

auricl **acoustic consulting**

**Hampstead Dental Studio
9 Market Place
Falloden Way
London**

Planning Conditions 5 & 6 Report

15 April 2024

For
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9 Market Place
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SUMMARY

It is proposed to replace external condenser units to the rear of Hampstead Dental Studio in London.

A planning condition sets external noise requirements for new items of fixed mechanical plant, requiring a background noise survey and plant noise assessment to be undertaken.

A noise survey has therefore been undertaken to determine the typical daytime background noise levels representative of the nearest noise sensitive properties to the development.

Subsequently, a noise assessment has been undertaken to predict noise emissions associated with proposed external plant items at the nearest noise sensitive properties.

Results of the assessment show that the predicted noise levels at the nearest noise sensitive windows are less than the plant noise limits during daytime periods. The plant is not expected to operate during night-time periods. The planning condition requirements are therefore considered to be achieved.

1.0 Introduction

It is proposed to replace external condenser units to the rear of Hampstead Dental Studio in London.

A planning condition sets external noise requirements for new items of fixed mechanical plant, requiring a background noise survey and plant noise assessment to be undertaken.

auricl has been commissioned to carry out a noise assessment of the proposed plant, in relation to the planning condition requirements.

This report presents the methodology and results of a noise survey to determine background noise levels that are representative of the nearest noise sensitive properties, as well as an acoustic assessment of the proposed plant to address the planning condition requirements.

2.0 Description of Site and Proposals

The proposed development site is located at 7 Market Place on Falloden Way in London, in a mixed commercial and residential area, with residential housing forming much of the surrounding area and located above the proposed development site at first floor level. Commercial properties are generally located at ground floor level at Market Place and along Falloden Way.

It is proposed to install two condenser units mounted on the rear wall as part of the ground floor extension of the existing dental practice into 7 Market Place.

The nearest existing noise sensitive properties are considered to be the residential dwellings at first floor level directly above the development site at 7a and 7b Market Place.

Figure 2.1 shows the approximate existing dental practice extent in **blue**, the approximate proposed development site in **red**, and the proposed location of the condenser units indicated in **green**.

Figure 2.1 Existing Site Extent and Surroundings



3.0 Planning Condition Requirements

Planning condition 5 for the proposals states the following:

“The level of noise emitted from the air conditioning units hereby approved shall be at least 5dB(A) below the background level, as measured from any point 1 metre outside the window of any room of a neighbouring residential property.

If the noise emitted has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or distinct impulse (bangs, clicks, clatters, thumps), then it shall be at least 10dB(A) below the background level, as measured from any point 1 metre outside the window of any room of a neighbouring residential property.

Reason: To ensure that the proposed development does not prejudice the amenities of occupiers of neighbouring properties in accordance with Policies DM04 of the Development Management Policies DPD (adopted September 2012) and D14 of the London Plan 2021.”

Planning condition 6 for the proposals states:

“a) No development other than demolition works shall commence on site in connection with the development hereby approved until a report has been carried out by a competent acoustic consultant that assesses the likely noise impacts from the development of the ventilation/extraction plant, and mitigation measures for the development to reduce these noise impacts to acceptable levels, and has been submitted to and approved in writing by the Local Planning Authority.

The report shall include all calculations and baseline data, and be set out so that the Local Planning Authority can fully audit the report and critically analyse the content and recommendations.

b) The measures approved under this condition shall be implemented in their entirety prior to the commencement of the use/first occupation of the development and retained as such thereafter.

Reason: To ensure that the proposed development does not prejudice the amenities of occupiers of neighbouring properties in accordance with Policy DM04 of the Development Management Policies DPD (adopted September 2012), the Sustainable Design and Construction SPD (adopted April 2016) and Policies D13 and D14 of the London Plan 2021.”

As the site is understood to operate during daytime periods only, we shall consider hourly periods as is standard practice e.g. as recommended by BS 4142: 2014+A1: 2019.

We will therefore base our assessment on the above criteria.

4.0 Baseline Noise Survey

4.1 Methodology

Attended environmental noise measurements were undertaken at 1m from the façade of the nearest noise sensitive properties at 7a and 7b Market Place, during a typical daytime period on Thursday 14 March 2024. The survey was fully manned due to the lack of a suitable secure location to install equipment over a longer period.

The measurement position is indicated in **purple** on Figure 4.1.

Figure 4.1 Noise Measurement Position



At the measurement position, the measurement microphone was mounted on a tripod positioned 1.5m above the access walkway for the apartments.

The measurement position is considered to be representative of background noise levels at the nearest noise sensitive properties.

The equipment used for the noise survey is summarised in Table 4.1.

Table 4.1 Description of Noise Survey Equipment

Item	Make & Model	Serial Number
Type 1 automated logging sound level meter	01dB Fusion	12032
Type 1 ½" microphone	GRAS 40CE	330829
Calibrator	01dB CAL31	89093

L_{Aeq} and L_{A90} sound pressure levels were measured throughout the noise survey.

Weather conditions during the survey were noted to consist of warm sunny periods and occasional light showers with only light wind speeds. Weather conditions are not considered to have had any significant effect on the measured noise levels.

The noise monitoring equipment was calibrated before and after the noise survey period. No significant change was found to have occurred. Laboratory equipment calibration certificates can be provided upon request.

4.2 Noise Survey Results

The measured L_{Aeq} and L_{A90} sound pressure levels are presented in Table 4.2.

Table 4.2 Noise Survey Results

Period (Start)	Measured Sound Pressure Level (dB)	
	L_{Aeq} (1 hour)	L_{A90} (1 hour)
11:30	56	49
12:30	55	46
13:30	53	47

The noise climate during the survey was noted to be dominated by road traffic noise from Falloden Way, and occasionally affected by aircraft noise.

We would consider the measured noise levels to be reasonable, taking into account the location of the measurement position and the dominant nearby noise sources.

5.0 Plant Noise Assessment

This section presents our assessment and calculations of noise emissions from the proposed external plant, in relation to the planning condition requirements and the plant noise limits set out below.

5.1 Proposed Plant

Two condenser units are proposed to be located on the rear façade of the development as follows:

- 1 No Fujitsu A0YG09KPCA which operates at a sound pressure level of 47 dB L_{pA} at 1m from the unit face
- 1 No Fujitsu A0YG30KBTA4 which operates at a sound pressure level of 54 dB L_{pA} at 1m from the unit face

Noise data has been obtained from the manufacturer’s literature.

The proposed location of the units is indicated on Figure 2.1.

The units are expected to emit consistent broadband noise and are not anticipated to be tonal, intermittent or impulsive, or contain any other distinctive audible characteristics.

5.2 Nearest Noise Sensitive Property

We have considered the nearest noise sensitive properties to be the existing dwellings at first-floor level directly above the proposed development site at 7a and 7b Market Place, which are set back from the ground floor façade behind a parapet wall and access walkway, approximately 2.2m from the units horizontally.

5.3 Plant Noise Limits

The proposed items of external plant are not anticipated to be tonal, intermittent or impulsive, or contain any other distinctive audible characteristics, therefore planning condition 5 requires that external plant noise is limited to at least 5 dB below the measured background noise level at nearest noise sensitive premises.

As a worst case, we have considered the lowest measured $L_{A90, 1 \text{ hour}}$, and therefore based on the measured noise levels presented in Table 4.2, the plant noise limit in accordance with the planning condition requirements is $L_{Aeq, T}$ **41 dB**.

5.4 Plant Noise Predictions

Our calculations to predict the plant noise level at the nearest noise sensitive windows are presented in Table 5.1.

Table 5.1 Plant Noise Emission Calculations

Element	Level (dB)	
	AOYG09KPCA	AOYG30KBTA4
Unit Sound Pressure Level (L_{pA})	47	54
$L_{pA} \Rightarrow L_{WA}$	+11	+14
Acoustic Reflections	+3	+3
Attenuation due to Distance	-16	-16
Attenuation due to Barrier Effect	-14	-14
Predicted Sound Pressure Level at Nearest Residential Window	31	41
Total Predicted Plant Noise Level at Nearest Residential Window	41	
Noise Limit	41	
<i>Difference</i>	<i>0</i>	

It can be seen that the total predicted plant noise level at the nearest noise sensitive windows does not exceed the plant noise limit during daytime periods when the proposed units are expected to be operational, and therefore achieves the requirements of planning condition 5. This is also therefore expected to be sufficient to satisfy the requirements of planning condition 6.

Appendix A – Acoustic Terminology

Parameter	Description
Decibel (dB)	A logarithmic scale representing the sound pressure or power level relative to the threshold of hearing (20×10^{-6} Pascals).
Sound Pressure Level (L_p)	The sound pressure level is the sound pressure fluctuation caused by vibrating objects relative to the threshold of hearing.
A-weighting (L_A or dBA)	The sound level in dB with a filter applied to increase certain frequencies and decrease others to correspond with the average human response to sound.
$L_{Aeq,T}$	<p>The A-weighted equivalent continuous noise level over the time period T (typically T= 16 hours for daytime periods, T = 8 hours for night-time periods).</p> <p>This is the sound level that is equivalent to the average energy of noise recorded over a given period.</p>
L_{A90} (15 min)	The noise level exceeded for 90% of the time (also referred to as the background noise level), measured over a 15 minute period