



## NOISE IMPACT ASSESSMENT

on behalf of

## Bowmer and Kirkland Limited

for development at

## Echo Street, Manchester

## Report Number NA101531-5

**Date of Report 27 March 2026**

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## Summary

Plant verification measurements were carried out for the purpose of discharging condition 16(b) of the original planning permission (136874/FO/2023) for a student accommodation development at Echo Street, Manchester.

A noise assessment has previously been undertaken to predict the potential impact of noise from the fixed plant associated with the development for the purpose of discharging condition 16(a) of the planning permission.

Rooftop measurements of the plant in operation have been undertaken in 2026 under normal operating loads to establish the rooftop levels.

Comparison with the previous predicted results show compliance with the adopted plant noise limits and it is therefore considered that condition 16(b) can be discharged.

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|------------------|---------------|--------------|-------------------------------------------------------------------------------------|--------------|
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### Advisory Note

The suitability of any recommended noise mitigation measures within this report should be approved by the relevant architects, structural engineers, building contractors, fire consultants and material manufacturers constituting the wider design team, prior to procurement and field application. This should ensure that when the recommended noise control measures are implemented on site, they will satisfy the requirements of all disciplines, therefore should not cause any health and safety issues.

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# 1 Introduction

1.1 Miller Goodall Ltd has undertaken a noise assessment to accompany an application to discharge planning condition 16 of the planning permission (Manchester City Council ref: 136874/FO/2023) for a proposed student accommodation development at Echo Street, Manchester.

1.2 Planning condition 16 states:

*"16) (a) Prior to the first occupation of the development hereby approved, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval in writing by the City Council, as Local Planning Authority. Externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 dB (L<sub>aeq</sub>) below the typical background (L<sub>A90</sub>) level at the nearest noise sensitive location.*

*(b) Prior to the first occupation of the development, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non-conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. A verification report and measures shall be agreed until such a time as the development complies with part (a) of this planning condition. Any mitigation measures shall be implemented in accordance with a timescale to be agreed with the City Council, as Local Planning Authority. Any measures shall thereafter retained and maintained in situ.*

*Reason – To minimise the impact of plant on the occupants of the development pursuant to policies SPI and DMI of the Manchester Core Strategy (2012) and saved policy DC26 of the Unitary Development Plan for the City of Manchester (1995)."*

1.3 Miller Goodall has previously provided a noise impact assessment<sup>1</sup> for discharging condition 16(a) demonstrating that operation of the fixed plant associated with the development

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<sup>1</sup> Milelr Goodall report "Noise Impact Assessment – Report Number NA101531-5" dated 3 October 2025

comply with the noise limits within the condition through computer 3D modelling, an assessment in accordance with BS 4142:2014+A1:2019<sup>2</sup> using the original baseline surveys.

- 1.4 This report seeks to discharge condition 16(b) through the required measurements of the plant in operation at the site and comparison with predicted noise levels and with the plant noise limits previously set.
- 1.5 It should be noted that condition 16 relates only to externally mounted ancillary plant under normal usage. Plant which operates in emergency scenarios e.g. emergency smoke extract fans and basement diesel pumps, have not been included as part of the assessment and validation measurements

## 2 Policy, Standards and Guidance

- 2.1 The following overarching planning policy and acoustics standards and guidance have been considered in this assessment.
- Noise Policy Statement for England (NPSE).
  - National Planning Policy Framework (NPPF).
  - BS 4142:2014+A1:2019 *'Methods for rating and assessing industrial and commercial sound'*.
- 2.2 Further detail is provided in **Appendix 1: Policy, Standards and Guidance**.

## 3 Site Description

- 3.1 The site is located at Echo Street, Manchester. The site location is indicated in the figure presented in **Appendix 2: Site Location, Monitoring and NSR Locations**.
- 3.2 The site is bounded to the south by the trainline, running between Manchester Piccadilly and Manchester Oxford Road, beyond which are university buildings and the Mancunian Way (A57(M)) overpass approximately 250 m away. To the east, the site is directly bounded by Echo Street and an office building with the A6 and Piccadilly train station beyond.

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<sup>2</sup> British Standard (BS) 4142:2014+A1:2019 "Methods for rating and assessing industrial and commercial sound"

- 3.3 North of the site, across Granby Row, is the existing iQ student accommodation, with Fairfield Street and offices beyond. To the west of the site are Vimto Park and University of Manchester buildings.
- 3.4 The primary noise sources in the area are the A6 and Fairfield Street, with anonymous traffic noise from other surrounding roads and intermittent noise from the train line.

## 4 Proposed Development

- 4.1 Three interlinked towers ranging from 27, 21, and 16 storeys are currently being erected together with intermediary link buildings (15 and 11 storeys) to form Purpose Built Student Accommodation with associated amenity space and external landscaping and other associated works.
- 4.2 Externally mounted plant items are roof mounted on each of the main towers, the rooftop plant layout is presented in **Appendix 3: Plant Layout**.
- 4.3 Only one scenario is assessed as it is the worst-case scenario for the development, which is night-time assessment of mechanical services plant.

## 5 2026 Plant Measurements

- 5.1 Attended measurements of the mechanical services plant in operation have been undertaken 18 February 2026 to quantify the noise levels for comparison with the predicted rooftop noise levels. If the rooftop levels recorded are lower than predicted at the same positions, the plant will comply with the plant noise limits at noise sensitive receptors.
- 5.2 The measurements were undertaken in accordance with BS 7445-1: 2003<sup>3</sup> by Robert Nelms of Miller Goodall Ltd. The calibration of the sound level meter was checked before and after measurements with negligible deviation ( $\leq 0.1$  dB). Details of the equipment used are shown in **Table 1**.

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<sup>3</sup> BS 7445-1: 2003 Description and measurement of environmental noise – Part 1: Guide to quantities and procedures

**Table 1: Noise monitoring equipment – 2026**

| Equipment Description                                                  | Type Number | Manufacturer | Serial No. | Date Calibrated | Calibration Certification Number |
|------------------------------------------------------------------------|-------------|--------------|------------|-----------------|----------------------------------|
| Class 1 <sup>4,5</sup> Integrating Real Time 1/3 Octave Sound Analyser | NOR 140     | Norsonic     | 1406017    | 08/10/2025      | 07403/1                          |
| Microphone                                                             | NOR 1225    | Norsonic     | 358159     | 08/10/2025      | 07403/1                          |
| Class 1 Calibrator <sup>6</sup>                                        | B&K 4231    | Brüel & Kjær | 2478249    | 19/08/2025      | 07361/1                          |

5.3 The loudest level recorded at any position on any roof was 58 dB LAeq.

## 6 Plant Noise Limits

6.1 Based on the results of the original environmental sound surveys undertaken at the site, and using the guidance from Condition 16(a), plant noise limits have been derived and are shown in **Table 2**.

**Table 2: Plant Noise Limits**

| Position | Period                    | Plant Noise Limits (dB) |
|----------|---------------------------|-------------------------|
| North    | Daytime: 07:00 – 23:00    | 49                      |
|          | Night-time: 23:00 – 07:00 | 48                      |
| South    | Daytime: 07:00 – 23:00    | 54                      |
|          | Night-time: 23:00 – 07:00 | 50                      |

<sup>4</sup> IEC 61672-1 (2002) Electroacoustics – Sound level meters Part 1: Specifications

<sup>5</sup> IEC 61260 (1995) Electroacoustics – Octave-band and fractional-octave-band filters

<sup>6</sup> IEC 60942 (2003) Electroacoustics – Sound calibrators

## 7 3D Noise Model Results

- 7.1 Details on the 3D modelling, including sources and assumptions, have been provided as part of the discharge of condition 16(a). The results from the noise modelling are summarised in **Table 3** below.

**Table 3: Modelled noise levels and noise sensitive receptors**

| Noise Sensitive Receptor (NSR) |                                                                                                          |                          | Modelled<br>Specific<br>Noise Level,<br>dB $L_{Aeq,Tr}$ |
|--------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------|
| Reference                      | Description                                                                                              | Plant Noise<br>Limit, dB |                                                         |
| NSR1                           | Sackville Building – west of the site, approximately 50 m from the site on the north side of Granby Row. | 48                       | 41                                                      |
| NSR2                           | Fairfield Hall – north-east of the site, directly across Granby Row.                                     | 48                       | 36                                                      |
| NSR3                           | Lambert Hall – north of the site, directly across Granby Row.                                            | 48                       | 36                                                      |
| NSR4                           | Barnes Wallis Building – south of the site, approximately 40 m south of the site across the train line.  | 50                       | 33                                                      |
| NSR5                           | Piccadilly Hotel – east of the site, approximately 100 m from the site across the train line and the A6. | 50                       | 25                                                      |

- 7.2 The output from the noise model showing the loudest levels at each façade as described in **Table 3** is presented in **Appendix 4: Noise Model Output**.
- 7.3 With respect to Condition 16(b), **Figure 4b** shown in **Appendix 4: Noise Model Output** shows the areas where the rooftop noise levels are predicted to be above 58 dB  $L_{Aeq,T}$ . The loudest level recorded at any position on any roof was 58 dB  $L_{Aeq}$ , and this was within the areas modelled and shown in red in the figure.
- 7.4 Consequently, the plant as installed and operating at the site is quieter than modelled, and this will result in lower noise levels at noise sensitive receptors which were previously modelled to discharged condition 16(a). Therefore, we would consider that condition 16(b) can be discharged.

## 8 Summary and Conclusion

- 8.1 Verification measurements have been carried out to discharge condition 16(b) of the original planning permission (*136874/FO/2023*).
- 8.2 This report has provided full details of the verification measurements and the results thereof.
- 8.3 It has been demonstrated that the results of the measurements comply with the adopted plant noise limits, and condition 16(b) can therefore be discharged.

# APPENDICES

# Appendix 1: Policy, Standards and Guidance

## 1 Noise Policy Statement for England

- 1.1 The Noise Policy Statement for England (NPSE<sup>7</sup>) sets out the long-term vision of noise policy. The Noise Policy aims, as presented in this document, are:

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

- *avoid significant adverse effects on health and quality of life;*
- *mitigate and minimise adverse effects on health and quality of life; and*
- *where possible, contribute to the improvement of health and quality of life.”*

- 1.2 The NPSE makes reference to the concepts of NOEL (No Observed Effect Level) and LOAEL (Lowest Observed Adverse Effect Level) as used in toxicology but applied to noise impacts. It also introduces the concept of SOAEL (Significant Observed Adverse Effect Level) which is described as the level above which significant adverse effects on health and the quality of life occur.

- 1.3 The first aim of the NPSE is to avoid significant adverse effects, taking into account the guiding principles of sustainable development (as referenced in Section 1.8). The second aim seeks to provide guidance on the situation that exists when the potential noise impact falls between the LOAEL and the SOAEL, in which case:

*“...all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development”.*

- 1.4 Importantly, the NPSE goes on to state:

*“This does not mean that such adverse effects cannot occur”.*

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<sup>7</sup> Noise Policy Statement for England, Defra, March 2010

- 1.5 The Statement does not provide a noise-based measure to define SOAEL, acknowledging that the SOAEL is likely to vary depending on the noise source, the receptor and the time in question. NPSE advises that:

*"Not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available"*

- 1.6 It is therefore likely that other guidance will need to be referenced when applying objective standards for the assessment of noise, particularly in reference to the SOAEL, whilst also taking into account the specific circumstances of a proposed development.

## **2 National Planning Policy Framework**

- 2.1 The National Planning Policy Framework (NPPF<sup>8</sup>) was updated most recently in February 2025. The NPPF advises that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives). One of these is an environmental objective which is described in par. 8 (c):

*"to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."*

- 2.2 At par. 187 NPPF advises that:

*"Planning policies and decisions should contribute to and enhance the natural and local environment by:*

*e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans..."*

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<sup>8</sup> National Planning Policy Framework, Ministry of Housing, Communities and Local Government, December 2023

2.3 Par. 198 goes on to state:

*“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; ...”*

2.4 Par. 200 seeks to ensure that any development does not prejudice the legally permitted operations and activities of other, existing non-residential uses, stating:

*“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 BS 4142:2014+A1:2019 ‘Methods for rating and assessing industrial and commercial sound’**

3.1 BS 4142:2014+A1:2019<sup>9</sup> provides guidance on the assessment of the likelihood of complaints relating to noise from industrial sources. The standard presents a method of assessing potential noise impact by comparing the noise level due to industrial sources (the Rating Level) with that of the

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<sup>9</sup> BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound

existing background noise level at the nearest noise sensitive receiver in the absence of the source (the Background Sound Level).

3.2 The Specific Noise Level – the noise level produced by the source in question at the assessment location – is determined and a correction applied for certain undesirable acoustic features such as tonality, impulsivity or intermittency. The corrected Specific Noise Level is referred to as the Rating Level.

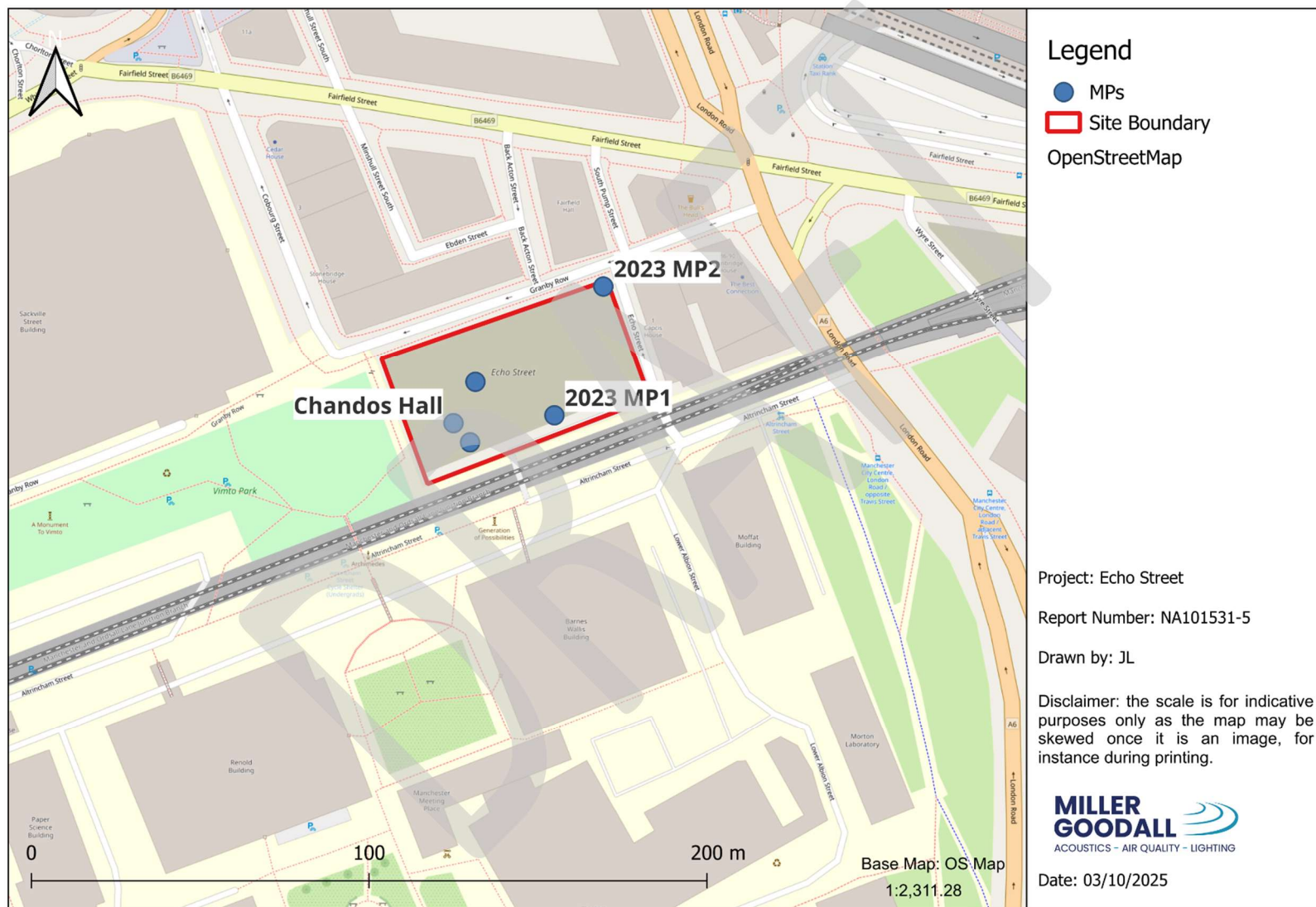
3.3 In order to assess the noise impact, the Background Sound Level is arithmetically subtracted from the Rating Level. The standard states the following:

- *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.*

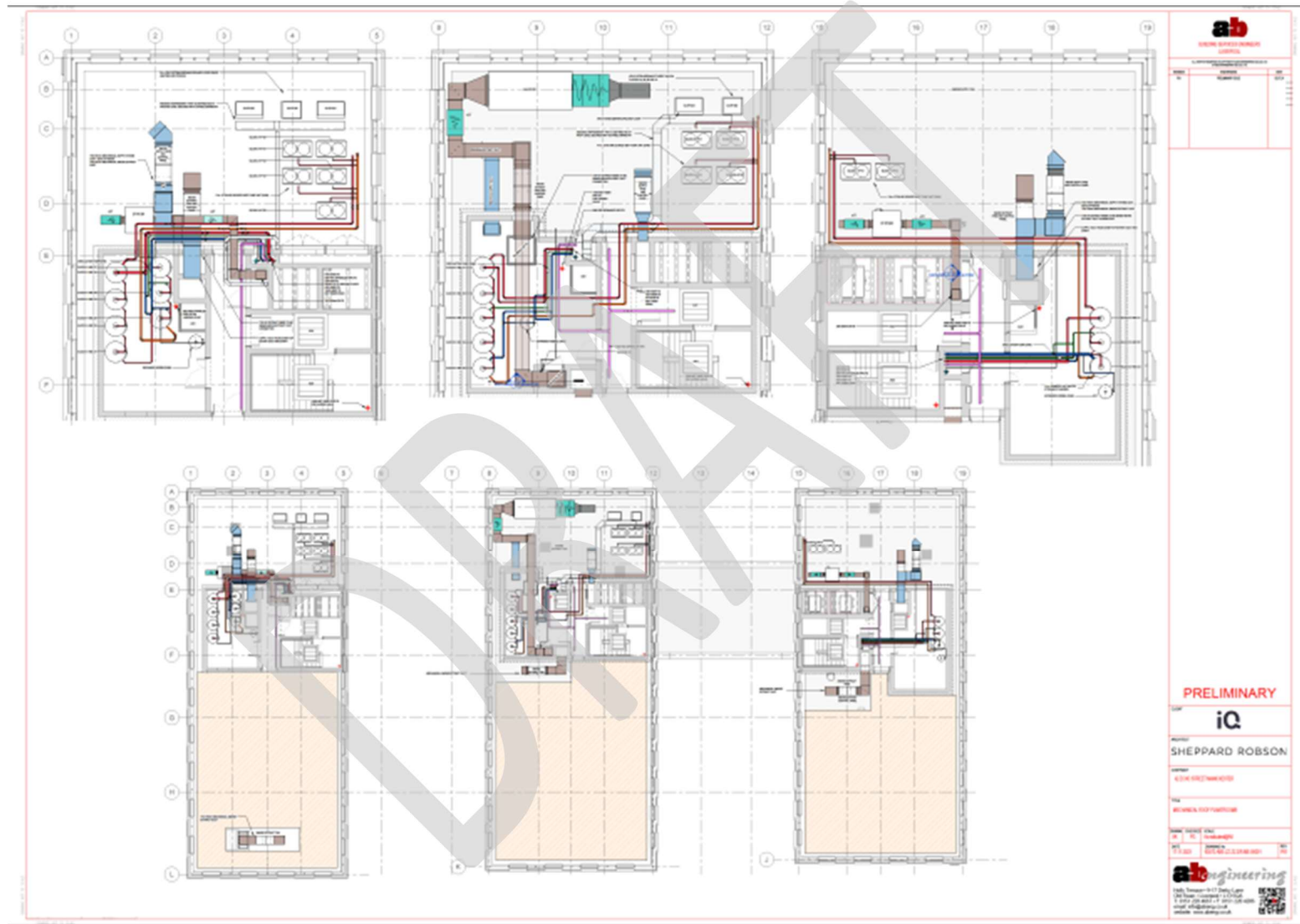
3.4 In addition to the margin by which the Rating Level of the specific sound source exceeds the Background Sound Level, the 2014+A1:2019 edition places emphasis upon an appreciation of the context, as follows:

*An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.*

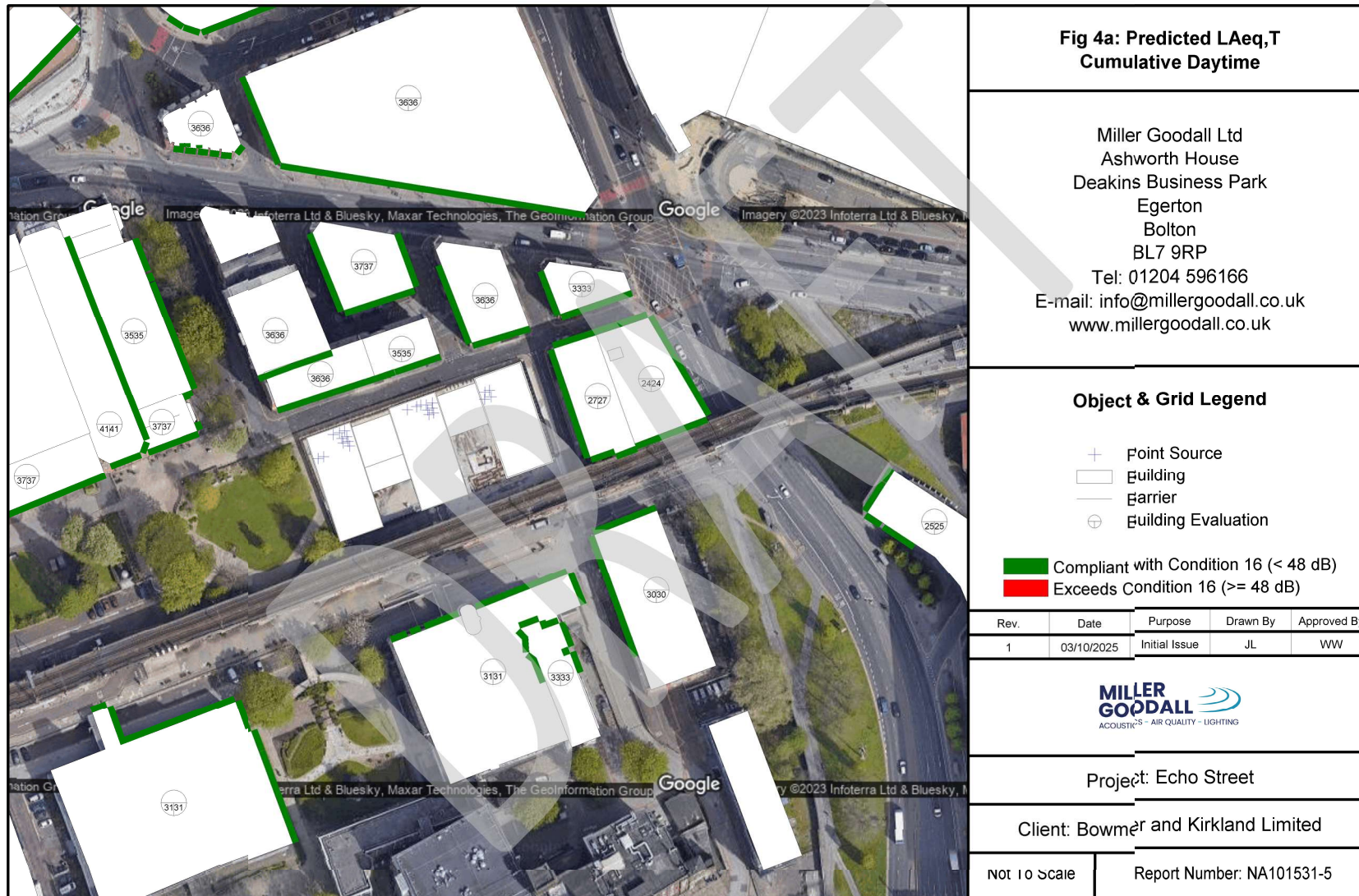
## Appendix 2: Site Location, Monitoring and NSR Locations

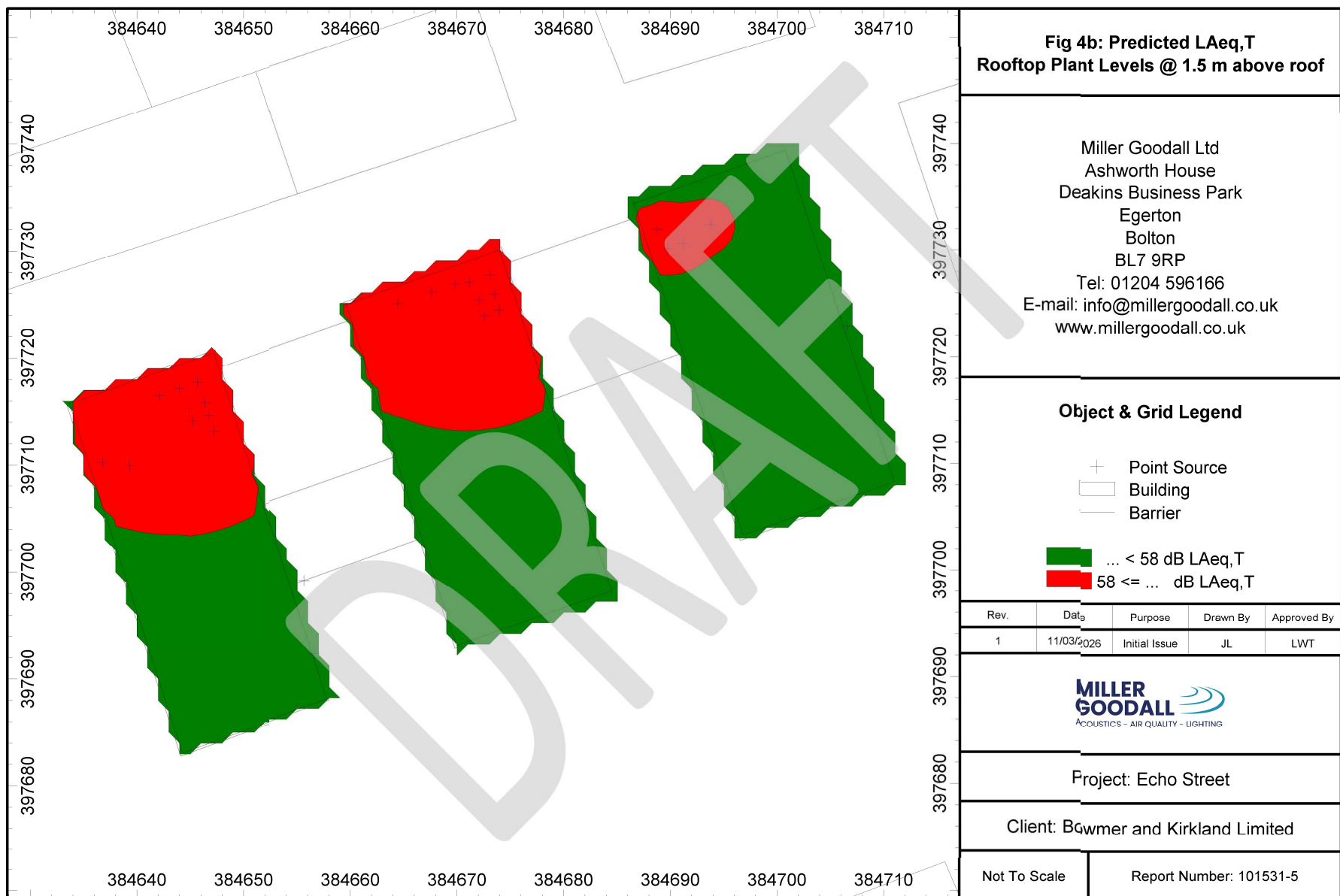


## Appendix 3: Plant Layout



## Appendix 4: Noise Model Output





## Glossary of Terms

**Decibel (dB)** The unit used to quantify sound pressure levels; it is derived from the logarithm of the ratio between the value of a quantity and a reference value. It is used to describe the level of many different quantities. For sound pressure level the reference quantity is  $20 \mu\text{Pa}$ , the threshold of normal hearing is in the region of 0 dB, and 140 dB is the threshold of pain. A change of 1 dB is usually only perceptible under laboratory conditions.

**dB  $L_A$**  Decibels measured on a sound level meter incorporating a frequency weighting (A-weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB  $L_A$  broadly agree with an individual's assessment of loudness. A change of 3 dB  $L_A$  is the minimum perceptible under normal conditions, and a change of 10 dB  $L_A$  corresponds roughly to halving or doubling the loudness of a sound. The background noise level in a living room may be about 30 dB  $L_A$ ; normal conversation about 60 dB  $L_A$  at 1 meter; heavy road traffic about 80 dB  $L_A$  at 10 meters; the level near a pneumatic drill about 100 dB  $L_A$ .

**$L_{A90,T}$**  The A weighted noise level exceeded for 90% of the specified measurement period ( $T$ ). In BS 4142: 2014+A1:2019 it is used to define background noise level.

**$L_{Aeq,T}$**  The equivalent continuous sound level. The sound level of a notionally steady sound having the same energy as a fluctuating sound over a specified measurement period ( $T$ ).  $L_{Aeq,T}$  is used to describe many types of noise and can be measured directly with an integrating sound level meter.

**$L_{AF,max}$**  The highest A-weighted noise level recorded during the time period using a Fast time-weighting. It is usually used to describe the highest noise level that occurred during the event.

