RIBA Stage 4+ Acoustic Design Advice

Site Address: Laystall Street, Manchester, M1 2JP

Client Name: Assured CMS

Project Reference: NP-013041-2

Authorisation and Version Control		
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Amendment History		
Revision	Date	Summary of Amendments
01	10/04/2026	Previous Stage 4 report ref. NP-013041.
02	15/07/2026	References to planning conditions that will be discharged at a later date removed.

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1. Introduction

NOVA Acoustics Ltd has been commissioned to prepare a RIBA Stage 4+ acoustic design review for a hotel development at Laystall Street, Manchester, M1 2JP ('the Site').

The applicant has received conditional planning approval (ref. 135662/FO/2022, 'the Application') from Manchester City Council. This report has been prepared to assess compliance with the recommendations provided in the original acoustic assessment for the project (Acoustic Consultants ref. 9840/PR/BL), BREEAM guidelines, and specific brand requirements.

This noise assessment is necessarily technical in nature; therefore, a glossary of terms is included in Appendix A to assist the reader.

1.1 Standards, Legislation, Policy & Guidance

The following performance standards, legislation, policy, and guidance have been considered to ensure good acoustic design in the assessment:

- Acoustic Associates Ltd report ref. SS/J3661/18212
- BREEAM 'New Construction 2018'
- Motto – Brand Standards – Europe 2500 – Design, Construction & Renovation Standards'
- LPA planning condition 34 (a)
- National Planning Policy Framework (2024)
- Noise Policy Statement for England (2010)
- British Standard BS8233:2014 – 'Guidance on sound insulation and noise reduction for buildings'
- Approved Document F: Volume 1 Dwellings (2021)
- Acoustics Ventilation Overheating: Residential Design Guide 2020' (AVO Guide)
- Approved Document Part E: Resistance to the Passage of Sound (2003)

Further information on the legislation can be found in Appendix B.

1.2 BREEAM Criteria and Brand Standards

As stated above, it is understood that it is intended for the building to comply with BREEAM standards (namely 'New Construction 2018').

For BREEAM, 5 credits are available, including 4 for Hea 05 (internal acoustics) and 1 for Pol 05 (noise from external fixed plant). These are defined in the table overleaf.

Residential Institutions (short-term and long-term stay)	
Hea 05 – First and Second Credit – Sound Insulation	
Criteria	**One credit** Airborne sound insulation values are at least 3dB higher and impact sound insulation values are at least 3dB lower than the performance standards in the relevant building regulations or standards. **Two credits** Airborne sound insulation values are at least 5dB higher and impact sound insulation values are at least 5dB lower than the performance standards in the relevant building regulations or standards.
Testing Requirements	A programme of pre-completion testing is carried out by a compliant test body based on the normal programme of testing described in the relevant building regulations or standards for every group or sub-group of dwellings (houses, flats or rooms for residential purposes) and this must demonstrate that the performance standards detailed within this table are achieved.
Hea 05 – Third Credit – Indoor Ambient Noise Levels	
Criteria	Achieve indoor ambient noise levels that comply with the design ranges given in Section 7 of BS8233:2014.
Testing Requirements	A programme of pre-completion acoustic testing is carried out by a compliant test body in accordance with the acoustic testing and measurement procedures outlined in Methodology below.
Hea 05 – Fourth Credit – Indoor Ambient Noise Levels	
Criteria	Achieve the requirements relating to sound absorption within residential spaces and within the common spaces of the building described in the relevant building regulations or building standards national guidance.
Testing Requirements	Installation of a specification compliant with the relevant building described in the relevant building regulations or building standards national guidance demonstrates compliance. A site inspection by the developer or SQA is required to confirm that a compliant specification has been installed.

Table 1 – BREEAM Criteria – Hea 05

Pol 05 – Plant Noise

One credit can be achieved for Pol 05 if the following criteria are satisfied.

1. There are no noise-sensitive areas within the assessed building or within 800 m radius of the assessed site.

OR

2. Where there are noise-sensitive areas within the assessed building or noise-sensitive areas within 800 m radius of the assessed site, a noise impact assessment compliant with BS4142:2014(231) is commissioned. Noise levels must be measured or determined for:
    a. Existing background noise levels:
        i. at the nearest or most exposed noise-sensitive development to the proposed assessed site

ii. including existing plant on a building, where the assessed development is an extension to the building

b. Noise rating level from the assessed building.

3. The noise impact assessment must be carried out by a suitably qualified acoustic consultant.
4. The noise level from the assessed building, as measured in the locality of the nearest or most exposed noise sensitive development, must be at least 5dB lower than the background noise throughout the day and night.
5. If the noise sources from the assessed building are greater than the levels described in criterion 4, measures have been installed to attenuate the noise at its source to a level where it will comply with the criterion.

1.3 Brand Guidelines:

It is intended that the development will achieve the criteria outlined in the 'Motto – Brand Standards – Europe 2500 – Design, Construction & Renovation Standards' document.

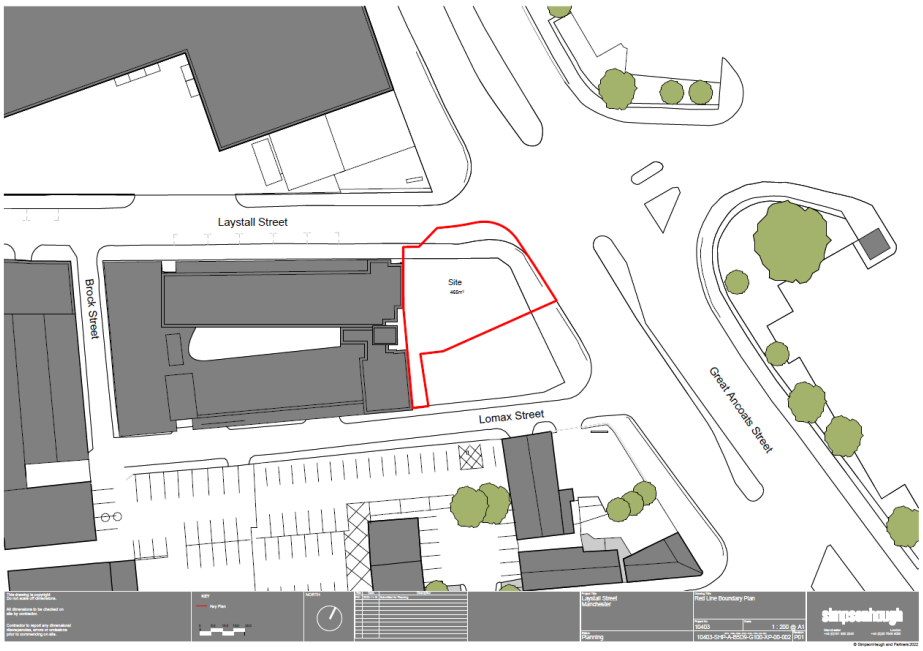
Criteria are given for internal noise intrusion, building services noise, internal sound insulation of partitions and doors, noise from lifts, reverberation, rainfall, and vibration. As the brand guidelines criteria are generally more stringent, the BREEAM criteria should be achieved in the majority of situations provided the brand standards are met.

1.4 Proposal Brief

The proposal for the site is as follows:

"Erection of a 20-storey building to create a 154-bedroom hotel (Class C1) above 2 basement levels with ancillary café / bar / restaurant and gym and other associated works including highway improvements, cycle parking and creation of accessible parking bay following removal of onsite structures."

The site location plan is shown below.



Drawing Ref. 10403-SHP-A-B5D9-G100-XP-00-002 from 'Simpsonhaugh'

Figure 1 – Site Location Plan

1.5 Planning Background and Conditions

The following planning condition relating to noise is assessed in this report. It is noted that other conditions relating to acoustics will be assessed at a later date.

"34) (a) Notwithstanding the details submitted as set out in the Noise Impact Assessment (Ref: 9840/PR/BL) by Acoustic Consultant Ltd Rev C dated 23-11-22 before the development other than demolition, commences a final scheme for acoustically insulating the development hereby permitted against any actual or potential sources of noise from:

(a) any commercial/industrial premises in the vicinity of the development

(b) the local traffic network;

(c) any mechanical ventilation system installed as part of the development; and

(d)noise transfer from the bar / restaurant area to rooms;

shall be submitted to the City Council as local planning authority in writing for its written approval The mitigation for hotel rooms shall be in accordance with Section 6.7 of the above report in relation to items (a) and (b) The approved noise insulation scheme shall be completed before each of the approved uses commence."

2. Façade Sound Insulation Scheme

In the following section, the proposed façade sound insulation scheme is assessed.

2.1 Criteria

The brand guideline criteria for internal ambient noise levels (noise intrusion and ventilation) defined in the Motto document are as follows:

Area	Internal Ambient Noise Level Criteria	Internal Mechanical Services Noise
Guestroom (Daytime 07:00 – 23:00)	35dB $L_{Aeq,16h}$	NR25 (NR35 in bathrooms)
Guestroom (Night-time 23:00 – 07:00)	30dB $L_{Aeq,8h}$ / 40dB L_{AFmax}	
Meeting/Function Rooms	32dB $L_{Aeq,5min}$	NR30
Bar/Restaurant/Breakout	38dB $L_{Aeq,5min}$	NR35
Executive Lounge	35dB $L_{Aeq,5min}$	NR35
Lobby/Reception/Guest Corridors	42dB $L_{Aeq,5min}$	NR40
Public Restrooms	--	NR40
Toilets/Team Member Changing	40dB $L_{Aeq,5min}$	NR45
Fitness Centre	40dB $L_{Aeq,5min}$	NR40
Spa	38dB $L_{Aeq,5min}$	NR35
Offices	38dB $L_{Aeq,5min}$	NR35
BOH/Service Areas	--	NR40 – NR45

Table 2 – Internal Ambient Noise Level Criteria

It should be noted that these criteria are equivalent to, or more restrictive than the criteria defined in BS8233:0214, and as such are compliant with the BREEAM requirements.

2.2 Glazing

In the original Acoustics Consultants Ltd assessment, the facades of the building were divided into colour groups depending on the sound reduction requirements. In the following section, the original recommendations are shown alongside alternative glazing types that can provide equivalent levels of sound reduction.

Façade Colour: Blue

Locations: Bar / Reception and Meeting Rooms

- Overall sound reduction of 50dB R_w. This can be achieved with either of the following glazing configurations:

  - 68.2 Stadip Silence glass, 24mm cavity, 66.2 Stadip Silence glass.
  - 10.8mm Pilkington Optiphon glass, 24mm argon cavity, 16.8mm Pilkington Optiphon glass.

Façade Colour: Purple

Locations: Hotel rooms up to floor 7, Ground Floor Reception, Office and WC.

- Overall sound reduction of 49dB R_w. This can be achieved with either of the following glazing configurations:
  - 88.2 Stadip Silence glass, 15mm cavity, 88.2 Stadip Silence glass.
  - 8.8mm Pilkington Optiphon glass, 16mm argon cavity, 12.8mm Pilkington Optiphon glass.

Façade Colour: Orange

Locations: Hotel rooms on floors 2 – 12.

- Overall sound reduction of 40dB R_w. This can be achieved with either of the following glazing configurations:
  - 10mm glass, 15mm cavity, 13.6mm glass.
  - 10mm glass, 16mm argon cavity, 8.8mm Pilkington Optiphon glass.

Façade Colour: Green

Locations: Hotel rooms on all floors.

- Overall sound reduction of 33dB R_w. This can be achieved with either of the following glazing configurations:
  - 6mm glass, 12mm cavity, 6.4mm laminated glass.
  - 8mm glass, 16mm air Cavity, 6mm glass

At this stage, the full specifications have not been finalised, however, NOVA Acoustics has been informed that they will comply with the above.

2.3 Ventilation

It is intended for the development to be ventilated using mechanical extraction (constant MEV) in conjunction with trickle ventilators.

The client intends to install Airvent ACO+ trickle ventilators, which provide a sound reduction of 46dB $D_{n,e,w}$ (-4, C_{tr}). Calculations show that in the worst-case rooms, the average daytime and night-time criteria (L_{Aeq}) are expected to be achieved, however, there are likely to be exceedances of the brand guidelines of between 3dB and 4dB for maximum events (L_{AFmax}). It should be noted that the brand criteria are 5dB more stringent than the BS8233 criteria, meaning that the BREEAM thresholds should be achieved, and as such, this may be viewed as an acceptable derogation.

In order to achieve the criteria for mechanical ventilation noise, in-line attenuators may be required. This will require final confirmation.

As a general design guide, the following maximum duct velocities for conventional low velocity systems should not be exceeded. The below information has been taken from Table 2.16 of CIBSE Guide B2 'Ventilation and ductwork: 2016'.

Noise Level (dBA)	Duct Velocity (m/s)		
	Main Duct	Branch Duct	Final Runout
30 (NR25)	3.0	2.5	<2.0
35 (NR30)	5.0	4.5	2.5
40 (NR35)	6.0	5.5	3.0
45 (NR40)	7.5	6.0	3.5
50 (NR45)	9.0	7.0	4.5

Table 3 – Maximum Duct Velocities

2.4 Structural Envelope Elements

It was recommended in the original acoustic assessment that the structural façade provides the minimum sound reduction values shown in the table below.

Description	1/1 Octave Band Frequency (R, dB)								Overall (R_w, dB)
	63	125	250	500	1k	2k	4k	8k	
Structural Façade Sound Reduction	32	49	54	58	60	67	70	67	62

Table 4 – Minimum Structural Façade Sound Reduction Values

The proposed structural façade construction is as follows:

- 28mm brick slips (min. density of 1600kg/m^3)
- Brick slip carrier system (210mm cavity) with 150mm mineral wool insulation (assumed min. density of 10kg/m^3)
- 15mm sheath board (assumed marine ply or OSB)
- 150mm structural framing system with 150mm mineral wool insulation (assumed min. density of 10kg/m^3)
- 2no. 12.5mm plasterboards

The above construction has been modelled in INSUL 9.0 prediction software, and it is confirmed that the minimum sound reduction should be achieved.

2.5 Roof

The roof of the building is expected to be constructed from a minimum of 350mm reinforced concrete slab. It is stated in the brand guidelines document that noise from rainfall must not exceed the NR40 curve in guestrooms below. As the construction is heavyweight, and does not include rooflights/glass roofs, the criteria should be achieved without mitigation.

Providing the slab has a minimum density of 1600kg/m^3, which is not an onerous requirement, the sound reduction values shown in Table 4 should also be achieved (without taking into account the sound reduction provided by the suspended ceiling).

3. BS4142 / Pol 05 Noise Impact Assessment

In the following section, noise is from the proposed rooftop plant equipment is assessed.

3.1 Plant Noise Limit Levels

To achieve the BREEAM Pol 05 criteria, the noise emissions from all plant must be a minimum of 5dB below the prevailing background noise levels. This is equivalent to 'low impact' when assessed in accordance with BS4142 and is complaint with Condition 11 imposed by the Local Authority. The noise limits are inclusive of any rating penalties that should be applied to account for the subjective annoyance caused by audible acoustic characteristics, such as intermittency or tonality, in accordance with BS4142.

Considering the lowest measured background noise levels given in the original acoustic assessment (lowest $L_{A90,15min}$) were 52dB during the day and 51dB during the night, the following limits are proposed:

- Daytime (07:00 – 23:00 hours): 47dBA
- Night-time (23:00 – 07:00 hours): 46dBA

3.2 Specific Sound Levels

NOVA Acoustics has been informed that the following external fixed plant will be installed at rooftop level. It is expected that the plant can operate at any time during the day or night, dependent on demand.

- 2no. Samsung AM260AXVGGH/EU ASHP units
- 11no. Samsung AM100AXVDGH/EU condenser units
- 6no. Samsung AM250TNBFEB/EU hydro units
- 1no. TGT/4/6-800-6/16 BLP extraction fan (EF-RF-01)
- 1no. THGT/2/4-500-6/8 BLP extraction fan (KEF-RF-01)
- 1no. TCBBX2/4-500 extraction fan (SEF-RF-02)

The octave band sound power levels for the plant units are shown in the table overleaf. Where octave band data is not provided by the manufacturer, this has instead been taken from data for a similar unit and corrected to give the overall A-weighted level.

Description	1/1 Octave Band Frequency (L_w, Hz, dB)								Overall (L_{wA}, dB)
	63	125	250	500	1k	2k	4k	8k	
1no. Samsung AM260AXVGGH/EU	93	95	88	84	81	75	67	56	87
1no. Samsung AM100AXVDGH/EU	84	86	79	75	72	66	58	47	78
1no. Samsung AM250TNBFEB/EU	67	69	62	58	55	49	41	30	61
1no. TGT/4/6-800-6/16 BLP Inlet	86	93	98	96	93	89	83	76	98
1no. TGT/4/6-800-6/16 Breakout [1]	78	83	84	77	69	60	49	42	79
1no. THGT/2/4-500-6/8 BLP Inlet	84	90	93	94	92	88	82	76	96
1no. THGT/2/4-500-6/8 BLP Breakout [1]	76	80	79	75	68	59	48	42	76
1no. TCBBX2/4-500 Outlet	85	88	95	88	88	82	75	70	92
1no. TCBBX2/4-500 Breakout [1]	77	78	81	69	64	53	41	36	74

Notes:
The breakout noise levels are calculated considering the sound reduction provided by 0.6mm steel casing, as per CIBSE guidance.

Table 5 – External Fixed Plant Sound Power Levels

The locations of the plant units are shown in the figure below.

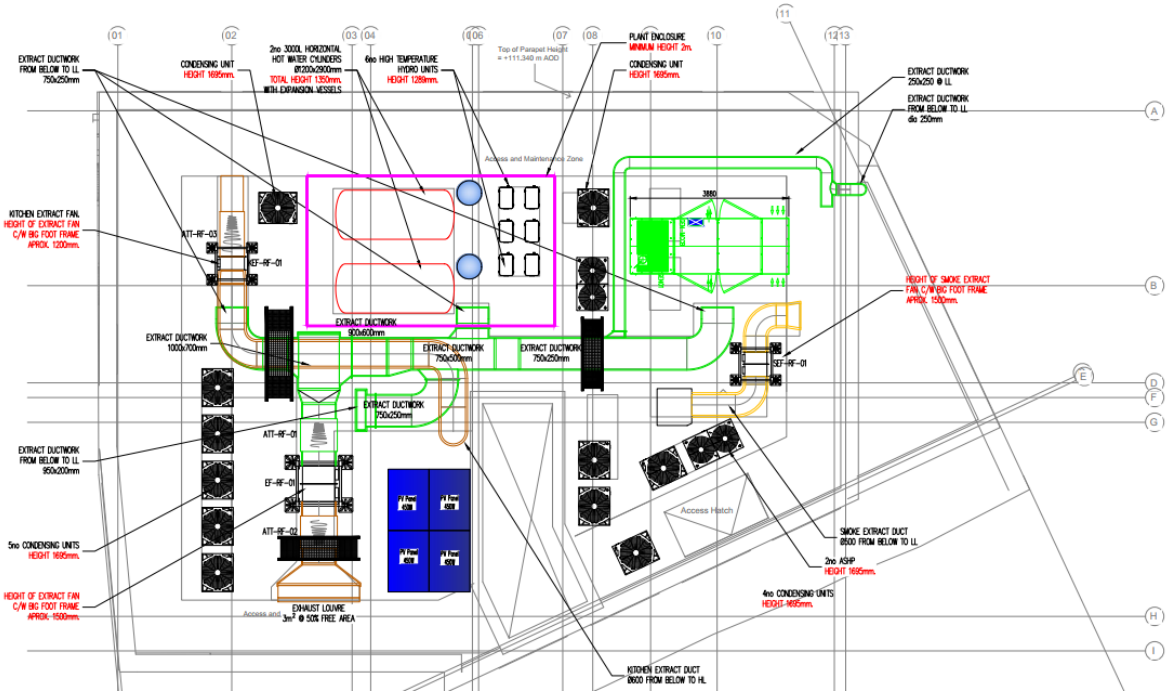


Figure 2 – External Fixed Plant Locations

For noise emissions from the extraction fans to be at acceptable levels, the silencers between the fans and the environmental termini must provide the following insertion losses:

Description	1/1 Octave Band Frequency (IL, Hz, dB)							
	63	125	250	500	1k	2k	4k	8k
TGT/4/6-800-6/16 BLP Inlet	0	5	17	19	19	21	23	27
THGT/2/4-500-6/8 BLP Inlet	0	2	12	17	18	20	22	27
TCBBX2/4-500 Outlet	0	0	14	11	14	14	15	21

Table 6 – Fan Silencer Insertion Losses

3.3 Noise Impact Assessment

The closest and most affected noise-sensitive receptor to the rooftop plant equipment is thought to be the Marriot Hotel directly adjacent to the site (40 Laystall Street). The proposed development will be considerably taller than the existing hotel (64m and 36m respectively), and as such, there will be a propagation path of approximately of 28m. Full shielding will be provided by the building itself as there will be no direct line of site from any window of 40 Laystall Street up to the plant deck.

The full calculations and BS4142 assessment are shown in the table below. The calculations are undertaken for the night-time period exclusively, as measured background noise levels are lower at this time.

Description	1/1 Octave Frequency Band (Hz, dB)								Overall (dB)
	63	125	250	500	1k	2k	4k	8k	
Cumulative Sound Power Level (L_w)	99	101	95	90	87	81	73	62	93
Acoustic Shielding	-14	-17	-20	-20	-20	-20	-20	-20	--
Propagation Loss (28m, Q=4)	-34								--
Specific Sound Level at NSR1 (L_{eq})	51	50	41	36	33	27	19	8	40
Acoustic Feature Correction	A +4dB penalty is applied to account for perceptible levels of tonality. Considering the number of units, intermittency is not expected to be audible.								+4
Rating Sound Level ($L_{Ar,Tr}$)	Specific sound level plus rating penalties.								44
Plant Noise Limit Level	Night-time limit (Lowest $L_{A90,15min}$ – 5dB)								46
Exceedance	$L_{Ar,Tr}$ – $L_{A90,15min}$.								-2
LPA Criteria Outcome	Rating noise level is within the criteria defined by the LPA.								
BS4142 Assessment Outcome	Low Impact, dependent on context.								
Pol 05 Outcome	Rating level is within Pol 05 criteria.								
NPPF & NPSE Outcome	No Observed Adverse Effect Level ('NOAEL').								
No mitigation measures are required.									

Table 7 – Calculations & BS4142 Noise Impact Assessment

As can be seen, providing the plant units are installed as specified, the noise emissions are predicted to be within both the Local Authority and BREEAM criteria. It should be noted that the calculations have been carried out considering a worst-case scenario of all equipment running at full capacity with no acoustic shielding provided by intervening structures on the roof itself. In reality, noise emissions are likely to be lower.

3.4 Emergency Power Generator

It is intended that an emergency power generator will also be installed at roof level. This will be used infrequently in the event of a power outage.

The manufacturer provides a sound pressure level of 62dBA at a distance of 15m (enclosure option 2), which equates to a sound power level of 94dBA (assuming the measurements were taken with 1 reflective plane).

Based on the shielding attenuation detailed in Table 7 and a distance of 28m to the nearest unassociated window, the projected rating noise level is 44dBA. Although this may marginally exceed the LPA criteria if the generator was to be operational alongside the other plant, as the unit is anticipated to be used infrequently, and the noise level is below the lowest recorded background noise at night; it is thought this should be viewed as acceptable.

4. Internal Sound Insulation Review

The aim of this section of the report is to assess the compliance of the current design proposals with respect to the Requirements E1, E2 and E3 of Building Regulations Approved Document E 2003 (Including 2004, 2010, 2013 and 2015 amendments) ('ADE'), the Motto brand guidelines document, and the BREEAM criteria.

The ADE requirements are defined as follows:

- E1 – Provide sufficient airborne and impact sound insulation **between** separate dwellings and acoustically separate spaces.
- E2 – Achieve appropriate levels of sound insulation for internal walls **within** dwellings.
- E3 – Control reverberation times within communal spaces such as corridors and entrance halls.

Where construction details have been provided by the client, these are assessed and upgraded designs/specifications are included where necessary. Where partition details have not yet been finalised, compliant constructions are proposed. In addition, guidance regarding junction detailing and measures required to mitigate flanking sound transmission are also provided.

4.1 E1 – Protection against sound from other parts of the building and adjoining buildings

It is stated in Requirement E1 of Approved Document E that dwelling-houses, flats, and rooms for residential purposes must be designed and constructed to provide reasonable resistance to sound from adjoining dwellings or other parts of the same building. The separating walls and floors must meet the minimum standards shown in the following table to limit the transmission of both airborne noise (such as speech or music) and impact noise (such as footsteps).

Partition Type	Airborne Sound Insulation ($D_{nT,w}$ + C_{tr}, dB)	Impact Sound Insulation ($L'_{nT,w}$, dB)
(Newbuild Rooms for Residential Purposes)		
Walls	≥43	--
Floors and Stairs	≥45	≤62

Table 8 – ADE Requirement E1 Performance Standards

The following criteria are provided in the brand guidelines document. It should be noted that the criteria are given in terms of R'_w (apparent weighted sound reduction index), which is an onsite testing metric. For the purposes of this report, this is assumed to be equivalent to $D_{nT,w}$.

	Guestroom	Equip. rm. / riser or storage	Corridor, no door	Restaurant, Bar, Game Room	Function Room	Meeting, Training, Board Rms	Exec Lounge, Bus. Center	Fitness Ctr, Spa	Office	WC/ Change Room	Kitchen, Laundry
Guestroom	55dB	60dB	60dB	60dB	60dB	60dB	60dB	60dB	60dB	60dB	65dB
Equipment room/riser or storage		-	45dB	45dB	45dB	50dB	50dB	45dB	50dB	45dB	40dB
Corridor - no door			-	45dB	45dB	45dB	45dB	45dB	45dB	45dB	50dB
Restaurant, Bar				40dB	45dB	55dB	55dB	45dB	50dB	45dB	50dB** (no door)

Table 9 – Brand Guidelines – Airborne Sound Insulation Performance Standards

	Guestroom	Equip. rm. / riser or storage	Corridor, no door	Restaurant, Bar, Game Room	Function Room	Meeting, Training, Board Rms	Exec Lounge, Bus. Center	Fitness Ctr, Spa	Office	WC/ Change Room	Kitchen, Laundry
Function Room					50dB*	55dB	55dB	45dB	55dB	45dB	50dB** (no door)
Meeting, Board, Training Rooms						50dB*	50dB	50dB	50dB	50dB	55dB
Executive Lounge/ Business Center							50dB	50dB	50dB	50dB	55dB
Fitness Center/Spa								-	50dB	45dB	55dB
Office									45dB	50dB	55dB
WC/ Changing Room Guestroom										40dB	45dB
Kitchen, Laundry											-

Table 10 – Brand Guidelines – Airborne Sound Insulation Performance Standards

The following criteria are given for impact sound insulation performance.

Space Below	Space Above								
	Guestroom	Restaurant, Bar, Game Room	Function Room	Meeting, Board, Training Rooms	Executive Lounge, Business Center	Office	WC/ Changing Room	Fitness Center, Spa*	Kitchen, laundry, bar store
Guestroom	50dB	45dB	45dB	50dB	50dB	50dB	50dB	*	**
Restaurant, Bar	55dB								
Function Room									
Meeting, Board, Training Rooms									
Executive Lounge, Business Center									
Fitness Center, Spa	55dB								
Office	60dB								

Table 11 – Brand Guidelines – Impact Sound Insulation Performance Standards

As can be seen, walls between guestrooms must provide a minimum sound reduction of 55dB R'_w, and floors between guestrooms should provide 55dB R'_w and 50dB $L_{nT'w}$ for airborne and impact sound reduction respectively.

Further to the above, the following criteria and guidance is provided regarding doors:

Room	Weighted Sound Reduction Index of Doors, R_w or STC
Guestroom entrance (within 5m of elevator/lift lobby)	32dB (35dB)
Meeting/function room entrance	35dB
Executive lounge	30dB
Offices	30dB

Table 12 – Brand Guidelines – Airborne Sound Insulation Performance – Doors

"Doors connecting guestrooms must be designed and installed to achieve sound reduction values listed in Section 2514.05.N (55dB)"

"Other than where occurring between guestrooms, partitions containing a door are unlikely to achieve sound reduction performances specified in Section 2514.05.N. In this case, the partition construction must be selected so as to be capable of achieving in-situ performance, i.e. R'$_w$ or ASTC, at least 10dB greater than the door performance above. For example, the partition containing a guestroom access door must be designed to achieve minimum R'$_w$/ASTC 42dB. Owing to the relative internal dimensions of corridors and stairwells, in-situ testing of guestroom doors will not be undertaken."

It should be noted that brand guidelines criteria are more stringent than the typical ADE criteria, and as such, assuring compliance with the brand guidelines should ensure the ADE requirements will also be met.

Partition and Door Locations

The locations of the separating walls are highlighted in the following figures. The partitions have been colour-coded to indicate the different sound insulation values that are proposed. The client has also completed partition mark-ups, and these are shown in Appendix D.

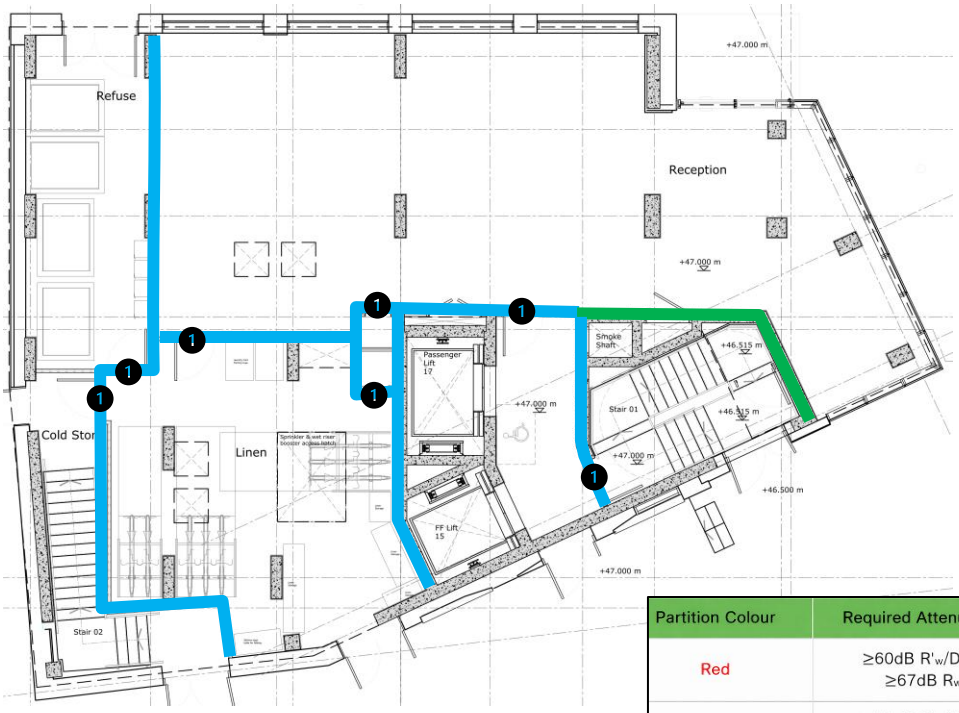
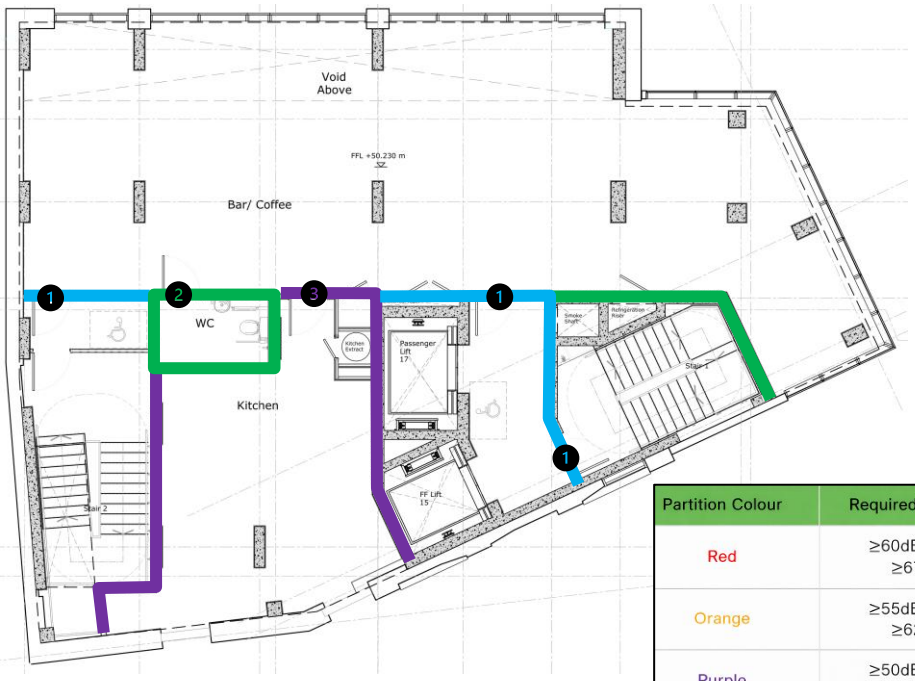


Figure 3 – Ground Floor Level Markup

Partition Colour	Required Attenuation
Red	≥60dB R'$_w$/D$_{nT,w}$ ≥67dB R$_w$
Orange	≥55dB R'$_w$/D$_{nT,w}$ ≥62dB R$_w$
Purple	≥50dB R'$_w$/D$_{nT,w}$ ≥57dB R$_w$
Green	≥45dB R'$_w$/D$_{nT,w}$ ≥52dB R$_w$
Blue	≥40dB R'$_w$/D$_{nT,w}$ ≥47dB R$_w$



Partition Colour	Required Attenuation
Red	≥60dB $R'_{w}/D_{nT,w}$ ≥67dB R_{w}
Orange	≥55dB $R'_{w}/D_{nT,w}$ ≥62dB R_{w}
Purple	≥50dB $R'_{w}/D_{nT,w}$ ≥57dB R_{w}
Green	≥45dB $R'_{w}/D_{nT,w}$ ≥52dB R_{w}
Blue	≥40dB $R'_{w}/D_{nT,w}$ ≥47dB R_{w}

Figure 4 – 1st Floor Level Markup

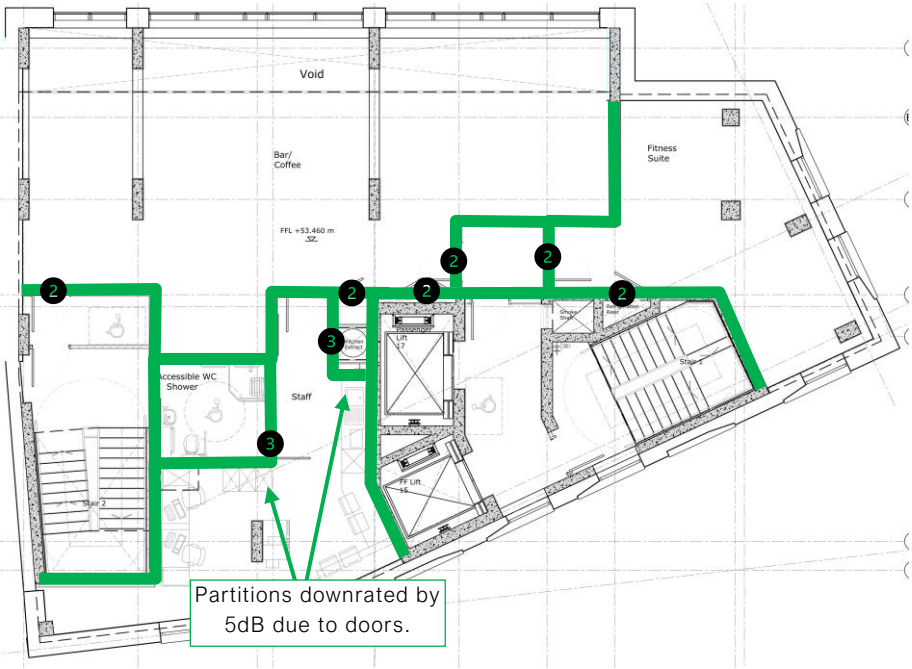


Figure 5 – Mezzanine Floor Level Markup

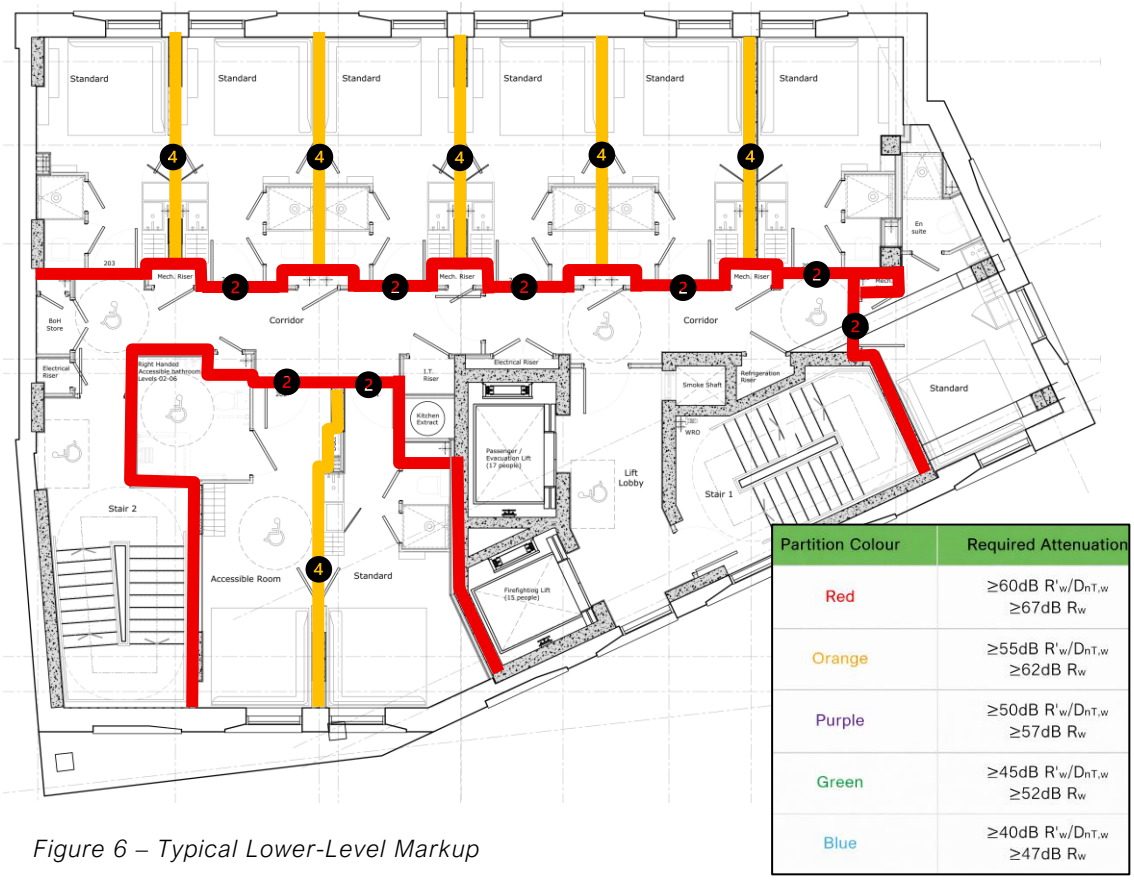


Figure 6 – Typical Lower-Level Markup

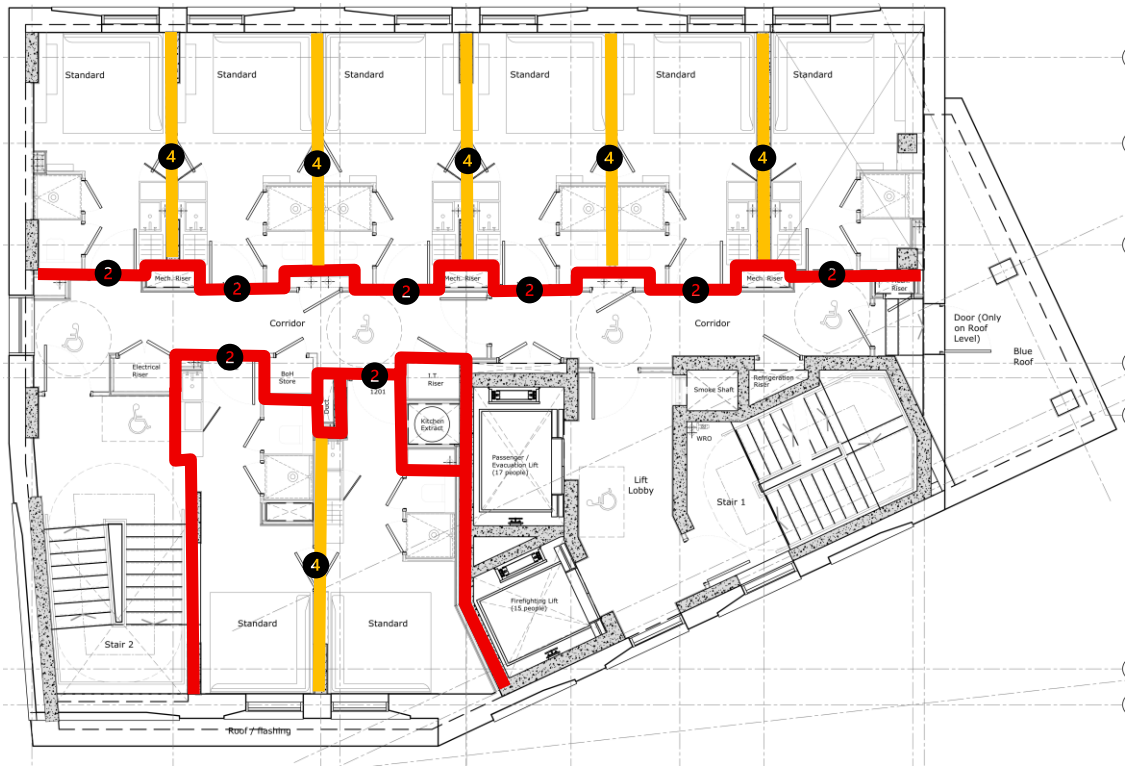


Figure 7 – Typical Upper-Level Wall Markup

Door Specifications

The proposed door products are shown in the following table.

Door Ref.	Required Attenuation	Example Door Model
1	≥30dB R_w	Heletec 30
2	≥32dB R_w	To be designed by ID
3	≥35dB R_w	Huet Euroflam EI60 35
4	≥55dB R_w	Proprietary back-to-back twin doorset with 180-degree hinges

Table 13 – Proposed Door Specifications

It is noted that the double door specification (door ref. 4) may not achieve the full BREEAM credits, however, this is likely to be the highest level of sound reduction possible without installing lobbies between rooms. As such, this would need to be accepted as a derogation from the guidelines.

In order for the doors to be as effective as possible, it is recommended that acoustic seals and threshold plates are carefully selected and that the doors close to an airtight condition. Further to this, it is also recommended that automatic door closers are installed to ensure that both doors are fully secure when occupied.

The following is stated in BS8233:2014 regarding door seals:

"The main factors determining the sound insulation of a single door set are the mass of the door and the gaps around the edges; usually, the latter are critical. For good sound insulation, the door should form airtight joints with the frame when closed and the joints between frame and wall should be sealed. A threshold seal is essential, and even keyhole covers should be fitted in critical situations."

Internal Walls

The clients proposed wall construction types are compared with the requirements in the table below.

Partition Ref.	Max. Required Attenuation	Proposed Construction	Compliant (Y/N)
01	≥60dB $R'_w/D_{nT,w}$ ≥48dB $D_{nT,w} + C_{tr}$ ≥55dB $R_w + C_{tr}$	**BG White Book Ref: A316013 (EN)** Two layers of Gyproc SoundBloc 15mm each side of Gypframe 70 S 50 'C' Studs at 600mm centres with Gypframe RB1 Resilient Bar at 600mm centres to both sides. 50mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 3200mm. **BG Test Score: 65dB R_w / 57dB $R_w + C_{tr}$**	Y [1]
02	≥50dB $R'_w/D_{nT,w}$ ≥57dB R_w	**BG White Book Ref:** A206A296S (EN) Two layers of Gyproc FireLine 12.5mm each side of Gypframe 92 AS 50 AcouStuds at 600mm centres. 100mm Isover Modular Roll in the cavity with 2mm Thistle MultiFinish on each side. For heights up to 3000mm. **BG Test Score: 58dB R_w**	Y

03	≥45dB $R'_w/D_{nT,w}$ ≥52dB R_w	**BG White Book Ref:** A206274 (A) (EN) Two layers of Gyproc FireLine 15mm each side of Gypframe 92 S 50 'C' Studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 4200mm. **BG Test Score: 52dB R_w**	Y
04	≥40dB $R'_w/D_{nT,w}$ ≥47dB R_w	**BG White Book Ref:** A206099 (EN) Two layers of Gyproc FireLine 12.5mm each side of Gypframe 48 S 50 'C' Studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 3000mm. **BG Test Score: 49dB R_w**	Y
05	N/A / ≥45dB R_w	**BG White Book Ref:** A206033 (EN) One layer of Gyproc WallBoard 12.5mm each side of Gypframe 48 S 50 'C' Studs at 600mm centres. 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 2500mm. **BG Test Score: 40dB R_w**	Y / N [2]
06	N/A	**BG White Book Ref:** A206013 (EN) One layer of Gyproc WallBoard 12.5mm each side of Gypframe 70 S 50 'C' Studs at 600mm centres. For heights up to 3600mm. **BG Test Score: 36dB R_w**	Y
07	N/A	**BG White Book Ref:** A206067A (EN) Two layers of Gyproc FireLine 12.5mm each side of Gypframe 48 S 50 'C' Studs at 600mm centres. For heights up to 3400mm. **BG Test Score: 42dB R_w**	N/A
08	N/A	**BG White Book Ref:** N/A 1 layer of 12.5mm Moisture resistant SoundBloc on one side of 70mm Gypframe C studs at 400mm centres. **BG Test Score: N/A**	N/A
09	≥60dB $R'_w/D_{nT,w}$ ≥67dB R_w	**BG White Book Ref:** A306035 (EN) Gypframe 60 I 70 'I' Studs at 600mm centres with Gyproc CoreBoard 19mm between studs, secured by Gypframe G102 Retaining Channel. Three layers of Gyproc FireLine 15mm to non-shaft side and 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 4200mm. **BG Test Score: 45dB R_w**	N [3]
10	≥60dB $R'_w/D_{nT,w}$ ≥50dB $D_{nT,w} + C_{tr}$ ≥57dB $R_w + C_{tr}$	1 layer of 12.5mm Gyproc WallBoard dot and dab on 250mm Reinforced Concrete Column / Wall (≥2450kg/m³) **Predicted Test Score: 60dB $D_{nT,w}$ / 55dB $D_{nT,w} + C_{tr}$**	Y [4]

11	≥60dB $R'_w/D_{nT,w}$ ≥67dB R_w	**BG White Book Ref:** A206099 (EN) with 275mm min. Reinforced Concrete Column / Wall (≥2450kg/m³) Gypframe 60 I 70 'I' Studs at 600mm centres with Gyproc CoreBoard 19mm between studs, secured by Gypframe G102 Retaining Channel. Three layers of Gyproc FireLine 15mm to non-shaft side and 25mm Isover Acoustic Partition Roll (APR 1200) in the cavity. For heights up to 4500mm. **BG Test Score: ≥70dB R_w**	Y

Notes:
[1] *Whilst this build-up is predicted to be marginally below the brand guideline criteria, as the walls contain doors, this is not expected to be reduce the overall sound reduction provided by the partitions.*
[2] *According to ADE, there is no specific requirement for these walls, however according to the Brand Guidelines, ensuite walls should provide a minimum sound reduction of 45dB R_w. This can be achieved with BG ref. A206016S (A) (EN).*
[3] *See sections 4.2 and 4.3 regarding risers.*
[4] *This detail is predicted to be close to the lower brand guideline threshold.*

Table 14 – Proposed Separating Wall Specifications – Requirement E1

Installation Guidance:

- Ensure all products are installed in accordance with the manufacturer's guidance.
- Ensure mineral wool covers the whole partition area and is installed tightly between the studs without sagging.
- The plasterboard joints should be staggered to avoid direct air paths.
- All joints in the outer layers of plasterboard should be sealed to an airtight condition with acoustic sealant.
- All plasterboards should be finished 3mm from the partition junction. This gap should be filled with acoustic mastic.
- Head and sole plates should be isolated from the building structure using appropriate isolation strips.

It should be noted that at this stage, NOVA Acoustics has not been provided with specific junction details to review.

4.2 Risers Between Guestrooms

In some locations, risers are located between guestrooms using wall type 09. In these situations, it is possible for sound to flank through both the common plasterboards and weak junction interfaces. An example of this is highlighted in the figure overleaf.

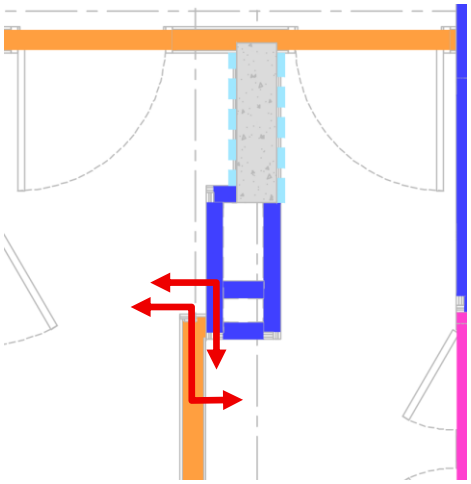


Figure 8 – Riser Flanking

To improve the sound reduction, the orange wall should be continued all around the riser; this is shown below.

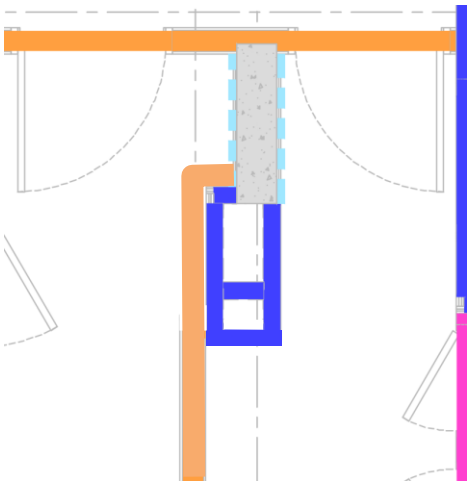


Figure 9 – Riser Flanking Treatment

4.3 Risers Between Corridors and Guestrooms

It is noted that in multiple locations, risers are located between the corridors and guestrooms. Examples of this are shown below.

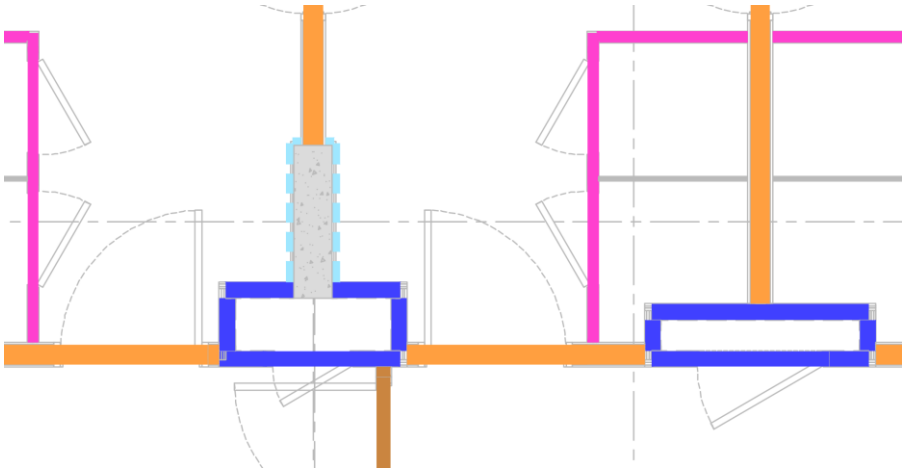


Figure 10 – Risers Adjoining Corridors/Guest Bedrooms

In these locations, the sound insulation performance is going to be heavily influenced by the riser doors. As such, it is recommended that these doors are specified at no less than 40dB R_w. It should also be noted that according to the brand guidelines, all partitions between risers and guestrooms should provide a minimum sound reduction of 60dB $D_{nT,w}$. As can be seen in Table 14, the riser walls have been specified to achieve a sound reduction of 45dB R_w (wall type 09), which is significantly below the requirement. However, if noise levels within the risers will not be of a high level, this may be an acceptable derogation. It is recommended that this is confirmed prior to the design being finalised, particularly for locations where rooms are adjacent to the kitchen extraction flue riser.

4.4 Partition Floors

The sound reduction requirements for the floors within the development are as follows:

- ≥60dB R'_w ($D_{nT,w}$) airborne sound insulation performance
- ≤50dB $L_{n,T'w}$ impact sound insulation performance

The proposed floor construction types are shown in the table below.

Proposed Separating Floor Specification
Floor Types 1 & 4: - 5mm impact matting (MuteMat OSF-750-05 or equivalent) - 225mm in-situ concrete (min. density of 2000kg/m^3) - Gypframe acoustic hangers - Suspended MF ceiling (min. drop of 100mm) with 25mm mineral wool insulation in the cavity (min. density of 10kg/m^3) - 1no. 15mm BG WallBoard **Predicted Test Score: 70dB $D_{nT,w}$ / 65dB $D_{nT,w}$ + C_{tr} / ≤50dB $L_{n,T'w}$**
Floor Type 5 (Corridors): - 5mm MuteMat OSF-750-05 (or equivalent impact matting) - 225mm in-situ concrete (min. density of 2000kg/m^3) - Gypframe acoustic hangers - Suspended MF ceiling (390mm drop) & 1no. 15mm BG WallBoard **Predicted Test Score: 76dB $D_{nT,w}$ / 69dB $D_{nT,w}$ + C_{tr} / ≤50dB $L_{n,T'w}$**
Floor Type 6: - 5mm impact matting (MuteMat OSF-750-05 or equivalent) - 275mm in-situ concrete (min. density of 2000kg/m^3) - Gypframe acoustic hangers - Suspended MF ceiling (min. drop of 140mm) with 25mm mineral wool insulation in the cavity (min. density of 10kg/m^3) - 1no. 15mm BG WallBoard **Predicted Test Score: 75dB $D_{nT,w}$ / 70dB $D_{nT,w}$ + C_{tr} / ≤50dB $L_{n,T'w}$**

Table 15 – Proposed Separating Floor Specification – Requirement E1

4.5 Flanking Risks

Flanking transmission occurs when sound travels indirectly through a building's structure, bypassing the separating partition. This can take place in various locations, such as through connecting steelwork, ductwork, and service runs, and can significantly impact the overall acoustic performance of the

separation element. Effective acoustic design must therefore consider not only the insulation of main elements but also the control of flanking paths through careful detailing, use of resilient materials, and proper isolation techniques. Common flanking paths and recommended treatments are described in the following section.

Steelwork Supporting Structures

To avoid noise flanking through interconnecting structural steelwork at ceiling level, it is recommended that the steelwork itself is completely enveloped within the separating partition. To be effective, the steelwork should not touch or be attached to the ceiling in any way. An example of this is shown below.

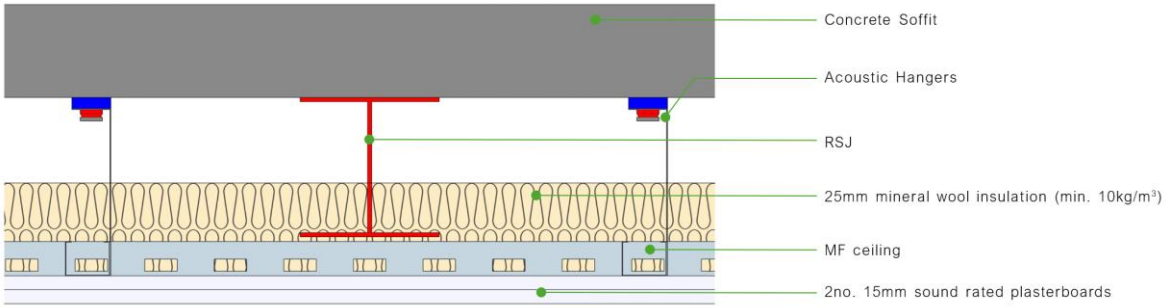


Figure 11 – RSJ Ceiling Detail

Where the steelwork will sit below the acoustic ceiling, it is recommended that it is encased within two layers of sound rated plasterboard attached to an independent frame, as shown below.

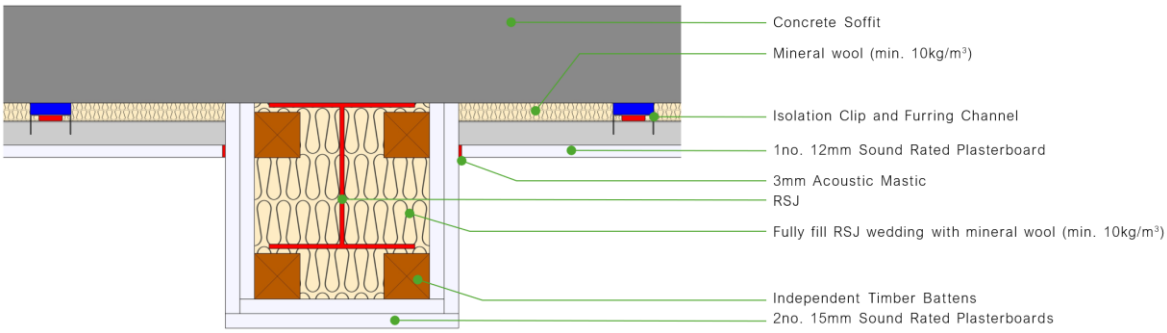


Figure 12 – RSJ Ceiling Boxing Detail – Independent Timber Battens

If it is not possible to install an independent timber frame, an alternative option is to affix timber battens to the steelwork, and install the plasterboards on resilient bars, as shown below.

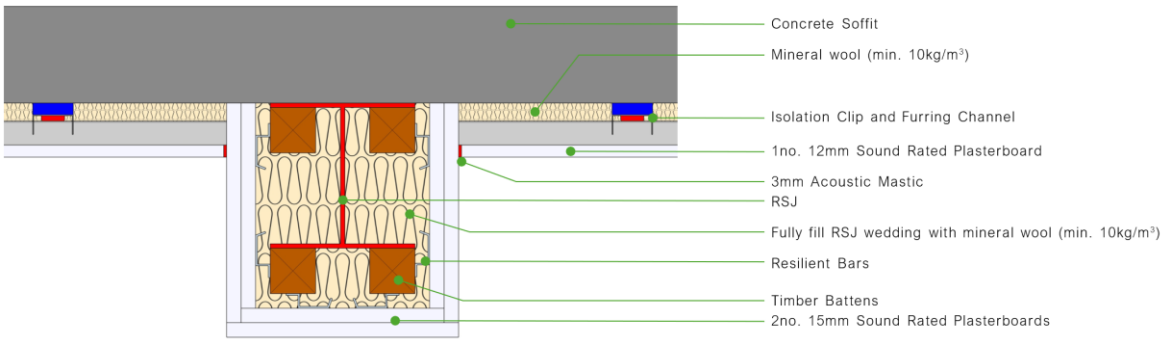


Figure 13 – RSJ Ceiling Boxing Detail – Resilient Bars

If there is an unavoidable need to connect separating walls or ceilings to these structures, then specific details and section drawings should be issued to NOVA Acoustics for review.

External Walls

In steel frame constructions, flanking can take place through the inner framing of the external wall. In order to mitigate this, it is recommended that the floors are separated by either the concrete slab itself, or a cement particle board, as shown in the figure below. The cavity between the framing and external brickwork should be fully closed, with all rigid sheathing board acoustically isolated between floors. The internal area of the external wall must be lined with 2no. layers of plasterboard (this is already specified by the client as detailed in Section 2.4 and does not require further upgrades).

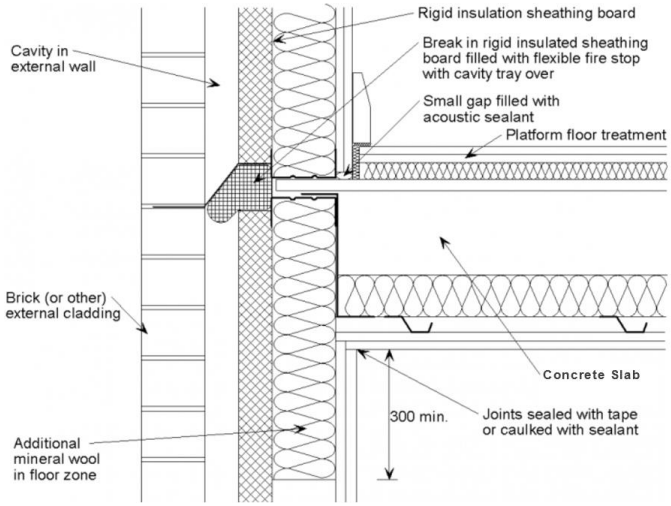


Figure 14 – SFS External Wall Flanking Mitigation

Concrete Pillars or Other Common Structural Masonry

In areas with concrete pillars or common structural masonry, it is recommended that an acoustic lining system is installed, comprising of timber or steel frames affixed to the concrete, with 25mm absorbent mineral wool between the frames finished with 1no. 12.5mm SoundBloc plasterboard (min. surface mass of 10.6kg/m²). The plasterboard must not run common between acoustically separate spaces, and all joints must be well sealed with acoustic mastic. Affixing plasterboard via dot and dab will not be sufficient.

Doors (Part E Requirement)

It must be ensured that all doors located in acoustically separating partitions have good perimeter sealing (including the threshold where practical) and a minimum surface mass of 25kg/m².

The doorsets should provide a minimum sound reduction of 29dB R_w (measured in the laboratory according to BS EN ISO 140-3:1995 and rated according to BS EN ISO 717-1:1997). All doors should also satisfy the requirements of Building Regulations Part B – Fire safety. As can be seen in previous sections, the brand guidelines are more stringent than the Part E requirement, and as such, no further upgrades are required.

Downlighters and Recessed Lighting

Based upon considerable testing experience standard downlighters and recessed lighting do not require special acoustic backs or hoods. Where there is a minimum ceiling void of 75mm downlighters may be

installed in the ceiling. They should be installed in accordance with the manufacturer's instructions, at no more than one light per 2m^2, at centres of not less than 0.75m. Openings should not exceed 100mm diameter.

Electrical Sockets

Where electrical sockets are to be located on separating walls, they should ideally be surface mounted. If sockets are to be recessed, they must not be positioned back-to-back and should be staggered by a minimum of 150mm in different stud bays. Acoustic backboxes or baffles equivalent to the wall lining should be installed behind sockets in stud/framed walls with all joints fully sealed. Example details are shown below.

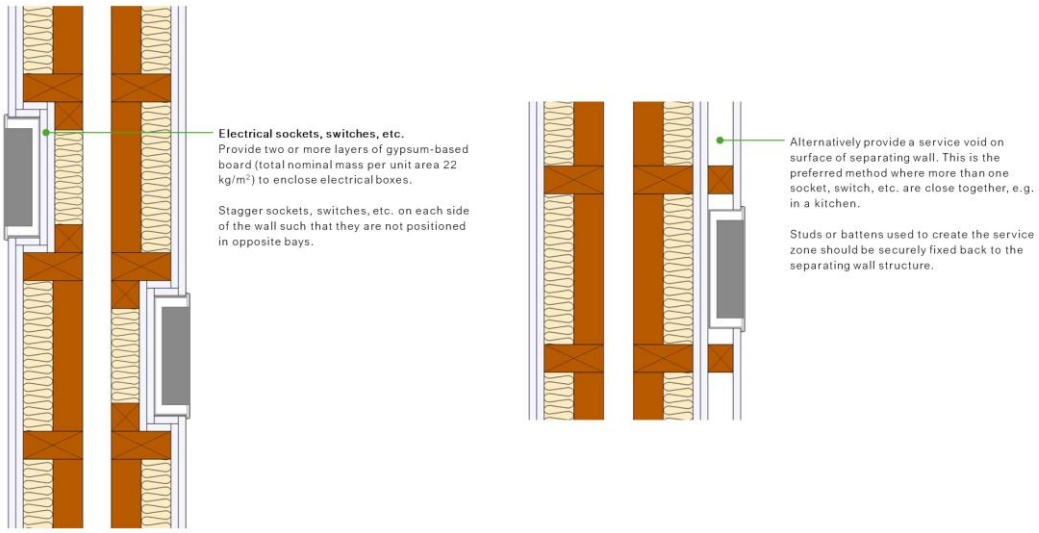


Figure 15 – Electrical Socket / Switch Detail

Piped Services / Ducts

Piped services and ducts which pass through separating walls or floors should be surrounded with sound absorbent material and enclosed for their full height. The enclosure should be constructed of material with a minimum surface mass of 12kg/m^2, as shown in the following figure.

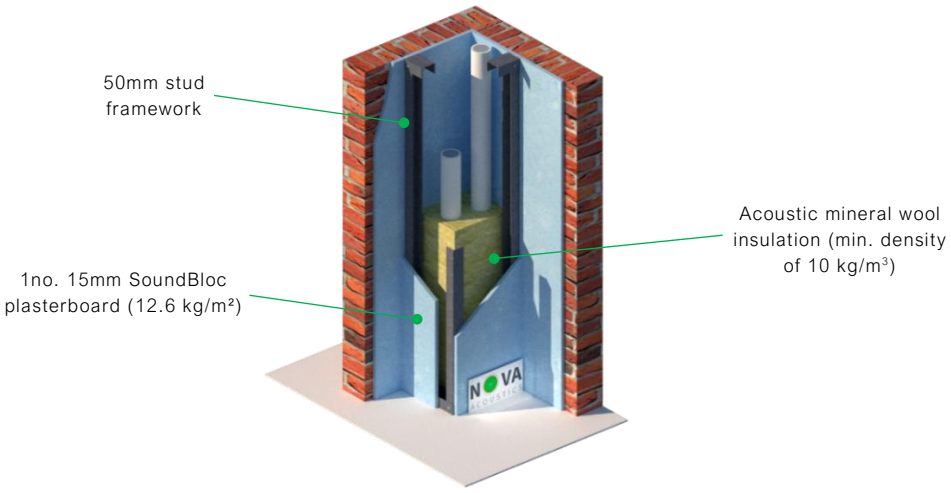


Figure 16 – Piped Service Detailing

Lightweight Screed Floors

For separating floors mounted on continuous lightweight floor screeds, it is recommended that the base slab has a minimum surface mass of ≥350kg/m^2. Should any floor build-up incorporate thermally or acoustically isolated levelling floor screeds then partitions should be built up off the structural slab, utilising a sole plate if required, and the floor screeds terminated at the room perimeters. Resilient perimeter strips should be incorporated at the room perimeters to maintain isolation. Separating walls should be built from slab to soffit if possible. Where this is not practical, a 20mm wide cut through the entire screed layer would need to be allowed for, as shown in the figure below.

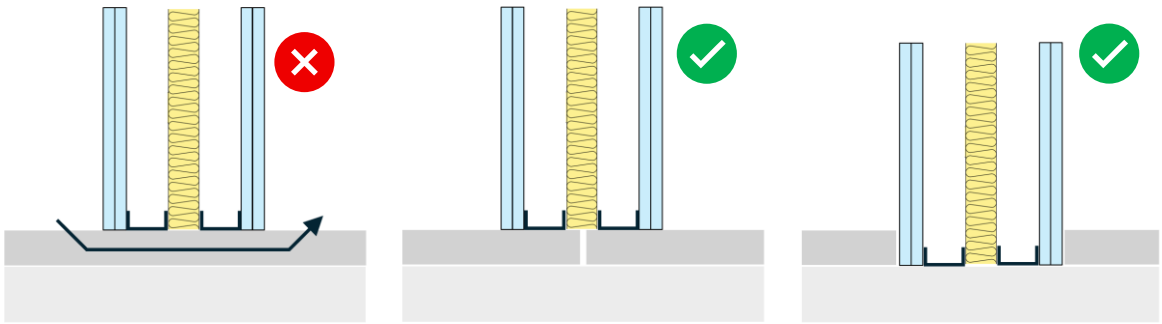


Figure 17 – Lightweight Screed Separating Wall

4.6 E2: Sound Insulation Within Residential Rooms

Requirement E2 relates to the sound insulation provided by partitions or separating elements within a single dwelling. The criteria are explained in the following excerpt from Approved Document E.

"Dwelling-houses, flats and rooms for residential purposes shall be designed and constructed in such a way that: (a) internal walls between a bedroom or a room containing a water closet, and other rooms; and (b) internal floors provide reasonable resistance to sound.

Requirement E2 does not apply to:

(a) An internal wall which contains a door.
(b) An internal wall which separates an ensuite toilet from the associated bedroom.
(c) Existing walls and floors in a building which is subject to a material change of use."

Considering the above, it is not thought that this requirement is relevant to this development, however, the following is stated in the brand guidelines document:

"Sound insulation between a guestroom and its ensuite is controlled by the door. Notwithstanding, the partition construction must be capable of achieving sound reduction R_w / STC 45dB."

A partition design which is compliant with this is shown in the following table.

Element	Required Attenuation	Proposed Internal Wall Partition Construction
Ensuite Walls	45dB R_w	**BG White Book Ref: A206016S (A) (EN)** Two layers of Gyproc WallBoard 15mm each side of Gypframe 70 S 50 'C' Studs at 600mm centres with 2mm Thistle MultiFinish on each side. For heights up to 4200mm.

Table 16 – Sound Insulation Specification – Ensuite Walls – Brand Guidelines

4.7 E3: Reverberation Within Common Internal Areas

Requirement E3 relates to reverberation in the common areas of buildings. It is important to control reverberant build-up in these areas to ensure that noise within corridors, atriums, and similar spaces does not negatively affect the amenity of adjacent residents.

Again, whilst the development must be designed to achieve the criteria, there is no specific requirement for testing in order to prove compliance.

Two methods of achieving the criteria are provided in Approved Document E. These are as follows:

- Method A to BS EN ISO 11654:1997 detailed in Approved Document E Sections 7.10 - 7.12, or
- Method B in accordance with Approved Document E Sections 7.13 - 7.25.

In general, the simplest methods of achieving compliance with the criteria are outlined in the table below.

Room Type	Required Interior Finish
Corridors and Hallways	Cover the surface area greater than or equal to the floor area with a Class C absorber. Typically, the ceiling area.
Stairwells	Cover the surface area greater than or equal to the floor area, including landings and stair treads with a Class C absorber. Typically, the ceiling area.

Table 17 – Absorption Specification – Requirement E3

As can be seen, providing the floors of the areas outlined above are covered with an appropriate carpet layer, Requirement E3 will be satisfied. Where this is not desirable or practicable, absorptive surfaces can be installed on the walls and/or ceiling, such as acoustic panelling (e.g., iKoustic StillNote panels), or perforated plasterboard (e.g., British Gypsum Gyptone Quatro 41). Further advice can be provided by NOVA Acoustics if required.

Further to the above, the following reverberation time criteria are provided in the brand guidelines document. It should be noted that the criteria are given in terms of 't_{mf}', which is the arithmetic average of reverberation times in octave bands between 500Hz and 2kHz (inclusive).

Room	Maximum reverberation times, seconds
Meeting/function room	0.8
Lobby/reception	1.5
Bar/restaurant	1.0
Executive lounge	0.8
Spa	1.0

Table 18 – Brand Guidelines Reverberation Criteria

5. Conclusion and Action Plan

The current design proposals have been reviewed against the relevant acoustic design criteria. A summary of the results is as follows:

1. The proposed glazing and background ventilation systems should be installed in accordance with the specifications provided in Sections 2.1 and 2.2.
2. The noise emissions from all plant systems should not exceed 47dBA during the daytime (07:00 – 23:00) and 46dBA during the night-time (23:00 – 07:00) at the closest noise-sensitive receptors. The noise limits are inclusive of any rating penalties that should be applied to account for the subjective annoyance caused by audible acoustic characteristics, such as intermittency or tonality, in accordance with BS4142:2014+A1:2019. The current specification for rooftop plant is within these criteria, and as such is acceptable providing the recommended mitigation measures are implemented.
3. If any revisions are made to the plant specifications, NOVA Acoustics should be consulted to ensure the limit levels can be achieved.
4. The separating wall and floor partition details are assessed in Section 4. Recommendations are included where construction types are yet to be finalised.
5. Appropriate flanking sound mitigation measures and junction designs are included in Section 4.2, 4.3 and 4.5. Once all details are fully finalised, NOVA Acoustics should be consulted to ensure that the designs are appropriate.

The findings of this report will require written approval from the Local Authority and decision makers prior to work commencing.

Appendix A – Acoustic Terminology

A-weighted sound pressure level, L_{pA}	Quantity of A-weighted sound pressure given by the following formula in decibels (dBA). $L_{pA} = 10 \log_{10} (pA/p_0)^2$. Where: pA is the A-weighted sound pressure in pascals (Pa) and $p0$ is the reference sound pressure (20 µPa)
Background Sound	Underlying level of sound over a period, T, which might in part be an indication of relative quietness at a given location
Equivalent continuous A-weighted sound pressure level, $L_{Aeq,T}$	Value of the A-weighted sound pressure level in decibels (dB) of a continuous, steady sound that, within a specified time interval, T, has the same mean-squared sound pressure as the sound under consideration that varies with time
Facade level	Sound pressure level 1 m in front of the facade
Free-field level	Sound pressure level away from reflecting surfaces
Indoor ambient noise	Noise in a given situation at a given time, usually composed of noise from many sources, inside and outside the building, but excluding noise from activities of the occupants
Noise Criteria	Numerical indices used to define design goals in a given space
Noise Rating (NR)	Graphical method for rating a noise by comparing the noise spectrum with a family of noise rating curves
Octave Band	Band of frequencies in which the upper limit of the band is twice the frequency of the lower limit
Percentile Level, $L_{AN,T}$	A-weighted sound pressure level obtained using time-weighting “F”, which is exceeded for N% of a specified time interval
Rating Level, $L_{Ar,Tr}$	Equivalent continuous A-weighted sound pressure level of the noise, plus any adjustment for the characteristic features of the noise
Reverberation time, T	Time that would be required for the sound pressure level to decrease by 60 dB after the sound source has stopped
Sound Pressure, p	root-mean-square value of the variation in air pressure, measured in pascals (Pa) above and below atmospheric pressure, caused by the sound
Sound Pressure Level, L_p	Quantity of sound pressure, in decibels (dB), given by the formula: $L_p = 10\log_{10}(p/p_0)^{2.}$ Where: p is the root-mean-square sound pressure in pascals (Pa) and $p0$ is the reference sound pressure (20 µPa)
Weighted sound reduction index, R_w	Single-number quantity which characterizes the airborne sound insulating properties of a material or building element over a range of frequencies

Appendix B – Standards, Legislation, Policy, and Guidance

This report is to be primarily based on the following standards, legislation, policy, and guidance.

B.1 – National Planning Policy Framework (2024)

Government policy on noise is set out in the National Planning Policy Framework (NPPF), published in 2024. This replaced all earlier guidance on noise and places an emphasis on sustainability. In section 15, Conserving and enhancing the natural and local environment, paragraph 187e, it states:

Preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

Paragraph 198 states:

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

a) *Mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life:*
b) *Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and*
c) *Limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes, and nature conservation.*

B.2 – Noise Policy Statement for England (2010)

Paragraph 198 of the NPPF also refers to advice on adverse effects of noise given in the Noise Policy Statement for England (NPSE). This document sets out a policy vision to:

Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.

To achieve this vision the Statement identifies the following three aims:

Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse impacts on health and quality of life:
- Mitigate and minimise adverse impacts on health and quality of life:
- Where possible, contribute to the improvement of health and quality of life.

In achieving these aims the document introduces significance criteria as follows:

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur. It is stated that "significant adverse effects on health and quality of life should be avoided while also considering the guiding principles of sustainable development".

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected. It is stated that the second aim above lies somewhere between LOAEL and SOAEL and requires that: "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also considering the guiding principles of sustainable development. This does not mean that such adverse effects cannot occur."

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise. This can be related to the third aim above, which seeks: "where possible, positively to improve health and quality of life through the pro-active management of noise while also considering the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim."

This is further expanded using the updated "Noise Exposure Hierarchy Table" which includes an additional level of impact referred to as the 'No Observed Adverse Effect Level' ('NOAEL'). It is stated that at this level: *"noise can be heard, but does not cause any change in behaviour, attitude or other physiological response"*. In addition, noise at this level *"can slightly affect the acoustic character of the area but not such that there is a change in the quality of life".*

The NPSE recognises that it is not possible to have a single objective noise-based measure that is mandatory and applicable to all sources of noise in all situations and provides no guidance as to how these criteria should be interpreted. It is clear, however, that there is no requirement to achieve noise levels where there are no observable adverse impacts but that reasonable and practicable steps to reduce adverse noise impacts should be taken in the context of sustainable development and ensure a balance between noise sensitive and the need for noise generating developments.

Any scheme of noise mitigation outlined in this report will, therefore, aim to abide by the above principles of the NPPF and NPSE whilst recognizing the constraints of the site.

B.3 – BS8233:2014 'Guidance on Sound insulation and noise reduction for buildings'

BS8233 provides guidance on noise levels from sources without specific character in the built environment, based on the recommendations of the World Health Organization; specifically, 'WHO Guidelines on Community Noise, 1999'. The Guidelines on Community Noise (1999) document defines community noise to include noise from "industries" and "construction". The desirable criteria levels of steady state, "anonymous" noise in unoccupied spaces within dwellings, from sources such as road traffic, mechanical services and other continuously running plant, are tabulated below.

BS8233:2014 Internal Ambient Noise Level Criteria			
Activity	**Location**	**Daytime (07:00 – 23:00)**	**Night-time (23:00 – 07:00)**
Resting	Living Room	35 dB $L_{Aeq,16hour}$	--
Dining	Dining Room/Area	40 dB $L_{Aeq,16hour}$	--
Sleeping (Daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$ 45 dB L_{AFmax}*

Table 19 – BS8233:2014 Internal Ambient Noise Level Criteria

**ProPG:2017 states that's good acoustic design can be used so that individual noise events do not normally exceed 45 dB L_{AFmax} more than 10 time a night within noise sensitive rooms such as bedrooms. However, where it is not reasonably practicable to achieve the guideline then the judgment of acceptability will depend not only on the maximum noise levels but also on factors such as the source, number distribution, predictability, and regularity of noise events.*

It is noted, however, that where development is considered necessary or desirable, despite external noise level above WHO guidelines, the above target levels may be relaxed by up to 5 dB.

General recommendations for mitigation to enable these targets to be achieved are provided, including the use of bunds and barriers to reduce external noise and space planning and sound insulation for the control of internal noise levels.

For this assessment, the above criteria are considered to be the 'LOAEL' as defined in the NPSE in Appendix B.

Appendix C – Manufacturer's Datasheets

TGT

TGT/4/6-800-6/16 BLP 4,5/1,5KW (400V50HZ) IE1 V5

Sound Performance

	63	125	250	500	1k	2k	4k	8k	Overall
Inlet (LwA)	60/52	77/69	89/81	93/85	93/85	90/82	84/76	75/67	98/89
Inlet LpA @ 15m	26/17	43/34	55/46	59/50	59/50	56/47	50/41	41/32	64/55

THGT

THGT/2/4-500-6/8 BLP 2,2/0,5KW (400V50HZ) F300/F200 IE1 V5

Sound Performance

	63	125	250	500	1k	2k	4k	8k	Overall
Inlet (LwA)	58/43	74/59	84/69	91/76	92/77	89/74	83/68	75/60	97/82
Inlet LpA @ 15m	24/9	40/25	50/35	57/42	58/43	55/40	49/34	41/26	62/47

TCBBX2/TCBTX2

5605766800 - TCBBX2/4-500 (230V50HZ) V5 - CYLINDRICAL CASED AXIAL FLOW FANS

Sound Performance

	63	125	250	500	1k	2k	4k	8k	Overall
Inlet (LwA)	60	73	83	82	85	80	73	66	89
Inlet LpA @ 15m	25	38	48	47	50	45	38	31	55
Outlet (LwA)	59	72	86	85	88	83	76	69	92
Outlet LpA @ 15m	24	37	51	50	53	48	41	34	58

Sound Pressure Levels (dBA) for Level 2 Enclosure

Generator Set Model		50 Hz							60 Hz						
		15 m (50 ft)		7 m (23 ft)		1 m (3 ft)		Ambient Capability °C	15 m (50 ft)		7 m (23 ft)		1 m (3 ft)		Ambient Capability °C
		75% Load	100% Load	75% Load	100% Load	75% Load	100% Load		75% Load	100% Load	75% Load	100% Load	75% Load	100% Load	
P249-5	Prime/ standby								62/63	64/64	68/69	70/70	78/78	78/79	57
P250-5	Prime/ standby	61/61	62/62	67/67	68/68	75/75	76/76	49							





Model			AM220AXVGGH/EU	AM240AXVGGH/EU	AM260AXVGGH/EU
Power Supply			3Φ, 4, 380~415 V, 50 Hz	3Φ, 4, 380~415 V, 50 Hz	3Φ, 4, 380~415 V, 50 Hz
Performance	HP		22	24	26
	Capacity	Cooling	61.6	67.2	72.8
		Heating	61.6	67.2	68.0
	Maximum number of connectable indoor units		40	43	47
	Total capacity of the connected indoor units	Min.	30.8	33.6	36.4
		Max.	80.1	87.4	94.6
Power	Current Input	Cooling	44.15	48.62	57.61
		Heating	27.29	44.20	45.11
	Current	Minimum SSC value	7.4	9.3	10.2
		MCA	46.0	55.0	60.0
		MFA	63	63	75
Energy Efficiency[1]	SEER		6.2	5.9	5.4
	SCOP		4.30	3.90	3.90
	ηs,c		245	233	213
	ηs,h		169	153	153
Compressor	Output		6.67 x 2	6.67 x 2	6.67 x 2
	Oil	Type	PVE	PVE	PVE
		Initial Charge	1,100 x 2	1,100 x 2	1,100 x 2
Fan	Type		Propeller	Propeller	Propeller
	Discharge direction		Top	Top	Top
	Number of Fans		2	2	2
	Airflow Rate		342	365	365
			5,498.00	6,089.00	6,089.00
	External Static Pressure	Max.	11	8	8
			110.00	80.00	80.00
Fan Motor	Type		BLDC Motor	BLDC Motor	BLDC Motor
	Output		TBD	TBD	TBD
Piping Connections	Liquid Pipe		15.88	15.88	19.05
			5/8	5/8	3/4
	Gas Pipe		28.58	34.92	34.92
			1 1/8	1 3/8	1 3/8
	Piping length (ODU-IDU)[3]	Max. (Equiv.)	200 (220)	200 (220)	200 (220)
	Piping length (1st Branch - IDU)[3]	Max.	90	90	90
	Total piping length (System)	Max.	1,000	1,000	1,000
	Level difference (ODU in highest position)[3]	Max.	110	110	110
	Level difference (IDU in highest position)[3]	Max.	110	110	110
	Level Difference (IDU-IDU)[3]	Max.	50	50	50
Wiring Connections	Transmission Cable		0.75	0.75	0.75
	Remark		F1, F2	F1, F2	F1, F2
Refrigerant	Type		R410A (Fluorinated greenhouse gas, GWP=2,088)		
	Factory Charging		10.5	14.0	14.0
			21.92	29.23	29.23
Sound	Sound Pressure[2]	Cooling	64	65	65
		Heating	65	67	67
	Sound Power	Cooling	86	87	87



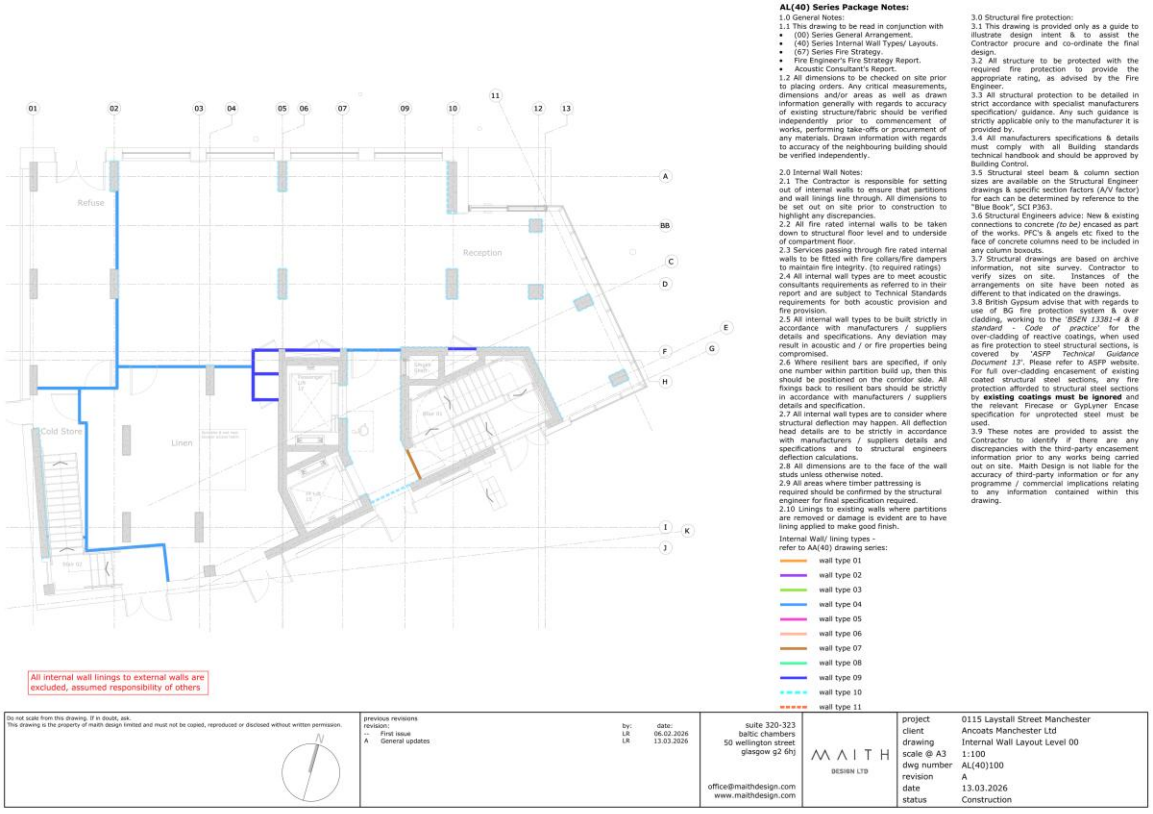
Model (HT)				AM160TNBFEB/EU	AM160TNBFGB/EU	AM250TNBFEB/EU	AM250TNBFGB/EU
Power Supply			Φ, #, V, Hz	1Φ, 2, 220~240 V, 50 Hz	3Φ, 4, 380~415 V, 50 Hz	1Φ, 2, 220~240 V, 50 Hz	3Φ, 4, 380~415 V, 50 Hz
Performance	Capacity (Nominal)	Cooling	kW	-	-	-	-
		Heating	kW	16	16	25	25
Power	Power Input (Nominal)	Cooling	W	-	-	-	-
		Heating	W	3.1	3.1	5.0	5.0
	Current Input (Nominal)	Cooling	A	-	-	-	-
		Heating	A	14.30	4.85	23.10	7.85
	MCA (Including External Contact)		A	18.0	16.1	30.0	16.1
	MFA		A	25	20	40	20
Heat Exchanger	Type		-	PHE	PHE	PHE	PHE
	Quantity		ea	2	2	2	2
	Pipe Size		ø, inch	PT1 (25A)	PT1 (25A)	PT1 (25A)	PT1 (25A)
	Water Flow Rate		l/min	23	23	36	36
	Flow Switch		l/min	12	12	12	12
Piping Connections	Liquid Pipe		ø, mm	9.52	9.52	9.52	9.52
			ø, inch	3/8	3/8	3/8	3/8
	Gas Pipe		ø, mm	15.88	15.88	15.88	15.88
			ø, inch	5/8	5/8	5/8	5/8
Field Wiring	Power Source Wire (L<10 m, Single Installation)		mm^2	4	2.5	4	2.5
	Transmission Cable		mm^2	0.75~1.50	0.75~1.50	0.75~1.50	0.75~1.50
Refrigerant	Type		-	R134A (Fluorinated greenhouse gas, GWP=1,430)			
	Control Method		-	EEV	EEV	EEV	EEV
	Factory Charging		kg / tCO_2e	2.15/3.07	2.15/3.07	2.15/3.07	2.15/3.07
Sound	Sound Pressure[1]		dB(A)	42	42	42	42
	Sound Power		dB(A)	60	60	61	61
Dimensions	Net Weight		kg	105.0	103.5	105.0	103.5
	Net Dimensions (W × H × D)		mm	518 x 1,210 x 330	518 x 1,210 x 330	518 x 1,210 x 330	518 x 1,210 x 330
Operating Temperature Range	Ambient	Cooling	˚C	-	-	-	-
		Heating	˚C	-20~43	-20~43	-20~43	-20~43
		Hot Water (Main Cooling, HR)	˚C	-20~43	-20~43	-20~43	-20~43
	Leaving Water	Heating	˚C	25~80	25~80	25~80	25~80





Model			AM100AXVDGH/EU	AM120AXVDGH/EU	AM140AXVDGH/EU
Power Supply		Ø, #, V, Hz	3Ø, 4, 380–415 V, 50 Hz	3Ø, 4, 380–415 V, 50 Hz	3Ø, 4, 380–415 V, 50 Hz
Performance					
HP		HP	10	12	14
Capacity	Cooling (Rated)	kW	28.0	33.6	40.0
	Heating (Rated)	kW	28.0	33.6	40.0
	Heating (Max)	kW	31.5	37.8	45.0
Maximum number of connectable indoor units		ea	18	21	26
Total capacity of the connected indoor units	Min.	kW	14.0	16.8	20.0
	Max.	kW	36.4	43.7	52.0
Power					
Current input	Cooling (Rated)	A	20.50	22.01	28.60
	Heating (Rated)	A	14.34	16.45	20.91
Current	Minimum SSC value	MVA	3.7	4.0	4.6
	MCA	A	23.0	25.0	29.0
	MFA	A	32	32	32
Energy efficiency[1]					
SEER		W/W	6.00	6.40	6.20
SCOP		W/W	4.10	4.30	4.10
ηs.c		%	237	253	245
ηs.h		%	161	169	161
Compressor					
Type		-	Inverter Scroll x 1	Inverter Scroll x 1	Inverter Scroll x 1
Output		kW x n	6.67 x 1	6.67 x 1	6.67 x 1
Oil	Type	-	PVE	PVE	PVE
	Initial Charge	cc x n	1,100 x 1	1,100 x 1	1,100 x 1
Fan					
Type		-	Propeller	Propeller	Propeller
Discharge direction		-	Vertical	Vertical	Vertical
Number of Fans		ea	1	1	1
Airflow Rate		m³/min	167	196	210
		l/s	2,779	3,260	3,500
External Static Pressure	Max.	mmAq	11	11	8
		Pa	110	110	80
Fan Motor					
Type		-	BLDC Motor	BLDC Motor	BLDC Motor
Output		W x n	630 x 1	630 x 1	630 x 1
Piping Connection					
Liquid Pipe		Ø, mm	9.52	12.70	12.70
		Ø, inch	3/8	1/2	1/2
Gas Pipe		Ø, mm	22.22	28.58	28.58
		Ø, inch	7/8	1 1/8	1 1/8
Piping length (ODU-IDU)[3]	Max. (Equiv.)	m	200 [220]	200 [220]	200 [220]
Piping length (1st Branch - IDU)[3]	Max.	m	90	90	90
Total piping length (System)	Max.	m	1,000	1,000	1,000
Level difference (ODU in highest position)[3]	Max.	m	110	110	110
Level difference (IDU in highest position)[3]	Max.	m	110	110	110
Level Difference (IDU-IDU)[3]	Max.	m	50	50	50
Wiring Connections					
Transmission Cable	Min.	mm²	0.75	0.75	0.75
	Remark	-	F1, F2	F1, F2	F1, F2
Refrigerant					
Type		-	R410A (Fluorinated greenhouse gas, GWP=2,088)		
Factory Charging		kg	5.5	7.0	7.0
		tCO₂e	11.48	14.62	14.62
Sound					
Sound Pressure[2]	Cooling	dB(A)	56	61	63
	Heating	dB(A)	60	63	65
Sound Power	Cooling	dB(A)	78	81	85
External Dimensions					

Appendix D – Client Partition Mark-ups



AL(40) Series Package Notes:

1.0 General Notes:
1.1 This drawing to be read in conjunction with
- (00) Series General Arrangement.
- (40) Series Internal Wall Types/ Layouts.
- (67) Series Fire Strategy.
- Fire Engineer's Fire Strategy Report.
- Acoustic Consultant's Report.

1.2 All dimensions to be checked on site prior to placing orders. Any critical measurements, dimensions and/or areas as well as drawn information generally with regards to accuracy of existing structure/fabric should be verified independently prior to commencement of works, performing take-offs or procurement of any materials. Drawn information with regards to accuracy of the neighbouring building should be verified independently.

2.0 Internal Wall Notes:
2.1 The Contractor is responsible for setting out of internal walls to ensure that partitions and wall linings line through. All dimensions to be set out on site prior to construction to highlight any discrepancies.
2.2 All fire rated internal walls to be taken down to structural floor level and to underside of compartment floor.
2.3 Services passing through fire rated internal walls to be fitted with fire collars/fire dampers to maintain fire integrity. (to required ratings)
2.4 All internal wall types are to meet acoustic consultants requirements as referred to in their report and are subject to Technical Standards requirements for both acoustic provision and fire provision.
2.5 All internal wall types to be built strictly in accordance with manufacturers / suppliers details and specifications. Any deviation may result in acoustic and / or fire properties being compromised.
2.6 Where resilient bars are specified, if only one number within partition build up, then this should be positioned on the corridor side. All fixings back to resilient bars should be strictly in accordance with manufacturers / suppliers details and specification.
2.7 All internal wall types are to consider where structural deflection may happen. All deflection head details are to be strictly in accordance with manufacturers / suppliers details and specifications and to structural engineers deflection calculations.
2.8 All dimensions are to the face of the wall studs unless otherwise noted.
2.9 All areas where timber pattressing is required be confirmed by the structural engineer for final specification required.
2.10 Linings to existing walls where partitions are removed or damage is evident are to have lining applied to make good finish.

Internal Wall/ lining types - refer to AA(40) drawing series:
- wall type 01
- wall type 02
- wall type 03
- wall type 04
- wall type 05
- wall type 06
- wall type 07
- wall type 08
- wall type 09
- wall type 10
- wall type 11

3.0 Structural fire protection:
3.1 This drawing is provided only as a guide to illustrate design intent & to assist the Contractor procure and co-ordinate the final design.
3.2 All structure to be protected with the required fire protection to provide the appropriate rating, as advised by the Fire Engineer.
3.3 All structural protection to be detailed in strict accordance with specialist manufacturers specification/ guidance. Any such guidance is strictly applicable only to the manufacturer it is provided by.
3.4 All manufacturers specifications & details must comply with all Building standards technical handbook and should be approved by Building Control.
3.5 Structural steel beam & column section sizes are available on the Structural Engineer drawings & specific section factors (A/V factor) for each can be determined by reference to the "Blue Book", SCI P363.
3.6 Structural Engineers advice: New & existing connections to concrete *(to be)* encased as part of the works. PFC's & angels etc fixed to the face of concrete columns need to be included in any column boxouts.
3.7 Structural drawings are based on archive information, not site survey. Contractor to verify sizes on site. Instances of the arrangements on site have been noted as different to that indicated on the drawings.
3.8 British Gypsum advise that with regards to use of BG fire protection system & over cladding, working to the *'BSEN 13381-4 & 8 standard - Code of practice'* for the over-cladding of reactive coatings, when used as fire protection to steel structural sections, is covered by *'ASFP Technical Guidance Document 13'*. Please refer to ASFP website. For full over-cladding encasement of existing coated structural steel sections, any fire protection afforded to structural steel sections by **existing coatings must be ignored** and the relevant Firecase or GypLyner Encase specification for unprotected steel must be used.
3.9 These notes are provided to assist the Contractor to identify if there are any discrepancies with the third-party encasement information prior to any works being carried out on site. Maith Design is not liable for the accuracy of third-party information or for any programme / commercial implications relating to any information contained within this drawing.

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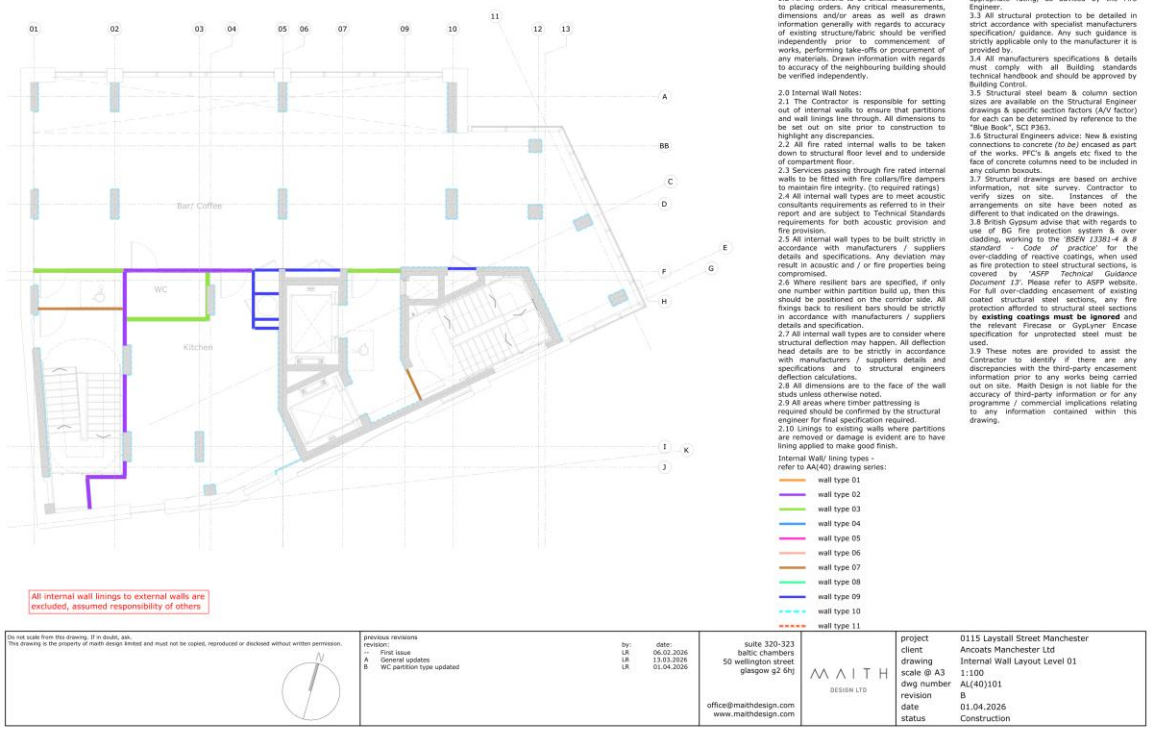
previous revisions
revision: by: date:
– First issue LR 06.02.2026
A General updates LR 13.03.2026

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project	0115 Laystall Street Manchester
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drawing	Internal Wall Layout Level 00
scale @ A3	1:100
dwg number	AL(40)100
revision	A
date	13.03.2026
status	Construction



AL(40) Series Package Notes:

1.0 General Notes:
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- (40) Series Internal Wall Types/ Layouts.
- (67) Series Fire Strategy.
- Fire Engineer's Fire Strategy Report.
- Acoustic Consultant's Report.

1.2 All dimensions to be checked on site prior to placing orders. Any critical measurements, dimensions and/or areas as well as drawn information generally with regards to accuracy of existing structure/fabric should be verified independently prior to commencement of works, performing take-offs or procurement of any materials. Drawn information with regards to accuracy of the neighbouring building should be verified independently.

2.0 Internal Wall Notes:
2.1 The Contractor is responsible for setting out of internal walls to ensure that partitions and wall linings line through. All dimensions to be set out on site prior to construction to highlight any discrepancies.
2.2 All fire rated internal walls to be taken down to structural floor level and to underside of compartment floor.
2.3 Services passing through fire rated internal walls to be fitted with fire collars/fire dampers to maintain fire integrity. (to required ratings)
2.4 All internal wall types are to meet acoustic consultants requirements as referred to in their report and are subject to Technical Standards requirements for both acoustic provision and fire provision.
2.5 All internal wall types to be built strictly in accordance with manufacturers / suppliers details and specifications. Any deviation may result in acoustic and / or fire properties being compromised.
2.6 Where resilient bars are specified, if only one number within partition build up, then this should be positioned on the corridor side. All fixings back to resilient bars should be strictly in accordance with manufacturers / suppliers details and specification.
2.7 All internal wall types are to consider where structural deflection may happen. All deflection head details are to be strictly in accordance with manufacturers / suppliers details and specifications and to structural engineers deflection calculations.
2.8 All dimensions are to the face of the wall studs unless otherwise noted.
2.9 All areas where timber pattressing is required be confirmed by the structural engineer for final specification required.
2.10 Linings to existing walls where partitions are removed or damage is evident are to have lining applied to make good finish.

Internal Wall/ lining types - refer to AA(40) drawing series:
- wall type 01
- wall type 02
- wall type 03
- wall type 04
- wall type 05
- wall type 06
- wall type 07
- wall type 08
- wall type 09
- wall type 10
- wall type 11

3.0 Structural fire protection:
3.1 This drawing is provided only as a guide to illustrate design intent & to assist the Contractor procure and co-ordinate the final design.
3.2 All structure to be protected with the required fire protection to provide the appropriate rating, as advised by the Fire Engineer.
3.3 All structural protection to be detailed in strict accordance with specialist manufacturers specification/ guidance. Any such guidance is strictly applicable only to the manufacturer it is provided by.
3.4 All manufacturers specifications & details must comply with all Building standards technical handbook and should be approved by Building Control.
3.5 Structural steel beam & column section sizes are available on the Structural Engineer drawings & specific section factors (A/V factor) for each can be determined by reference to the "Blue Book", SCI P363.
3.6 Structural Engineers advice: New & existing connections to concrete *(to be)* encased as part of the works. PFC's & angels etc fixed to the face of concrete columns need to be included in any column boxouts.
3.7 Structural drawings are based on archive information, not site survey. Contractor to verify sizes on site. Instances of the arrangements on site have been noted as different to that indicated on the drawings.
3.8 British Gypsum advise that with regards to use of BG fire protection system & over cladding, working to the *'BSEN 13381-4 & 8 standard - Code of practice'* for the over-cladding of reactive coatings, when used as fire protection to steel structural sections, is covered by *'ASFP Technical Guidance Document 13'*. Please refer to ASFP website. For full over-cladding encasement of existing coated structural steel sections, any fire protection afforded to structural steel sections by **existing coatings must be ignored** and the relevant Firecase or GypLyner Encase specification for unprotected steel must be used.
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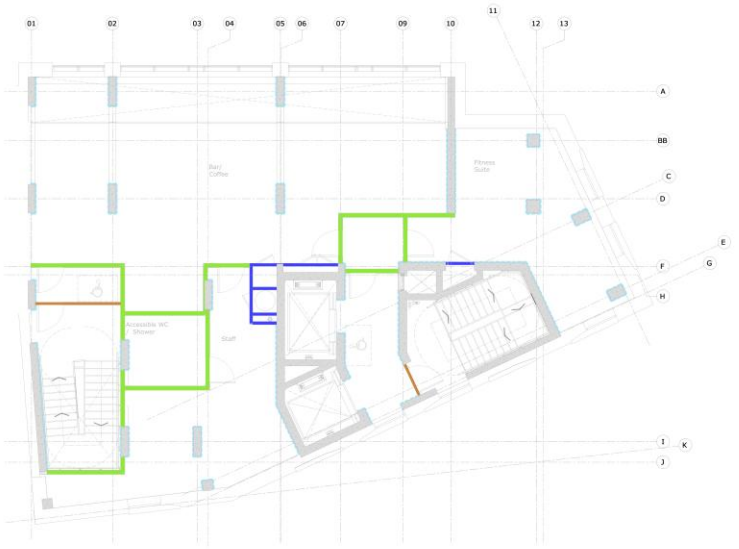
previous revisions
revision: by: date:
– First issue LR 06.02.2026
A General updates LR 13.03.2026
B WC partition type updated LR 01.04.2026

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MAITH DESIGN LTD

project	0115 Laystall Street Manchester
client	Ancoats Manchester Ltd
drawing	Internal Wall Layout Level 01
scale @ A3	1:100
dwg number	AL(40)101
revision	B
date	01.04.2026
status	Construction



All internal wall linings to external walls are excluded, assumed responsibility of others

AL(40) Series Package Notes:

1.0 General Notes:
1.1 This drawing to be read in conjunction with
- (00) Series General Arrangement.
- (40) Series Internal Wall Types/ Layouts.
- (67) Series Fire Strategy.
- Fire Engineer's Fire Strategy Report.
- Acoustic Consultant's Report.

1.2 All dimensions to be checked on site prior to placing orders. Any critical measurements, dimensions and/or areas as well as drawn information generally with regards to accuracy of existing structure/fabric should be verified independently prior to commencement of works, performing take-offs or procurement of any materials. Drawn information with regards to accuracy of the neighbouring building should be verified independently.

2.0 Internal Wall Notes:
2.1 The Contractor is responsible for setting out of internal walls to ensure that partitions and wall linings line through. All dimensions to be set out on site prior to construction to highlight any discrepancies.
2.2 All fire rated internal walls to be taken down to structural floor level and to underside of compartment floor.
2.3 Services passing through fire rated internal walls to be fitted with fire collars/fire dampers to maintain fire integrity. (to required ratings)
2.4 All internal wall types are to meet acoustic consultants requirements as referred to in their report and are subject to Technical Standards requirements for both acoustic provision and fire provision.
2.5 All internal wall types to be built strictly in accordance with manufacturers / suppliers details and specifications. Any deviation may result in acoustic and / or fire properties being compromised.
2.6 Where resilient bars are specified, if only one number within partition build up, then this should be positioned on the corridor side. All fixings back to resilient bars should be strictly in accordance with manufacturers / suppliers details and specification.
2.7 All internal wall types are to consider where structural deflection may happen. All deflection head details are to be strictly in accordance with manufacturers / suppliers details and specifications and to structural engineers deflection calculations.
2.8 All dimensions are to the face of the wall studs unless otherwise noted.
2.9 All areas where timber pattressing is required should be confirmed by the structural engineer for final specification required.
2.10 Linings to existing walls where partitions are removed or damage is evident are to have lining applied to make good finish.

Internal Wall/ lining types - refer to AA(40) drawing series:
- wall type 01
- wall type 02
- wall type 03
- wall type 04
- wall type 05
- wall type 06
- wall type 07
- wall type 08
- wall type 09
- wall type 10
- wall type 11

3.0 Structural fire protection:
3.1 This drawing is provided only as a guide to illustrate design intent & to assist the Contractor procure and co-ordinate the final design.
3.2 All structure to be protected with the required fire protection to provide the appropriate rating, as advised by the Fire Engineer.
3.3 All structural protection to be detailed in strict accordance with specialist manufacturers specification/ guidance. Any such guidance is strictly applicable only to the manufacturer it is provided by.
3.4 All manufacturers specifications & details must comply with all Building standards technical handbook and should be approved by Building Control.
3.5 Structural steel beam & column section sizes are available on the Structural Engineer drawings & specific section factors (A/V factor) for each can be determined by reference to the "Blue Book", SCI P363.
3.6 Structural Engineers advice: New & existing connections to concrete *(to be)* encased as part of the works. PFC's & angels etc fixed to the face of concrete columns need to be included in any column boxouts.
3.7 Structural drawings are based on archive information, not site survey. Contractor to verify sizes on site. Instances of the arrangements on site have been noted as different to that indicated on the drawings.
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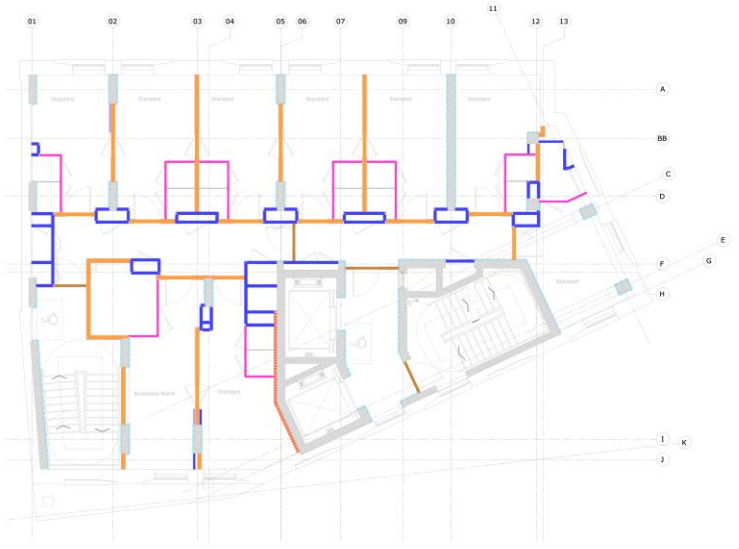
previous revisions
revision: by: date:
-- First issue LR 06.02.2026
A General updates LR 13.03.2026
B Accessible WC partition type updated LR 01.04.2026

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MAITH DESIGN LTD

project	0115 Laystall Street Manchester
client	Ancoats Manchester Ltd
drawing	Internal Wall Layout Level 01M
scale @ A3	1:100
dwg number	AL(40)101M
revision	B
date	01.04.2026
status	Construction



All internal wall linings to external walls are excluded, assumed responsibility of others

AL(40) Series Package Notes:

1.0 General Notes:
1.1 This drawing to be read in conjunction with
- (00) Series General Arrangement.
- (40) Series Internal Wall Types/ Layouts.
- (67) Series Fire Strategy.
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- Acoustic Consultant's Report.

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previous revisions
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-- First issue LR 06.02.2026
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MAITH DESIGN LTD

project	0115 Laystall Street Manchester
client	Ancoats Manchester Ltd
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scale @ A3	1:100
dwg number	AL(40)102
revision	A
date	13.03.2026
status	Construction


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ACOUSTICS