Our Ref: 32392/MF

ALLAWAY ACOUSTICS
LIMITED

Client: Borahurst Ltd,
75 Bell Street, Reigate,
Surrey RH2 7AN

**Project: 12, 13 & 14 Bloomsbury Square,
London, WC1A 2LP**

Plant Noise Assessment

Date of Survey: 24th-26th July 2012

Prepared By: Chris Swiejkowski BSc/MSc MIOA
Checked By: Andy Smith MIOA

12-14 Bloomsbury Square, London WC1A 2LP
Plant Noise Assessment

ALLAWAY ACOUSTICS
LIMITED

1. Introduction

1.1 Following the installation of new building services plant at this site, Allaway Acoustics Ltd have been asked to carry out an environmental noise survey to establish the existing minimum background noise levels at the above site.

1.2 Full survey details/results have been included within our Survey Report Ref. 32392/MF Rev. 1 (issued as separate document).

2. Plant information

2.1 We understand that the following plant has been installed externally on the roof level of No. 12-14 Bloomsbury Square building:

- Unit 1 - VRV Daikin REYQ44P installed on the roof of No. 12;
- Unit 2 - VRV Daikin REYQ44P installed on the roof of No. 13;
- Unit 3 - VRV Daikin REYQ18P installed on the roof of No. 14;

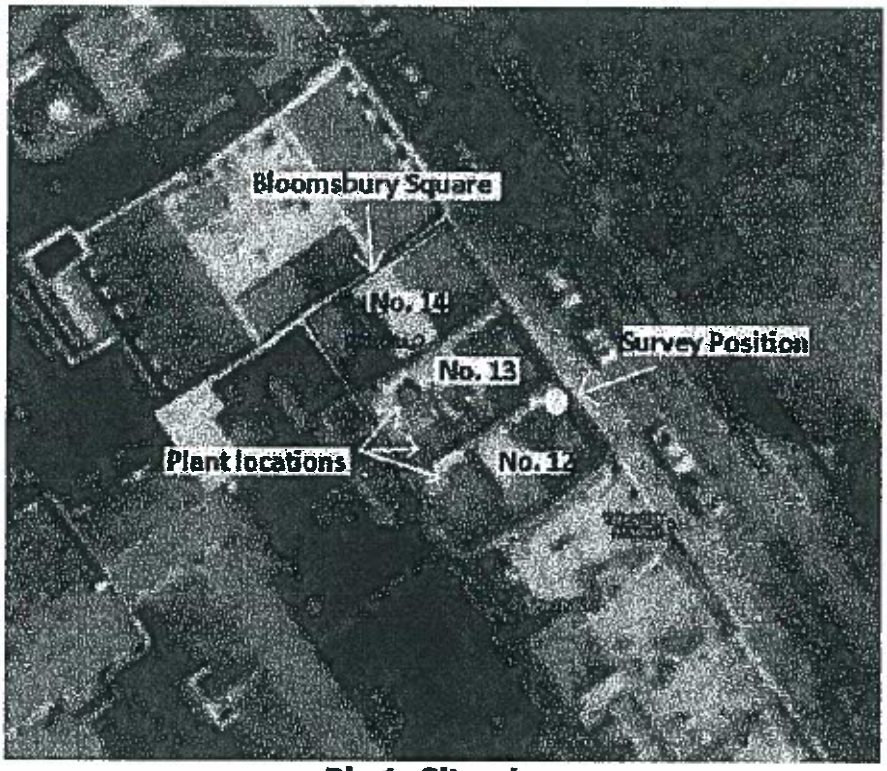
2.2 Published plant data:

Plant	dB(A) @ 1m
REYQ44P	65
REYQ18P	61

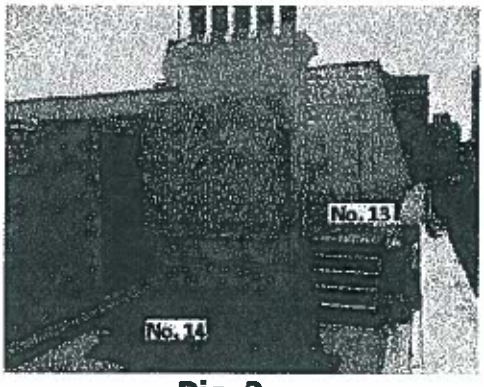
2.3 The plant will have the capability to operate during office hours (07:00am – 07:00pm)

3. Plant Location

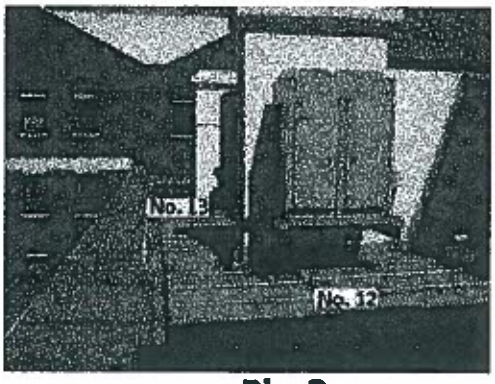
Unit ref. REYQ44P have been installed on the roof of No. 12 & 13 Bloomsbury Square and unite ref. REQ18P has been installed on the roof of No. 14 Bloomsbury Square in the positions as shown below.



Pic 1. Site plan



Pic. 2



Pic. 3

4. Plant noise assessment

4.1 The minimum background (L90) noise level measured between the hours of 07:00am-07:00 pm (plant operating hours) was 52dB(A).

4.2 In order that any proposed new plant noise does not increase the existing noise levels it must be at least 10dB(A) lower than the current measured level (including consideration to a 5dB acoustic features correction as necessary).

4.3 To this end, we would recommend that a limit of 42dB(A) be set as the plant noise limit at 1m external to the nearest sensitive façade:

- Unit 1 installed at No. 12 Bloomsbury Square (REYQ44P) – the closest façade to this plant location is the 5th storey wall of No. 11 Bloomsbury Square approx. 5m away;
- Unit 2 installed at No. 13 Bloomsbury Square (REYQ44P) – the closest façade to this plant location is approx. 25m away;
- Unit 3 installed at No. 14 Bloomsbury Square (REYQ18P) – the closest façade to this location is the 5th storey wall of No. 15 Bloomsbury Square approx.. 5m away.

4.4 Predicted noise levels at the nearest receiver

Based on the published plant data, plant dimensions and location the predicted noise levels at the nearest receiver would be as follows:

The above table indicates that the proposed criteria have been exceeded.

4.5 In order to achieve the specified target noise levels all plant will require a suitably designed acoustic enclosure.

Our quotation for the acoustic enclosure will be issued separately.

.....
Chris Swiejkowski BSc/MSc MIOA
06 August 2012

.....
Andy Smith MIOA

ALLAWAY ACOUSTICS
LIMITED

ACOUSTIC TERMINOLOGY

DECIBEL (dB) - The Decibel is a logarithmic unit used to express ratios of quantities such as sound pressure level or sound power. The logarithmic nature of the unit means that decibel values cannot be added or subtracted in the usual way.

dBA or LA - The A weighted scale is used to take account of the fact that the human ear is more sensitive to sounds at high frequencies than sounds at low frequencies. "A" weighted sound pressure level (sound level) measurements correspond roughly to the subjective impression of loudness of the average listener.

LAEQ - The LAEQ index is used as a method of averaging temporally or spatially varying sound levels. At a given position, it may be defined as the notional sound level which contains the same amount of acoustical energy as the actual (time varying) sound level over the same measurement period. The LAEQ is gaining acceptance for many types of noise assessment, and is now referred to within BS4142 (used to assess the likelihood of justifiable environmental noise complaints), and also within the Noise at Work Regulations 1989.

LAMAX - The LAMAX is the maximum sound pressure level (sound level) recorded during any given measurement period.

LA10 - The LA10 is the sound level that is exceeded for 10% of the measurement period and is commonly used to describe road traffic noise, since it has been found to correlate reasonably well with complaint thresholds.

LA90 - The LA90 is the sound level that is exceeded for 90% of the measurements period, and is generally considered to describe the background noise, since it inherently excludes the sounds of transient events.