

Memo.

To: Ed Harvey, Chris Baker

Cc: James Woodhouse, John Pearson

From: Al Plail, Senior Acoustics Engineer

Date: 20 February 2020

Project: The Manchester College CC

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Comments on compliance with NSE1.

This document has been produced in response to comments from Manchester City Council Environmental Health in relation to the Manchester College City Centre scheme.

Environmental Health have stated the below comments in relation to NSE1 (noise break out) for the Manchester College scheme:

'I have reviewed revision 3 of the Hoare Lea acoustic report dated November 2019 and we will still require construction details such as required performance and specification recommendations for the Recording studio, Theatre, Studio Theatre and Film studio. The developer will also need these details to ensure it is built to the correct specification for the purpose. Details of how the internal noise levels will be set and subsequently controlled will be required.'

1. Façade construction.

The façade specification and proposed constructions for the spaces highlighted by the EHO are summarised in Table 1. These are specified on the basis of controlling noise intrusion to meet onerous internal noise criteria.

Table 1 Façade specification and construction

Room	Minimum façade sound insulation performance	Proposed construction
Theatre	N/A - Not located on the facade	
Recording studio	$R'_w + C_{tr}$ 55 dB	- Corium ventilated cladding system - 175 mm Rockwool Rainscreen Duo Slab - 2x 15 mm cement particle board - 220 mm SFS system with mineral wool insulation between the studs to the full depth - 10 mm cavity - 3x 15 mm Fireline independently supported on 94 mm I studs

Room	Minimum façade sound insulation performance	Proposed construction
Studio theatre	$R'_w + C_{tr}$ 50 dB	- Corium ventilated cladding system - 175 mm Rockwool Rainscreen Duo Slab - 15 mm cement particle board - 220 mm SFS system with mineral wool insulation between the studs to the full depth - 10 mm cavity - 3x 15 mm Fireline independently supported on 94 mm I studs
Film studio	$R'_w + C_{tr}$ 50 dB	- Corium ventilated cladding system - 175 mm Rockwool Rainscreen Duo Slab - 15 mm cement particle board - 220 mm SFS system with mineral wool insulation between the studs to the full depth - 10 mm cavity - 2x 15 mm Fireline independently supported on 94 mm I studs

2. Internal noise limits.

Based on the façade constructions given above, a summary of the maximum permissible internal activity noise levels are provided in Table 2 with associated comments.

Table 2 Comments on permissible internal noise levels

Room	Worst affected receptor	Internal noise limit to comply with night-time limits at receptor	Comments
Recording studio	Beaumont Building	L_{Aeq} 130 dB; L_{eq} 117 dB at 63 Hz	This level is above the threshold of pain and exceeds the realistic limit of noise in the recording studios
Studio theatre	Travelodge	L_{Aeq} 127 dB; L_{eq} 107 dB at 63 Hz	This overall level is above the threshold of pain and exceeds the realistic limit of noise in the studio theatre. At 63 Hz, this level is in line with those experienced at 'concert' style live music events. This is beyond what is understood to be proposed in the studio theatre.
Film studio	Old Brewery Gardens	L_{Aeq} 117 dB; L_{eq} 98 dB at 63 Hz	This overall level is approaching the threshold of pain. At 63 Hz, this level is in line with levels experienced in night club environments. This is beyond what is understood to be proposed in the film studio.