Building Acoustic Test
Internal Sound Insulation Desktop Assessment
In Compliance with Building Regulation Approved Document Part E

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Site Address:	211 Rayleigh Road Hutton Brentwood Essex CM13 1LZ
Client / Performed for:	***Sunil Sehdev***
Report Date:	***24/03/2024***
Issued by:	***Nilav Babariya (A.M.I.O.A)***
Report No:	***10824032024-01***
Report Issued Date:	***24/03/2024***
Discharge Condition:	***Condition 1***
Planning Reference:	***23/01532/PNCOU***
Report Approved by and position:	 ***Suresh Babariya – Laboratory Manager***

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Desk Top Report Summary

Airtight Building Solutions Ltd has been requested to carry out a sound insulation assessment of the party walls and floors between **211 Rayleigh Road Hutton Brentwood Essex CM13 1LZ** The scheme includes additional installations for timber floor and achieve building regulations compliances.

The building is required to achieve the sound insulation performance criteria within Approved Document E (ADE) 'Resistance to the passage of sound' of the Building Regulations with additional improvement of at least 5dB above building Regulation.

The purpose of this design note is to provide a review of the sound insulation performance for the separating walls and floors within the development.

Desktop audit showed that the WALL(S) and FLOOR(S) assessed is likely to MEET and exceed at least the requirements of Approved Document E with respect to IMPACT sound insulation provided that all works are undertaken as per specification and manufactures guideline as below

ABOVE floor

- Removal of the floorboards.

- Insert 100mm RWA45 Acoustic insulations between existing Joist.

- Install floorboards.

BELOW Ceiling/Joists

- Install a secondary layer of Sound block plaster board on existing ceiling

- Install independent joists below existing ceiling with a minimum drop of 125mm from existing ceiling

- Insert 100mm RWA45 Acoustic insulations between new independent ceiling joists.

- Install 2x15mm Sound block plaster board to ceiling and skim.

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Condition 1:

No development shall take place until details of sound protection and insulation measures for the buildings to be converted (including fenestration alterations) has been submitted to and approved in writing by the local planning authority. Details should include methods of sound insulation between the internal and adjoining walls of the proposed and existing above residential dwellings from noise arising from activities within the ground floor retail premises, shall be submitted to and approved in writing by or on behalf of the Local Planning Authority. The scheme shall be fully implemented and sound transmission tests shall be carried out by a competent person to demonstrate compliance with the approved scheme, the results shall be submitted to the Local Planning Authority and approved scheme shall be permanently maintained thereafter.
Deliveries to the retail shop shall be made at reasonable times to avoid disturbance to local residents.

Reason: To help mitigate noise disturbances in the interest of future occupiers of the residential dwellinghouses.

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1 OBJECTIVES

1.1 To carry out Desk top Internal Sound Insulation Report to comply to **Condition 1** of planning permission number **23/01532/PNCOU** at the following property: **211 Rayleigh Road Hutton Brentwood Essex CM13 1LZ**

2 ASSESSMENT DETAILS

2.1	Type of property:	Flat conversion
2.2	Age of property:	N/A
2.3	Tests carried out by:	Airtight Building Solutions Ltd. 11 Imperial Drive North Harrow HA2 7BP
2.4	Test Technician / Engineer:	Nilav Babariya
2.5	Laboratory Manager:	Suresh Babariya
2.6	Client:	Sunil Sehdev
2.7	Description of Background Noise:	Light vehicular traffic noise

2.8 Desk top audit has been carried in full accordance with the procedures set out in Approved Document E [1], and the following standard(s):

BS EN ISO 140-4: 1998 [2]
BS EN ISO 140-7: 1998 [3]

2.9 The sound insulation ratings were calculated in full accordance with:

BS EN ISO 717-1: 1997 [4]
BS EN ISO 717-2: 1997 [5]

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3 PERFORMANCE STANDARDS AND RESULTS

3.1 The table below is taken from Building Regulations Approved Document E. Table 3.1 shows the required performance standard needed to pass a sound insulation test for **separating walls and floors for dwelling houses and flats**.

Table 3.1

	Airborne Sound Insulation $D_{nT,w} + C_{tr}$	Impact Sound Insulation $L'_{nT,w}$
Purpose built dwelling houses and flats		
Walls	**45dB**	**-**
Floor	**45dB**	**62dB**
Dwelling houses and flats formed by material change of use		
Walls	**43dB**	**-**
Floors	**43dB**	**64dB**

3.2 The table below is taken from Building Regulations Approved Document E. Table 3.2 shows the required performance standard needed to pass a sound insulation test for **separating walls and floors for Rooms for residential purpose**.

Table 3.2

	Airborne Sound Insulation $D_{nT,w} + C_{tr}$	Impact Sound Insulation $L'_{nT,w}$
Purpose built Rooms for Residential Purpose		
Walls	**43dB**	**-**
Floor	**45dB**	**62dB**
Rooms for residential purpose formed by material change of use		
Walls	**43dB**	**-**
Floors	**43dB**	**64dB**

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3.3 Predicted Desk top analysis results of the sound insulation tests are documented below in Table 3.3 – If all materials used in accordance with strictly manufactures specifications

Table 3.3
Predictive Desk top analysis Test Results
KEY WORD: ABW = Airborne Wall($D_{nT,w}$); ABF = Airborne Floor($D_{nT,w}$); IMP = Impact($L'_{nT,w}$)

Test Number / Test Type / Chart No	Source Room	Receive Room	Required dB	Predective dB Dntw+Ctr	Pass / Fail
01ABF(Floor)	GF – Commercial	1st F – Front Room	≥43dB	55dB	Pass
02IMP(Floor)	1st F – Front Room	GF – Commercial	≤64dB	51dB	Pass
03ABW(Wall)	Bedroom	Commercial	≥43dB	48dB	Pass

3.4 **The Building Regulations Approved Document E**

Approved Document E (2003) edition which incorporates 2004, October 2010 and April 2013, amendments. Sets out guideline sound transmission values for separating walls and floors that should be achieved under test if, acoustical performance is to be deemed acceptable. This document provides information on construction details, flanking details, testing and sampling methods as well as the criteria for both new build and converted buildings.

Approved Document E states airborne tests should be undertaken for both partition floors and walls between dwellings. For airborne performance, converted dwellings the partition walls and floor between dwellings and between dwellings and communal areas should achieve a minimum of 43 dB DnT,w + Ctr, and purpose built dwellings should achieve a minimum of 45 dB DnT,w + Ctr.

Approved Document E states impact tests should be undertaken for partition floors between dwellings. For impact performance, converted dwellings the partition floor between dwellings and between dwellings and communal areas should achieve a maximum of 64 dB DnT,w + Ctr, and purpose built dwellings should achieve a maximum of 62 dB DnT,w + Ctr.

Internal walls and floors within dwelling are required to meet minimum construction standards, these will not however be tested. Section 0.2 of the Building Regulations Part E states that internal walls and floor need to provide a minimum of Rw 40 dB.

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Reverberation within communal spaces is also required to meet minimum standards, these will not however be tested.

To allow the reader to better understand the predicted acoustic performances stated for the proposed partition walls and floors, we have applied the following subjective scale. This scale is based on our opinion of best achieving our client's expectations. We will only design to achieve a 'Good' performance or better.

Table 3.4
Subjective Scale of Acoustic Performance

Predicted Performance Range for Airborne Sound		Predicted Performance Range for Impact Sound		Subjective Ratings
Conversion	**New Build**	**Conversion**	**New Build**	
43-46	45-48	61-64	59-62	Poor/Average
47-50	49-52	57-60	55-58	Good
50-53	53-56	53-56	51-54	Very Good
54-57	57-60	49-52	47-50	Excellent

3.5 Sound Insulation Specification

Sound Insulation Criteria – Requirement E1

Requirement E1 of Approved Document E requires protection against sound from other parts of the building and adjoining buildings as follows:

E1 – Dwelling-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that they provide reasonable resistance to sound from other parts of the same building and from adjoining building.

The table below shows the criteria for sound insulation of the party walls and floors. The sound insulation requirements are taken from Part E.

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Table 3.5 Design Sound Insulation Specification – Requirements E1		
Element	**Minimum Performance Standard**	**Minimum Design Standard**
Party Walls	**Airborne – 45dB $D_{nT,w}$ + Ctr (43dB for Material Change of Use)**	**Airborne – 50dB $D_{nT,w}$ + Ctr**
	Airborne – 45dB $D_{nT,w}$ + Ctr (43dB for Material Change of Use)	**Airborne – 50dB $D_{nT,w}$ + Ctr**
Party Floors	**Impact – 62 dB L_{nTw} (64dB for Material Change of Use)**	**Impact – 57 dB L_{nTw}**

4 INTERNAL SOUND INSULATION

To comply with Planning **Condition 1** a sound insulation assessment of party walls and floors has been carried out to ensure future habitants are not unduly affected by noise and activities within adjoining flats.

Planning **Condition 1** requires separating walls and floors to achieve a minimum of +5 dB improvement above the performance standards within the Building Regulations.

4.1 Design Targets

To comply with Planning **Condition 1** a sound insulation assessment of party walls and floors has been carried out to ensure future habitants are not unduly affected by noise and activities within adjoining flats.

Planning **Condition 1** requires separating walls and floors to achieve a minimum of +5 dB improvement above the performance standards within the Building Regulations.

Table 4.1.1 – Design Targets in compliance with Condition 1			
Sound Insulation Performance	**ADE Requirements**	**Design Tolerance**	**On-site Requirement**
Airborne Walls and Floors	**≥43dB $D_{nT,w} + C_{tr}$**	**+ 12dB(Floors), + 5dB(Walls)**	**≥55dB $D_{nT,w} + C_{tr}$**
Floor- Impact	**≤64dB $L'_{nT,w}$**	**- 5dB**	**≤59dB $L'_{nT,w}$**

Note that the values within Table 6.1 are on-site performance targets. The sound insulation of various construction elements are normally measured and rated in acoustic test laboratories, and quoted in terms of the sound reduction index, Rw. Using a minimum sensible design tolerance, we calculate that the following laboratory measure of sound insulation is required:

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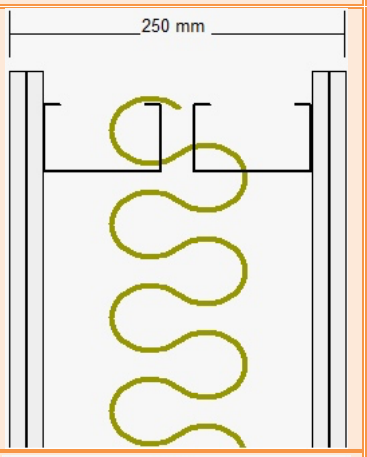
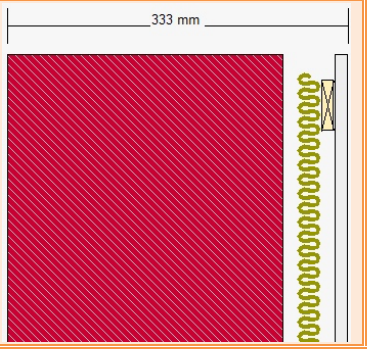
Table 4.1.2 – Laboratory Sound Insulation Performance Requirements		
Sound Insulation Performance	**On-site Requirement**	**Laboratory Tested Values**
Walls -Airborne	**≥48 dB $D_{nT,w} + C_{tr}$**	**≥57 dB $R_w + C_{tr}$**
Floor- Airborne	**≥48 dB $D_{nT,w} + C_{tr}$**	**≥60 dB $R_w + C_{tr}$**
Floor-Impact	**≤59 dB $L'_{nT,w}$**	**≤51 dB $L'_{nT,w}$**

4.2 Separating Wall Construction

It is understood that new build separating walls between flats is based on a twin timber stud construction and existing walls to be retained are formed from 140mm solid masonry.

To meet the acoustic performance targets for separating walls the following wall specifications are provided:

Table 4.2 – Main separating wall construction		
Plan view	**Construction Specification**	**Acoustic Rating**
	• 1 layer of 12.5mm Fire Line • 1 layer of 15mm Sound Bloc • 2 x 75mm Studs – Not Braced • Minimum 200mm cavity between inner boards • 100mm Mineral Wool Insulation (density ≥ 45 kg/m3) • 1 layer of 15mm Sound Bloc • 1 layer of 12.5mm Fire Line	**57 dB $R_w + C_{tr}$**
	• 270mm Brick/Block • 50mm Independent Timber Stud – Not fixed to wall • 25mm Mineral Wool Insulation (density ≥ 45 kg/m3) • 1 x layers of 12.5mm Wall Board	**58 dB $R_w + C_{tr}$**

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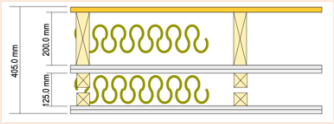
Construction Notes:

- Calculations are based on the twin studs remaining independent, i.e. no cross braces.
- Ensure walls are fully complete with no service penetrations.
- Care must be taken to ensure the insulation layer is fully complete with no airgaps of sagging.
- Acoustic back boxes or putty pads should be used around electrical outlets.

4.3 Separating Floor Construction

It is understood the existing floors are based on a timber joist construction. To achieve the airborne sound insulation performance value in Table 4.2 the following construction specification is provided:

Table 4.3 – Main separating floor construction

Section View	Construction Specification	Acoustic Rating
	Cavity: Solid joist(timber or Twinaplate): Stud spacing 600 mm , Infill Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2) Panel 2 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01) Cavity: Separate joists: Stud spacing 600 mm , Infill Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2) Panel 3 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01)	60 dB R_w + C_{tr}

Calculations show that the proposed floor construction will achieve the design targets set out in Table 4.3 above once constructed correctly. It is seen as the responsibility of the main designer and contractor to ensure all junctions and interfaces are detailed correctly.

Sound insulation data sheets for the proposed constructions are provided in Appendix D.

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4.4 Impact Sound Insulation

Calculations show that the proposed floor construction achieves an impact sound insulation performance of 51 dB L'n,w which meet the performance criteria within Table 4.1.2.

The floating floor may be applied as T&G flooring boards over a separate resilient layer or as a complete system. Sample systems included Screed Board 28, Sound Deck, Isosonic Dek or Karma Overlay. Please refer to manufacturers specifications to ensure the system provides an impact reduction of no less than 18 dB ΔLw. Ensure manufacturers installation guidelines are fully followed.

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5 REFERENCES

[1]The Building Regulations 2010

Approved Document E: Resistance to the Passage of Sound (2003 Edition incorporating 2004 and 2010 amendments)
1.ISBN 978 1 85946 204 1

[2]BS EN ISO 140-4: 1998

Acoustics – Measurement of sound insulation in buildings and of building elements
2.Part 4: Field measurements of airborne sound insulation between rooms

[3]BS EN ISO 140-7: 1998

Acoustics – Measurement of sound insulation in buildings and of building elements
3.Part 7: Field measurements of impact sound insulation of floors

[4]BS EN ISO 717-1: 1997

Acoustics – Rating of sound insulation in buildings and of building elements
Part 1: Airborne sound insulation

[5]BS EN ISO 717-2: 1997

Acoustics – Rating of sound insulation in buildings and of building elements
Part 2: Impact sound insulation

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6 APPENDIX 1 – GLOSSARY OF TERMS

Airborne Sound : Sound propagating through the air

Airborne Sound Insulation : Sound insulation which reduces the amount of airborne sound passing between buildings or parts of buildings

C_{tr} : The correction applied to a sound insulation rating (such as $D_{nT,w}$) to take into account specific sound spectra

Decibel (dB) : The unit used in acoustic measurement to describe one level with respect to a pre-defined reference level

$D_{nT,w}$: The weighted standardised level difference – a single number figure used to characterise the airborne sound insulation between rooms

Hertz (Hz) : The unit of measurement of frequency (cycles per second)

Impact Noise : Sound (generally from foot-falls) propagating through the material of the building

Impact Noise Insulation : Sound insulation which reduces the amount of structure-borne sound passing between buildings or parts of buildings

$L'_{nT,w}$: The weighted standardised impact sound pressure level – a single number figure used to characterise the impact sound insulation of floors

Noise : Unwanted sound

Reverberation Time (RT_{60}) : An indication of the amount of absorption in a room. The time (in seconds) taken for the noise level in a room to decay by 60dB

Types of Separating Walls	**Wall Type 1:** ***Solid Masonry***
	Wall Type 2: ***Cavity Masonry***
	Wall Type 3: ***Masonry between independent panels***
	Wall Type 4: ***Framed walls with absorbent material***
Types of Separating Floors ***covering***	**Floor Type 1:** ***Concrete base with ceiling and soft floor***
floor	**Floor Type 2:** ***Concrete base with ceiling and floating***
platform floor	**Floor Type 3:** ***Timber frame base with ceiling and***

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7 APPENDIX 2 – TEST CHART(S) and Drawings

As Attached below

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Sound Insulation Prediction (v8.0.7)

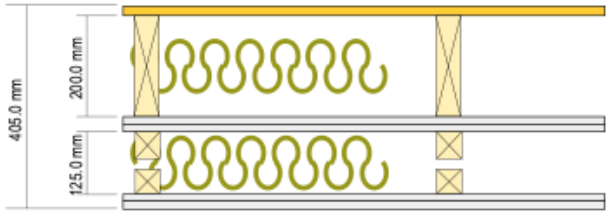
Margin of error is generally within Rw +/- 3 dB

Job Name:

Job No.: Page No.: Notes:

Date: Initials:

File Name:



Rw	79 dB
C	-10 dB
C_{tr}	-19 dB
D_{nTw}	81 dB

System description

Panel 1 : 1 x 20.0 mm Flooring Particle Board (?:710 kg/m3,E:3.4GPa,?:0.03)

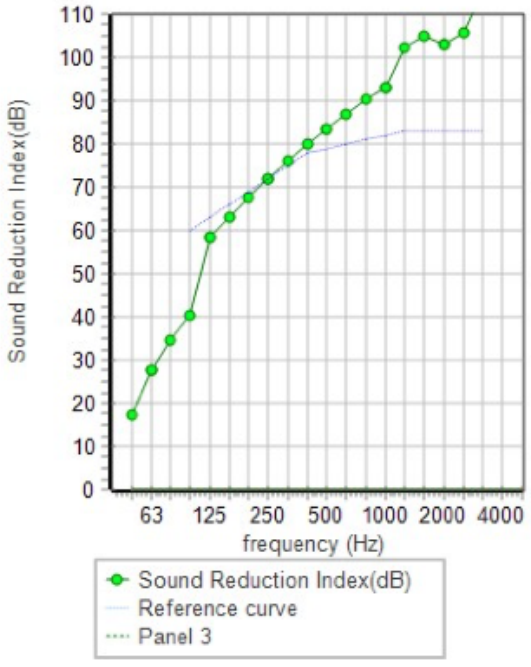
Cavity: Solid joist(timber or Twinaplate): Stud spacing 600 mm , Infill Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2)
Panel 2 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01)

Cavity: Separate joists: Stud spacing 600 mm , Infill Fibreglass (10kg/m3) Thickness 100 mm (?:10 kg/m3, Rf:4000 Pa.s/m2)
Panel 3 + 2 x 15.0 mm Gyproc SoundBloc 15mm (?:840 kg/m3,E:3.1GPa,?:0.01)

Mass-air-mass resonant frequency =35 Hz , 55 Hz

frequency (Hz)	R(dB)	R(dB)
50	17	
63	28	22
80	35	
100	40	
125	58	45
160	63	
200	68	
250	72	71
315	76	
400	80	
500	84	83
630	87	
800	90	
1000	93	93
1250	102	
1600	105	
2000	103	104
2500	106	
3150	115	
4000	123	119
5000	129	

Panel Size 2.7x4 m; Mass 66.6 kg/m2



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Sound Insulation Prediction (v8.0.0)

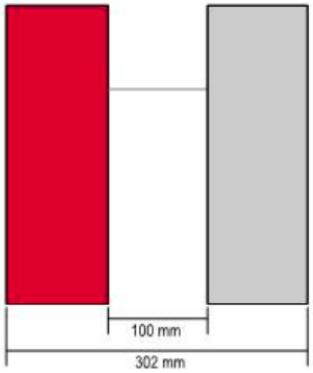
Margin of error is generally within Rw +/- 3 dB

Job Name:

Job No.: Page No.: Notes:

Date: Initials:

File Name: insul



Rw	54 dB
C	-1 dB
C_{tr}	-4 dB
D_{nTw}	56 dB

System description

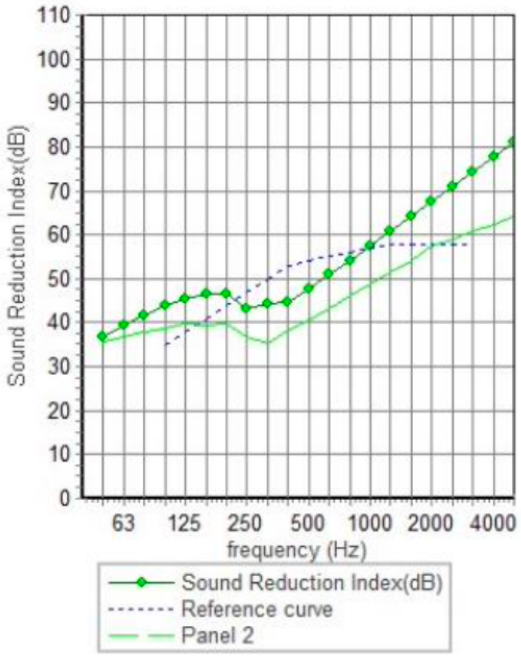
Panel 1 : 1 x 102.0 mm Brick (102.5) (?:1600 kg/m3,E:8.9GPa,?:0.02)

Cavity: Point connections ,Stud spacing 600 mm (?:0 kg/m3, Rf:100 Pa.s/m2)
Panel 2 + 1 x 100.0 mm mm Concrete Block (?:1850 kg/m3,E:8.3GPa,?:0.02)

Mass-air-mass resonant frequency =19 Hz

frequency (Hz)	R(dB)	R(dB)
50	37	
63	39	39
80	42	
100	44	
125	45	45
160	46	
200	47	
250	43	44
315	44	
400	45	
500	48	47
630	51	
800	54	
1000	58	57
1250	61	
1600	64	
2000	67	67
2500	71	
3150	74	
4000	78	77
5000	81	

Panel Size 2.7x4 m



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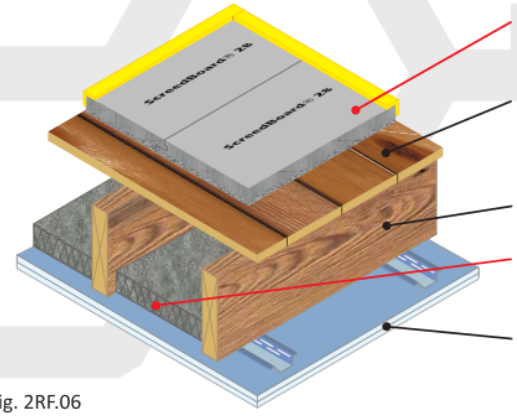
Timber floor - Treatment laid on sub-floor

Refurbishment/conversion timber separating floor

CELLECTA ScreedBoard® 28 laid on timber sub-floor
Existing timber joists
New ceiling fixed to resilient bars



Floating floor treatment	CELLECTA ScreedBoard® 28 (See Table 2RF.06a for full details)
Floor decking	15mm thick (min) wood based board, density 600kg/m³ (min) or existing floor boards (with all gaps sealed with suitable flexible mastic)
Joists	200mm (min) solid timber joists
Absorbing material	o 50mm CELLECTA FIBREfon® Micro 50 ● 100mm (min) mineral wool (45kg/m³)
Ceiling	See Table 2RF.06b for ceiling treatment

Fig. 2RF.06

FASTRACKCAD ARCHITECTURAL CAD DATABASES

nbsPlus

Table 2RF.06a

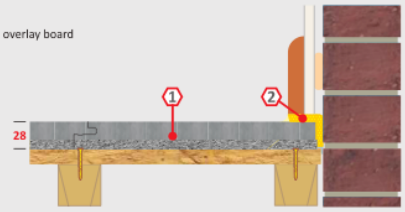
Installation Details

Resilient overlay platform floor system

① **ScreedBoard® 28** High density acoustic overlay board
Dimensions: 28mm x 600mm x 1200mm
Weight: 26kg/m² / 18.72kg/board

Ⓐ **CELLECTA Pro Adhesive**
ScreedBoard joint adhesive
Bottle size: 1L / 33m² coverage

② **YELOfon® FS50**
Preformed flanking strip:
6mm x 50mm x 30mm x 2m



Additional Products for this application
o 50mm CELLECTA FIBREfon Micro 50 non-itch polyester quilt
● 100mm (min) mineral wool 45kg/m³

Install **RUBBERfon® TSS** (Threshold Support Strip) at door thresholds or where square edge boards meet, reducing excessive flex, whilst maintaining acoustic performance.
Composition: 100% recycled re-bonded rubber
Size: 8mm x 75mm x 1000mm

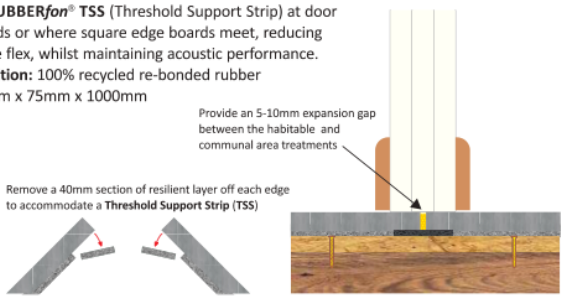


Table 2RF.06b

Ceiling Treatment Options

Ceiling boards must not penetrate or touch joists
● 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres.
o 30mm CELLECTA HP30 resilient bars mounted at right angles to the joists at 600mm (max) centres.

Ceiling treatment
Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m²) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m²) fixed with 42mm screws, with all joints staggered.

Standard resilient bars set at 450mm (max) centres

HP30 resilient bars set at 600mm (max) centres

+ 3	dB $R_w + C_{tr}$ [1]
+ 2	dB $L_{n,w}$ [1]

[1] Typical dB improvement of **HP30** over 16mm resilient bars.

Acoustic Performance

Airborne:	52dB $R_w + C_{tr}$
Impact:	54dB $L_{n,w}$

Performance values quoted were achieved using 50 x 235mm solid timber and 16mm resilient bar at Sound Research laboratories, Sudbury in accordance with Approved Document E: Annex B: Procedures for sound insulation testing.
Airborne results tested in accordance with BS EN ISO 140-3:1995
Impact results tested in accordance with BS EN ISO 140-6: 1998

Third Party Accreditation and Approvals

CLASS B*fl*,S1
BS EN13501-1

SRL Performance Tested

bmtrada 2015

Environmental Credentials

GWP <5

100% Recycled Gypsum

zero ODP

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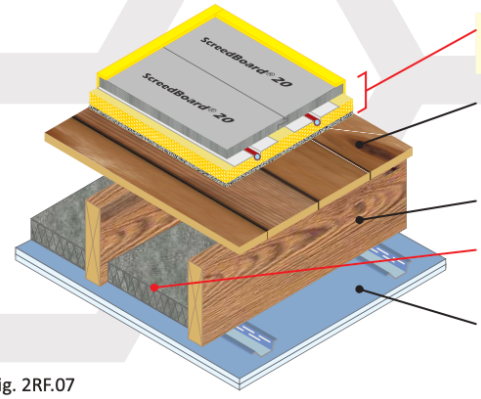
Timber floor - Treatment laid on sub-floor

Refurbishment/conversion timber separating floor

CELLECTA Mojave® dry laid resilient system incorporating underfloor heating
Existing timber joists
New ceiling fixed to resilient bars



Floating floor treatment +UFH	**CELLECTA Mojave® S1-8** platform floor system incorporating underfloor heating
Floor decking	15mm thick (min) wood based board, density 600kg/m³ (min) or existing floor boards (with all gaps sealed with suitable flexible mastic)
Joists	200mm (min) solid timber joists
Absorbing material	○ 50mm CELLECTA FIBREfon® Micro 50 ● 100mm (min) mineral wool (45kg/m³)
Ceiling	See Table 2RF.07b for ceiling treatment

Fig. 2RF.07

FASTRACKCAD ARCHITECTURAL CAD DATABASES

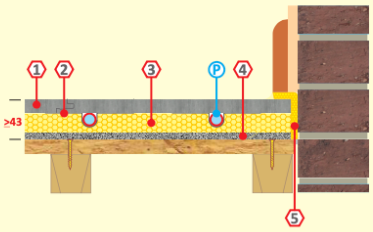
nbsPlus

Table 2RF.07a

Installation Details

Resilient overlay platform floor system incorporating underfloor heating

CELLECTA Mojave® S1-8
Dry laid acoustic treatment incorporating underfloor heating system



① **ScreedBoard® 20**
High conductivity overlay board:
20mm x 600mm x 1200mm
Weight: 25kg/m² / 18.00kg/board
Thermal resistance: 0.05m2K/W

Ⓐ **CELLECTA Pro Adhesive**
ScreedBoard joint adhesive
Bottle size: 1L / 33m² coverage

② **ULTRAplate**
Aluminium heat diffuser plate (to suit pipe installed):
130mm x 1000mm

HIGH COMPRESSIVE 250-500kPa STRENGTH XPS

③ **XFLO® 250, 300, 500**
High compressive strength routed XPS insulation board:
15-75mm x 600mm x 1250/2500mm
Compressive strengths available: 250, 300, 500kPa
Pipe centre: 150, 200, 300mm
Pipe bore size (OD): 10 - 20mm (manufactured to suit)

④ **FIBREfon® 8**
High performance resilient layer:
8mm x 600mm x 1200mm
Weight: 1.00kg/m² / 0.72kg/board

⑤ **YELOfon® ES5/120**
Perimeter edge strip:
5mm x 120mm x 50m

Ⓟ UFH water pipe (by others)

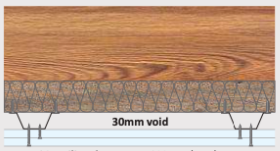
Table 2RF.07b

Ceiling Treatment Options

Ceiling boards must not penetrate or touch joists
- ● 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres.
- ○ 30mm CELLECTA **HP30** resilient bars mounted at right angles to the joists at 600mm (max) centres.

Ceiling treatment
Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m²) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m²) fixed with 42mm screws, with all joints staggered.

Standard resilient bars set at 450mm (max) centres



HP30 resilient bars set at 600mm (max) centres

+3	dB $R_w + C_{tr}$ (1)
+2	dB $L_{n,w}$ (1)

(1) Typical dB improvement of **HP30** over 16mm resilient bars.

Acoustic Performance

Airborne:	52dB $R_w + C_{tr}$
Impact:	54dB $L_{n,w}$

Performance values quoted were achieved using 50 x 235mm solid timber and 16mm resilient bar at Sound Research laboratories, Sudbury in accordance with Approved Document E: Annex B: Procedures for

Third Party Accreditation and Approvals

CLASS B*fl*,S1
BS EN13501-1

SRL Performance Tested

bmtrada 2015

Environmental Credentials

GWP <5

100% Recycled Gypsum

zero ODP

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Timber Floor - Treatment laid on sub-floor

Refurbishment/conversion timber separating floor

CELLECTA acoustic treatment laid on timber sub-floor
Existing timber joists
Ceiling on resilient bars

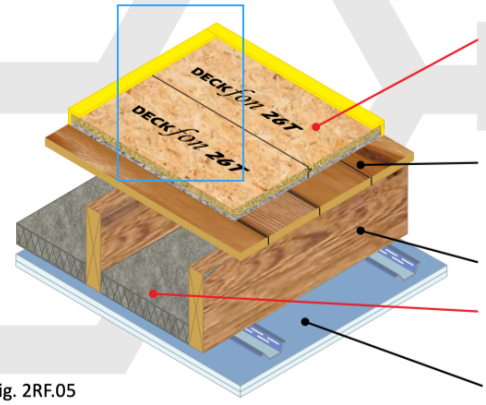


Fig. 2RF.05

Floating floor treatment options	CELLECTA DECKfon 17T (MDF) CELLECTA DECKfon 26T (OSB/Ply/Chip) CELLECTA DECKfon 30T (Chip) (See Table 2RF.05a for full details)
Floor decking	15mm thick (min) wood based board, density 600kg/m³ (min) or existing floor boards, with all gaps sealed with suitable flexible mastic
Floor joist	200mm (min) solid timber joists
Absorbing material	○ 50mm CELLECTA FIBREfon Micro 50 ● 100mm (min) mineral wool (45kg/m³)
Ceiling	See Table 2RF.05b for ceiling treatment

FASTRACKCAD ARCHITECTURAL CAD DATABASES NBSPlus

Table 2RF.05a

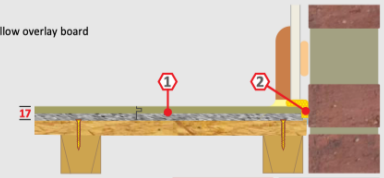
Installation Details

Resilient shallow overlay platform floor system

① DECKfon 17T Composite acoustic shallow overlay board
17mm x 600mm x 2400mm
Weight: 7.25kg/m² / 10.44kg/board

Ⓐ CELLECTA fon Adhesive
Acoustic board joint adhesive
Bottle size: 1L / 33m² coverage

② YELOfon FS15
Preformed flanking strip:
6mm x 15mm x 30mm x 2m



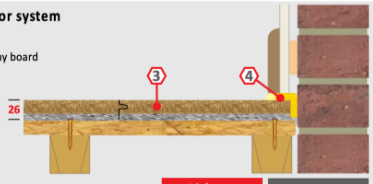
Airborne	Impact
50dB $R_w + C_{tr}$	56dB $L_{n,w}$

Resilient shallow overlay platform floor system

③ DECKfon 26T Composite acoustic overlay board
26mm x 600mm x 2400mm
Chipboard: 13.80kg/m² / 19.87kg/board
Ply: 11.80kg/m² / 16.99kg/board
OSB: 12.36kg/m² / 17.79kg/board

Ⓐ CELLECTA fon Adhesive
Acoustic board joint adhesive
Bottle size: 1L / 33m² coverage

④ YELOfon FS30
Preformed flanking strip:
6mm x 30mm x 30mm x 2m



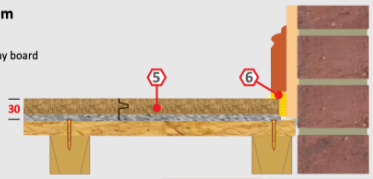
Airborne	Impact
51dB $R_w + C_{tr}$	57dB $L_{n,w}$

Resilient overlay platform floor system

⑤ DECKfon 30T Composite acoustic overlay board
26mm x 600mm x 2400mm
Weight: 16.00kg/m² / 23.04kg/board

Ⓐ CELLECTA fon Adhesive
Acoustic board joint adhesive
Bottle size: 1L / 33m2 coverage

⑥ YELOfon FS30
Preformed flanking strip:
6mm x 30mm x 30mm x 2m



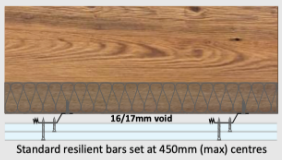
Airborne	Impact
51dB $R_w + C_{tr}$	56dB $L_{n,w}$

Table 2RF.05b

Ceiling Treatment Options

Ceiling boards must not penetrate or touch joists
- ● 16mm (min) metal resilient bars mounted at right angles to the joists at 400mm (max) centres.
- ○ 30mm CELLECTA HP30 resilient bars mounted at right angles to the joists at 600mm (max) centres.

Ceiling treatment
Two layers of gypsum-based board, composed of 15mm (nominal 12.5kg/m²) fixed with 25mm screws and a second layer of 15mm (nominal 12.5kg/m²) fixed with 42mm screws, with all joints staggered.



Standard resilient bars set at 450mm (max) centres

HP30 resilient bars set at 600mm (max) centres

+3	dB $R_w + C_{tr}$ (1)
+2	dB $L_{n,w}$ (1)

(1) Typical dB improvement of HP30 over 16mm resilient bars.

Acoustic Performance

Performance values quoted were achieved using 50 x 235mm solid timber joists installed at Sound Research laboratories, Sudbury. Tested in accordance with Approved Document E: Annex B: Procedures for sound insulation testing.
Airborne results tested in accordance with BS EN ISO 140-3:1995
Impact results tested in accordance with BS EN ISO 140-6: 1998

Third Party Accreditation and Approvals

SRL Performance Tested bmtrada 2015

Environmental Credentials

GWP <5 100% Recycled Foam zero ODP

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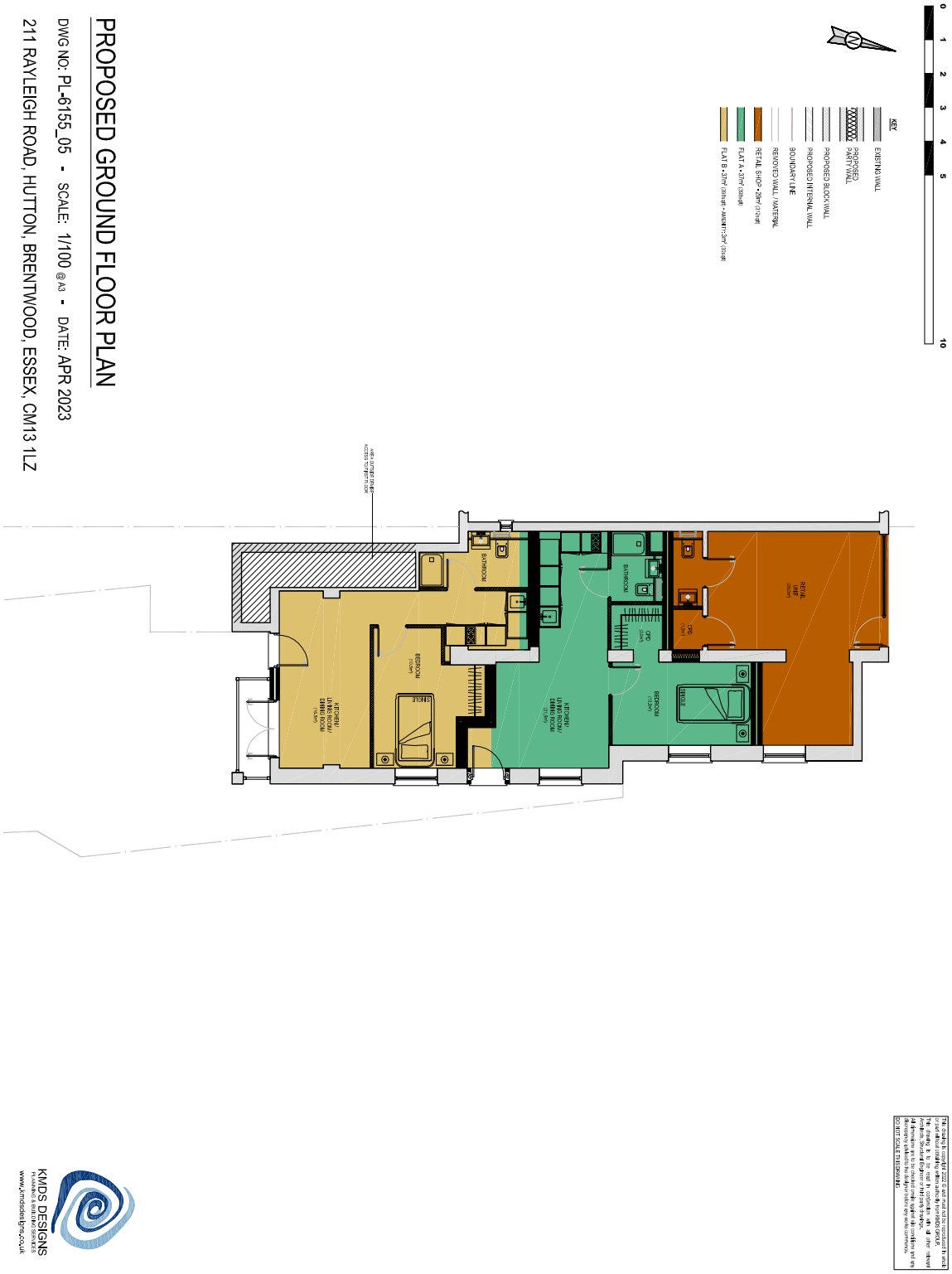

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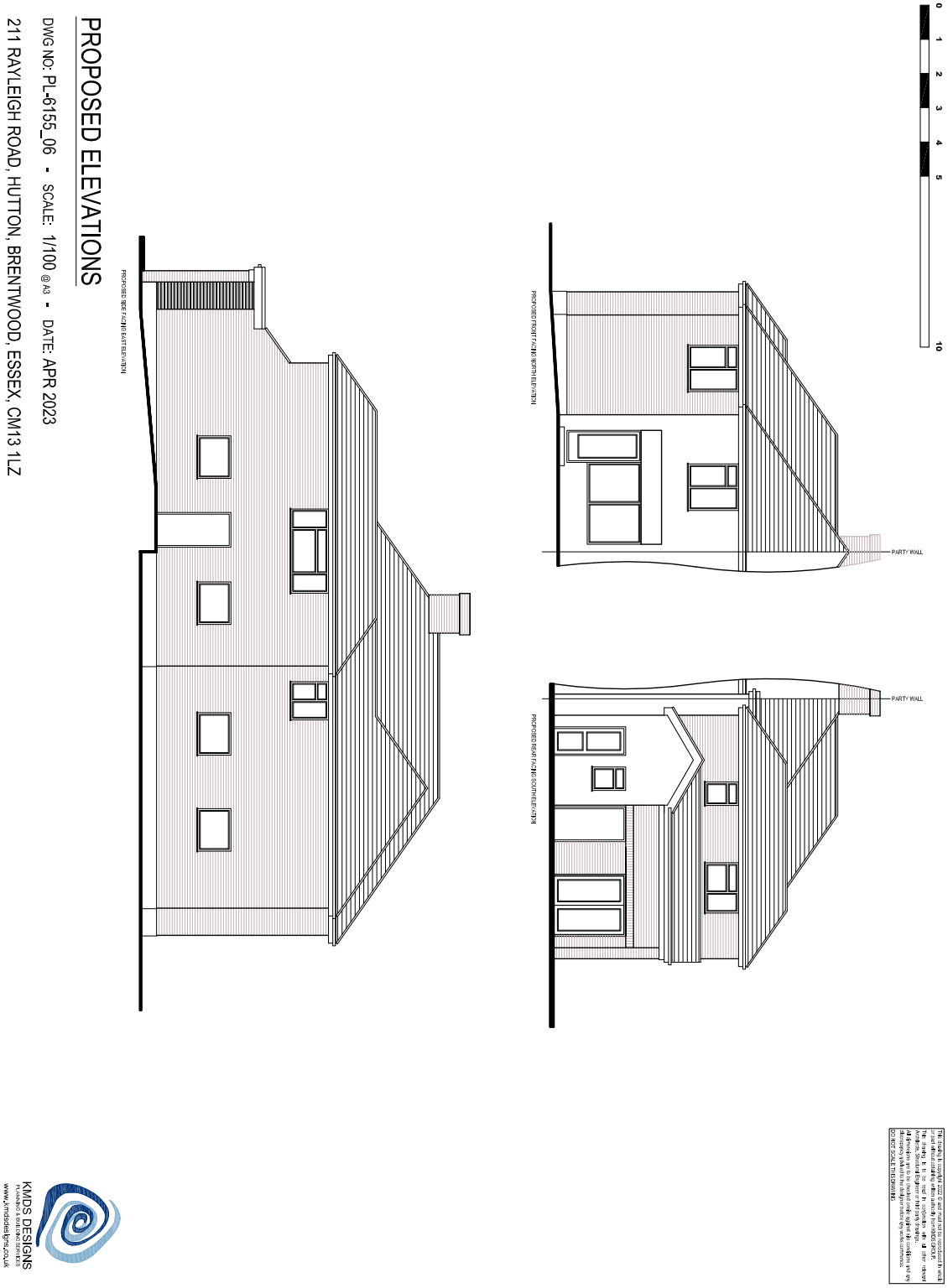

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