

Acoustic assessment of installed mechanical services equipment

335–337 Oxford Road, Manchester, M13 9PG



Client: Diocese of Salford

Report Reference: 260108-R001

Date: 3rd February 2026

Revision:	Date:	Author:	Checked:
-	03/02/2026	Tommy Burn BSc (Hons) MIOA	Rob Cant MIOA MEnvSc

This report has been prepared by ACA Acoustics Limited (ACA) with all reasonable skill, care, and diligence in accordance with generally accepted acoustic consultancy principles and taking account of the services and terms agreed between ACA and our client. Any information provided by third parties and referred to herein may not have been checked or verified by ACA unless expressly stated otherwise. Certain statements made in the report may constitute estimates or projections and even though these are based on reasonable assumptions and good industry practice, such forward-looking statements by their nature involve risks and uncertainties which could cause actual results to differ materially from the results predicted. ACA does not guarantee or warrant any estimate or projection contained in this report.

Note that consideration of non-acoustic aspects including, but not limited to structural calculations, compliance with Building Regulations and other statutory requirements, or any assessment of fire regulations are outside the scope of ACA Acoustics Limited and should be considered by others accordingly.

This report is confidential to the client and ACA accepts no responsibility whatsoever to third parties unless formally agreed by ACA. Any such party relies upon the report at their own risk. © 2026 ACA Acoustics Limited.

CONTENTS

0. SUMMARY	1
1. INTRODUCTION	2
2. ACOUSTIC CRITERIA	2
2.1. Decision Notice 139464/FO/2024.....	2
2.2. BS 4142:2014+A1:2019	3
3. REVIEW OF SITE LOCATION.....	3
4. SOUND LEVEL SURVEY	4
5. ACOUSTIC ASSESSMENT.....	6
6. CONCLUSION.....	7

0. SUMMARY

- 0.1. ACA Acoustics Limited has been commissioned to assess the acoustic impact of previously installed mechanical services equipment associated with a modular building at 335-337 Oxford Road, Manchester.
- 0.2. The assessment is required to discharge a noise related planning condition to provide evidence that noise emissions from the equipment are not detrimental to the amenity of nearby noise-sensitive properties and complies with the Local Authority's requirements.
- 0.3. A survey has been carried out in the vicinity to establish existing background sound levels, along with specific sound levels from the installed equipment. Based on Manchester City Council's noise related planning condition for application reference 139464/FO/2024, the rating level from the equipment should not exceed a sound level 5dB below the measured background sound level outside the most noise-sensitive receptor when assessed in accordance with the methodology of BS 4142:2014+A1:2019.
- 0.4. The most noise-sensitive residential receptor (NSR) has been assessed as first floor residential windows of properties above a retail unit at Horniman House, 399-401 Oxford Road.
- 0.5. ACA Acoustics have undertaken a manned sound level survey of the installed equipment, along with obtaining background sound levels during the latest periods of operation. Typical measured background sound levels are LA90 53dB. The rating sound level from the installed equipment is LAr <43dB when assessed in accordance with the requirements of BS 4142:2015+A1:2019. Measured rating levels from the equipment are at least 10dB below the measured LA90 background sound levels and meet the requirements of Manchester City Council.
- 0.6. Noise from the equipment will not be disturbing or detrimental to the amenity of any nearby residential or other noise-sensitive receptors and complies with the planning requirements of Manchester City Council such that Planning Condition 4 of application reference 139464/FO/2024 may be discharged.

1. INTRODUCTION

An air conditioning condensing unit associated with a temporary modular building has been installed at 335-337 Oxford Road, Manchester. This planning application is to permit the retention of the associated building for a further two years. Planning condition 4 of the planning application reference 139464/FO/2024 relates to noise from the installed mechanical plant associated with the building.

ACA Acoustics Limited has been commissioned on behalf of the client to carry out an assessment of noise emissions from the installed mechanical plant and, where necessary, to make recommendations for a mitigation scheme to ensure that the amenity of nearby noise-sensitive properties is not compromised. The purpose of the report is to support a retrospective planning application for the installed equipment.

This report presents results of the sound level survey and assessment.

2. ACOUSTIC CRITERIA

2.1. Decision Notice 139464/FO/2024

Manchester City Council have issued Decision Notice for application reference 139464/FO/2024. This contains Condition 4 which pertains to noise from installed mechanical equipment.

Condition 4 states:

“4) a) Within one month of the date of this approval, a scheme to secure a reduction in the level of noise emanating from the site shall be submitted to and approved in writing by the City Council as local planning authority. This shall include a report to validate that the externally mounted ancillary plant, equipment and servicing is acoustically treated so as to achieve a rating level of 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. Any instances of non-conformity shall be detailed along with any measures required to be undertaken to ensure compliance with the agreed noise criteria.

b) The scheme shall be implemented in full within one month of the discharge of part a) of this condition.

Reason - To minimise the impact of the development and to prevent a general increase in pre-existing background noise levels around the site pursuant to policies DM1 and SP1 of the Manchester Core Strategy (2012).”

2.2. BS 4142:2014+A1:2019

The scope of BS 4142:2014+A1:2019 *Methods for rating and assessing industrial and commercial sound* advises that,

“This British Standard describes methods for rating and assessing sound of an industrial and/or commercial nature ... to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident”.

BS 4142:2014+A1:2019 is commonly used to assess the potential for loss of amenity due to noise from mechanical services equipment.

The assessment method of BS 4142:2014+A1:2019 corrects the specific sound level from the source under investigation to account for characteristics that could make the sound more intrusive to obtain a rating level. This rating level is compared against the prevailing background noise outside the noise-sensitive property. Section 11 of BS 4142:2014+A1:2019 provides an initial estimate of the impact and advises that:

- a) Typically, the greater this difference [between the rating level and the background sound level], the greater the magnitude of the impact.
- b) A difference of around +10dB 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 source having a low impact, depending on the context.

It is important to note that each of the initial assessment outcomes is subject to consideration of the context. However, the guidance in the Standard suggests that designing a solution equal to or below the background level will ensure that there is a low likelihood of adverse impact. Therefore, complying with Manchester City Council’s criteria will ensure a low likelihood of adverse impact for nearby residents.

3. REVIEW OF SITE LOCATION

Mechanical equipment, comprising of a single AC condenser unit is proposed for retention, serving a temporary modular building.

The equipment is situated to the rear of the modular building and operates until 19:30.

There are no directly adjacent noise sensitive properties, however the nearest residential properties are those above an existing Sainsbury's Local supermarket at Horniman House, 399-401 Oxford Road. This is around 175 meters from the installed plant location

The most affected noise sensitive receptors are discussed in Table 1 below.

Receptor	Description
NSR1	First floor residential windows of properties at 399-401 Oxford Road, at a distance of around 175 meters.

Table 1: NSR Description

A marked-up photograph is included in Figure 1 identifying the location of the equipment and nearest residential windows.

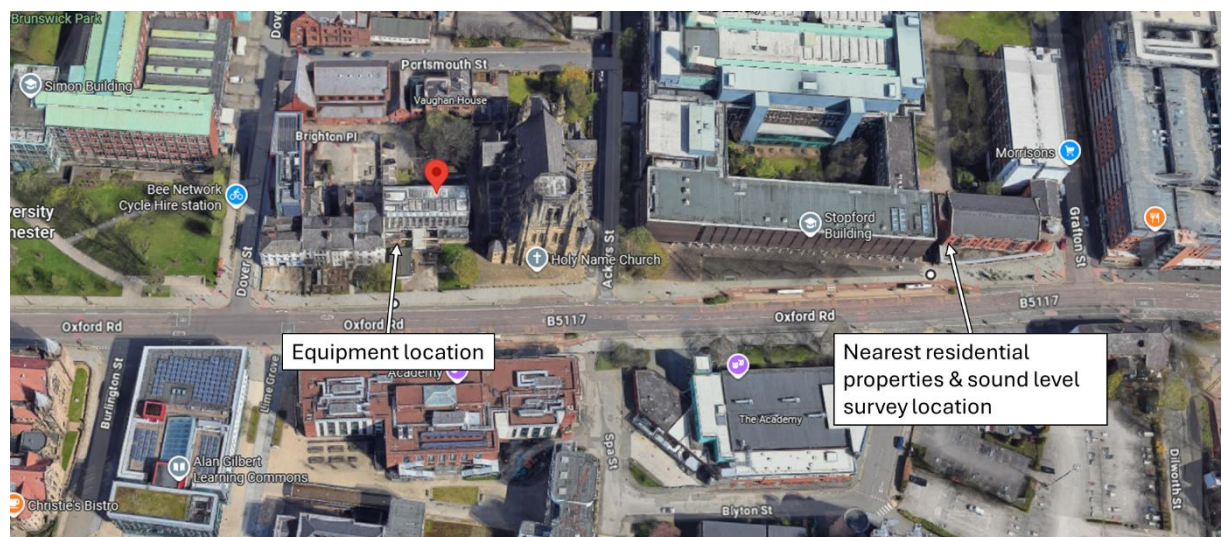


Figure 1: Equipment location, measurement position, and closest receptor (available at [google.com/maps](https://www.google.com/maps))

4. SOUND LEVEL SURVEY

To assess sound levels from the mechanical equipment, a manned sound level survey has been carried out during the latest operating period of the equipment.

The survey was conducted by Tom Bateson of ACA Acoustics during the late afternoon and evening of the 27th January 2026.

During the survey, the soundscape in the vicinity was influenced predominantly by local and distant road traffic. This reduced into the later night period.

The following equipment was used during the survey. An on-site calibration check was conducted on the sound level meter prior to the survey and repeated after with no deviation noted.

Equipment.	Serial Number
NTi Audio Class 1 sound level meter type XL2-TA complete with weatherproof and lockable outdoor environmental kit	A2A-10964-E0
Svantek calibrator type SV33B. Compliant to IEC 60942-1:2003	83826

Table 2: Equipment used for the sound level survey

Weather conditions at the time of setting up the survey were clear, cold, calm, and dry.

Measurements were obtained with the condenser operating and powered off.

Results of the survey are shown in Table 3 below.

Description	Measured Sound Levels	
	LAeq	LA90
Sound level with condenser operating, measured at the nearest residential properties	59	53
Background sound level immediately after condenser powers off	59	53
Background sound level at 19:30	57	52

Table 3: Summary sound level survey results

The condenser was operating continuously during the survey period while it was powered on, and as such it is appropriate to use the LA90 sound levels as most representative to determine the actual sound level of the unit while excluding intermittent traffic events from the busy road.

There was no change in the measured sound levels with the condenser operating and switched off. This correlates with subjective opinion of ACA Acoustics' engineer; noise from the condenser was completely inaudible at the closest noise-sensitive receptors

Assessment of specific sound levels of the condenser to the nearest residential property is shown below. As there is no change to the measured residual sound level when the equipment powered on it is not possible to ascertain exact sound level however the specific noise is at least 10dB below background.

Description	Specific Sound Levels
Specific sound level of condenser to nearest residential windows	≤43dB

Table 4: Summary sound level survey results

5. ACOUSTIC ASSESSMENT

The results summarised in Table 3 indicate that specific sound levels from the installed plant are currently at least 10dB below the measure background sound level.

Assessment of the calculated rating levels in accordance with BS 4142:2014+A1:2019 is provided in Table 5 below.

Description	R1 Receptor	Relevant Clause	Commentary
Calculated specific sound level to receptor	LAeq <43dB	7.1 7.3.6	Equipment operating.
Background sound level	LA90 52dB	8.1.3 8.3	Measured representative background sound level.
Acoustic feature correction	0dB	9.2	While on site the installed equipment was subjectively inaudible at the nearest residential property and as such no acoustic correction is applicable.
Rating level	LAr <43dB	9.2	
Excess of rating level over background sound level	At least 10dB below the background LA90 sound level	11	Assessment indicates a low likelihood of adverse impact

Table 5: Assessment of results in accordance with BS 4142:2014+A1:2019

Table 5 shows the rating level of the equipment is at least 10dB below the background LA90 sound level to outside the closest noise-sensitive properties.

BS 4142:2014+A1:2019 requires an assessment to consider the context of the development, rather than simply adhering to numerical values.

In this instance, the existing plant is to be retained, and has not history of complaint from nearby residential dwellings. In addition the plant is subjectively inaudible at nearby residential dwellings. This further reduces the likelihood of adverse impact.

6. CONCLUSION

Manchester City Council have issued a decision notice with noise related planning conditions for a condenser serving a temporary modular building.

ACA Acoustics have undertaken an assessment of noise from the installed equipment. The rating level is at least 10dB below the background sound level when assessed in accordance with the methodology of BS 4142:2014+A1:2019 at 1m from the closest noise-sensitive windows of the nearest residential receptors, achieving a “low likelihood of adverse impact”.

As a result the installed equipment achieves the Local Authority’s planning requirements for this development.

