Intended for
Faithful + Gould

Document type
Stage 2 Acoustic Report

Date
August 2022

25 TAVISTOCK PLACE
ACOUSTIC STAGE 2 REPORT

RAMBOLL Bright ideas. Sustainable change.

25 TAVISTOCK PLACE
ACOUSTIC STAGE 2 REPORT

Project name	**25 Tavistock Place**
Project no.	**Click or tap here to enter text.**
Recipient	**James Paterson (Faithful + Gould), Takuya Oura (Manalo and White)**
Document type	**Report**
Version	**-**
Date	**01/08/2022**
Prepared by	**Michael Fort**
Checked by	**Simon Taylor**
Approved by	**Simon Taylor**
Description	**Stage 2 Acoustic Report**

Ramboll
Terrington House
13-15 Hills Road
Cambridge CB2 1NL
United Kingdom

T +44 1223 321 195
https://uk.ramboll.com

Ramboll UK Limited
Registered in England & Wales
Company No: 03659970
Registered office:
240 Blackfriars Road
London
SE1 8NW

CONTENTS

1. EXECUTIVE SUMMARY

Stage 2 acoustic design advice is provided within this report for the proposed refurbishment of 25 Tavistock Place in London.

Acoustic criteria are set to meet acoustic BREEAM requirements.

Marked-up drawings are provided showing sound insulation requirements for walls and doors, in terms of a laboratory rating (R_w).

Plant noise limits are set to meet the Planning requirements and BREEAM Pol05 criteria. Proposed plant selections will be reviewed in the next Design Stage.

2. INTRODUCTION

Ramboll Acoustics are appointed to provide acoustic design advice for the refurbishment of 25 Tavistock Place, providing new offices for The Methodist Church.

The project involves multiple open plan and cellular offices, meeting rooms, breakout spaces and multi-function rooms.

The scheme is registered BREEAM Refurbishment and Fit-out 2014 - Offices and targets a rating of Very Good.

3. LEGISLATION & GUIDANCE

Acoustic criteria are set out in accordance with the relevant BREEAM credits and local authority guidance.

3.1 BREEAM

The scheme is registered BREEAM Refurbishment and Fit-out 2014 – Office Buildings and targets a rating of Very Good. Acoustic credits are targeted for Hea05 and Pol05.

The specific acoustic criteria and associated Stage 2 design advice are set out in the later sections of this report.

3.2 External Noise Legislation

The relevant legislation and guidance regarding external plant noise level requirements are summarised below.

3.2.1 London Borough of Camden Plan - Local Noise Policy (2017)

Where specific planning conditions have not been set, the anticipated condition is predicted to be in line with the London Borough of Camden Local Noise policy below.

"A relevant standard or guidance document should be referenced when determining values for LOAEL and SOAEL for non-anonymous noise. Where appropriate and within the scope of the document it is expected that British Standard 4142:2014 'Methods for rating and assessing industrial and Camden Local Plan | Appendices 347 commercial sound' (BS 4142) will be used. For such cases a 'Rating Level' of 10 dB below background (15dB if tonal components are present) should be considered as the design criterion)."

3.2.2 BS 4142:2014 "Methods for rating and assessing industrial and commercial sound"

Suitable criteria for determining the magnitude of the impact from any proposed building services plant are proposed based on the guidance in BS 4142: 2014[1].

The basis of BS 4142: 2014 is a comparison between the background noise level in the vicinity of residential locations and the rating level of the noise source under consideration. The relevant parameters in this instance are as follows:

- **Background Sound Level**: $L_{A90,T}$ – defined in the Standard as the 'A' weighted sound pressure level that is exceeded by the residual sound at the assessment location for 90% of a given time interval, T, and quoted to the nearest whole number of decibels (dB);
- **Specific Sound Level**: $L_{Aeq,Tr}$ – the equivalent continuous 'A' weighted sound pressure level produced by the specific sound source at the assessment location over a given time interval, T;
- **Residual Sound Level**: $L_{Aeq,T}$ – the equivalent continuous 'A' weighted sound pressure level at the assessment location in the absence of the specific sound source under consideration, over a given time interval, T; and

[1] British Standards Institution,2014. BS 4142: 2014 Methods for rating and assessing industrial and commercial sound, BSI.

- **Rating Level**: $L_{Ar,Tr}$ – the specific sound level plus any adjustment made for the characteristic features of the noise. These features include tonality, impulsivity and intermittence, where a 3dB penalty will be applied.

The background level and the rating levels are compared and the standard states that:

"Typically, the greater the difference, the greater the magnitude of impact.

- *A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending upon the context.*
- *A difference of around +5 dB is likely to be an indication of an adverse impact, depending upon the context.*
- *The lower the rating level is to the measured background sound level, the less likely it is that the specific sound will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending upon the context."*

The standard specifies the specific sound level as an L_{Aeq} with a one-hour assessment period during the day (07:00-23:00 hours) and a fifteen-minute assessment period at night (23:00-07:00 hours).

4. NOISE SURVEY

Ramboll measure noise levels on site between 20th-25th July 2022.

Weather was mostly hot, dry and calm during the survey with wind speeds <5m/s.

Full survey details are provided in Appendix A.

Survey locations are shown in Figure 1 with a summary of the measured noise levels in Table 1.

Figure 1 - Noise Survey locations

Table 1 – Summary of Measured Noise Levels

Location	Period	$L_{Aeq,T}$ dB	L_{A90} dB	Notes
LT1 (Rooftop)	Day	51	48	Noise climate on rooftop and rear of building made up of distant traffic noise from all directions, as well as surrounding plant noise and distant construction noise.
	Night	47	43	
ST1 (Ground Floor Level)	Day	64	57	Noise levels at Ground floor level dominated by road traffic noise on Tavistock Place.

5. INTERNAL AMBIENT NOISE LEVELS

Ambient noise levels measured during the day on site ranged from 51 to 64 dBL_{Aeq}. The dominant noise source was identified as road traffic noise on Tavistock Place.

Both noise from building services and break-in from external noise sources (e.g. road traffic noise) contribute to the internal ambient noise levels. Suitable plant, attenuators, and façade elements shall be chosen to meet an IANL appropriate for each occupied space in the new building.

5.1 Internal Ambient Noise Levels Criteria

BREEAM Hea05 requires that internal ambient noise levels (IANLs) comply with the design ranges given in Section 7 of BS 8233:2014. BCO also provides suitable noise limits for building services noise levels which are also provided below.

Table 1 Upper limits for indoor ambient noise levels and building services noise levels

Area	BS8233:2014 IANL $L_{Aeq,30min}$ (dB)	BCO Building Services Noise Limit (NR, dB)
Open-plan write-up areas/offices	40-45	NR40
Cellular Offices, Meeting and training rooms, multi-functional space	35-45	NR35
Corridors, Circulation, Support areas	45	NR40
Cafeteria, Toilet facilities	50	NR45

5.2 Façade and Glazing Design Specification

We understand the current solid brick façade will be retained, with additional layers of plasterboard added internally for thermal reasons.

Current proposals may require the glazing to be replaced from the current double glazing. Any new glazing will be required to have a sound insulation performance of at least R_w 30dB. R_w 30 can be achieved with standard thermal double glazing and does not require specialist acoustic glazing.

The scheme will be mechanically ventilated and windows will not be required to open as part of the background ventilation strategy.

Therefore, IANL requirements presented above can be comfortably achieved with the current façade and glazing proposals.

We understand that windows may be openable at the users discretion. IANLs may be slightly higher than the agreed criteria during these times within a few spaces.

5.3 Internal Building Services Noise

Services noise must be limited to meet the BS8233:2014 noise levels presented in Table 1 in when operating at normal duties. Where a range is given the service noise level must be within this range. Where a limit is given the service noise level must be no lower than 3dB below the limit.

5.3.1 Meeting internal M&E noise levels

Internal M&E noise levels shall be achieved through the selection of appropriate equipment and attenuators. This selection process will be undertaken by the Ramboll M&E consultants.

Where ventilation units (MVHRs) are proposed in areas with exposed soffits, special consideration of the MHVR noise levels will be required. These may need boxing in and attenuation to both supply and extracts.

It is recommended that Ramboll Acoustics check the noise level calculations from a sample of the final plant systems (selections, layouts and attenuation) against the internal noise requirements before plant is ordered.

6. EXTERNAL PLANT NOISE

6.1 Plant Noise Planning Limits

Camden Local Authority require that the plant rating noise level is 10dB below the background level at 1m from façade of the nearest noise sensitive receptors.

6.2 BREEAM Pol05 Limits

The aim of Pol 05 is to reduce the likelihood of noise arising from fixed installations on the new development affecting nearby noise-sensitive receivers.

One credit is available for all building types, which is as follows:

"The noise level from the proposed building, as measured in the locality of the nearest or most exposed noise-sensitive development, is a difference no greater than +5dB during the day (07:00-23:00) and+3dB at night (23:00-07:00) compared to the background noise level."

Where the noise source(s) from the proposed building is greater than these levels, measures must be installed to attenuate the noise at its source to a level where it will comply with them.

Meeting the plant breakout noise limits for planning will mean that the BREEAM Pol05 credit is achieved by default.

6.3 Noise Sensitive Receptors

The closest Noise Sensitive Receptors (NSRs) are the residential properties adjacent to the site on Compton Place and Tavistock Place. The NSRs are shown in Figure 2.

Figure 2 - Noise Sensitive receptor locations

6.4 Plant Noise Limits

Plant noise limits to meet the requirements of BREEAM Pol05 and the potential planning requirements are set out in Table 2.

The most exposed noise sensitive receptors are the residential properties at the rear of the scheme on Compton Place, North of the site. This is due to the most likely locations of plant being at the rear of the building. The measured pre-existing background noise levels are also substantially lower at these receptors.

Therefore, by meeting noise limit requirements at these locations, the requirements of Pol05 should be considered to be met at all NSR locations.

Table 2 - Project external plant noise limits

Location	Plant Noise Rating Level Limit	
	Day time (0700-2300h)	Night-time (2300-0700h)
Compton Place NSRs	38 dBA	33 dBA

Details of plant selections are not known at this time and will be reviewed at Stage 3.

7. INTERNAL SOUND INSULATION

7.1 Criteria – Sound Insulation

There are no mandatory, i.e. Building Regulation, requirements for sound insulation within offices in the UK therefore the BREEAM requirements form the minimum sound insulation requirements for the scheme.

BREEAM Hea05 refers to Section 7 of BS8233:2014 "*Guidance on sound insulation and noise reduction for buildings"* which in turn references British Council of Offices "*Guide to Specification 2019*" (BCO)

BCO and BS8233:2014 provide acoustic guidance and recommended criteria for office design. The guidance within these two documents has been considered for the acoustic design off the scheme.

BCO states that offices should be capable of achieving $D_{nT,w}$ 48 during fit-out.

BS8233:2014 states that the minimum sound insulation between offices should be D_w 38, and D_w 48 where privacy is required. Meeting these values on-site will mean the BREEAM Hea05 credit for sound insulation is achieved.

7.2 Floors - Concrete slabs

The existing concrete slabs are proposed to be retained between floors with wooden floor finishes. We understand that the existing floors are flat concrete slabs, assumed to be at least 200mm thick.

These floors should be capable of achieving D_{nTw} 48 / D_w 48 for airborne sound insulation, however acoustic measurements will be undertaken to assess the current performance, once the existing raised access floors and ceilings have been removed.

7.2.1 Impact sound insulation

It is recommended impact noise is controlled to $L'_{nT,w}$ 60 dB in offices below. Where the wooden floor finish is proposed it should either be capable of, or be fitted above an acoustic resilient layer/underlay capable of, achieving an impact sound improvement of at least Δ17 dB.

Where carpet floor finishes are proposed these will control impact sound sufficiently.

7.3 Internal Partitions

Internal partitions separating different cellular offices, meeting rooms and open plan offices should achieve a sound insulation performance of $D_{nT,w}$ 48.

To achieve $D_{nT,w}$ 48 on site, we recommend that partitions rated at R_w 56 dB. This performance can be achieved with the following build-up:

- 2 x 15mm dense plasterboard (>800kg/m³)
- 70mm C stud with 50mm mineral wool in cavity
- 2 x 15mm dense plasterboard (>800kg/m³)

Partitions between less sensitive spaces should achieve a sound insulation performance of $D_{nT,w}$ 38.. This performance can be achieved with the following build-up:

- 1 x 12.5mm dense plasterboard (>800kg/m³)

- 70mm C stud with 50mm mineral wool in cavity
- 1 x 12.5mm dense plasterboard (>800kg/m³)

Whilst some existing partitions will be retained, a selection of new partitions will be constructed in between existing partitions. The proposed design is to infill in between existing structures, forming new partitions between rooms.

The material of the existing structure is not confirmed, but is predicted to be blockwork, it is likely that a form of treatment is required. This could include additional plasterboard linings, for example:

$D_{nT,w}$ 48 (Rw 56)

- Existing Block work (TBC)
- 48mm Gypliner with 25mm mineral wool in cavity
- 1 x 15mm dense plasterboard (Soundbloc)

$D_{nT,w}$ 38

- Existing structures may be suitable to achieve this without any additional treatment.

Mark-ups are provided in Appendix 3, showing the sound insulation requirements for partitions and doors, in terms of the laboratory rating (R_w).

7.4 Doors

Doors limit the sound insulation capability between adjacent spaces.

Doors to corridors should typically be rated at R_w30 dB in walls rated at R_w40 dB.

Where privacy is critical, e.g. meeting rooms, board rooms, it is recommended that corridor doors are rated at R_w35 dB in walls rated at R_w45 dB.

Where doors connect offices directly to other office spaces, these doors should be rated at R_w35 dB in walls rated at R_w 45 dB.

Current proposals include glazed doors and frames. In order to meet the high levels of sound insulation, we recommended rebated systems such as Optima Edge Series (other systems from other manufacturers are available). Non rebated glazing systems are unlikely to achieve the required levels of sound insulation on site.

All doors will require effective acoustic seals to the head, jambs and thresholds.

7.5 Flanking

To maintain the sound insulation capabilities of the separating partitions (Walls and Floors) flanking noise paths (i.e. those not directly through a construction) must be controlled.

7.5.1 Head detail

The proposal is to have exposed soffits within the office and meeting room spaces.

The head detail, where separating partitions meet the underside of the concrete slab, will be a particular weak point acoustically where the soffit is exposed. This will therefore be a key detail in

achieving the required sound insulation performances between spaces, especially where $D_{nT,w}$ 48 is required.

The following detail is required.

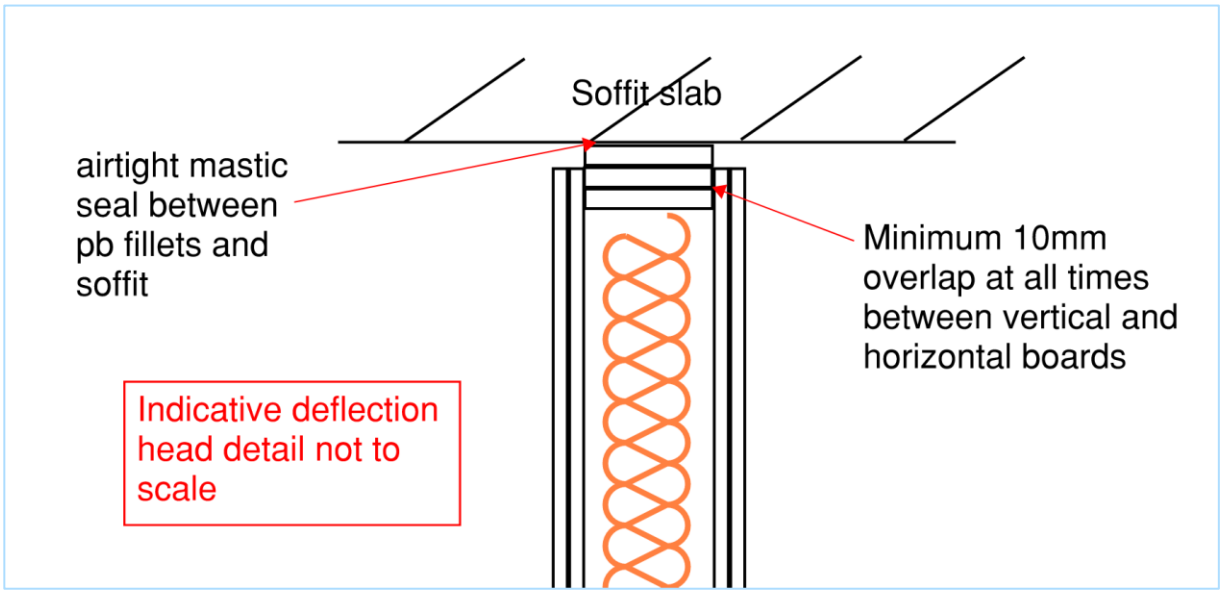


Figure 3 - Minimum Head detail requirement

The detail shown in Figure 4 is capable of controlling flanking across the head of the partition provided the workmanship is excellent and the gaps between plasterboard fillets and soffit slab are sealed airtight with mastic.

On some jobs partitions with this detail have failed by as much as 9dB during testing. When the contractor subsequently sealed the gaps airtight with dense mastic they managed to improve them to a pass during retests

It should be noted that British Gypsum recommend that steel angles are uses either side of the partition to achieve the required performance (see Figure 5). Specifying these steel angles would reduce risk of failure during testing.

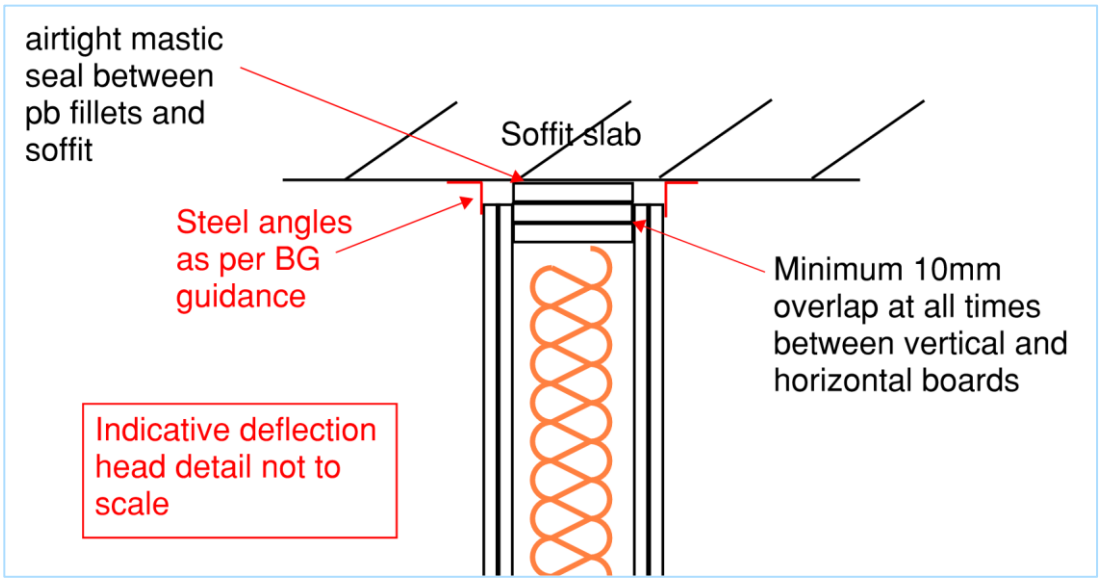


Figure 4 - BG recommended head detail (steel angles)

7.5.2 Foot detail

Screeds are not proposed, therefore separating partitions will be built up directly from the slab.

It is critical that the gaps between the bottom of the plasterboard and the slab are kept to a minimum and sealed airtight with dense mastic before the skirting is fitted.

7.5.3 Façade junctions (walls and slabs)

The scheme will feature partition junctions at the existing brick facade.
These junctions must be built carefully to limit any sound travelling around the ends of the partitions. This should be developed in Stage 3.

Where plasterboard partitions meet other plasterboard partitions or plasterboard linings the following separating partitions should penetrate the external wall linings. The principle is shown in Figure 6.These details can be developed in Stage 3.

Figure 5 - Typical wall junction detail

7.6 Other Sound Insulation Issues

Current plans propose a semi-private office on the first floor. It is worth noting that any privacy will not be achieved between this office space and the surrounding open plan office and kitchenette areas. It is worth considering adding a partition to enclose the space if privacy is required.

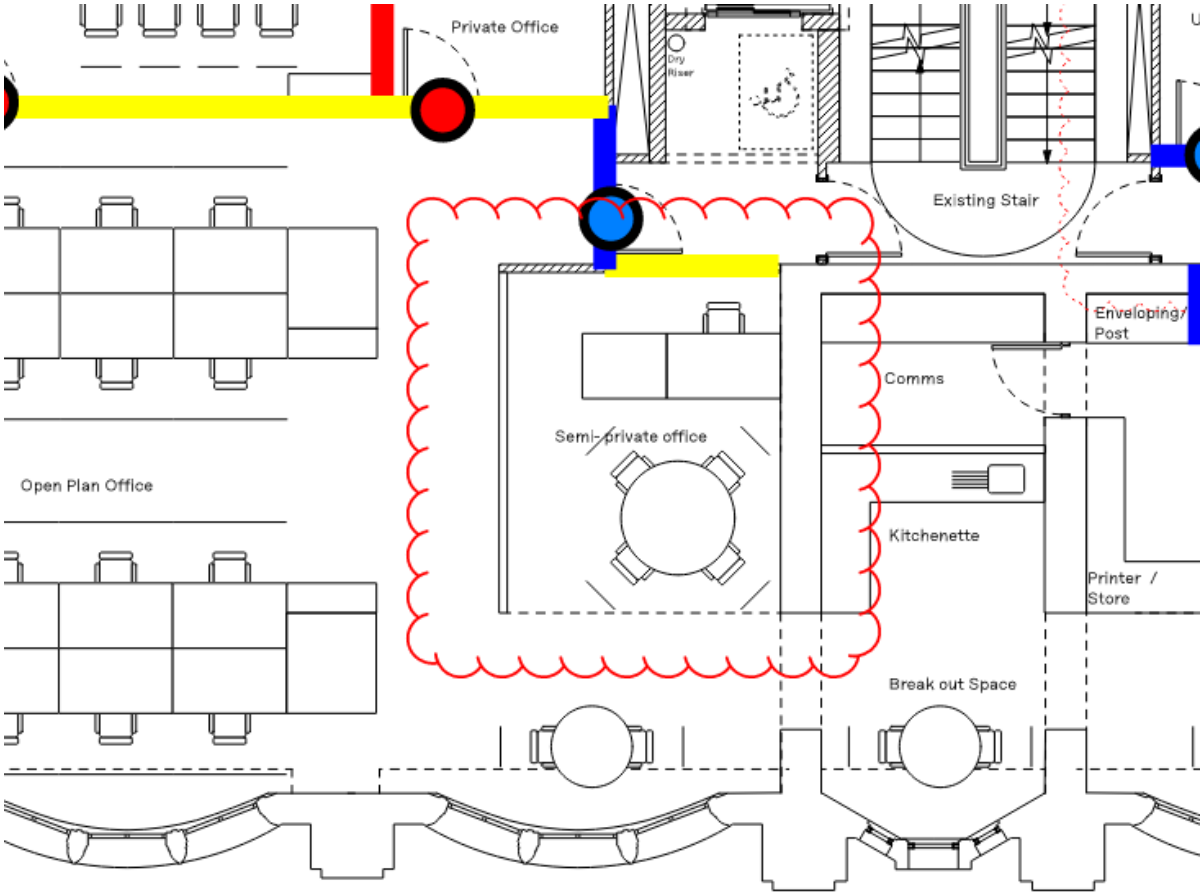


Figure 6 - First Floor Semi-Private Office

8. REVERBERATION

8.1 Criteria

The BREEAM credit Hea 05 states that reverberation times must achieve the requirements set out in Section 7 of BS8233:2014. There are no specific requirements for room acoustics within BS8233, however it does indicate that general acoustic guidance for offices is available from the British Council for Offices Guide (BCO) 2014.

BCO 2014 provides practical design guidance on the finishes of office spaces to control unwanted primary noise reflections and reverberant noise build-up. These are summarised below:

- *For open plan offices, a ceiling with acoustic absorption performance of Class A (ref BS EN ISO 11654:1997) is advised to cover all ceiling areas with the exception of lights, grilles and plasterboard margins;*
- *A carpet floor finish in office areas is advisable to control impact noise from sources such as footfall and to provide additional acoustic absorption. Whilst alternative soft floor finishes may be considered acceptable, BCO 2014 advise against the use of hard floor finishes within office areas;*
- *Acoustically hard, reflective surface finishes (such as glass, stone or metal) within the entrance lobbies and atria may lead to long reverberation times. This may in turn lead to issues with speech clarity within the space, especially for people with impaired hearing. This should be considered in the design of any public address/voice alarm (PA/VA) system. It may be necessary to mitigate potential issues by introducing acoustically absorbent finishes and furnishings.*

The guidance within BCO may not be applicable to this scheme, as the scheme does not currently propose carpets or ceilings. As there are no specific requirements for the reverberation times for different spaces in BS8233 or BCO, Ramboll have suggested reverberation times that are based on industry best practice.

Table 3 - Reverberation time criteria

Type of Space	Reverberation Time T_{mf} (seconds)
Meeting rooms, cellular offices	≤0.8
Open plan offices, multi-functional space	≤1.0
Foyer, entrance spaces, circulation space, tea point, toilets	≤1.5

It is understood that the design proposals for the office spaces are exposed concrete soffits and acoustically hard wooden floors. Absorption will need to be added via wall panels or baffles/rafts suspended from the soffit.

Examples of acoustic absorption relevant to this design are presented in Appendix 2.

APPENDIX 1 - NOISE SURVEY DETAILS

Location of Survey

25 Tavistock Pl
London
WC1H 9SF

Date & Time of Survey

20-25th July 2021

Personnel Present During Survey

Michael Fort MSc MIOA (Ramboll)

Weather Conditions during Survey

Dry, Calm, wind speed average ~2m/s,

Instrumentation

Bruel & Kjaer

Type 2250 Sound Level Meter (serial no.3002075)
Type 4189 Preamplifier (serial no:2839798)
Type 4231 Calibrator (serial no:3004168)

Calibration Procedure

Before and after the survey the measurement apparatus was check calibrated to an accuracy of ±0.3 dB using the type 4231 Sound Level Calibrator. Calibrator produces sound pressure levels of 93.8 dB re 2 x 10^{-5} Pa at a frequency of 1 kHz.

Survey Procedure

An unattended noise logger was set up for 5 days continuously monitoring noise levels at LT1 at rooftop level. Additional attended measurements were undertaken at ground floor level at ST1 to measure road traffic noise levels during the day.

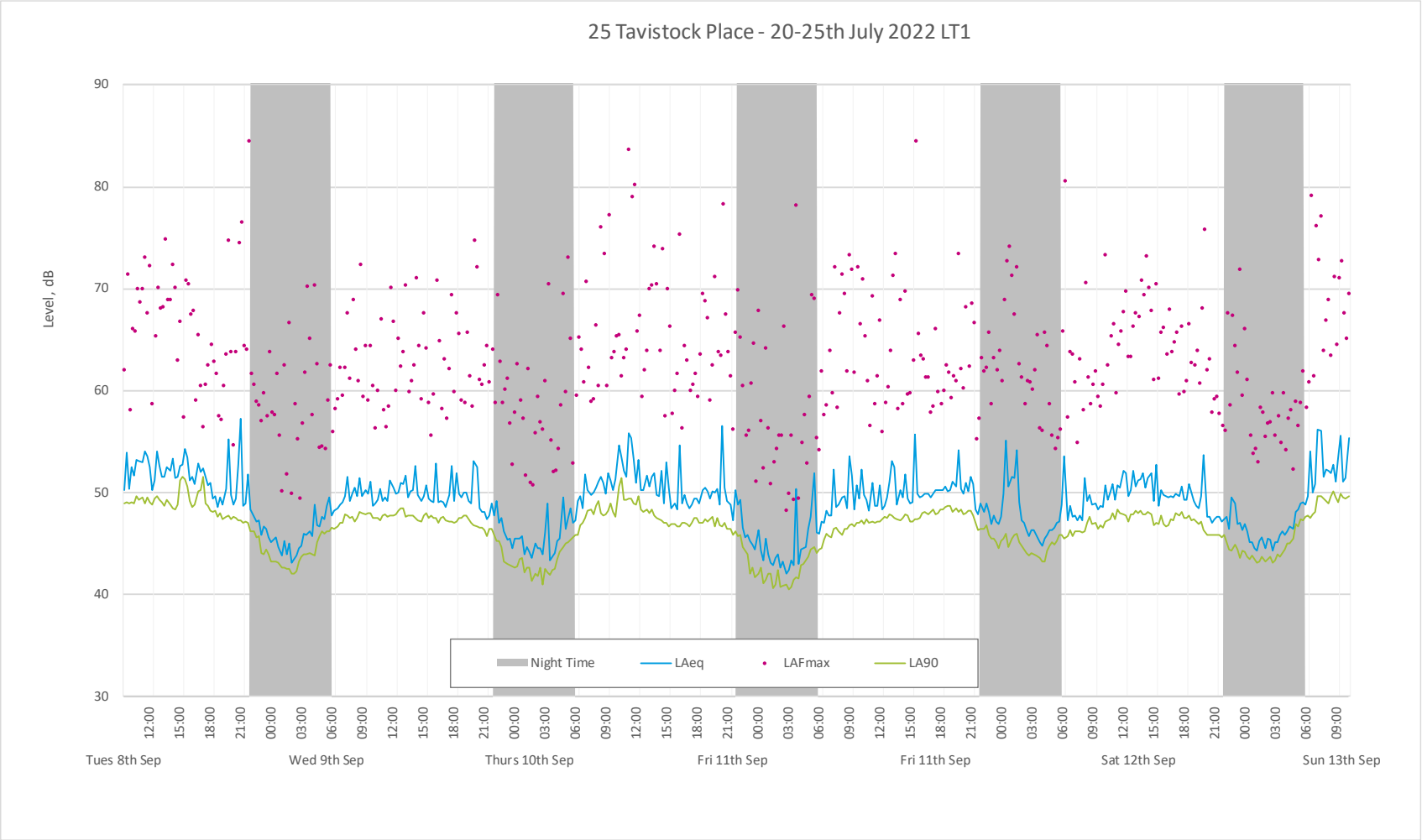


Figure 7 - LT1 Noise Levels

APPENDIX 2 – ACOUSTIC ABSORPTION EXAMPLES

There are many products that are designed to provide acoustic absorption, and a variety of designs to complement different interior styles. This report presents several products of Class A, Class B, and Class C. A class C absorber, owning to its reduced performance, will require a greater area than a class A absorber.

Acoustic Hanging Baffles

Acoustic absorbent hanging baffles could be used to control the RT, e.g. SAS Ceiling baffles.

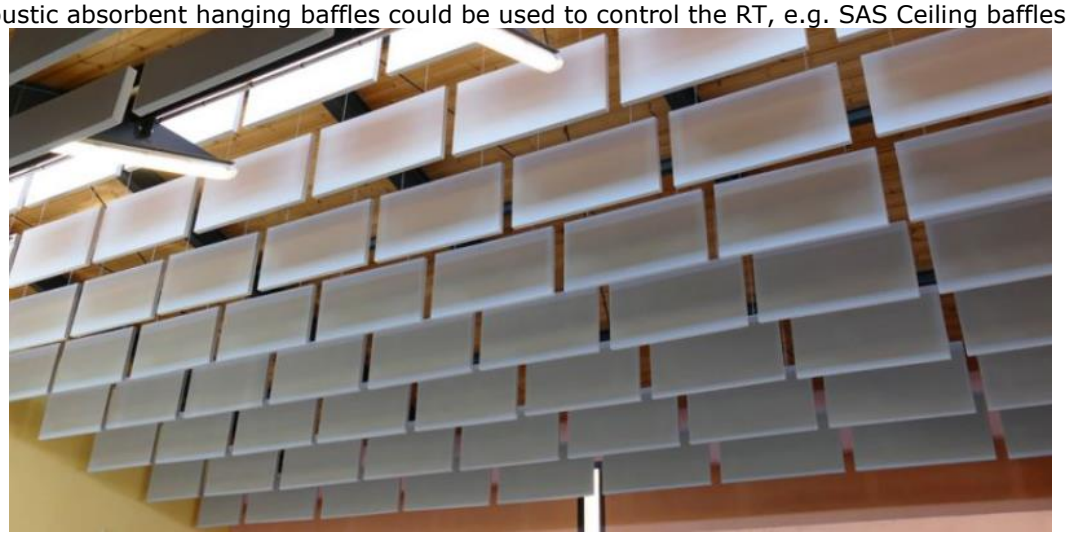


Figure 8 - SAS500 Ceiling Baffles

Horizontal Acoustic Rafts

Another option is to use acoustically absorbent horizontal rafts, e.g. *Ecophon Solo Square*.

Figure 9 - Ecophon Solo Square Acoustic Rafts

Compressed fibrous material - Troldtekt®

Troldtekt produce cement-bonded wood wool acoustic panels with several design parameters to choose from, including structure coarseness, colour, and pattern designs / scales. Their products can be mounted to walls and ceilings or installed as a suspended ceiling or baffles.

Performances vary, with many product / installation solutions providing Class A absorption.

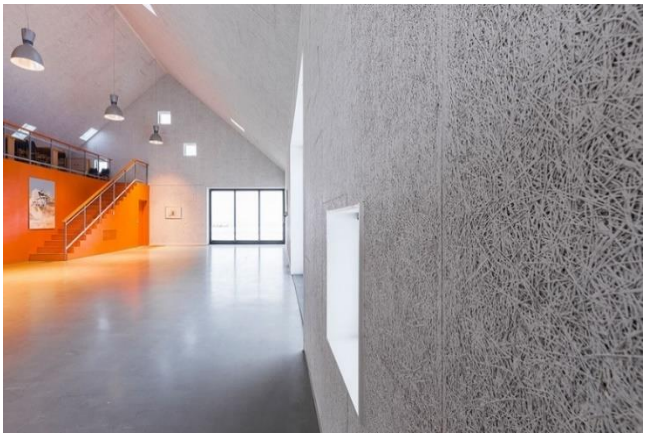


Figure 10 - Troldtekt panel designs

Barrisol MICROSORBER®

This product is a microperforated membrane which offers a range of translucent finishes. The main advantage of this product is its minimal effect on the architecture of the room. The product can be installed on walls, ceilings and glass facades. It is stretched to a frame and is printable.

A double-layered MICROSORBER can achieve Class C absorption when installed 100mm or more from a solid surface.

Figure 11 - Barrisol MICROSORBER (wall, left) (ceiling, right)

Nano-Perforated Timber Acoustic Panels

Gustafs nano-perforated timber acoustic panels are an option as they can provide Class A performance and the perforations are difficult to detect from casual viewing.

It is possible that these panels need not be timber but a simple white finish which, in effect, would be indistinguishable from white boarding.

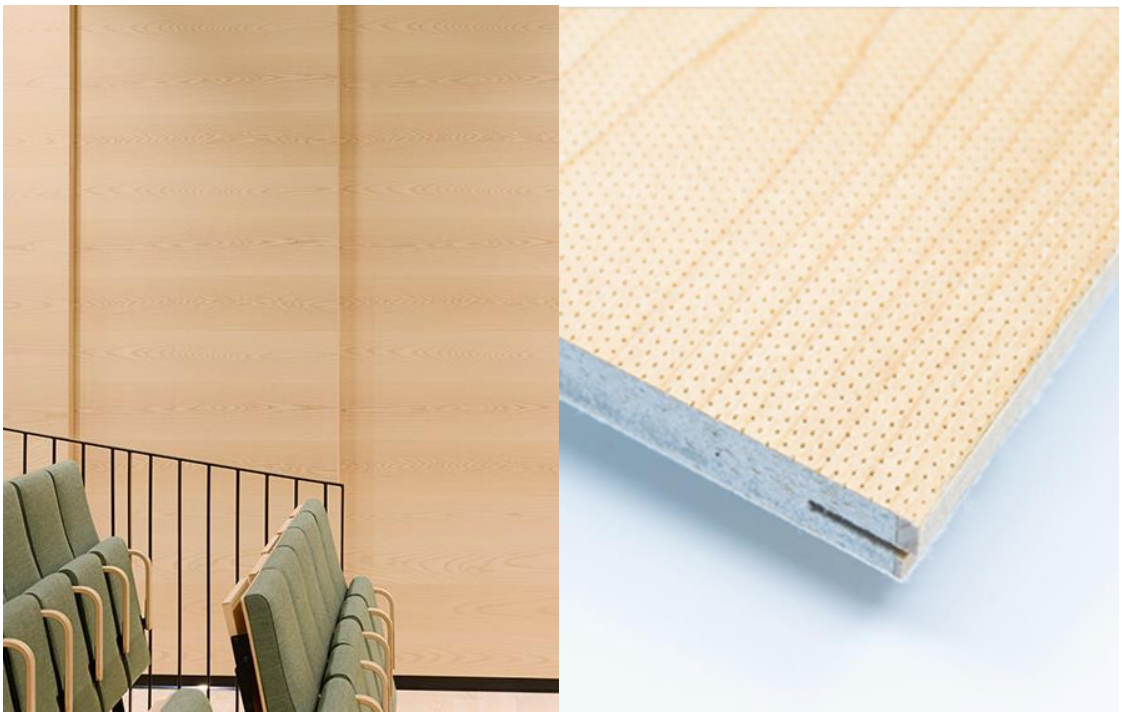


Figure 12 - Nano-Perforated Timber Acoustic Panels

Fabric Faced Mineral Wools Wall Panels

Fabric faced mineral wool panels which can have artwork printed on them. These panels can achieve up to Class A. A few example manufacturers are listed below.

Figure 13 - Barrisol Arbatex

Acoustic Plaster

An option with minimal visual impact is using acoustically absorbent sprayed-plaster backed by mineral wool. Example products of this are provided by Sto and Oscar Acoustics.

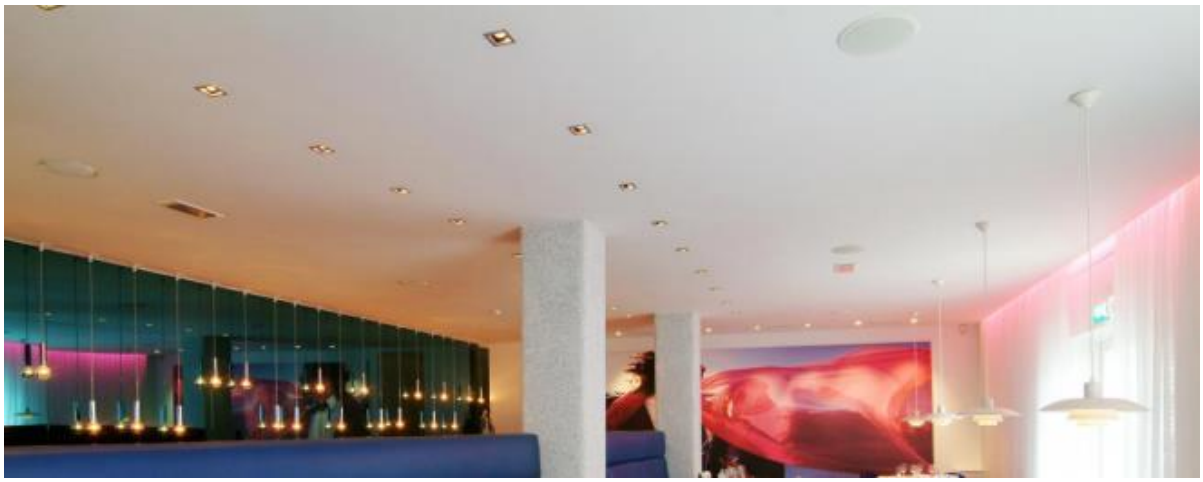


Figure 14 - Acoustic Plaster (on ceiling)

Other sound absorbing products

Figure 15 - Anne Kyyro Quinn – Various felt based products which can be formed in patterns

Figure 16 - MuffleStretch Acoustic Fabric - available in multiple colours

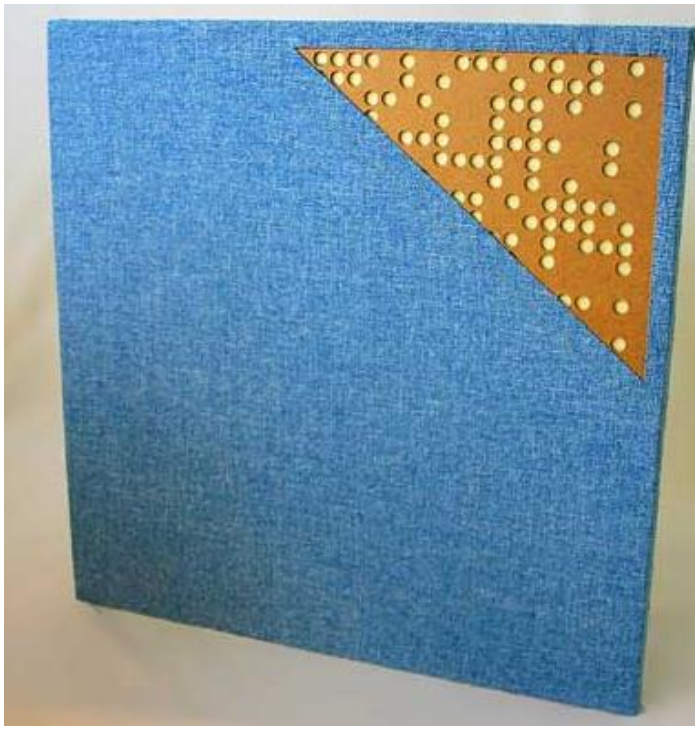
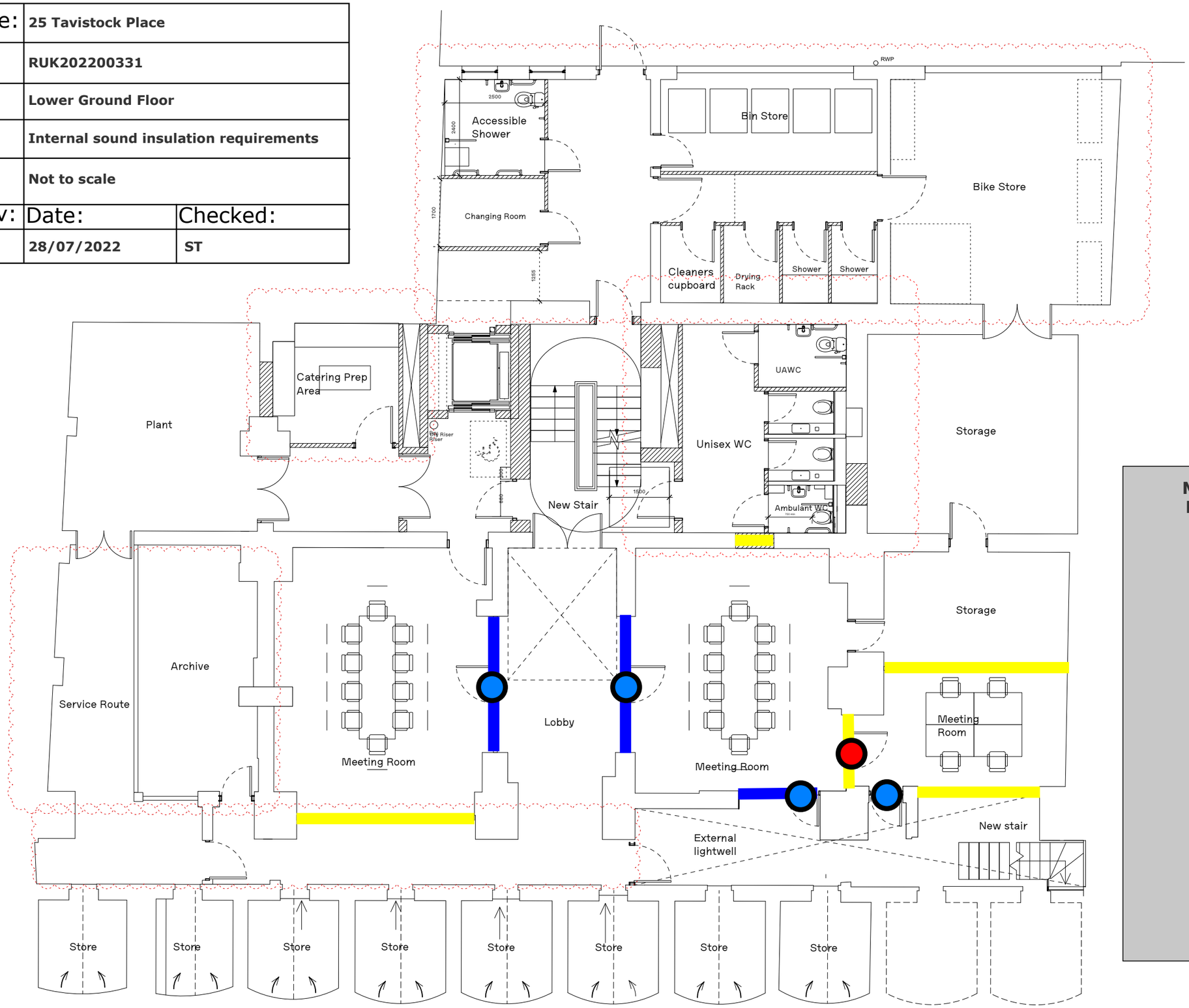


Figure 17 - RPG BAD Fabric Covered Panel (the perforation patten follows a mathematical acoustic sequence – the panel does not need to be fabric faced).

APPENDIX 3 - ACOUSTIC MARK-UPS

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	Lower Ground Floor		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



P 5 19/07/2022 Coordination Set

MINIMUM WEIGHTED SOUND REDUCTION REQUIREMENTS OF INTERNAL ELEMENTS

SOLID PARTITIONS

R_w 40 dB partition

R_w 45 dB partition

R_w 56 dB partition

DOORSETS

R_w 30 dB doorset

R_w 35 dB doorset

*Manufacturer's must provide evidence in the form of laboratory certification that acoustic elements can achieve these minimum criteria.

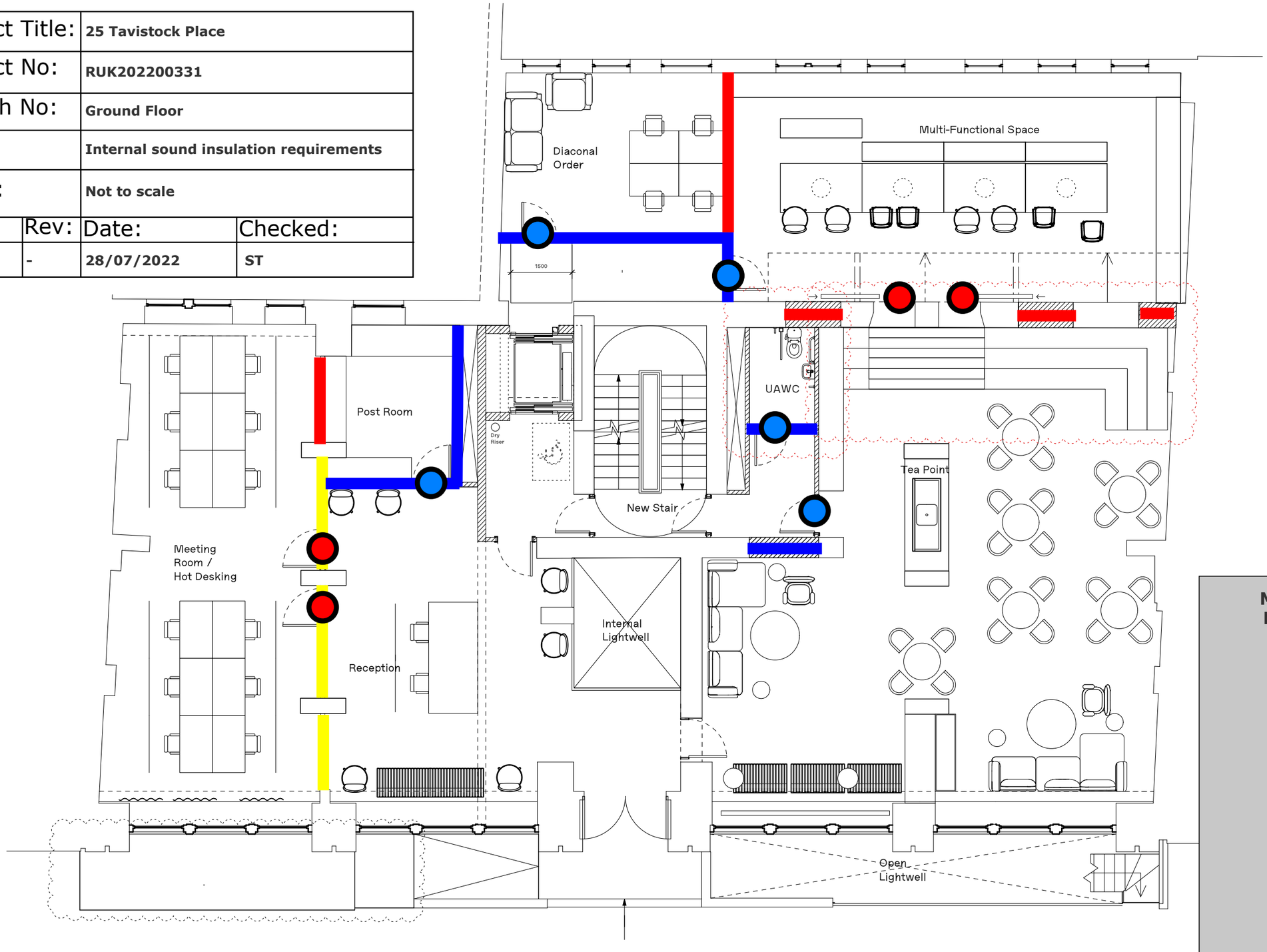
DRAWING No. 02 0200P

REVISION P 5

PROJECT No. 1194

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	Ground Floor		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



REV.	DATE	COMMENT
P 5	19/07/2022	Coordination Set
P 4	15/07/2022	Issue to services designer
P 3	01/07/2022	Fire & Accessibity Comments
P 2	21/06/2022	Core Coordination
P 1	23/05/2022	Preliminary For Cost Review

MINIMUM WEIGHTED SOUND REDUCTION REQUIREMENTS OF INTERNAL ELEMENTS

SOLID PARTITIONS

- R_w 40 dB partition
- R_w 45 dB partition
- R_w 56 dB partition

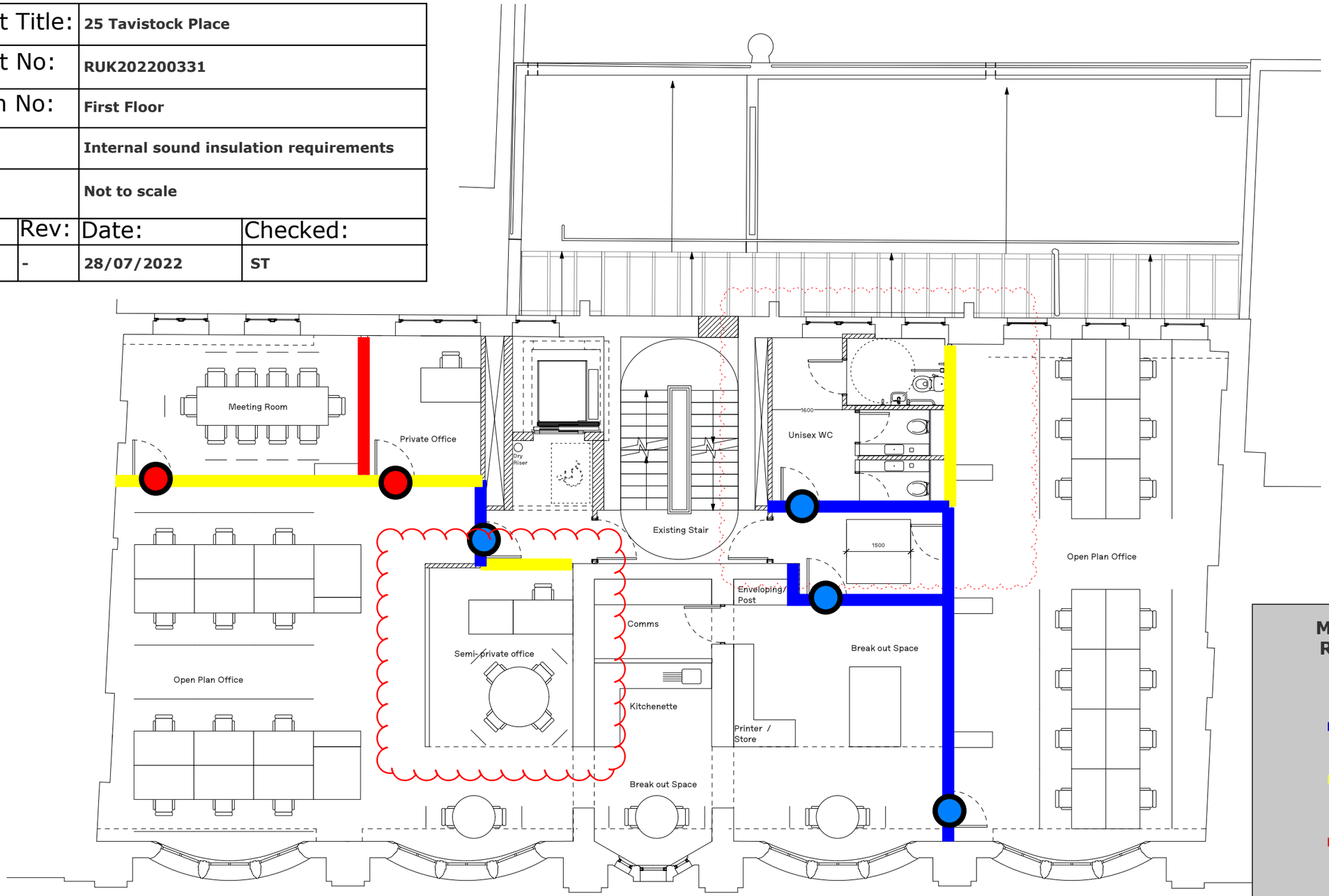
DOORSETS

- R_w 30 dB doorset
- R_w 35 dB doorset

*Manufacturer's must provide evidence in the form of laboratory certification that acoustic elements can achieve these minimum criteria.

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	First Floor		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



REV.	DATE	COMMENT
P 5	19/07/2022	Coordination Set
P 4	15/07/2022	Issue to services designer
P 3	01/07/2022	Fire & Accessibity Comments
P 2	21/06/2022	Core Coordination
P 1	23/05/2022	Preliminary For Cost Review

MINIMUM WEIGHTED SOUND REDUCTION REQUIREMENTS OF INTERNAL ELEMENTS

SOLID PARTITIONS

R_w 40 dB partition

R_w 45 dB partition

R_w 56 dB partition

DOORSETS

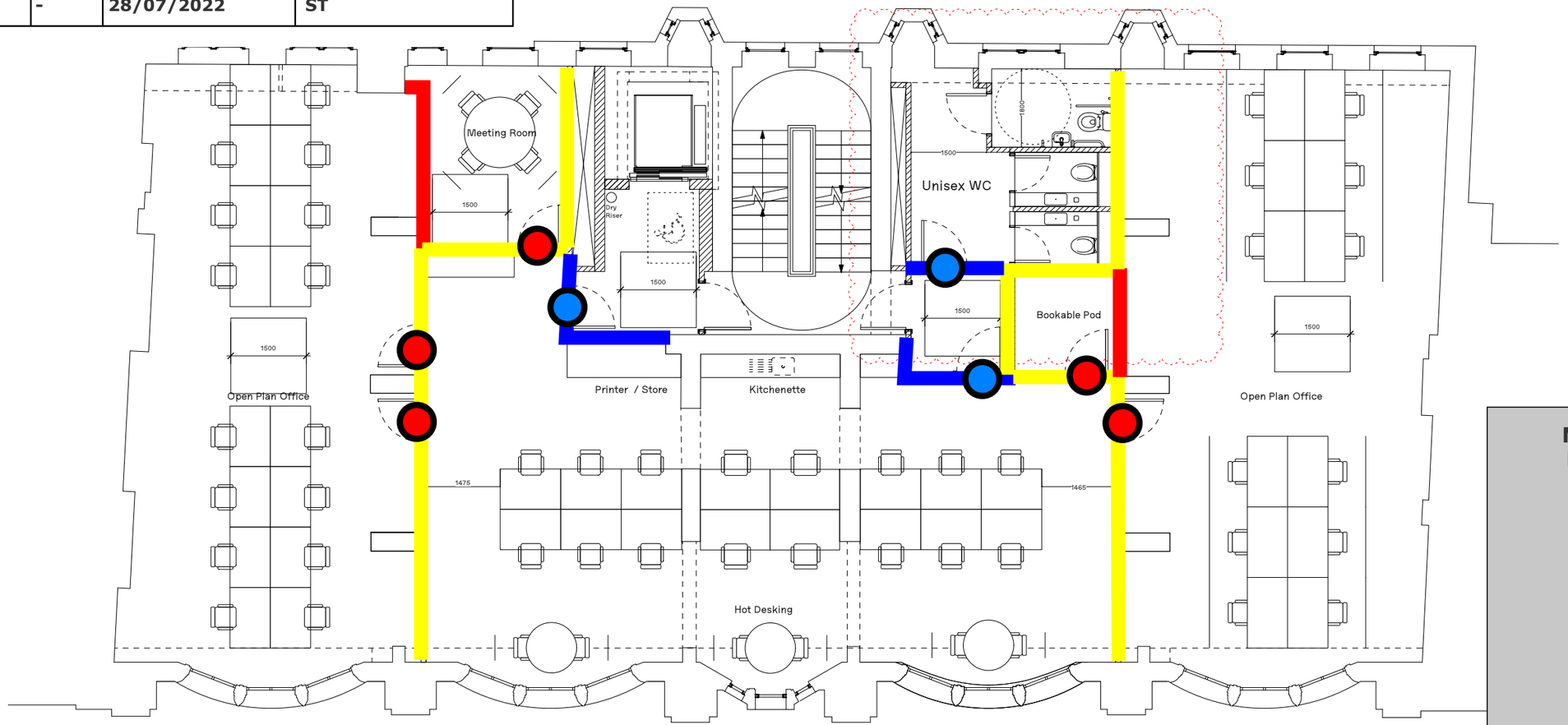
R_w 30 dB doorset

R_w 35 dB doorset

*Manufacturer's must provide evidence in the form of laboratory certification that acoustic elements can achieve these minimum criteria.

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	Second Floor		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



REV.	DATE	COMMENT
P 5	19/07/2022	Coordination Set
P 4	15/07/2022	Issue to services designer
P 3	01/07/2022	Fire & Accessibity Comments
P 2	21/06/2022	Core Coordination
P 1	23/05/2022	Preliminary For Cost Review

N

MINIMUM WEIGHTED SOUND REDUCTION REQUIREMENTS OF INTERNAL ELEMENTS

SOLID PARTITIONS

- R_w 40 dB partition
- R_w 45 dB partition
- R_w 56 dB partition

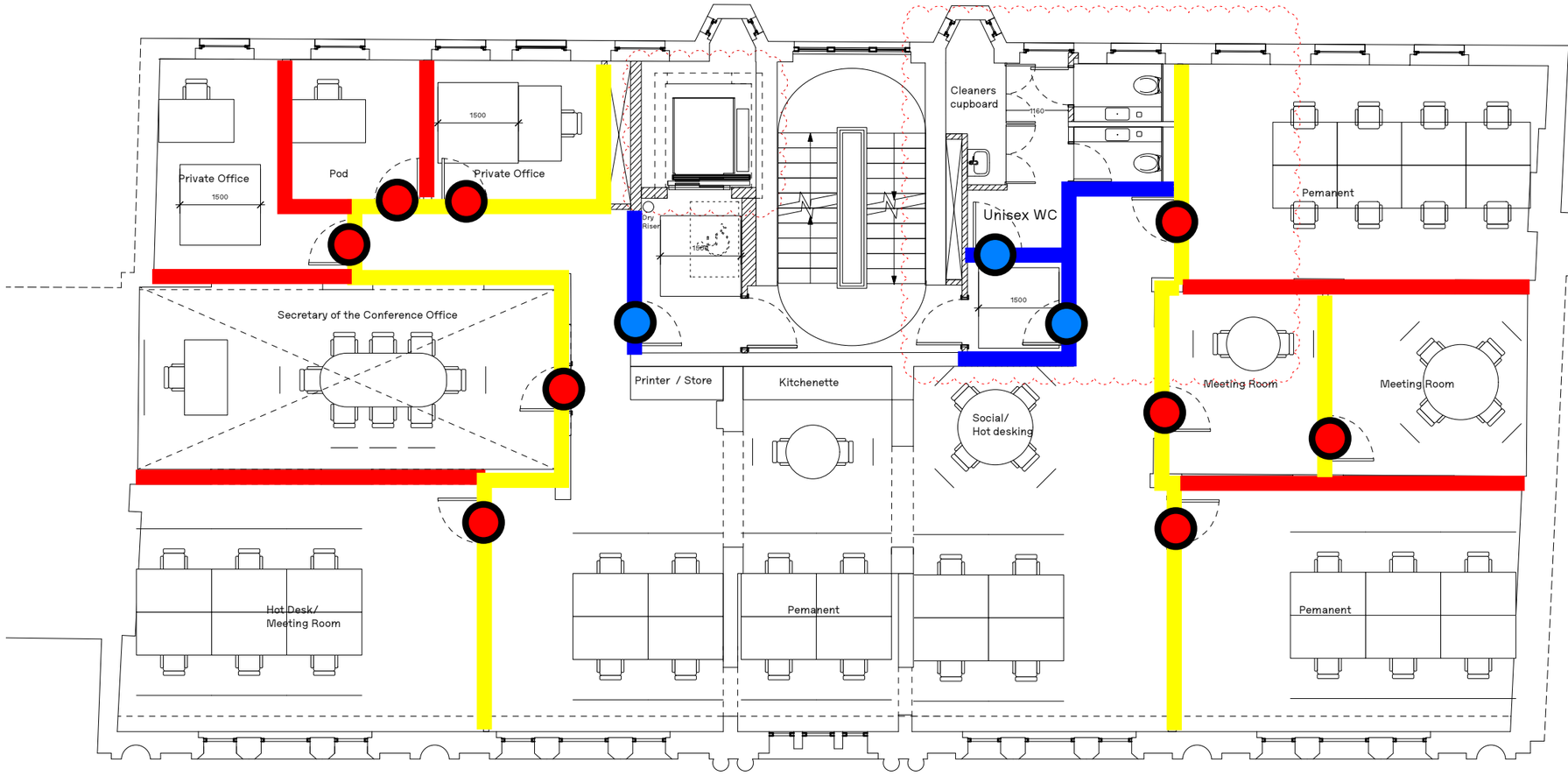
DOORSETS

- R_w 30 dB doorset
- R_w 35 dB doorset

*Manufacturer's must provide evidence in the form of laboratory certification that acoustic elements can achieve these minimum criteria.

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	Third Floor		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



REV.	DATE	COMMENT
P 5	19/07/2022	Coordination Set
P 4	15/07/2022	Issue to services designer
P 3	01/07/2022	Fire & Accessibity Comments
P 2	21/06/2022	Core Coordination
P 1	23/05/2022	Preliminary For Cost Review

MINIMUM WEIGHTED SOUND REDUCTION REQUIREMENTS OF INTERNAL ELEMENTS

SOLID PARTITIONS

R_w 40 dB partition

R_w 45 dB partition

R_w 56 dB partition

DOORSETS

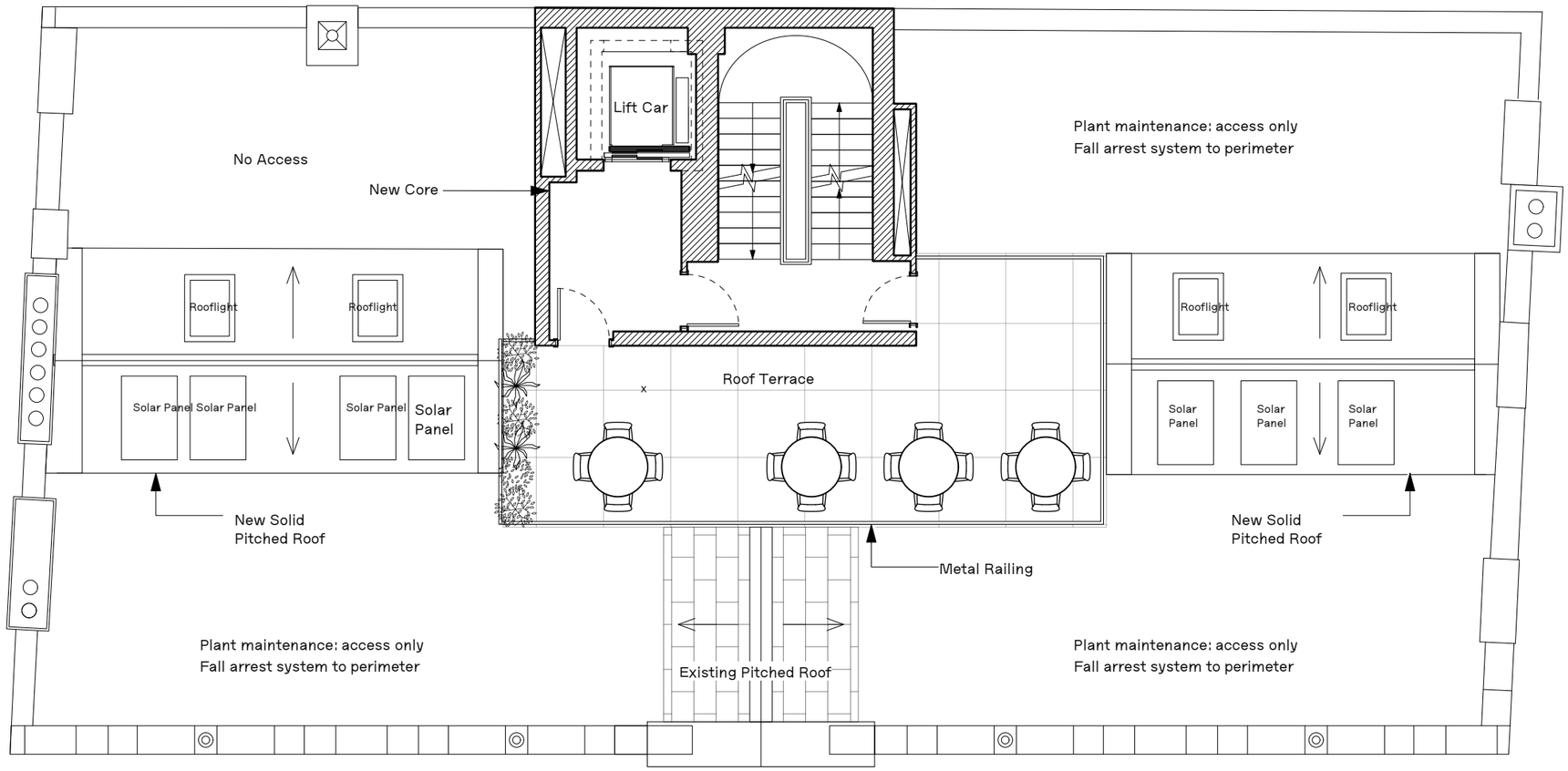
R_w 30 dB doorset

R_w 35 dB doorset

*Manufacturer's must provide evidence in the form of laboratory certification that acoustic elements can achieve these minimum criteria.

RAMBOLL

Project Title:	25 Tavistock Place		
Project No:	RUK202200331		
Sketch No:	Roof		
Title:	Internal sound insulation requirements		
Scale:	Not to scale		
Eng:	Rev:	Date:	Checked:
MF	-	28/07/2022	ST



REV.	DATE	COMMENT
P 2	19/07/2022	Coordination Set
P 1	15/07/2022	Issue to services designer

N

1:100

0 1 2 3m

NOTES

Do not scale from this drawing. All dimensions to be confirmed on site. Architect to be informed of any discrepancies before any action is taken. This drawing is copyright © Manalo & White Ltd and should not be copied or reproduced without Manalo & White Ltd consent.

Manalo & White

UNIT 301, METROPOLITAN WHARF BUILDING,
70 WAPPING WALL, LONDON E1W 3SS
T 020 7265 4945 E contact@manaloandwhite.co.uk

PROJECT
1194 Tavistock Place

DRAWING
Roof

SCALE
1:100 @A3

STATUS
Preliminary

DRAWING No.
02 0205P

REVISION
P 2

PROJECT No.
1194