

NOISE MITIGATION STATEMENT

**Retention of One Class E Commercial Unit at Ground Floor Level and Change of Use of the Remainder of the Building to a 12-Bedroom (14-Person) House in Multiple Occupation (Sui Generis), Including Part Ground and First Floor Rear Extensions and Construction of a Mansard Roof Extension
79 London Road, Waterloooville**

Planning Application Reference: APP/26/00150

**Prepared by:
JB Architectural Design Studio
June 2026**

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1. INTRODUCTION

This Noise Mitigation Statement has been prepared in support of the discharge of planning conditions relating to the proposed redevelopment of 79 London Road, Waterlooville.

The approved development comprises the retention of one Class E commercial unit at ground floor level together with the change of use, extension and alteration of the remainder of the building to form a 12-bedroom (14-person) House in Multiple Occupation (Sui Generis), including part ground and first floor rear extensions and construction of a mansard roof extension.

This statement confirms the acoustic mitigation measures that will be incorporated into the development to provide suitable internal living conditions for future occupants.

The proposed mitigation strategy has been developed having regard to the site's location on London Road together with the approved noise mitigation strategy adopted for the adjoining redevelopment at 81 London Road, which is subject to the same principal source of road traffic noise.

This document should be read in conjunction with the approved planning drawings and window schedule.

2. DEVELOPMENT OVERVIEW

The site occupies a prominent position on London Road within Waterlooville Town Centre where environmental noise is principally associated with road traffic.

The proposed development has therefore been designed to incorporate enhanced acoustic mitigation measures to ensure satisfactory internal living conditions for future occupants.

The proposed mitigation strategy combines:

- Enhanced acoustic glazing.
- Acoustic trickle ventilation.
- Single-room mechanical ventilation.
- Enhanced wall construction.
- Enhanced roof construction.

The combined performance of these measures will provide an appropriate level of mitigation against external noise sources.

3. APPLICABLE STANDARDS

The mitigation measures contained within this statement have been prepared having regard to:

- BS8233:2014 – Guidance on Sound Insulation and Noise Reduction for Buildings.
- Approved Document F – Ventilation.
- Approved Document L – Conservation of Fuel and Power.
- The Environmental Health consultation responses.
- The approved mitigation strategy adopted for the adjoining development at 81 London Road.

4. VENTILATION STRATEGY

The development will utilise a combination of acoustic background ventilation together with decentralised single-room mechanical ventilation to maintain good indoor air quality whilst minimising the ingress of external road traffic noise.

Each bedroom fronting London Rd will be provided with:

- Acoustic trickle ventilators integrated within the window frame providing a minimum acoustic performance of 36dB Dn,e,w (or equivalent approved).
- A dedicated single-room continuous mechanical ventilation unit serving the individual bedroom and associated en-suite facilities, designed in accordance with Approved Document F.
- Openable window elements providing purge ventilation when external conditions allow.

The acoustic trickle ventilators allow the required background ventilation rates to be achieved whilst maintaining the acoustic integrity of the façade with windows closed.

The single-room mechanical ventilation units will provide continuous background ventilation, maintaining indoor air quality and reducing reliance on opening windows during periods of elevated external noise.

The final system shall be installed in accordance with the manufacturer's recommendations and the approved Building Regulations ventilation strategy.

5. EXTERNAL WALL CONSTRUCTION

The external wall construction will comprise the existing masonry structure upgraded internally with insulation and plasterboard lining in accordance with the approved construction drawings.

The completed wall construction is expected to provide a high level of airborne sound insulation suitable for the site's location adjacent to London Road.

6. ROOF CONSTRUCTION

The proposed mansard roof extension will comprise an insulated timber roof construction incorporating high-performance insulation and waterproof membrane over the structural deck.

The completed roof construction will provide enhanced acoustic performance consistent with modern Building Regulations requirements.

7. WINDOWS AND GLAZING SPECIFICATION

All habitable room windows shall comprise enhanced acoustic double-glazed units designed for locations exposed to road traffic noise.

The glazing specification shall be equivalent to:

4-10-6 Double Glazed Unit (20mm overall thickness)

or another glazing specification capable of achieving equal or better acoustic performance.

Acoustic trickle ventilators shall be incorporated within the window frames to maintain the required background ventilation whilst allowing windows to remain closed during periods of elevated external noise.

Window locations and specifications are identified within the accompanying Window Schedule.

8. BUILDING SERVICES

Mechanical ventilation systems shall be installed in accordance with the manufacturer's recommendations and commissioned prior to occupation.

Background ventilation shall be maintained through acoustic trickle ventilators with purge ventilation available through opening window lights.

The proposed strategy has been developed to ensure compliance with Approved Document F whilst maintaining the acoustic performance of the building envelope.

9. NOISE MITIGATION STRATEGY

The proposed noise mitigation measures comprise:

- Enhanced acoustic double glazing.
- Acoustic trickle ventilators.
- Single-room mechanical ventilation.
- Enhanced external wall construction.
- Enhanced insulated roof construction.

The mitigation strategy has been developed having regard to the site's location and the approved approach successfully adopted for the adjoining redevelopment at 81 London Road.

Collectively these measures provide a robust acoustic design strategy that will minimise the effects of road traffic noise whilst maintaining appropriate levels of ventilation and occupant comfort.

10. CONCLUSION

This Noise Mitigation Statement confirms the mitigation measures that will be incorporated into the development at 79 London Road.

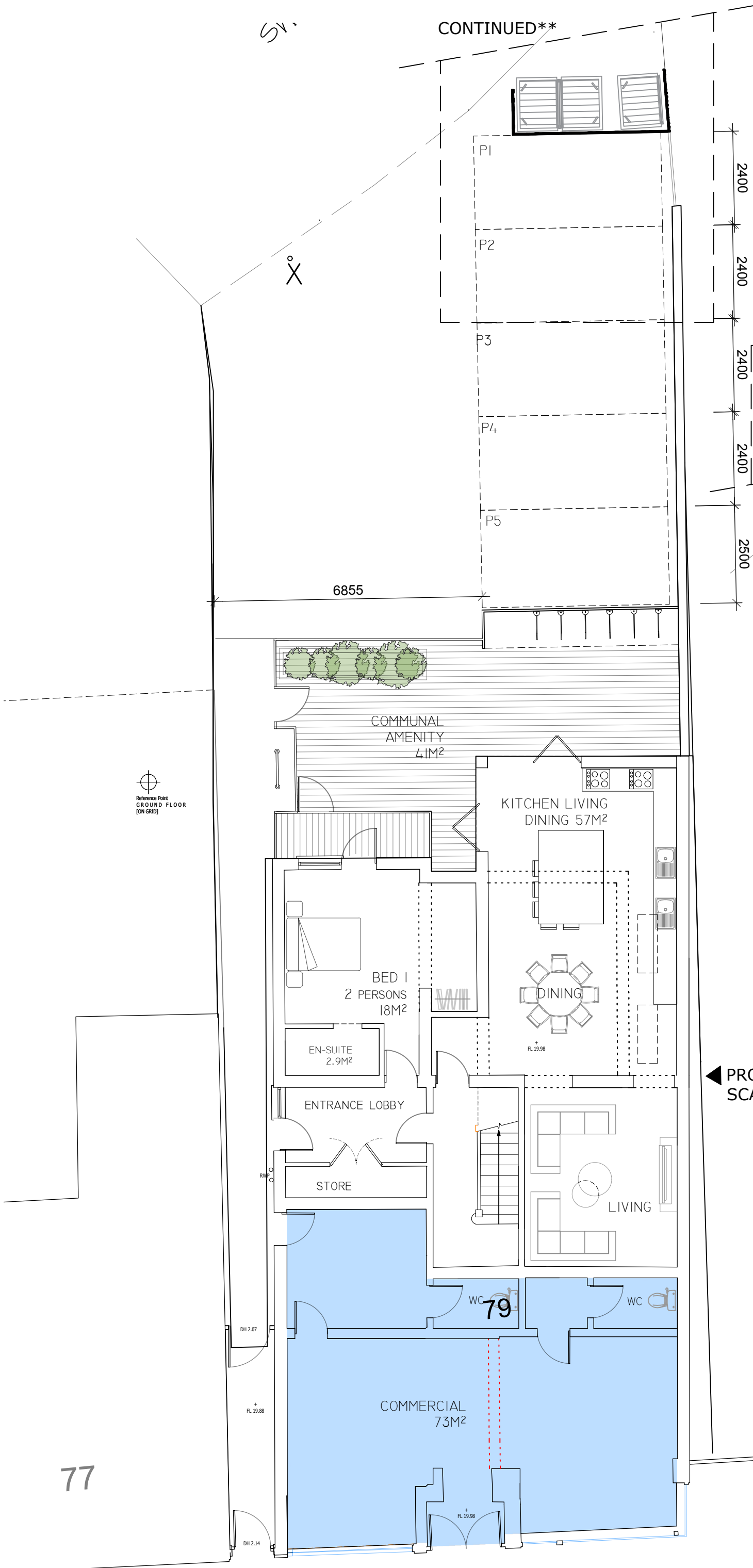
The combination of enhanced glazing, acoustic background ventilation, single-room mechanical ventilation and upgraded building fabric forms the committed noise mitigation strategy for the development.

The proposed specification represents a practical and robust approach to mitigating road traffic noise associated with London Road and will be incorporated as part of the completed development

Appendices

Appendix A

Approved Floor Plans



GENERAL NOTES:
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All dimensions to be checked on site prior to commencement of any construction works and JB Architectural Design Studio notified of any discrepancy via the Supervising Officer.

Figured dimensions are to be used in preference to scaled dimensions. However for Planning purposes scaling is permitted.

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All works are to comply with the current edition of the Building Regulations and British Standards.

It is the contractors responsibility to check all dimensions and quantities on site prior submitting his tender for the works.

Construction Design and Management (CDM) REGULATIONS 2015, RISK ASSESSMENT.

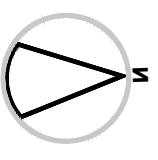
M & E
Standards required - CIBSE, BAFE, NICEIC, Gas safe. Dampers to ducting where required. Fire stopping where required. Light fittings to be Fire Rated where ceilings are fire separation. Fire Officer Testing and Certificate.

BUILDING REGULATIONS
To Building regulation and British Standard. Requirements in all respects. To Fire Officer requirements in all respects. The Building Contractor must include for all works required by the M&E Contractors.

**** CONTINUED SITE PLAN
SCALE 1:100**

KEY:
BLUE HATCH DENOTES
DEMISE OF COMMERCIAL
PREMISES

**PROPOSED GROUND FLOOR
SCALE - 1:100**



SCALE 1:100
0m
5
10

CLIENT BREWHOUSE DEVELOPMENTS		B
PROJECT 79 LONDON ROAD, WATERLOOVILLE, PO7 7EL		DRAWING NO. 100.01
ISSUE 01.01.2026 RE-ISSUE	SCALE AS SHOWN @A3	PROJECT NO. 26.01
DESCRIPTION PROPOSED GF		
CONCEPT		
DRAFT		PLANNING
FINAL		

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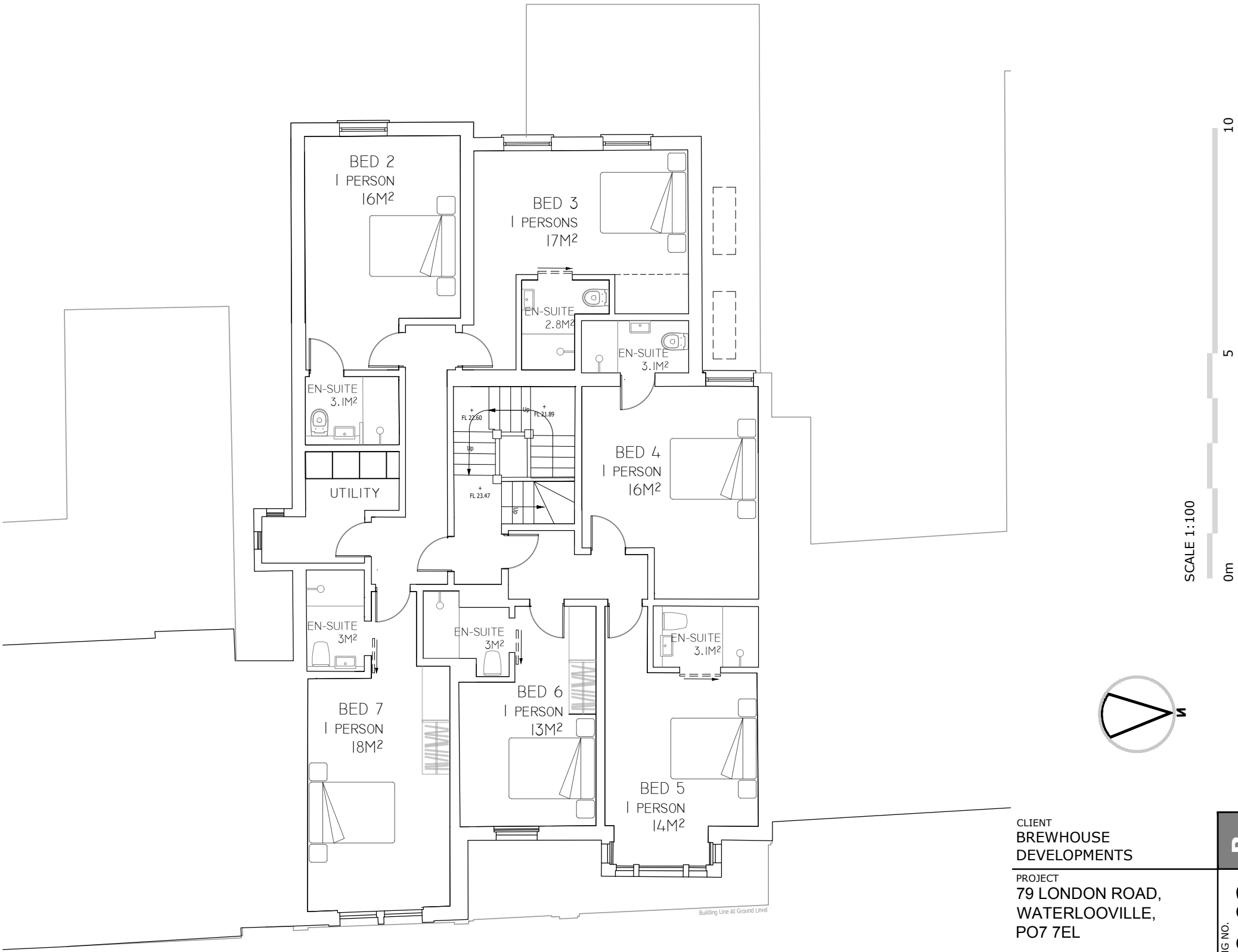
All works are to comply with the current edition of the Building Regulations and British Standards.

It is the contractors responsibility to check all dimensions and quantities on site prior submitting his tender for the works.

Construction Design and Management (CDM) REGULATIONS 2015, RISK ASSESSMENT.

M & E
Standards required - CIBSE, BAFE, NICEIC, Gas safe. Dampers to ducting where required. Fire stopping where required. Light fittings to be Fire Rated where ceilings are fire separation. Fire Officer Testing and Certificate.

BUILDING REGULATIONS
To Building regulation and British Standard. Requirements in all respects. To Fire Officer requirements in all respects. The Building Contractor must include for all works required by the M&E Contractors.



PROPOSED FIRST FLOOR
SCALE - 1:100

CLIENT BREWHOUSE DEVELOPMENTS		B
PROJECT 79 LONDON ROAD, WATERLOOVILLE, PO7 7EL		DRAWING NO. 100.02
ISSUE 01.01.2026 RE-ISSUE	SCALE AS SHOWN @A3	PROJECT NO. 26.01
DESCRIPTION PROPOSED FIRST FLOOR		
CONCEPT	PLANNING	
	DRAFT	FINAL

GENERAL NOTES:
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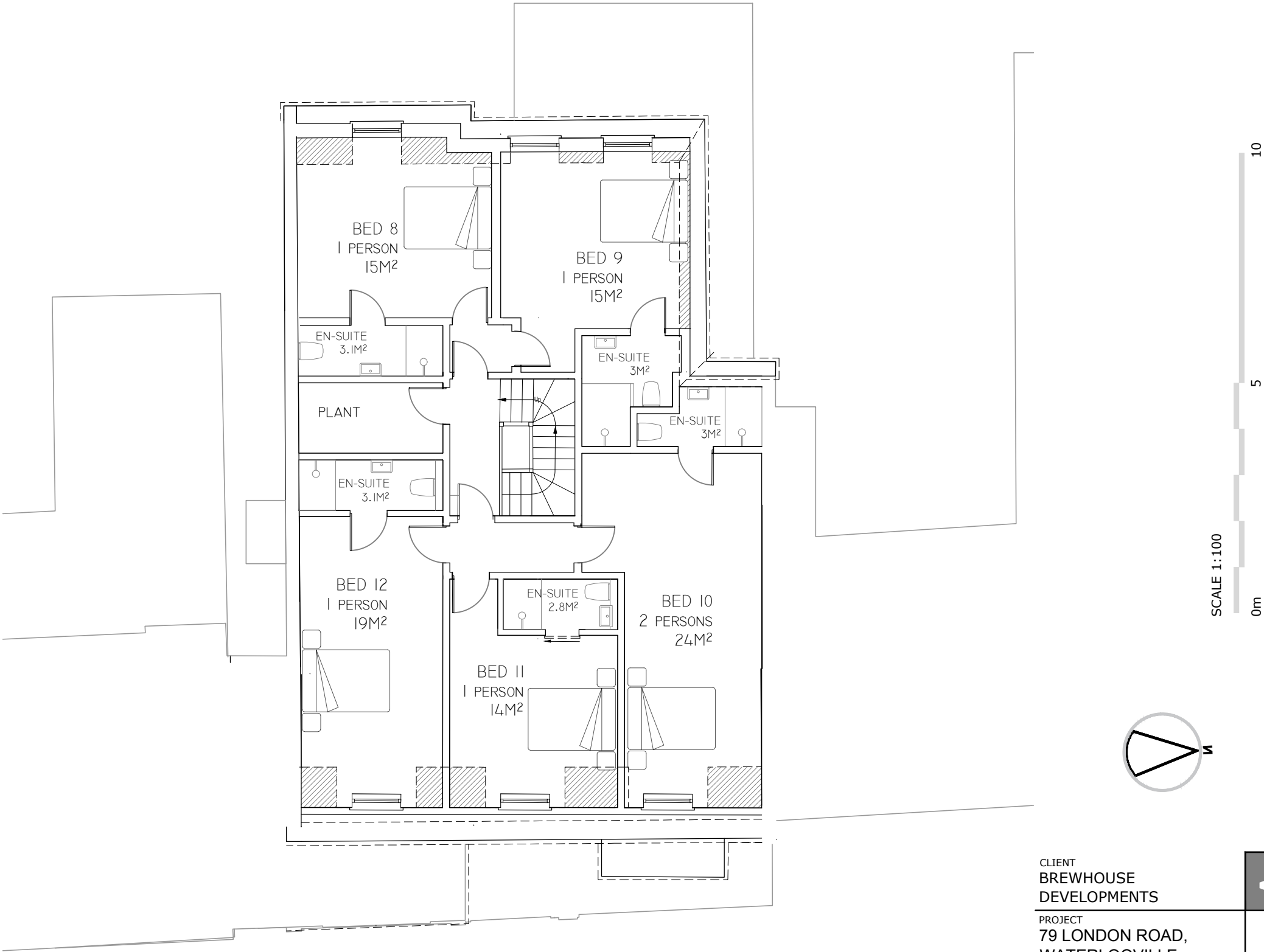
All works are to comply with the current edition of the Building Regulations and British Standards.

It is the contractors responsibility to check all dimensions and quantities on site prior submitting his tender for the works.

Construction Design and Management (CDM) REGULATIONS 2015, RISK ASSESSMENT.

M & E
Standards required - CIBSE, BAFE, NICEIC, Gas safe. Dampers to ducting where required. Fire stopping where required. Light fittings to be Fire Rated where ceilings are fire separation. Fire Officer Testing and Certificate.

BUILDING REGULATIONS
To Building regulation and British Standard. Requirements in all respects. To Fire Officer requirements in all respects. The Building Contractor must include for all works required by the M&E Contractors.



PROPOSED SECOND FLOOR
SCALE - 1:100

KEY:

= DIMINISHING HEADROOM

CLIENT BREWHOUSE DEVELOPMENTS		A
PROJECT 79 LONDON ROAD, WATERLOOVILLE, PO7 7EL		DRAWING NO. 100.03
ISSUE 01.01.2026 RE-ISSUE	SCALE AS SHOWN @A3	PROJECT NO. 26.01
DESCRIPTION PROPOSED SECOND FLOOR		
CONCEPT	PLANNING	
	DRAFT	FINAL

Appendix B

Window

Appendix C

Acoustic trickle ventilator performance data.

Single-room mechanical ventilation product information.

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.



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

OPTIONS

- » Can be supplied on Glazed-in carrier bar » Some models available with humidity control

Model Details	Internal Colour options	External Colour options
Simon Acoustic FV	Any Standard Simon FV colour	Any Standard RAL or Silver anodised
Simon Acoustic SL	Any Standard RAL or Silver anodised	Any Standard RAL or Silver anodised
Simon Acoustic EMM	Any Standard RAL	Any Standard RAL or Silver anodised
Simon Acoustic EHA	Any Standard RAL	Any Standard RAL or Silver anodised
Simon Acoustic EHAS	Any Standard RAL	Any Standard RAL or Silver anodised
Simon EHA & AEA851	Any Standard RAL	Any Standard RAL
Simon EHAS & AEA851	Any Standard RAL	Any Standard RAL

R.W. Simon Limited

System Works, Hatchmoor Industrial Estate, Torrington, Devon EX38 7HP United Kingdom

Tel: 01805 623721 Fax: 01805 624578 Email: info@rwsimon.co.uk Web: www.rwsimon.co.uk



Simon Acoustic Ventilators

Model Details	dB closed	dB Open	EA to BS13141-1	Measured Area	Internal Dimension	External Dimension	Slot Size
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)

ACOUSTIC FV

- » Supplied with PVCu internal flap unit and aluminium external canopy
- » Rod control option available

ACOUSTIC SL

- » Manufactured full from aluminium
- » Rod control option available

ACOUSTIC EMM

- » Supplied with PVCu internal unit and aluminium external canopy
- » Uses a hygromatic sensor to open and close dependent on the quantity of moisture in the room

ACOUSTIC EHA

- » Supplied with PVCu internal unit and aluminium external canopy

ACOUSTIC EHAS

- » Supplied with PVCu internal unit and aluminium external canopy
- » Includes additional acoustic sleeve to increase acoustic properties

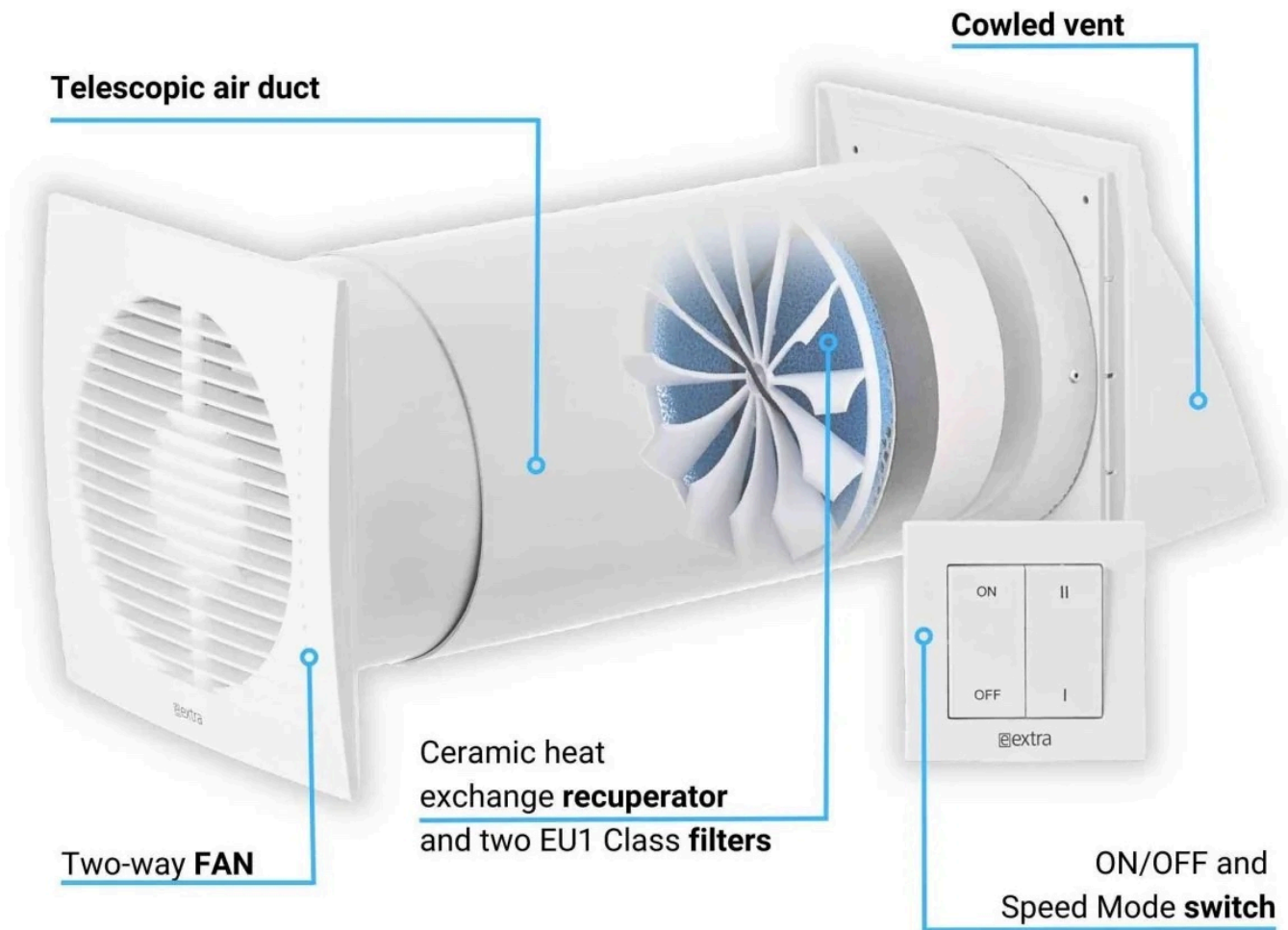
SIMON EHA & AEA851

- » Supplied with PVCu internal unit and external canopy

SIMON EHAS & AEA851

- » Supplied with PVCu internal unit and external canopy
- » Includes additional acoustic sleeve to increase acoustic properties

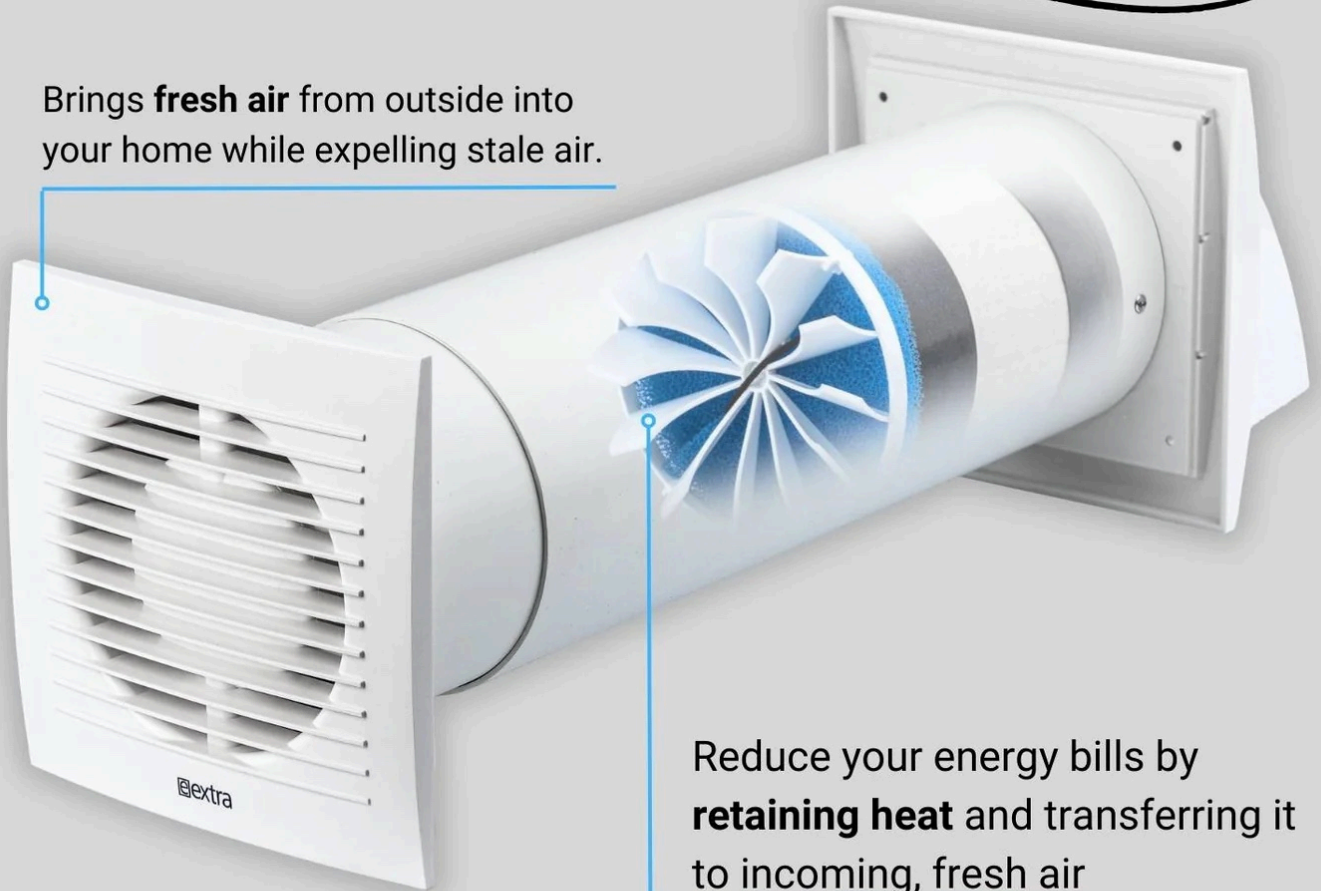




Heat Recovery Ventilator for single room



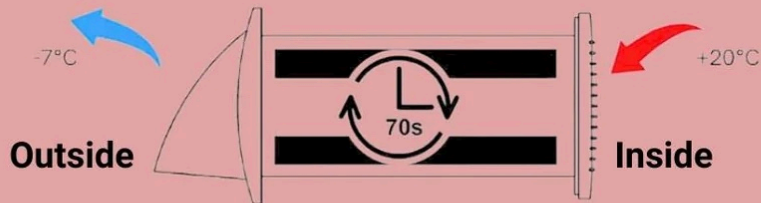
Brings **fresh air** from outside into your home while expelling stale air.



Reduce your energy bills by **retaining heat** and transferring it to incoming, fresh air

How does it work?

Heat **Energy recovery** takes place thanks to the reversible operation of the fan, which **consists of 2 cycles**.

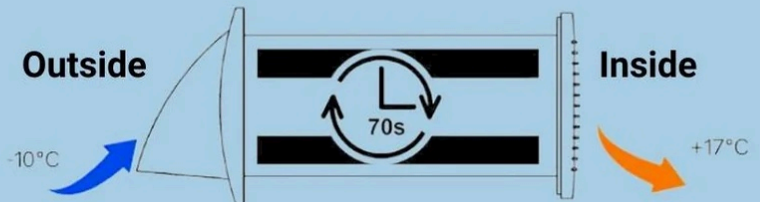


I cycle

For the first 70 seconds, the fan exhausts the room air and the heat exchanger absorbs the heat.

II cycle

Fan changes the direction of rotation and fresh air flows into the room, which is warmed as it flows through the heat exchanger.



After 70 seconds, the fan changes direction and cycle I begins.



Appendix D

Typical Construction Details

Report Number BTC 10724A

**ACOUSTIC TEST REPORT COVERING
LABORATORY SOUND INSULATION TESTS TO
BS EN ISO 140-3:1995 AND
BS EN ISO 140-6:1998 ON A 213mm TIMBER
JOIST FLOOR WITH A GYPROC MF SUSPENDED
CEILING INCORPORATING ACOUSTIC HANGERS.**

Test Date: 5th August 1999

Customer:

British Gypsum Ltd
Head Office
East Leake
Loughborough
Leicestershire
LE12 6HX

Customer: **British Gypsum Ltd**

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ACOUSTIC TEST REPORT COVERING LABORATORY SOUND INSULATION TESTS TO BS EN ISO 140-3:1995 AND BS EN ISO 140-6:1998 ON A 213mm TIMBER JOIST FLOOR WITH A GYPROC MF SUSPENDED CEILING INCORPORATING ACOUSTIC HANGERS.

DESCRIPTION

195mm x 45mm timber joists are laid at 450mm centres. A walking surface of 18mm T&G chipboard is screw fixed to the top of the joists using 42mm Gyproc Drywall screws. The perimeter of the floor is sealed to the test aperture with Gyproc sealant.

A Gyproc MF suspended ceiling is fitted to the underside of the joists. Gyproc MF6A Perimeter Channel is fixed to the perimeter of the aperture using 25mm Drywall screws. The Gyproc Perimeter Channel is fixed so that the distance from the underside of the chipboard walking surface to the underside of the Gyproc Perimeter Channel is 277mm. Gyproc Soffit Cleats are fixed to the ends of Gyproc Acoustic Hangers using MF11 nuts and bolts. The Gyproc Acoustic Hangers are fixed, at 1200mm centres, along one side of each intermediate joist, forming a 1200mm x 900mm grid of hangers. The Gyproc Acoustic Hangers are fixed to the timber joists so that the 'L' bend of the Acoustic Hanger is level with the base of the joists. Each Gyproc Acoustic Hanger is fixed to the timber joist using three 25mm Drywall screws.

Gyproc MF7 Primary Support Channels are fixed to the bottom of the Gyproc Soffit Cleats using two 13mm Gyproc Wafer Head Jack Point screws. The Gyproc MF7 Primary Support Channels are placed at 900mm centres and run parallel to the timber joists. Gyproc MF5 Ceiling Section is placed perpendicular to the joists and Gyproc MF7 Primary Support Channel and spaced at 450mm centres. The Gyproc MF5 Ceiling Section is clip fixed to the Gyproc MF7 Primary Support Channels using Gyproc MF9 Connecting Clips.

80mm thick Isowool 1000 is placed into the cavity above the framework.

The framework is clad with a double layer of 12.5mm Gyproc SoundBloc. The inner layer is fixed to the Gyproc MF5 Ceiling Section at 230mm centres in the field of the boards and at 150mm centres around the perimeter of the boards using 25mm Gyproc Drywall screws. The outer layer of Gyproc SoundBloc is fixed back to the Gyproc MF5 Ceiling Sections at 230mm centres in the field of the boards and at 150mm centres around the perimeter of the boards using 36mm Gyproc Drywall screws. All board joints are staggered between layers.

The perimeter of the ceiling was sealed to the test aperture with Gyproc Sealant. All outer layer board joints were taped with adhesive tape.

Customer: **British Gypsum Ltd**

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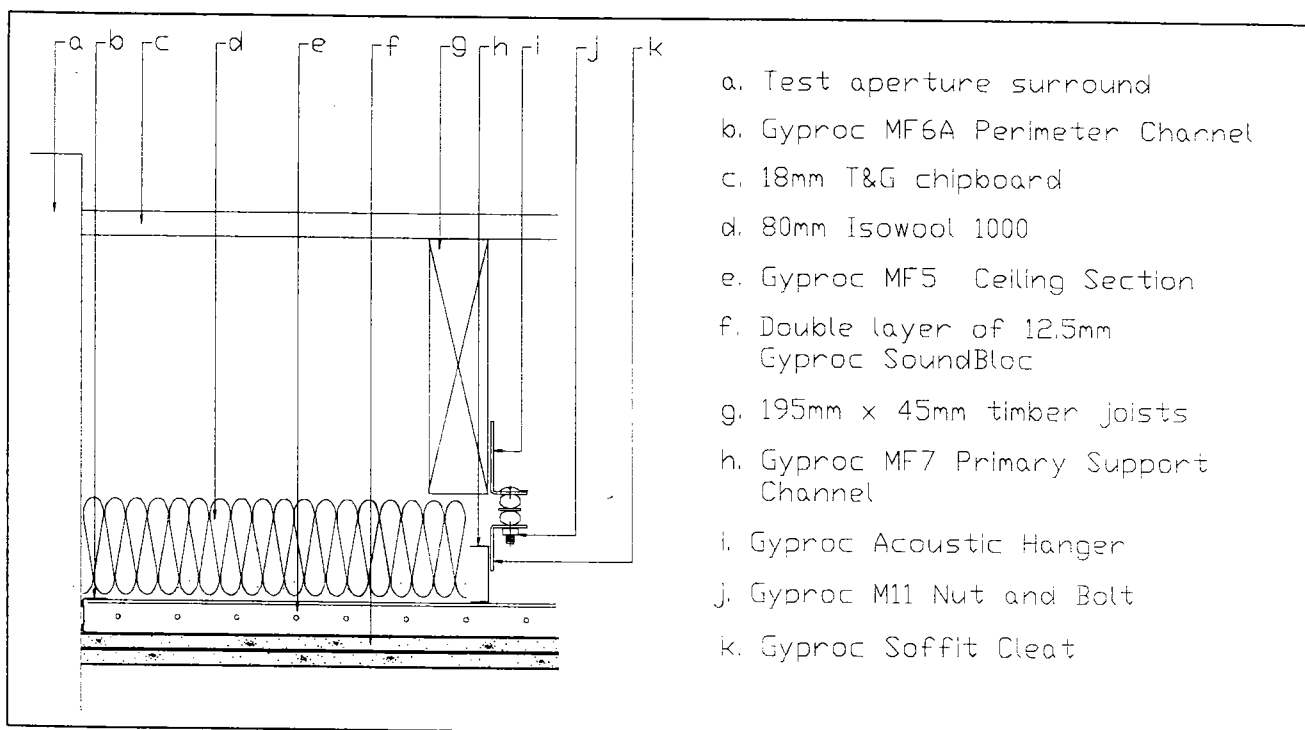


Figure 1: Section through test specimen

The descriptions of individual components making up the test specimen were provided by the customer and were checked for accuracy wherever possible.

RESULTS

Weighted Airborne Sound Reduction Index

$R_w (C; C_{tr}) = 63 (-3; -8) \text{ dB}$

Weighted Normalised Impact Sound Pressure Level $L_{n,w} = 54 \text{ dB}$

For full data see pages 6 -9.

Tested in accordance with BS EN ISO 140-3:1995 and BS EN ISO140-6:1998

Airborne sound Insulation test rated in accordance with BS EN ISO 717-1:1997

Impact sound insulation test rated in accordance with BS EN ISO 717-2:1997

Customer: British Gypsum Ltd

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MATERIALS

Boards

Gyproc SoundBloc

Nominally 12.5mm (thick) x 1200mm (wide) x 2400mm (long) Gyproc SoundBloc manufactured by British Gypsum Limited at Kirkby Thore works.

Average thickness:	12.45 mm
Average surface density:	10.97 kg/m ²
Board code:	27-175-9 20:38
Nominal moisture content:	< 1%.

The surface density was calculated using the actual weight and size of the boards used for the test specimens. The moisture content of plasterboard has been established from measurements made over many tests using samples dried to constant weight in an oven at 40°C.

Timber

- (i) Nominally 18mm (thick) x 600mm (wide) x 2400mm (long) grade P5 Caberfloor, manufactured by Caberboard Ltd, Station Road, Cowie, Stirling, Stirlingshire, FK7 7BQ

Average thickness	18.11mm
Surface density:	11.29 kg/m ²
Board Code:	02799 21:55

Surface density calculated using average weight and dimensions of the 18mm T&G chipboard used in test specimen.

- (ii) Softwood timber joists nominally 195 mm (deep) x 45mm (wide) of SC3 grade timber.

Insulation

Isowool 1000

Nominally 80mm thick glass mineral wool. Manufactured and supplied by British Gypsum – Isover Ltd.

Average weight	11.7 kg
Average surface density	0.86 kg/m ²
Density	10.79 kg/m ³

Surface density calculated using actual weight of a pack of 80mm thick Isowool 1000 used in the test specimen.

Customer: **British Gypsum Ltd**

Fasteners

- (i) 25mm, 36mm and 42mm Gyproc Drywall screws
- (ii) 13mm Gyproc Wafer Head Jack Point screws
- (iii) Gyproc MF11 nut and bolts

All fasteners supplied by British Gypsum Limited.

Metal Components

- (i) Gyproc Acoustic Hangers
- (ii) Gyproc MF5 Ceiling Section manufactured from 0.55mm gauge mild steel.
- (iii) Gyproc MF6A Perimeter Channel manufactured from 0.5mm gauge mild steel.
- (iv) Gyproc MF7 Primary Support Channel manufactured from 0.9mm gauge mild steel.
- (v) Gyproc MF9 Connecting Clips.
- (vi) Gyproc MF12 Soffit Cleats manufactured from 1.6mm gauge mild steel.

All metal components supplied by British Gypsum Limited.

Where measurements could not be taken then the weight and dimensions were provided by the customer or the manufacturer e.g. from material labelling. Material information was recorded according to procedure MAT/1.

TEST PROCEDURE

The test specimen (3.16m x 3.16m) is constructed in a floor dividing two reverberant rooms of approximately 98m³ and 101m³. The accuracy of the test method conforms to BS EN 20140-2: 1993, the test procedures used were 140/3 issue 1 (airborne) and 140/6 issue 1 (impact). Broad-band white noise was used to measure the level differences and broad-band pink noise was used to measure the reverberation times. Third octave band pass filters were used in real time mode. Four impact machine positions were used and placed more than 0.5m away from each other and the edge of the floor. See appendix for further information.

Report Author:



Chris Oakton
Technologist

Report Approved by:



Eur Ing Paul Howard B.Sc. (Hons.), C.Eng., MIOA
Head of Laboratory
The Building Test Centre

Report Date:

12 August, 1999

Customer: British Gypsum Ltd

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LABORATORY AIRBORNE SOUND INSULATION TEST - BS EN ISO 140-3:1995

Test Code: **V10724AA**

Test Date: **05/08/99**

Specimen Area, S = **9.99 m²**

	Room T3	Room T4
Room Volume, m ³ :	98	101
Temperature, deg.C:	22.1	23
Rel. Humidity, %RH:	67.2	64.6

Freq Hz	Test Room T3 to Test Room T4						R dB	U.Dev. dB	R 1/1 Oct dB
	Source dB	Rec. (uc) dB	Bgrnd dB	Rec. (corr) dB	Rev.time Sec	Corr. dB			
50	64.9	51.5	27.6	51.5	2.04	1.0	14.4		
63	70.2	46.6	17.6	46.6	3.41	3.2	26.8		18.8
80	81.1	48.3	16.1	48.3	1.20	-1.3	31.5		
100	87.8	47.6	15.9	47.6	1.04	-1.9	38.3	5.7	
125	95.2	46.7	9.0	46.7	0.94	-2.4	46.1	0.9	41.6
160	99.6	53.1	17.7	53.1	1.07	-1.8	44.7	5.3	
200	101.7	54.4	17.3	54.4	1.41	-0.6	46.7	6.3	
250	100.3	51.0	8.5	51.0	1.80	0.5	49.8	6.2	49.4
315	100.0	44.4	8.0	44.4	1.85	0.6	56.2	2.8	
400	98.3	37.7	9.5	37.7	1.71	0.2	60.8	1.2	
500	97.5	35.3	6.6	35.3	1.71	0.2	62.4	0.6	61.9
630	96.7	33.9	5.5	33.9	1.60	0.0	62.8	1.2	
800	97.3	30.9	4.4	30.9	1.71	0.2	66.6		
1 000	99.4	32.9	6.8	32.9	1.88	0.7	67.2		67.5
1 250	101.3	33.1	5.3	33.1	1.96	0.8	69.0		
1 600	99.2	31.0	5.8	31.0	1.98	0.9	69.1		
2 000	101.0	33.1	6.3	33.1	1.93	0.8	68.7		69.1
2 500	101.8	32.8	6.6	32.8	1.91	0.7	69.7		
3 150	101.5	31.9	7.6	31.9	1.88	0.7	70.3		
4 000	96.7	23.5	10.3	23.3	1.72	0.3	73.7		73.1
5 000	102.7	22.8	10.7	22.5	1.51	-0.3	79.9		
6 300									
8 000									
10 000									

Single Figure Ratings
BS EN ISO 717-1: 1997

Rw

dB

63

C

dB

-3

Ctr

dB

-8

Total U. Dev., dB

30.2

Background Corrected

(100-5000)

-2

-8

RT's > factor 1.5 apart

(50-3150)

-10

-24

Tested Serially/Real Time

(50-5000)

-9

-24

Tested By:

[Signature]

Checked By:

[Signature]

Test Procedure: 140/3/issue 1

Worksheet: MSOFFICE\EXCEL\140\140_3_1.XLS

Customer: **British Gypsum Ltd**

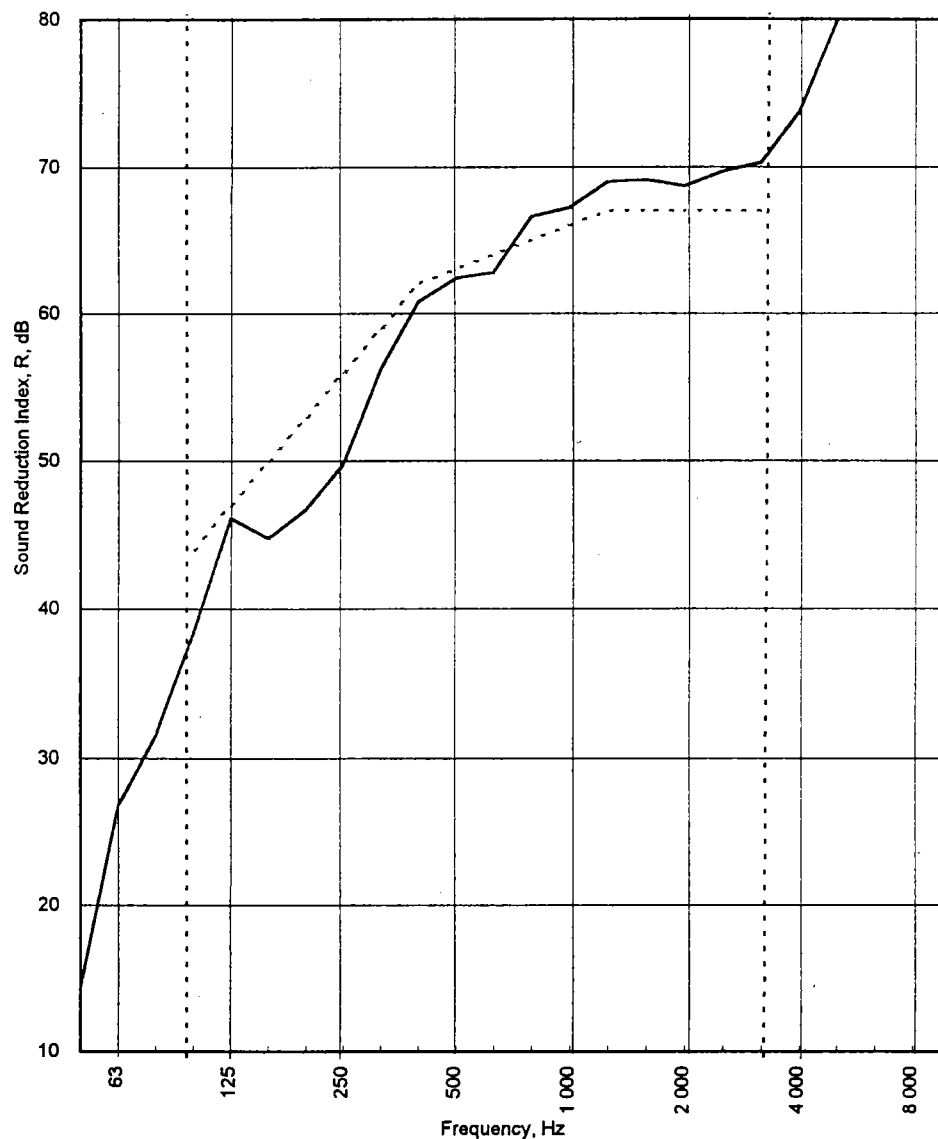
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Test Code:
V10724AA
Test Date:
05/08/99

Freq. Hz	R dB
50	14.4
63	26.8
80	31.5
100	38.3
125	46.1
160	44.7
200	46.7
250	49.8
315	56.2
400	60.8
500	62.4
630	62.8
800	66.6
1 000	67.2
1 250	69.0
1 600	69.1
2 000	68.7
2 500	69.7
3 150	70.3
4 000	73.7
5 000	79.9
6 300	
8 000	
10 000	



Rating according to
BS EN ISO 717-1:1997

R_w (C;Ctr) = 63 (-3;-8) dB

Max dev. 6.3 dB at 200 Hz

Evaluation based on laboratory
measurement results obtained by
an engineering method:

C₅₀₋₃₁₅₀ = -10 dB

C₅₀₋₅₀₀₀ = -9 dB

C₁₀₀₋₅₀₀₀ = -2 dB

C_{tr,50-3150} = -24 dB

C_{tr,50-5000} = -24 dB

C_{tr,100-5000} = -8 dB

Customer: **British Gypsum Ltd**

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LABORATORY IMPACT SOUND INSULATION TEST - BS EN ISO 140-6:1998

Test Code: **V10724AI**

Test Date: **05/08/99**

Specimen Area, S = **9.99 m²**

Room T3 Room T4

Room Volume, m³: **98 101**
Temperature, deg.C: **22 23**
Rel. Humidity, %RH: **67 64.6**

Freq Hz	Test Room 4 to Test Room 3										Ln dB	U.Dev. dB	Ln 1/1 Oct. dB
	Imp.L1 dB	Imp.L2 dB	Imp.L3 dB	Imp.L4 dB	SD dB	Li (uc) dB	BKGD dB	Li (corr) dB	Rev.time Sec	Corr. dB			
50	62.1	61.7	65.2	63.1	1.6	63.3	15.3	63.3	2.52	-2.0	61.3		
63	59.6	59.6	62.9	61.4	1.6	61.1	20.6	61.1	2.39	-1.7	59.4		65.2
80	63.4	63.9	65.2	61.8	1.4	63.7	24.9	63.7	3.36	-3.2	60.5		
100	64.7	65.7	61.3	62.0	2.1	63.8	7.3	63.8	3.26	-3.1	60.7	4.7	
125	65.1	65.6	59.5	61.9	2.9	63.7	1.6	63.7	2.70	-2.3	61.4	5.4	66.9
160	66.8	65.7	63.3	64.6	1.5	65.3	0.8	65.3	2.34	-1.7	63.6	7.6	
200	62.9	62.8	61.8	63.0	0.6	62.7	5.8	62.7	1.49	0.3	63.0	7.0	
250	59.4	58.7	58.7	61.2	1.2	59.6	0.8	59.6	1.64	-0.1	59.5	3.5	65.0
315	55.5	52.6	54.1	55.2	1.3	54.5	5.6	54.5	1.54	0.2	54.7		
400	54.3	53.0	53.5	53.4	0.5	53.6	9.9	53.6	1.61	0.0	53.6		
500	55.0	54.3	55.3	55.5	0.5	55.0	4.3	55.0	1.60	0.0	55.0	1.0	58.7
630	52.1	52.5	53.7	53.5	0.8	53.0	4.1	53.0	1.61	0.0	53.0		
800	52.5	51.4	51.3	51.4	0.6	51.7	7.4	51.7	1.73	-0.3	51.4		
1 000	50.2	51.3	50.0	51.0	0.6	50.7	6.7	50.7	1.82	-0.6	50.1		54.6
1 250	46.2	48.5	45.9	47.1	1.2	47.0	4.7	47.0	1.70	-0.3	46.7		
1 600	42.8	45.6	43.4	44.3	1.2	44.2	5.7	44.2	1.71	-0.3	43.9		
2 000	40.2	43.0	40.1	40.5	1.4	41.1	6.0	41.1	1.70	-0.3	40.8		46.4
2 500	37.4	40.1	37.1	37.0	1.5	38.1	6.9	38.1	1.57	0.1	38.2		
3 150	36.2	38.0	35.0	34.3	1.6	36.1	8.5	36.1	1.51	0.2	36.3	0.3	
4 000	31.3	32.4	29.1	28.8	1.7	30.7	9.7	30.7	1.36	0.7	31.4		37.7
5 000	24.7	24.5	21.8	21.2	1.8	23.3	11.0	23.0	1.22	1.2	24.2		
6 300													
8 000													
10 000													

Single Figure Rating **Ln,w 54 dB**
ISO 717-2:1997

Total U. Dev., dB **29.5**

Background Corrected

RT's > factor 1.5 apart

Tested Serially [✓] Real Time []

Tested By: *L. Dahlen*

Checked By: *R. W. A.*

Test Procedure: 140/6/issue 1

Worksheet: MSOFFICE\EXCEL\140\140_6.XLS

Customer: **British Gypsum Ltd**

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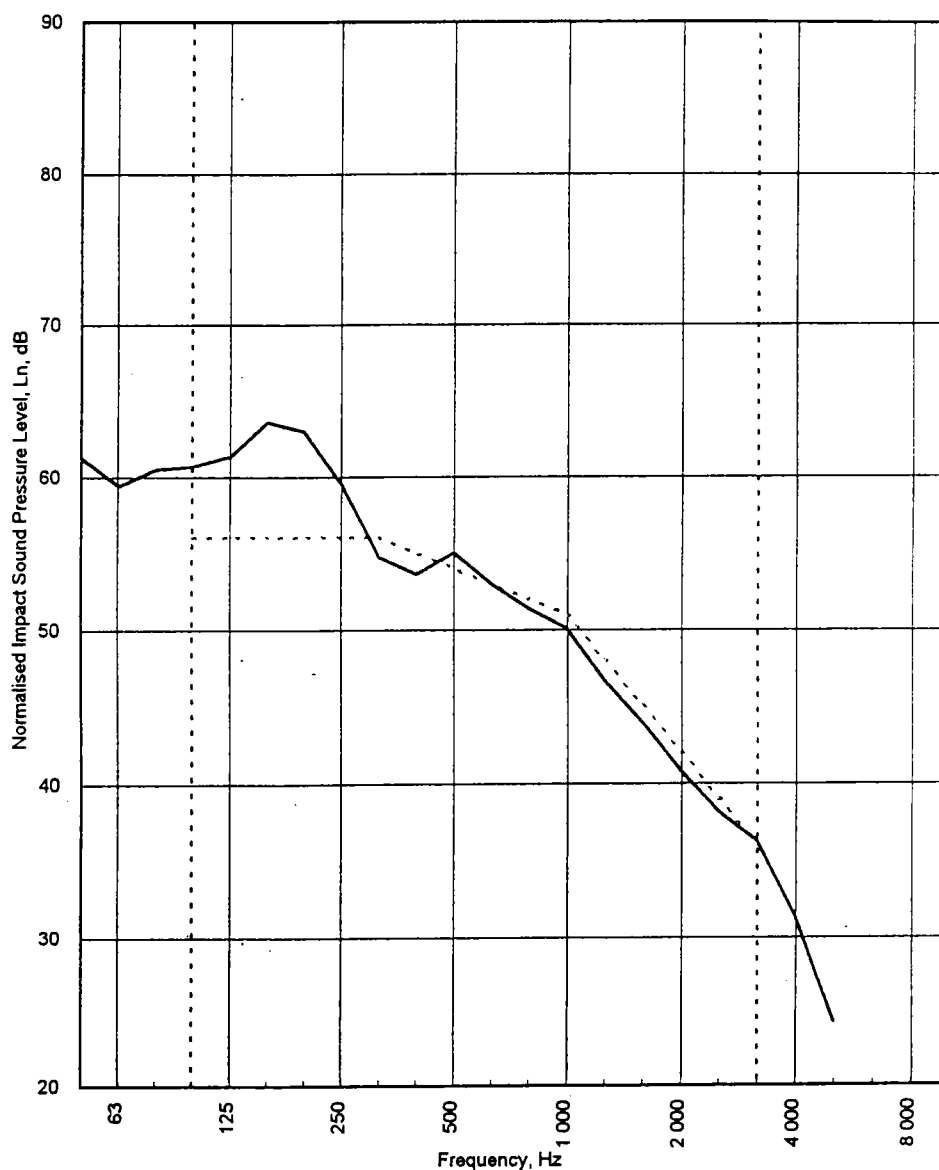
The Building Test Centre

Fire Acoustics Structures

The Building Test Centre
British Gypsum Limited
East Leake
Loughborough
Leicestershire LE12 6NP
Tel: 0115 945 1564
Fax: 0115 345 1562

Test Code:
V10724AI
Test Date:
05/08/99

Freq. Hz	Ln, 1/3 oct., dB
50	61.3
63	59.4
80	60.5
100	60.7
125	61.4
160	63.6
200	63.0
250	59.5
315	54.7
400	53.6
500	55.0
630	53.0
800	51.4
1 000	50.1
1 250	46.7
1 600	43.9
2 000	40.8
2 500	38.2
3 150	36.3
4 000	31.4
5 000	24.2
6 300	
8 000	
10 000	



Rating according to draft
ISO 717-2:1997

Ln,w 54 dB

Max dev. 7.6 dB at 160 Hz

Evaluation based on laboratory
measurement results obtained by
an engineering method:

Customer: **British Gypsum Ltd**

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The Building Test Centre

Fire Acoustics Structures

The Building Test Centre
British Gypsum Limited
East Leake
Loughborough
Leicestershire LE12 6NP
Tel 0115 945 1564
Fax 0115 945 1562

TEST METHOD AND CONDITIONS

An omnidirectional loudspeaker rotating at 1rpm is used in source room satisfying Annex C of BS EN ISO 140-3: 1995. The average sound pressure level in each 1/3 octave band is measured using a rotating microphone boom, positioned such that the minimum distance between microphone and sound source is 1m and between microphone and room boundaries is 0.7m.

The rotating microphone has a sweep radius of at least 1m and is inclined in relation to the boundaries at an angle of at least 30° to the horizontal. The microphone has a traverse time of 32 seconds, and the sound pressure levels are averaged over 64 seconds which is equivalent to two complete sweeps of the microphone boom. The equivalent absorption area of each room is determined by producing the arithmetic average of six reverberation times and applying this to the Sabine formula.

The laboratory limit for airborne sound insulation measurement due to flanking on a lightweight construction is

Freq Hz	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
R _{max}	20	27	29	33	43	53	55	60	63	66	70	72	73	78	82	83	84	82	84	88	88

The laboratory limit for airborne sound insulation measurement due to flanking on concrete based construction is

Freq Hz	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
R _{max}	26	36	33	35	39	47	51	58	61	66	70	68	71	75	79	83	85	84	82	85	83

The figures below show flanking and isolation treatments in the test chamber

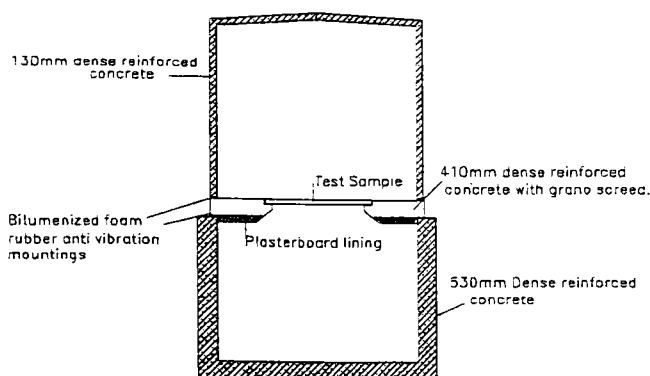


Figure 1 Chamber layout

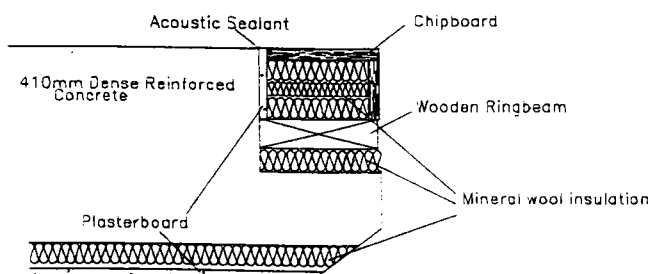


Figure 2 Ringbeam construction around test aperture

Customer: British Gypsum Ltd

BTC 10724A: Appendix

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