



QUALITY FAST FACADES LIMITED

RESIDENTIAL DEVELOPMENT

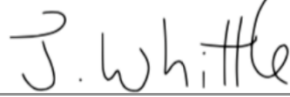
THE BOATMANS, CITY ROAD EAST, MANCHESTER

FACADE ACOUSTIC COMMISSIONING

R2220-REP02-JW

29 AUGUST 2024

REPORT DETAILS

Project	The Boatmans, City Road East, Manchester
Client	Quality Fast Facades Limited Attn: Andrew Marsden a.marsden@qffacades.co.uk
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Signed	

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SUMMARY

Red Acoustics Ltd has been commissioned by Quality Fast Facades Limited, to conduct internal ambient noise level verification measurements to confirm that measured daytime and night-time noise levels meet the internal ambient noise level criteria outlined in the guidance in BS8233:2014 Guidance on sound insulation and noise reduction for buildings.

This report has been prepared to support an application for discharge of planning condition 4 of the relevant planning consent (ref: 135775/FO/2022).

The results of the internal ambient noise level measurements have demonstrated compliance with the performance requirements.

RESIDENTIAL DEVELOPMENT - BOATMANS, CITY ROAD EAST, MANCHESTER

QUALITY FAST FACADES LIMITED

ENVIRONMENTAL NOISE STUDY - R2220-REP01-SJW

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1.0 INTRODUCTION

Red Acoustics Ltd has been commissioned by Quality Fast Facades Limited, to undertake acoustic commissioning testing at the completed redevelopment of The Boatmans, 42 City Road East, Manchester.

This report makes reference to the previously submitted facade review report prepared by Red Acoustics (ref: R2220-REP01-SJW dated 4 August 2023) in support of the application for planning consent (ref: 135775/FO/2022) for replacement of the existing timber cladding with aluminium cladding.

An acoustic review of the facade proposals as built has been undertaken in accordance with the requirements of Manchester City Council and validation testing has been undertaken to verify that internal ambient noise levels comply with the guideline values outline in BS8233:2014 Guidance on sound insulation and noise reduction for buildings.

2.0 PRE-REDEVELOPMENT FACADE ELEMENTS

The facade elements prior to facade redevelopment comprised:

Masonry Facade

2no skins of 100mm medium density concrete block
c/w full fill mineral wool cavity insulation
19mm timber battens
18mm timber cladding

Predicted performance $\geq 55\text{dB } R_w$.

Timber Facade

2x12.5mm plasterboard
VCL (appeared to be a DPM type material)
100mm x 50mm s.w timber studs c/w 50mm mineral wool & 50mm Void
11mm plywood
18mm cedar timber cladding

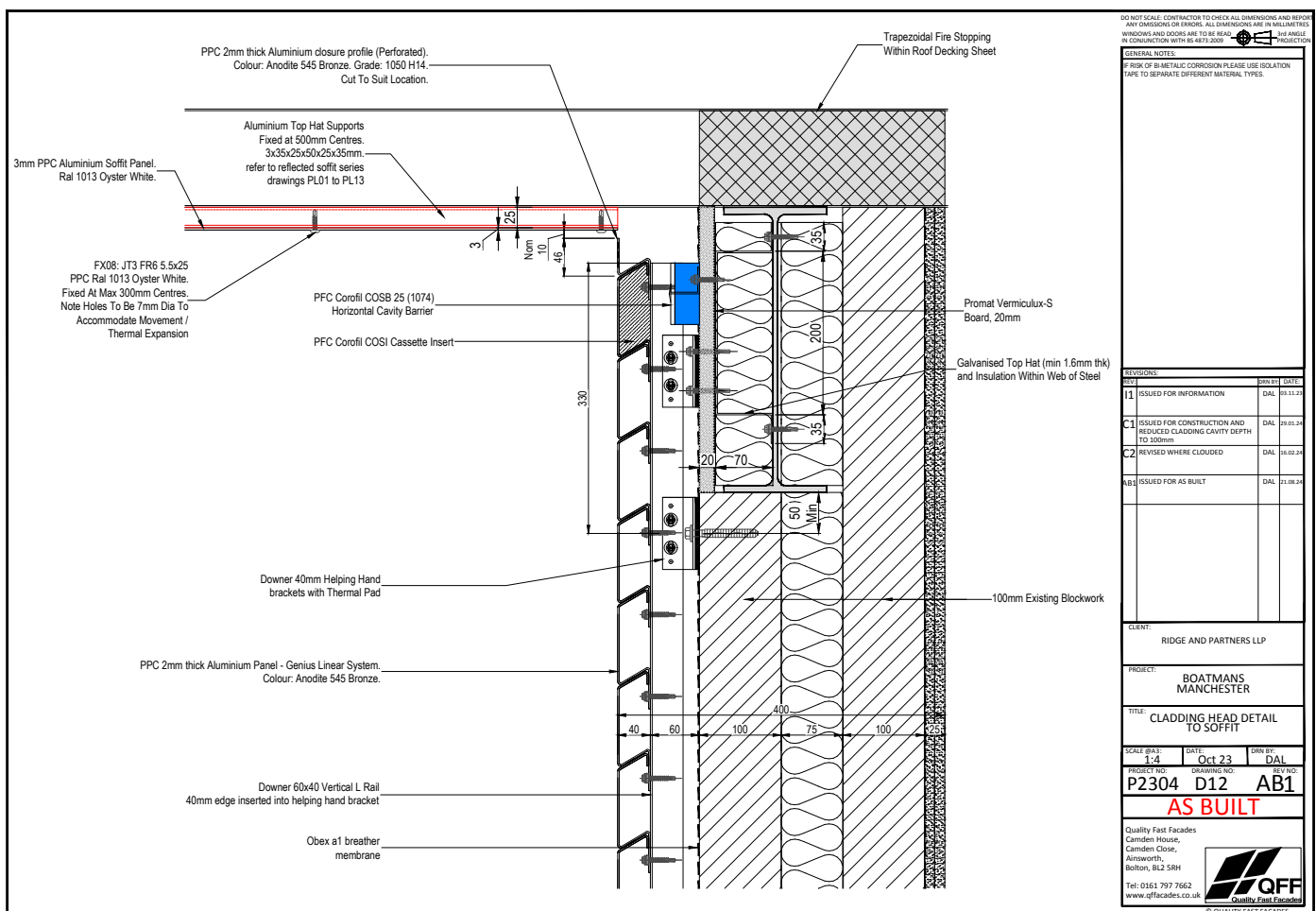
Predicted performance $\geq 50\text{dB } R_w$

3.0 FACADE CONSTRUCTIONS

The client has provided updated drawings for the redeveloped facade constructions as built. These are presented below and compared against the existing facade acoustic performance requirements.

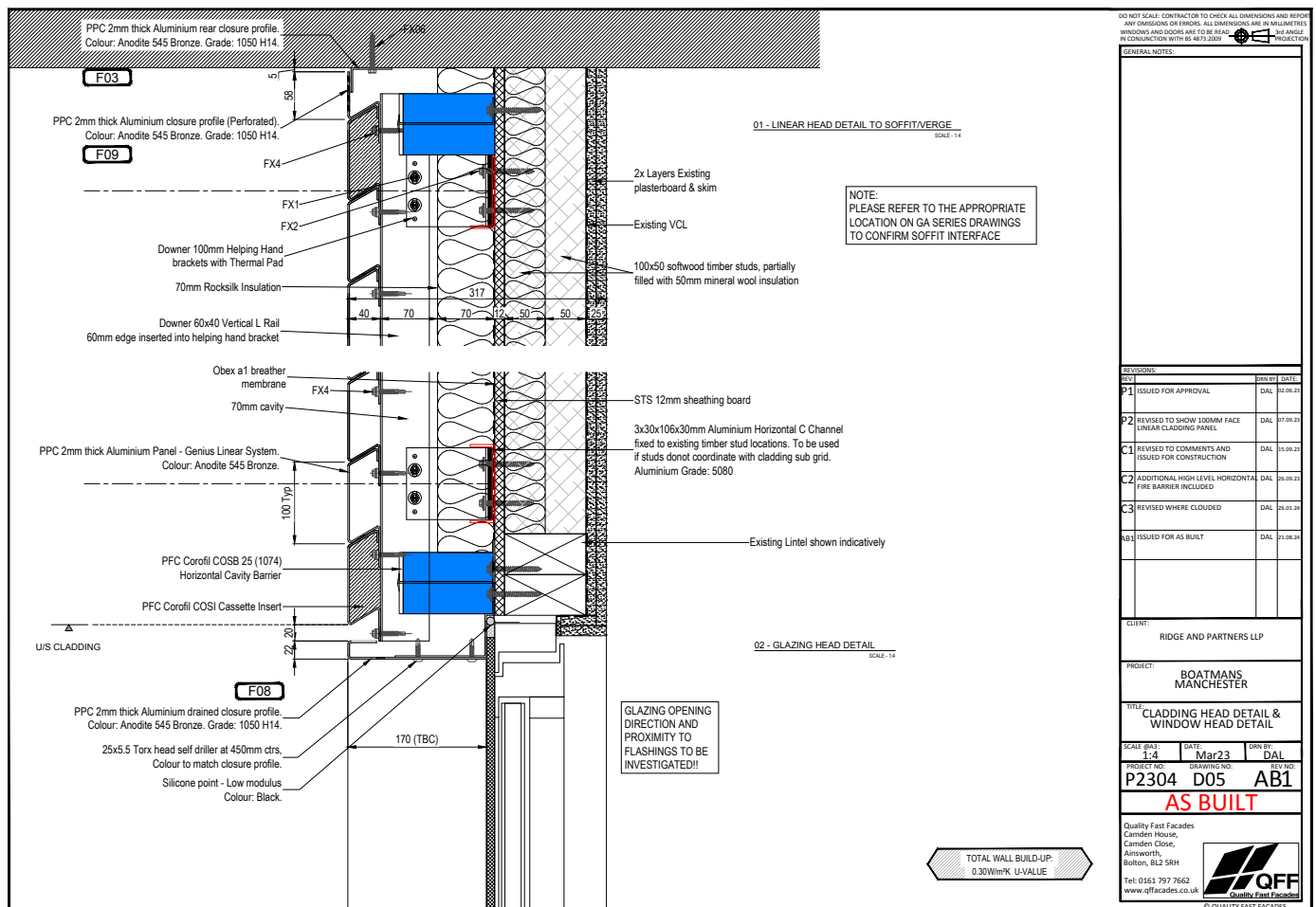
Masonry Facade

Predicted performance $\geq 55\text{dB } R_w$



Timber Facade

Predicted performance $\geq 55\text{dB } R_w$



The predictions above indicate that the new facade provides an acoustic performance which is equal to or greater than the pre-redevelopment facade construction. The acoustic integrity of the facade is therefore maintained with the redevelopment works subject to a good level of workmanship. It is understood from discussions with the client that glazing and ventilation facade elements have remained unchanged.

4.0 VERIFICATION TESTING

Target Criteria

Planning condition 4 of the relevant planning consent (ref: 135775/FO/2022) is repeated below for clarity:

4) The development hereby approved shall be carried out in accordance with R2220REP01-SJW Boatmans, Manchester - Façade Acoustic Review - 4th August 2023.

Upon completion of the development, a verification report shall be submitted to and approved in writing by the City Council as Local Planning Authority in order to validate the works undertaken conform to the acoustic insulation recommendations and requirements contained within the approved acoustic submission. The report should contain details of post completion testing to confirm that the internal noise criteria has been met. Any instances of non conformity with the recommendations contained within the report shall be detailed, along with any measures required to ensure compliance with the internal noise criteria. Any additional measures required to ensure compliance with the internal noise criteria shall be implemented, and a further verification report submitted to and approved in writing by the City Council as local planning authority to demonstrate that the internal noise criteria have been met, within 6 months of the addition measures being undertaken.

Reason - The purpose of this condition is to ensure that the proposed cladding is the same or better acoustically than the existing cladding, and that it has been installed correctly in the interests of residential amenity of the building, as specified in policy DM1 of the Core Strategy.

It is proposed that the internal noise criteria referenced in planning condition 4 be taken from the guidance in BS8233:2014 and Manchester City Council Planning and Noise Technical Guidance (October 2022) as this is not specifically referenced in the planning condition or the approved noise submission. In both cases the guideline values are the same and are repeated below for clarity:

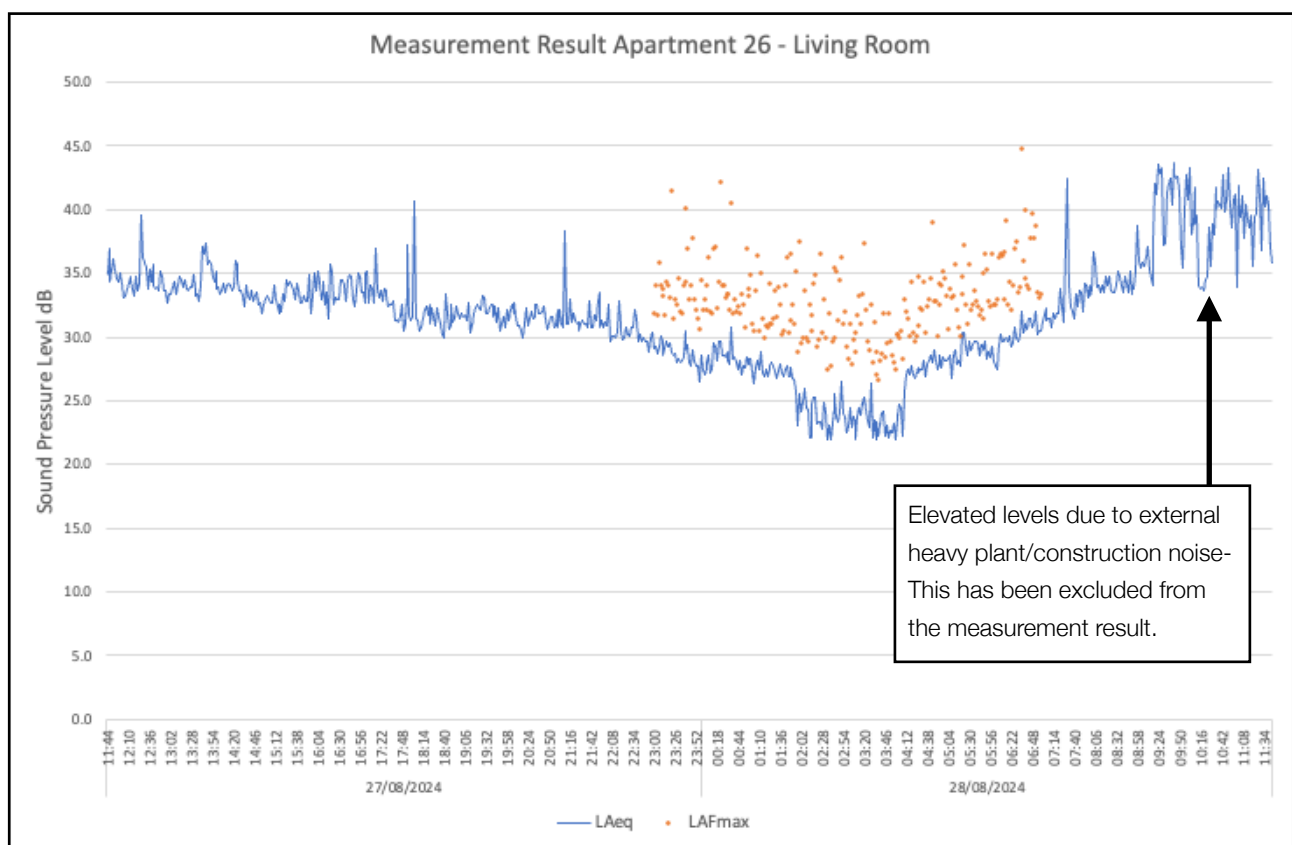
- Bedrooms (Night-time - 23.00hrs-07.00hrs) 30dB $L_{Aeq,8hr}$
- Individual night-time noise events should not normally exceed 45dB L_{AFmax} by more than 10 times
- Living Rooms (Daytime - 07.00hrs-23.00hrs) 35dB $L_{Aeq,16hr}$

Commissioning Test

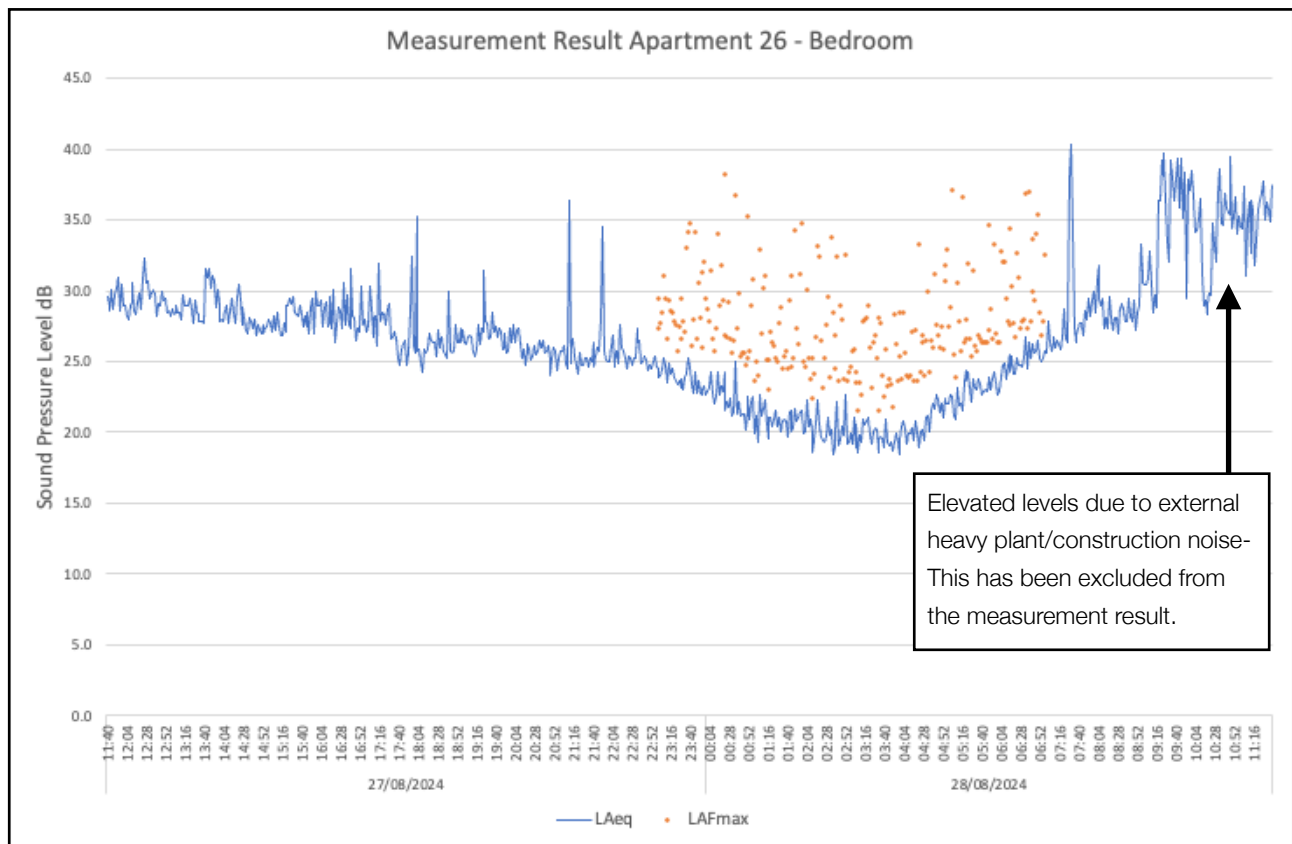
By prior arrangement with the client, vacant possession of the now occupied building was secured for a complete 24 hour period within apartment 26 of the completed development. Commissioning testing cannot typically be undertaken on occupied dwellings as internal noise generated by the occupants introduces noise contamination that is typically at a higher level than the required acoustic targets.

A 24 hour measurement was undertaken within a living room space and a bedroom space of the residential dwelling in the absence of occupier activity. External construction noise was evident at the development. The results of the measurements are shown in Figures 4.1 and 4.2 below. Testing was undertaken between 27th & 28th August 2024.

Figure 4.1: Internal Ambient Noise Measurement Results (Living Room Space)



The measured resultant daytime noise level across the 24 hour measurement was 33.7dBA $L_{Aeq,14.5hr}$ though there were periods of contamination due to external construction noise that have not been excluded from the measurement. Some higher level contamination due to heavy plant operation has been excluded from the measurement. This demonstrates compliance with the BS8233:2014 criteria. Although not typically required for living room spaces, it should also be noted that the night-time $L_{Aeq,8hour}$ and L_{AFmax} targets were also met with measured levels of 27.9dBA and 44.8dBA respectively.

Figure 4.2: Internal Ambient Noise Measurement Results (Bedroom Space)

The measured resultant daytime noise level across the 24 hour measurement was 28.6dBA $L_{Aeq,14.5hr}$ though there were periods of contamination due to external construction noise that have **not** been excluded from the measurement. Some higher level contamination due to heavy plant operation **has** been excluded from the measurement. The night-time $L_{Aeq,8hour}$ and L_{AFmax} measured levels were 22.4dBA and 38.2dBA respectively. This demonstrates compliance with the BS8233:2014 criteria.

Measurements were taken with the microphone mounted on a tripod at the approximate centre of each room space. Electrical equipment such as refrigerators and any ventilation systems were not deactivated. All spaces were unoccupied during the survey period.

Measurement instrumentation is summarised in Appendix A below.

5.0 CONCLUSIONS

Red Acoustics Ltd has been commissioned by Quality Fast Facades Limited, to conduct internal ambient noise level verification measurements to confirm that measured daytime and night-time noise levels meet the internal ambient noise level criteria outlined in the guidance in BS8233:2014 Guidance on sound insulation and noise reduction for buildings.

This report has been prepared to support an application for discharge of planning condition 4 of the relevant planning consent (ref: 135775/FO/2022). The results of the internal ambient noise level measurements have demonstrated compliance with the performance requirements.

APPENDIX A: TEST DETAILS

Location

The Boatmans, 42 City Road East, Manchester - Apartment 26

Date of Measurements

27-28 August 2024

Personnel

Simon Webster BEng (Hons) MIOA

Instrumentation

Table A1 below presents the instrumentation used during the surveys.

Methodology

Before and after the measurements the sound level meters were check calibrated to an accuracy of $\pm 0.3\text{dB}$ using their associated Class 1 Calibrators. No drift in the instruments' sensitivities were noted across any of the survey periods.

Calibration Certificates

Copies of all calibration certificates are kept on file by Red Acoustics Ltd and can be supplied if requested.

Instrumentation Used

Table A1: List of Instrumentation Used

Kit No	Equipment Description	Type Number	Manufacturer	Serial Number	Date of Last Calibration	Calibration Certificate Number
RED08	Sound Level Meter	XL2	Nti Audio	A2A-22062-F0	16/03/2023	UK-23-033
RED12	Sound Level Meter	XL2	Nti Audio	A2A-16928-E0	29/11/2023	UK-23-140
NA	Sound Calibrator	Type 1251 IEC 60942-1997 Class 1	Norsonic	31040	01-May-24	47684