

Vision House Wythenshawe

Noise Impact Assessment Report

Client:

Hurstwood Estates
c/o Broadgrove Planning & Development Ltd

Date:

18 July 2025

Our Ref:

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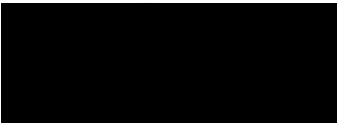
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ACOUSTICS**

Consultants in acoustics,
noise and vibration

Document Control

Revision	Date	Author	Description
0	18-07-2025	AJ	-

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1.0 Introduction

Jameson Acoustics Limited has been commissioned by Hurstwood Estates to provide a noise impact assessment in relation to the renovation of Vision House in Wythenshawe to create a new special educational needs and disabilities (SEND) school.

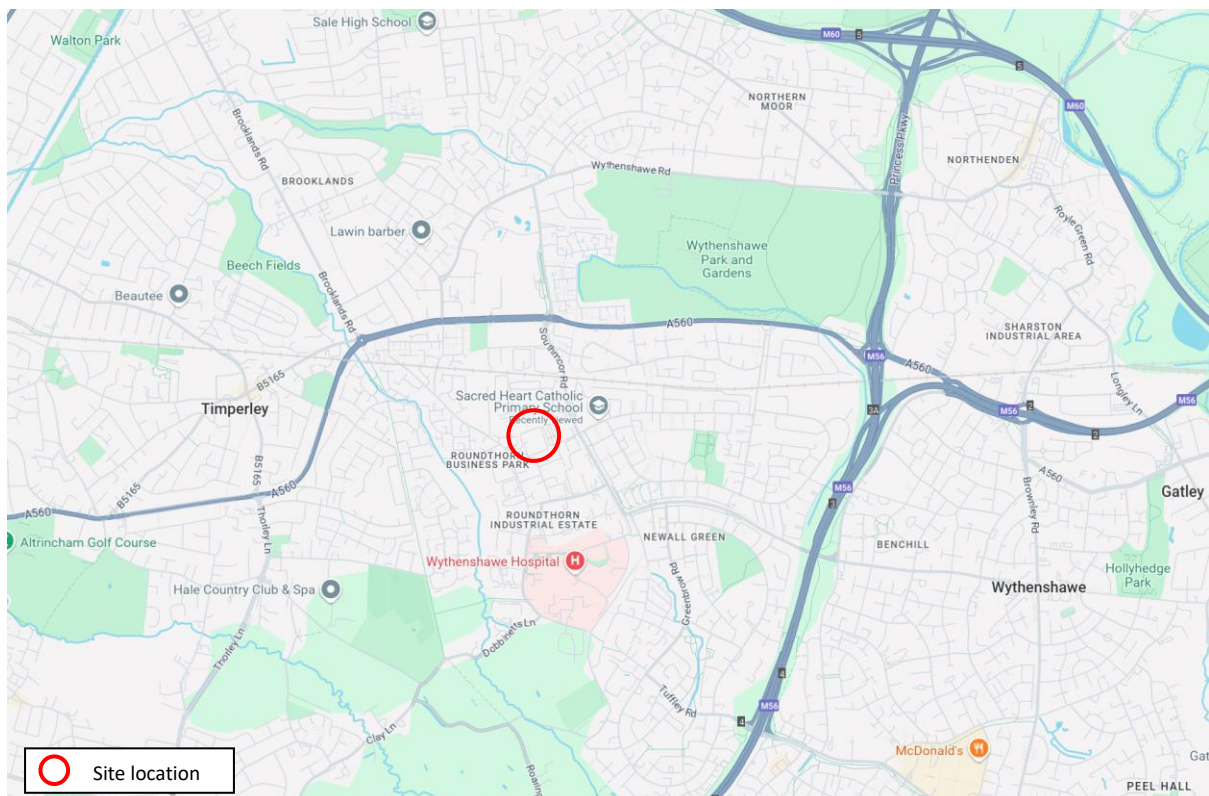
The development site is subject to environmental noise impacts from road, rail/tram and air traffic sources, as well as operational activities associated with neighbouring commercial/industrial premises. The noise impact assessment aims to evaluate prevailing noise levels against design guidelines presented in Building Bulletin (BB) 93: Acoustic Design of Schools both within the building (future classrooms) and externally within the proposed play area.

Our findings are presented herein.

For a description of the acoustic terminology used herein, please see Appendix A.

2.0 Project Proposals

Vision House is located off Floats Road in Wythenshawe and falls under the jurisdiction of Manchester City Council. See location plan below.



Location Plan (© maps.google.co.uk)

The development site is shielded from groundborne environmental noise sources by surrounding commercial buildings. However, the environmental noise climate was noted to be made up of distant environmental noise from traffic on the surrounding road network, as well as tram movements to the east and aircraft passbys associated with Manchester Airport (approx. 4.5 km to the south).

The development is bounded on all sides by commercial/industrial premises, as listed below. Associated activities that may influence the noise climate on-site have been described for each.

- Schmitz Cargobull warehouse and service yard to the north – a HGV trailer supplier – manufacturing activities occur within the building, no notable service yard activities other than occasional HGV (delivery) movements.
- Titan Self Storage to the east – an array of shipping containers providing storage units for domestic customers – no notable activity noise, except occasional light (private) vehicle entry and loading/unloading to containers.
- RPF Ltd warehouse to the south – during our site visit, we noted the warehouse was used for bulk storage but there was no noise-generating service yard activities occurring – occasional service yard activities are likely for deliveries to/from the storage site, which may involve HGVs and folk lifts.
- Circle Express/Same Day Couriers/Porcelain Superstore warehouse to the north-west – comprising freight distribution (logistics) and bulk storage – during our site visit, service yard activities occurred and involved a folk lift moving materials into/out of the warehouse in close proximity to the site boundary.
- Heritage Construction & Landscaping to the south-west – a centre that supplies construction and landscaping materials to trade – during our site visit, there were no notable activities, but the service yard is likely to have folk lifts moving pallets of materials from time to time.

Vision House is a former office building with associated car park and green space. The building is constructed from a steel frame construction with insulated cladding walls and double-glazed windows. The roof is lightweight, although the void space is occupied by a central plantroom. The building is fully mechanically ventilated, although windows are openable for purge ventilation. The building's mechanical ventilation/services were non-operational during our survey, as it is likely that the services will be replaced and reconfigured to suit the proposed change of use. However, the existing external building fabric will be retained.

See site plan below.



Site Plan (© maps.google.co.uk)

3.0 Planning Policy, Legislation & Assessment Guides

3.1 National Planning Policy

National planning policies are set out in the following:

- Noise Policy Statement for England [NPSE], 2010;
- National Planning Policy Framework [NPPF], 2024;
- National Planning Practice Guidance – Noise [PPGN], 2019.

These documents provide a qualitative approach to noise assessments. See Appendix B for a detailed description of each.

3.2 Local Planning Requirements

3.2.1 Local Plans & Policies

Manchester City Council's [MCC] Core Strategy was adopted on the 11 July 2012 and is the key document in the Manchester Local Plan. It sets out the long-term strategic policies for Manchester's future development and will form the framework that planning applications will be assessed against.

The Core Strategy requests that all new developments follow the 'Development Principles' and accord with the design guidance set out in the Supplementary Planning Documents. In accordance with Policy DM1, this includes the effects on amenity due to noise generated by a new development and, conversely for noise sensitive uses (e.g. residential), the effects of environmental noise onto the new development.

MCC's Supplementary Planning Document relating to noise is their 'Planning & Noise, Technical Guidance' published in October 2022 by their Environmental Protection Team. This document provides guidance to applicants and consultants concerning the assessment and prediction of environmental noise associated with a particular development. The key elements relevant to this development are summarised below.

3.2.2 Specific Guidance on Noise

Policy 26 of MCC's Citywide Development Control Policies relates to development and noise and states:

DC26.1 The Council intends to use the development control process to reduce the impact of noise on people living and working in, or visiting, the City. In giving effect to this intention, the Council will consider both:

- a) the effect of new development proposals which are likely to be generators of noise; and*
- b) the implications of new development being exposed to existing noise sources which are effectively outside planning control.*

DC26.2 New noise-sensitive developments (including large-scale changes of use of existing land or buildings), such as housing, schools, hospitals or similar activities, will be permitted subject to their not being in locations which would expose them to high noise levels from existing uses or operations, unless the effects of the noise can realistically be reduced. [...]

The document does not specifically set any specific requirements in relation to new school developments, but it is anticipated that MCC would expect any such scheme to be acoustically designed in accordance with Building Bulletin 93: 'Acoustic Design of Schools, Performance Standards'.

In relation to noise from any new items of fixed plant and equipment associated with the development, MCC's guidance advises that "BS 4142 should be used to assess the likely impact of noise from industrial and commercial sources at noise sensitive premises". The Council consider that new developments should contribute and enhance the area in which they are located and where possible, i.e. prevent 'noise creep', contribute to the improvement of people's health and quality of life as per the NPSE. For fixed plant, the Council advises a BS 4142 assessment that demonstrates that:

'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 (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location'.

3.3 Legislation (Building Regulations)

The development will need to be built in such a way that it conforms to the Building Regulations 2010. In relation to noise and acoustics, the document to consider is:

- Approved Document E: 2003 Edition (amend. 2015) '*Resistance to the Passage of Sound*' [ADE].

ADE Requirements E4 of Schedule 1 states:

"Each room or other space in a school building shall be designed and constructed in such a way that it has the acoustic conditions and the insulation against disturbance by noise appropriate to its intended use."

"In the Secretary of State's view the normal way of satisfying Requirement E4 will be to meet the values for sound insulation, reverberation time and internal ambient noise which are given in section 1 of Building Bulletin 93 'The Acoustic Design of Schools', produced by DfES."

Note: Department for Education and Skills (DfES) is now DfE.

Requirement E4 only applies to teaching and learning spaces.

3.4 Assessment Guides

3.4.1 Building Bulletin 93: Acoustic Design of Schools

The 'Acoustic Design of Schools: Performance Standards' (Building Bulletin 93) dated February 2015 outlines internal ambient noise levels targets, as well as other design requirements (including sound insulation and reverberation times). This is a renovation development, and it shall therefore be designed to achieve the 'refurbishment' design standards unless otherwise stated. This document shall be referenced herein as "BB93".

For SEND schools, BB93 states *"The Equality Act 2010 places a duty on all schools and local authorities to prepare and implement accessibility strategies and plans to increase over time the accessibility of schools for disabled pupils and staff. Schools and local authorities are required to provide strategies for [...] improving the physical environment of schools for the purpose of increasing the extent to which disabled pupils are able to take advantage of education and the benefits, facilities and services provided."*

Pupils with special educational needs are generally even more sensitive to the acoustic environment than others. Consequently, required [...] indoor ambient noise levels (and the capacity for distraction) [are] lower than in environments for other pupils. This is reflected in the tables contained within this document."

Pupils with hearing impairment, autism and other special needs are often very sensitive to specific types of noise, particularly those with strong tonal, impulsive or intermittent characteristics. This should be taken into consideration in the design of areas which may be used by such children."

For SEND rooms, BB93 sets the following internal noise level criteria:

Type of room	Upper limit for the indoor ambient noise level, $L_{Aeq,30min}$ (dB)	
	New build	Refurbishment
Teaching space intended specifically for students with special hearing and communication needs	30	35
SEN calming room	35	35

In order to protect students from regular discrete noise events, eg, aircraft or trains, indoor ambient noise levels should not exceed 60 dB $L_{A1,30min}$. This is achieved by default for spaces with IANLs up to 40 dB $L_{Aeq,30min}$, but requires assessment in spaces with higher IANL limits, eg, 45 and 50 dB.

This document only provides suitable conditions within teaching rooms but does not cover the external environment (the external play area). For this area, reference shall be made to the guidance presented in 'Acoustics of Schools: a design guide', dated November 2015, as summarised below.

3.4.2 Acoustics of Schools: A Design Guide (Outdoor Play Area)

The 'Acoustics of Schools: a design guide' presents recommendations for external noise levels outside of school buildings. It states:

"Although Requirement E4 does not apply to external noise, the following recommendations are considered good practice for providing suitable acoustic conditions outside school buildings.

For new schools, 60 dB $L_{Aeq,30min}$ should be regarded as an upper limit for external noise at the boundary of external areas used for formal and informal outdoor teaching and recreation.

It may be possible to meet the specified indoor ambient noise levels on sites where external noise levels are as high as 70 dB $L_{Aeq,30min}$ but this will require considerable building envelope sound insulation, or screening.

Playgrounds, outdoor recreation areas and playing fields are generally considered to be of relatively low sensitivity to noise. Indeed, playing fields may be used as buffer zones to separate school buildings from busy roads where necessary. However, where used for teaching, for example sports lessons, outdoor ambient noise levels have a significant impact on communication in an environment which is already acoustically less favourable than most classrooms. Noise levels in unoccupied playgrounds, playing fields and other outdoor areas should not exceed 55 dB $L_{Aeq,30min}$ and there should be at least one area suitable for outdoor teaching activities where noise levels are below 50 dB $L_{Aeq,30min}$. If this is not possible, due to a lack of suitably quiet sites, acoustic screening should be used to reduce noise levels in these areas as much as practicable, and an assessment of noise levels and options for reducing these should be carried out. Noise levels can be reduced by up to 10 dBA at positions near an acoustic screen.

All external noise levels specified in this section apply to measurements made at approximately 1.5 m above the ground and at least 3 m from any other reflecting surface."

3.4.3 BS 4142: 2014+A1: 2019

British Standard BS 4142 looks at the assessment of noise of a commercial / industrial nature. It describes methods for rating and assessing outdoor sound of an industrial and/or commercial nature “on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident”. In relation to this development, this includes sound from fixed installations, comprising M&E plant and equipment.

The assessment method is based on the difference between the measured ‘background sound level’ without the influence of any industrial noise source, and the ‘rating level’ of the industrial source, at the receiver location. The standard states that:

- “a difference of around +10 dB or more is likely to be an indication of a significant adverse impact”;
- “a difference of around +5 dB is of marginal significance is likely to be an indication of an 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”.

4.0 Baseline Noise Surveys

4.1 Procedures

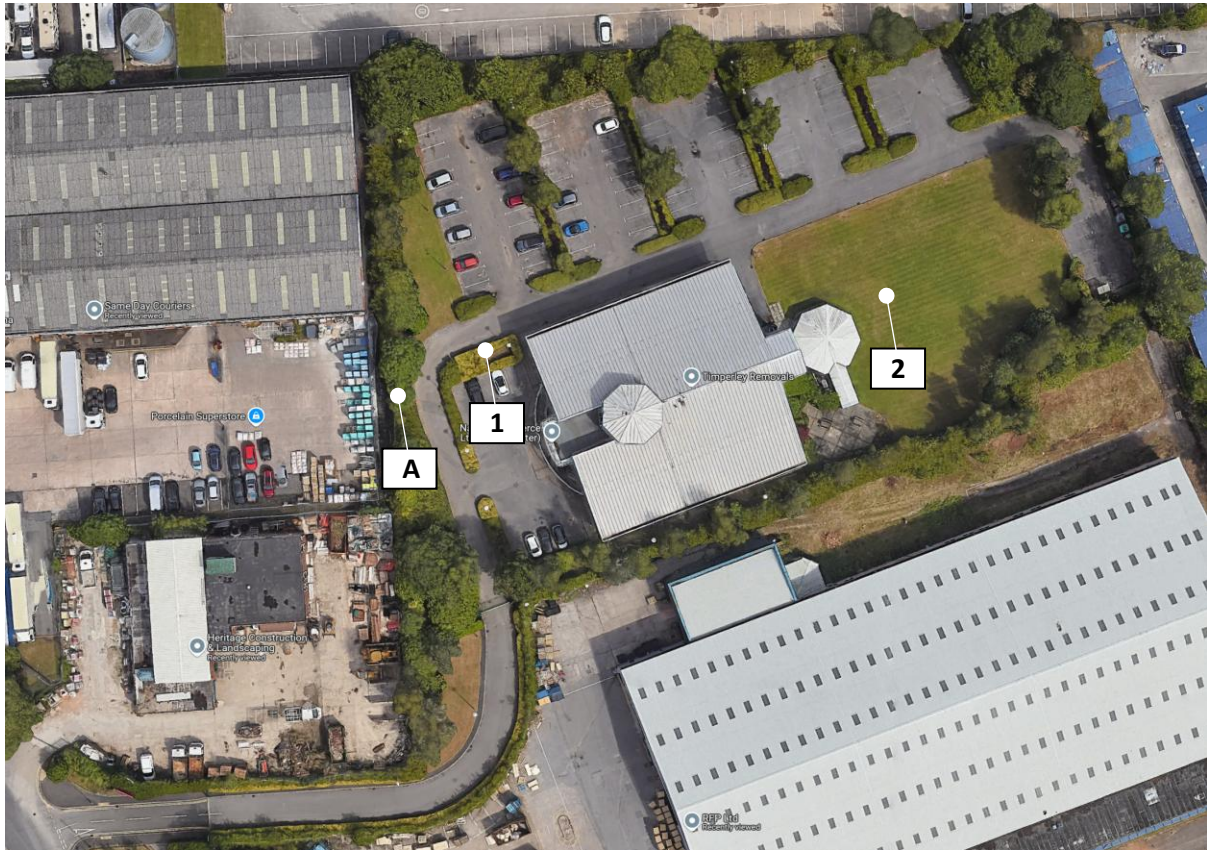
4.1.1 External Noise Surveys

Automated noise level measurements were taken from 09:00hr on Monday 7 July to 08:00hr on Tuesday 8 July 2025 at two on-site positions selected to establish typical prevailing outdoor noise levels in the proposed outdoor play area and to establish typical worst-case incident noise levels onto the building.

Additional manned measurements were taken at the site boundary adjacent to the Heritage Construction & Landscaping service yard during folk lift operations. These measurements were taken between 12:00-13:00hr on Thursday 3 October 2024 for the purpose of assessing commercial/industrial noise impacts.

The external noise level measurement positions are described and illustrated below.

Position	Type	Description
1	Automated	To establish typical worst-case incident noise levels onto the building. Microphone fixed to lamppost near to building entrance (west elevation) approx. 3m above ground level in free-field conditions.
2	Automated	To establish typical noise levels in the proposed outdoor play area. Microphone fixed to a post in the lawned area to the east of the building approx. 2m above ground level in free-field conditions.
A	Manned	To measure noise levels from service yard activities from Heritage C&L. Microphone held at a position approx. 1m from the site boundary fence (open mesh fence) and approx. 1.3m above ground level (free-field) with full angle of view to service yard.



Site Plan showing measurement positions (© maps.google.co.uk)

The equipment was programmed to record all relevant A-weighted broadband (dBA) and linear spectral noise level indices, including L_{eq} , L_{90} , L_{10} and L_{max} . The automated equipment continuously logged these values over intervals of 5-minutes, 15-minutes, 30-minutes and 1-hour intervals.

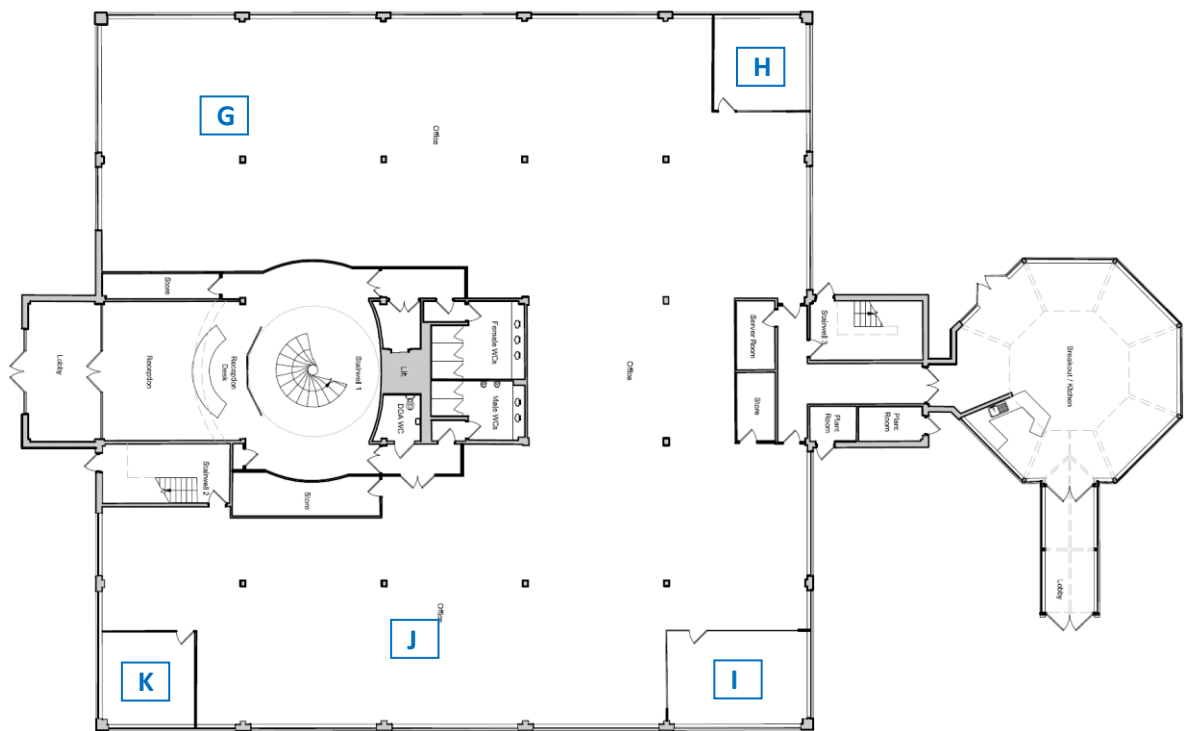
All measurements were taken in general accordance with BS 7445-1: 2003 '*Description and Measurement of Environmental Noise*'.

4.1.2 Internal Noise Survey

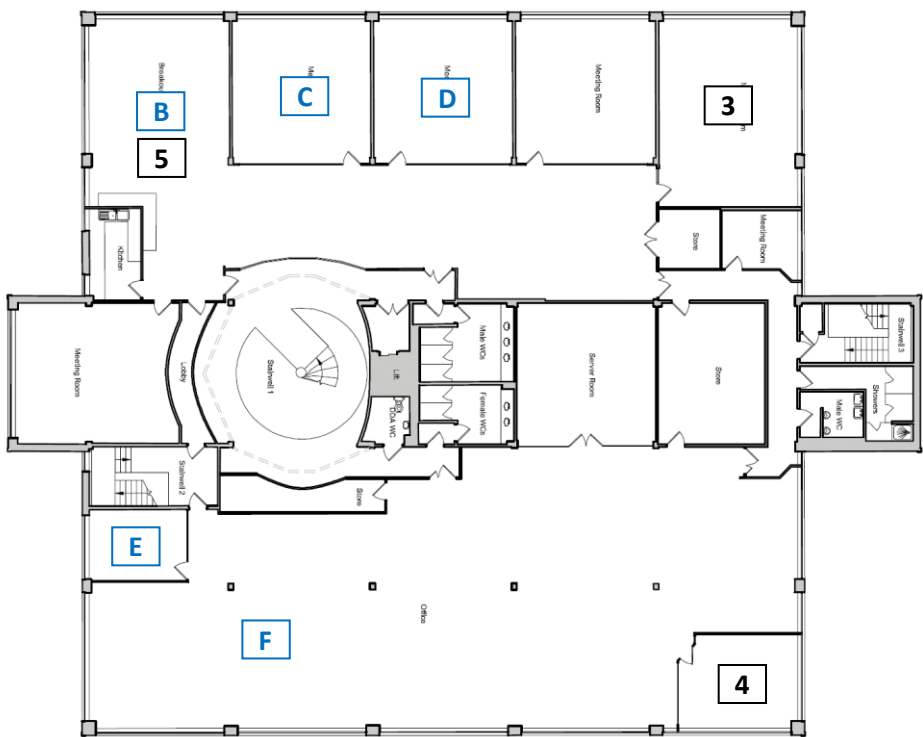
Automated noise level measurements were taken from 09:00hr on Monday 7 July to 08:00hr on Tuesday 8 July 2025 within 3nr rooms within the office building. The positions were selected to obtain continuous 30-minute L_{Aeq} internal noise levels due to external noise intrusion for evaluation against BB93 internal noise level targets.

Additional manned measurements were taken between 09:30-12:00hr on Monday 7 July 2025 across the full range of internal spaces over shortened measurement periods of not less than 5-minutes for evaluation against BB93 internal noise level targets. The measurements were deemed to be suitably representative of the 30-minute L_{Aeq} noise level in each space.

The internal noise level measurement positions are described and illustrated below. For the automated positions, the microphone was mounted on a tripod in the centre of the room, at approximately 1.5m above floor level and sufficiently away from perimeter walls.



Existing ground floor plan showing measurement positions



Existing first floor plan showing measurement positions

4.2 Instrumentation

The instrumentation used for the survey is summarised below. The sound level meters were hand-calibrated at the beginning and end of the survey periods. No significant deviations in calibration level were noted.

Description	Equipment	Serial Nr	Lab Calibration Expiry	Lab Calibration Certificate Nr
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	124663 (82835)	26 Aug 2026	1509611-1
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	131635 (85533)	4 Nov 2026	1510429-1
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	131642 (85571)	26 July 2025	26 July 2023
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	154301 (94512)	16 Jan 2027	16 Jan 2025
Class 1 sound level meter	Svantek 971A (with Type 7152 microphone)	154288 (94517)	16 Jan 2027	16 Jan 2025
Class 1 sound level meter	Cirrus CR:171B (with MK:224 microphone)	G056718 (204055A)	12 Nov 2025	1171320
Class 1 sound calibrator	Cirrus CR:515	57570	12 Nov 2025	1171319

4.3 Weather Conditions

Due to the nature of the 24-hour survey at Positions 1-5, i.e. unmanned, it is not possible to accurately describe the weather conditions throughout the duration of the survey period. However, on install and collection (and during the manned survey period) the weather conditions were considered suitable for obtaining representative readings. Road surfaces were dry and wind speeds were low (below the 5 m/s windshield tolerance).

Based on internet weather reports for the full duration of the survey, conditions generally remain commensurate with those described, although there was a perimeter of heavy rainfall between 00:30-01:30hr.

4.4 Observed Noise Climate

Due to the nature of the automated survey, i.e. unmanned, it is not possible to describe the noise climate throughout the duration of the survey period. However, on install and collection the noise climate was noted to be dominated by environmental noise source, including distant road traffic and occasional tram/aircraft movements. It was noted that aircraft were taking off from Manchester Airport in a northerly direction (over Stockport) meaning aircraft noise levels on-site will have been 'worst-case'.

At times, industrial noise from neighbouring commercial premises was audible, but not significant. The noise was evident from the unit to the south (RPF Ltd) in the form of internal warehouse activities (bangs and clatters), and to the north-west (Porcelain Superstore) in the form of external fork lift movements. All other industrial units were noted to be operational but not producing any audible noise during our time on site.

4.5 Results & Analysis

4.5.1 External Noise Surveys

The results of the automated survey at Positions 1 & 2 have been plotted on Time History Graphs 22179-G1 & G2 enclosed in Appendix C. The graph presents the 15-minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} levels throughout the duration of the survey.

A summary of the results, as used to inform subsequent assessments against design guidelines, is presented in the following tables. Note, the $L_{Amax,5min}$ noise levels shall be used in place of BB93's $L_{A01,30min}$ parameter to inform a worst-case assessment (to account for SEND pupils who may be very sensitive to sharp elevations in noise). The adverse weather period has been excluded.

External L_{Aeq} Noise Levels

The mean and highest $L_{Aeq,30min}$ ambient noise levels (during typical school operational times, 08:00-18:00hr)

Position	Free-Field Ambient Noise Level (dB), $L_{Aeq,30min}$	
	Mean	Highest
1	51	54
2	49	53

External L_{Amax} Maximum Noise Levels (to be used in place of BB93 $L_{01,30min}$)

The typical highest and highest $L_{Amax,5min}$ noise levels (during typical school operational times, 08:00-18:00hr)

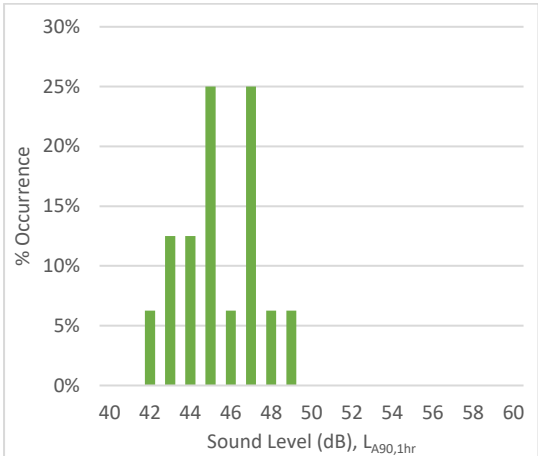
Position	Free-Field Maximum Noise Level (dB), L_{Amax}	
	Typical Highest (10 th)	Highest
1	72	78
2	68	74

L_{A90} Background Noise Levels

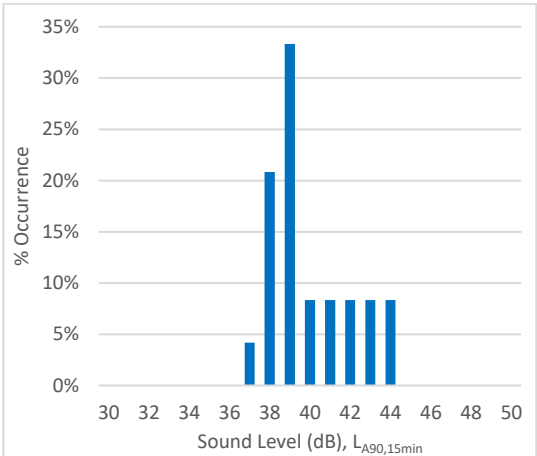
The representative background determined through statistical analysis to BS 4142 (lowest common value taken)

Position	Free-Field Background Noise Level (dB)	
	Daytime $L_{A90,1hr}$ (07:00-23:00)	Night-time $L_{A90,15min}$ (23:00-07:00)
1	45	39
2	43	36

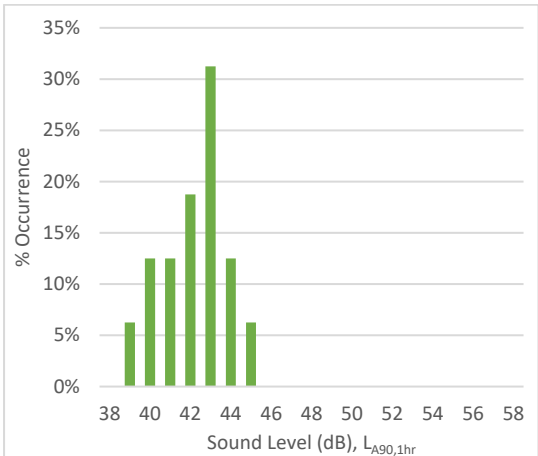
See below graphs showing the % distribution of background noise levels at each position throughout the duration of the survey.



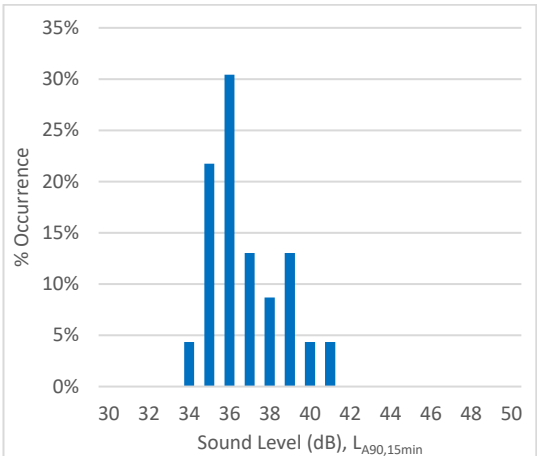
Daytime – Position 1



Night-time – Position 1



Daytime – Position 2



Night-time – Position 2

At Position A, manned noise level measurements of folk lift movements indicate a specific noise level of 55 dB L_{Aeq} (74 dB L_{Amax}) with a residual noise level of 46 dB L_{Aeq} at the site boundary.

4.5.2 Internal Noise Survey

The results of the automated survey at Positions 3-5 have been plotted on Time History Graphs 22179-G3 & G5 enclosed in Appendix C. The graph presents the 30-minute A-weighted (dBA) L_{90} , L_{eq} and L_{max} levels throughout the duration of the survey.

A summary of the results, as used to inform subsequent assessments against design guidelines, is presented in the following tables. Note, the $L_{Amax,5min}$ noise levels shall be used in place of BB93's $L_{A01,30min}$ parameter to inform a worst-case assessment (to account for SEND pupils who may be very sensitive to sharp elevations in noise).

Internal L_{Aeq} Noise Levels

The mean and highest $L_{Aeq,30min}$ ambient noise levels (during typical school operational times, 08:00-18:00hr)

Position	Ambient Noise Level (dB), $L_{Aeq,30min}$	
	Mean	Highest
3	26	27
4	25	27
5	26	28

Internal L_{Amax} Maximum Noise Levels (to be used in place of BB93 $L_{01,30min}$)

The typical highest and highest $L_{Amax,5min}$ noise levels (during typical school operational times, 08:00-18:00hr)

Position	Maximum Noise Level (dB), L_{Amax}	
	Typical Highest (10 th)	Highest
3	45	49
4	45	51
5	44	50

The following table summarises the results of the manned noise level measurements.

Position	Noise Level (dB)	
	Ambient, L_{Aeq}	Maximum, L_{Amax}
B – L01 breakout space	26	38
C – L01 meeting room	25	34
D – L01 meeting room	27	37
E – L01 cellular office	26	39
F – L01 open plan office	28	43
G – L00 open plan office	22	35
H – L00 cellular office	23	36
I – L00 cellular office	20	32
J – L00 open plan office	24	31
K – L00 cellular office	20	32

Note, all test rooms were furnished with sound absorbent ceiling tiles and carpeted floors, and unfurnished. Windows were closed.

5.0 Internal Noise Levels in SEN Classrooms

SEN classrooms shall be designed to satisfy Building Regulations ADE requirements, i.e. BB93, which includes targets for indoor ambient noise levels as well as other considerations, including reverberation times.

The reverberation times for SEN classrooms are onerous and will require significant sound absorbent treatment; far more than is currently provided in the existing building. The increased provisions for sound absorbent treatment will have a beneficial effect on the measured internal noise levels (as summarised in Section 4.5.2). However, for a worst-case assessment we shall not introduce any corrections to the measured figures in our analysis.

The following table compares the measured L_{Aeq} internal noise levels against the BB93 internal noise level target (based on mechanically ventilated SEN classrooms).

Position	Noise Level (dB)		Compliance?
	Measured, $L_{Aeq,30min}$	BB93 Limit, $L_{Aeq,30min}$ New build - Refurb	
3 – L01 meeting room (dual aspect)	27*	30-35	✓
4 – L01 office (dual aspect)	27*	30-35	✓
5 – L01 open office (dual aspect)	28	30-35	✓
B – L01 breakout space (dual aspect)	26	30-35	✓
C – L01 meeting room	25	30-35	✓
D – L01 meeting room	27	30-35	✓
E – L01 cellular office	26	30-35	✓
F – L01 open plan office (dual aspect)	28	30-35	✓
G – L00 open plan office	22	30-35	✓
H – L00 cellular office (dual aspect)	23	30-35	✓
I – L00 cellular office (dual aspect)	20	30-35	✓
J – L00 open plan office	24	30-35	✓
K – L00 cellular office (dual aspect)	20	30-35	✓

* Highest measured $L_{Aeq,30min}$

The above table shows that internal L_{Aeq} noise levels should comply with BB93 targets for SEN classrooms. This provides a positive indication that the existing external building fabric of Vision House can provide adequate acoustic protection for the proposed SEND school usage, when assessed to BB93.

In order to maintain targets, building HVAC systems shall be designed to achieve a noise rating level of NR 25 in SEN classrooms. The HVAC systems shall provide all of the necessary ventilation and cooling to teaching rooms so as to remove any reliance on opening windows or other passive ventilators in the façade. This applies during summertime too, and the HVAC will need to ensure SEN classrooms can maintain acceptable internal temperatures with windows closed.

It should be noted that internal noise levels are typically lower in the ground floor accommodation. These roofs are not subject to contributions of external noise intrusion through the roof (e.g. aircraft). It may therefore be prudent to locate high-noise sensitivity rooms at ground floor level.

During rainfall, noise levels may increase in the first floor rooms. This can be countered by underdrawing sensitive first floor rooms with plasterboard ceilings (with mineral wool in the ceiling void). This type of ceiling treatment is likely to be required anyway to satisfy BB93 internal sound insulation standards between adjacent teaching rooms (to control sound flanking via the head of new partitions).

Industrial noise impacts will have been captured in the 24-hour survey (and some industrial noise was noted to be present during some of the manned internal noise measurement periods). The results suggest the industrial noise impacts were not significant enough to cause exceedances of the $L_{Aeq,30min}$ noise criterion. However, intermittent peak L_{Amax} industrial noise impacts should also be considered...

The results of the automated internal noise survey indicate typical highest L_{Amax} noise levels were 44-45 dB L_{Amax} in the three test rooms. These peak noise events are likely to have been caused by either industrial activities or environmental sources (e.g. aircraft). Either way, the levels are significantly below the BB93 upper limit for peak noise events of 60 dB $L_{01,30min}$. At 45 dB, the building facades are controlling peak noise intrusion to a level commensurate with World Health Organisation guidance for bedrooms in new dwellings (to avoid sleep disturbance). At such a low level, it is likely that operational activities within the building itself, such as doors closing, will generate higher levels of peak intermittent noises in classrooms.

This suggests the typical highest peak noise events (based on survey results) are unlikely to adversely impact on SEN teaching activities within the school building, although the building will need to be well managed in this regard. The inclusion of 'land locked' rooms (without external walls/windows) for highly noise sensitive pupils may be prudent.

However, it may have been that not all worst-case industrial operations were active during the survey period. To verify this, we shall consider potential worst-case industrial activities at nearby commercial premises based on historic source noise data at similar facilities, as surveyed by Jameson Acoustics. The anticipated worst-case industrial activities and their associated source noise levels (normalised to 5 metres) are detailed below.

Premises	Activity	Source Noise Level at 5m (dB)	
		Ambient, L_{Aeq}	Maximum, L_{Amax}
Schmitz Cargobull (to the north)	HGV movements in service yard, including reverse beepers, air brakes & cab door slam (30-seconds)	74	87
Titan Self Storage (to the east)	Industrial metal door slam (5-seconds)	83	90
Circle Express/ Same Day Couriers / Porcelain Superstore (to the north-west)	Folk lift operations in service yard (5-minutes)	55	74
Heritage Construction & Landscaping (to the south-west)	Folk lift operations, stacking of heavy materials and metalwork (5-minutes)	60	88

The external and internal L_{Aeq} noise level measurements provide an indication that the external building facades provide a circa 25 dB outside-to-inside sound level difference.

Based on this, the above source noise levels, and with consideration for associated distance losses calculated using Google Maps, the following table summarises the predicted worst-case L_{Amax} noise levels inside the building. Note, again, no correction has been applied for lower reverberation times required in SEN rooms (worst-case).

Premises	Est. Worst-case Source Level at 5m, dB L_{Amax}	Distance Loss to building façade, dB (Distance)	Outside to inside sound level difference, dB	Predicted Internal Noise Level, dB L_{Amax}
Schmitz Cargobull (to the north)	87	-23 (70m)	-25	39
Titan Self Storage (to the east)	90	-23 (70m)	-25	42
Circle Express/ Same Day Couriers / Porcelain Superstore (to the north-west)	74	-16 (30m)	-25	33
Heritage Construction & Landscaping (to the south-west)	88	-17 (35m)	-25	46

The above estimated worst-case noise levels inside the building are commensurate with those surveyed, which supports the summary that typical highest peak noise events are unlikely to adversely impact on SEN teaching activities within the school building.

It is worth noting that, due to the proximity to numerous industrial premises, there will always be a risk that atypical (extreme) noise events may occur from time to time, causing a significant short-term peak in noise. Based on the calculation approach above, industrial noise events would need to exceed a level of 100 dB L_{Amax} at 5 metres to approach the BB93 peak noise criterion. This is possible, e.g. from hammering, metal cutting or the dropping of large loads from a height, but such events are unlikely to occur often based on our site observations. And in the same way that building acoustic design criteria exclude emergency vehicle sirens, so too should it exclude such extraneous, atypical noise events.

There is no published guidance on the potential health/psychological effects of impulsive noise events on highly sensitive pupils, so this subject is difficult to assess and quantify. However, we would highlight again that the amplitude of noise event levels would be similar to those experienced in most modern-build household bedrooms at night. It is perhaps, however, the nature of the industrial noise that may present a minor risk in this regard (i.e. the acoustic features of the industrial noise, with sharp onsets and atypical characteristics compared to everyday environmental sources). We would suggest this risk may need to be suitably monitored and managed by the school. The design of the school can also take this into account, for example, providing quiet rooms or pods within classrooms (with no interface with the external façade). Especially sensitive students (e.g. with severe ASD, lacking the cognitive ability to apply the 'cocktail party effect' which is where a listener can focus on a chosen noise source within a room of numerous other noise sources) could also benefit from listening aids. These aids actively suppress (cancel) extraneous noise and amplify the teacher's speech, enhancing the signal-to-noise ratio for better speech intelligibility and minimising the impact of outside noise.

6.0 Outdoor Noise Levels in Play Area

The outdoor play area is understood to be for recreation purposes only, and not teaching. However, it is important to ensure the outdoor area will provide a suitable environment for play, without causing distress.

BB93's performance standards do not cover outdoor spaces, so there are no Building Regulation requirements that apply. However, the BB93 design guide that accompanies the standard does provide some guidance. The guidance is, however, intended for regular school facilities and does not cover facilities for pupils with special educational needs or disabilities. Nevertheless, this guidance can be used as a starting point...

The BB93 design guide presents suggested upper noise limits for outdoor of the school buildings. In summary, the following design limits are suggested:

Description	Upper Noise Limit, dB $L_{Aeq,30min}$
At the boundary of external areas used for formal and informal outdoor teaching and recreation	60
Outdoor areas used for teaching, for example sports lessons	55
- with at least one 'low noise' area suitable for outdoor teaching activities	50

Based on the results of the external noise survey at Position 2, typical daytime (08:00-18:00hr) noise levels were surveyed as 49 dB $L_{Aeq,30min}$ with a high of 53 dB $L_{Aeq,30min}$. These levels align with the most onerous limits of BB93, which suggests the environment should be more than suitable for school recreation.

However, due to the proximity with industrial/commercial premises, it is again important to consider the impacts of intermittent noise events on pupils. There is however no known standard or design guide that provides quantitative methods for determining acceptability of peak noise events in an outdoor play area of a school, let alone a SEND school.

In lieu, it may be prudent to consider assessments in line with BS 4142 to determine the severity of intermittent industrial noises. This standard is intended for evaluating commercial and industrial noise impacts onto residential receptors, but the recreation area of a SEND school may arguably be classed with the same 'sensitivity to noise' as a dwelling.

With reference to the source noise levels presented in Section 5.0, the following table presents a BS 4142 assessment of anticipated worst-case industrial noise activities onto the play area. To inform our assessment, pessimistic assumptions of the number of events and resultant 'on-times' for each source have been made (as stipulated in the table). Distances have been taken as the shortest distance from edge of source activity area to closest boundary of the play area. Appropriate acoustic feature corrections have been applied.

It is worth noting at this point that the recreation area is well positioned, in the quietest area of the site with respect to industrial noise impacts. The area provides maximum distance from the noisiest neighbouring industrial premises, and benefits from screening provided by the building for the more active industrial sites to the west.

Description	Schmitz Cargobull (HGVs)	Titan Self Storage (Door slams)	CE, SDC & Porcelain Superstore (Folk lifts)	Heritage C&L (Folk lifts & heavy material drops)
Source noise level at 5m, dB L _{Aeq}	74	83	55	60
Assumed no. of events	6	10	6	6
Assumed total on-time (per 1hr period)	3min	50s	30min	30min
Source noise level over 1hr period, dB L _{Aeq,1hr}	60	59	55	60
Distance (m)	60	20	70	85
Distance loss, dB	-22	-12	-23	-25
Screening	No	Full	Just visible	Full
Screening loss, dB	0	-10	-5	-10
Specific noise level at receptor, dB L _{Aeq,1hr}	38	37	27	25
Acoustic feature	clearly impulsive	clearly impulsive	intermittent & impulsive	intermittent & impulsive
Acoustic feature correction, dB	+6	+6	+9	+9
Noise rating level, dB L_{Ar,Tr}	44	43	36	34
Background noise level (0800-1800), dB L _{A90,1hr}	43	43	43	43
Level difference, dB	+1	0	-7	-9

The BS 4142 assessment indicates a noise rating level from the majority of sources that is equal to or less than the prevailing background noise level. In accordance with the BS 4142 evaluation method, *“this is an indication of the specific sound source having a low impact”* with site context considered. For HGV movements, the level may be +1 dB above the background, which would be of less than ‘*of marginal significance*’ with site context considered.

As discussed earlier in this Section, the play area is already situated in the quietest part of the site. Should it be deemed necessary to introduce additional noise mitigation measures, provisions exist to introduce solid perimeter fencing to further attenuate industrial noise impacts. The need for additional screening is not considered necessary at this stage, however, should it be introduced, the fencing would need to be imperforate and a sufficient height to provide full line of sight screening to the full play area. The fence panelling would need to provide a minimum mass per unit area of 12 kg/m².

There is no published guidance on the potential health/psychological effects of impulsive noise events on highly sensitive pupils, and so it is not possible to form an objective assessment of peak L_{Amax} noise impacts for the outdoor play area. However, this area is not intended for teaching and learning, and is not covered under the Building Regulations acoustic requirements. The space is intended purely for recreation. Nevertheless, the location in close proximity to industrial premises will always present a risk in this regard, albeit a relatively minor risk based on the above objective assessment. Any potential adverse health/psychological effects of intermittent peak industrial noises on highly sensitive pupils would need to be appropriated managed by the school.

It would also be possible to create 'quiet zones' within the play area, with additional localised screening. This localised screening could have soft, sound absorbent panelling on the inner faces to further reduce noise. It could even utilise amplified sound systems (external loudspeakers) playing calming sounds that help to mask the industrial noise.

7.0 Plant Noise Emissions

7.1 Limits

Based on the requirements of the Local Authority, the following plant noise emission limits are to be achieved at nearby noise sensitive windows with all non-emergency plant operating at design duty.

Receptor	Plant Noise Rating Level, $L_{A,r,Tr}$ (dB)	
	Daytime (07:00-23:00)	Night-time (23:00-07:00)
Any nearby noise sensitive receptor	38	31

Plant noise output should be assessed in accordance with BS 4142: 2014 (+A1: 2019) with appropriate penalties applied for tonality, intermittency or irregularity.

7.2 Plant Design Proposals & Noise Mitigation

At this stage, plant items have not been selected and cannot therefore be assessed. However, we understand all central plant would be installed within the roof void (Level 02) plantroom. Provisions therefore exist to select low-noise equipment and/or attenuate noise 'at source' within the plantroom to control breakout in line with the above limits.

8.0 Conclusions

Jameson Acoustics Limited has been commissioned by Hurstwood Estates to provide a noise impact assessment in relation to the renovation of Vision House in Wythenshawe to create a new special educational needs and disabilities (SEND) school.

The development site is subject to environmental noise impacts from road, rail/tram and air traffic sources, as well as operational activities associated with neighbouring commercial/industrial premises. The noise impact assessment aims to evaluate prevailing noise levels against design guidelines presented in Building Bulletin (BB) 93: Acoustic Design of Schools both within the building (future classrooms) and externally within the proposed play area.

The assessment finds that internal noise levels fall within BB93 design targets for SEN teaching rooms. Peak, L_{Amax} , industrial noise intrusion levels have been considered, and the assessment suggests these fall within a proposed acceptable range.

The assessment finds that noise levels within the outdoor play area also fall within BB93 design guidelines. Industrial noise impacts onto the play area have been assessed in line with BS 4142, in lieu of a recognised design standard, and this assessment suggests a low probability of adverse impact (or noise of less than marginal significance) with site context considered.

The risk of industrial peak noise events causing distress to highly sensitive pupils has been considered, but no objective assessment can be formed in this regard. The amplitude of the peak noise events is low which suggests the risk of adverse health/psychological impacts may only be 'minor'. Such risks would need to be appropriately managed by the school, although possible solutions to assist have been discussed.

Plant noise emission limits have been proposed so that future plant installations do not adversely impact on the locality.

Appendix A – Acoustic Terminology

dB	Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form.
dB(A)	The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The 'A'-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The _A subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted (e.g. $L_{Aeq,T}$ in dB). Noise levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is only just perceptible.
$L_{Aeq,T}$	$L_{Aeq,T}$ is the equivalent continuous sound pressure level. It is an average of the total sound energy measured over a specified time measurement period, T .
$L_{10,T}$	L_{10} is the noise level exceeded for 10% of the measurement period T (i.e. the quietest 10% of the measurement) and has, for many years, been used in the assessment of road traffic noise.
$L_{90,T}$	L_{90} is the noise level exceeded for 90% of the measurement period T (i.e. the quietest 10% of the measurement) and is often used to describe the 'background' noise level.
L_{max}	L_{max} is the maximum sound pressure level recorded over the measurement period, T . L_{max} is often used in assessing scheduled environmental noise 'events' (such as train passbys), particularly at night where such events may cause sleep disturbance.
R_w	The weighted sound reduction index, R_w , is a single figure description of sound reduction as defined in BS EN ISO 717-1. It is single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies. The R_w is calculated from sound insulation measurements taken in an acoustic laboratory. Sound insulation ratings derived from site measurements are invariably lower than the laboratory figures and are referred to as the apparent weighted sound reduction index, R'_w .
$D_{n,e,w}$	The weighted element-normalised level difference, $D_{n,e,w}$, is a single figure description of the sound insulation performance of small building elements, such as a trickle ventilator.
C_{tr}	C_{tr} is correction term applied against the sound insulation single-number values (e.g. R_w) to provide a weighting against low frequency performance. The reference values used within the C_{tr} calculation are based on urban traffic noise.

Appendix B – Planning Policy & Assessment Guides

Planning Policy

- **Noise Policy Statement for England (NPSE)**

The Noise Policy Statement for England (NPSE) launched in March 2010 states the long-term vision of Government noise policy is to “*promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development*”.

The long-term vision is supported by the following aims; 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;
- Where possible, contribute to the improvement of health and quality of life.

The intention is that the NPSE should apply to all types of noise apart from noise in the workplace (occupational noise).

The NPSE introduces a three-tier concept for the assessment of noise impacts onto a receptor:

- **NOEL – No Observed Effect Level:** The level below which no effect can be detected and below which there is no detectable effect on health and quality of life due to noise.
- **LOAEL – Lowest Observable Adverse Effect Level:** The level above which adverse effects on health and quality of life can be detected.
- **SOAEL – Significant Observed Adverse Effect Level:** The level above which significant adverse effects on health and quality of life occur.

There are no numeric thresholds relating to each of the above. The NPSE acknowledges that the severity of noise impacts vary depending upon the type of noise, the type of receptor, the duration (on-time) of the noise, the characteristics of the noise, the time of day, the day of the week, etc.. As a result, the definition of what constitutes an SOAEL is somewhat flexible.

- **National Planning Policy Framework (NPPF)**

The National Planning Policy Framework (NPPF) was first published in 2012 and sets out the government’s planning policies for England and how these are expected to be applied.

The latest revision of the NPPF (December 2024) states that the planning system should **contribute to, and enhance**, the natural and local environment by (amongst others) “*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, water or **noise pollution** or land stability.”*

The express inclusion of noise in the NPPF means that it is a material planning consideration for local planning decisions. Paragraph 187 of the NPPF document 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 & 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.”

The NPPF recognises 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.”*

- **Planning Practice Guidance on Noise (PPG)**

The National Planning Practice Guidance (PPG) is a web-based resource, launched by the Department for Communities and Local Government (DCLG) in March 2014 to support the NPPF and make it more accessible. It advises on how planning can manage potential noise impacts in new development. The guidance is regularly reviewed and updated and noise is listed as a specific category. The guidance is for ad hoc developments, as major infrastructure is covered by overarching National Policy Statements.

PPG provides the following tabulated summary of the effects of noise exposure (in terms of health and quality of life) associated with noise generating and sensitive developments.

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required

Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

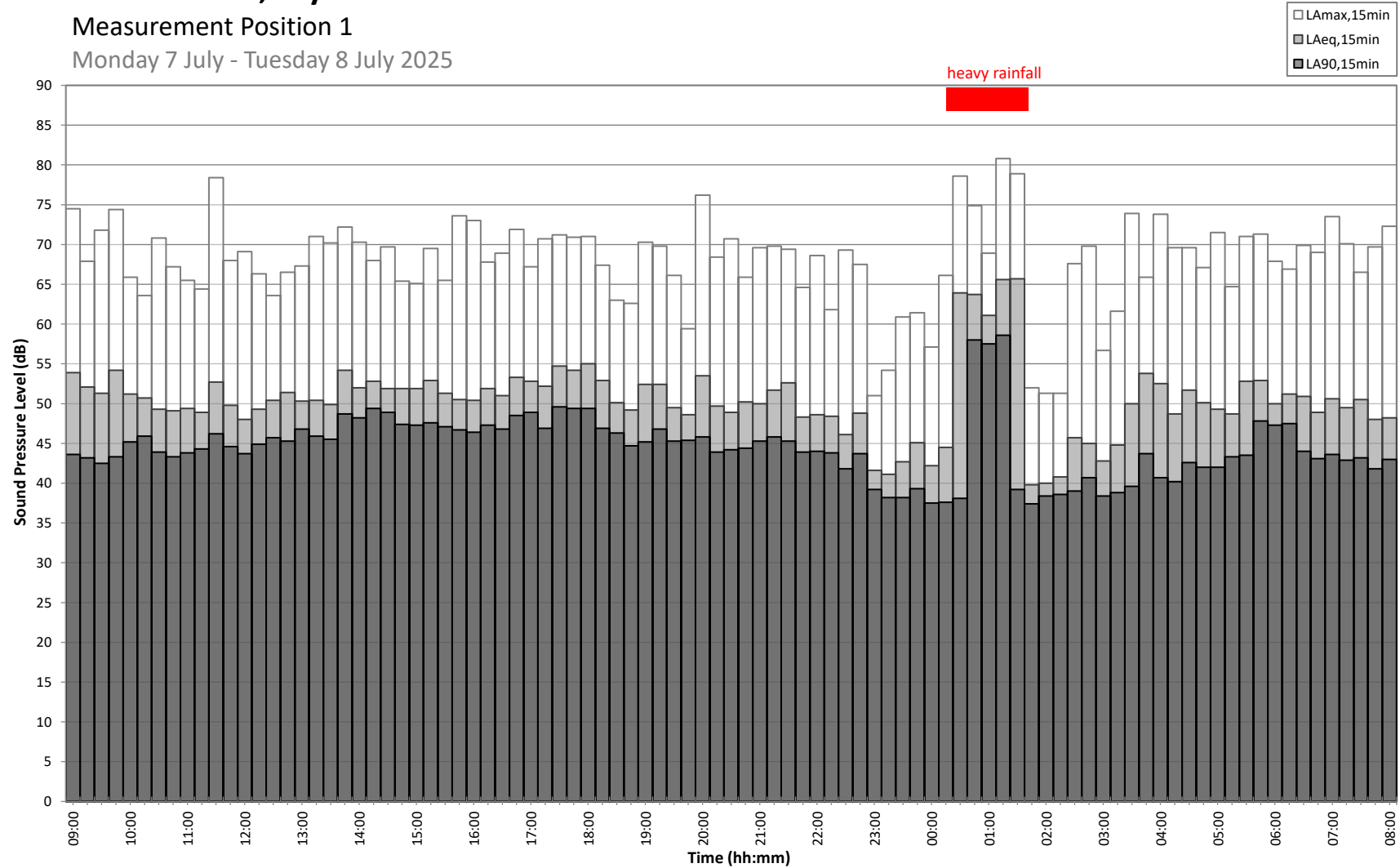
Appendix C – Time History Graphs

Vision House, Wythenshawe

Measurement Position 1

Monday 7 July - Tuesday 8 July 2025

22179-G1

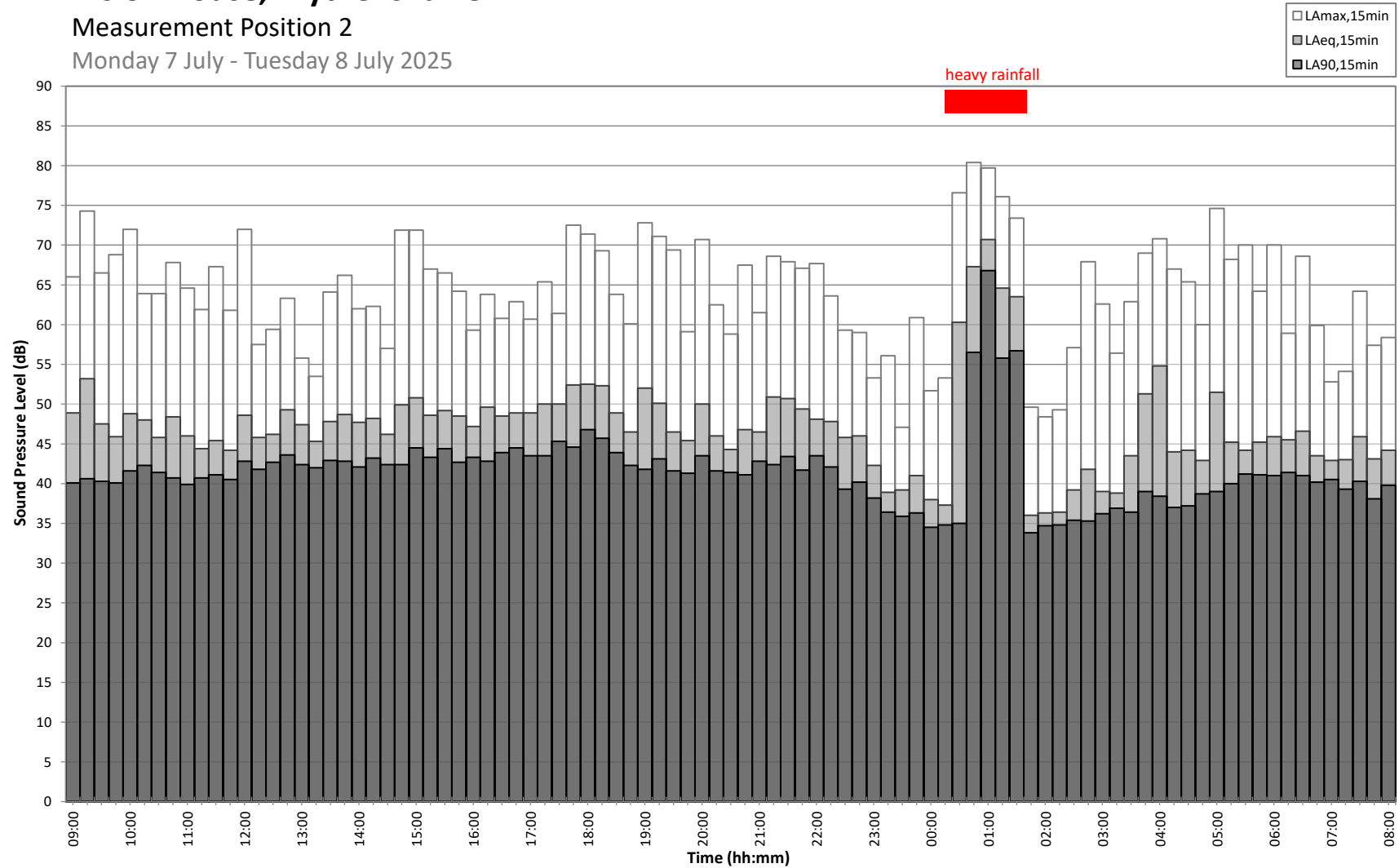


Vision House, Wythenshawe

Measurement Position 2

Monday 7 July - Tuesday 8 July 2025

22179-G2

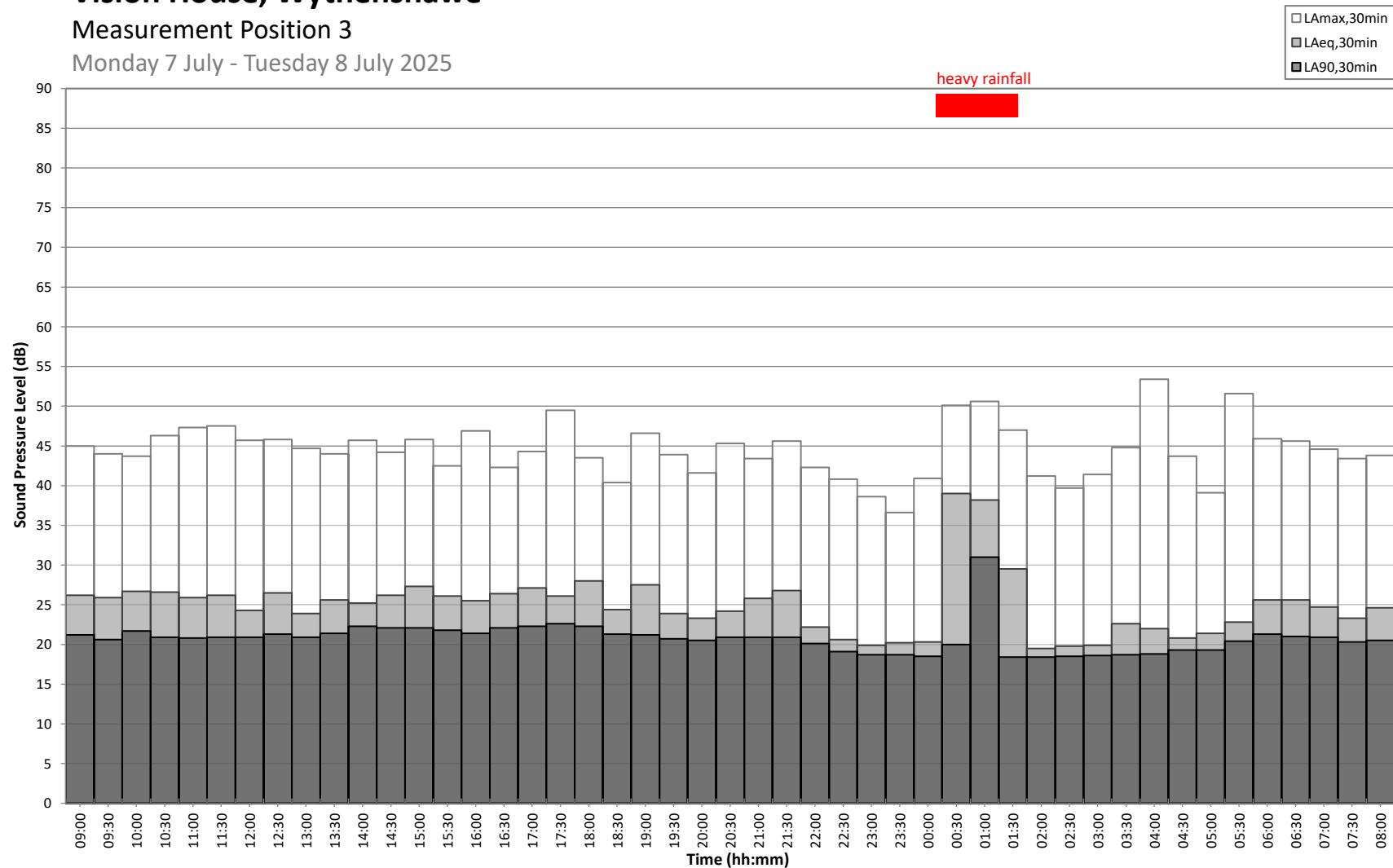


Vision House, Wythenshawe

Measurement Position 3

Monday 7 July - Tuesday 8 July 2025

22179-G3

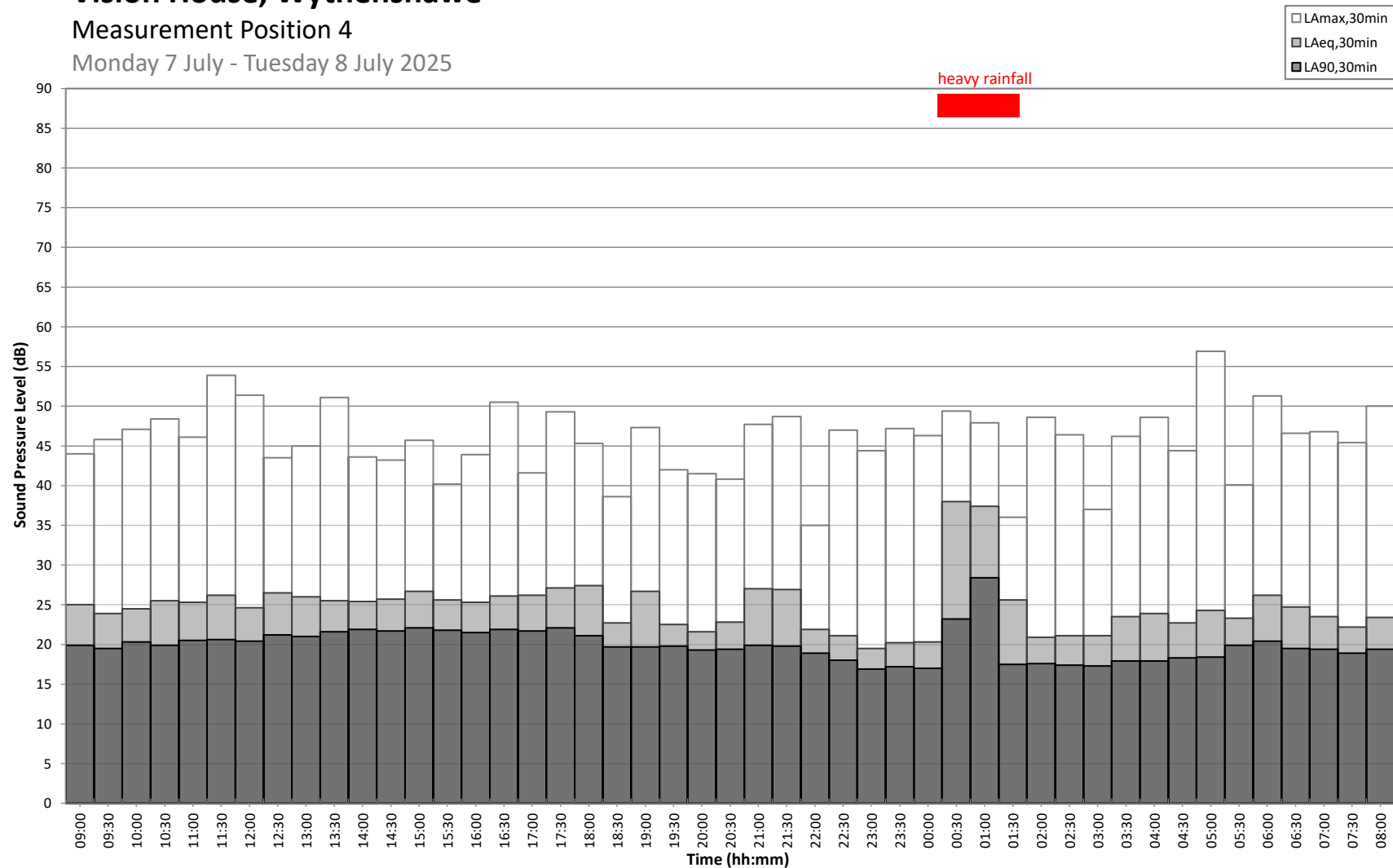


Vision House, Wythenshawe

Measurement Position 4

Monday 7 July - Tuesday 8 July 2025

22179-G4



Vision House, Wythenshawe

Measurement Position 5

Monday 7 July - Tuesday 8 July 2025

22179-G5

