

SANDY BROWN

Consultants in Acoustics, Noise & Vibration

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Globe & Simpson

Amplified sound egress assessment report

London, Manchester, Edinburgh, Birmingham, Belfast

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Summary

Sandy Brown have been commissioned by Allied London to carry out an assessment of amplified sound egress from the ground level and rooftop loudspeakers to surrounding sensitive receptors in accordance with Planning Condition 15 associated with the development at Globe & Simpson in Manchester.

In line with Manchester City Council criteria and Planning Condition 15, amplified sound egress should be controlled to 10 dB below the background noise level without the entertainment noise present, in each octave band at the nearest noise sensitive location.

In order to comply with these limits, sound pressure limits at 1 m have been set for both ground floor and roof level loudspeakers.

Providing these limits are complied with, the amplified sound egress limits are expected to be met. As such, Planning Condition 15 should be discharged.

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1 Introduction

Sandy Brown have been commissioned by Allied London to carry out an assessment of amplified sound egress from the ground and rooftop loudspeakers to surrounding sensitive receptors.

This report sets out the basis for this assessment, amplified sound egress limits and provides sound pressure limits for the ground floor and roof level loudspeakers.

2 Site description

Globe & Simpson is located within zone 2 of St John's Place within the St John's Masterplan, located on the former site of Granada Studios, along New Quay Street.

The proposed development includes a new Shell & Core 9-storey building with 8 floors of speculative offices, a reception/retail space at ground floor, a co-working/breakout area at mezzanine level, a basement car park and rooftop amenity terrace. A rooftop plant area is proposed.

The site location in relation to its surroundings is shown in Figure 1.

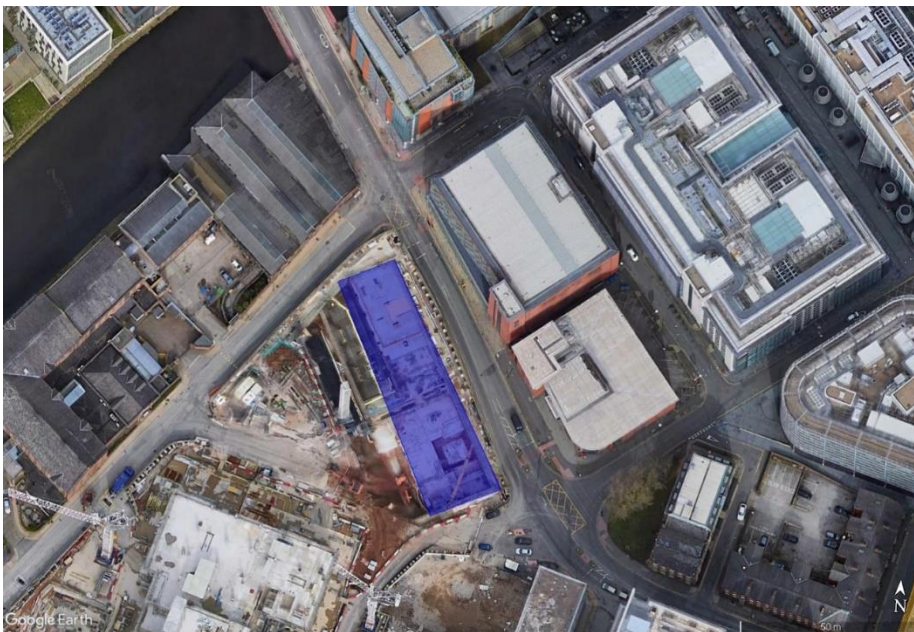


Figure 1 Site map

(courtesy of Google Earth Pro)

The nearest noise sensitive receivers are the surrounding offices as part of St John's Place, and on New Quay Street. The nearest residential receptors are the Marriott Hotel on Water Street, and on Liverpool Road and Lower Byrom Street.

3 External noise limits

3.1 Planning condition 15

Planning condition 15 imposed by Manchester City Council states the following:

‘No amplified sound or any music shall be produced or played in any part of the site outside of the building, other than in accordance with a scheme detailing the levels at which any music shall be played and the hours during which it shall be played which has been submitted to and approved in writing by the City Council as local planning authority’

3.2 Manchester City Council criteria

MCC in their *Planning and Noise Technical Guidance* document dated December 2015 stipulates the following in relation to amplified music associated with a new development:

‘Entertainment noise (L_{Aeq}) should be controlled to 10 dB below the background noise level (L_{A90}) without the entertainment noise present, in each octave band at the nearest noise sensitive location.’

3.3 Amplified sound egress limits

3.3.1 Overall criteria for St Johns masterplan

The cumulative noise level resulting from the amplified sound egress at 1 m from the windows of noise sensitive facades within St John’s Masterplan should not exceed the limits are set out in Table 1.

These limits are set to be 10 dB below the background noise levels measured during the relevant noise survey works presented in Sandy Brown Acoustic Planning report 15210-R03-K dated 23 October 2018.

Table 1 Overall amplified sound limits at 1 m from the noise sensitive facades within the St Johns development

Maximum amplified sound pressure level at 1 m from noise sensitive facades, $L_{eq,5min}$ (dB) at each octave band centre frequency (Hz)								
Time of day	63	125	250	500	1k	2k	4k	$L_{Aeq 5min}$
07:00-23:00	48	45	44	42	40	33	23	44
23:00-07:00	42	36	37	34	32	26	16	36

3.3.2 Split between St Johns Place zones

There are understood to be two 'zones' proposed as part of the St John's Place development. In order to ensure the cumulative limits are achieved, it is necessary to consider the amplified sound egress contributions from these two different zones. The limits set out in Table 3 consider an equal contribution split between these two zones and have therefore been used as the basis for this assessment.

Table 2 Split amplified sound limits at 1 m from the noise sensitive facades within the St Johns development

Maximum amplified sound pressure level at 1 m from noise sensitive facades, $L_{eq,5min}$ (dB) at each octave band centre frequency (Hz)								
Time of day	63	125	250	500	1k	2k	4k	$L_{Aeq 5min}$
07:00-23:00	45	42	41	39	37	30	20	41
23:00-07:00	39	33	34	31	29	23	13	33

4 Amplified sound egress assessment

4.1 Loudspeaker locations

The proposed ground floor and roof level loudspeaker locations are shown in Figure 2 and Figure 3 respectively highlighted in red. The loudspeakers are to be mounted 2.5 m above floor level.

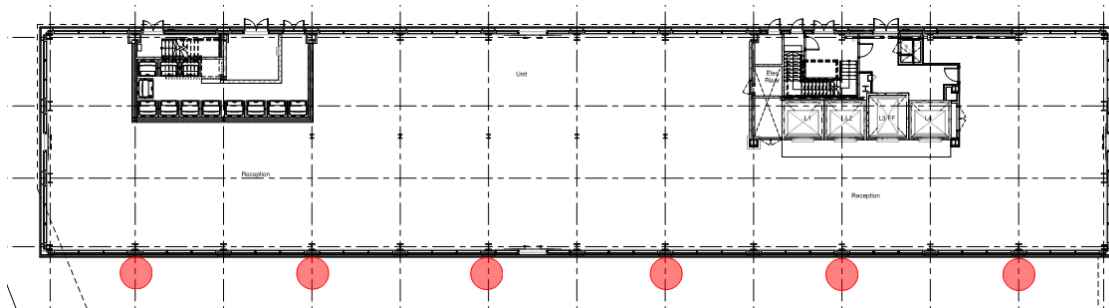


Figure 2 Ground floor loudspeaker locations

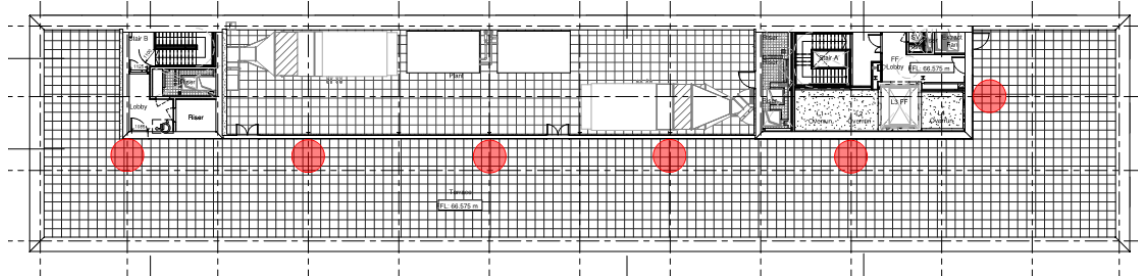


Figure 3 Roof level loudspeaker locations

4.2 Operational hours

The loudspeakers will be capable of operating during both the daytime (07:00-23:00) and the night-time (23:00-07:00). As a worst-case scenario, the ground floor and roof level loudspeakers are considered to operate simultaneously.

4.3 Loudspeaker amplified sound limits

Noise levels at receptors have been calculated in a 3D acoustic model, taking into account attenuation with distance, reflections from buildings, and screening where applicable.

An image of the 3D model is provided in Figure 4.

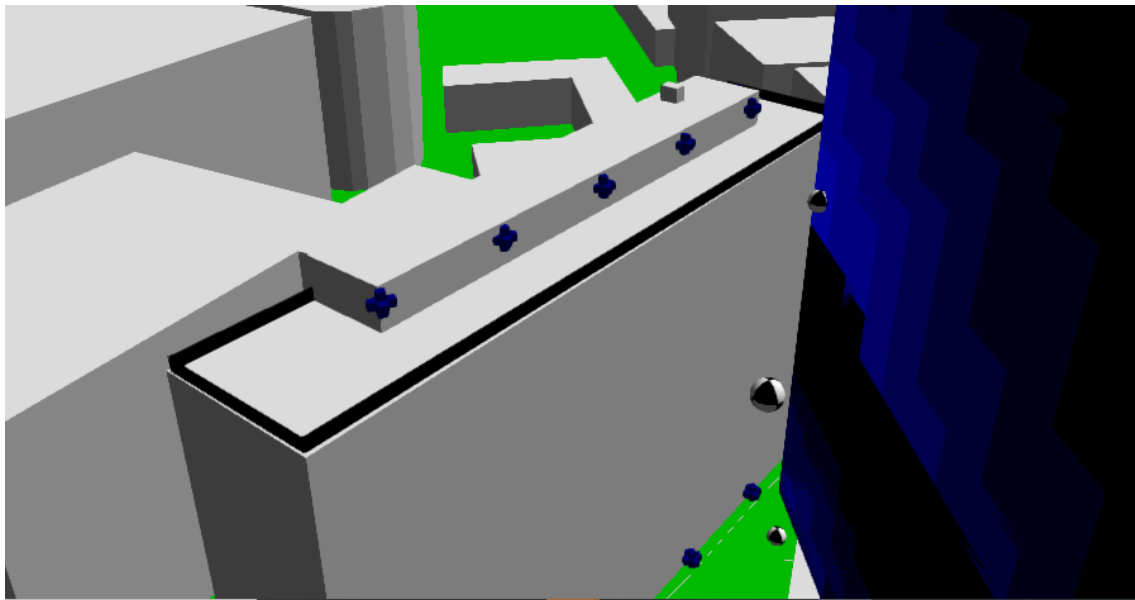


Figure 4 Image from 3D model

Based on the above, loudspeaker sound pressure limits at 1 m have been set for each of the ground floor and roof level loudspeakers, for both the daytime (07:00-23:00) and night-time (23:00-07:00). These limits are provided in Table 3.

Table 3 Amplified sound loudspeaker limits at 1 m

Maximum loudspeaker amplified sound pressure level at 1 m, $L_{eq,5min}$ (dB) at each octave band centre frequency (Hz)								
Time of day	63	125	250	500	1k	2k	4k	$L_{Aeq 5min}$
<i>Ground floor</i>								
07:00-23:00	57	54	53	51	49	42	33	53
23:00-07:00	51	45	46	43	41	35	26	45
<i>Roof level</i>								
07:00-23:00	62	59	58	55	53	46	37	57
23:00-07:00	56	50	51	47	45	39	30	49

These limits would be suitable for low levels of background music only. It is recommended that electronic limiters be installed to the loudspeaker systems to ensure that the above limits are not exceeded.

It should be noted that if the number of or locations of the loudspeakers were to differ from those set out in Section 4.1, these limits would need to be revised accordingly.

5 Conclusion

An assessment of amplified sound egress has been undertaken.

Amplified sound egress limits have been set in line with Manchester City Council criteria and Planning Condition 15.

In order to comply with these limits, sound pressure limits at 1 m have been set for both ground floor and roof level loudspeakers.

Providing these limits are complied with, the amplified sound egress limits are expected to be met. As such, Planning Condition 15 should be discharged.