

Sound Advice

A C O U S T I C S L T D

REPORT REFERENCE:

SA – 7513

**INTERNAL & EXTERNAL
RIBA STAGE E2
ASSESSMENT**

CLIENT:

KS4 Consulting

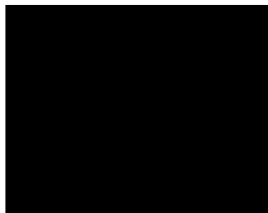
SITE:

81 – 88 Beresford Street

London

SE18 6BG

Report Presented By
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1 INTRODUCTION

1.1 Instruction

Sound Advice Acoustics Ltd has been instructed by KS4 Consulting, to assess the internal construction of the proposed development for 81 – 88 Beresford Street, London, SE18 6BG. This assessment has been based on the requirements of the current Building Regulations 2010 Approved Document E 2003 Edition incorporating 2004, 2010, 2013 and 2015 amendments.

Construction consists of a single block, which comprises of commercial in the basement and ground floor, with floors one to thirteen purpose-built student accommodation.

1.2 Scope of Report

This report aims to establish the following:

- ✓ Absorption Requirements for Stairwells and Corridors
- ✓ Absorption calculations for the lobby and stairwells in accordance with section 7 of the current Building Regulations 2015 Approved Document E 2003 'Resistance to the Passage of Sound'.
- ✓ Mitigation Specifications where required.

1.3 Criteria

Internal assessments and calculations are to be made to demonstrate the predicted absorption calculations for the lobby and stairwells in accordance with section 7 of the current Building Regulations 2015 Approved Document E 2003 'Resistance to the Passage of Sound'. Advice is to be given as to the amount of additional absorption required in order to meet the relevant standards and any other employer's requirements.

2 CALCULATIONS AND DISCUSSION OF RESULTS

The following report assesses the reverberation control requirements to the designed stairwells as required by the Building Regulations 2010 Approved Document E 2003 Edition incorporating 2004, 2010, 2013 and 2015 amendments.

The calculations have been carried out in accordance with Building Regulations 2010 Approved Document E 2003 Edition incorporating 2004, 2010, 2013 and 2015 amendments, Section 7 ‘Reverberation in common internal parts of buildings containing flats or rooms for residential purposes’ – Method B calculation.

The following calculations demonstrate the required absorption calculation for the stairwells, landings and communal corridors. The proposed ceilings in the communal corridors and entrance lobby area are being specified with a carpet tile and a standard plasterboard ceiling. The following table demonstrates the amount of absorption, either class D or class C for the stairwells.

Absorption	Class D (m ²)	Class C (m ²)
Staircase 1	171.90	85.95
Staircase 2	171.90	85.95

2.1 Calculated Stairs Absorption

Stair Tread Areas (m ²)							
					Staircase - Surface Areas		
Staircase 1	Width	Length	Area	Total stair tread area	1	2	
Basement to Ground	1.1	4.4	4.84				
Ground to First	1.1	4.4	4.84				
First to second	1.1	4.4	4.84				
Second to Third	1.1	4.4	4.84				
Third to Fourth	1.1	4.4	4.84				
Fourth to Fifth	1.1	4.4	4.84				
Fifth to Sixth	1.1	4.4	4.84				
Sixth to Seventh	1.1	4.4	4.84				
Seventh to Eighth	1.1	4.4	4.84				
Eighth to Ninth	1.1	4.4	4.84				
Ninth to Tenth	1.1	4.4	4.84				
Tenth to Eleventh	1.1	4.4	4.84				
Eleventh to Twelfth	1.1	4.4	4.84				
Twelfth to Thirteenth	1.1	4.4	4.84	62.92	62.92		
Staircase 2	Width	Length	Area	Total stair tread area			
Basement to Ground	1.1	4.4	4.84				
Ground to First	1.1	4.4	4.84				
First to second	1.1	4.4	4.84				
Second to Third	1.1	4.4	4.84				
Third to Fourth	1.1	4.4	4.84				
Fourth to Fifth	1.1	4.4	4.84				
Fifth to Sixth	1.1	4.4	4.84				
Sixth to Seventh	1.1	4.4	4.84				
Seventh to Eighth	1.1	4.4	4.84				
Eighth to Ninth	1.1	4.4	4.84				
Ninth to Tenth	1.1	4.4	4.84				
Tenth to Eleventh	1.1	4.4	4.84				
Eleventh to Twelfth	1.1	4.4	4.84				
Twelfth to Thirteenth	1.1	4.4	4.84	62.92		62.92	

Upper Surface of 1/2 Landings (m ²)					Staircase – Surface Areas		
Staircase 1	Width	Length	Area		1	2	
Basement to Ground	1.1	2.6	2.86				
Ground to First	1.1	2.6	2.86				
First to second	1.1	2.6	2.86				
Second to Third	1.1	2.6	2.86				
Third to Fourth	1.1	2.6	2.86				
Fourth to Fifth	1.1	2.6	2.86				
Fifth to Sixth	1.1	2.6	2.86				
Sixth to Seventh	1.1	2.6	2.86				
Seventh to Eighth	1.1	2.6	2.86				
Eighth to Ninth	1.1	2.6	2.86				
Ninth to Tenth	1.1	2.6	2.86				
Tenth to Eleventh	1.1	2.6	2.86				
Eleventh to Twelfth	1.1	2.6	2.86				
Twelfth to Thirteenth	1.1	2.6	2.86	37.18	37.18		
Staircase 2	Width	Length	Area				
Basement to Ground	1.1	2.6	2.86				
Ground to First	1.1	2.6	2.86				
First to second	1.1	2.6	2.86				
Second to Third	1.1	2.6	2.86				
Third to Fourth	1.1	2.6	2.86				
Fourth to Fifth	1.1	2.6	2.86				
Fifth to Sixth	1.1	2.6	2.86				
Sixth to Seventh	1.1	2.6	2.86				
Seventh to Eighth	1.1	2.6	2.86				
Eighth to Ninth	1.1	2.6	2.86				
Ninth to Tenth	1.1	2.6	2.86				
Tenth to Eleventh	1.1	2.6	2.86				
Eleventh to Twelfth	1.1	2.6	2.86				
Twelfth to Thirteenth	1.1	2.6	2.86	37.18		37.18	

Upper Surface of Landings (m ²)				Staircase - Surface Areas			
Staircase 1	Width	Length	Area		1	2	
Basement to Ground	1	4.2	4.2				
Ground to First	1	4.2	4.2				
First to second	1	4.2	4.2				
Second to Third	1	4.2	4.2				
Third to Fourth	1	4.2	4.2				
Fourth to Fifth	1	4.2	4.2				
Fifth to Sixth	1	4.2	4.2				
Sixth to Seventh	1	4.2	4.2				
Seventh to Eighth	1	4.2	4.2				
Eighth to Ninth	1	4.2	4.2				
Ninth to Tenth	1	4.2	4.2				
Tenth to Eleventh	1	4.2	4.2				
Eleventh to Twelfth	1	4.2	4.2				
Twelfth to Thirteenth	1	4.2	4.2				
Ceiling	1	13	13	71.8	71.8		
Upper Surface of Landings (m ²)							
Staircase 2	Width	Length	Area				
Basement to Ground	1	4.2	4.2				
Ground to First	1	4.2	4.2				
First to second	1	4.2	4.2				
Second to Third	1	4.2	4.2				
Third to Fourth	1	4.2	4.2				
Fourth to Fifth	1	4.2	4.2				
Fifth to Sixth	1	4.2	4.2				
Sixth to Seventh	1	4.2	4.2				
Seventh to Eighth	1	4.2	4.2				
Eighth to Ninth	1	4.2	4.2				
Ninth to Tenth	1	4.2	4.2				
Tenth to Eleventh	1	4.2	4.2				
Eleventh to Twelfth	1	4.2	4.2				
Twelfth to Thirteenth	1	4.2	4.2				
Ceiling	1	13	13	71.8		71.8	
Total Area					171.90	171.90	
Class D Absorber Areas					171.90	171.90	
Class C Absorber Areas					85.95	85.95	

2.2 Calculated Corridor Absorption

2.2.1 Floor 13

Building Regulations Approved Document E3 (2003) Section 7 Reverberation in common internal parts of buildings containing flats or rooms for residential purposes Method B Calculation			
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Corridor Location	Typical	Volume m ³	89
Floor	Floor 13	A _T m ²	22.25

Surface	Specification	Area m ²
Floor	Carpet	37
Walls	Plasterboard on Metal Studs	88
Doors	Timber	24
Lift Doors	Metal	6
Windows	Glass	4
Plasterboard Ceiling	Standard Plasterboard	37
Acoustic Ceiling	Quattro 46	0

Resultant Absorption Requirement							
Specification	Percentage Coverage	Area m ²	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Quattro 46	0%	0	0.60	0.55	0.45	0.40	0.35
Standard Plasterboard	100%	37	0.12	0.08	0.08	0.06	0.05

Resultant Absorption Difference					
	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Corridors / Hallways	0.53	0.45	0.39	0.33	0.26
Total Absorption	19.69	18.65	19.88	19.70	18.79

Absorption Data							
Surface	Specification	Area m ²	Absorption Area (m ²)				
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Floor	Carpet	37	0.15	0.25	0.30	0.30	0.30
Walls	Plasterboard on Metal Studs	54	0.12	0.08	0.06	0.06	0.05
Doors	Timber	24	0.10	0.06	0.08	0.10	0.10
Lift Doors	Metal	6	0.09	0.08	0.09	0.11	0.11
Windows	Glass	4	0.07	0.05	0.03	0.02	0.02
Plasterboard Ceiling	Standard Plasterboard	37	0.12	0.08	0.08	0.06	0.05
Acoustic Ceiling	Quattro 46	0	To be determined				

2.2.2 Floors 11 & 12

Building Regulations Approved Document E3 (2003) Section 7
Reverberation in common internal parts of buildings containing flats or rooms for residential purposes
Method B Calculation

Corridor Location	Typical	Volume m ³	103
Floor	Floors 11 & 12	A _r m ²	25.75

Surface	Specification	Area m ²
Floor	Carpet	43
Walls	Plasterboard on Metal Studs	102
Doors	Timber	22
Lift Doors	Metal	6
Windows	Glass	4
Plasterboard Ceiling	Standard Plasterboard	43
Acoustic Ceiling	Quattro 46	0

Resultant Absorption Requirement							
Specification	Percentage Coverage	Area m ²	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Quattro 46	0%	0	0.60	0.55	0.45	0.40	0.35
Standard Plasterboard	100%	43	0.12	0.08	0.08	0.06	0.05

Resultant Absorption Difference	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Corridors / Hallways	0.54	0.46	0.39	0.33	0.25
Total Absorption	23.03	21.79	22.96	22.62	21.49

Absorption Data							
Surface	Specification	Area m ²	Absorption Area (m ²)				
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Floor	Carpet	43	0.15	0.25	0.30	0.30	0.30
Walls	Plasterboard on Metal Studs	70	0.12	0.08	0.06	0.06	0.05
Doors	Timber	22	0.10	0.06	0.08	0.10	0.10
Lift Doors	Metal	6	0.09	0.08	0.09	0.11	0.11
Windows	Glass	4	0.07	0.05	0.03	0.02	0.02
Plasterboard Ceiling	Standard Plasterboard	43	0.12	0.08	0.08	0.06	0.05
Acoustic Ceiling	Quattro 46	0	To be determined				

2.2.3 Floors 9 & 10

Building Regulations Approved Document E3 (2003) Section 7
Reverberation in common internal parts of buildings containing flats or rooms for residential purposes
Method B Calculation

Corridor Location	Typical	Volume m ³	132
Floor	Floors 9 & 10	Ar m ²	33

Surface	Specification	Area m ²
Floor	Carpet	55
Walls	Plasterboard on Metal Studs	137
Doors	Timber	28
Lift Doors	Metal	6
Windows	Glass	2
Plasterboard Ceiling	Standard Plasterboard	55
Acoustic Ceiling	Quattro 46	0

Resultant Absorption Requirement							
Specification	Percentage Coverage	Area m ²	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Quattro 46	0%	0	0.60	0.55	0.45	0.40	0.35
Standard Plasterboard	100%	55	0.12	0.08	0.08	0.06	0.05

Resultant Absorption Difference	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Corridors / Hallways	0.55	0.47	0.39	0.33	0.26
Total Absorption	30.45	28.49	29.80	29.36	27.80

Absorption Data							
Surface	Specification	Area m ²	Absorption Area (m ²)				
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Floor	Carpet	55	0.15	0.25	0.30	0.30	0.30
Walls	Plasterboard on Metal Studs	101	0.12	0.08	0.06	0.06	0.05
Doors	Timber	28	0.10	0.06	0.08	0.10	0.10
Lift Doors	Metal	6	0.09	0.08	0.09	0.11	0.11
Windows	Glass	2	0.07	0.05	0.03	0.02	0.02
Plasterboard Ceiling	Standard Plasterboard	55	0.12	0.08	0.08	0.06	0.05
Acoustic Ceiling	Quattro 46	0	To be determined				

2.2.4 Floors 1 to 8

Building Regulations Approved Document E3 (2003) Section 7
Reverberation in common internal parts of buildings containing flats or rooms for residential purposes
Method B Calculation

Corridor Location	Typical	Volume m ³	173
Floor	Floors 01 - 08	A _r m ²	43.25

Surface	Specification	Area m ²
Floor	Carpet	72
Walls	Plasterboard on Metal Studs	189
Doors	Timber	50
Lift Doors	Metal	6
Windows	Glass	2
Plasterboard Ceiling	Standard Plasterboard	72
Acoustic Ceiling	Quattro 46	0

Resultant Absorption Requirement							
Specification	Percentage Coverage	Area m ²	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Quattro 46	0%	0	0.60	0.55	0.45	0.40	0.35
Standard Plasterboard	100%	72	0.12	0.08	0.08	0.06	0.05

Resultant Absorption Difference							
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Corridors / Hallways			0.57	0.47	0.40	0.35	0.27
Total Absorption			40.84	37.82	39.82	39.48	37.45

Absorption Data							
Surface	Specification	Area m ²	Absorption Area (m ²)				
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Floor	Carpet	72	0.15	0.25	0.30	0.30	0.30
Walls	Plasterboard on Metal Studs	131	0.12	0.08	0.06	0.06	0.05
Doors	Timber	50	0.10	0.06	0.08	0.10	0.10
Lift Doors	Metal	6	0.09	0.08	0.09	0.11	0.11
Windows	Glass	2	0.07	0.05	0.03	0.02	0.02
Plasterboard Ceiling	Standard Plasterboard	72	0.12	0.08	0.08	0.06	0.05
Acoustic Ceiling	Quattro 46	0	To be determined				

2.2.5 Ground Floor

Building Regulations Approved Document E3 (2003) Section 7
Reverberation in common internal parts of buildings containing flats or rooms for residential purposes
Method B Calculation

Corridor Location	Typical	Volume m ³	168
Floor	Ground Floor	Ar m ²	42

Surface	Specification	Area m ²
Floor	Carpet	70
Walls	Plasterboard on Metal Studs	176
Doors	Timber	20
Lift Doors	Metal	6
Windows	Glass	4
Plasterboard Ceiling	Standard Plasterboard	70
Acoustic Ceiling	Quattro 46	0

Resultant Absorption Requirement							
Specification	Percentage Coverage	Area m ²	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Quattro 46	0%	0	0.60	0.55	0.45	0.40	0.35
Standard Plasterboard	100%	70	0.12	0.08	0.08	0.06	0.05

Resultant Absorption Difference	250Hz	500Hz	1000Hz	2000Hz	4000Hz
Corridors / Hallways	0.56	0.47	0.39	0.32	0.24
Total Absorption	39.24	36.66	37.62	36.70	34.54

Absorption Data							
Surface	Specification	Area m ²	Absorption Area (m ²)				
			250Hz	500Hz	1000Hz	2000Hz	4000Hz
Floor	Carpet	70	0.15	0.25	0.30	0.30	0.30
Walls	Plasterboard on Metal Studs	146	0.12	0.08	0.06	0.06	0.05
Doors	Timber	20	0.10	0.06	0.08	0.10	0.10
Lift Doors	Metal	6	0.09	0.08	0.09	0.11	0.11
Windows	Glass	4	0.07	0.05	0.03	0.02	0.02
Plasterboard Ceiling	Standard Plasterboard	70	0.12	0.08	0.08	0.06	0.05
Acoustic Ceiling	Quattro 46	0	To be determined				

3 CONCLUSIONS

Sound Advice Acoustics Ltd has been instructed by KS4 Consulting, to assess the internal construction of the proposed development for 81 – 88 Beresford Street, London, SE18 6BG. This assessment has been based on the requirements of the current Building Regulations 2010 Approved Document E 2003 Edition incorporating 2004, 2010, 2013 and 2015 amendments.

The calculations have been carried out in accordance with Building Regulations 2010 Approved Document E 2003 Edition incorporating 2004, 2010, 2013 and 2015 amendments, Section 7 ‘Reverberation in common internal parts of buildings containing flats or rooms for residential purposes’ – Method B calculation.

The following calculations demonstrate the required absorption calculation for the stairwells, landings and communal corridors. The proposed ceilings in the communal corridors and entrance lobby area are being specified with a carpet tile and a standard plasterboard ceiling. The following table demonstrates the amount of absorption, either class D or class C for the stairwells.

Absorption	Class D (m ²)	Class C (m ²)
Staircase 1	171.90	85.95
Staircase 2	171.90	85.95

END OF REPORT