} .					

Due to the existing noise climate of plant in the vicinity of the site producing constant noise levels, this has resulted in the L_{Aeq, T} and L_{A90} in **Table 4.3** being similar.

Appendix 2 identifies the time history of the measured noise levels over the full measurement period.

5. NOISE IMPACT ASSESSMENT

5.1. Noise Modelling

CadnaA noise modelling software has been utilised to calculate the external noise levels at NSRs from plant forming the telecommunications development application. CadnaA is a three-dimensional noise model developed by DataKustik and has been extensively used by ACCON and others to develop noise models for a wide variety of situations and noise sources. CadnaA utilises standard acoustic calculation methodology to predict breakout noise levels from internal noise sources and ISO 9613 to predict noise from point, line and area sources.

Fixed plant details have been provided by Beacon Comms. The data has been provided as single figure A-weighted sound power levels.

There is one item of plant which will generate the highest levels of noise at this fixed installation: the Base Station Hardware located on the main roof level.

All fixed plant has been assumed to operate 24 hours a day and 7 days a week and that the proposed plant will be visible from the top floor windows of Premier Suites.

The CadnaA noise model has utilised topography from Defra Survey Data³.

5.2. Model Details

Table 5.1 below presents the average weekday and weekend noise measurement results which have been utilised to inform the BS 4142 assessment.

Table 5.1: Averaged Semi-Permanent Measurement Results

	Period	L _{Aeq, T} (dB)	Mean L _{A90, T} (dB)	Modal L _{A90, T} (dB)	Typical L _{A90, T} (dB)
Weekday	0700 hrs to 2300 hrs	55	51	51	51
	2300 hrs to 0700 hrs	50	46	48	48
Weekend	0700 hrs to 2300 hrs	55	52	53	53
	2300 hrs to 0700 hrs	49	46	46	44

5.3. Fixed Plant

The Base Station Hardware make and model is the Ericsson Radio 2260 and Ericsson Radio 2212. The Base Station noise levels are a result of the operation of cooling fans. The data provided by Beacon Comms has been included in **Appendix 3**, and identifies the sound

³ <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey>

power levels at different running temperatures. The maximum temperature has been utilised as a very worst case scenario. The antennas will be mounted at a height of 31 m above street level. The proposed tower plan is identified in **Figure F.2**. The A-weighted sound power levels used within the assessment are provided in **Table 5.2**.

Table 5.2: Fixed Plant Sound Power Levels

Unit	Sound Power Level L_w dB(A)
Ericsson Radio 2260 @ 60°C	61
Ericsson Radio 2212 @ 55°C	59
Ericsson Air 6488 B42EU Antennas	36

5.4. External Noise to Residential Receptors

5.4.1. Methodology

The data from the noise measurement survey has been used to determine the background sound level at the nearest NSRs (Premier Suites). The sound pressure level of the proposed plant has been predicted using manufacturer's data (as provided in **Table 5.2**). The potential noise impact has been assessed using the methodology in BS 4142.

5.4.2. Noise from Fixed Plant

Table 5.3 provides a summary of the predicted rating noise levels from fixed plant associated with the development at the nearest NSRs. The predicted plant noise rating level includes a correction for tonality of +4 dB for a clearly perceptible tone, which is typical for fixed plant installations of the types proposed.

Table 5.3: Fixed Plant Noise Levels Predicted at Residential NSRs

NSR	Plant Noise Rating Level ($L_{Aeq, T}$, dB)
Premier Suites East Façade: First Floor	11
Premier Suites East Façade: Second Floor	13
Premier Suites East Façade: Third Floor	16
Premier Suites South Façade: First Floor	12
Premier Suites South Façade: Second Floor	14
Premier Suites South Façade: Third Floor	16

Table A4.1 to **Table A4.4** of **Appendix 4** identify the results of the BS 4142 assessment for daytime and night-time respectively for weekdays and weekends. The predicted external noise level due to fixed plant at each NSR has been compared to the average background sound level L_{A90} dB from **Table 5.1**. It can be seen that the predicted noise levels do not exceed the assessment criteria at the NSRs. The smallest difference between the predicted Rating Level and the background sound level of 28 dB occurs at those dwellings on the third floor of Premier Suites during the weekend night-time period.

5.5. Discussion of Context

The area local to 41 Minster Street is mixed in nature, comprising residential and retail uses many of which have externally mounted air conditioning units, therefore the proposed plant is not out of context for the area.

5.6. Discussion of Uncertainty

5.6.1. Noise Survey

The noise measurements undertaken for this survey are considered to be robust and of limited uncertainty. All equipment used has been calibrated to laboratory standards and installed by suitably qualified personnel. Microphone calibration indicated that there was no significant drift in measured noise levels throughout the survey, indicating accurate measurements have been obtained. The extended noise measurement period of four days ensured that any variability between weekday and weekend noise levels are appropriately taken into account.

5.6.2. Assessment

The data used in the assessment has been obtained from manufacturer datasheets and from the client. The single figure A-weighted sound power levels are considered accurate and not dissimilar to those which ACCON have measured for telecoms equipment elsewhere.

Overall, it is considered that this noise assessment has a low level of uncertainty in the calculation procedure, especially within the context of the results clearly indicating a low impact.

Importantly, even if background sound levels were to vary slightly from day to day e.g. ± 5 dBA, then the assessment would remain as a low impact.

6. SUMMARY AND CONCLUSION

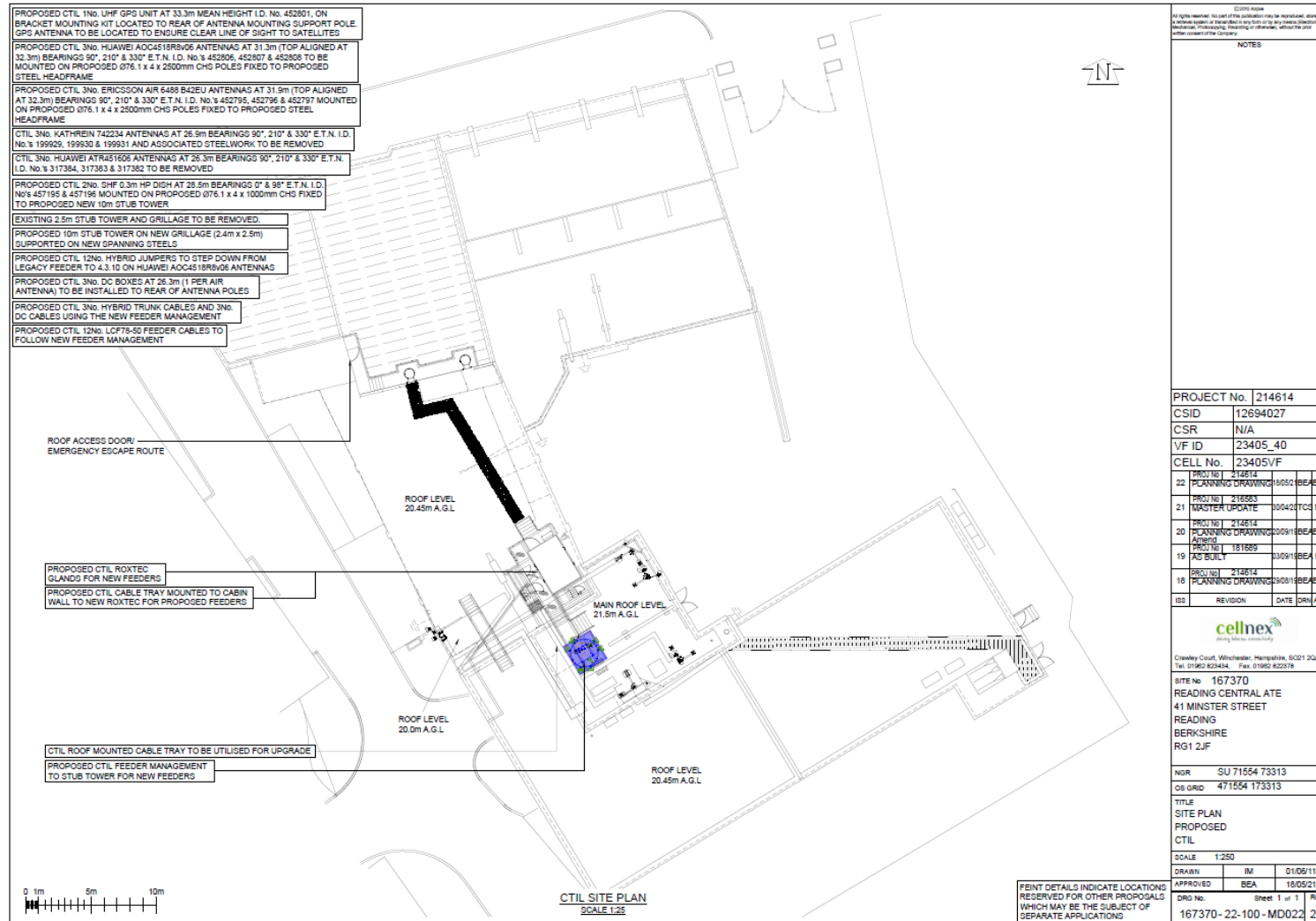
A noise assessment has been carried out to consider the potential noise impacts of the fixed plant installation of telecommunications equipment at 41 Minster Street, Reading. The fixed plant forms part of a planning application to install a telecommunications mast on the main roof of 41 Minster Street.

Noise measurements were undertaken in order to determine the typical background sound levels in the vicinity of the nearest noise sensitive residential receptors.

Source sound power levels for the fixed plant installation were used in calculations in order to predict the likely sound level at the nearest NSRs located at Premier Suites. The BS 4142 assessment has identified that external noise levels at the closest residential receptors will not exceed the assessment criteria and will be significantly below both the background sound level and the existing ambient noise levels.

ADDITIONAL FIGURES

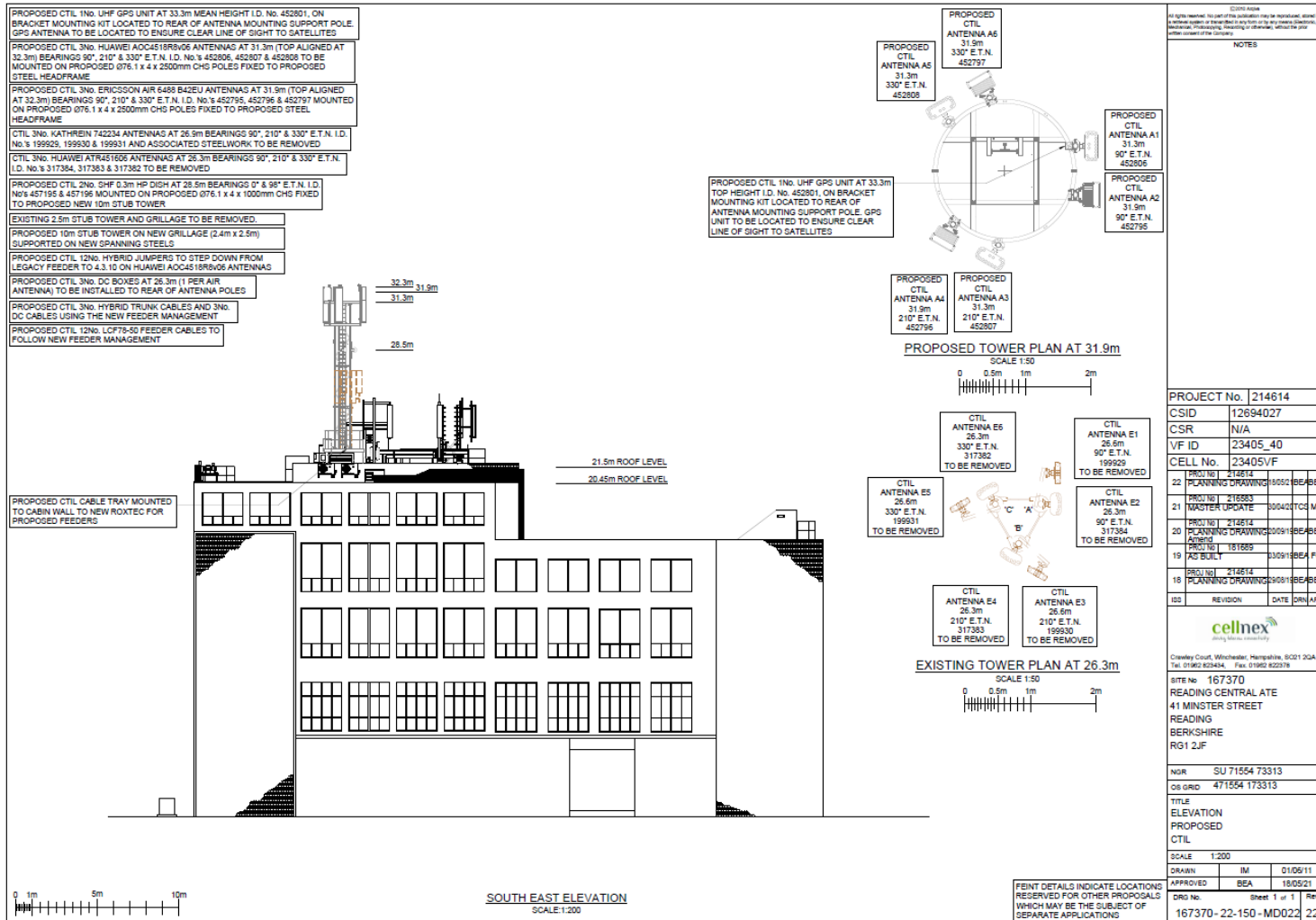
Figure F.1: Proposed Site Layout



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Figure F.2: Proposed South East Elevation



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APPENDICES

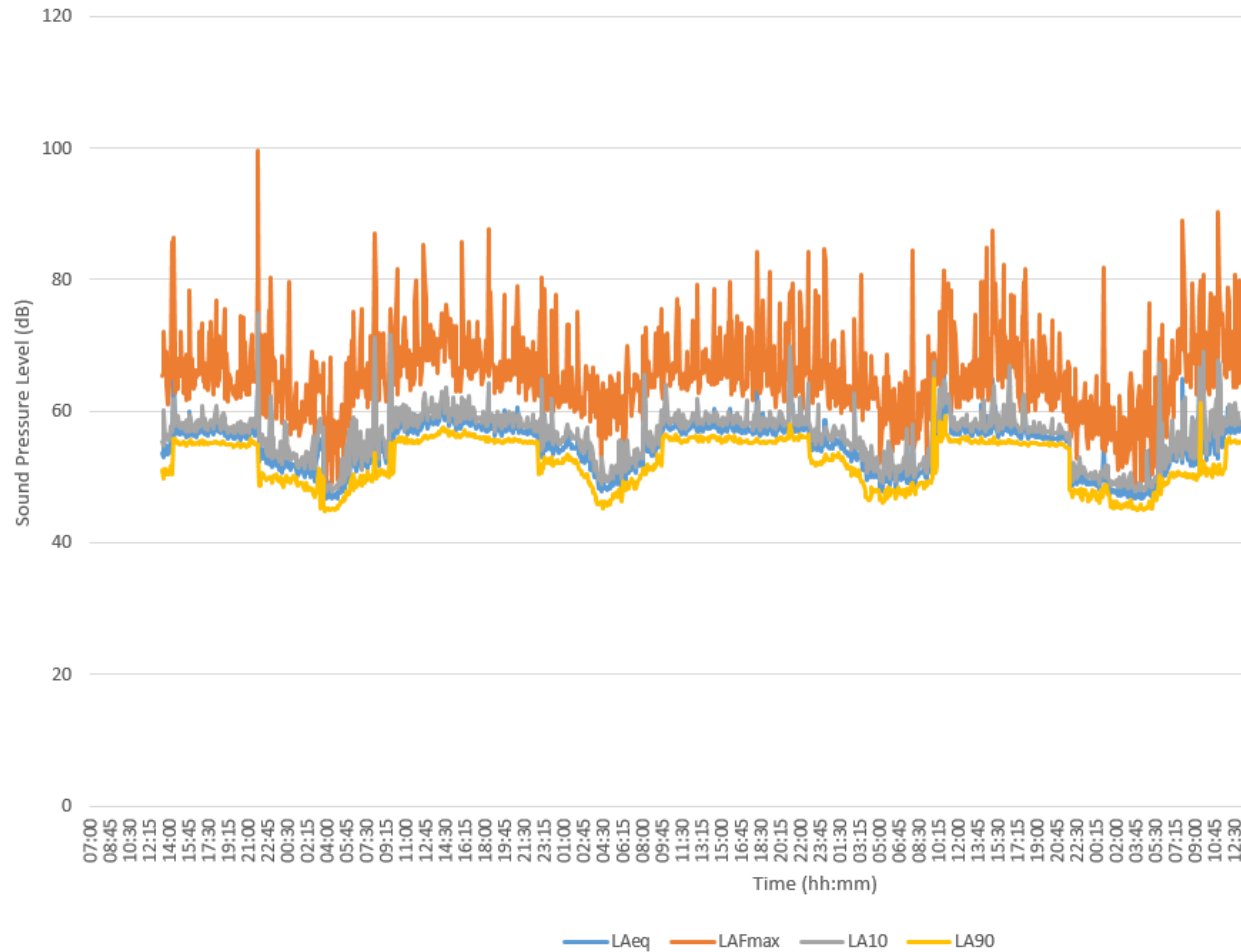
Appendix 1

Glossary of Acoustic Terminology

Term	Description
'A'-Weighting	This is the main way of adjusting measured sound pressure levels to take into account human hearing, and our uneven frequency response.
Decibel (dB)	This is a tenth (deci) of a bel. A decibel can be a measure of the magnitude of sound, changes in sound level and a measure of sound insulation. Decibels are not an absolute unit of measurement but are an expression of ratio between two quantities expressed in logarithmic form.
Ambient /Period Sound Level, $L_{Aeq, T}$	The equivalent steady sound level in dB containing the same acoustic energy as the actual fluctuating sound level over the given period, T. T may be as short as 1 second when used to describe a single event, or as long as 24 hours when used to describe the noise climate at a specified location. $L_{Aeq, T}$ can be measured directly with an integrating sound level meter.
Background Sound Level, $L_{A90, T}$	The 'A'-weighted sound pressure level of the residual noise in decibels exceeded for 90 per cent of a given time (T). The $L_{A90, T}$ is used to describe the background noise levels at a particular location.
L_{AFmax}	The 'A'-weighted maximum sound pressure level measured over a measurement period measured with 'fast' weighting (125 ms).
Rating Level, $L_{Ar, Tr}$	The specific sound level plus any adjustment for the characteristic features of the sound.
Specific Sound Level, $L_{Aeq, Tr}$	The equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, Tr .
R	Sound reduction index. Laboratory measure of the sound insulating properties of a material or building element in a stated frequency band
R_w	Weighted sound reduction index, a single number quantity for the airborne sound insulation in buildings and of building elements such as wall, doors and windows. The quantity is intended for rating the airborne sound insulation and for simplifying the formulation of acoustical requirements in building codes, when measured in the presence of flanking sound transmission, denoted R'_{w} .

Appendix 2 **MP1 Time History**

Figure A.1: MP1 Time History



Appendix 3 Supplied Datasheets

Table A3.1 Ericsson Radio 2260 Maximum Sound Power Levels

Table 5 Maximum Sound Power Level (dB) for Radio 2260 with Fan

Temperature (°C)	Radio 2260 Sound Power Level (dB)
≤ +20	46
+25	48
+30	50
+40	55
+45	57
+55	61
+60	61

Table A3.2 Ericsson Radio 2212 Maximum Sound Power Levels

Table 5 Maximum Sound Power Level (dB) for Radio 2212 with Fan

Temperature (°C)	Radio Sound Power Level (dB) (R-state < R5)	Radio Sound Power Level (dB) (R-state ≥ R5)
< +25	45	40
+30	45	40
+40	53	40
+45	55	40
+55	59	40

Appendix 4 **BS 4142 Assessment**

Table A4.1: BS 4142 Assessment – Noise from Fixed Plant – Weekday Daytime

NSR	Predicted Rating Noise Level ($L_{Ar, Tr}$, dB)	Measured Background Sound Level ($L_{A90, T}$, dB)	Difference between Rating Level and Background Sound Level (dB)	Initial Estimate of Impact
Premier Suites East Façade: First Floor	11	51	-40	Low Impact
Premier Suites East Façade: Second Floor	13	51	-38	Low Impact
Premier Suites East Façade: Third Floor	16	51	-35	Low Impact
Premier Suites South Façade: First Floor	12	51	-39	Low Impact
Premier Suites South Façade: Second Floor	14	51	-37	Low Impact
Premier Suites South Façade: Third Floor	16	51	-35	Low Impact

Table A4.2: BS 4142 Assessment – Noise from Fixed Plant – Weekday Night-time

NSR	Predicted Rating Noise Level ($L_{Ar, Tr}$, dB)	Measured Background Sound Level ($L_{A90, T}$, dB)	Difference between Rating Level and Background Sound Level (dB)	Initial Estimate of Impact
Premier Suites East Façade: First Floor	11	48	-37	Low Impact
Premier Suites East Façade: Second Floor	13	48	-35	Low Impact
Premier Suites East Façade: Third Floor	16	48	-32	Low Impact
Premier Suites South Façade: First Floor	12	48	-36	Low Impact

NSR	Predicted Rating Noise Level ($L_{Ar, Tr}$, dB)	Measured Background Sound Level ($L_{A90, T1}$, dB)	Difference between Rating Level and Background Sound Level (dB)	Initial Estimate of Impact
Premier Suites South Façade: Second Floor	14	48	-34	Low Impact
Premier Suites South Façade: Third Floor	16	48	-32	Low Impact

Table A4.3: BS 4142 Assessment – Noise from Fixed Plant – Weekend Daytime

NSR	Predicted Rating Noise Level ($L_{Ar, Tr}$, dB)	Measured Background Sound Level ($L_{A90, T1}$, dB)	Difference between Rating Level and Background Sound Level (dB)	Initial Estimate of Impact
Premier Suites East Façade: First Floor	11	53	-42	Low Impact
Premier Suites East Façade: Second Floor	13	53	-40	Low Impact
Premier Suites East Façade: Third Floor	16	53	-37	Low Impact
Premier Suites South Façade: First Floor	12	53	-41	Low Impact
Premier Suites South Façade: Second Floor	14	53	-39	Low Impact
Premier Suites South Façade: Third Floor	16	53	-37	Low Impact

Table A4.4: BS 4142 Assessment – Noise from Fixed Plant – Weekend Night-time

NSR	Predicted Rating Noise Level ($L_{Ar, Tr}$, dB)	Measured Background Sound Level ($L_{A90, T}$, dB)	Difference between Rating Level and Background Sound Level (dB)	Initial Estimate of Impact
Premier Suites East Façade: First Floor	11	44	-33	Low Impact
Premier Suites East Façade: Second Floor	13	44	-31	Low Impact
Premier Suites East Façade: Third Floor	16	44	-28	Low Impact
Premier Suites South Façade: First Floor	12	44	-32	Low Impact
Premier Suites South Façade: Second Floor	14	44	-30	Low Impact
Premier Suites South Façade: Third Floor	16	44	-28	Low Impact



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