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Noise Impact Report

Project Details

Client	Burnage Parochial Church Council
Client Address	250 Burnage Lane Manchester M19 1FL
Site Address	St Margaret's Church 250 Burnage Lane Manchester M19 1FL
Reference	22610E

Quality Assurance

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1 Executive Summary

A noise assessment has been conducted for a new building containing a community workshop at St Margaret's Church, 250 Burnage Lane, Manchester, M19 1FL.

The assessment is to be submitted as part of a planning application for the development site to Manchester City Council (MCC). At the time of reporting, no response or commentary has been provided by MCC.

The assessment considers the impact on potentially noise sensitive neighbouring residential premises in comparison with BS 4142: 2014.

Assessment of noise levels due to normal operation inside the premises indicates no adverse impact on the amenity of the local community according to BS 4142: 2014 noise criteria, provided that the recommended roof specification is implemented and the rooflights and roller shutter door achieve the minimum specified sound reduction performance. This assessment also concludes that all windows should remain closed during periods of high-noise activity. Therefore, it is recommended that specialist advice on ventilation strategy is sought.

Furthermore, a plant noise limit level has been defined to ensure that, once the plant and location of the units have been determined, noise levels at the closest noise sensitive receptor are not exceeded.



2 Introduction

Burnage Parochial Church Council has instructed Spratt and Hamer Limited to undertake an environmental noise survey in order to assess the impact of the proposed community workshop, which may have an impact on existing nearby residents.

The proposed development site is an existing car park associated with St Margaret's church used by patrons attending the church hall and the local garden centre. It is proposed to alter the car park through removing four parking spaces and erect a new structure that will be used as a community workshop. As part of the proposed operations, the workshop will facilitate the use of power tools e.g., saws and drills. A dust extraction unit is proposed to be installed on the northern façade of the building. The client has informed us that operations will be limited to the hours of 10:00 to 21:00 each day of the week.

This report is prepared solely for Burnage Parochial Church Council. Spratt and Hamer Limited accepts no responsibility for its use by any third party.

This document has been prepared using the various documents listed within the appendices of this report, together with drawings, technical information and additional verbal representations made by third parties. We have not audited nor independently verified the content or accuracy of any of the documents and information provided to us in the preparation of this report.

If additional information comes to light subsequent to the production of this report, we reserve the right to revise our opinions, and the conclusions reached within this report.

2.1 Noise Impact Assessment

Spratt and Hamer Limited has undertaken an environmental noise impact assessment at the above site with noise levels measured externally over a 4-hour period (12:00 – 16:00) during a Monday.

This report will state the measured noise levels and will refer to guidance relevant to the nature of this survey whilst considering the Local Planning Authority's anticipated guidance and conditions.



3 Assumptions, Limitations & Uncertainty

- a. All suggested specifications require a good level of workmanship and for materials to be installed as the manufacture intends. Any poor workmanship may lead to weaknesses in the sound attenuation provided by the building elements.
- b. It is assumed that the sound pressure levels measured on site during the environmental noise survey are typical of the site.
- c. It is assumed that drawings and all information supplied by Bernard Taylor Partnership Limited are up to date and correct.
- d. The development is only proposed. As such, no measurements of the noise emissions have been undertaken. It is assumed that the expected noise emissions used in the report are representative of the proposed development.
- e. It should be noted that building elements modelled in INSUL are only an approximation of the proposed specifications due to the limitation of materials available within the software.
- f. Detailed noise modelling has been undertaken in accordance with recognised methodologies. Note that CADNA-A predictions may be subject to a certain degree of uncertainty due to inherent limitations within the software.



4 Planning Policies, Guidance and Criteria

The planning policies and criteria listed below are taken from associated relevant guidance documents, all of which should be considered for the internal and external noise levels.

4.1 National Planning Policy

The National Planning Policy Framework (NPPF) December 2024 set out the Government's planning policies for England and how they are expected to be applied. It provides a framework within which the Local Authorities are to prepare local plans and use their planning powers to minimise the adverse impact of noise. It should contain the following in relation to noise impacts.

187. Planning policies and decisions should contribute to and enhance the natural and local environment by:

'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.'

198. 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:

'mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life'

NPPF previously characterised noise by grading and recommending actions and different effect levels as reproduced in Table 1.



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Perception	Examples of outcomes	Increasing effect level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
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

Table 1: Noise exposure hierarchy based on likely average response.



4.2 Criteria

4.2.1 Local Planning Authority Criteria

At the time of writing the report, the consultant is unaware of any conditions or specific criteria provided by the Local Planning Authority; therefore, the following noise impact assessment will be undertaken in order to meet the criteria of BS 4142:2014.

In addition to BS 4142:2014 criteria, Manchester City Council Planning and Noise Technical Guidance October 2022 section 3.7.1.5 states the following:

"The development should be designed so as to achieve a rating level of 5 dB (L_{Aeq}) below the typical background (L_{A90}) level at the nearest noise sensitive location."

4.2.2 BS 4142+A1:2019 Method for rating and assessing industrial and commercial sound

BS 4142:2014+A1:2019 Method for rating and assessing industrial and commercial sound is routinely used by local authorities in assessing noise associated with industrial and/or commercial activity.

In brief, BS 4142 provides a means of assessment whereby noise from industrial and commercial sources (the "specific sound level", $L_{Aeq,t}$) is compared with background noise ("background sound level", L_{AF90}).

The specific sound level may be corrected by a numerical penalty if it includes acoustic features that are considered to be distinctive. The corrected specific sound level is termed a "rating level" ($L_{Aeq,t}$) and is designed to reflect people's subjective reaction to noise characteristics that may be considered annoying.

The rating level is then compared to the background sound level to assess its impact. BS 4142 describes an indication of the impact according to the numerical difference between the rating level and the background sound level. This is shown below in Table 2.

Rating Level – Background Sound Level	Indication of Impact
+ 10dB	Significant Adverse Impact
+ 5dB	Adverse Impact
≤ 0dB	Low Impact

Table 2: BS 4142 Rating Level Impact

4.3 Criteria Summary

In order to meet the requirements of MCC, the assessment and recommendations will be made in accordance with *BS 4142+A1:2019 Method for rating and assessing industrial and commercial sound*. Furthermore, the assessment will comply with Section 3.7.1.5 of the MCC technical guidance document by ensuring that the rating level remains at least 5 dB below the representative background noise level at the most exposed noise-sensitive receiver (NSR).



5 Site Description

The proposed development site is an existing car park associated with St. Margaret's Church, south Manchester, located approximately 6 kilometres of the city centre. The area is of a mixed commercial and residential environment.

To the west and north of the proposed development is the location for the nearest neighbouring residential gardens, situated adjacent to the existing carpark. The south façade of the proposed workshop will be situated approximately 38m from the church building. Further to the east at approximately 90m runs Burnage Lane, a two-way road experiencing light to moderate levels of traffic flow, including bus routes. It is along Burnage Road where most of the commercial activity occurs including a pub (The Farmers Arms), a café (Dahlia Café), a community centre (Burnage Community Centre) and others.

The closest noise sensitive receptors are the houses fronting St. Margarets Avenue and Hyde Fold Close, located to the north and west, respectively. Traffic flow on these roads is minimal, as both are cul-de-sacs with no through access.

The noise profile of the area is dominated from traffic and other noise sources secondary in nature, such as car park vehicle movement.

5.1 Subjective Observations

The noise profile of the area is dominated by traffic coming from the surrounding road network mixed with other noise sources secondary in nature, such as church car park vehicle movement and church bells. It is also worth noting that a maintenance team operated in a neighbouring garden for part of the survey, using various petrol-powered tools, including a lawn mower.

The on-site consultant was advised by the church vicar that the car park is typically used by visitors to the nearby garden centre and church hall; however, both facilities were closed on the day of the site survey.

5.2 Weather

09/06/2025	Monday
Temperature (°C)	11.1 – 17.1
Wind Speed (m/s)	0.0 – 2.6
Wind Direction	SW
Precipitation (mm/h)	0.0 – 1.0
Damp road/ wet ground	No
Fog/snow/ice	No

Table 3: Measuring Weather Conditions

All weather data taken from www.metoffice.gov.uk from the Highfield Park, Heaton Mersey weather station, located at approximately 2.2km south of the proposed development.



6 Noise Measurement Procedure

6.1 Survey Date and Time

Monday 09/06/2025 from 12:18 to 16:08.

6.2 Personnel Present

Jonny Spratt BSc (Hons)

6.3 Survey Equipment Used

Manufacturer	Model	Serial No.	Description
Rion	NL-52	01054205	Integrating Sound Level Meter and Real Time Analyser
Pulsar	Model 105	59964	Acoustic Calibrator

Table 4: Survey Equipment Used

6.4 Calibration

The sound level meters were calibrated with the field calibrator to a level of 94.0 dB @ 1 kHz prior to and on completion of the survey. No significant drift in calibration was observed. The meters used during the survey are precision grade Class 1.

Calibration certificates are available on request.

6.5 External Ambient Sound Measurements

The measurement locations chosen during the survey were deemed suitable for the determination of the ambient and background sound levels of the area The survey was conducted outside school pick-up times and peak traffic hours, making it representative of a quiet period.

The sound level meters were set to measure broadband and 1:1 octave centre frequency bands L_{Aeq} and L_{A90} in 5-minute periods.

6.5.1 Monitoring Position 1

A microphone was placed on a tripod at approximately 1.5m from ground level in the northwest corner of the car park overlooking the rear gardens of properties on Hyde Fold Close. The sound level meter was set to record WAV file audio recordings for all maximum sound level events above 53 dBA. The meter was set to measure the complete survey period.



6.6 Location Plan of Measurement Positions

The location plan below shows the proposed development and positions of the monitoring equipment and nearest receptors.

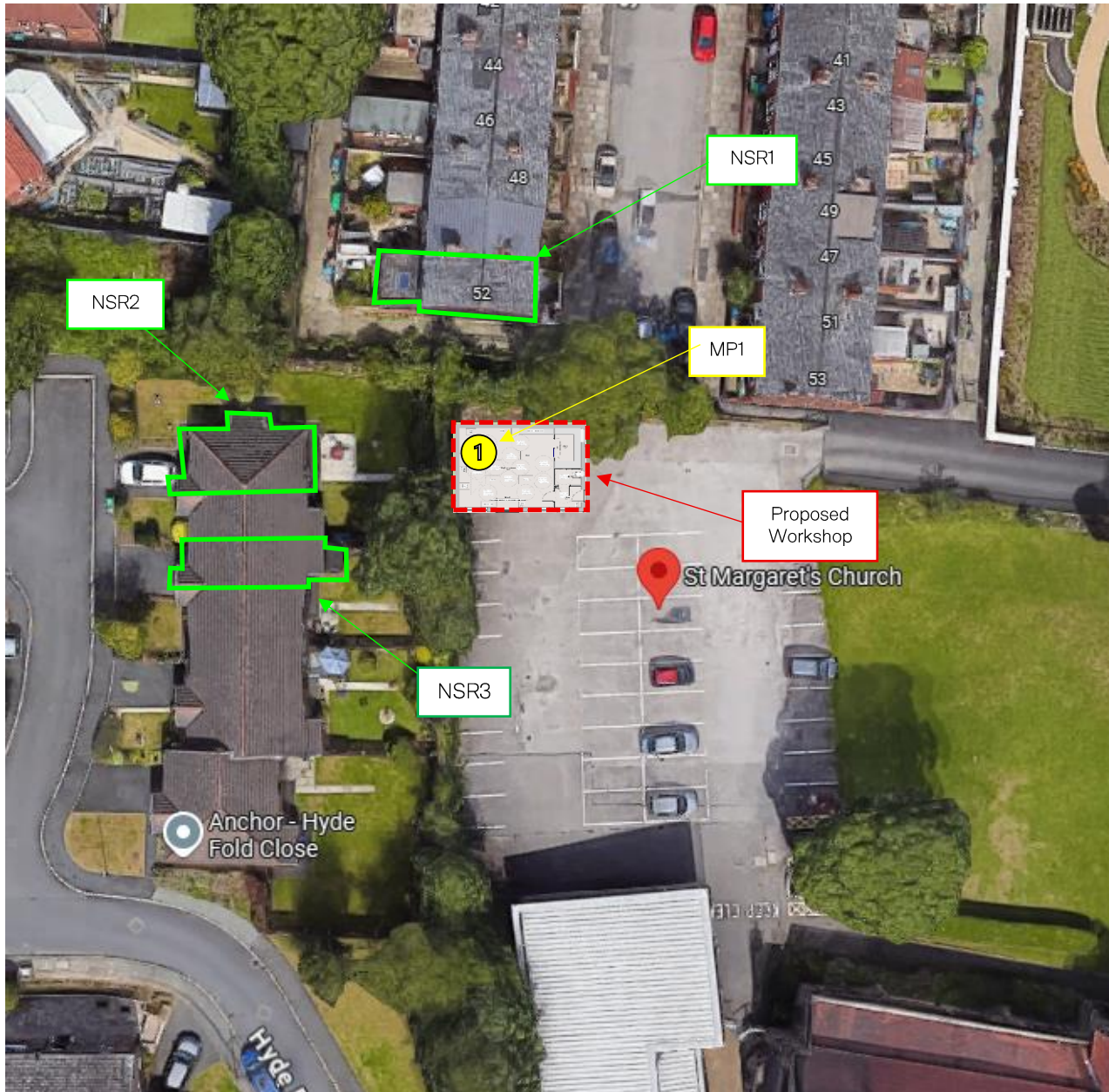


Figure 1: Indicative Site Map. Image taken from www.google.com/maps



7 Results and Analysis

7.1 Background Noise Level Measurement Analysis

The following table presents the measured results from the monitoring position during operational hours of the proposed development.

Consistent lawnmower noise for approximately 1 hour was audible during the monitoring period, influencing the measured noise levels. This is not considered representative of typical ambient conditions in the area; accordingly, data collected during this time has been excluded from the assessment analysis.

Monitoring position	Time Period <i>t</i>	<i>L</i> _{Aeq,t} (dB)	Min. <i>L</i> _{A90,t} (dB)	Max. <i>L</i> _{A90,t} (dB)	Modal <i>L</i> _{A90,t} (dB)
1	12:00 – 16:00	51.5	44	48	45

Table 5: Measurement Results

Data tables can be found in the appendix.

To ensure robustness, the following histogram outlines the measured *L*_{A90,t} background noise results in 5-minute intervals (rather than 1-hour) at the monitoring positions during operational time of the workshop. All values are rounded to integers such that 0.5 is rounded up.

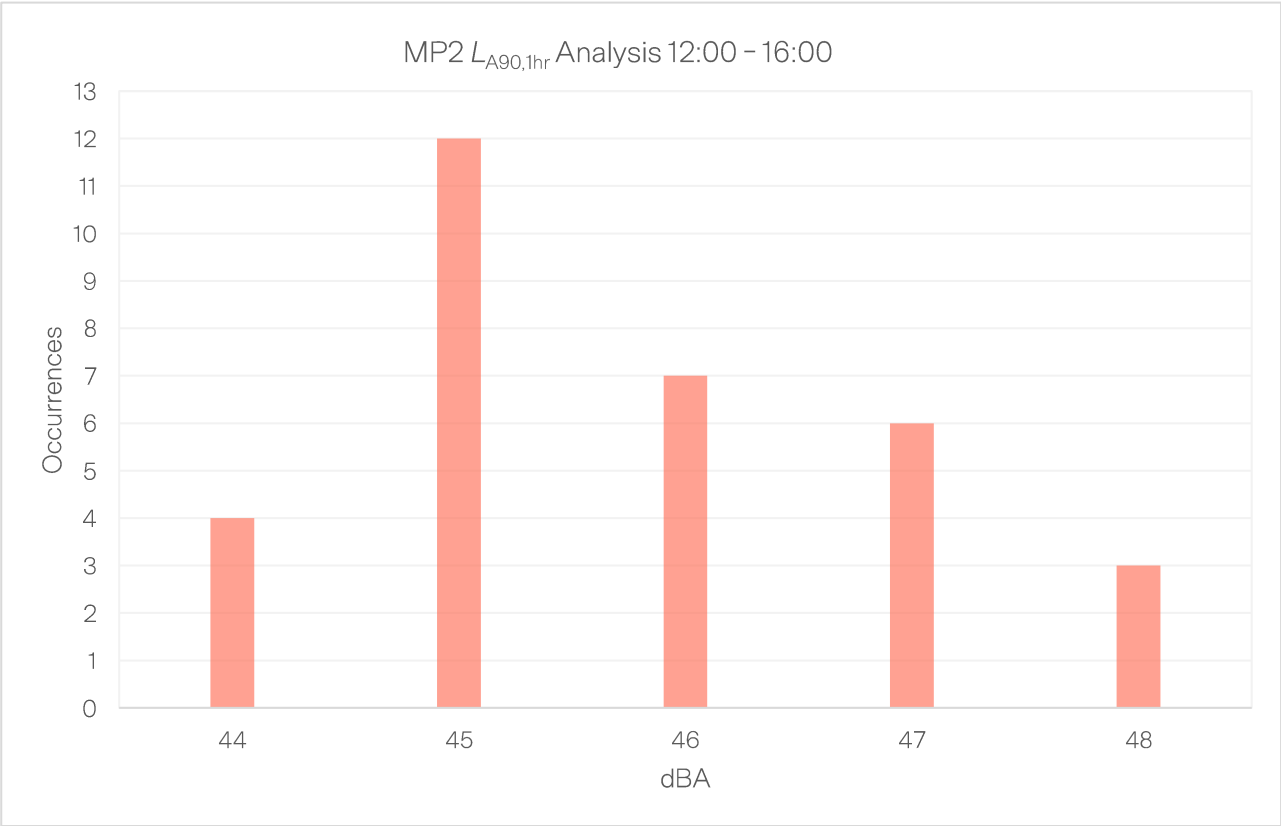


Figure 2: Background Noise Analysis

As can be seen, the lowest measured *L*_{A90,t} is 44 dB. To ensure a robust assessment, this value will be adopted as it is considered representative of the area during quiet periods.



8 Noise Impact Assessment

The workshop building consists of four indoor areas, with the main workshop occupying most of the building's footprint. A store, WC, and lobby are located along the east façade. Calculations have been undertaken using CADNA-A noise mapping software by DataKustik in order to model propagation of noise from the identified sources.

At the time of the survey, no internal measurements were carried out as the workshop is only proposed. Therefore, historical data from a comparable facility will be used, as previously measured by Spratt & Hamer Ltd of a furniture manufacturer. Report ref. 22266 defines the noise emissions at 86dB $L_{Aeq,1hr}$.

The monitored activities included sawing, drilling, screwing, background and radio noise, with all activities occurring simultaneously. As such, it will be considered to represent a robust scenario. The table below presents the calculated cumulative noise level,

Description	Sound Level $L_{Aeq,1hour}$ (dB)
Workshop Sound Level	86

Table 6: Workshop Noise Emissions

8.1 Building Envelope

The building envelope is proposed to be constructed of brick-cavity-block external walls with double glazed windows, including a roller shutter door on the south façade. The roof is of timber base construction with rooflights. The following table outlines the proposed minimum build-up of each element of the façade and expected minimum sound reduction.

At the time of reporting, detailed specifications for the proposed rooflights and roller shutter doors were not available. For the purposes of this assessment, the rooflights have been assumed to provide an acoustic performance equivalent to the façade glazing (R_w 31 dB), while the roller shutter door has been modelled based on a minimum acoustic performance of R_w 18 dB.

Element	Construction	Expected Sound Reduction R_w	Source
Façade	- 100mm solid brick, 150 mm void with 100mm PIR insulation, 100mm concrete block	≥ 55	INSUL
Roof	- 150mm timber rafters filled with PIR insulation.	34 dB	INSUL
Glazing	- 6mm glass, 16mm void, 6mm glass	31 dB	Pilkington
Roller Shutter Doors	- Corrugated metal	18 dB	-
Rooflights	- 6mm glass, 16mm void, 6mm glass	31 dB	Pilkington

Table 7: Façade Element

8.2 Subjective Assessment

BS 4142:2014 states that where appropriate a rating penalty should be established for a sound on a subjective assessment of its characteristics and to correct the Specific Sound Level if a tone, impulse or other characteristics occur e.g., intermittency.

BS4142:2014 says of Impulsivity:



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“A correction of up to +9dB can be applied for sound that is highly impulsive, considering both the rapidity of the change in sound level and the overall change in sound level. Subjectively, this can be converted to a penalty of 3dB for impulsivity which is just perceptible at the noise receptor, 6dB where it is clearly perceptible, and 9dB where it is highly perceptible.”

BS4142 says of tonality:

“... a penalty of 2dB for a tone which is just perceptible at the noise receptor, 4dB where it is clearly perceptible and 6dB where it is highly perceptible.”

BS4142 says of intermittency:

“... If the intermittency is readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.”

In order to provide a robust approach, a penalty correction of +6 dB for ‘clearly perceptible’ impulsivity acoustic characteristic will be applied due to potential rapid increases in noise level and the overall change in sound level such as banging activity.

8.3 Noise Breakout Assessment

This section will assess the impact onto the nearest residential receptors due to the proposed workshop operations. The predicted sound levels have been predicted using CADNA-A noise prediction software, including the following assumptions and considerations:

- The nearest residential dwellings (noise sensitive receptors) are located as outlined in Figure 1.
- The ground between the NSR and the site has been considered as a mixture of hard and soft.
- The sound reduction of each element of the building envelope.
- The noise emissions at the receptor will be compared with the lowest measured background sound levels at the monitoring position.
- Windows and doors are assumed closed.

The following table demonstrates the impact of the proposed workshop on the nearest noise sensitive dwellings.

Description	NSR1 (dB)	NSR2 (dB)	NSR3 (dB)
Sound Level $L_{Aeq,tat}$ at NSR	32	38	38
BS 4142 Penalty Rating	6	6	6
Rating Sound Level $L_{Ar,Tr}$	38	44	44
Background $L_{A90,5min}$	44	44	44
Exceedance over Background $L_{A90,5min}$	-6	0	0
MCC Criteria	39	39	39
Exceedance over MCC Criteria $L_{A90,5min}$	-1	+5	+5

Table 8: BS4142 Impact Assessment

The assessment indicates the noise impact of the proposed workshop will not exceed the background level at any NSR, equating to Low Impact according to BS 4142 definitions and Lowest Observed



Adverse Effect Level (LOAEL) in accordance with NPPF. However, the calculated rating sound level at NSR2 and NSR3 exceed the MCC criterion by 5 dB.

The noise map with the initial calculations can be seen in the figure below.

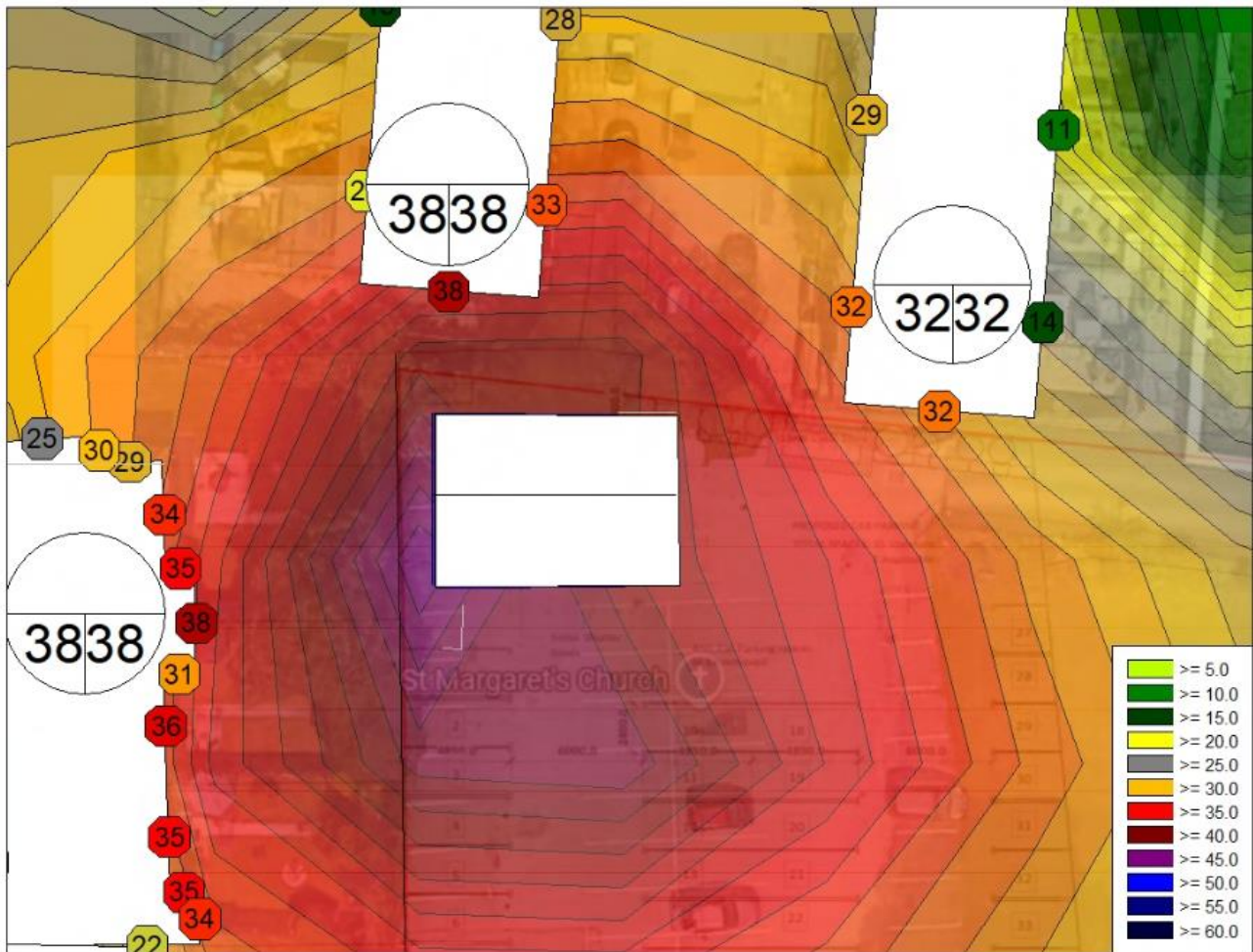


Figure 3: Noise Map



8.4 Mitigation Measures

It has been found that noise egress is prominent via the roof structure (including the rooflights) and the roller shutter door, these being the weakest elements of the building envelope.

It is recommended to upgrade these elements as outlined below.

Element	Recommendation	Required Sound Reduction R_w	Source
Roof	Partially fill the cavity with additional 50mm (min.) mineral wool insulation of 45kg/m ³ and board with 1 no. layers of sound rated plasterboard on resilient bars.	47 dB	INSUL
Roller Shutter Doors	Select roller shutter door capable of meeting the required sound reduction.	≥ 30 dB	SAFE-door Industries Ltd
Rooflights	8mm glass, 16mm void, 4mm glass	≥ 33 dB	Pilkington

Table 9: Façade Element

The following table demonstrates the impact of the proposed workshop on the nearest noise sensitive dwellings following the implementation of the mitigation measures.

Description	NSR1 (dB)	NSR2 (dB)	NSR3 (dB)
Sound Level $L_{Aeq,t}$ at NSR	25	29	29
BS 4142 Penalty Rating	6	6	6
Rating Sound Level $L_{A,r,Tr}$	31	35	35
Background $L_{A90,5min}$	44	44	44
Exceedance Over Background $L_{A90,5min}$	-13	-9	-9
MCC Criteria	39	39	39
Exceedance Over MCC Criteria $L_{A90,5min}$	-8	-4	-4

Table 10: BS4142 Impact Assessment

The assessment indicates that the calculated rating sound level at all NSRs remains no greater than 9 dB below the background noise level, thereby falling in line with the LPA policy.

The noise map with the mitigation measures implemented can be seen in the figure below.





Noise calculations have been carried out using a conservative methodology, incorporating the following considerations:

- As such, it is considered that the noise emissions will be quieter for the majority of the time and the likelihood is that the difference between noise emissions and the background noise will be even greater, thus resulting in an even lower level of impact on nearby receptors.

8.6 Notes on Ventilation

This assessment has been carried out on the basis that all windows and doors must remain closed during noisy activity to avoid noise intrusion. Given the potential for elevated internal temperatures during warmer periods, it is anticipated that some form of mechanical ventilation may be required. As such, specialist advice should be sought regarding suitable ventilation solutions.



9 Plant Noise Assessment

9.1 Assessment of Mechanical Plant in Accordance with BS4142:2014+A1:2019

We have been advised by the client that a dust extraction unit is associated with the proposed development and is proposed to be located at the northern façade of the building. However, at the time of this report, the location and make and model of any proposed unit/s have not been determined. As such, a plant noise limit level will be defined in order to achieve the Local Planning Authority criteria.

9.2 External Background Measurement Results

It will be assumed that the proposed plant will only operate during the proposed operational hours. MCC criteria is 5 dB below the background of 44 dB, taken from the Measuring Position 1, considered to be representative of the background noise levels at the most exposed Noise Sensitive Receptor.

9.3 Plant Noise Limit Level Numerical Assessment

The following considerations have been taken into account.

- The plant and/or location have not been determined.
- The plant may operate at any time during the proposed opening times 10:00 – 21:00. As such, the lowest $L_{A90,5-min}$ of 44 dB at Measuring Position 1 will be used for the assessment.
- Nature of the plant is unknown. As such, any future calculation should include any characteristic features that may incur in penalty rating, such as tonality, impulsivity, intermittency or other.
- The noise level at the NSRs will be a cumulative noise level including the noise breakout from the workshop.

The following table outlines the rating sound limit level at the nearest noise sensitive dwelling.

Description	Operational Time 10:00 – 21:00 (dBA)
Background Sound Level $L_{A90,t} - 5dB$	39
Predicted Workshop $L_{A,r,Tr}$ Sound Level	35
Cumulative Rating Sound Limit Level $L_{A,r,Tr}$ at NSR	39
Dust Extraction Rating Sound Limit Level $L_{A,r,Tr}$ at NSR	37

Table 11: BS4142 Impact Assessment

The table above indicates that the noise impact due to the any proposed external plant units should not exceed 37 dB rated sound level at the nearest noise sensitive receptor in order to fall in line with the Local Policy, thereby corresponding to a 'Low Impact' according to BS 4142 definitions



10 Conclusion

The report concludes that, based on the measurements undertaken on site and existing background noise levels, noise from the proposed workshop will have a low impact on the amenity of the residents of neighbouring dwellings as long as the following mitigation measures are implemented:

- During periods of high-noise activity, all windows and doors to the workshop must remain closed to control internal noise breakout. Accordingly, specialist advice should be sought to ensure an appropriate ventilation strategy.
- The windows located in the workshop must provide a minimum sound reduction performance of 31 dB R_w (e.g., 6mm glass / 16mm void / 6mm glass).
- Rooflights / Velux windows must provide a minimum sound reduction performance of 33 dB R_w . (e.g., 8mm glass / 16mm void / 4mm glass).
- The roller shutter door must achieve a minimum sound reduction performance of 30 dB R_w . An example of a suitable product is the Soundroll Acoustic Door at www.safe-door.co.uk, or any other unit capable of achieving the minimum sound reduction.
- The workshop must not operate outside the proposed opening hours (before 10:00 or after 21:00).
- The roof construction should incorporate an additional 50 mm (minimum) mineral wool insulation with a density of 45 kg/m³, and the ceiling boarded with one layer of 15 mm sound rated plasterboard on resilient bars.

Furthermore, a plant noise limit level has been defined for the relevant M&E specialist to ensure that, once the plant and location of the units have been determined, noise levels at the closest noise sensitive receptor are not exceeded.



11 References

National Planning Policy Framework (NPPF).

BS 4142:2014+A1:2019 Method for rating and assessing industrial and commercial sound.

BS 7445-1:2003 Description and measurement of environmental noise – Part 1: Guide to quantities and procedures.

Manchester City Council Planning and Noise Technical Guidance October 2022

www.google.co.uk/maps.

www.metoffice.gov.uk.

Insul Version 9.0.24.

CADNA-A (version 2023) noise modelling software

11.1 Drawing References

SMC-BTP-00-E-DR-A-4581_111 - North and South Elevation

SMC-BTP-00-E-DR-A-4581_112 - East and West Elevations

SMC-BTP-00-GF-DR-A-4581_108 - Workshop Plan

SMC-BTP-00-LP-DR-A-4581_100 - Location Plan

SMC-BTP-00-RF-DR-A-4581_110 - Roof Plan

SMC-BTP-00-SP-DR-A-4581_105 - Site Plan as Existing

SMC-BTP-00-SP-DR-A-4581_106 - Site Plan as Proposed

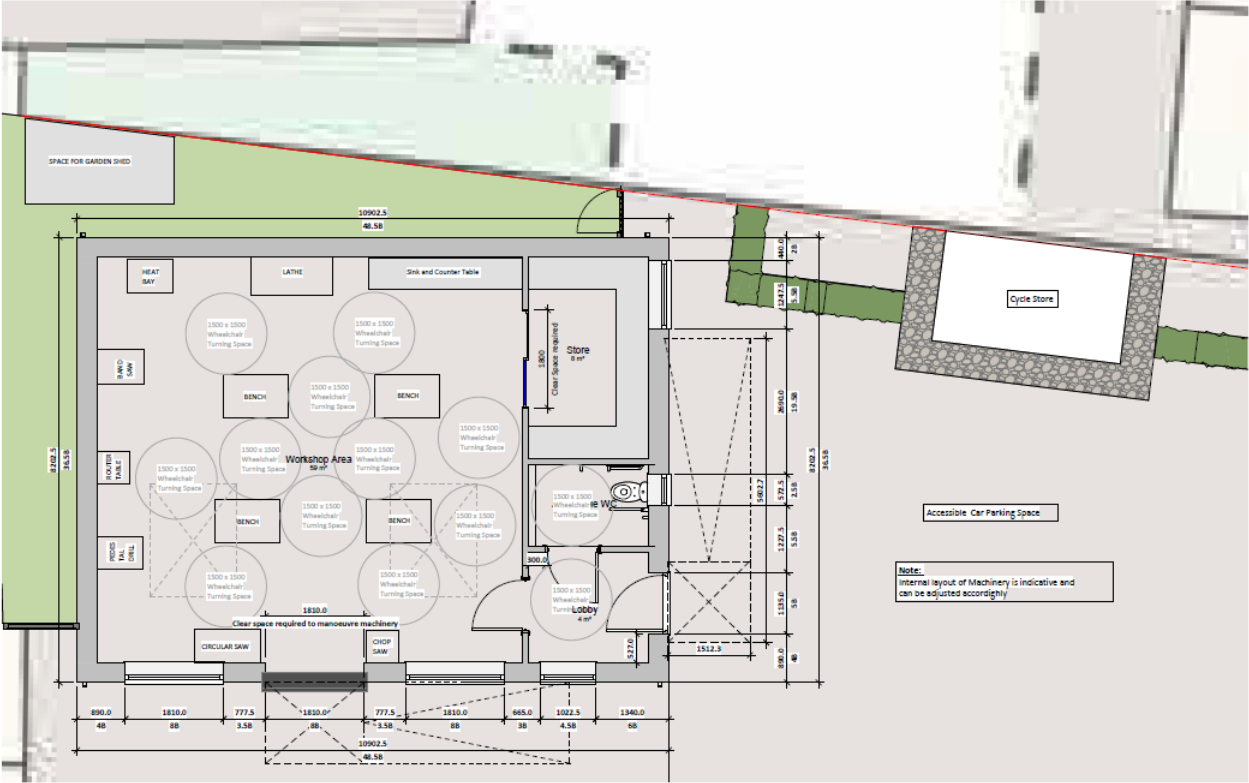


Appendix

Figure 1: Photograph showing Monitoring Position 1



Figure 2: Proposed Workshop Plan



Workshop Plan
1 : 50

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Rev	Date	Int	Description
btp ARCHITECTS RIBA Chartered Practitioner			
CLIENT: Tony Hardy			
PROJECT: Workshop Shed, St Margarets Church			
DESCRIPTION: Workshop Plan			
PURPOSE OF ISSUE: Planning			
DRAWN BY: RA		CHECKED: MA	DATE: 02/04/25 SCALE @ A2: 1 : 50
JOB NO: 4581		STATUS CODE: S2 DRAWING NO: 108	
FILE IDENTIFIER: SMC-BTP-00-GF-DR-A-4581_108			
Elizabeth Thomas 498 Didsbury Road, Station Mersey, Stockport, S64 1BB 0161 443 1231 info@bernardtaylor.co.uk www.btparchitects.co.uk			



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Measurement Results

Monitoring Position 1

Monitoring position	Time Period	Time Base T (mins)	$L_{Aeq,T}$ (dB)	L_{Amax} (dB)	L_{A90} (dB)	L_{A10} (dB)
1	12:18	5	53.7	85.2	44.8	51.3
	12:23		51.2	65.5	45.2	54.2
	12:28		48.2	64.8	44.2	50.9
	12:33		48.6	56.3	45.3	51.2
	12:38		51.3	65.8	44.2	54.7
	12:43		52.6	70.9	44.6	55.0
	12:48		48.2	58.7	44.5	50.8
	12:53		46.9	56.3	43.5	49.2
	12:58		52.0	64.1	45.3	55.4
	13:03		55.5	70.0	48.2	59.0
	13:08		49.7	55.3	46.8	51.9
	13:13		50.1	63.2	46.8	52.3
	13:18		49.1	66.3	45.8	50.5
	13:23		48.6	57.3	45.8	50.6
	13:28		47.4	57.5	44.6	49.7
	13:33		49.4	70.1	45.1	51.6
	13:38		54.5	75.1	45.3	55.7
	13:43		57.2	78.6	47.0	57.9
	13:48		52.6	62.3	47.6	55.7
	13:53		58.0	63.9	56.0	59.9
	13:58		60.3	66.9	50.8	63.3
	14:03		64.4	76.7	57.7	66.6
	14:08		62.9	75.2	50.1	66.8
	14:13		59.7	70.0	54.0	62.8
	14:18		56.3	69.4	46.1	60.5
	14:23		68.4	81.4	49.3	75.1
	14:28		75.0	83.5	53.8	79.5



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Monitoring position	Time Period	Time Base T (mins)	$L_{Aeq,T}$ (dB)	L_{Amax} (dB)	L_{A90} (dB)	L_{A10} (dB)
	14:33		53.7	68.2	44.2	57.7
	14:38		49.6	62.5	44.5	51.9
	14:43		52.8	64.3	45.3	57.0
	14:48		52.5	64.3	45.3	56.3
	14:53		52.3	65.6	45.7	55.6
	14:58		51.7	66.5	45.2	54.2
	15:03		52.7	66	45.7	56.4
	15:08		51.1	63.4	46.5	54.0
	15:13		52.6	67.4	46.8	56.2
	15:18		50.6	62.7	45.5	53.5
	15:23		50.8	63.4	45.9	53.6
	15:28		54.2	69.8	45.1	58.2
	15:33		52.6	65.2	44.3	56.6
	15:38		56.1	68.4	47.9	59.7
	15:43		52.6	67.5	47.3	56.0
	15:48		49.6	61.2	46.1	51.8
	15:53		50.2	63.9	46.0	52.5
	15:58		53.9	69.2	46.7	57.7
	16:03		53.1	72.5	45.3	56.6
	16:08		51.8	60.9	45.2	57.1



Glossary of Acoustical Terms

A-weighting

Noise levels are corrected to represent human response to sound.

L_{Aeq}

This is a continuous equivalent of time varying noise, or effectively the average measured (A weighted) noise level over a defined period of time.

$L_{Aeq,16hour}$

A 16 hour long measurement of the L_{Aeq} over the period between 07:00 and 23:00, also known as a daytime measurement.

$L_{Aeq,8hour}$

An 8 hour long measurement of the L_{Aeq} over the period between 23:00 and 07:00, also known as a night time measurement.

L_{AFmax}

The highest, or maximum A-weighted sound pressure level measured over a specified time period. The 'F' defines a time weighting in Fast.

L_{A90}

The A-weighted noise level or average level which is exceeded for 90 percent of the measured time period. Also known as a background level.

L_{A10}

The A-weighted noise level or average level which is exceeded for 10 percent of the measured time period.

1:1 & 1:3 octave spectrum analysis

A single measurement that is separated into frequency bands to allow for a more detailed analysis of the noise source in question.

R_w

The weighted sound reduction index of a partition or facade. A single number value based on the performance of a partition between two rooms across the frequency range 100Hz to 3150Hz. The level is adjusted for the effects of reverberation and background noise.



$D_{n,e,w}$

The weighted level difference of a partition or façade which takes into account a small element such as a grill or vent.

SEL (sound exposure level)

A measure of A-weighted sound energy used to describe a particular event, such as a train pass. It is the sound energy, which, if occurring over one second would contain the same energy as the event.

Free field sound pressure

Is where the radiation or spread of sound is completely unaffected by the presence of any reflecting surfaces or boundaries.

Low Frequency Noise

A term generally used for sound below a frequency of 100 to 150Hz.





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