

Back Turner Street Manchester

Condition 16 Discharge Report

25779/RP3

6 March 2023

For:
Artal Limited
29 John Dalton Street
Manchester



Hann Tucker Associates
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Document Control

Issue	Date	Comment	Prepared by	Authorised by
0	06/03/2023	-		
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Attachments

Appendix A – Acoustic Terminology



1.0 Introduction

Hann Tucker Associates has been commissioned to discharge a planning condition relating to the Back Turner Street development in Manchester.

The condition (Condition 16) relates to internal ambient noise and states that a verification report is required to validate the work undertaken as part of Condition 16.

Hann Tucker Associates prepared and submitted a technical memorandum to discharge the pre-commencement part of the condition in December 2020.

Hann Tucker Associates have been appointed undertake a post completion noise impact assessment with the aim of discharging Condition 16 set by Manchester City Council.

2.0 Objectives

To visit site to carry out internal ambient noise level measurements in a sample of the speculative office areas.

To comment on the acceptability of the measured noise levels, in-line with the approved scheme, pre-commencement submission, and the requirements of Planning Condition 16.

3.0 Acoustic Terminology

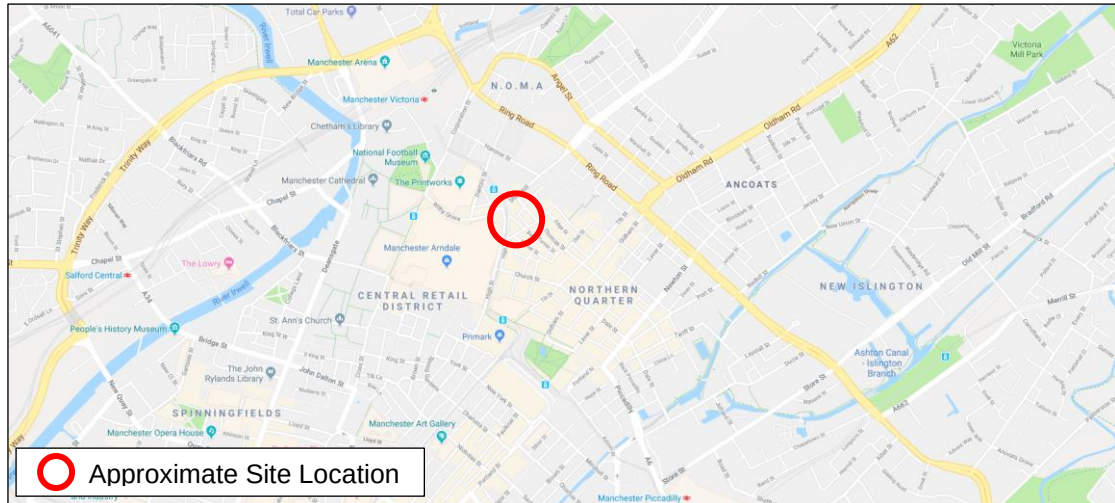
Please refer to Appendix A for an explanation of acoustic terminology used herein.



4.0 Site Description

4.1 Location

The proposed development is located on Back Turner Street in Manchester and falls under the jurisdiction of Manchester City Council. See site location below.



Site Location (© maps.google.co.uk)

4.2 Description

The site is bounded by Back Turner Street, High Street, Soap Street and Shudehill. The surrounding area comprises a mix of residential and commercial uses. Shudehill is a major bus route into the city centre and there is a tram line to the east of the site. There are several entertainment venues (i.e. bars) nearby along High Street. See site plan below.



Site Plan (© maps.google.co.uk)

5.0 Planning Condition 16

The local authority have included a condition relating to internal ambient noise in Condition 16, as detailed below:

“Before the development commences a scheme for acoustically insulating and mechanically ventilating the office accommodation against noise from adjacent roads and the adjacent trams and the commercial units below shall be submitted to and approved in writing by the City Council as local planning authority.

The approved noise insulation scheme and vibration and reradiated noise mitigation measures shall be completed before any of the dwelling units are occupied. Prior to occupation a post completion report to verify that all of the recommended mitigation measures have been installed and effectively mitigate any potential adverse noise impacts in the residential accommodation shall be submitted and agreed in writing by the City Council as local planning authority. Prior to occupation any non compliance shall be suitable mitigated in accordance with an agreed scheme.”



6.0 Acoustic Criteria

6.1 Internal Ambient Noise Levels

Internal ambient noise levels should not exceed the following acoustic design criteria:

Room Type	Indoor Ambient Noise Level Criteria	NR Criteria
Speculative Office	43 dB L _{Aeq,T}	NR38

The above levels are to be measured 1.5 m above the floor level at a position no closer than 1m from a wall in the absence of activity noise.

No noise source shall give rise to audible tones or rattles. Vibration transfer from M&E services to internal occupied areas shall not exceed 0.01 m/s² peak based on the W_b weighting as defined within BS 6472-1: 2008 "Guide to Evaluation of Human Exposure to Vibration in Buildings".

7.0 Test Procedure

Hann Tucker Associates attended site on 28 February 2023 to perform measurements on site. All testing was undertaken by Alex Jang BEng(Hons) AMIOA.

7.1 Equipment

The following equipment was used for the tests:

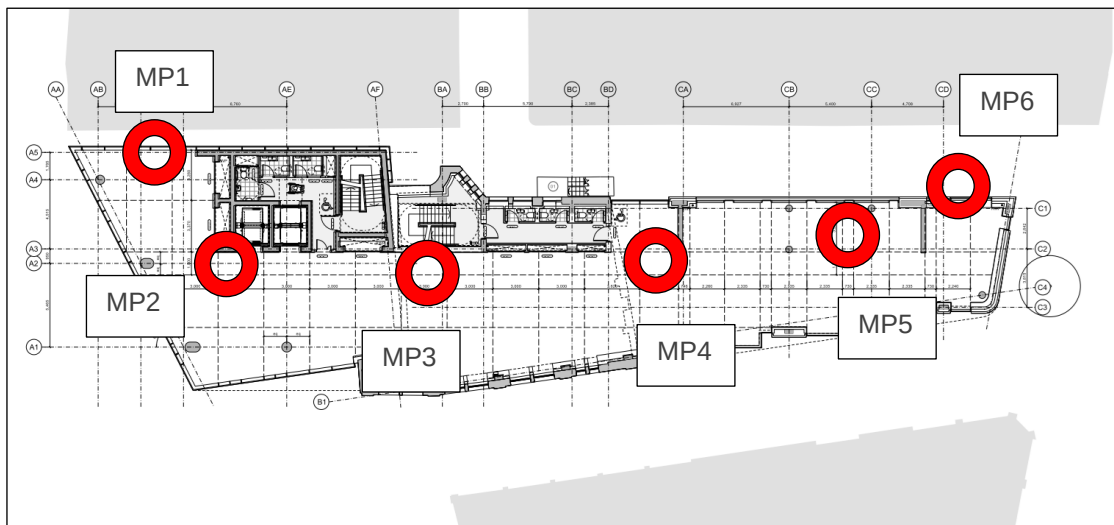
Equipment	Model	Serial Number	Calibration Date	Certificate Number
Type 1 Data Logging Sound Level Meter	Brüel & Kjær 2250	3025397	03/10/2022	04048/2
SLM Calibrator	Brüel & Kjær 4231	2271905	30/09/2022	05505/1

The equipment was calibrated prior to and on completion of the survey. No significant deviations occurred.

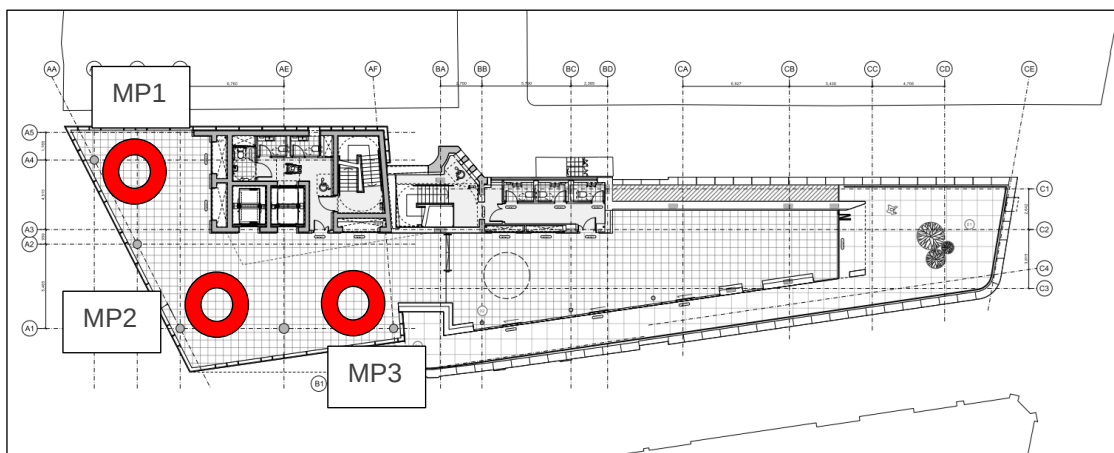
7.2 Measurement Locations

The location of each measurement location is indicated on the plans shown below.

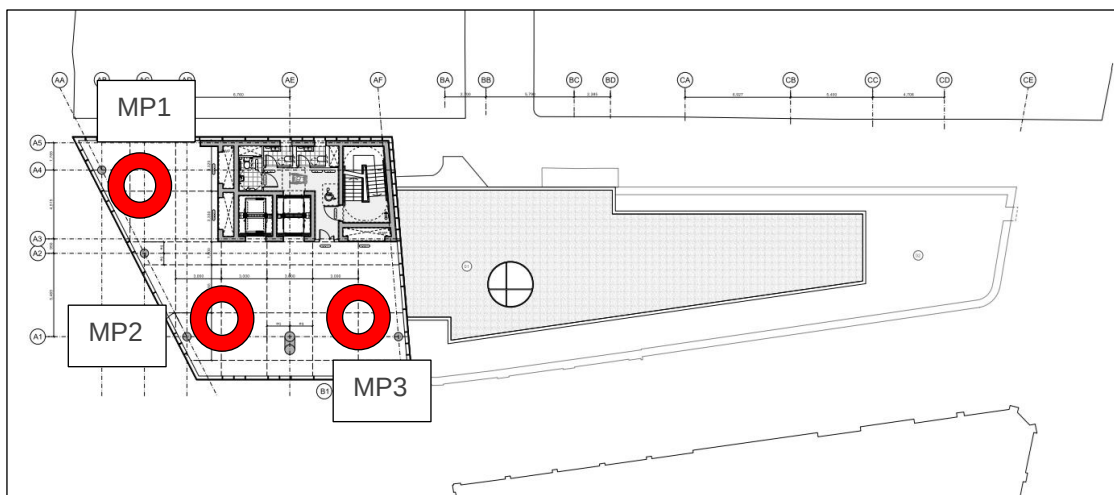
Noise measurements were taken across the entire floor slab.



Measurement Locations (1st & 2nd Floor)



Measurement Locations (5th Floor)



Measurement Locations (6th, 10th, & 15th Floor)



7.3 Survey Results

The following table summarises noise levels recorded at each of the measurement positions along with notes detailing the purpose of each measurement.

Environmental Noise Break-in Measurement Results					
Test Location	Measurement Position	Measured $L_{Aeq, 5min}$	Measured NR	Criteria $L_{Aeq, 5min}$ dB	Criteria NR
1 st Floor Office	MP1	42	37	≤ 43	≤ 38
	MP2	41	36		
	MP3	41	36		
	MP4	41	35		
	MP5	42	36		
	MP6	40	34		
2 nd Floor Office	MP1	43	38	≤ 43	≤ 38
	MP2	40	36		
	MP3	42	37		
	MP4	41	36		
	MP5	42	37		
	MP6	40	34		
5 th Floor Office	MP1	40	36	≤ 43	≤ 38
	MP2	40	36		
	MP3	40	35		
6 th Floor Office	MP1	42	38	≤ 43	≤ 38
	MP2	39	35		
	MP3	40	36		
10 th Floor Office	MP1	38	34	≤ 43	≤ 38
	MP2	38	34		
	MP3	42	37		
15 th Floor Office	MP1	37	32	≤ 43	≤ 38
	MP2	37	33		
	MP3	39	36		

7.4 Discussion of Noise Climate

During the measurements, the dominant noise source was steady state road traffic noise from the surrounding roads of Shudehill and Nicholas Croft, as well as regular tram passbys at Shudehill tram station.

7.5 Discussion of Results

The measurement results indicate that all internal ambient noise levels do not exceed the project criteria of 43dB $L_{Aeq,T}$ and NR38 for speculative offices.



8.0 Conclusion

Internal ambient noise measurements were undertaken at the development on Back Turner Street.

The results indicates that the noise levels inside the speculative office spaces achieve the project internal noise criteria and therefore should be suitable to discharge the pre-occupation element of Planning Condition 16.

Appendix A

The acoustic terms used in this report are defined as follows:

dB Decibel - Used as a measurement of sound level. Decibels are not an absolute unit of measurement but an expression of ratio between two quantities expressed in logarithmic form. The relationships between Decibel levels do not work in the same way that non-logarithmic (linear) numbers work (e.g. 30dB + 30dB = 33dB, not 60dB).

dBA The human ear is more susceptible to mid-frequency noise than the high and low frequencies. The A-weighting scale approximates this response and allows sound levels to be expressed as an overall single figure value in dBA. The _A subscript is applied to an acoustical parameter to indicate the stated noise level is A-weighted

It should be noted that levels in dBA do not have a linear relationship to each other; for similar noises, a change in noise level of 10dBA represents a doubling or halving of subjective loudness. A change of 3dBA is just perceptible.

L₁₀ L₁₀ is the noise level exceeded for 10% of the period (i.e., the quietest 90% of the measurement).

L₉₀ L₉₀ is the noise level exceeded for 90% of the period (i.e., the quietest 10% of the measurement) and is often used to describe the background noise level.

L_{Aeq} L_{Aeq} is the equivalent continuous A-weighted sound pressure level. It is an average of the total sound energy measured over a specified time period.

L_{max} L_{max} is the maximum sound pressure level recorded over the period stated. L_{max} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the L_{eq} noise level.

Sound Pressure Level (L_p) is the sound pressure relative to a standard reference pressure of 2×10^{-5} Pa. This level varies for a given source according to a number of factors (including but not limited to: distance from the source; positioning; screening and meteorological effects).