



HOWARD & SEDDON
PARTNERSHIP
RIBA CHARTERED ARCHITECTS

12,982

ACOUSTIC INSULATION SCHEME

PROPOSAL:

ERECTION OF A TWO-STOREY ROOFTOP EXTENSION TO FORM 9
DUPLEX APARTMENTS AND THE CONVERSION OF THE EXISTING
REDUNDANT INTERNAL CAR PARK TO CREATE A FURTHER 4
DUPLEX APARTMENTS AT BARCLAY HOUSE, WHITWORTH
STREET WEST, MANCHESTER



LOCATION:

BARCLAY HOUSE, 35 WHITWORTH STREET WEST, MANCHESTER,
M1 5NG

CONDITION No. 12 ATTACHED TO PLANNING APPROVAL REF:
128804/FO/2020

SEPTEMBER 2024

Doc Ref: 12,982/AIS/RevA

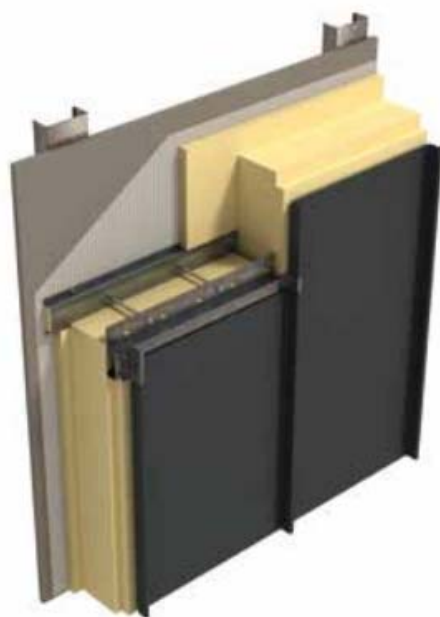
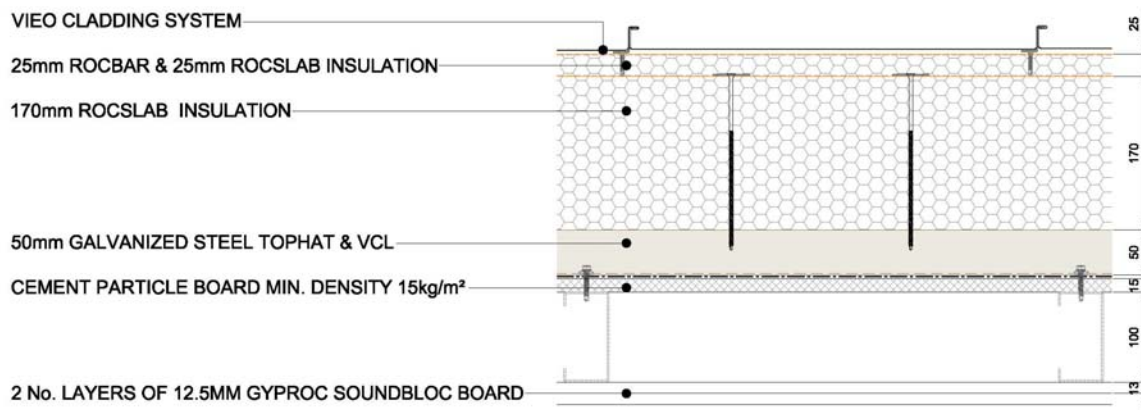
Noise Criteria

- Bedrooms (night time - 23.00 - 07.00) 30 dB LAeq (individual noise events shall not exceed 45 dB L_{Amax,F} by more than 15 times)
- Living Rooms (daytime - 07.00 - 23.00) 35 dB LAeq
- Gardens and terraces (daytime) 55 dB LAeq

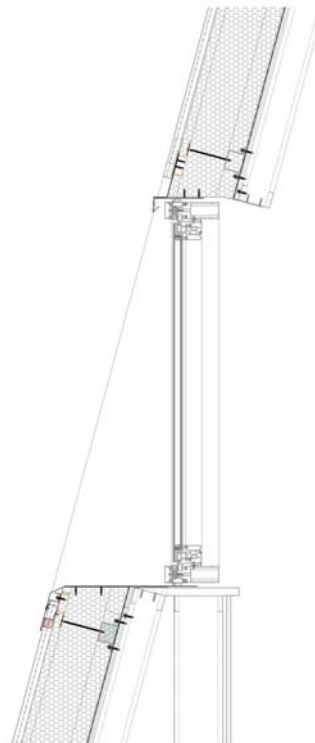
The proposed two-storey roof top extension will be constructed to meet the required noise criteria listed above and will include the following build-ups.

Wall Build-up

The extension walls will be constructed using the Euroclad Vieo metal wall system. The wall build-up incorporates RocSlab insulation, cement particle board and 2no. layers of Gyproc Soundbloc wall board to ensure the target noise criteria is achieved.

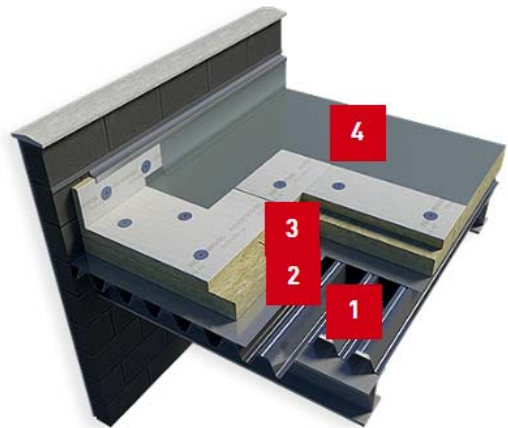


Vieo Warm Wall SFS



Roof Build-up

1. Steel (0.7 mm)
2. Polyethylene/polythene, low density 0.15 mm (0.15 mm)
3. HARDROCK® Multi-Fix (DD) (185 mm + 150 mm)
4. Single Ply Membrane (1.2 mm)



Predicted Airborne Sound Reduction

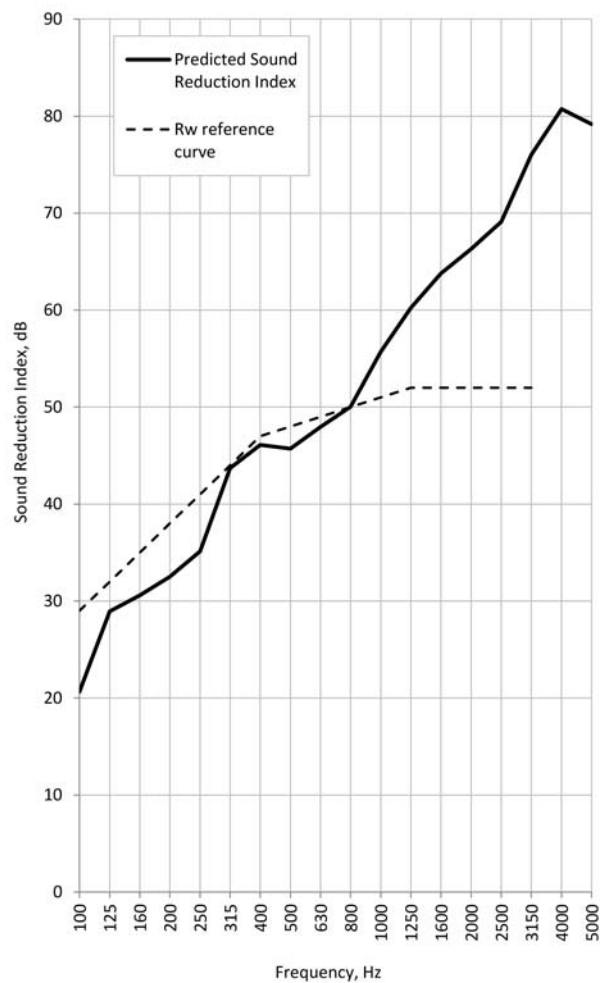


Reference:	A08-0015
Deck Type:	Steel Profile Deck (10 kg/m ²)
Thickness:	0.7mm
Mass Layer:	[None]
Waterproofing:	Single Ply Membrane
Insulation:	335mm ROCKWOOL Hardrock (DD) Multi-Fix
Weight:	63 kg/m ² (approx.)

Freq f Hz	Predicted Sound Reduction Index, dB	
	1/3 Oct	1/1 Oct
50+	26.6	26.9
63+	28.4	
80+	25.9	
100	20.7	24.5
125	28.9	
160	30.6	
200	32.5	35.2
250	35.1	
315	43.7	
400	46.1	46.5
500	45.7	
630	48.0	
800	50.0	53.4
1000	55.7	
1250	60.2	
1600	63.8	65.9
2000	66.3	
2500	69.1	
3150	76.0	78.2
4000	80.7	
5000	79.2	
6300+	75.4	66.9
8000+	70.4	
10000+	63.0	
Average 100-3150	48.3	

+ increased uncertainty

Rating according to BS EN 717-1:2013

 $R_w(C;C_{tr}) = 48 (-3;-10) \text{ dB}$ 

Predicted using data from test report:

DPA Cauberg-Huygen 20151078-03

Glazing

Pilkington Optiphon glass is proposed to all windows within the two-storey extension. This high quality acoustic laminated glass offers an increased acoustic performance and is available in many standard thicknesses.

*‘Pilkington **Optiphon**[™] is the ideal choice of glass in situations where there is excess noise from road, rail or air traffic, or other sources such as factories or nightclubs.’*

The proposed glazing configuration is 8.8/16/6 as shown in the table below taken from Apex Acoustics Report ref: 8319.M1A.

Glazing	Octave band centre frequency, Hz Sound Reduction Index, R dB					R _w dB
	125	250	500	1k	2k	
Pilkington Optiphon 8.8/16/6	25	27	38	48	47	41



Pilkington **Optiphon**[™] - acoustic performance data

Glass types	Acoustic performance data [dB]			Total thickness [mm]
	R _w	C	C _e	
Single glazing				
Pilkington Optiphon ™ 6,8	36	-1	-4	6.8
Pilkington Optiphon ™ 8,8	37	0	-2	8.8
Pilkington Optiphon ™ 10,8	38	-1	-3	10.8
Pilkington Optiphon ™ 12,8	40	-1	-3	12.8
Pilkington Optiphon ™ 16,8	41	-1	-3	16.8
Pilkington Optiphon ™ 20,8	42	-1	-3	20.8
Pilkington Optiphon ™ 24,8	43	-1	-3	24.8
Double insulating glass units				
4 mm - 16 mm - Pilkington Optiphon ™ 6,8	36	-2	-6	26.8
4 mm - 16 mm - Pilkington Optiphon ™ 8,8	39	-3	-7	28.8
6 mm - 16 mm - Pilkington Optiphon ™ 6,8	40	-2	-6	28.8
6 mm - 16 mm - Pilkington Optiphon ™ 8,8	41	-2	-6	30.8
8 mm - 16 mm - Pilkington Optiphon ™ 6,8	42	-3	-7	30.8
8 mm - 16 mm - Pilkington Optiphon ™ 8,8	42	-3	-8	32.8
8 mm - 16 mm - Pilkington Optiphon ™ 10,8	43	-2	-6	34.8
8 mm - 16 mm - Pilkington Optiphon ™ 12,8	43	-2	-6	36.8
10 mm - 16 mm - Pilkington Optiphon ™ 8,8	44	-2	-6	34.8
10 mm - 18 mm - Pilkington Optiphon ™ 8,8	43	-2	-6	36.8
10 mm - 20 mm - Pilkington Optiphon ™ 8,8	46	-2	-6	38.8
10 mm - 16 mm - Pilkington Optiphon ™ 12,8	44	-1	-5	36.8
Pilkington Optilam ™ 9,5 - 20 mm - Pilkington Optiphon ™ 8,8	43	-3	-7	38.3
Pilkington Optilam ™ 14,8 - 20 mm - Pilkington Optiphon ™ 14,8	47	-1	-3	49.6
Pilkington Optiphon ™ 8,8 - 16 mm - Pilkington Optiphon ™ 12,8	48	-2	-7	37.6
Pilkington Optiphon ™ 8,8 - 20 mm - Pilkington Optiphon ™ 12,8	49	-2	-7	41.6
Pilkington Optiphon ™ 10,8 - 24 mm - Pilkington Optiphon ™ 16,8	52	-2	-6	51.6
Pilkington Optiphon ™ 12,8 - 16 mm - Pilkington Optiphon ™ 14,8	51	-2	-6	43.6
Pilkington Optiphon ™ 12,8 - 16 mm - Pilkington Optiphon ™ 16,8	51	-1	-6	45.6
Pilkington Optiphon ™ 12,8 - 20 mm - Pilkington Optiphon ™ 16,8	51	-1	-4	49.6

Ventilation

RW Simon Acoustic EHAS type ventilators are proposed to be fitted above the windows and to meet the noise criteria shown in the table below taken from Apex Acoustics Report ref: 8319.M1A.

Trickle vent	Octave band centre frequency, Hz Element normalised level difference, $D_{n,e}$ dB					$D_{n,e,w}$ dB
	125	250	500	1k	2k	
RW Simon Acoustic EHAS	40	36	34	35	44	38

Simon Acoustic Ventilators

The Simon Acoustic ventilator range is designed to assist in creating aesthetic solutions for all acoustic requirements. All ventilators in our range meet the requirements of Approved Document F & Approved Document E of the Building Regulations.



<i>Model Details</i>	<i>dB closed</i>	<i>dB Open</i>	<i>EA to BS13141-1</i>	<i>Measured Area</i>	<i>Internal Dimension</i>	<i>External Dimension</i>	<i>Slot Size</i>
Acoustic FV	40	32	2830	4080	400x20	431 x 45	340x12
Acoustic SL	39	33	2967	4080	400x18	431 x 45	340x12
Acoustic EMM	39	33	3199	4080	404x31	431 x 45	340x12
Acoustic EHA	38	36	2799	4080	423x54	431 x 45	340x12
Acoustic EHAS	41	38	2799	4080	423x54	431 x 45	340x12
EHA & AEA851	-	41	3912	3925	423x54	420x54	2x (177x12) (10mm land)
EHAS & AEA851	-	42	3912	3925	423x54	420x54	2x (177x12) (10mm land)

Features

- Sound reduction up to 42db open
- All models have been tested in accordance with BS EN ISO 717-1:1997 & BS EN 20140-10:1992
- All models have a minimum Equivalent Area of 2500mm²
- Meets WHO recommended reduction of 33db

Wall Linings and Sealing

Gyproc Soundbloc wall boards are proposed to the inside face of all external walls and ceilings.

Windows are to be appropriately sealed both internally and externally. Acoustic sealant is to be used to seal perimeters and any gaps where sound may escape.

Product Data Sheet

Gyproc® SoundBloc 12.5mm



Gyproc SoundBloc 12.5mm is a plasterboard with a high density noise insulating core.

Where to use

Use it to achieve greater sound insulation levels through walls, ceilings and floors.

Certifications

Environmental Product Declaration (EPD) available
[Click here.](#)



Product information

Composition

The plasterboard is made of a gypsum core between paper liners.

Colour

Face colour: Blue.
Reverse colour: Brown.

DIMENSIONS AND WEIGHTS				
PRODUCT SIZES (mm)	1200 X 2400	1200 X 2700	1200 X 2800	1200 X 3000
Nominal thickness (mm)	12.5	12.5	12.5	12.5
Minimum weight (kg/m ²)	10.3	10.3	10.3	10.3
Edge options	Tapered edge	Tapered edge	Tapered edge	Tapered edge
Number of tapered edges	2	2	2	2
Maximum width tolerance (mm)	+0	+0	+0	+0
Minimum width tolerance (mm)	-4	-4	-4	-4
Maximum length tolerance (mm)	+0	+0	+0	+0
Minimum length tolerance (mm)	-5	-5	-5	-5
Maximum taper width (mm)	80	80	80	80
Minimum taper width (mm)	40	40	40	40
Maximum taper depth (mm)	2.5	2.5	2.5	2.5
Minimum taper depth (mm)	0.6	0.6	0.6	0.6
Squareness: 1200mm width boards (maximum difference in diagonal measurements), 5mm				

NB: Dimensional tolerances. Quality controls are set to meet customer requirements between these maximum and minimum tolerances.