

Project

Dixons Newall Green Academy
Plant noise measurements (main building)

Prepared for

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Version History

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PI	04/11/2025	First issue	Tom Farris

Summary

The planning approval for the new and refurbished buildings at Dixons Newell Green Academy in Wythenshawe includes a condition which limits noise from plant and services at the nearest noise sensitive receptor and requires commissioning measurements following completion of the project.

The building is now occupied and SRL have measured noise levels in the residential areas surrounding the site. The building's services were operating normally during our survey and were not audible at any location during the day or at night.

On that basis we would expect the rating level of noise from building services to be comfortably 5 or more dBA below the background noise levels at the nearest residential receptors and for the requirements of the planning condition 23 to be met.

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1.0 Introduction

Morgan Sindall has been working on a scheme to refurbish and extend buildings for Dixon's Newell Green Academy, on Greenbrow Road in Wythenshaw. The scheme includes new fixed plant and externally terminating building services, including Air Source Heat Pumps (ASHPs), Air Handling Units (AHUs), Mechanical Ventilation with Heat Recovery units (MVHRs), extract fans and IT cooling condenser units. Figure I shows a 3-D render of the scheme and the surrounding residential areas.

Figure I - 3D render of scheme



The planning approval for the main school building includes a condition which limits noise from plant and services at the nearest noise sensitive receptor and requires commissioning measurements at completion. We have previously assessed noise levels at the nearest receptors (see report FS0998-SRL-XX-XX-T-J-0008-PI Plant noise assessment (main building) dated 6 June 2025).

The building is now complete and occupied and this report details the results of noise measurements taken at the surrounding receptors with the building services operating.

2.0 Noise criteria and guidance

2.1 Planning condition 23

The planning approval for the scheme includes the following condition in relation to noise from building plant and services:

23) a) Externally mounted ancillary 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 5dB (LAeq) below the typical background (LA90) level at the nearest noise sensitive location. Prior to commencement of the use hereby approved the scheme shall be submitted to and approved in writing by the City Council as local planning authority in order to secure a reduction in the level of noise emanating from the site. The scheme shall be implemented in full before the use commences or as otherwise agreed in writing by the City Council as local planning authority.

b) Within 3 months of the first occupation of the approved development a verification report shall be submitted to and approved in writing by the City Council as local planning authority to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic report. The report shall also undertake post completion testing to confirm that the noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the agreed noise criteria.

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

BS 4142 provides a method to assess whether “sound of an industrial and/or commercial nature” is likely to have an adverse impact at noise sensitive receptors.

When comparing such sound (the “specific” noise) against existing background noise levels, BS 4142 highlights that certain acoustic features (such as tonality, impulsivity, intermittency, and so on) can increase any significance of impact. Where this occurs, penalties can be applied to the specific noise level, in accordance with the guidance set out in BS 4142, to provide the “rating level” of the noise source.

Comparison of the rating level to the background noise level indicates the significance of the new noise source at the receptors under assessment. 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 or more is likely to be an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the measured typical background noise level, the less likely it is that the specific sound source will have an adverse impact.
- Where the rating level does not exceed the background noise level, this is an indication of the specific sound source having a low impact, depending on the context.

BS 4142 states that “In using the background sound level in the method for rating and assessing industrial and commercial sound it is important to ensure that values are reliable and suitably represent both the circumstances and periods of interest. For this purpose, the objective is not simply to ascertain a lowest measured background sound level, but rather to quantify what is typical during particular time periods.”

3.0 Building plant and services

The buildings are served by the following building services plant:

- Teaching spaces are served by fan assisted hybrid ventilation units
- 3 roof-mounted Air Source Heat Pumps (ASHPs)
- 2 roof mounted and 1 internal Air Handling Units (AHUs)
- 2 internal Mechanical Ventilation with Heat Recovery units (MVHRs)
- 1 external IT cooling unit
- Various extract fans

The ASHP and IT cooling equipment can run at any time of day or night. The ventilation plant only operates during the daytime, when the building is occupied.

4.0 Noise survey

SRL visited site on 22 - 23 September 2025 to measure the levels of noise generated by building plant and services, and other environmental sources, at the surrounding residential receptors. We took measurements in publicly accessible areas, with a line of sight to the school buildings as follows:

Figure 2 - Survey locations



- A. Barnacrce Ave/Clay Lane
- B. Capenhurst Close
- C. Scout Drive
- D. Greenbrow Road

We took measurements at a height of 1.2m above local ground level for three consecutive 5-minute periods during the school day (11:15 to 12:45) and at night (23:00 to 00:30) at each location. Details of equipment and calibration and full measurement results are contained in the Appendices of this report.

A summary of the measured noise levels at each is as follows:

Location	Daytime L _{Aeq}	Daytime L _{A90}	Night-time L _{Aeq}	Night-time L _{A90}
Barnacrce Ave/Clay Lane	58 - 62	44 - 47	53 – 59	38
Capenhurst Close	49 -53	38 - 39	38 - 42	36 – 38
Scout Drive	45 - 59	41	41 - 44	38 – 39
Greenbrow Road	64 - 65	49 - 53	50 - 59	38 - 40

Noise levels were dominated by local traffic on the surrounding roads and distant traffic on the wider road network. Results were also affected by distant aircraft, light breeze in foliage, and other transient sources typically associated with this type of suburban environment. Unrepresentative noise sources close to the survey location were paused out.

The school's building services were operating normally during our survey and were not audible at any location during the day or at night. On that basis we would expect the rating level of noise from building services to be comfortably 5 or more dBA below the background noise levels at the nearest residential receptors and for the requirements of the condition to be met.

Appendix A - Survey Details

A1. Location of Survey

See Figure 2 above.

A2. Date & Time of Survey

Daytime: 11:15 22/09/25 to 12:45 22/09/25

Night-time: 23:00 22/09/25 to 00:30 23/09/25

A3. Personnel Present During Survey

Tom Farris, SRL

A4. Weather Conditions during Survey

Daytime: 11 °C, wind 3 km/hour SE.

Night-time: 6°C, wind 2 km/hour W.

A5. Instrumentation

Brüel & Kjaer - Noise Meter AT2

Description	SRL No.	Make	Type	S/N
Sound Level Meter (AT2, Green)	814	Brüel & Kjaer	2250	2575775
Pre-amp	814	Brüel & Kjaer	ZC0032	5843
Microphone	814	Brüel & Kjaer	4189	2573767
Calibrator	815	Brüel & Kjaer	4231	2575525

Appendix B – Measured Noise levels

Location	Start	End	dB L _{Aeq,T}	dB L _{A90,T}
A - Barnacrce Ave/Clay Lane	11:23	11:28	61.8	44.2
	11:29	11:34	62.9	47.2
	11:34	11:39	58.0	41.8
B - Capenhurst Close	11:49	11:54	49.0	38.1
	11:54	12:01	51.5	38.4
	12:01	12:07	52.6	38.2
C - Scout Drive	12:15	12:20	58.8	40.8
	12:21	12:26	46.7	40.8
	12:29	12:37	44.9	40.6
D - Greenbrow Road	12:43	12:48	64.3	49.2
	12:49	12:54	64.6	53.3
	12:54	12:59	63.7	49.7
A - Barnacrce Ave/Clay Lane	23:00	23:05	53.4	38.2
	23:06	23:11	58.7	38.0
	23:11	23:16	56.2	37.8
B - Capenhurst Close	23:21	23:26	40.0	38.2
	23:26	23:31	37.8	35.7
	23:32	23:37	42.0	36.6
C - Scout Drive	23:42	23:47	43.6	38.7
	23:47	23:52	40.6	39.1
	23:53	23:58	40.6	38.8
D - Greenbrow Road	00:01	00:06	57.4	40.3
	00:06	00:11	59.1	39.4
	00:13	00:18	49.5	38.1

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