Noise Impact Assessment for the Extension of a Prayer Hall

Client Name:	Drawing World Ltd
Client Address:	18 Rutters Close, Middlesex, UB7 9AL
Site Address:	4-5 Cowley Mill Rd, Uxbridge, UB8 2QB
Date:	18/02/2021

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Date	18/02/2021
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Version Reference	Version 2

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Executive summary

An environmental noise survey and noise impact assessment have been undertaken at 4-5 Cowley Mill Rd, Uxbridge, UB8 2QB to assess the potential increase in noise levels from the extension of a Prayer Hall on the surrounding Noise Sensitive Receptors. The measured ambient noise levels have allowed for an IEMA Increase in Ambient Noise level Assessment to be undertaken.

The Increase in Ambient Noise Level assessment indicates that provided a minimum sound reduction of 29 dB R_w is achieved for all building elements including glazing and doors the expected increase in noise levels from the proposed development to be 'Not Significant' when assessed in accordance with the IEMA Guidelines on Noise Impact'. This equates to 'No Observed Effect Level' when assessed in conjunction with the NPPF and NPSE.

An overview of the recommendations can be found below:

Recommendations and Mitigation Measure Overview
- All windows and doors should remain closed, where possible, throughout the operational period of the Prayer Hall. Alternative ventilation should be provided to enable windows to remain closed where possible. - All glazing, doors and building elements within the Prayer Hall should provide a minimum of 29 dB R_w. - All ventilation requires a minimum sound insulation requirement of 29 dB $D_{n,e,w}$

The findings of this report will require written approval from the Local Authority prior to work commencing.

1. Introduction

Overview

NOVA Acoustics Ltd has been commissioned to prepare a noise assessment for the extension of a Prayer Hall (the Proposed Development') at 4-5 Cowley Mill Rd, Uxbridge, UB8 2QB ('the Site').

The applicant is preparing a planning application to be submitted ('the Application') to the London Borough of Hillingdon council.

The following technical noise assessment has been prepared to support the planning application to the London Borough of Hillingdon council. This report details the existing background sound climate at the nearest receptors, as well as the sound emissions associated with the Proposed Development.

This noise assessment is necessarily technical in nature; therefore, a glossary of terms is included in Appendix A to assist the reader.

Scope & Objectives

The scope of the noise assessment can be summarized as follows:

- Baseline sound monitoring survey to evaluate the prevailing background sound levels at the nearest sensitive receptor ('NSR') to Site;
- Detailed sound modelling, acoustic calculation and analysis in accordance with; ISO9613 – 1 ISO 9613-2 - Attenuation of sound during propagation outdoors prediction methodology, to predict sound levels at the NSR;
- A detailed assessment of the suitability of the Site, in accordance with relevant standards in respect of sound from the proposed sources; and
- Recommendation of mitigation measures, where necessary, to comply with the requirements of the National Planning Policy Framework (2019), Noise Policy Statement for England (2010), British Standard BS 4142:2014+A1:2019 - Methods for rating and assessing industrial and commercial sound. Further information on the legislation can be found in Appendix B.

2. Environmental Noise Survey

Measurement Methodology

To characterise the sound profile of the area at the closest sensitive receptors (NSR), an environmental sound survey has been carried out from the 6th of August to the 10th of August, 2020. The monitoring position was chosen in order to collect representative sound levels at the NSRs during the typical operational periods of the proposed development. The monitoring location is shown in Figure 1.0.

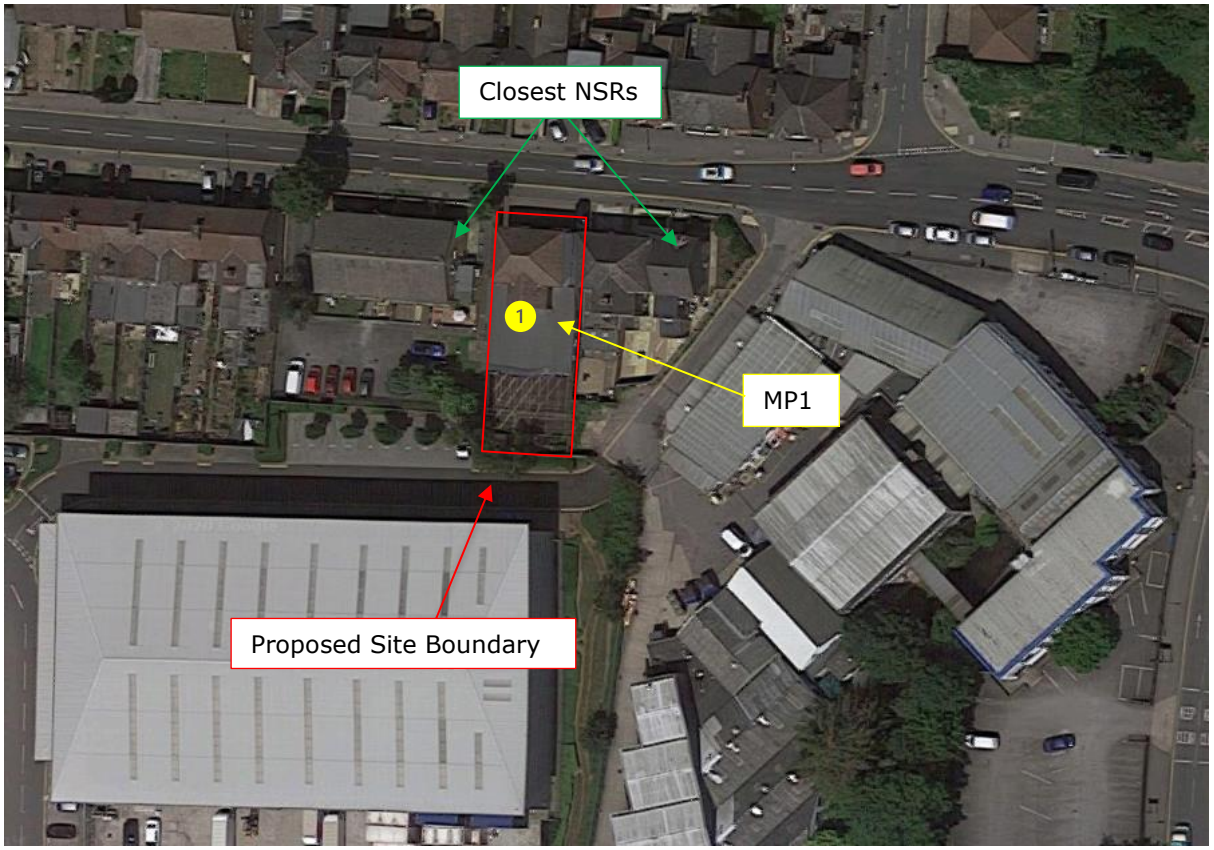


Figure 1.0 - Indicative Site Layout

Context & Subjective Impression

The area surrounding site is primarily mixed in nature with both commercial/industrial and residential dwellings. The noise profile of the area is dominated by traffic noise from the surrounding road networks and plant units, works and deliveries from near commercial/industrial units.

Environmental Noise Survey Results

The proposed Prayer Hall will operate between 05:00 to 22:00 from Monday to Sunday at various time intervals. The table below outlines the existing background sound levels during the operational period of the Prayer Hall, that will be used as the baseline for the noise assessment. Further summary results for the entire measurement period can be found in Appendix D. Details on operational times and expected attendance can be found in Appendix E.

Measurement Position MP1				
Measurement Time Period ('t')	**$L_{Aeq,t}$**	**$L_{Amax,t}$**	**$L_{A90,t}$**	**$L_{A10,t}$**
Night 3 – 08/08/20 – 05:00 - 07:00	43.0	69.0	41.0	44.0
Day 4 – 09/08/20 – 07:00 – 22:00	48.0	75.0	45.0	49.0

Table 1.0 – Existing Ambient Sound Level Summary Results

3. Noise Assessment

3.1 Noise Breakout Assessment

Conversations with the client have shown that there is to be no live music or PA system in the venue. Instead, there will be talks and prayers via voice only. The number of participants is expected to vary significantly depending on the day and time of pray session. The maximum number of attendees in the day time occurs on a Friday with 225 people attending. The maximum number of attendees in the night time period is 15.

To assess the noise breaking out of the development it has been assumed that each attendee will be speaking in a raised voice. To calculate the noise level at the closest NSR the noise breaking out of the weakest element of the façade, the glazing has been assessed. It is assumed the glazing will be standard double glazing 4mm glass/ 16mm cavity /4mm glass with a sound reduction of 29 dB Rw.

Description	Day time (dBA)	Night Time (dBA)
Noise Level of a Raised Voice at 1m	66.0	66.0
Max Number of Attendees	225	15
Expected Internal Noise Level (L1 x n +6)	96.0	84.0
Sound Reduction of Glazing (Rw)	29.0	29.0
External Noise Level (L1-Rw-6)	61.0	49.0
Distance Attenuation to NSR (5m)	-14.0	-14.0
Specific Noise Level at NSR	47.0	35.0

Table 2.0 – Predicted External Noise Levels at NSR

3.2 Increase in Ambient Noise Level Assessment

The following section of the report assesses the expected increase in noise levels of the area due to the noise breaking out of the development. The specific noise levels at the NSR are logarithmically added to the lowest measured ambient noise levels presented in Table 1.0. the higher the increase in noise levels the higher the expected impact.

Description	Day time (dBA)	Night time (dBA)
Specific Noise Level at NSR	47.0	35.0
Lowest Ambient Noise Level	48.0	43.0
Resulting Noise Level	50.5	43.6
Increase in Noise Levels	+2.5	+0.6

IEMA Impact Rating	'Not Significant'	'Not Significant'

Table 3.0 – Increase in Ambient Noise Level Assessment

Discussion:

The assessment above indicates provided a minimum sound reduction of 29 dB Rw is achieved the expected increase in noise levels from the proposed development to be 'Not Significant' when assessed in accordance with the IEMA Guidelines on Noise Impact'. This equates to 'No Observed Effect Level' when assessed in conjunction with the NPPF and NPSE.

Given the site already operates the noise from the site does not represent a wholly new noise source in the area merely a slight intensification it is expected that the actual impact on the surrounding NSRs is lower than stated.

3.2.1 Recommendations and Mitigation measures

The following section outlines the mitigation measures that are necessary to reduce the impact of the extract duct.

- All windows and doors should remain closed, where possible, throughout the operational period of the Prayer Hall. Alternative ventilation should be provided to enable windows to remain closed where possible.
- All glazing, doors and building elements within the Prayer Hall should provide a minimum of 29 dB R_w.
- All ventilation requires a minimum sound insulation requirement of 29 dB $D_{n,e,w}$ the following models could be installed to provide the required sound attenuation.
    - Titon Trickle 4400EA Attenuation when open 33 dB $D_{n,e,w}$
    - Titon through wall 9x3 acoustic AirLiner set with hit & miss ventilator when open 38 dB $D_{n,e,w}$
    - Titon mechanical through wall Sonair F+ 55 dB $D_{n,e,w}$

Appendix A – Acoustic Terminology

Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Pressure Level (Sound Level)	The sound level is the sound pressure relative to a standard reference pressure of 20µPa (20x10-6 Pascals) on a decibel scale.
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log10 (s1 / s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20µPa.
A-weighting, dB(A)	The unit of sound level, weighted according to the A-scale, which takes into account the increased sensitivity of the human ear at some frequencies.
Noise Level Indices	Noise levels usually fluctuate over time, so it is often necessary to consider an average or statistical noise level. This can be done in several ways, so a number of different noise indices have been defined, according to how the averaging or statistics are carried out.
$L_{eq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level during the period T. Lmax is sometimes used for the assessment of occasional loud noises, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the 'fast' sound level meter response.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. L90 can be considered to be the "average minimum" noise level and is often used to describe the background noise.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L10 can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m
Facade	At a distance of 1m in front of a large sound reflecting object such as a building façade.
Fast Time Weighting	An averaging time used in sound level meters. Defined in BS 5969.

In order to assist the understanding of acoustic terminology and the relative change in noise, the following background information is provided. The human ear can detect a very wide range of pressure fluctuations, which are perceived as sound. In order to express these fluctuations in a manageable way, a logarithmic scale called the decibel, or dB scale is used. The decibel scale typically ranges from 0 dB (the threshold of hearing) to over 120 dB. An indication of the range of sound levels commonly found in the environment is given in the following table.

Sound Level	Location
0dB(A)	Threshold of hearing
20 to 30dB(A)	Quiet bedroom at night
30 to 40dB(A)	Living room during the day
40 to 50dB(A)	Typical office
50 to 60dB(A)	Inside a car
60 to 70dB(A)	Typical high street
70 to 90dB(A)	Inside factory
100 to 110dB(A)	Burglar alarm at 1m away
110 to 130dB(A)	Jet aircraft on take off
140dB(A)	Threshold of Pain

The ear is less sensitive to some frequencies than to others. The A-weighting scale is used to approximate the frequency response of the ear. Levels weighted using this scale are commonly identified by the notation dB(A).

In accordance with logarithmic addition, combining two sources with equal noise levels would result in an increase of 3 dB(A) in the noise level from a single source. A change of 3 dB(A) is generally regarded as the smallest change in broadband continuous noise which the human ear can detect (although in certain controlled circumstances a change of 1 dB(A) is just perceptible). Therefore, a 2 dB(A) increase would not be normally be perceptible. A 10 dB(A) increase in noise represents a subjective doubling of loudness.

A noise impact on a community is deemed to occur when a new noise is introduced that is out of character with the area, or when a significant increase above the pre-existing ambient noise level occurs.

For levels of noise that vary with time, it is necessary to employ a statistical index that allows for this variation. These statistical indices are expressed as the sound level that is exceeded for a percentage of the time period of interest. In the UK, traffic noise is measured as the L_{A10}, the noise level exceeded for 10% of the measurement period. The L_{A90} is the level exceeded for 90% of the

time and has been adopted to represent the background noise level in the absence of discrete events. An alternative way of assessing the time varying noise levels is to use the equivalent continuous sound level, L_{Aeq}.

This is a notional steady level that would, over a given period of time, deliver the same sound energy as the actual fluctuating sound. To put these quantities into context, where a receiver is predominantly affected by continuous flows of road traffic, a doubling or halving of the flows would result in a just perceptible change of 3 dB, while an increase of more than 25%, or a decrease of more than 20%, in traffic flows represent changes of 1 dB in traffic noise levels (assuming no alteration in the mix of traffic or flow speeds).

Note that the time constant and the period of the noise measurement should be specified. For example, BS4142:2014 specifies background noise measurement periods of 1 hour during the day and 15 minutes during the night. The noise levels are commonly symbolised as $L_{A90,1hour}$ dB and $L_{A90,15mins}$ dB. The noise measurement should be recorded using a 'FAST' time response equivalent to 0.125ms

Appendix B – Legislation, Policy and Guidance

This report is to be primarily based on the following legislation, policy and guidance.

B.1 - National Planning Policy Framework (2019)

Government policy on noise is set out in the National Planning Policy Framework (NPPF), published in 2019. This replaced all earlier guidance on noise and places an emphasis on sustainability. In section 15, Conserving and enhancing the natural and local environment, paragraph 170e, it states:

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

Paragraph 180 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 impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;*
b) *Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
c) *Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.*

B.2 - Noise Policy Statement for England (2010)

Paragraph 180 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for England (NPSE). This document sets out a policy vision 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.

To achieve this vision the Statement identifies the following three 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.*

In achieving these aims the document introduces significance criteria as follows:

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur. It is stated that "significant adverse effects on health and quality of life should be avoided while also considering the guiding principles of sustainable development".

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected. It is stated that the second aim above lies somewhere between LOAEL and SOAEL and requires that: "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also considering the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur."

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise. This can be related to the third aim above, which seeks: "where possible, positively to improve health and quality of life through the pro-active management of noise while also considering the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim."

The NPSE recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations and provides no guidance as to how these criteria should be interpreted. It is clear, however, that there is no requirement to achieve noise levels where there are no observable adverse impacts but that reasonable and practicable steps to reduce adverse noise impacts should be taken in the context of sustainable development and ensure a balance between noise sensitive and the need for noise generating developments.

Any scheme of noise mitigation outlined in this report will, therefore, aim to abide by the above principles of the NPPF and NPSE whilst recognizing the constraints of the site.

B.3 – IEMA Guidelines on Noise Impact Assessments

The IEMA Guidelines for Environmental Noise Assessment address the key principles of noise impact assessment and are applicable to all development proposals where noise effects may occur. The guidelines set out key principles for noise impact assessment relevant to all types of project regardless of size. The guidance provides advice with regards to the collection of baseline noise data, prediction of noise levels and how noise should be assessed. The guidance recognizes that the effect associated with a noise impact will be dependent on a number of factors including but not limited to the sensitivity of the receptor, frequency and duration of the noise source and time of day. The Guidelines accept that a simple change in noise levels using a single noise indicator may fail to adequately reveal the actual noise impact of the proposal. The character of the noise must be

considered and the Guidelines suggest comparing several noise indicators such as the LAeq, LAmax and LA90 as a more rigorous approach.

Absolute levels such as those set out in WHO Guidelines are also considered and the Guidelines suggest that a change in noise levels in an area where the existing levels are above WHO Guidelines should be considered as having more of an adverse effect than a change in noise levels in an area where existing levels are well below.

The Guidelines stop short of providing specific assessment criteria which developments should achieve but instead suggests that the methodology adopted should be selected on a site by site basis regarding relevant national and local standards.

The Guidelines contain effect descriptors for changes in noise levels and for noise effect levels. These are summarized below:

Effect Descriptors	
Very substantial	Greater than 10 dB L_{Aeq} change in sound level perceived at a receptor of great sensitivity to noise
Substantial	Greater than 5 dB L_{Aeq} change in sound level at a noise sensitive receptor, or a 5 to 9.9 dB LAeq change in sound level at a receptor of great sensitivity to noise
Moderate	A 3 to 4.9 dB L_{Aeq} change in sound level at a sensitive or highly sensitive noise receptor, or a greater than 5dB LAeq change in sound level at a receptor of some sensitivity
Slight	A 3 to 4.9 dB L_{Aeq} change in sound level at a receptor of some sensitivity
None/Not Significant	Less than 2.9 dB L_{Aeq} change in sound level and/or all receptors are of negligible sensitivity to noise or marginal to the zone of influence of the proposals

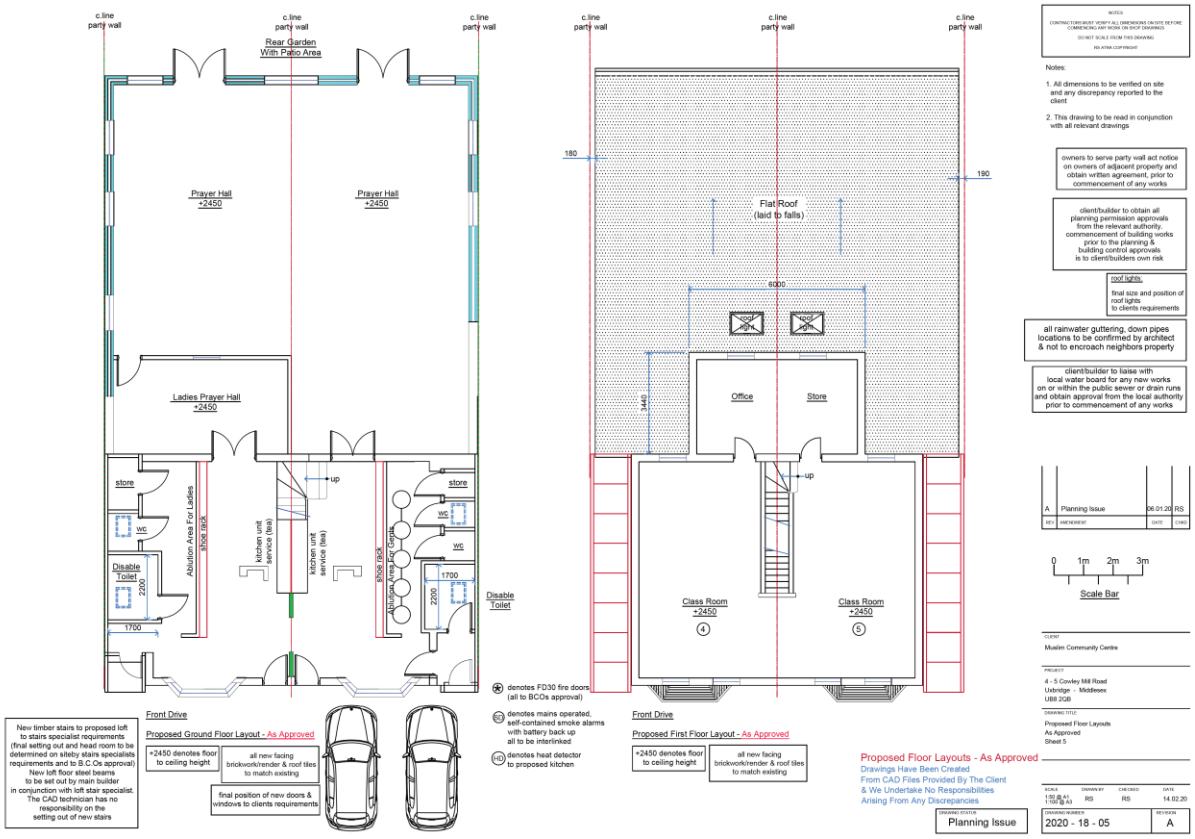
Table 4.0 – IEMA Guidelines effect descriptors

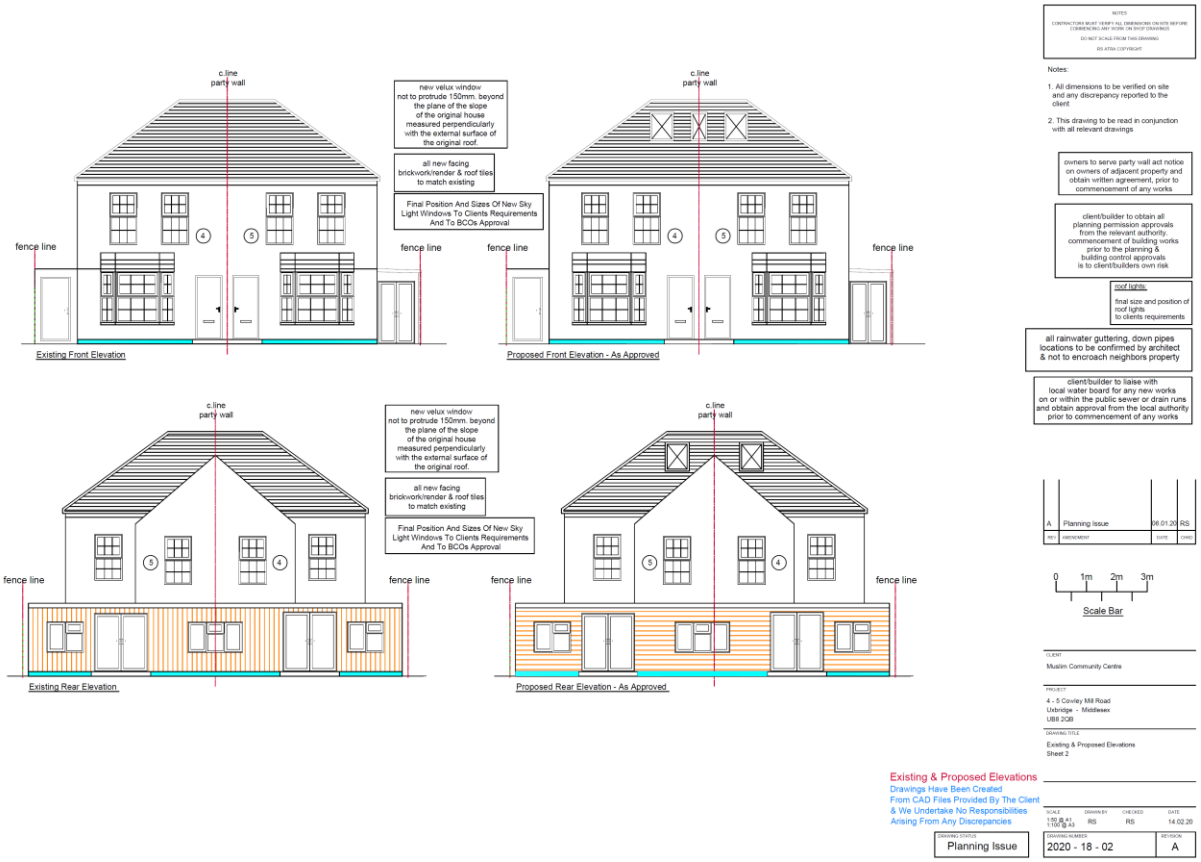
Noise Effect Level		
Time	**Lowest Observed Adverse Effect Level**	**Significant Observed Adverse Effect Level**
07:00 - 23:00	50 dB $L_{Aeq,16\ hour}$	60 dB $L_{Aeq,16\ hour}$
23:00 - 07:00	40 dB $L_{Aeq,8\ hour}$	55 dB $L_{Aeq,8\ hour}$
	60 dB L_{AFMax} (at the facade)	80 dB L_{AFMax} (at the facade)

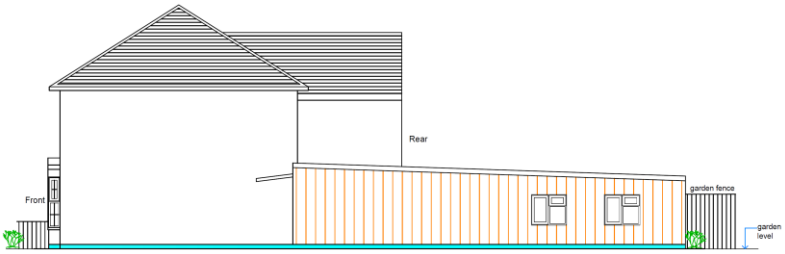
Table 5.0 – IEMA Guidelines noise effect level

The Guidelines are not prescriptive as to how a noise impact assessment should be carried out, and allow assessors to consider factors such as frequency spectra, days and times of operation, frequency of operation and any other factor which allows the noise to be assessed in context.

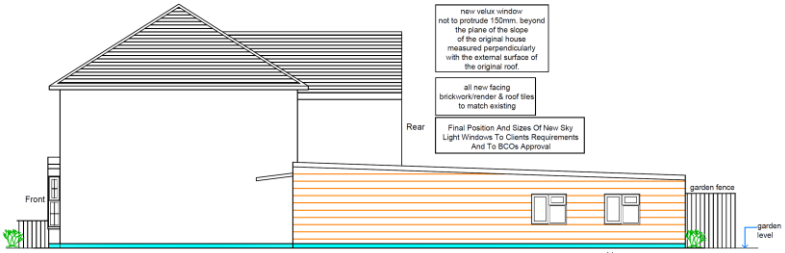
Appendix C – Site Plans







Existing Side Elevation - Right Hand Side



Proposed Side Elevation - Right Hand Side - As Approved

non open able
(obscure glass windows)

NOTES

CONTRACTORS MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK OR SHOP DRAWINGS

DO NOT SCALE FROM THIS DRAWING

RS ATBA COPYRIGHT

Notes:

1. All dimensions to be verified on site and any discrepancy reported to the client

2. This drawing to be read in conjunction with all relevant drawings

owners to serve party wall act notice on owners of adjacent property and obtain written agreement, prior to commencement of any works

client/builder to obtain all planning permission approvals from the relevant authority. commencement of building works prior to the planning & building control approvals is to client/builders own risk

roof lights:
final size and position of roof lights to clients requirements

all rainwater guttering, down pipes locations to be confirmed by architect & not to encroach neighbors property

client/builder to liaise with local water board for any new works on or within the public sewer or drain runs and obtain approval from the local authority prior to commencement of any works

REV	AMENDMENT	DATE	CHKD
A	Planning Issue	06.01.20	RS

0 1m 2m 3m

Scale Bar

CLIENT
Muslim Community Centre

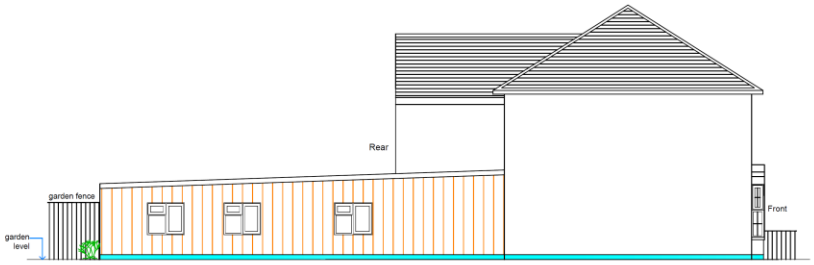
PROJECT
4 - 5 Cowley Mill Road
Uxbridge - Middlesex
UB8 2QB

DRAWING TITLE
Existing & Proposed Elevations
Sheet 3

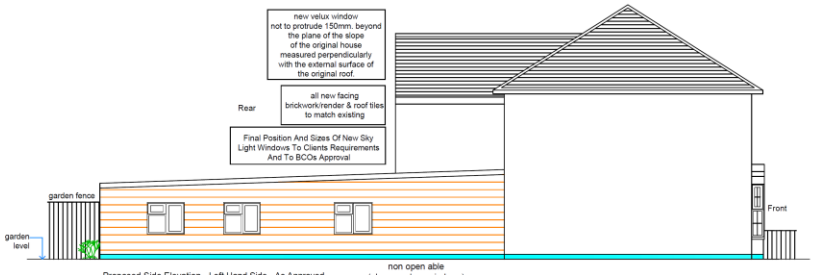
Existing & Proposed Elevations
Drawings Have Been Created
From CAD Files Provided By The Client
& We Undertake No Responsibilities
Arising From Any Discrepancies

SCALE	DRAWN BY	CHECKED	DATE
1:50 @ A1 1:100 @ A3	RS	RS	14.02.20

DRAWING STATUS	DRAWING NUMBER	REVISION
Planning Issue	2020 - 18 - 03	A



Existing Side Elevation - Left Hand Side



Proposed Side Elevation - Left Hand Side - As Approved

non open able
(obscure glass windows)

NOTES

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owners to serve party wall act notice on owners of adjacent property and obtain written agreement, prior to commencement of any works

client/builder to obtain all planning permission approvals from the relevant authority. commencement of building works prior to the planning & building control approvals is to client/builders own risk

roof lights:
final size and position of roof lights to clients requirements

all rainwater guttering, down pipes locations to be confirmed by architect & not to encroach neighbors property

client/builder to liaise with local water board for any new works on or within the public sewer or drain runs and obtain approval from the local authority prior to commencement of any works

REV	AMENDMENT	DATE	CHKD
A	Planning Issue	06.01.20	RS

0 1m 2m 3m

Scale Bar

CLIENT
Muslim Community Centre

PROJECT
4 - 5 Cowley Mill Road
Uxbridge - Middlesex
UB8 2QB

DRAWING TITLE
Existing & Proposed Elevations
Sheet 4

Existing & Proposed Elevations
Drawings Have Been Created
From CAD Files Provided By The Client
& We Undertake No Responsibilities
Arising From Any Discrepancies

SCALE	DRAWN BY	CHECKED	DATE
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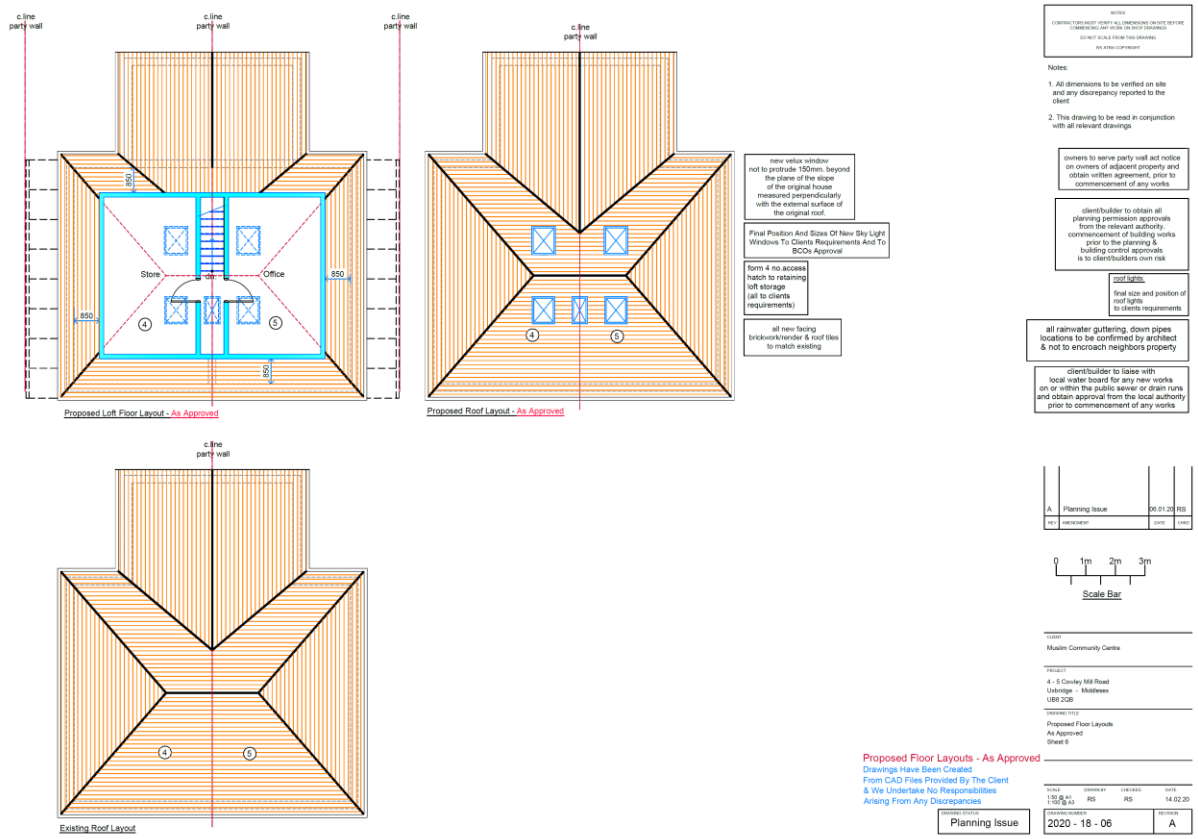
DRAWING STATUS	DRAWING NUMBER	REVISION
Planning Issue	2020 - 18 - 04	A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Office
dw
4
5
Proposed Loft Floor Layout - As Approved
Proposed Roof Layout - As Approved
Existing Roof Layout
new velux window not to protrude 150mm. beyond the plane of the slope of the original house measured perpendicularly with the external surface of the original roof.
Final Position And Sizes Of New Sky Light Windows To Clients Requirements And To BCOs Approval
form 4 no.access hatch to retaining loft storage (all to clients requirements)
all new facing brickwork/render & roof tiles to match existing
NOTES
CONTRACTORS MUST VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING ANY WORK ON SHOP DRAWINGS
DO NOT SCALE FROM THIS DRAWING
RS ATBA-COPYRIGHT
Notes:
1. All dimensions to be verified on site and any discrepancy reported to the client
2. This drawing to be read in conjunction with all relevant drawings
owners to serve party wall act notice on owners of adjacent property and obtain written agreement, prior to commencement of any works
client/builder to obtain all planning permission approvals from the relevant authority, commencement of building works prior to the planning & building control approvals is to client/builders own risk
roof lights:
final size and position of roof lights to clients requirements
all rainwater guttering, down pipes locations to be confirmed by architect & not to encroach neighbors property
client/builder to liaise with local water board for any new works on or within the public sewer or drain runs and obtain approval from the local authority prior to commencement of any works
A
Planning Issue
06.01.20
RS
REV
AMENDMENT
DATE
CHKD
0
1m
2m
3m
Scale Bar
CLIENT
Muslim Community Centre
PROJECT
4 - 5 Cowley Mill Road
Uxbridge - Middlesex
UB8 2QB
DRAWING TITLE
Proposed Floor Layouts
As Approved
Sheet 6
Proposed Floor Layouts - As Approved
Drawings Have Been Created
From CAD Files Provided By The Client
& We Undertake No Responsibilities
Arising From Any Discrepancies
SCALE
1:50 @ A1
1:100 @ A3
DRAWN BY
RS
CHECKED
RS
DATE
14.02.20
DRAWING STATUS
Planning Issue
DRAWING NUMBER
2020 - 18 - 06
REVISION
A

Appendix D – Environmental Survey

D.1 Tabulated Summary Noise Data

Measurement Position MP1				
Measurement Time Period ('t')	**$L_{Aeq,t}$**	**$L_{Amax,t}$**	**$L_{A90,t}$**	**$L_{A10,t}$**
Day 1 – 06/08/20 – 14:00 - 23:00	51.0	82.0	46.0	53.0
Night 1 – 06/08/20 – 23:00 – 07:00	50.0	78.0	42.0	53.0
Day 2 – 07/08/20 – 07:00 – 23:00	52.0	84.0	50.0	54.0
Night 2 – 07/08/20 – 23:00 – 07:00	46.0	71.0	42.0	49.0
Day 3 – 08/08/20 – 07:00 – 23:00	50.0	84.0	43.0	51.0
Night 3 – 08/08/20 – 23:00 – 07:00	45.0	87.0	40.0	47.0
Day 4 – 09/08/20 – 07:00 – 23:00	48.0	75.0	42.0	49.0
Night 4 – 09/08/20 – 23:00 – 07:00	44.9	82.0	37.0	49.0
Day 5 – 10/08/20 – 07:00 – 12:00	53.0	82.0	45.0	55.0
LA90 Analysis				
Measurement Period ('t')	**$L_{A90,t}$**	**SMR $L_{A90,t}$**	**Min. $L_{A90,t}$**	**Max. $L_{A90,t}$**
Day 1 – 06/08/20 – 14:00 - 23:00	46.0	45.0	43.0	48.0
Night 1 – 06/08/20 – 23:00 – 07:00	42.0	39.0	38.0	54.0
Day 2 – 07/08/20 – 07:00 – 23:00	50.0	45.0	44.0	51.0
Night 2 – 07/08/20 – 23:00 – 07:00	42.0	40.0	38.0	45.0
Day 3 – 08/08/20 – 07:00 – 23:00	43.0	42.0	40.0	45.0
Night 3 – 08/08/20 – 23:00 – 07:00	40.0	35.0	35.0	41.0
Day 4 – 09/08/20 – 07:00 – 23:00	42.0	42.0	38.0	44.0
Night 4 – 09/08/20 – 23:00 – 07:00	37.0	34.0	32.0	45.0
Day 5 – 10/08/20 – 07:00 – 12:00	45.0	45.0	44.0	48.0
Noise Survey Time History				

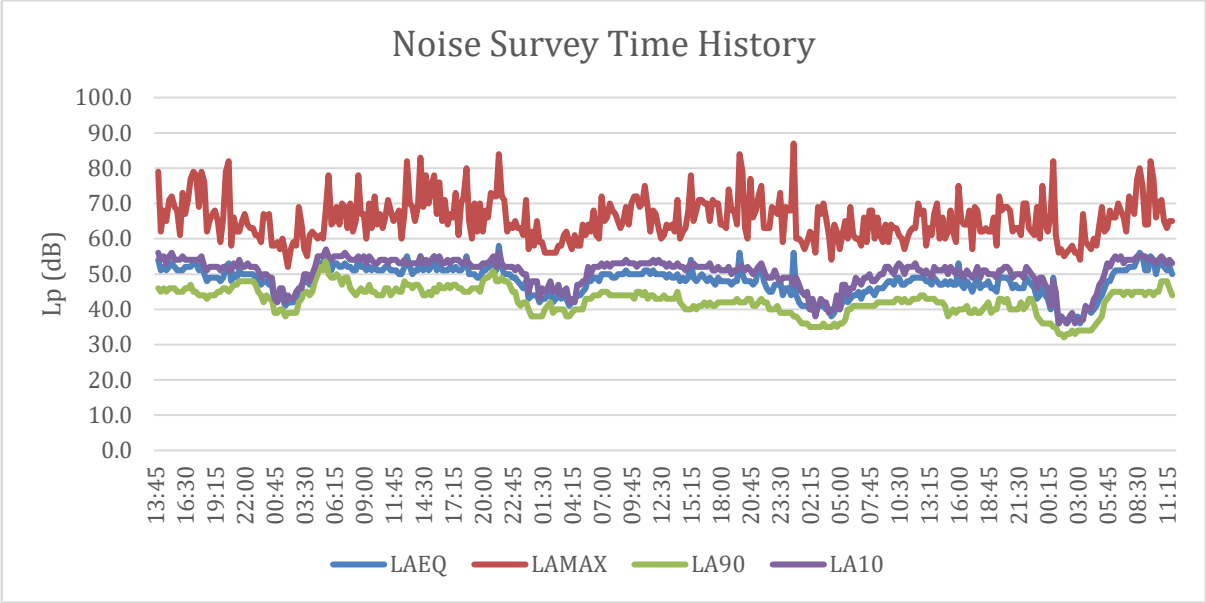

Table 6.0 – Sound Survey Summary Results

D.2 Surveying Equipment

Piece of Equipment	Serial No	Calibration Deviation
CESVA SC420 Class 1 Sound level meter	T250680	≤0.5
CESVA CB006 Class 1 Calibrator	902441	

Table 7.0 – Measurement Equipment

All equipment used during the survey was field calibrated at the start and end of the measurement period with a negligible deviation of ≤0.5 dB. All sound level meters are calibrated every 24 months and all calibrators are calibrated every 12 months, by a third-party calibration laboratory. All microphones were fitted with a protective windshield for the entire measurements period. Calibration certificates can be provided upon request.

D.3 Meteorological Conditions

As the environmental noise survey was carried out over a long un-manned period no localized records of weather conditions were taken. However, during the setup and collection of the monitoring equipment, the weather conditions have been documented in the following table. All measurements have been compared with met office weather data of the area, specifically the closest weather station, the data from the weather station is outlined in the table below. When reviewing the time history of the noise measurements, any scenarios that were considered potentially to be affected by the local weather conditions have been omitted. The analysis of the noise data includes statistical and percentile analysis and review of minimum and maximum values, which aids in the preclusion of any periods of undesirable weather conditions. The weather conditions were deemed suitable for the measurement of environmental noise in accordance with BS7445 Description and Measurement of Environmental Noise. The table below presents the average temperature, wind speed and rainfall range for each 24-hour period during the entire measurement.

Weather conditions – Whitehse46 Station, 2.7km				
Time period	**Air temp (^{0}C)**	**Rainfall mm/h**	**Prevailing Wind Direction**	**Wind Speed (m/s)**
Day 1 – 06/09/20 – 00:00 - 23:59	19.1 – 28.1	0.0	SW	0.0 – 5.1
Day 2 – 07/08/20 – 00:00 - 23:59	16.4 – 33.3	0.0	SSW	0.0 – 6.3
Day 3 – 08/08/20 – 00:00 - 23:59	19.4 – 31.2	0.0	E	0.0 – 4.8
Day 4 – 09/08/20 – 00:00 - 23:59	17.9 – 31.0	0.0	E	0.0 – 4.5
Day 5 – 10/08/20 – 00:00 - 23:59	19.3 – 32.5	0.0	E	0.0 – 5.1

Table 8.0 – Weather Summary

Appendix E – Prayer Timetable

Uxbridge Community Centre
Average Attendance

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
5am to 6am	15	15	15	15	15	15	15
6am to 9am	0	0	0	0	0	0	0
9am to 12pm	0	0	0	0	0	0	0
12pm to 2pm	25	25	25	25	225	30	30
2pm 5pm	0	0	0	0	0	0	0
5pm to 6pm	20	20	20	20	20	30	30
6pm to 7pm	0	0	0	0	0	0	0
7pm to 8pm	15	15	15	15	15	20	20
8pm to 9pm	0	0	0	0	0	0	0
9pm to 10pm	15	15	15	15	15	20	20

Uxbridge Community Centre is a registerted charity located at Cowley Mill Road. The Cowley Mill Road has mixed residential and commercial properties as well as factory such as Hale Hamilton.

The centre is mainly used for prayers by local residents and generally the prayers last for around 10minutes. However, the timetable above reflect the attendance and leaving time and therefore accordingly the time has been recorded in a table format. Altogether there are five daily prayers.