



Ian Sharland

LIMITED

Noise & Vibration Control Specialists

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LOWER ACRE SITE ONE HORTON HEATH EASTLEIGH

SUBMISSION OF DETAILED PROPOSALS
TO DISCHARGE CONDITIONS 30 & 31
APPLICATION REF: F/20/89500

v.2

Client:

EASTLEIGH BOROUGH COUNCIL

Eastleigh House
Upper Market Street
Eastleigh
SO50 9YN

13 August 2025
Ref: M5055-PC30/31

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Project Reference	M5055-PC30/31
Issue No.	2
Reviewed	Richard Sharland MA MSc CEng MIOA
Signature	
Author	Eddie Oxborough MSc MIOA
Signature	
Date	13 August 2025

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1. INTRODUCTION

- 1.1 The purpose of this report is to set out the detail of acoustic mitigation provided to the Lower Acre Site on the One Horton Heath development, in Eastleigh.
- 1.2 The site is being development of some 383 new dwellings (a mixture of houses and apartments) and a new link road running from north to south (see Figures 1 & 2).
- 1.3 Condition 30 of the Planning Consent requires confirmation that the scheme will be designed to ensure that existing noise on the site, along with additional road traffic noise generated by the new link road, will be controlled to levels which will protect the residential amenity of the occupiers:

30 Within 3 months of commencement of development (excluding the site clearance), a detailed noise mitigation and management scheme, detailing in full the noise reduction specifications for the top surface of the link road within the site, acoustic wall/fence/bund provisions, alternative methods of ventilation and enhanced glazing, including the specific product and their acoustic performance, shall be submitted to and approved in writing by the local planning authority. The agreed measures shall then be fully installed in accordance with the approved details prior to first occupation of the buildings for which they are specified and thereafter retained and maintained to the satisfaction of the local planning authority.
- 1.4 Condition 31 seeks evidence, prior to first occupation, that all measures have been implemented satisfactorily:

31 Prior to first occupation of each building, evidence of all acoustic mitigation provided under the Condition 30 shall be submitted to the Local Planning Authority. Where in the opinion of the Local Planning Authority the development falls short of the design guidelines, performance and reliability, availability and maintainability, provision for remediation shall be agreed in writing by the Local Planning Authority and fully implemented within all agreed timescales. Verification methods shall be agreed beforehand by the Local Planning Authority and shall include testing and demonstration through empirical means.
- 1.5 In October 2023, an acoustic assessment was provided, setting out all of the acoustic measures required to achieve acceptable noise levels across the development, inside and out (Ian Sharland report 'Environmental Noise Assessment', M5055 v4 10 October 2023).
- 1.6 This report will confirm the implementation of these specifications, to demonstrate that the recommendations have been adopted in full.

2. RECOMMENDATIONS FOR NOISE ATTENUATION MEASURES

2.1 Glazing

2.1.1 The Environmental Noise Assessment (ENA) confirmed the following requirements for glazing to windows around the development site – expressed in terms of three standards of glazing. The default was a ‘standard’ double glazed window (Type 1), and Table 2.1 confirms those windows requiring an enhanced performance (see also Figure 2)

Plots	Façade	Proposed Glazing	Plots	Façade	Proposed Glazing
Living Rooms			Bedrooms		
4-7	East only	Level 2	1 – 3	North & East only	Level 2
32-33	East only	Level 2	4 - 7	East only	Level 3
49-50	East only	Level 2	30 - 31	South & East only	Level 2
51, 52, 66, 67	North & East	Level 2	32 & 33	North, South & East only	Level 3
68-67	East only	Level 2	49 & 50	North, South & East only	Level 3
79-80	East only	Level 2	51, 52	North, South & East only	Level 3
81-82	East only	Level 2	66, 67	North, South & East only	Level 3
94	East only	Level 2	68 & 69	North, South & East only	Level 3
95-96	East only	Level 2	79 & 80	North, South & East only	Level 3
97-98	South only	Level 2	81 & 82	North, South & East only	Level 3
99	South only	Level 2	92 - 94	North, South & East only	Level 3
210 - 213	West only	Level 2	95 - 98	North, South & East only	Level 3
318-329	West only	Level 2	99	North, South & East only	Level 3
375	West only	Level 2	318 - 329	West only	Level 2
376-383	West only	Level 2	372 - 375	West only	Level 2
A2, 119-124	South only	Level 2	376 - 383	West only	Level 2
A3, 125-143	South-west/South-east	Level 2	A2, 119-124	South-west/South-east	Level 3
B161-180	West only	Level 2	A3, 125-143	South-west/South-east	Level 2

Table 2.1 – Glazing Requirements

2.1.2 Table 1.2 confirms the specific details of the glazing, as octave band sound reduction values:

	Minimum Sound Reduction, dB, at Octave Band Centre Frequency (Hz)							Overall Rating & Configuration
	63	125	250	500	1K	2K	4K	
Level 1 – Proposed	20	17	19	31	45	47	41	27 dB Rw + Ctr 4 / 16 / 4 / 16 / 4
Level 2 - Proposed	28	20	30	39	49	55	62	34 dB Rw + Ctr 6.8 / 16 / 4 / 16 / 6
Level 3 - Proposed	27	27	32	42	52	52	67	39 dB Rw + Ctr 6 / 16 / 6 / 12.8

Table 2.2 – Glazing Performance Requirements

2.1.3 Appendix 1 provides copies of the test data.

- 2.1.4 As previously confirmed, the plots will not use trickle ventilators in the window frames (see Section 2.3 below)

2.2 Façade Construction

- 2.2.1 The original assessment was based on the presumption of the following external wall constructions:

Houses:

- 100mm brick
- 50mm cavity
- 140mm insulated timber stud, 9mm OSB to cavity face
- 25mm battens and 12.5mm plasterboard

Flats:

- 100mm brick
- Min. 100mm partially insulated cavity,
- 140mm concrete blockwork

- 2.2.2 Appendix 2 provides the relevant wall type drawings from the architect's Construction stage drawings, confirming that this minimum construction has been achieved. As such, the modelling of acoustic performance adopted in the original assessment will remain valid.

- 2.2.3 The roof construction to the houses and flats will be as follows:

Houses:

- Tiles over felt on timber battens.
- Pitched rafters.
- 500mm thermal insulation between roof joists
- Generally, 12.5mm plasterboard to underside but, where Level 3 glazing is adopted, 2 x 15mm Fireline/SoundBloc

Flats:

- Single ply membrane over 140mm thermal insulation
- 22mm decking over 250mm timber joists.
- Generally 2 x 12.5mm plasterboard to underside of joists but, where Level 3 glazing is adopted, 2 x 15mm Fireline.
- Nom. 450mm service zone and 12.5mm plasterboard on MF grid

- 2.2.4 Appendix 3 provides the relevant roof type drawings from the architect's Construction stage drawings, confirming that this minimum construction has been achieved. As such, the modelling of acoustic performance adopted in the original assessment will remain valid.

2.3 Ventilation

- 2.3.1 Details of the proposed MVHR units serving houses (two types) and flats are provided herein Appendix 4.
- 2.3.2 The report also indicated that a number of plots should ensure that external grills were located on the west elevations of the building, or that a 500mm long silencer should be included behind the grill.
- 2.3.3 Appendix 4 also details the relevant duct silencer and the list below confirms the plots to which the silencers will be applied.

32, 33, 49, 50, 52, 67, 68, 69, 79, 80, 81, 82, 92, 93, 94, 96, 97, 98
--

Table 2.3 – Plots Requiring Silencers behind External MVHR Grills

2.4 Summary of Performance

- 2.4.1 Appendix 5 repeats the calculations presented in the original ENA report, updated to reflect the final selection of glazing.
- 2.4.2 It is repeated that calculations all include a 3 dB tolerance, to reflect the difference in ideal performance against sensible expectation y(whether glass vs glass in frames, installation variables etc).
- 2.4.3 The calculations all indicate compliance with the project targets for internal noise.

2.5 External Amenity Space

- 2.5.1 The recommendations of the ISL October 2023 report were based on the earlier modelling conducted by Hydrock. Since issuing that report, Hydrock have revisited the protecting external amenity.
- 2.5.2 Their Technical Design Report, dated 31st March 2025, is submitted here as Appendix 6 alongside this report. In summary, it identifies the areas where an acoustically effective barrier is required to the perimeter of the development site. No acoustic barriers are required within the site.
- 2.5.3 Figure 2 confirms the acoustic strategy for the barriers (limited to the east of the site, and in the north-west corner only). Barriers facing the perimeter roads are 2m in height, and the small number of ‘flanking’ barriers are 1.8m in height
- 2.5.4 The noise map below confirms that all levels in amenity areas will fall the 55 dB(A) threshold:



- 2.4.5 Appendix 7 provides details of the proposed barriers – a solid masonry construction. It is confirmed that this will provide sufficient loss through construction that the noise transmission over the barrier is the only significant contributor.

FIGURE 1 – SITE LOCATION

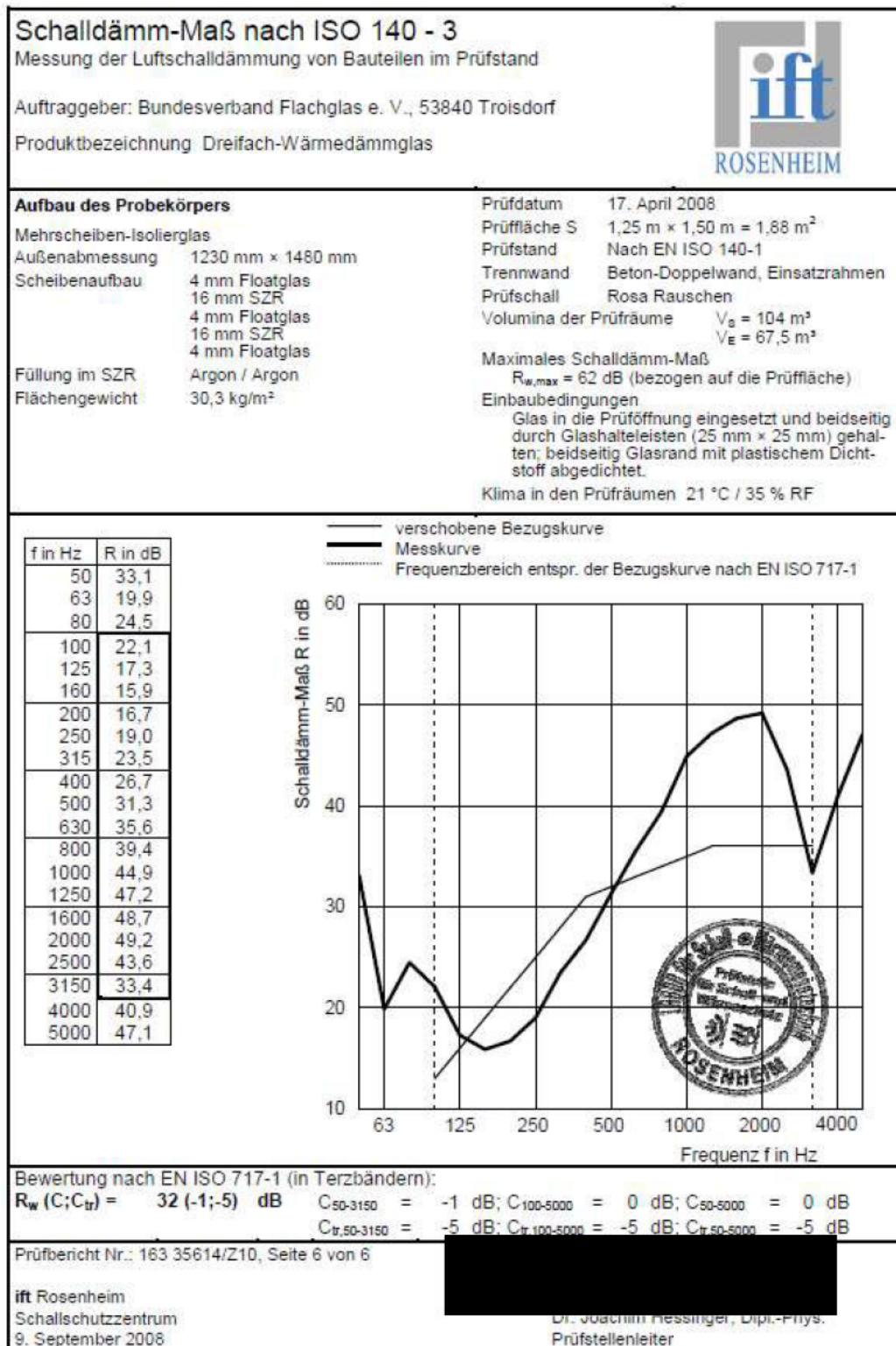


FIGURE 2 – PROPOSED ACOUSTIC STRATEGY PLAN



APPENDIX 1 – GLAZING LAB TEST DATA

Level 1 Glazing



Level 2 Glazing

COMPUTAT OF THE SOUND TRANSMISSION LOSS

Modeling and computation done by Saint-Gobain Recherche Compiègne

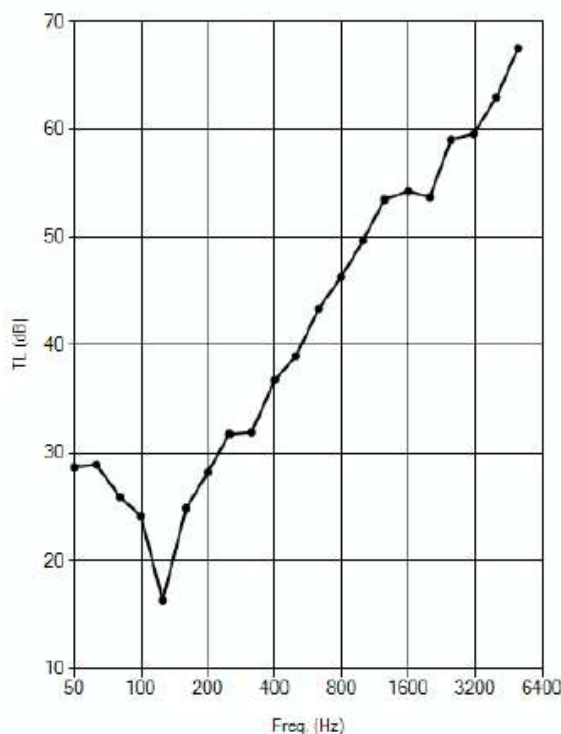
Computation hypothesis defined to model a measurement according to EN ISO 140

All the results, notices, measures, diagrams or charts and any other elements in this document have been obtained in Saint-Gobain's laboratories under specific circumstances. They are for information purposes only and have no contractual value. Saint-Gobain will not be liable for them in any circumstances.

Glazing : 33.2SIL (16AR) 4 (16AR) 6

Ratings : According to ISO 717-1 100Hz - 3150Hz / ASTM E413 125Hz - 4000Hz / ASTM E1332 80Hz - 4000Hz

$R_W (C; C_{tr}) = 41(-2 ; -7) \text{ dB}$ $R_A = 39 \text{ dB}$ $R_{A, tr} = 34 \text{ dB}$ $STC = 40 \text{ dB}$ $OITC = 30 \text{ dB}$



Frequency Hz	R	
	1/3 oct. dB	1/1 oct. dB
50	28.7	27.6
63	28.9	
80	26	
100	24.1	20
125	16.3	
160	24.9	
200	28.2	30.3
250	31.8	
315	31.9	
400	36.8	38.9
500	39	
630	43.4	
800	46.3	48.9
1000	49.7	
1250	53.5	
1600	54.3	55.1
2000	53.7	
2500	59	
3150	59.6	62.3
4000	63	
5000	67.5	

Computation details: Composition n°5965 calculated on 18/09/2021 - ISACO 2.0.0

- Overall dimensions: 1480 mm x 1230 mm
- Composition:
 - Glass 1: SGG STADIP SILENCE 33.2
 - Gas 1: AR 16
 - Glass 2: SGG GLASS 4
 - Gas 2: AR 16
 - Glass 3: SGG GLASS 6



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Saint-Gobain Recherche Compiègne – BP 40103 – 60777 Throurotte – Tél 03 44 92 36 00 – Fax 03 44 92 36 99
Saint-Gobain Glass France – Société Anonyme au capital de 219.001.680 € – R.C.S. Nanterre B 998 269 211 – N° T.V.A. CEE FR 6099 8269 211
Siège Social : Les Miroirs – 18 avenue d'Alsace – 92400 Courbevoie – Tél : 01 47 62 34 00 – Adresse Postale : Les Miroirs – 92096 La Défense Cedex
www.saint-gobain-glass.com

Level 3 Glazing

COMPUTAT OF THE SOUND TRANSMISSION LOSS

Modeling and computation done by Saint-Gobain Recherche Compiègne

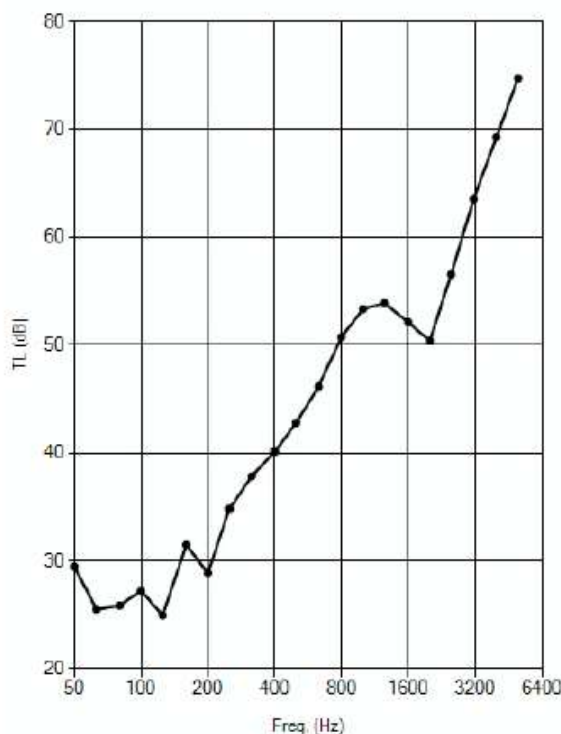
Computation hypothesis defined to model a measurement according to EN ISO 140

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Glazing : 6 (16AR) 6 (16AR) 66.2SIL

Ratings : According to ISO 717-1 100Hz - 3150Hz / ASTM E413 125Hz - 4000Hz / ASTM E1332 80Hz - 4000Hz

$R_W (C; C_{tr}) = 46(-2; -7)$ dB $R_A = 44$ dB $R_{A, tr} = 39$ dB $STC = 46$ dB $OITC = 36$ dB



Frequency Hz	R	
	1/3 oct. dB	1/1 oct. dB
50	29.5	26.6
63	25.5	
80	25.9	
100	27.2	27.1
125	25	
160	31.5	
200	28.9	32.2
250	34.8	
315	37.8	
400	40.1	42.4
500	42.8	
630	46.1	
800	50.7	52.4
1000	53.3	
1250	53.9	
1600	52.1	52.3
2000	50.4	
2500	56.6	
3150	63.5	67
4000	69.3	
5000	74.7	

Computation details: Composition n°3033 calculated on 15/02/2021 - ISACO 2.0.0

- Overall dimensions: 1480 mm x 1230 mm
- Composition:
 - Glass 1: SGG GLASS 6
 - Gas 1: AR 16
 - Glass 2: SGG GLASS 6
 - Gas 2: AR 16
 - Glass 3: SGG STADIP SILENCE 66.2

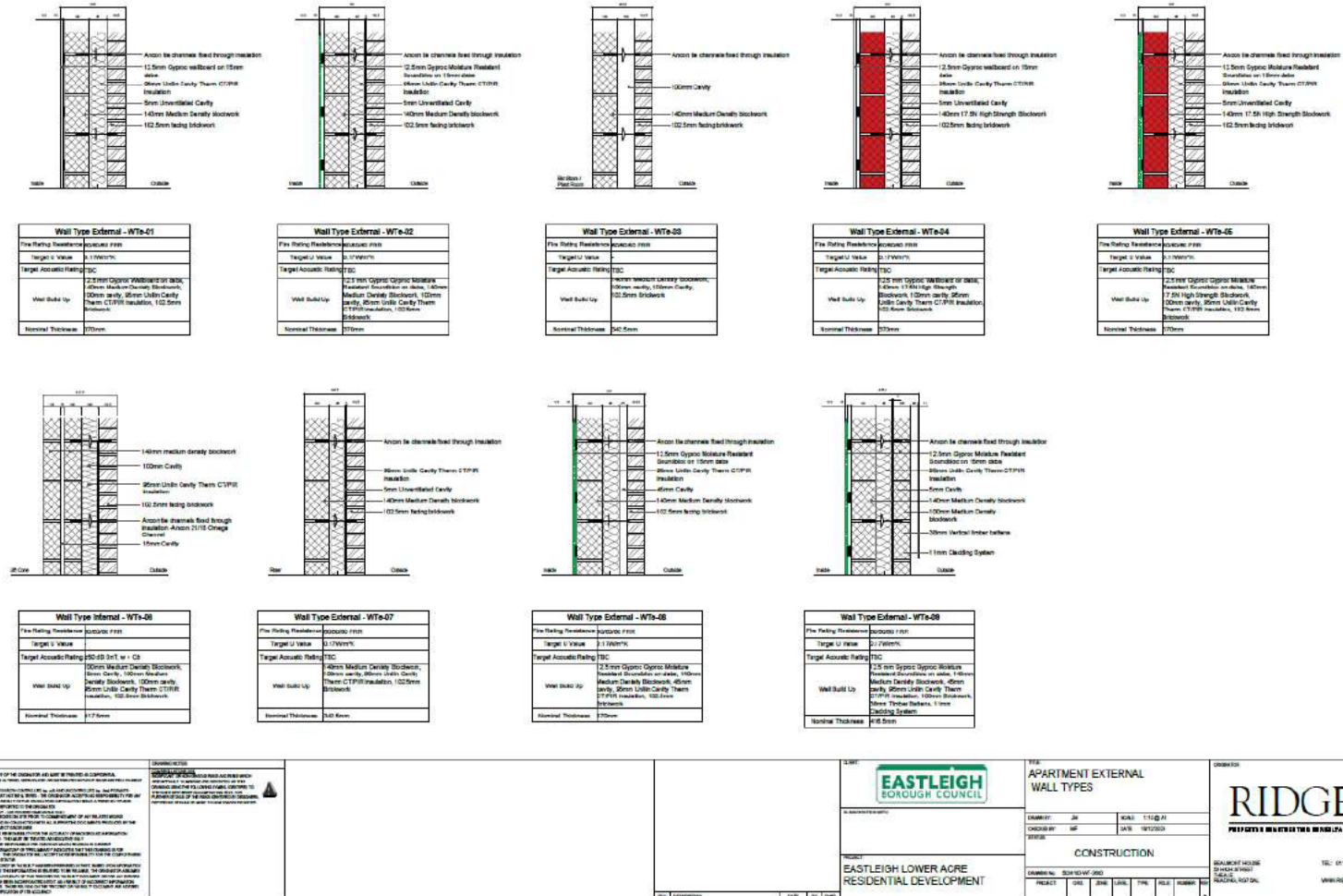


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APPENDIX 2A – EXTERNAL WALL CONSTRUCTIONS – HOUSES/FOGS

[illegible]

Construction



CONSTRUCTION



PILOTS WITH LEVEL 3 ACOUSTIC WINDOWS:

- Plots 4 - 5
- Plots 6 - 7
- Plots 32 & 33
- Plots 48 & 50
- Plots 51 - 52
- Plots 66 - 67
- Plots 68 & 69
- Plots 79 & 80
- Plots 81 & 82
- Plots 92 - 93 - 94
- Plots 95
- Plots 96 - 97
- Plots 98 - 99

2 x 15mm Gyproc FirLine - Type F (enhanced fire performance), or equivalent approved, reaction to fire Euroclass A2-s1,d0 and K=0.24W/m²K, taped and jointed as per manufacturers' specifications. ONLY for plots with LEVEL 3 Acoustic windows.

15mm Gyproc WallBoard - Type A, taped and jointed

25mm x 50mm vertical timber battens @400mm centres to receive plasterboards

Vapour control layer lapped, taped and sealed at perimeter/abutments/penetrations to ensure continuity

Taylor Lane Timber Frame closed panel system to achieve 0.17W/m²K U-Value

140mm timber frame studs @600mm centres max., as per Timber frame Supplier's design and specifications.

6mm OSB/Ply board

Galvanised metal strip to support window in accordance with Window manufacturers' details and specifications

37.5mm (12.5mm + 25mm) Kingspan Kooltherm K18 insulated plasterboard, K=0.022W/m²K and Euroclass B-s1,d0, mechanically installed as per manufacturers' specification

Caulk sealant to all perimeter window joints

Cavalok FlameBlok or equivalent approved insulation cavity barrier

EPDM membrane SikaMembran 220FR, or equivalent approved, Euroclass B-s1,d0, around the window perimeter to ensure airtightness and waterproofing

500mm Rockwool Roof mineral wool insulation, or equivalent approved, K=0.044W/m²K and Euroclass A1, to achieve U-value 0.09W/m²K in line with SAP calcs and installed as per manufacturers' specifications.

Consisting in:

- 2 layers of 100mm between trusses and,
- 3 layers of 100mm over trusses,
- maintaining 50mm air circulation gap as shown

Timber truss design and size to manufacturers' information

Roof tiles fixed as per manufacturers' instructions. Refer to Architects' information for materials and colours

38 x 25mm weather treated timber battens fixed in accordance with Roof tile finishes.

Vapour permeable breather membrane lapped and fixed following manufacturers' specifications.

Membrane support tray eave protector

20mm sub fascia timber board mechanically fixed to trusses, to be covered by the fascia

G1200H over-fascia ventilator equal to 10mm/m continuous air flow

175mm black uPVC fascia board as per manufacturer's instructions

50mm over ventilation zone

Swish SRG4 Half Round Gutter and SRP55 Rainwater down pipe in black. Refer to GAS for location and design.

OUTSIDE

As per Timber frame supplier information primary joints are manufactured with 10mm tolerance gap in width & 10mm tolerance gap in height + differential movement allowance. Refer to structural timber frame opening dimensions. Refer to TL-U25-T5A plan

50 x 50 mm Fire cavity barrier Rockwool SCB or equivalent approved, to close cavity

Breather membrane

Vaquene Zedex DPC, or equivalent approved, with cavity tray, installed as manufacturers' specifications and detail

Masonry support (inlet to suit timber frame, fixed in accordance with Timber frame manufacturers' specifications.

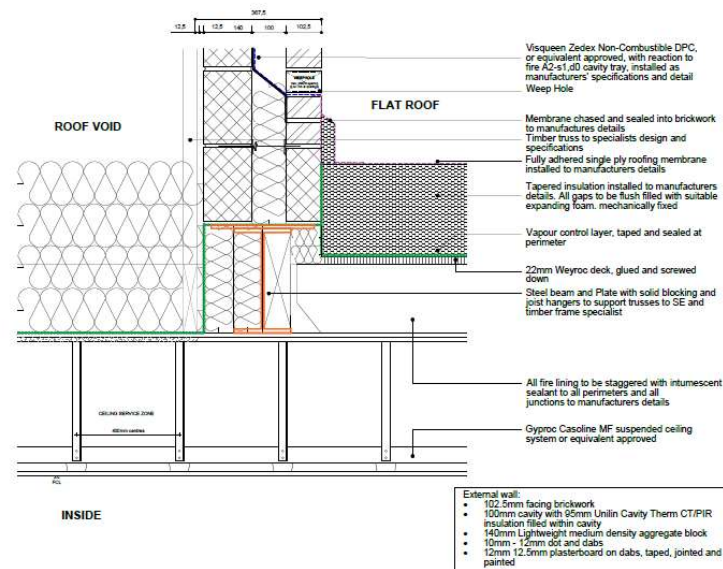
102.5mm facing brickwork

Polyurethane expanding foam tape, or equivalent approved, to head of window.

uPVC window installed to manufacturers' details. Refer to Architects' GAS and schedules for colour, size and style.

INSIDE

Construction



TYPICAL DETAIL - GABLE WALL - FLAT ROOF JUNCTION

[illegible]

APPENDIX 4 – MVHR SELECTIONS

House Type 1

Domestic & Commercial

Sales Tel: 0844 856 0590
Tech Support Tel: 0844 856 0590

Industrial

Sales Tel: 0844 856 0594
Tech Support Tel: 0844 856 0595



Product Information

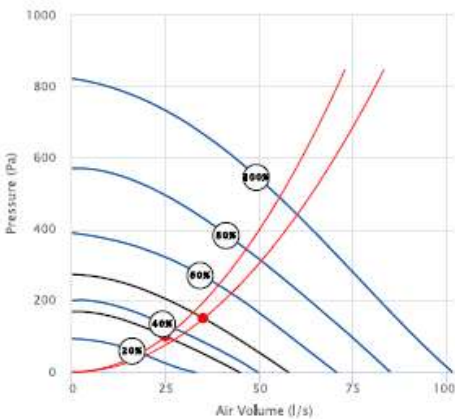
Heat Recovery - Vertical - Sentinel Kinetic FH Right



Technical Information

Stock Reference	408167	
Product Type	Heat Recovery -	
Product Range	Vertical	
Casing	Heat Recovery -	
Airstream Temperature	Vertical	
Warranty	ABS	
	-20 - 45°C	
	Up to 5 years	
Requested Duty	2.5 l/s @ 100 Pa	3.5 l/s @ 150 Pa
Actual Duty	2.5 l/s @ 100 Pa	3.5 l/s @ 151 Pa
Specific Fan Power	0.9	1.1
Selection Speed	34%	48%
dBA	27 dBA @ 3m	32 dBA @ 3m

Performance Chart



Electrical Information

Motor Rating	0.02
Selection Power	0.02
Supply Voltage	220-240V/1/50Hz
Full Load Current	0.00 A
Starting Current	0.00 A
Starting Method	-
Motor Poles	-
Insulation	-
IP Rating	IP22
S.T.O.P. Protection	Yes
Speed Controllable	In Built
Integral Controllers	-

Sound Information at Duty Point

Sound Power Level Spectra dB (re 10^{-12} Watts)
For ducted units, sound power is given as In Duct with end reflections added.
Stated dB(A) levels at 3m with spherical propagation at a reference level of 2×10^{-12} Pa

	63	125	250	500	1k	2k	4k	8k	Total	dB(A)@3m
Inlet	62	55	53	50	42	31	21	25	63	33
Outlet	67	64	64	55	49	41	31	27	70	38
Breakout	45	45	52	46	41	37	29	28	54	27

	63	125	250	500	1k	2k	4k	8k	Total	dB(A)@3m
Inlet	64	57	62	54	47	37	26	26	67	39
Outlet	69	68	69	60	54	48	38	32	74	43
Breakout	49	49	57	50	46	42	36	30	59	32

House Type 2

Domestic & Commercial

Sales Tel 0844 856 0590
Tech Support Tel 0844 856 0590

Industrial

Sales Tel 0844 856 0594
Tech Support Tel 0844 856 0595



Product Information

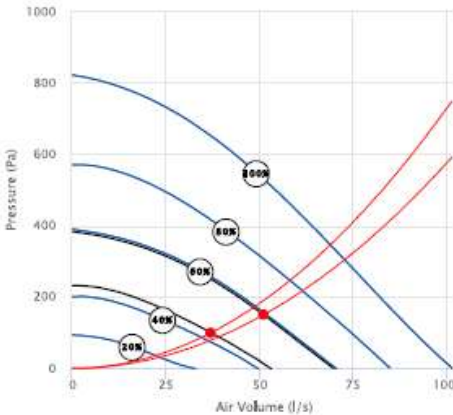
Heat Recovery - Vertical - Sentinel Kinetic FH Right



Technical Information

Stock Reference	408167	
Product Type	Heat Recovery -	
Product Range	Vertical	
Casing	Heat Recovery -	
Airstream Temperature	Vertical	
Warranty	ABS	
	-20 - 45°C	
	Up to 5 years	
Requested Duty	37 l/s @ 100 Pa	51 l/s @ 150 Pa
Actual Duty	37 l/s @ 100 Pa	51 l/s @ 150 Pa
Specific Fan Power	0.9	1.0
Selection Speed	43%	59%
dBA	31 dBA @ 3m	38 dBA @ 3m

Performance Chart



Electrical Information

Motor Rating	0.03
Selection Power	0.03
Supply Voltage	220-240V/1/50Hz
Full Load Current	0.00 A
Starting Current	0.00 A
Starting Method	-
Motor Poles	-
Insulation	-
IP Rating	IP22
S.T.O.P. Protection	Yes
Speed Controllable	In Built
Integral Controller	-

Sound Information at Duty Point

Sound Power Level Spectra dB (re 10^{-12} Watts)
For ducted units, sound power is given as In Duct with end reflections added.
Stated dB(A) levels at 3m with spherical propagation at a reference level of 2×10^{-12} Pa.

	63	125	250	500	1k	2k	4k	8k	Total	dB(A) @ 3m
Inlet	65	57	58	53	45	35	24	25	67	36
Outlet	69	67	68	58	53	46	36	30	73	41
Breakout	48	48	57	49	45	40	34	29	59	31

	63	125	250	500	1k	2k	4k	8k	Total	dB(A) @ 3m
Inlet	67	61	66	58	52	42	32	27	70	43
Outlet	72	72	81	64	59	53	45	39	82	52
Breakout	53	53	64	55	52	48	42	38	65	38

Flats

Domestic & Commercial

Sales Tel 0844 856 0590
Tech Support Tel 0844 856 0590

Industrial

Sales Tel 0844 856 0594
Tech Support Tel 0844 856 0595

Vent-Axia

Product Information

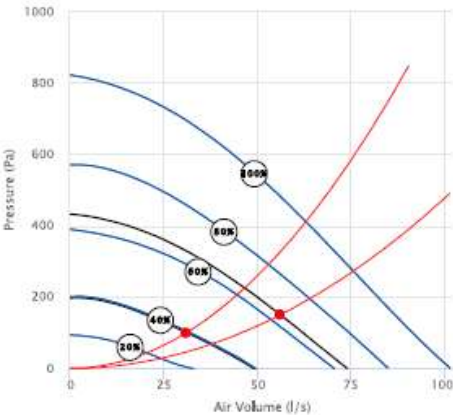
Heat Recovery - Vertical - Sentinel Kinetic FH Right



Technical Information

Stock Reference	408167		
Product Type	Heat Recovery -		
Product Range	Vertical		
Casing	Heat Recovery -		
Airstream Temperature	Vertical		
Warranty	ABS		
	-20 - 45°C		
	Up to 5 years		
Requested Duty	31 l/s @ 100 Pa	56 l/s @ 150 Pa	
Actual Duty	31 l/s @ 100 Pa	56 l/s @ 150 Pa	
Specific Fan Power	0.9	1.2	
Selection Speed	39%	65%	
dBA	30 dBA @ 3m	40 dBA @ 3m	

Performance Chart



Electrical Information

Motor Rating	0.03
Selection Power	0.03
Supply Voltage	220-240V/1/50Hz
Full Load Current	0.00 A
Starting Current	0.00 A
Starting Method	-
Motor Poles	-
Insulation	-
IP Rating	IP22
S.T.O.P. Protection	Yes
Speed Controllable	In Built
Integral Controller	-

Sound Information at Duty Point

Sound Power Level Spectra dB (re 10⁻¹² Watts)

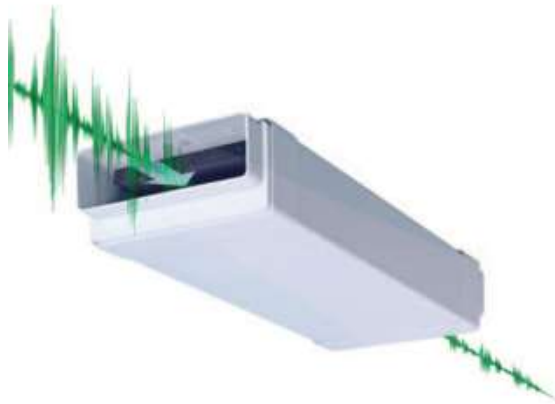
For ducted units, sound power is given as In Duct with end reflections added.

Stated dB(A) levels at 3m with spherical propagation at a reference level of 2 x 10⁻¹² Pa.

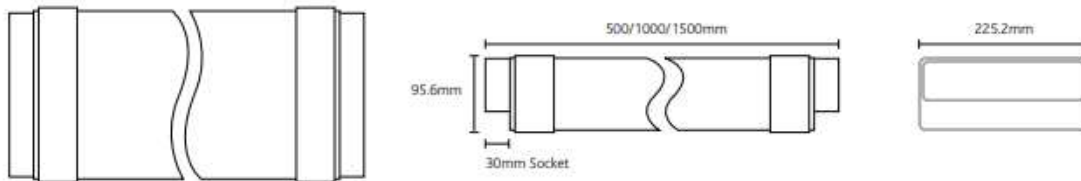
	63	125	250	500	1k	2k	4k	8k	Total	dB(A) @ 3m		63	125	250	500	1k	2k	4k	8k	Total	dB(A) @ 3m
Inlet	65	56	56	52	44	34	23	25	66	35	Inlet	70	62	66	60	53	43	33	28	72	44
Outlet	68	66	67	57	52	44	34	28	72	40	Outlet	73	73	79	66	60	54	47	41	81	51
Breakout	47	47	55	48	44	39	32	29	57	30	Breakout	55	53	65	58	53	49	43	39	67	40

■ NOISE SOLUTIONS

AVAILABLE IN 0.5M, 1M & 1.5M LENGTHS



- **Regulation driven** - to reduce duct noise for designers "Domestic Compliance Guide 2010" and noise requirements Part F 2010
- **Corrosion proof** - lightweight PVC removes the risk of corrosion
- **Reduce cross talk** - room to room noise
- **Prevents noise ingress** - for inner city development
- **Space saving** - slimline, low profile design for integration within your ducting system



Silencer Code	125 Hz	250 Hz	500 Hz	1k Hz	2k Hz	4k Hz	8k Hz
PVCSIL-500	10.8	5.6	6.2	7.5	18.9	34.3	31.7
PVCSIL-1000	10.1	6.6	8.3	11.6	40	49.8	51.4
PVCSIL-1500	9.9	8.2	11.4	16.1	44	53.5	53

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APPENDIX 5 - CALCULATION OF OUTSIDE TO INSIDE NOISE LEVELS

Houses, Living Rooms, Level 1 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Ambient Noise	dB	56	53	49	47	47	44	38	26	51
Projected New Traffic Noise	dB	57	59	58	59	58	55	48	40	62
Façade Noise Level, LAeq, 16hrs	dB	60	60	59	59	58	55	48	40	62
Glazing Specified: 27 dB Rw + Ctr	dB	21	17	19	31	45	47	41	45	
Area of Window	m2	5	5	5	5	5	5	5	5	
Area Correction	dB	7	7	7	7	7	7	7	7	
Reference Reverberation Time	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	34	39	35	24	9	4	3	-9	29
SRI External Wall, Houses	dB	38	51	56	65	65	65	65	65	
Area of Wall	m2	20	20	20	20	20	20	20	20	
Area Correction	dB	13	13	13	13	13	13	13	13	
Reference Reverberation Time	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	23	11	4	-4	-5	-8	-15	-23	3
Combined Level from elements	dB	35	39	35	24	9	5	3	-9	29
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	38	42	38	27	12	8	6	-6	32

Flats, Living Rooms, Level 1 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Ambient Noise	dB	56	53	49	47	47	44	38	26	51
Projected New Traffic Noise	dB	57	59	58	59	58	55	48	40	62
Façade Noise Level, LAeq, 16hrs	dB	60	60	59	59	58	55	48	40	62
Glazing Specified: 27 dB Rw + Ctr	dB	21	17	19	31	45	47	41	45	
Area of Window	m2	5	5	5	5	5	5	5	5	
Area Correction	dB	7	7	7	7	7	7	7	7	
Reference Reverberation Time	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	34	39	35	24	9	4	3	-9	29
SRI External Wall, Flats	dB	38	42	43	47	57	65	65	65	
Area of Wall	m2	20	20	20	20	20	20	20	20	
Area Correction	dB	13	13	13	13	13	13	13	13	
Reference Reverberation Time	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	23	20	17	14	3	-8	-15	-23	14
Combined Level from elements	dB	35	39	36	25	10	5	3	-9	29
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	38	42	39	28	13	8	6	-6	32

Houses, Living Rooms, Level 2 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Ambient Noise	dB	56	53	49	47	47	44	38	26	51
Projected New Traffic Noise	dB	62	64	63	64	62	61	53	45	67
Façade Noise Level, LAeq, 16hrs	dB	63	64	63	63	62	61	53	45	67
Glazing Specified: 34 dB Rw + Ctr	dB	28	20	30	39	49	55	62	65	
Area of Window	m2	5	5	5	5	5	5	5	5	
Area Correction	dB	7	7	7	7	7	7	7	7	
Reference Reverberation Time	sec	1	1	1	1	1	1	1	1	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	31	40	29	20	9	2	-13	-24	26
SRI External Wall, Houses	dB	38	51	56	65	65	65	65	65	
Area of Wall	m2	20	20	20	20	20	20	20	20	
Area Correction	dB	13	13	13	13	13	13	13	13	
Reference Reverberation Time	sec	1	1	1	1	1	1	1	1	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	27	15	9	0	-1	-2	-10	-18	7
Combined Level from elements	dB	32	40	29	20	9	3	-8	-17	26
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	35	43	32	23	12	6	-5	-14	29

Flats, Living Rooms, Level 2 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Ambient Noise	dB	56	53	49	47	47	44	38	26	51
Projected New Traffic Noise	dB	62	64	63	64	62	61	53	45	67
Façade Noise Level, LAeq, 16hrs	dB	63	64	63	63	62	61	53	45	67
Glazing Specified: 34 dB Rw + Ctr	dB	28	20	30	39	49	55	62	65	
Area of Window	m2	5	5	5	5	5	5	5	5	
Area Correction	dB	7	7	7	7	7	7	7	7	
Reference Reverberation Time	sec	1	1	1	1	1	1	1	1	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	31	40	29	20	9	2	-13	-24	26
SRI External Wall, Flats	dB	38	42	43	47	57	65	65	65	
Area of Wall	m2	20	20	20	20	20	20	20	20	
Area Correction	dB	13	13	13	13	13	13	13	13	
Reference Reverberation Time	sec	1	1	1	1	1	1	1	1	
Room Volume	m3	40	40	40	40	40	40	40	40	
Absorption		13	13	13	13	13	13	13	13	
Absorption Correction	dB	11	11	11	11	11	11	11	11	
Net SPL Inside	dB	27	24	22	18	7	-2	-10	-18	18
Combined Level from elements	dB	32	40	30	22	11	3	-8	-17	27
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	35	43	33	25	14	6	-5	-14	30

Houses, Bedrooms, Level 1 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, Lmax	dB	64	61	57	55	55	52	46	34	59
Projected New Traffic Peak	dB	69	69	67	68	66	65	63	53	72
External Noise Level Lmax	dB	69	69	67	68	66	65	63	53	72
Glazing Specified: 27 dB Rw + Ctr	dB	21	17	19	31	45	47	41	45	
Area of Window	m2	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	44	48	44	33	17	14	18	4	38
SRI External Wall, Houses	dB	38	51	56	65	65	65	65	65	
Area of Wall	m2	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	29	16	9	1	-1	-2	-4	-14	8
SRI Roof, Houses	dB	22	39	48	55	60	60	60	60	
Area of Roof	m2	12	12	12	12	12	12	12	12	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	dB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	sec	30	30	30	30	30	30	30	30	
Absorption	m3	10	10	10	10	10	10	10	10	
Absorption Correction		10	10	10	10	10	10	10	10	
Net SPL Inside	dB	48	31	20	14	7	6	4	-6	23
	dB									
Combined Level from elements	dB	50	48	44	33	18	15	18	5	38
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	53	51	47	36	21	18	21	8	41

Flats, Bedrooms, Level 1 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, L _{max}	dB	64	61	57	55	55	52	46	34	59
Projected New Traffic Peak	dB	69	69	67	68	66	65	63	53	72
External Noise Level L _{max}	dB	69	69	67	68	66	65	63	53	72
Glazing Specified: 27 dB Rw + Ctr	dB	21	17	19	31	45	47	41	45	
Area of Window	m ²	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m ³	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	44	48	44	33	17	14	18	4	38
SRI External Wall, Flats	dB	38	42	43	47	57	65	65	65	
Area of Wall	m ²	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m ³	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	29	25	22	19	7	-2	-4	-14	18
SRI Roof, Flats	dB	12	31	38	42	52	60	65	65	
Area of Roof	m ²	12	12	12	12	12	12	12	12	
Shielding to flat roof	dB	10	10	10	10	10	10	10	10	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m ³	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	48	29	20	17	5	-4	-11	-21	23
Combined Level from elements	dB	50	48	44	33	18	14	18	4	38
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	53	51	47	36	21	17	21	7	41

Houses, Bedrooms, Level 2 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, Lmax	dB	69	66	62	60	60	57	51	39	64
Projected New Traffic Peak	dB	76	76	74	75	73	72	70	60	79
External Noise Level Lmax	dB	76	76	74	75	73	72	70	60	79
Glazing Specified: 34 dB Rw + Ctr	dB	28	20	30	39	49	55	62	65	
Area of Window	m2	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	44	52	40	32	20	13	4	-9	38
SRI External Wall, Houses	dB	38	51	56	65	65	65	65	65	
Area of Wall	m2	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	36	23	16	8	6	5	3	-7	15
SRI Roof, Houses	dB	22	39	48	55	60	60	60	60	
Area of Roof	m2	12	12	12	12	12	12	12	12	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	dB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	sec	30	30	30	30	30	30	30	30	
Absorption	m3	10	10	10	10	10	10	10	10	
Absorption Correction		10	10	10	10	10	10	10	10	
Net SPL Inside	dB	55	38	27	21	14	13	11	1	30
	dB									
Combined Level from elements	dB	55	52	40	32	21	16	12	2	39
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	58	55	43	35	24	19	15	5	42

Flats, Bedrooms, Level 2 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, Lmax	dB	69	66	62	60	60	57	51	39	64
Projected New Traffic Peak	dB	76	76	74	75	73	72	70	60	79
External Noise Level Lmax	dB	76	76	74	75	73	72	70	60	79
Glazing Specified: 34 dB Rw + Ctr	dB	28	20	30	39	49	55	62	65	
Area of Window	m2	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	44	52	40	32	20	13	4	-9	38
SRI SRI External Wall, Flats	dB	38	42	43	47	57	65	65	65	
Area of Wall	m2	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	36	32	29	26	14	5	3	-7	25
SRI Roof, Flats	dB	12	31	38	42	52	60	65	65	
Area of Roof	m2	12	12	12	12	12	12	12	12	
Shielding to flat roof	dB	10	10	10	10	10	10	10	10	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	55	36	27	24	12	3	-4	-14	30
Combined Level from elements	dB	55	52	40	33	22	14	7	-4	39
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	58	55	43	36	25	17	10	-1	42

Houses, Bedrooms, Level 3 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, Lmax	dB	74	71	67	65	65	62	56	44	69
Projected New Traffic Peak	dB	85	84	82	84	82	81	79	69	88
External Noise Level Lmax	dB	85	84	82	84	82	81	79	69	88
Glazing Specified: 39 dB Rw + Ctr	dB	27	27	32	42	52	52	67	67	
Area of Window	m2	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	54	53	46	38	26	25	8	-2	42
SRI External Wall, Houses	dB	38	51	56	65	65	65	65	65	
Area of Wall	m2	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	45	31	24	17	15	14	12	2	24
SRI Roof, Houses, Enhanced	dB	34	44	51	57	61	59	63	65	
Area of Roof	m2	12	12	12	12	12	12	12	12	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	dB	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	sec	30	30	30	30	30	30	30	30	
Absorption	m3	10	10	10	10	10	10	10	10	
Absorption Correction		10	10	10	10	10	10	10	10	
Net SPL Inside	dB	52	41	32	28	22	23	17	5	32
	dB									
Combined Level from elements	dB	57	53	46	38	28	27	19	7	42
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	60	56	49	41	31	30	22	10	45

Flats, Bedrooms, Level 3 Glazing:

Frequency	Hz	63	125	250	500	1000	2000	4000	8000	dB(A)
Existing Peak Level Noise, Lmax	dB	74	71	67	65	65	62	56	44	69
Projected New Traffic Peak	dB	85	84	82	84	82	81	79	69	88
External Noise Level Lmax	dB	85	84	82	84	82	81	79	69	88
Glazing Specified: 39 dB Rw + Ctr	dB	27	27	32	42	52	52	67	67	
Area of Window	m2	4	4	4	4	4	4	4	4	
Area Correction	dB	6	6	6	6	6	6	6	6	
Maximum RT in Room	sec	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	53	52	45	37	25	24	7	-3	41
SRI SRI External Wall, Flats	dB	38	42	43	47	57	65	65	65	
Area of Wall	m2	6	6	6	6	6	6	6	6	
Area Correction	dB	8	8	8	8	8	8	8	8	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	45	40	37	34	23	14	12	2	34
SRI Roof, Flats Enhanced	dB	21	35	38	43	54	60	65	65	
Area of Roof	m2	12	12	12	12	12	12	12	12	
Shielding to flat roof	dB	10	10	10	10	10	10	10	10	
Area Correction	dB	11	11	11	11	11	11	11	11	
Maximum RT in Room	sec	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
Room Volume	m3	30	30	30	30	30	30	30	30	
Absorption		10	10	10	10	10	10	10	10	
Absorption Correction	dB	10	10	10	10	10	10	10	10	
Net SPL Inside	dB	55	40	35	31	19	12	5	-5	33
Combined Level from elements	dB	57	52	46	39	28	25	14	4	42
Tolerance on Calculation	dB	3	3	3	3	3	3	3	3	
Predicted Internal Noise Level	dB	60	55	49	42	31	28	17	7	45

APPENDIX 6 – HYDROCK AMENITY AREA REPORT



Technical design note

Project name	One Horton Heath FRP		
Design note title	Noise Impact Assessment		
Document reference	17826-HYD-XX-XX-TN-Y-1005		
Author	Jake Schofield, BSc(Hons), Pg. Dip, MIOA		
Revision	P01		
Date	31 March 2025	Approved	✓

1. Overview

Hydrock has been appointed by Eastleigh Borough Council (EBC), to provide acoustic engineering services in relation to the First Residential Parcel (FRP) at One Horton Heath.

It is understood this assessment is required to support the part discharge of Condition 30 in the Decision Notice for the FRP (application ref: F/20/89500).

Condition 30

Within 3 months of commencement of development (excluding site clearance) a detailed Noise Mitigation and Management Scheme detailing in full the noise reduction specifications for acoustic wall/fence/bund provisions; alternative methods of ventilation and enhanced glazing, including the specific products and their acoustic performance, shall be submitted to and approved in writing by the local planning authority. The agreed measures shall then be fully installed in accordance with the approved details prior to first occupation of the buildings for which they are specified and thereafter retained and maintained to the satisfaction of the local planning authority.

This technical note has been prepared to provide a revised scheme of noise mitigation for the external living areas of the FRP only.

This assessment is technical in nature; therefore, a glossary of acoustic terminology is provided in **Appendix A**.



2. Methodology

An assessment is required to determine the potential for noise impact from road traffic at external living areas of the FRP.

This assessment excludes the consideration of any externally located plant. Should externally located plant be required then an additional assessment should be carried out to determine the associated impacts and subsequent mitigation requirements.

Assessment of impacts at internal noise sensitive areas and the requirement for façade insulation, in the form of glazing and alternative ventilation, also fall outside the scope of this assessment.

This assessment considers the following policy, guidance and standards documents:

- » National Planning Policy Framework, 2024 (NPPF);
- » Noise Policy Statement for England, 2010 (NPSE);
- » Planning Practice Guidance – Noise, 2019 (PPG);
- » The World Health Organisation's Guideline for Community Noise, 1999 (WHO); and,
- » British Standard 8233: 2014 – Guidance on Sound Insulation and Noise Reduction for Buildings (BS8233).

2.1 Acoustic Modelling

Environmental noise modelling has been carried out using SoundPLAN V9.1. The software uses OS mapping, OS Terrain data and the proposed development plans to create a 3D study area of the site and surrounding areas. Calculations are carried out in accordance with ISO9613-2 and CRTN.

Road traffic noise has been predicted based on data used for the noise and vibration ES chapter supporting the outline planning application. The assessment uses data provided by Paul Basham Associates, for the 2030 future operational year, encompassing the Wider Outline Planning Application (OPA) and other committed developments. This traffic scenario considers full occupation of the Wider OPA and is considered to represent robust assessment of future road traffic noise when the development is occupied.



3. Assessment of Noise in Outdoor Living Areas

In accordance with BS8233 and The World Health Organisation's Guidelines for Community Noise, 1999 (WHO), the lower 'desirable' guideline noise level for external living areas is 50dB(A), and the upper guideline level is 55dB(A).

3.1 Noise Impacts Without Mitigation

Predicted noise levels are shown across the site without mitigation i.e. no provision for acoustic screening or close boarded fencing separating outdoor living areas, in **Figure 1**.

Noise levels in outdoor living areas are below the lower guideline noise level of 50 dB(A) across the majority of the site. However, noise levels in some outdoor living areas around the perimeter of the site, located closest to the Phase 3 link road and Burnetts Lane, exceed 50 dB(A) but are below 55 dB(A). This indicates a low potential for noise impact.

In a small proportion of outdoor living areas around the perimeter of the site, noise levels exceed the upper guideline level of 55 dB(A). This indicates a potential for adverse noise impacts in some outdoor living areas, therefore mitigation measures are required.

3.2 Noise Impact With Mitigation

Predicted noise levels are shown across the site with the inclusion of mitigation in the form of localised screening at the boundary of outdoor living areas most affected by road traffic noise, as shown in **Figure 2**.

With the inclusion of the mitigation scheme, noise levels are below the upper guideline level of 55dB (A) in outdoor living areas across the site. This indicates that suitable external noise levels are achieved which accord with BS8233 and WHO health-based guidance, and there is a low potential for noise impacts.



4. External Mitigation Requirements

The results of the assessment show a requirement for localised acoustic screening to mitigate noise at external living areas around the perimeter of the site. The location of the proposed acoustic screening is illustrated on **Figure 2**.

The acoustic screening should be 1.8m and 2m high. The acoustic screening should have no holes or gaps and should at a minimal superficial density of 10kg/m², which can be achieved with standard close bordered fencing, brick, or a combination of both. Feather edge boards should not be used unless they are bonded to form a double bank with staggered joints.



5. Summary and Conclusion

Hydrock has been appointed by Eastleigh Borough Council (EBC), to provide acoustic engineering services in relation to the First Residential Parcel (FRP) at One Horton Heath. This technical note has been prepared to provide a revised scheme of noise mitigation for the external living areas of the FRP only.

A noise assessment has been carried out to determine the potential for noise impact from road traffic noise at external living areas in accordance with BS8233 and WHO. The assessment has been carried out using SoundPLAN V9.1 acoustic modelling software.

The results of the assessment show that noise levels in outdoor living are acceptable across the majority of the site, except for in some outdoor living areas located closest to the Phase 3 link road and Burnetts Lane, which exceed the upper guideline of 55dB(A). This indicates a requirement for localised acoustic screening around at the boundary of affected outdoor living areas.

A scheme of localised screening to reduce road traffic noise to acceptable levels across all outdoor living areas has been determined, as shown on **Figure 2**. With the inclusion of mitigation noise levels in outdoor living areas are below the upper guideline level of 55dB(A) recommended by BS8233 and WHO health-based guidance.

It is considered this provides sufficient evidence to satisfy the requirements for outdoor living areas affected by road traffic noise associated with **Condition 30**.



Appendix A: Glossary of Acoustic Terminology



Term	Description
dB (decibel)	The scale on which sound pressure level is expressed. Sound pressure level is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2x10 ⁻⁵ Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. 'A' - weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
L_{Aeq,T}	L _{Aeq} is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A - weighted fluctuating sound measured over that period.
L_{Amax}	L _{Amax} is the maximum A - weighted sound pressure level recorded over the period stated. L _{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, 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.
L₁₀ and L₉₀	If a non-steady noise is to be described it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L ₁₀ is the level exceeded for 10% of the time, and the L ₉₀ is the level exceeded for 90% of the time.
R_w	R _w is the single-number quantity which characterizes the sound insulating properties of a given material over a range of frequencies. This is typically measured in a laboratory in accordance with BS EN ISO 717-1.
D_{n,w}	D _{n,w} is the single number quantity which characterizes the airborne sound insulation performance across a given 'element' and is typically used to describe the acoustic performance of trickle ventilators etc.
C_{tr}	C _{tr} is a correction term applied to single-number sound insulation values (R _w , D _{n,w} etc.) to afford additional weighting against low frequency performance.
Free-field Level	A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally, it is measured outside and at least 3m from buildings.





INFORMATION

**BOUNDARY WALL
1800 HIGH BRICK WALL
RETAINING**

**BOUNDARY WALL
1800 HIGH BRICK WALL
GATE**

**BOUNDARY WALL
2000 HIGH BRICK WALL
PA - B1 - B**

**440 x 440 MM
BRICK PIER
AND COPPING**

**BOUNDARY WALL
2000 HIGH BRICK WALL
PA - B1 - B**

**440 x 440 MM
BRICK PIER
AND COPPING**

APPENDIX 8 – TERMINOLOGY RELATING TO NOISE

Sound Pressure	Sound, or sound pressure, is a fluctuation in air pressure over the static ambient pressure.
Sound Pressure 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 log ₁₀ (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 considers 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.
Leq,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.
Lmax,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.
L90,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.
Free-Field	Far from the presence of sound reflecting objects (except the ground), usually taken to mean at least 3.5m.
Façade Noise Level	At 1m in front of a large sound reflecting object such as a façade.
Fast/Slow Time Weighting	Averaging times used in sound level meters.
Octave Band	Range of frequencies whose upper limit is twice the lower limit.
Rw	Single number quantity that characterises the airborne sound insulating properties of a material or building element over a range of frequencies.