UKAS TESTING
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ACOUSTIC DESIGN TECHNOLOGY
Noise and Vibration Consultants

ADT 1625

19 November 2010

Greene King plc
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Westgate Brewery
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THE ASSEMBLY HOUSE, KENTISH TOWN

ENVIRONMENTAL NOISE IMPACT ASSESSMENT

ACOUSTIC CONSULTANCY REPORT 1625/ENIA

Revision	Date	Issued By	Checked By	Revision Notes
-	19 November 2010	Andrew Lockwood		-

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1.0 SUMMARY

The proposal is install four new air conditioning condensers directly on the first floor roof of The Assembly House at the positions indicated on the attached site plan 1625/SP1.

Acoustic Design Technology have undertaken an environmental noise survey which revealed that the currently prevailing background noise levels in the vicinity of the proposed installation are over 60 dB(A) for much of the daytime and evening, but fall to as low as 45 dB(A) during the night.

Datakustik Cadna/A noise mapping software has been used to model the existing buildings and the proposed condenser installation, and to predict the resultant noise levels outside the windows of the nearest noise sensitive properties.

The predicted levels have then been compared with the requirements set out in Section 28 of Camden Council's Development Plan.

2.0 BASIS OF ASSESSMENT

2.1 Site Location

The Assembly House is a public house situated at the junction of Kentish Town Road and Leighton Road, immediately to the north of Kentish Town underground station.

The nearby properties in Kentish Town Road generally comprise a retail unit at ground floor with residential accommodation above, while the properties in Leighton Road appear to be entirely residential.

2.2 Proposed Installation

The proposal is to install four air conditioning condensers on the flat, first floor roof directly above the ground floor bar at the locations shown on the attached site plan 1625/SP1.

2.3 Strategy for Noise Impact Assessment

Camden Council's Development Policy states that planning permission for new plant and machinery will not be granted unless the noise emissions are controlled so as not to exceed the following levels at a distance of 1 metre from any noise sensitive facade:-

Condition	noise limit
General	5 dB(A) below background
noise with tonal / impulsive characteristics	10 dB(A) below background
where existing background level > 60 dB(A)	55 dB(A)

An environmental noise survey has been undertaken over a 28 hour period to determine the existing background (L_{A90}) noise levels in the area where the new condensers are to be sited.

Datakustik Cadna/A 4.0 noise mapping software has been used to model the noise emissions that would result from the four new condensers.

The predicted levels have been compared with the measured background noise levels to establish the periods during which the proposed condensers could operate within the constraints of the Council's Development Policy.

3.0 ENVIRONMENTAL NOISE SURVEY

3.1 Instrumentation

The survey was conducted using the following instrumentation:-

01dB Solo 1 Class 1 Integrating Sound Level Meter
01dB MCE 212 ½ inch Measurement Microphone
Rion NC-73 Acoustic Calibrator
Microphone Windshield

The meter was calibrated prior to use, and on completion of the survey period. No significant drift occurred.

3.2 Weather Conditions

As the noise survey was unmanned, a detailed description of the weather is not available. However, the noise monitoring position was extremely well sheltered and there is nothing in the results to indicate that the measurements were in any way affected by adverse conditions.

3.3 Procedure

An unmanned environmental noise survey was undertaken between 20:00 hours on Wednesday 3rd November and midday on Friday 5th November 2010.

The microphone was suspended approximately 4 metres above the flat roof at the position marked on the attached site plan 1625/SP1. The short term L_{eq} octave band and dB(A) levels and the $L_{Amax(S)}$ were logged continuously for the duration of the survey, and the recorded data have been post processed to determine the 5 minute L_{eq}, L_{90}, L_{max} octave band and dB(A) levels.

3.4 Results

The five minute L_{90}, L_{eq} and L_{max} dB(A) levels have been plotted on the attached time history graph 1625/TH1.

Please refer to Appendix A for explanation of the statistical noise units and the "A" weighted dB scale - dB(A) - used in this Report.

3.5 Existing Noise Climate

The flat roof above the ground floor bar is surrounded by buildings of varying heights which effectively create an enclosed lightwell.

There is a collection of existing plant in the lightwell which includes at least four condensers and three ventilation fans, and it is this existing plant which controls the noise levels for most, if not all of the time.

Reference to the attached time history graph 1625/TH1 shows a number of distinct steps in the recorded L_{A90} levels which are almost certainly attributable to the switching on and off of the various plant items.

The graph also indicates that an item of plant was running throughout the early hours of Thursday morning that did not run the night before.

4.0 NOISE IMPACT ASSESSMENT

4.1 General

The proposal is to install 4 no. Mitsubishi PUHZ-RP100VKA air conditioning condensers at the positions indicated on the attached site plan 1625/SP1.

According to the manufacturer's published data, each unit generates the following noise levels at a distance of 1 metre directly in front of the fans:-

heating mode	-	51 dB(A)
cooling mode	-	46 - 49 dB(A)

The manufacturer also publishes the following octave band sound pressure levels which correspond to the heating mode level of 51 dB(A):-

	Octave Band Centre Frequency - Hz							
	63	125	250	500	1k	2k	4k	8k
sound pressure level @ 1 m	58	59	51	48	45	41	34	29

4.2 Environmentally Sensitive Receptors

The flat roof on which the condensers are to be located is overlooked by existing residential dwellings to the north and west, as well as by the residential accommodation on the upper floors of The Assembly House.

Four environmentally sensitive receptors (ESR) have been chosen to represent these properties.

4.3 Modelling Information

Datakustik Cadna/A 4.0 noise mapping software has been used to model how noise from the new condensers would radiate to the surrounding area, and in particular, to the four ESR.

Each condenser has been modelled as a point source, and all buildings have been treated as acoustically reflective. Calculations have then been performed in accordance with ISO 9613-2, using both direct and first-order-reflected rays.

4.4 Predicted Noise Levels

The output of the CadnaA computer model is shown on the attached noise map 1625/NM1. This shows that the predicted level at the four ESR with all four units operating at maximum duty range between 37 dB(A) and 47 dB(A).

4.5 Comparison with Camden's Development Policy Requirements

There is no absolute definition of tonality, but one that is commonly accepted is that if the noise level in any octave band is 5 dB or more greater than both adjacent bands then the noise can be considered to be tonal. Reference to the manufacturer's data tabulated in Section 4.1 shows that using this definition the noise emissions are not tonal. Additionally, noise emissions from condenser units of this type are not impulsive.

Taking this into account, reference to Camden's requirements, summarised in Section 2.3 above, shows that the requirements are that the noise levels from the new plant must not exceed the following levels at the nearest noise sensitive positions, represented by the four ESR:-

Time of Operation	Noise Limit
00:00 - 08:00 hours	40 dB(A)
08:00 - 11:00 hours	52 dB(A)
11:00 - 24:00 hours	55 dB(A)

Reference to the attached noise map 1625/NM1 therefore shows that the proposed condenser installation would be fully compliant with the Development Policy requirements between 08:00 hours and midnight.

The noise emissions from two units operating at low speed would be 8 dB(A) lower (5 dB(A) reduction for low duty and 3 dB(A) reduction for halving the number of units), so this would still be compliant with the Development Policy between midnight and 08:00 hours.

Given that on Wednesday night / Thursday morning, the background noise levels were controlled by plant noise which did not fall below 48 dB(A), it is unlikely that the new condensers would cause any disturbance or nuisance even if all four were to operate during the early hours of the morning.

5.0 CONCLUSIONS

5.1 An unmanned environmental noise survey has demonstrated that the existing background noise levels in the vicinity of the proposed condenser installation are above 60 dB(A) for most of the daytime and evening, but fall to as low as 45 dB(A) during the early hours of the morning.

5.2 Computer modelling has demonstrated that with all four new condensers operating at full load, the resultant noise levels at the nearest noise sensitive receptors would range between around 37 dB(A) and 47 dB(A).

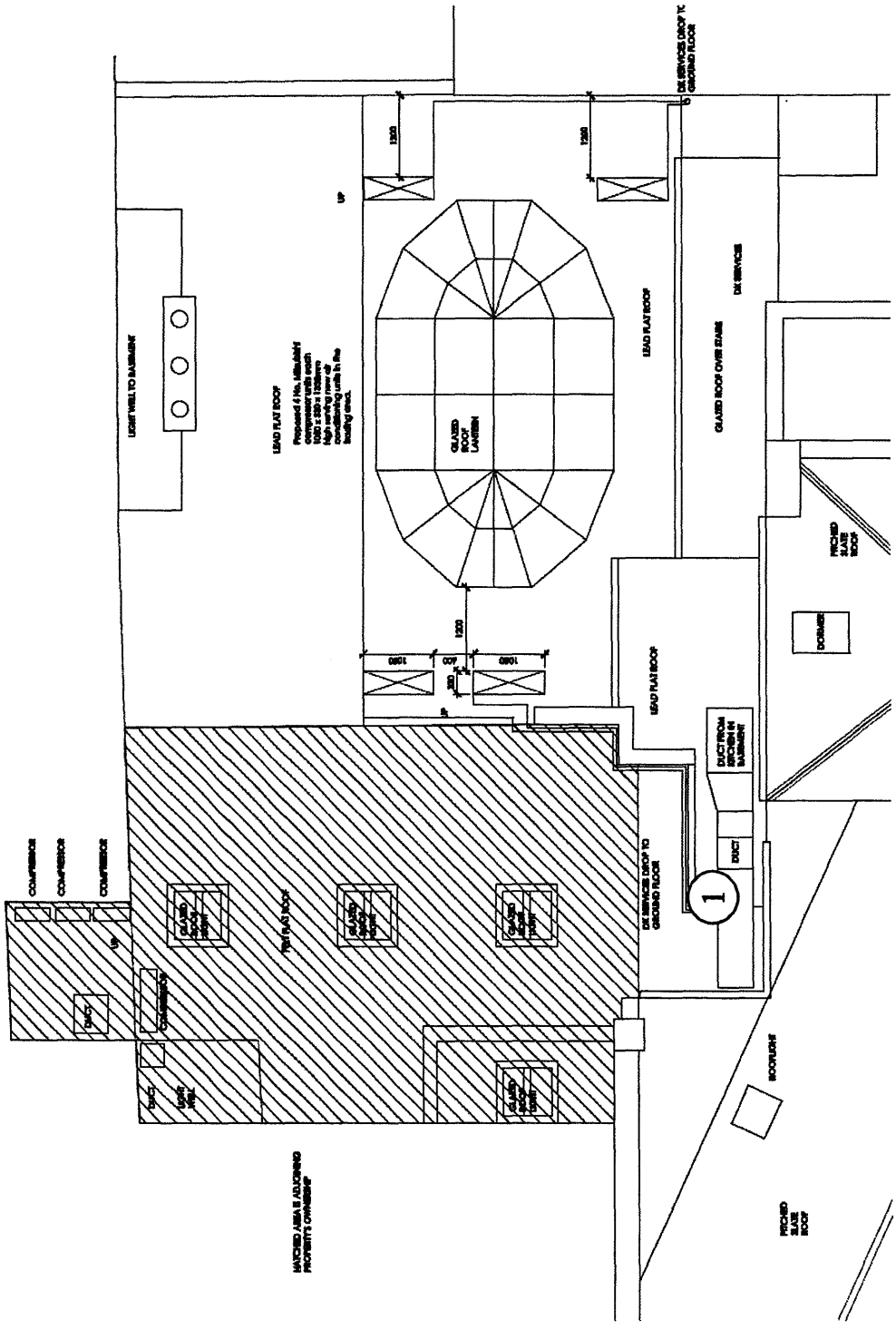
5.3 These predicted levels are fully compliant with Camden Council's Development Policy requirements between 08:00 hours and midnight.

5.4 Between midnight and 08:00 hours, the noise emissions from two units operating at low duty would still be compliant with the Development Policy requirements.

5.5 Given the magnitude of the existing plant noise levels, it is unlikely that the proposed installation would cause any disturbance to the surrounding area even if all the new units were to operate between midnight and 08:00 hours.

Andrew Lockwood

FOR ACOUSTIC DESIGN TECHNOLOGY



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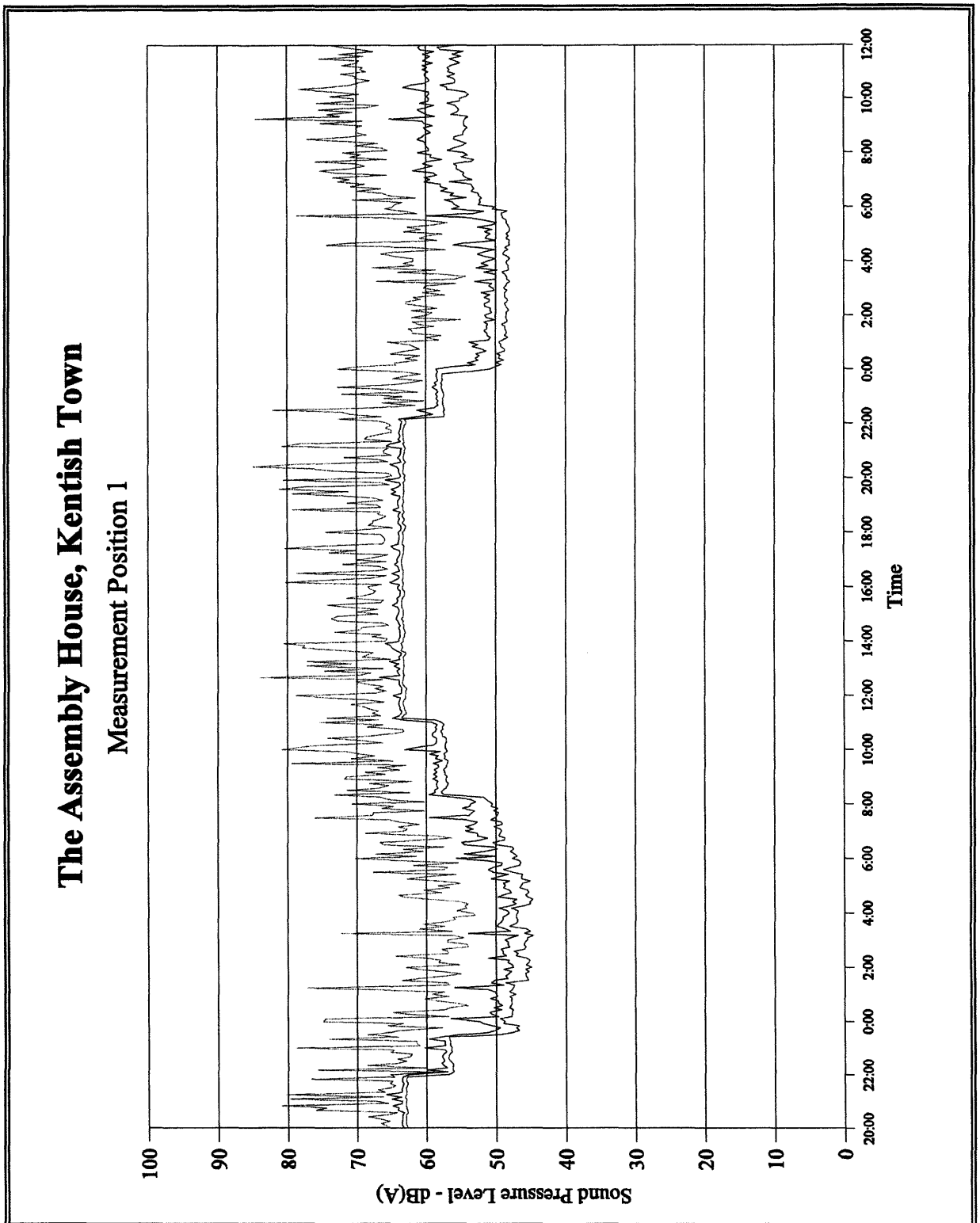
DESCRIPTION

Site plan showing measurement position and plant location

PROJECT	DATE	DRAWING NO.
The Assembly House	19 Nov 2010	1625/SP1



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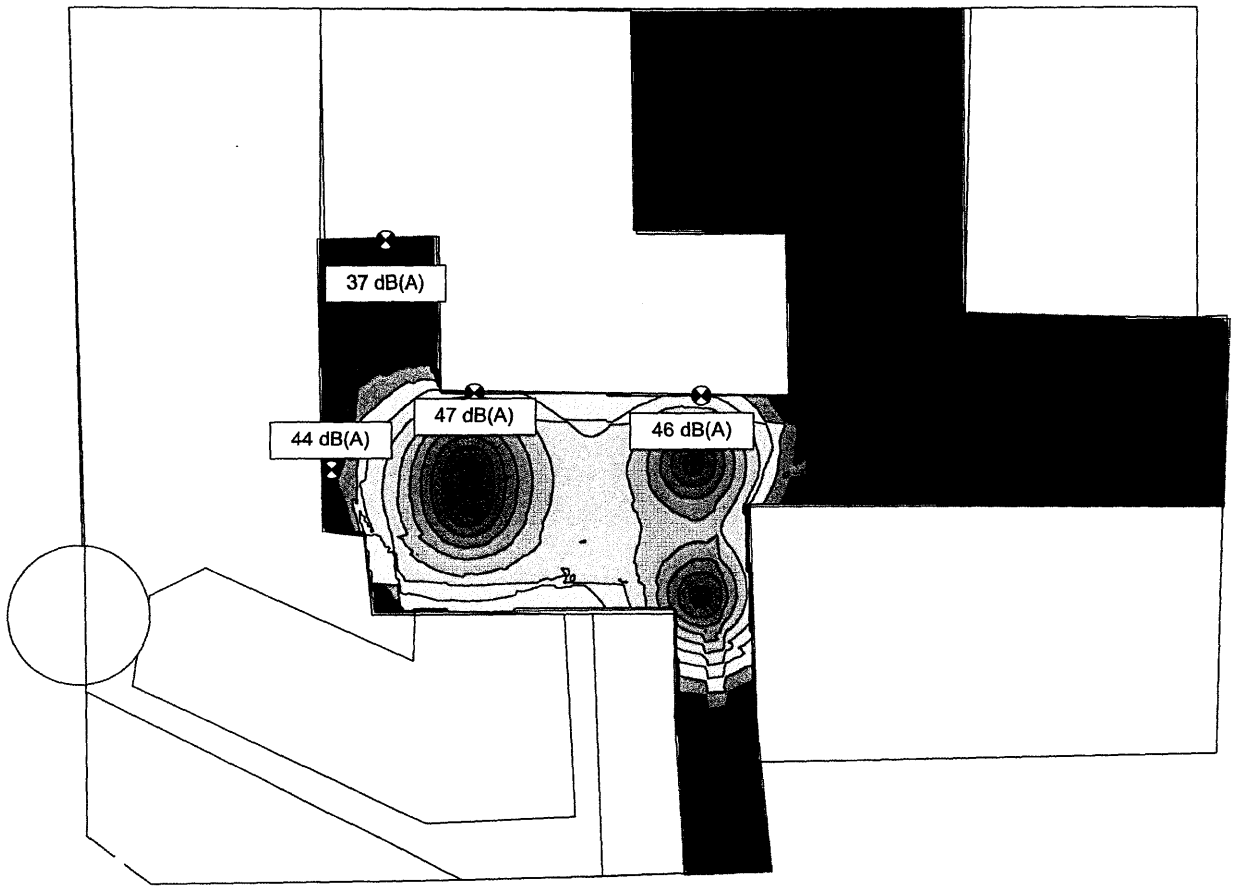
DESCRIPTION

Time history graph for measurement position 1

PROJECT	DATE	DRAWING NO.
The Assembly House	19 Nov 2010	1625/TH1



> 0.0 dB
> 35.0 dB
> 40.0 dB
> 45.0 dB
> 50.0 dB
> 55.0 dB
> 60.0 dB
> 65.0 dB

NOTES

DESCRIPTION

Predicted incident noise levels

PROJECT

The Assembly House, Kentish Town

DATE	**PLOT NO.**
19 Nov 2010	1625/NM1

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