

Ref: 50-662-R2-1
Date: 14th September 2023

AMBASSADOR THEATRE GROUP LIMITED

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BY Email

POST COMPLETION NOISE TESTING – ROOF MOUNTED PLANT PALACE THEATRE MANCHESTER

BACKGROUND & OBJECTIVES

E3P were instructed by ATG Ltd to undertake post completion noise testing for newly installed roof mounted plant, for which E3P conducted a Noise Impact Assessment which was submitted for the planning application (50-662-R2-3), in order satisfy the following planning condition:

3) a) The plant hereby approved shall be carried out in accordance with the Noise Impact Assessment. Palace Theatre, Manchester. Reference: 50-662-R1-3. Date: February 2023. Externally mounted plant, equipment and servicing shall be selected and/or acoustically treated in accordance with a scheme designed so as to achieve a rating level of 5 db (Laeq) below the typical background (La90) level at the nearest noise sensitive location.

(b) Prior to the first use of the development, a verification report will be required to validate that the work undertaken conforms to the recommendations and requirements approved as part of part (a) of this planning condition. The verification report shall include post completion testing to confirm the noise criteria has been met. In instances of non-conformity, these shall be detailed along with mitigation measures required to ensure compliance with the noise criteria. A verification report and measures shall not be agreed until such a time as the development complies with part (a) of this planning condition.

As such, this Letter Report includes for an attended measurement with the plant running and a comparison of the measured values to those originally predicted, in accordance with the above criteria, in the original NIA.



POST COMPLETION NOISE SURVEY

E3P have attended site once the new plant items were operational. The 2No. AHUs are housed within a louvred enclosure and in the locations stipulated in the original application.

Three measurements were conducted as follows:

-  Plant source measurement – 1 m from plant within the enclosure (Noise Measurement Position 1).
-  Plant source measurement – 1 m outside the enclosure (NMP2); and
-  Existing plant source measurement – 1 m from vent to the immediate north east of the new plant.

Measurements were conducted over 15-minute periods in order to capture any variance. However, noise levels were steady state from all plant items.

Table 1.1 below details the results:

TABLE 1.1 STATISTICAL VALUES FOR EACH DAYTIME AND NIGHT-TIME PERIOD

MEASUREMENT POSITION	SOURCE	DISTANCE (m)	MEASURED SOUND PRESSURE LEVEL, $L_{Aeq,T}$
NMP1	New plant inside enclosure	1 m from plant	78.0
NMP2	New plant outside enclosure	1 m outside enclosure	63.4
NMP3	Existing vent	1 m from vent	68.4

The vent at NMP3 was included initially in the noise model so that source levels at NMP1 and NMP2 can be corrected to allow its removal.

It is clear from the above that the plant was operating at a higher level than originally assessed. As it is not possible to measure the source at the receptors due to height, access and extraneous dominant noise, it is considered necessary to repeat the initial noise modelling with the sources updated for the above measurements.

The original NIA predicted that the predicted rating levels would fall below the background sound level (47 dB) at residential receptors by more than 10 dB and would not exceed internal noise limits within adjacent office space.

E3P note that the planning condition relates to the BS 4142 Assessment only in relation to residential dwellings, which are noted to the west of the Site. St James' to the north and Bridgewater House to the north east/east are noted to be office/working space only. Residential apartments on Oxford Street are noted to be the closest residential receptors.

As such, Figure 1 details the resultant façade noise levels at the receptors for the day and night period.



ATG Palace Theatre Manchester

Post Completion Noise Testing

September 2023

As can be seen, the highest predicted rating level at residential receptors is 35 dB. This is 12 dB below the background sound level and also considered a low rating level.

As such, no adverse impact is predicted at residential receptors and the measurements and subsequent noise modelling show compliance with the required planning condition.

For completeness, external façade noise levels at offices are not expected to exceed 44 dB at windows overlooking the site, this would result in internal noise levels of no more than 31 dB, well below any design range for office space.

Yours sincerely,
For and on behalf of E3P Ltd

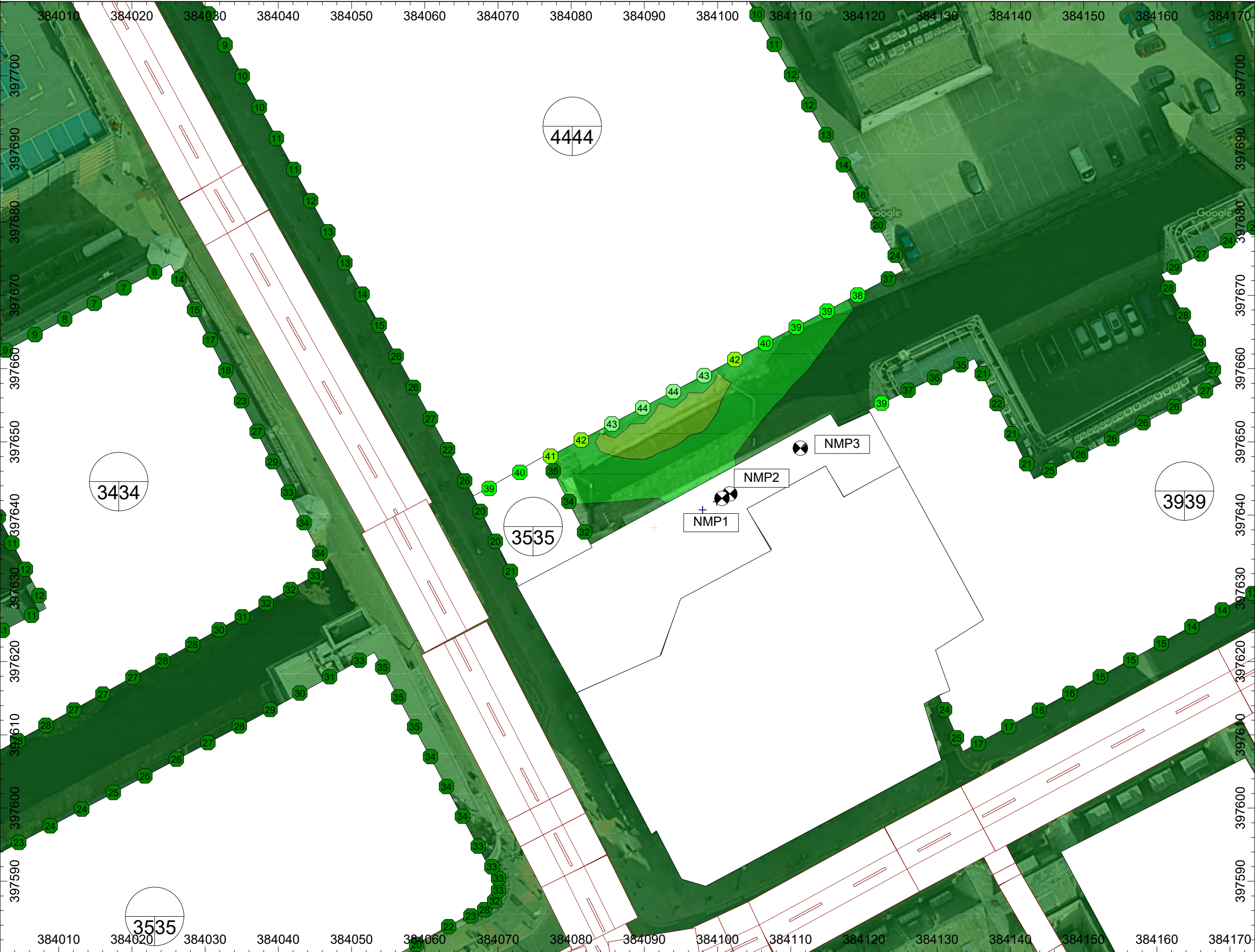
Lee Faulkner
Associate Director



APPENDIX I

NOISE MODELLING FIGURES

Figure 1 - Fixed Plant Sound Grid Noise Map - Calculation at 15m above ground level



Project:
Roof Mounted PLant,
Palace Theatre

Project-No:
50-662

Client:
ATG

Rating Level, LA,r (dB)	
...	<= 38
38 < ...	<= 40
40 < ...	<= 42
42 < ...	<= 45
45 < ...	<= 48
48 < ...	<= 50
50 < ...	<= 52
52 < ...	<= 55
55 < ...	

Noise Map Objects	
+	Point Source
—	Road
—	Building
—	Contour Line
⊙	Receiver
⊕	Building Evaluation
—	Calculation Area



Project Engineer: L Faulkner
Date: 14/09/2023