

REPORT TITLE: ACOUSTIC REPORT IN SUPPORT OF PLANNING APPLICATION FOR
EXTERNAL AIR CONDITIONING EQUIPMENT AT 17 WADHAM
GARDENS, LONDON NW3 3DN

REPORT REF: 15009-002

ISSUED TO: gpad ltd
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DATE: March 2015

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SUMMARY

- Philip Acoustics has been commissioned to assess noise and vibration from proposed new air conditioning equipment to be installed at 17 Wadham Gardens, London NW3 3DN. The assessment considers London Borough of Camden's planning consent noise conditions for mechanical services equipment.
- As part of the assessment, a background noise survey has been carried out at the site over a four day period including weekdays and a weekend to establish lowest existing background noise levels representative of outside neighbouring residential windows during operational times of the proposed new equipment.
- Based on acoustic calculations using proposed equipment manufacturer's noise data, the noise level contribution due to the proposed equipment is calculated to be below existing background noise levels and comply with London Borough of Camden's planning consent noise requirements.
- The assessment includes benefit of noise reduction treatment (acoustic louver enclosure) to the equipment. Specification details for the required acoustic screen are included in Section 6 of the report.
- Location of the new equipment is not structurally linked to any adjacent residential properties and therefore there will be no potential for any structure-borne vibration from the equipment to transfer to adjacent residential properties. Nevertheless, it is anticipated the equipment will be installed using vibration isolators as good practice.

1. INTRODUCTION

A new Mitsubishi air conditioning unit is proposed to be installed externally within the rear garden to serve a residential property at 17 Wadham Gardens, London NW3 3DN.

It is anticipated that as part of the planning process for the new equipment, the Local Planning Authority (London Borough of Camden) will require information in the form of an acoustic report regarding noise from the proposed new equipment in order to seek to protect the amenity of residents in the vicinity with regard to possible noise emissions from the equipment.

Philip Acoustics has therefore been commissioned to provide an acoustic assessment for the new equipment. This report presents results of the assessment and includes:-

- Confirmation of London Borough of Camden's planning consent noise requirements;
- Measurement of existing background noise levels;
- Calculation of equipment noise levels;
- Consideration of vibration from the equipment;
- Review of noise/vibration control treatments necessary to comply with London Borough of Camden's planning consent requirements.

2. LONDON BOROUGH OF CAMDEN NOISE REQUIREMENTS

Policy DP28 – Noise and Vibration of Section 3 of Camden Development Policies 2010-2025 covers in detail noise issues relating to a wide range of planning and noise pollution scenarios, including mechanical services equipment.

Policy DP28 includes the statement “*The Council will only grant permission for plant or machinery if it can be operated without cause harm to amenity and does not exceed our noise thresholds*”. Camden's noise limit thresholds for plant and machinery are listed in Table E of Policy DP28. A copy of page 133 from Camden Development Policies 2010-2025 Policy DP28 showing Table E is included in Appendix A.

In summary, London Borough of Camden's noise conditions are:

- i. That overall dBA noise from equipment shall be designed to at least 5dB below the existing L_{A90} dB background noise level;
- ii. That, where it is anticipated any equipment will have a noise that has a distinguishable discrete note (whine, hiss, screech or hum) and/or there are distinct impulses (bangs, clicks, clatters and thumps) then the overall dBA noise from equipment shall be designed to at least 10dB below the existing L_{A90} dB background noise level. *Note it is the author's experience and observation based on octave band noise data and on-site noise measurements of similar modern air conditioning condensers, that the type of proposed Mitsubishi air conditioning condenser subject to this assessment generates a typically broadband type of noise (i.e. without any strong tonal or intermittent characteristics sufficient to attract attention), and therefore the more onerous noise limit as item (ii) of London Borough of Camden's planning consent noise conditions is not considered applicable in this instance.*

Although not specifically included within Table E of Policy DP28, Philip Acoustics Ltd is aware that London Borough of Camden also has noise conditions guidance that for each octave band (63Hz to 8KHz) then noise from equipment shall be designed to not add more than 1dB to the existing lowest L_{90} dB octave band background noise level.

All of the above are applicable over a period of 60 minutes and measured at 1m external to noise sensitive facades. For this development the nearest noise sensitive façade is taken as relating to windows of existing first floor offices within the building itself.

3. BACKGROUND NOISE SURVEY

In order to assess noise from the proposed new equipment it is necessary to establish representative background noise levels at the nearest noise sensitive (residential) facade. Details of the background noise survey carried out by Philip Acoustics are provided in Sections 3.1 to 3.3.

3.1 Instrumentation

Details of the noise survey instrumentation used are provided in Appendix B. The sound level meters were calibrated before and after the survey measurements using the UKAS certified calibrator.

3.2 Measurement Procedure

Although the proposed new equipment would likely only tend to operate during the daytime and evening periods, as it will serve a residential property it will potentially operate at any time over 24 hours. Therefore the survey was carried out over at least a full 24 hour period to obtain background noise levels during the entire possible time of operation for the equipment.

The background noise survey was carried out over a four day period from 14 February 2015 to 17 February 2015 to include for sample weekday and weekend periods; the weather included dry and calm conditions during the day and also the night-time periods.

The proposed air conditioning equipment is to be located externally within the garden at the north site boundary. Nearest windows of neighbouring residential properties to this proposed location are the rear / side windows of the adjacent property at 19 Wadham Gardens approximately 21m straight line distance.

The background noise survey measurement location was external to the eastern site boundary using an extension pole and microphone extension lead arrangement, selected as being representative of outside the nearest residential property at 19 Wadham Gardens to the proposed new equipment location.

Noise measurements were recorded in terms of 5 minute samples of L_{A90} values over 1 hour periods for the entire survey duration.

Location for the proposed new equipment, direction to the nearest residential property and position of the measurement location are shown on marked up site plan drawing in Appendix C.

In accordance with London Borough of Camden's noise conditions, the sound level meter was set up to record background noise levels over 60 minute periods (split into 12 x 5 minute periods to enable more accurate analysis of results as required). Measurements of background noise were recorded as overall L_{A90} dB values.

In addition to the overall L_{A90} dB values, several manual samples of linear L_{90} dB octave band background noise were also recorded using the Bruel & Kjaer 2260 sound level meter to establish typical background noise octave band spectra.

3.3 Measurement Results

Existing background noise levels at the site are predominantly due to traffic on roads within the local area. Noise levels remain broadly consistent during the day and then reduce during the evening and night; this profile is normal for this type of location where there is frequent traffic in the area during the day followed by a reduction in traffic volume during the evening and night.

The lowest recorded background noise level in terms of overall L_{A90} dB and associated equipment octave band values are shown in Table 1. A graph showing the overall raw data L_{A90} dB values over the entire background noise survey period is provided in Appendix D.

Description	Overall L_{A90} dB	Octave Band Centre Frequency (Hz) (linear L_{90} dB)							
		63	125	250	500	1k	2k	4k	8k
Lowest measured background noise level L_{90} (60 minutes)	28	41	33	28	26	24	16	14	12
London Borough of Camden noise limit	23	37	29	24	22	20	12	10	8

Table 1: Lowest measured background noise level and London Borough of Camden's noise condition
(overall noise limit 5dBA below background level and octave band limit to not add more than 1dB to existing octave band noise levels)

4. NOISE FROM MECHANICAL SERVICES EQUIPMENT

The proposed new external air conditioning unit is Mitsubishi model PURY-P400YJM-A.

Proposed location of the equipment is indicated on a drawing in Appendix C. Manufacturer's noise data for the equipment is provided in Appendix E.

The manufacturer's noise data is in terms of overall free-field dBA sound pressure level at 1m. Summary of noise from the unit is shown in Table 2.

Description	Sound Pressure level at 1m Free-Field dBA
Mitsubishi PURY-P400YJM-A	61

Table 2: Equipment sound pressure level at 1m free-field (based on manufacturer's noise data)

To calculate the overall noise contribution from the equipment to outside the nearest non-associated residential windows a spreadsheet based noise model calculation has been used. The model takes account of the distance between the air conditioning equipment location and windows, acoustic directivity and any natural line of sight acoustic screening (nil applied). The noise model also takes account of acoustic noise reduction treatment (acoustic louver enclosure) applied to the equipment as specified in Section 6 of the report. Acoustic calculation details are provided in Appendix F.

Summary overall calculated noise level from the equipment to outside the nearest windows of noise sensitive (residential) premises compared with London Borough of Camden's overall dBA noise limit is shown in Table 3 below.

The acoustic calculations are considered extremely cautious for the following reasons:

- The calculation assumes the unit is operating constantly all of the time in any 60 minute period. In practice this type of air conditioning unit operates "on demand" and even when providing significant cooling / heating during the middle of a hot / cold day tend to operate only 60 to 70% of the time. It is extremely unlikely that the air conditioning unit would operate constantly for a full 60 minute period;
- The noise limits used for the assessment are cautiously based on the lowest measured background noise levels over the complete noise survey period which occurs during the middle of the night. Background noise levels for most of the time are much higher and correspondingly for these times any equipment noise would be significantly lower than noise limits applicable to these times based on the background noise during these times.

Description	Equipment Overall Noise Level	London Borough of Camden Noise limit
Assessment position to outside nearest residential windows at 19 Wadham Gardens	21.6dBA	23dBA

Table 3: Equipment noise at nearest (residential) windows compared with noise limit

Table 3 shows that noise from the air conditioning equipment with the specified acoustic treatment (acoustic louver enclosure - see Section 6) applied to the proposed new equipment that the overall equipment noise level is at least 5dBA below the lowest background noise. In addition, the equipment octave band noise levels are calculated to also comply with London Borough of Camden's octave band noise condition limits. Therefore the proposed new Mitsubishi PURY-P400YJM-A air conditioning unit (with acoustic treatment applied) complies with London Borough of Camden's noise condition limits.

5. VIBRATION FROM MECHANICAL SERVICES EQUIPMENT

Location of the new equipment is not structurally linked to any adjacent residential properties and therefore there will be no potential for any structure-borne vibration from the equipment to transfer to adjacent residential properties. Nevertheless, it is anticipated the equipment will be installed using vibration isolators as good practice.

It is recommended that the air conditioning unit be mounted using proprietary rubber or neoprene turret type vibration isolators. The isolators should be selected to each have a static deflection not less than 3mm under load of the unit. Details of possible acoustic hardware companies who could supply appropriate vibration isolators are provided in Appendix G.

Suitable turret type vibration isolators are approximately 30mm high and are available in various load capacities. The isolators are colour coded to indicate the load capacity and four isolators are required (one to each corner).

6. NOISE REDUCTION TREATMENT

Note that whilst this report is based on the specific proposed make and model of air conditioning equipment as detailed in Section 4 of this report, if during later design stages or during construction or as part of routine equipment maintenance or equipment replacement, an alternative make and model of equipment is selected then it is important that noise levels for the alternative equipment be checked by Philip Acoustics or another Acoustic Consultant to ensure the treatments specified below remain valid and noise emissions will remain compliant with London Borough of Camden's noise policy requirement.

In order to comply with London Borough of Camden's noise requirement it is necessary to specify noise reduction treatment to the proposed Mitsubishi air conditioning unit.

It is recommended that the most practicable way to reduce noise from the air conditioning unit would be to enclose it within a proprietary four-sided acoustic louver enclosure.

It is not necessary that all four sides of the enclosure are louvered it is possible to use solid acoustic panels (50mm) instead of the louvers depends on the amount of air circulation required.

Note that consideration of non-acoustic issues such as structural, visual and airflow aspects are outside the scope of this acoustic report and would be by others.

It is anticipated the acoustic louvres forming the enclosure may need to be demountable to enable maintenance access to the equipment. This would be achieved typically by using easy release acoustic louvered access panels (as opposed to acoustic louver doors which are much more costly).

A concept sketch drawing for the recommended acoustic louver enclosure is provided in Appendix G.

The recommended minimum performance requirement for acoustic louvers is shown in Table 4.

Description	Octave Band Centre Frequency (Hz)							
	63	125	250	500	1k	2k	4k	8k
Acoustic Louver Insertion Loss dB	4	4	5	8	12	16	15	13

Table 4: Acoustic louver performance specification

The acoustic louver in Table 4 is based on a proprietary 150mm deep type acoustic louver available from Allaway Acoustics. Most other acoustic hardware suppliers should be able to readily supply an equivalent performance acoustic louver.

Acoustic hardware suppliers for the specified enclosure would be able to assist with advice on airflow ventilation and system pressure drop. Details of possible acoustic hardware companies who could supply the specified type of enclosure and technical data sheets for the example acoustic panels and acoustic louvers are provided in Appendix G.

A P P E N D I X A

London Borough Of Camden Noise Conditions For Mechanical Services Equipment

Table D: Noise levels from places of entertainment on adjoining residential sites at which planning permission will not be granted

Noise description and measurement location	Period	Time	Sites adjoining places of entertainment
Noise at 1 metre external to a sensitive façade	Day and evening	0700-2300	L _{Aeq} ' 5m shall not increase by more than 5dB*
Noise at 1 metre external to a sensitive façade	Night	2300-0700	L _{Aeq} ' 5m shall not increase by more than 3dB*
Noise inside any living room of any noise sensitive premises, with the windows open or closed	Night	2300-0700	L _{Aeq} ' 5m (in the 63Hz Octave band measured using the 'fast' time constant) should show no increase in dB*

* As compared to the same measure, from the same position, and over a comparable period, with no entertainment taking place

Table E: Noise levels from plant and machinery at which planning permission will not be granted

Noise description and location of measurement	Period	Time	Noise level
Noise at 1 metre external to a sensitive façade	Day, evening and night	0000-2400	5dB(A) <LA90
Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dB(A) <LA90
Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dB(A) <LA90
Noise at 1 metre external to sensitive façade where LA90>60dB	Day, evening and night	0000-2400	55dBL _{Aeq} '

Key evidence and references

- Camden's Noise Strategy, 2002
- The London Plan (Consolidated with Alterations since 2004), 2008
- Planning Policy Guidance 24: Planning and noise

APPENDIX B

Noise Survey Instrumentation

Site: 17 Wadham Gardens, London NW3 3DN
Report: 15009-002 Appendix B
Date: March 2015

NOISE SURVEY INSTRUMENTATION

Four Day Background Noise Survey:

- Rion sound level meter type NL-31 Class 1 serial number 00773045 plus Rion microphone type UC-53A serial number 313002 complete with weatherproof and lockable outdoor environmental kit, microphone extension lead and extension boom arrangement;
- Bruel & Kjaer calibrator type 4231 serial number 2642929 (UKAS certified).

Sample Octave Band Values:

- Bruel & Kjaer sound level meter type 2260 serial number 2497368 plus Bruel & Kjaer microphone type 4189 serial number 2846933

APPENDIX C

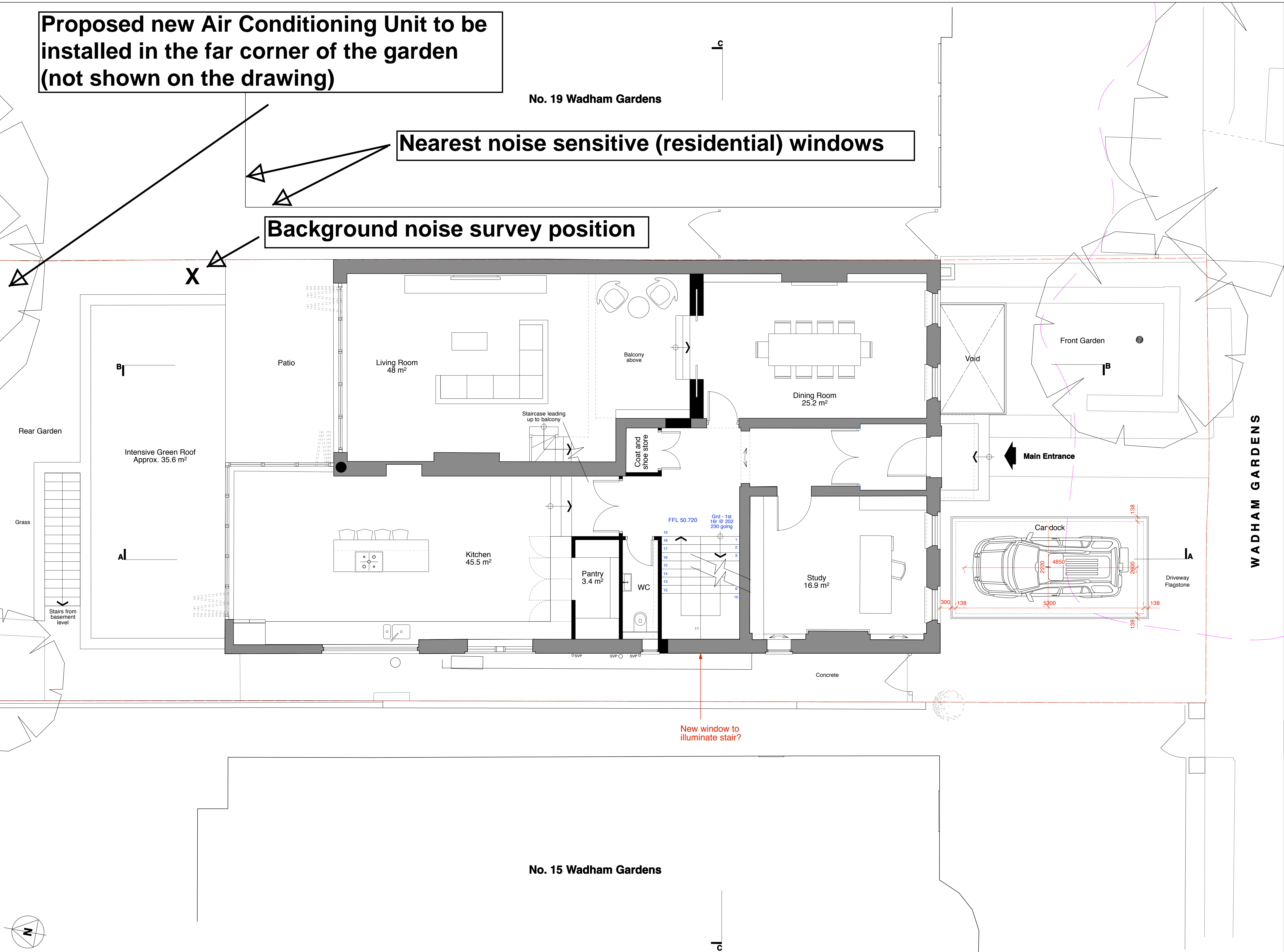
Drawing Showing Proposed Equipment Location

Proposed new Air Conditioning Unit to be installed in the far corner of the garden (not shown on the drawing)

No. 19 Wadham Gardens

Nearest noise sensitive (residential) windows

Background noise survey position



New window to illuminate stair?

No. 15 Wadham Gardens

WADHAM GARDENS

PRELIMINARY

rev.	date	notes
gpada architecture & interior design		
CLIENT	WHITEHALL PARK	
PROJECT	17 WADHAM GARDENS LONDON NW3 3DN	
TITLE	PROPOSED GROUND FLOOR PLAN	
DWG NO	462-GA.03	REV P1
DRAWN BY	J.W / HB	SCALE 1:50@A1
CHECKED BY		DATE January 2015
T: 020 7549 2133 F: 020 7549 2144 E: info@gpadltd.com W: www.gpadltd.com		(Unit 1) 9a Dallington Street Clerkenwell London EC1V 0BQ
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FILE NAME	PRINT SIZE A1	

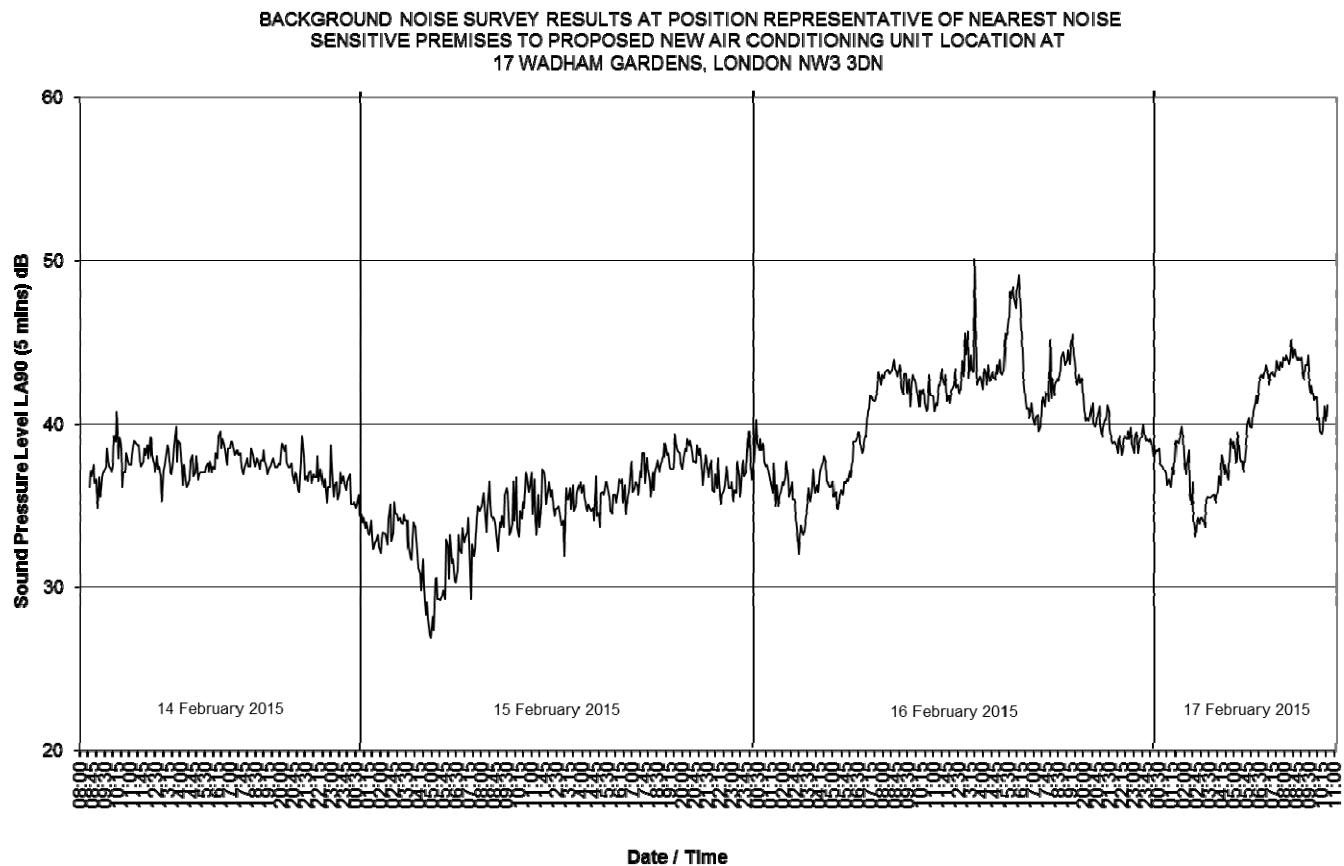
PROPOSED GROUND FLOOR PLAN

APPENDIX D

Background Noise Survey Results

Site: 17 Wadham Gardens, London NW3 3DN
Report: 15009-002 Appendix D
Date: March 2015

BACKGROUND NOISE SURVEY RESULTS



APPENDIX E

Manufacturer Noise Data For Proposed Equipment

▶ [City Multi \(VRF\)](#)

▶ [Controls](#)

▶ [Lossnay](#)

▶ [M Series](#)

▶ [Mr Slim](#)

City Multi (VRF) > Outdoor > Standard Heat Recovery > **45.0kW**

PURY-P400YJM-A STANDARD R2 SERIES 16HP OUTDOOR UNIT

R410A Heat Recovery

Many buildings require cooling in some areas and heating in others - even in adjacent rooms. The outstanding City Multi R2 system meets this requirement by distributing surplus heat from cooling operations (and vice versa) to rooms where it is needed. This efficiency can result in energy savings of up to 30% over conventional systems.



Hover your mouse over the red icons below to view a description of each feature:



MODEL INFO

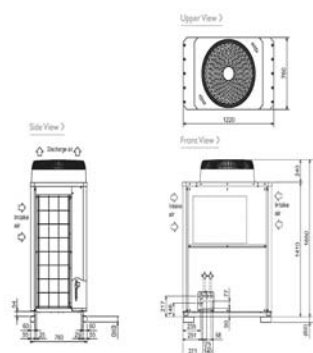
- New higher efficiency inverter technology, with low start currents and wrap around coil for added efficiency
- Easy to install unique 2-pipe technology means minimal disruption, quicker installation and less connections than 3 pipe equivalents
- Pipe run of 165m with a total system pipe length of up to 600m
- 100% inverter control
- High Sensible Cooling Function - By raising the off coil temperature, a 10% increase in sensible cooling capacity over standard operation is achievable, the result being greater comfort for occupants
- High Performance Heating Mode for low ambient conditions
- Compact chassis for easier installation

OUTDOOR

Heating Capacity (kW) (nominal)	50
Cooling Capacity (kW) (nominal)	45
High Performance Heating Capacity (kW) (UK)	47.5
COP Priority Heating Capacity (kW) (UK)	43
Cooling Capacity (kW) (UK)	42.3
Heating Power Input (kW) (nominal)	12.75
Cooling Power Input (kW) (nominal)	13.55
High Performance Heating Power Input (kW) (UK)	17.09
COP Priority Heating Power Input (kW) (UK)	12.37
Cooling Power Input (kW) (UK)	8.74
COP / EER (nominal)	3.92 / 3.32
SCOP / SEER	4.96 / 5.81
Max No. of Connectable Indoor Units	40
Airflow (m³/min)	225
Sound Pressure Level (dBA)	61
Sound Power Level (dBA)	81
Weight (kg)	270
Dimensions (mm) Width x Depth x Height	1220 x 760 x 1710
Electrical Supply	380-415V, 50HZ
Phase	3
Starting Current (A)	8
Running Current (A) - Heating	19.7
Running Current (A) - Cooling	20.9

DIMENSIONS

PURY-P400YJM-A

[\[Click to enlarge/Print\]](#)


APPENDIX F

Acoustic Calculations

Site: 17 Wadham Gardens, London NW3 3DN**Ref:** 15009-002 Appendix F**Date:** March 2015**ACOUSTIC CALCULATION SHEET****ASSESSMENT POSITION:** To outside nearest residential windows at 19 Wadham Gardens.**NOISE CONDITION:** 1 x Mitsubishi PURY-P400YJM-A**NOISE MITIGATION:** With acoustic enclosure fitted to the proposed new equipment (as per Section 6 of report 15009-002)

Equipment	Sound Pressure Level at 1m Lp dBA (1)	Attenuation dB (2)	Correction for noise directivity dB (3)	Distance to assessment position m (4)	Correction for distance to assessment position dB (5)	Correction for line of sight screening dB (6)	Individual Contributions dBA
Mitsubishi PURY-P400YJM-A	61	-10	-3	21	-26	0	22
Overall SPL from sources at assessment position:	21.6 dB(A)						

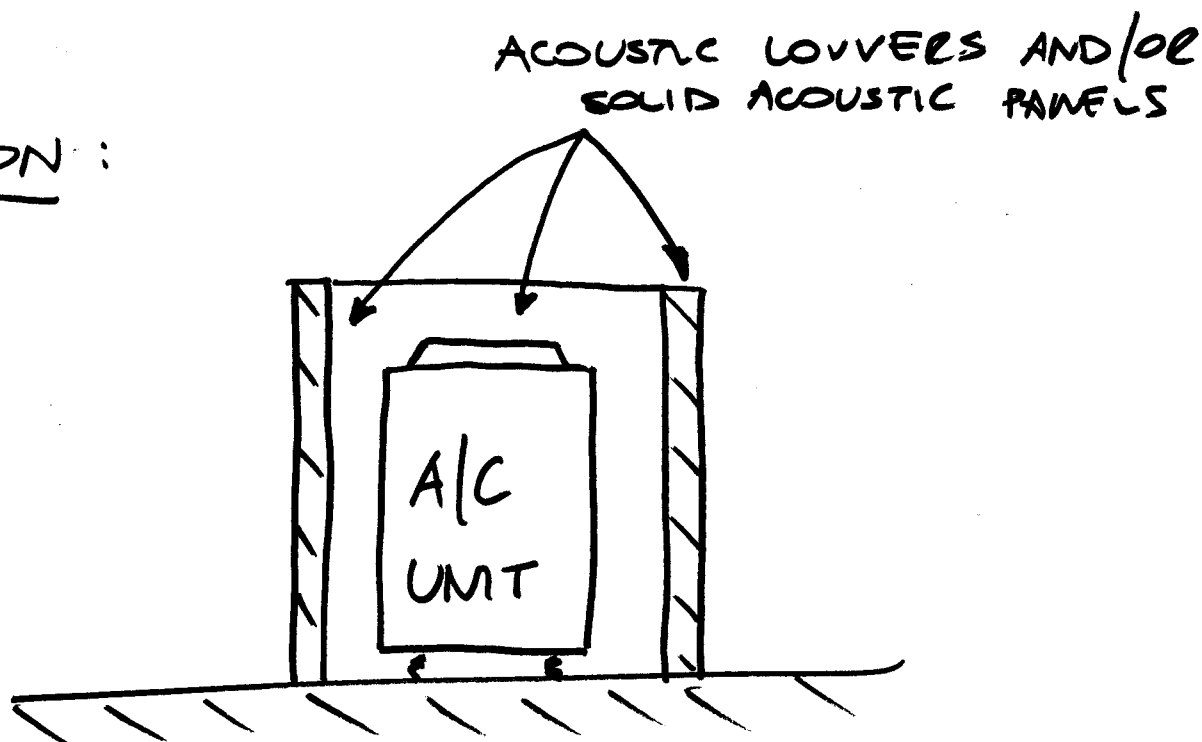
Notes:*Note 1: Equipment overall dBA sound pressure level at 1m based on manufacturer noise data.**Note 2: Specified acoustic enclosure to air conditioning unit reduces equipment noise by differing amounts at different frequencies; the equivalent overall dBA noise level reduction is -10dB.**Note 3: Directivity, allows for "off axis" angle directivity between sound sources and receiver position, i.e. corrections allow for assessment position (nearest residential windows) not directly in front of the sound source.**Note 4: Distance is from center of sound source to outside center of nearest residential windows.**Note 5: Distance correction allows for hemispherical radiation.**Note 6: Cautiously no natural line of sight acoustic screening benefit allowed.*

A P P E N D I X G

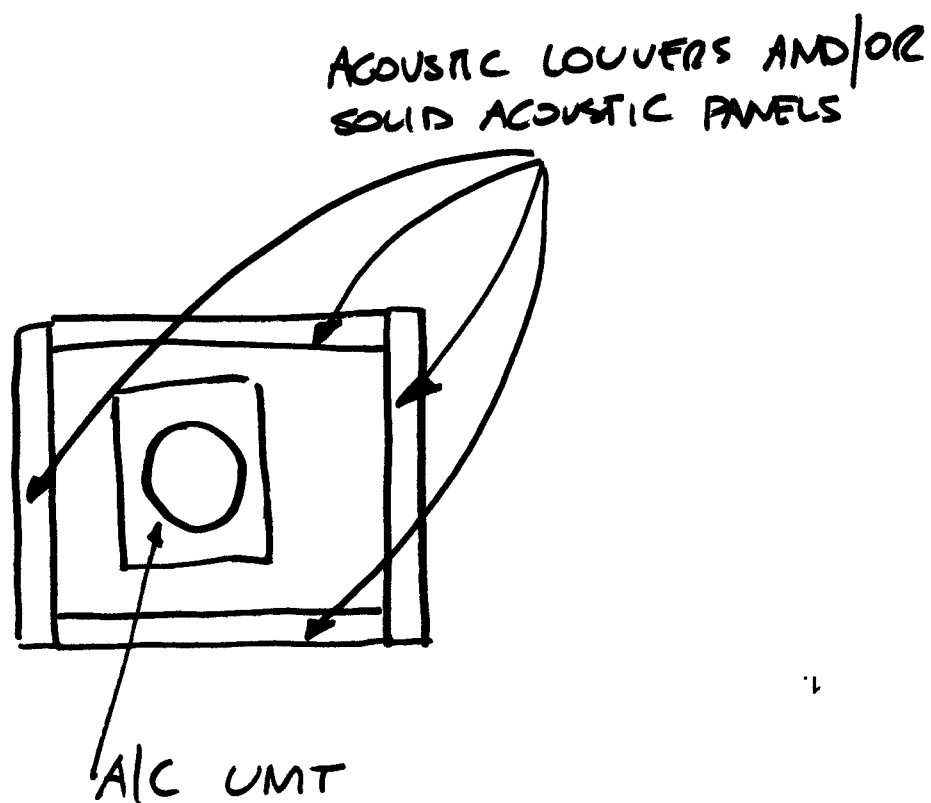
Noise And Vibration Reduction Treatment

ACOUSTIC ENCLOSURE CONCEPT SKETCH

SECTION :



PLAN :



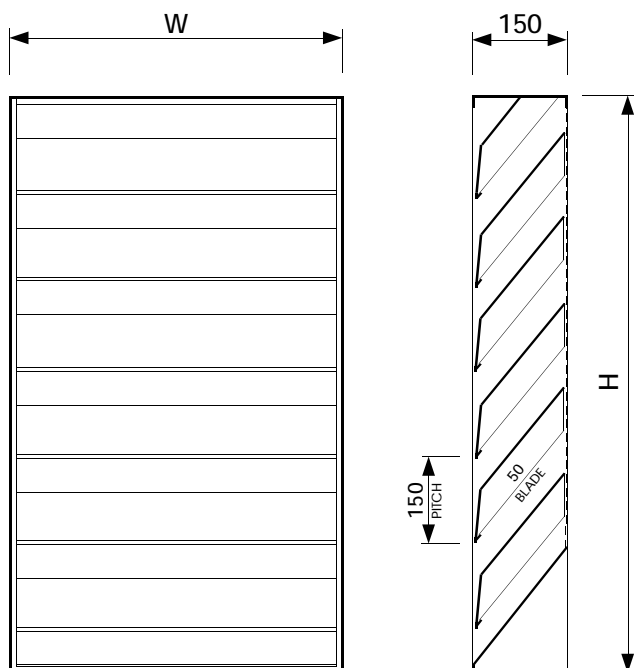
DATA SHEET L60D ACOUSTIC LOUVRE MODEL AL1515

THIS IS NOT A STAND ALONE DOCUMENT AND UNLESS REFERRED TO IN A DATED EQUIPMENT SCHEDULE IS SUBJECT TO REVISION WITHOUT NOTICE.



**ALLAWAY
ACOUSTICS**
LIMITED
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DIMENSIONS



SUFFIX

THE SUFFIX DEFINES ADDITIONAL FEATURES OR SPECIAL CONSTRUCTIONAL DETAILS

- A ALUMINIUM CONSTRUCTION.
- G GALVANISED STEEL CONSTRUCTION.
- P POLYESTER POWDER COAT.
- X SPECIAL CONSTRUCTION - REFER TO EQUIPMENT SCHEDULE FOR DETAILS.

WEIGHT

LOUVRE WEIGHTS ARE GIVEN ON THE EQUIPMENT SCHEDULE. APPROXIMATELY:

28kg/M² GALVANISED CONSTRUCTION
20kg/M² ALUMINIUM CONSTRUCTION

SPECIFICATION

LOUVRES ARE CONSTRUCTED FROM FOLDED SHEET METAL AND HAVE A SERIES OF HORIZONTAL BLADES CONTAINED WITHIN A FOUR SIDED EXTERNAL FRAME.

THE MATERIAL OF CONSTRUCTION MAY BE PRE-GALVANISED STEEL (SUFFIX G) OR ALUMINIUM (SUFFIX A).

LOUVRE BLADES HAVE LOWER FACES OF PERFORATED SHEET METAL, CONTAINING A FIBROUS SOUND ABSORBENT INFILL THAT IS NON-SHEDDING, NON-COMBUSTIBLE, NON-HYGROSCOPIC AND CHEMICALLY INERT. THE INFILL IS FACED WITH GLASS CLOTH TO MINIMISE FIBRE MIGRATION.

GALVANISED BIRD SCREENS ARE FITTED AS STANDARD.

CASING SIDES ARE PROVIDED WITH 10mm DIA HOLES FOR FIXING ADJACENT SECTIONS TOGETHER, OR FIXING THE LOUVRE INTO THE BUILDERSWORK OPENING.

LOUVRES ARE SUPPLIED SELF FINISH AS STANDARD OR WITH AN OPTIONAL POLYESTER POWDER FINISH (SUFFIX P).

NOTES

THIS DATA SHEET IS TO BE READ IN CONJUNCTION WITH THE EQUIPMENT SCHEDULE.

WIDTH (W) AND HEIGHT (H) DIMENSIONS GIVEN ON THE EQUIPMENT SCHEDULE ARE AS MANUFACTURED. ADEQUATE CLEARANCE MUST BE ALLOWED WHEN CONSTRUCTING THE BUILDERSWORK OPENING, A MINIMUM OF 10 mm IS RECOMMENDED.

LOUVRES WILL BE SUPPLIED WITHOUT SUPPORT STEELWORK, CLEATS, BRACKETS, FIXINGS, FLASHING, MASTIC, OR OTHER SUCH ITEMS, UNLESS OTHERWISE STATED.

EXCESSIVELY LARGE OR HEAVY LOUVRES MAY BE MANUFACTURED IN MATING SECTIONS FOR EASE OF HANDLING.

LOUVRES ARE MANUFACTURED TO STANDARD SHEET METAL TOLERANCES OF +/- 3 mm.

STANDARD SIZES

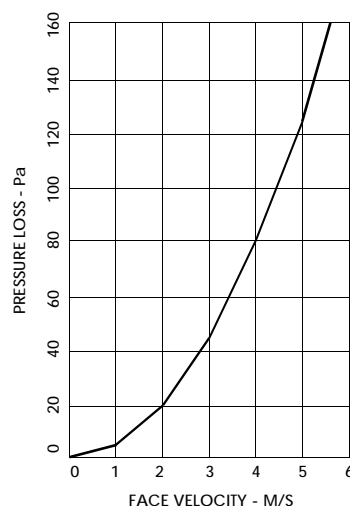
THERE ARE NO STANDARD SIZES. ALL LOUVRES ARE MADE TO ORDER.

ACOUSTIC PERFORMANCE

SOUND REDUCTION INDEX B.S. 2750/3-1980 (ISO 140/3 -1978)

63	125	250	500	1000	2000	4000	8000	Hz
4	4	5	8	12	16	15	13	dB

PRESSURE LOSS



DATA SHEET E40c

ACOUSTIC ENCLOSURE PANEL

MODEL EP50/UF

IMPORTANT : THIS IS NOT A STAND ALONE DOCUMENT AND UNLESS REFERRED TO IN A DATED AND

SPECIFICATION

THE ACOUSTIC ENCLOSURE PANEL COMPRISES A COMBINATION OF SOUND ABSORBENT MATERIALS AND HIGH MASS BARRIERS CONTAINED WITHIN A METAL CASING HAVING AN PLAIN OUTER AND PERFORATED INNER FACE, OFFERING EXCELLENT SOUND REDUCTION AND ABSORPTION PROPERTIES.

PANELS ARE CONSTRUCTED FROM GALVANISED STEEL (SUFFIX G), ZINTEC (SUFFIX Z), PLASTIC COATED STEEL (SUFFIX L) OR ALUMINIUM (SUFFIX A).

THE OUTER CASING IS FORMED FROM PLAIN SHEET METAL AND INSIDE FACE FROM PERFORATED METAL.

PANELS CONTAIN A FIBROUS SOUND ABSORBENT INFILL THAT IS NON-SHEDDING, NON-COMBUSTIBLE, NON-HYGROSCOPIC AND CHEMICALLY INERT. THE INFILL IS FACED WITH GLASS CLOTH TO PREVENT FIBRE MIGRATION.

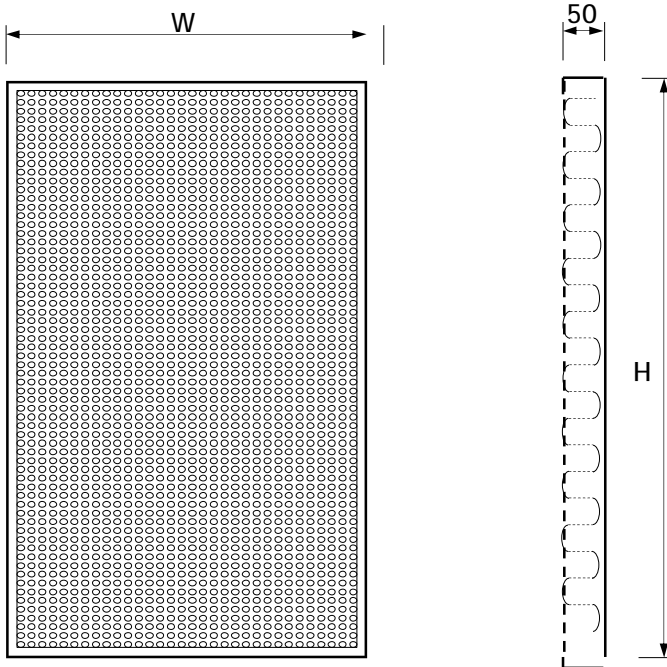
INFILL DENSITY - 45kg/m3.

INFILL THICKNESS -50mm.

THE CASING CAN BE SUPPLIED WITH A PERIMETER FLANGE FOR FIXING ADJACENT SECTIONS TOGETHER, FIXING THE PANELS INTO THE BUILDERSWORK OPENING OR FIXING INTO THE FRAMEWORK OF AN ACOUSTIC ENCLOSURE (OPTION F).

POLYESTER POWDER FINISH AVAILABLE (SUFFIX P)

DIMENSIONS



NOTES

THIS DATA SHEET IS TO BE READ IN CONJUNCTION WITH THE EQUIPMENT SCHEDULE

PANELS WILL BE SUPPLIED WITHOUT SUPPORT STEELWORK, BRACKETS, FIXINGS OR MASTIC UNLESS OTHERWISE STATED.

PANELS MORE THAN 1800 WIDE OR 2500 HIGH MAY BE MANUFACTURED IN SECTIONS FOR ON SITE ASSEMBLY.

SUFFIX

A - ALUMINIUM SUBSTRATE

G - GALVANISED STEEL SUBSTRATE

Z - ZINTEC SUBSTRATE

L - PLASTIC COATED STEEL

P - STOVED POLYESTER POWDER COAT

F - PERIPHERAL FIXING FRAME

SP - SPECIAL CONSTRUCTION, REFER TO EQUIPMENT SCHEDULE FOR DETAILS.

FEATURES

ARCHITECTURAL/INDUSTRIAL APPLICATION

ALL METAL CONSTRUCTION

HIGH SECURITY

HIGH ACOUSTIC RATING

HIGH SOUND ABSORPTION

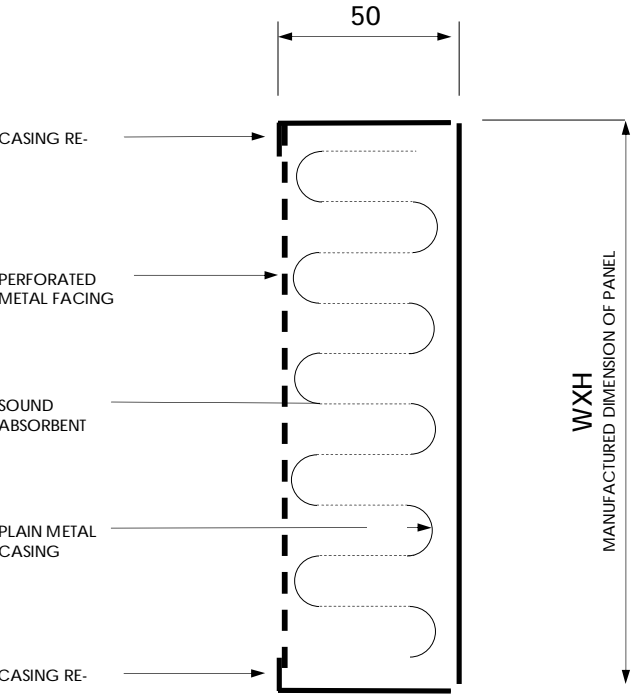
INTERNAL/EXTERNAL USE

OPTIONAL POLYESTER FINISH



ALLAWAY ACOUSTICS
LIMITED

CONSTRUCTION



ACOUSTIC PERFORMANCE

SOUND REDUCTION INDEX B.S.2750/3-1980

63	125	250	500	1000	2000	4000	8000	HZ
17	19	26	33	38	42	45	44	dB

SOUND ABSORPTION B.S.3638 -1987

63	125	250	500	1000	2000	4000	8000	HZ
.10	.25	.65	1.00	1.00	1.00	.95	.90	-

WEIGHT

ACTUAL PANEL WEIGHTS ARE GIVEN ON THE EQUIPMENT SCHEDULE.

APPROXIMATE WEIGHT:
38kg/M² GALVANISED
41kg/M² ALUMINIUM

BUILDERSWORK

THE W AND H DIMENSIONS GIVEN ON THE CERTIFIED EQUIPMENT SCHEDULE ARE AS MANUFACTURED.

ADEQUATE CLEARANCE MUST BE ALLOWED WHEN CONSTRUCTING THE BUILDERSWORK OPENING,

STANDARD

THERE ARE NO STANDARD SIZES.

PANELS ARE MANUFACTURED TO ORDER.

Site: 17 Wadham Gardens, London NW3 3DN
Report: 15009-002 Appendix G
Date: March 2015

DETAILS OF POSSIBLE ACOUSTIC HARDWARE SUPPLIERS

NOISE AND VIBRATION REDUCTION TREATMENTS

Not listed in any order of recommendation or preference

Suggested Supplier A

Supplier: Allaway Acoustics Ltd
Telephone: 01992 550825
Website: www.allawayacoustics.co.uk

Suggested Supplier B

Supplier: Christie & Grey
Telephone: 01732 371100
Website: www.christiegrey.com

Suggested Supplier C

Supplier: EMTEC
Telephone: 020 8848 3031
Website: www.emtecproducts.co.uk