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Our Ref: CSGA-C2169-T1Rev01

FAO: Galley Wu

Emailed to: gwu@hallidaymeecham.com

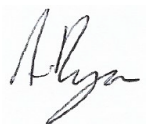
Dear Galley,

Re: Planning Sound Insulation Review of Façade – George Kenyon Hall

Improvements to façade elements of George Kenyon Hall is proposed and CSG Acoustics Ltd have been commissioned by Halliday Meecham Architects to provide a sound insulation review of the changes at George Kenyon Hall, Manchester. There is a planning condition relating to internal noise levels which has been addressed below and a sound insulation review of the façade changes is submitted as part of the Planning submission.

The proposed works are to replace the existing cladding with a mixture of aluminium cladding and corium brick slips, the existing windows are being retained. This review predicts the sound insulation of the existing and proposed constructions to allow direct comparison. This assessment therefore reviews the likely difference in acoustic performance due to the changes, it does not assess absolute internal noise levels.

Yours Sincerely,



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1 Planning Condition

The following Planning Condition 4 was requested by the Environmental Health Department. CSG Acoustics Ltd does not consider this appropriate as it cannot be demonstrated. The condition is typically applied to new build residential schemes and includes absolute noise level limits. George Kenyon Hall is not a new residential scheme and the works proposed will retain existing windows. Windows are the acoustic weakness and determining factor in the façade sound insulation performance and means that internal noise levels will remain unchanged even if significant improvements are made to the non-glazed elements.

The internal noise levels will remain unchanged provided the proposed works to the non-glazed elements maintain or improve the current level of sound insulation of non-glazed elements. This can be demonstrated by calculation and prediction, as provided in section 2 of this letter.

Condition 4–

4) a) Prior to the commencement of the development, a scheme for acoustically insulating the proposed accommodation against external noise sources shall be submitted to and approved in writing by the City Council as local planning authority. There may be other actual or potential sources of noise which require consideration on or near the site, including any local commercial/industrial premises. The approved noise insulation and ventilation scheme shall be completed before any of the dwelling units are occupied.

Noise survey data shall include measurements taken during a rush-hour period and night time to determine the appropriate sound insulation measures necessary. The following noise criteria shall be required to be achieved:

Bedrooms (night time – 23.00 – 07.00) 30 dB LAeq (individual noise events shall not exceed 45 dB L_{Amax,F} by more than 10 times)

Living Rooms (daytime – 07.00 – 23.00) 35 dB LAeq

Gardens and terraces (daytime) 55 dB LAeq

b) Prior to first occupation of the development, a verification report shall be required to validate that the work undertaken throughout the development conforms to the recommendations and requirements in the approved acoustic consultant report. The report shall also undertake post completion testing to confirm that the internal noise criteria have been met. Any instances of non-conformity with the recommendations in the report shall be detailed along with any measures required to ensure compliance with the internal noise criteria.

Reason: To secure a reduction in noise from traffic or other sources in order to protect future residents from noise disturbance pursuant to policy DM1 of the Manchester Core Strategy (2012) and saved policy DC26 of the Unitary Development Plan for Manchester (1995).

2 Façade Sound Insulation Assessment

INSUL Sound insulation software has been used to assess the existing and proposed constructions to allow a direct comparison.

The existing and proposed façade elements have been provided for assessment by Halliday Meecham Architects.

The following table details our sound insulation assessment of each façade element. The assessment includes a low frequency correction (C_{tr}) to account for the possibility of low frequency traffic noise.

Table 2.1: Sound Insulation Assessment

Façade Element		Details	Sound Insulation Prediction
1	Existing (Zinc Cladding on SFS)	<ul style="list-style-type: none"> • Zinc Cladding • 50mm Kingspan kooltherm in 100mm cavity • 12.5mm Sheathing board • 100mm SFS • 200mm Cavity • 2 x 15mm Plasterboard on secondary frame 	R_w 66dB C_{tr} -12 dB $R_w + C_{tr} = 54\text{dB}$
	Proposed (Aluminium of SFS)	<ul style="list-style-type: none"> • 3mm Aluminium Cassette panel • 90mm Cavity • 100mm Rockwool Rainscreen Duo Slab • 9mm Cement Sheathing board • 100mm SFS with 100mm Rockwool insulation • 2 x 15mm Plasterboard on secondary frame 	R_w 69dB C_{tr} -14dB $R_w + C_{tr} = 55\text{ dB}$
2	Existing (Zinc on concrete shear walls)	<ul style="list-style-type: none"> • Zinc Cladding on 19mm Plywood • 50mm Kingspan Kooltherm • 12.5mm Sheathing board • 100mm SFS • 200mm Concrete Shear wall • 2 x 15mm Plasterboard on dabs 	R_w 69dB C_{tr} -5dB $R_w + C_{tr} = 64\text{ dB}$

Façade Element		Details	Sound Insulation Prediction
	Proposed (Aluminium on concrete shear walls)	<ul style="list-style-type: none"> 3mm Aluminium Cassette panel 90mm Cavity 100mm Rockwool Rainscreen Duo Slab 9mm Cement Sheathing board MF 100mm 200mm Concrete Shear wall 2 x 15mm Plasterboard on dabs 	R_w 71dB C_{tr} -6dB $R_w + C_{tr} = 65 \text{ dB}$
3	Existing (Brick on SFS)	<ul style="list-style-type: none"> 102.5mm Brick 50mm Kingspan Kooltherm in 75mm Cavity 12.5mm Sheathing Board 100mm SFS 2 x 15mm Plasterboard 	R_w 71dB C_{tr} -6dB $R_w + C_{tr} = 65 \text{ dB}$
	Proposed (Corium Tile cladding on SFS)	<ul style="list-style-type: none"> Corium Brick slip system 100mm Rockwool Rainscreen Duo Slab in 200mm cavity 100mm SFS and 9mm Cement Sheathing board with insulation 2 x 15mm Plasterboard on secondary frame 	R_w 70dB C_{tr} -5dB $R_w + C_{tr} = 65 \text{ dB}$
4	Existing	<ul style="list-style-type: none"> 102.5mm Brick 50mm Kingspan Kooltherm in 75mm Cavity 200mm Concrete Shear wall 1 x 15mm Plasterboard on dabs 	R_w 72dB C_{tr} -7dB $R_w + C_{tr} = 65 \text{ dB}$
	Proposed	<ul style="list-style-type: none"> Corium Brick slip system 100mm Rockwool Rainscreen Duo Slab in 200mm cavity 200mm Concrete shear wall 1 x 15mm Plasterboard on dabs 	R_w 71dB C_{tr} -6dB $R_w + C_{tr} = 65 \text{ dB}$

As shown in the table above, the calculated sound insulation performance of all the elements of the façade (non-glazed elements), which are to be changed, show no change or an improvement in sound insulation performance over the existing.

This therefore demonstrates that provided all elements are suitably sealed and installed, the overall façade sound insulation will not show any degradation in terms of sound insulation performance and internal noise levels are predicted to remain unchanged.