TECHNICAL NOTE

Date: August 2025

File Ref: BD/CS/P25-3550/03TN

Company: Frough Ltd (Greenford)

Subject: Hotel Acoustic Criteria

Project: 233 High Street, Uxbridge

1.0 INTRODUCTION

1.1 Create Consulting Engineers have been commissioned by Frough Ltd (Greenford) to provide recommendations for suitable acoustic criteria for the newly proposed Hotel at 233 High Street, Uxbridge.

1.2 Specific design criteria has not been provided. As such, the recommendation from Annex H of BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* has been proposed.

1.3 This report should be read in conjunction with the noise impact assessment *P25-3550 233 High Street Uxbridge NIA* for further reference to the site.

2.0 ASSESSMENT METHODOLOGY AND CRITERIA

BS 8233:2014

2.1 Annex H (informative) provides examples of acoustic design criteria adopted by hotel groups.

Airborne Sound Insulation

2.2 Airborne sound insulation between spaces is not to be less than the values given in Table H.1 of the standard (summarised below), when measured in accordance with BS EN ISO 140-4 and rated in accordance with BS EN ISO 717-1.

Room areas	Performance
Bedroom – Bedroom	Floors: 45 dB $DnT,w + Ctr$
Bedroom – Bathroom (different rooms) Bathroom – Bathroom	Floors: 45 dB $DnT,w + Ctr$
Bedroom – Restaurant/bar	60 dB $D_{nT,w}$
Bedroom – Kitchen	60 dB $D_{nT,w}$
Bedroom – Other tenancies	65 dB $D_{nT,w}$
Bedroom – Corridor	Walls: 43 dB $D_{nT,w} + C_{tr}$
Bathroom – Corridor	45 dB $D_{nT,w}$
Bedroom – Laundry	43 dB $D_{nT,w} + C_{tr}$
Bedroom – Plant room	60 dB $D_{nT,w}$

Table 2.1: Table H.1 – Airborne Sound Insulation

2.3 Internal wall constructions within bedrooms (but not to en-suite bathrooms) are to have a sound insulation performance of not less than **40 dB R_w**. Doors to bedrooms are to have a sound insulation performance of not less than **29 dB R_w**, when measured in accordance with BS EN ISO 10140-2 and rated in accordance with BS EN ISO 717-1. Interconnecting doors should maintain the required room-to-room sound insulation performance of the total wall.

2.4 Where moveable walls are to be installed between meeting rooms and between function rooms, the entire wall, including cupboards for parking the wall panels and the wall above and beneath the ceiling or floor, is, in its entirety, to achieve a minimum installed performance of **48 dB $D_{nT,w}$**.

Impact Sound Insulation

2.5 Impact sound insulation performances for spaces above bedroom spaces is not to exceed **62 dB $L'_{nT,w}$**, when measured in accordance with BS EN ISO 140-7 and rated in accordance with BS EN ISO 717-2.

Internal Noise Levels form External Sources

2.6 The noise level in any hotel bedroom, with windows closed, from all external sources, including road, rail and air traffic and noise from activities outside the hotel and any adjacent premises.

Period	Noise Level
Daytime (07:00 – 23:00 hrs)	30 – 40 dB $L_{Aeq,1hour}$
Night-time (23:00 – 07:00 hrs)	25 – 35 dB $L_{Aeq,1hour}$
Night-time (23.00 – 07.00 hrs)	45 – 55 dB L_{Amax}

Table 2.2: Table H.3 – Internal Ambient Noise Levels

Building Services Noise Levels

2.7 The background noise level in any hotel bedroom arising from comfort cooling room units serving the bedroom is not to exceed **NR25 L_{eq}** when the units are operating at their design duty. Comfort cooling systems installed in bedrooms are to have the facility to be operated at quieter duties and to be switched off by room occupants.

2.8 The background noise level in any hotel bedroom as a result of constant minimum fresh air ventilation systems serving the bedroom or other parts of the development is not to exceed **NR20 L_{eq}** when the systems are operating at their design duty.

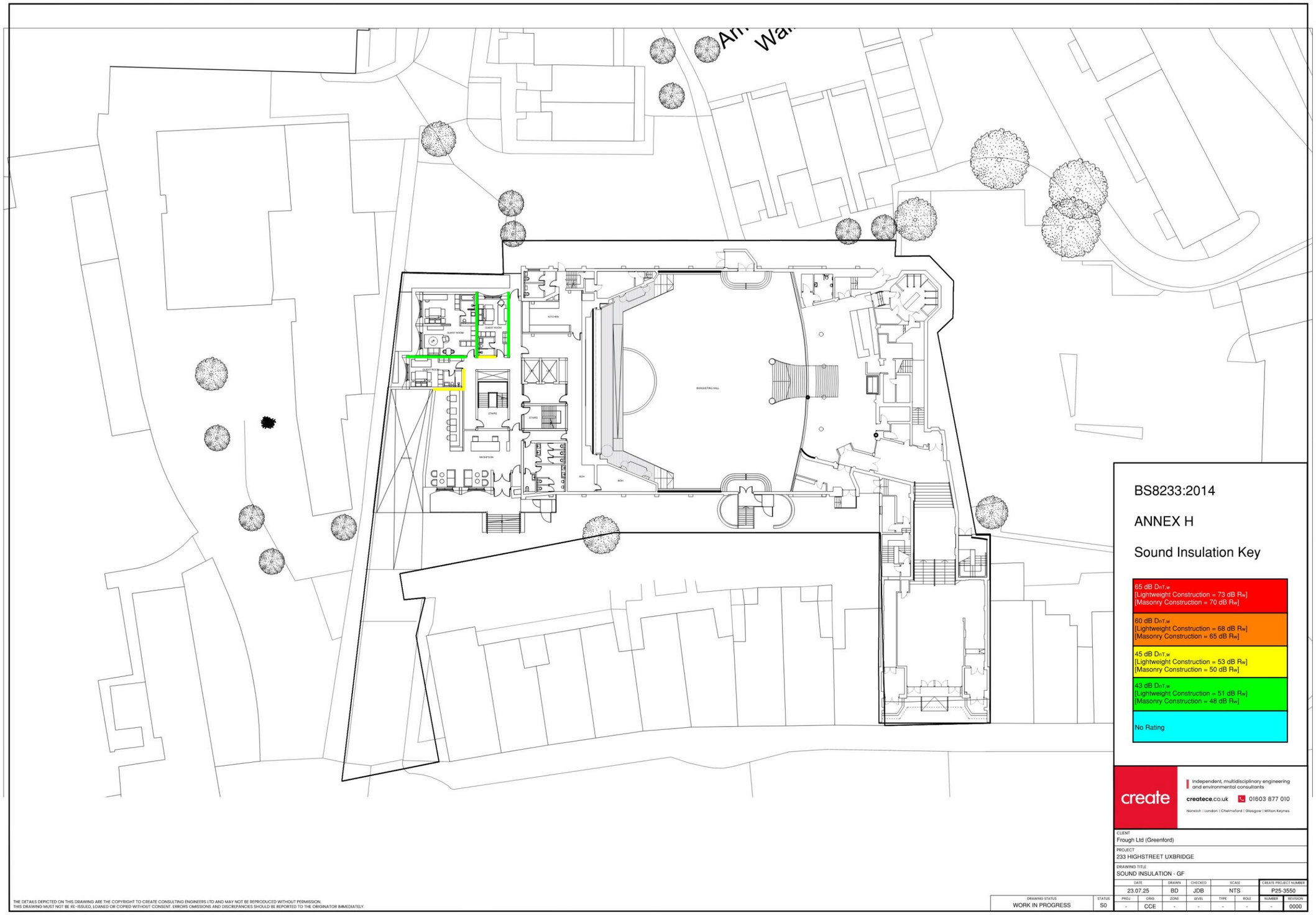
2.9 The background noise level in any other building services systems serving the bedroom or any other parts of the development is not to exceed **NR20 L_{eq}** within the bedroom.

Area	Noise Level
En suite bathrooms	30 – 40 dB $L_{Aeq,1hour}$
Corridors/lobbies	25 – 35 dB $L_{Aeq,1hour}$
Restaurants	45 – 55 dB L_{Amax}
Public toilets NR40 $L_{eq,\ 1hr}$	Public toilets NR40 $L_{eq,\ 1hr}$
Staff rooms NR40 $L_{eq,\ 1hr}$	Staff rooms NR40 $L_{eq,\ 1hr}$

Table 2.3: Table H.4 – Building Services

Design Considerations

- The performances detailed here are the **minimum** recommended design levels; and
- Control of reverberation in common areas is part of building regulations and is beyond the remit of this assessment.


BS8233:2014
ANNEX H
Sound Insulation Key
65 dB DnT,w
[Lightweight Construction = 73 dB Rw]
[Masonry Construction = 70 dB Rw]
60 dB DnT,w
[Lightweight Construction = 68 dB Rw]
[Masonry Construction = 65 dB Rw]
45 dB DnT,w
[Lightweight Construction = 53 dB Rw]
[Masonry Construction = 50 dB Rw]
43 dB DnT,w
[Lightweight Construction = 51 dB Rw]
[Masonry Construction = 48 dB Rw]
No Rating
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Frough Ltd (Greenford)
PROJECT
233 HIGHSTREET UXBRIDGE
DRAWING TITLE
SOUND INSULATION - GF
DATE 23.07.25
DRAWN BD
CHECKED JDB
SCALE NTS
CREATE PROJECT NUMBER P25-3550
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BS8233:2014
ANNEX H
BUILDING SERVICES
NR35 to NR 45 Leq, 1hr
NR40 Leq, 1hr
The background noise level in any hotel bedroom arising from comfort cooling room units serving the bedroom is not to exceed NR25 Leq when the units are operating at their design duty.
Comfort cooling systems installed in bedrooms are to have the facility to be operated at quieter duties and to be switched off by room occupants.
The background noise level in any hotel bedroom as a result of constant minimum fresh air ventilation systems serving the bedroom or other parts of the development is not to exceed NR20 Leq when the systems are operating at their design duty.
The background noise level in any hotel bedroom arising from any other building services systems serving the bedroom or any other parts of the development is not to exceed NR20 Leq within the bedroom.
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BS8233:2014

ANNEX H

Sound Insulation Key

65 dB $D_{nT,w}$ [Lightweight Construction = 73 dB R_w] [Masonry Construction = 70 dB R_w]
60 dB $D_{nT,w}$ [Lightweight Construction = 68 dB R_w] [Masonry Construction = 65 dB R_w]
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43 dB $D_{nT,w}$ [Lightweight Construction = 51 dB R_w] [Masonry Construction = 48 dB R_w]
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PROJECT: 233 HIGHSTREET UXBRIDGE

DRAWING TITLE: SOUND INSULATION - 1F - 3F

DRAWING STATUS	STATUS
WORK IN PROGRESS	S0

DATE	DRAWN	CHECKED	SCALE	CREATE PROJECT NUMBER
23.07.25	BD	JDB	NTS	P25-3550

PROJ	ORIG	ZONE	LEVEL	TYPE	ROLE	NUMBER	REVISION
-	CCE	-	-	-	-	-	0000

BS8233:2014

ANNEX H

BUILDING SERVICES

NR35 to NR 45 Leq, 1hr

NR40 Leq, 1hr

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DRAWING TITLE
BUILDING SERVICES - 1F

DRAWING STATUS	STATUS	DATE	DRAWN	CHECKED	SCALE	CREATE PROJECT NUMBER
WORK IN PROGRESS	S0	29.07.25	BD	JDB	NTS	P25-3550

PROJ	ORIG	ZONE	LEVEL	TYPE	ROLE	NUMBER	REVISION
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Created by: Ben Dixon, BA (Hons), MIoA, ACIEH

Approved by: Jody Blacklock, BEng (Hons), MIoA, MCIBSE