

Studio People  
Building creative environments

**The Studio People Ltd**

Shortwave A

Criggion Radio Station

Back Lane

Criggion, SY5 9BE

United Kingdom

Tele: +44 (0)1938 571148

Fax: +44 (0)1938 571146

Registered in England: No:3824450

[www.studiopeople.com](http://www.studiopeople.com)

## External Noise Survey Ver1.3

3<sup>rd</sup> Floor Balcony  
1 Stephen Street, London, W1T 1AL

Prepared by: Mr Christopher Smout, AMIOA.  
Qualification: IoA PGDip  
For: The Studio People Ltd  
Email: [chris@studiopeople.com](mailto:chris@studiopeople.com)

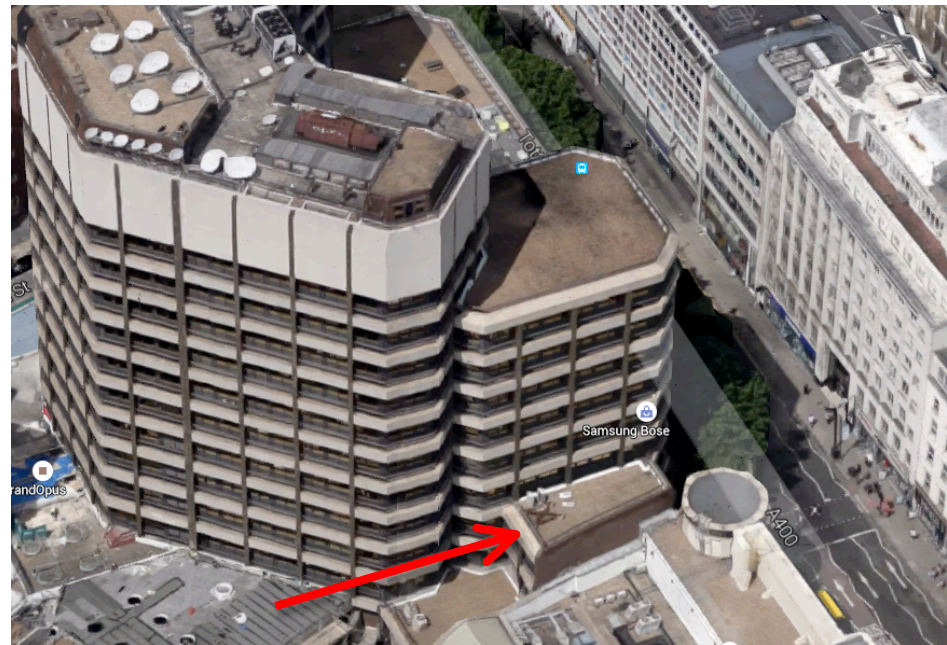
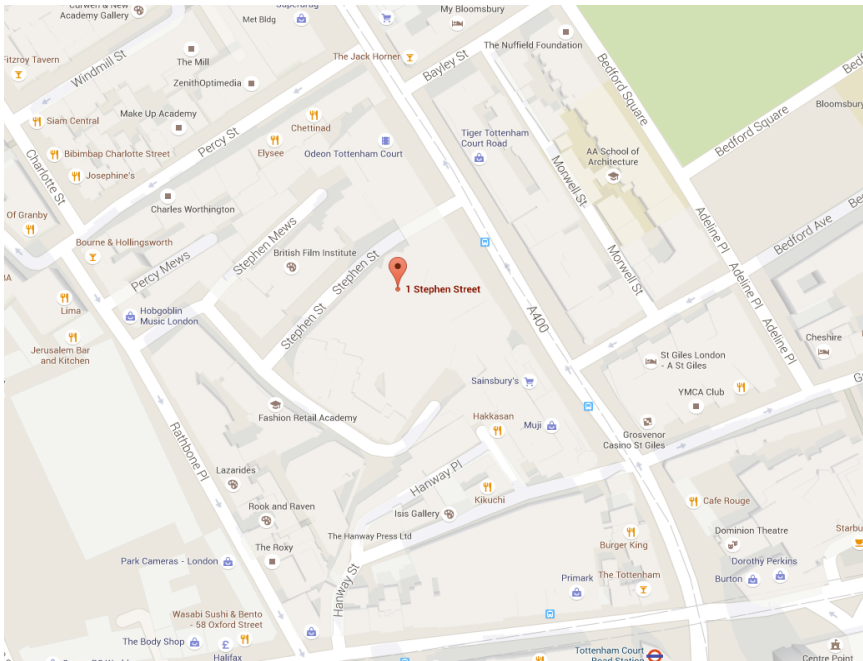
Date of Publication  
15<sup>th</sup> January 2015

## **1.0 Introduction:**

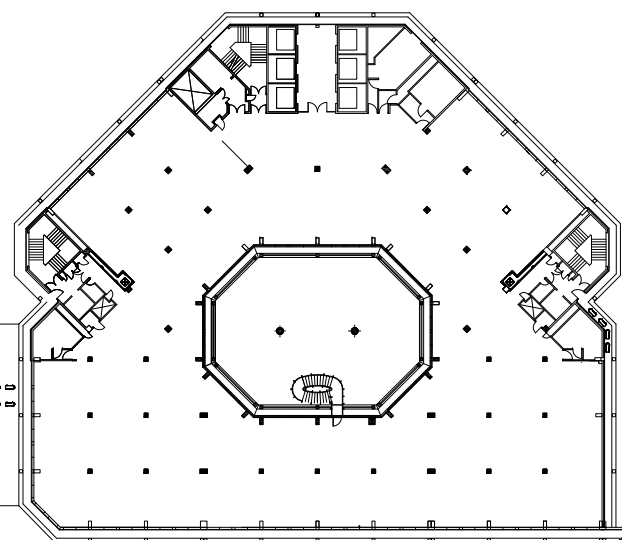
Fremantle Media Ltd, who occupy 1 Stephen Street, London, is expanding their facilities on the 4<sup>th</sup> Floor. Due to this expansion further air-conditioning units are required.

### **1.1 Site Information:**

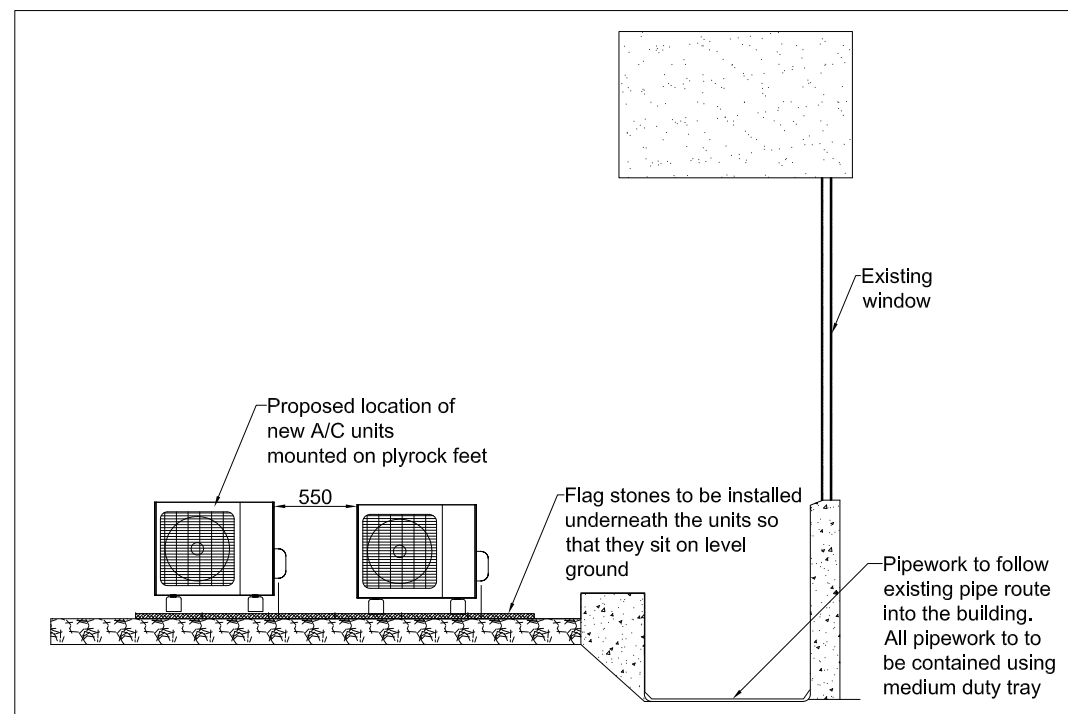
The proposed location of the new outdoor units is the 3<sup>rd</sup> floor balcony, which already houses a number of air-conditioning units. The planning application states a further five outdoor units to be installed, including one Mitsubishi PUHZ-ZRP35VKA, two Mitsubishi PUHZ-ZRP50VKA and two Mitsubishi PUHZ-ZRP71VHA4. Please see images below for balcony location and building location. The drawing on the following page shows the proposed layout along with photos of the surround areas.



Proposed location of outdoor condensers

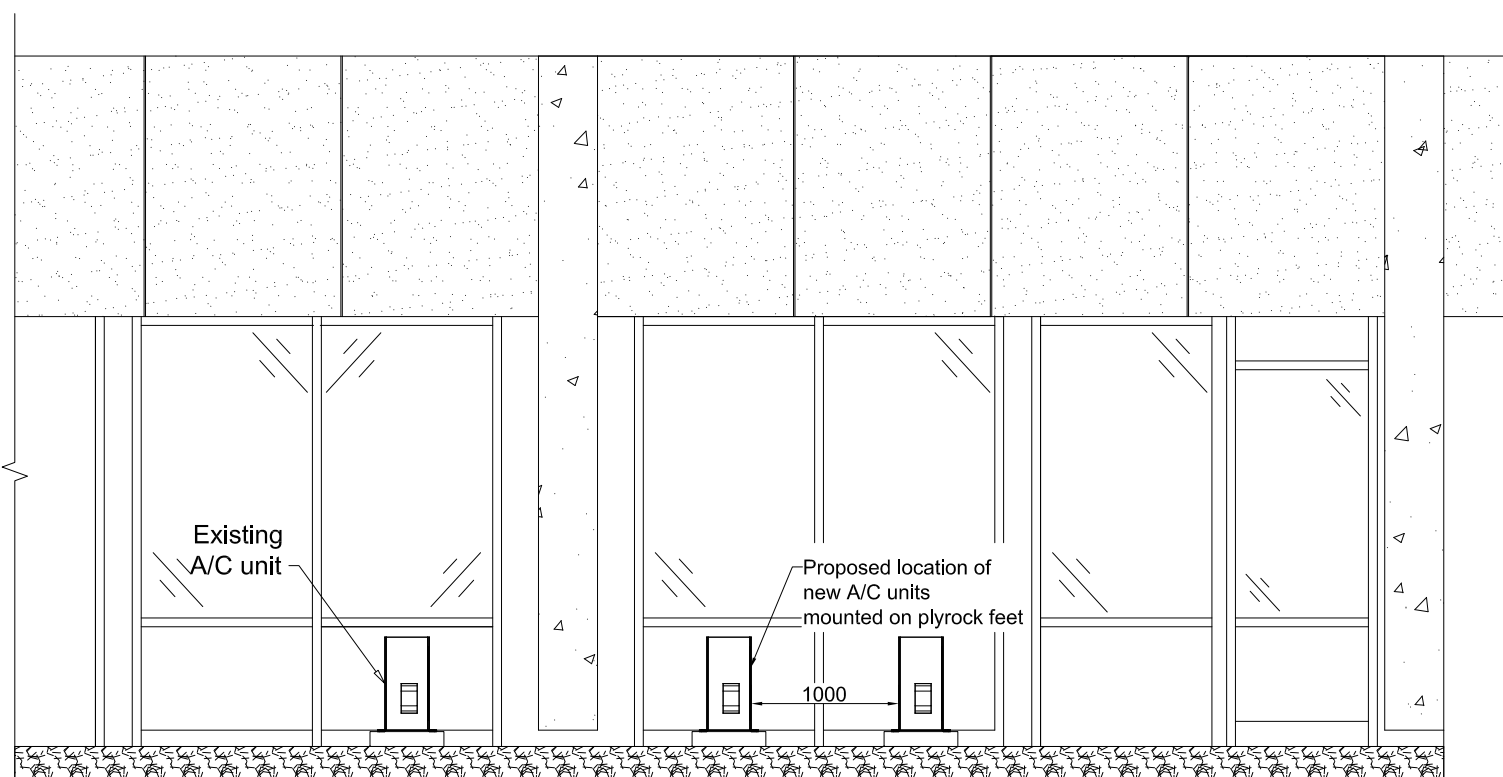


Building plan of location 3rd floor



Section of proposed location

@ 1:25



Elevation of 3rd floor balcony

proposed location

@ 1:25



Survey photos of proposed location

## Freemantle media studio works

As part of the studio works on the 4th floor we propose to install five DX air conditioning systems with the outdoor condensers to be located on the 3rd floor balcony.

The units shall sit on the gravel area on the balcony, the units shall have flag stones install underneath them so that they sit on level ground. The units will also have plyrock installed for extra support and stability.

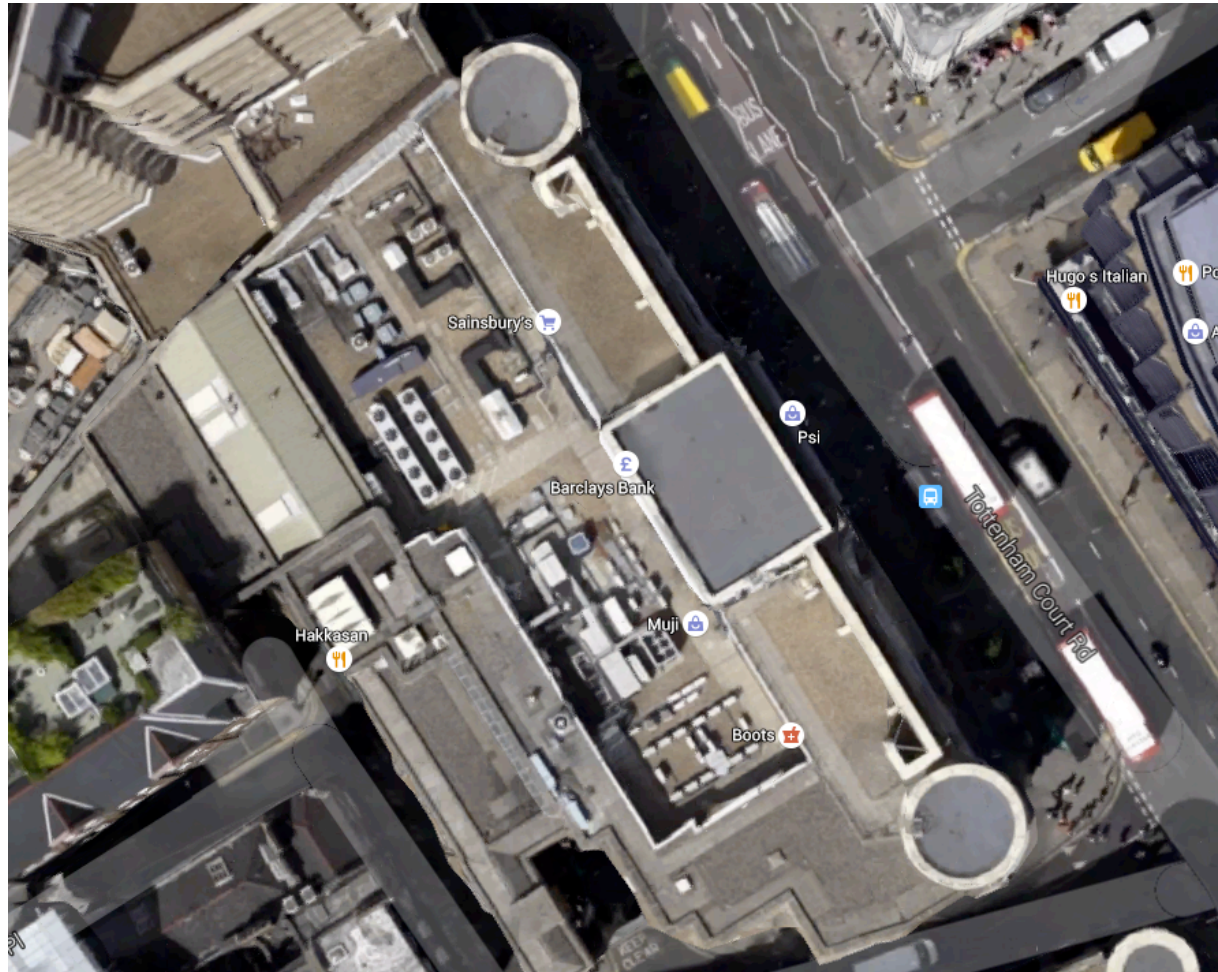
Pipework shall enter the building in the same manner as the existing pipework, through the low level point within the gully. The pipework is then to run high level to the pillar marked on the 3rd floor internal proposal drawing, pipework to be routed through a newly created 100Ø core hole which is to be fire stopped once pipework is installed.

Key:

| Proposed                                                                              |  |            |                                   |                |                 |
|---------------------------------------------------------------------------------------|--|------------|-----------------------------------|----------------|-----------------|
| Title: 31-02: HVAC Proposed Outdoor Location                                          |  |            |                                   |                |                 |
| Filename: DGMF-01 M&E.dwg                                                             |  |            | Revision: A                       | Paper: A1      | Scale: 1:25/100 |
| Last Edited by: Chris.campbell                                                        |  | View: Plan | Acad: 2007                        | Plot: 12:48:39 | 02/10/2015      |
|  |  | Client:    | Fremantle Media                   |                |                 |
|                                                                                       |  |            | Site address:                     |                |                 |
|                                                                                       |  |            | 1 Stephen St<br>London<br>W1T 1AL |                |                 |
| Building creative environments                                                        |  |            |                                   |                |                 |

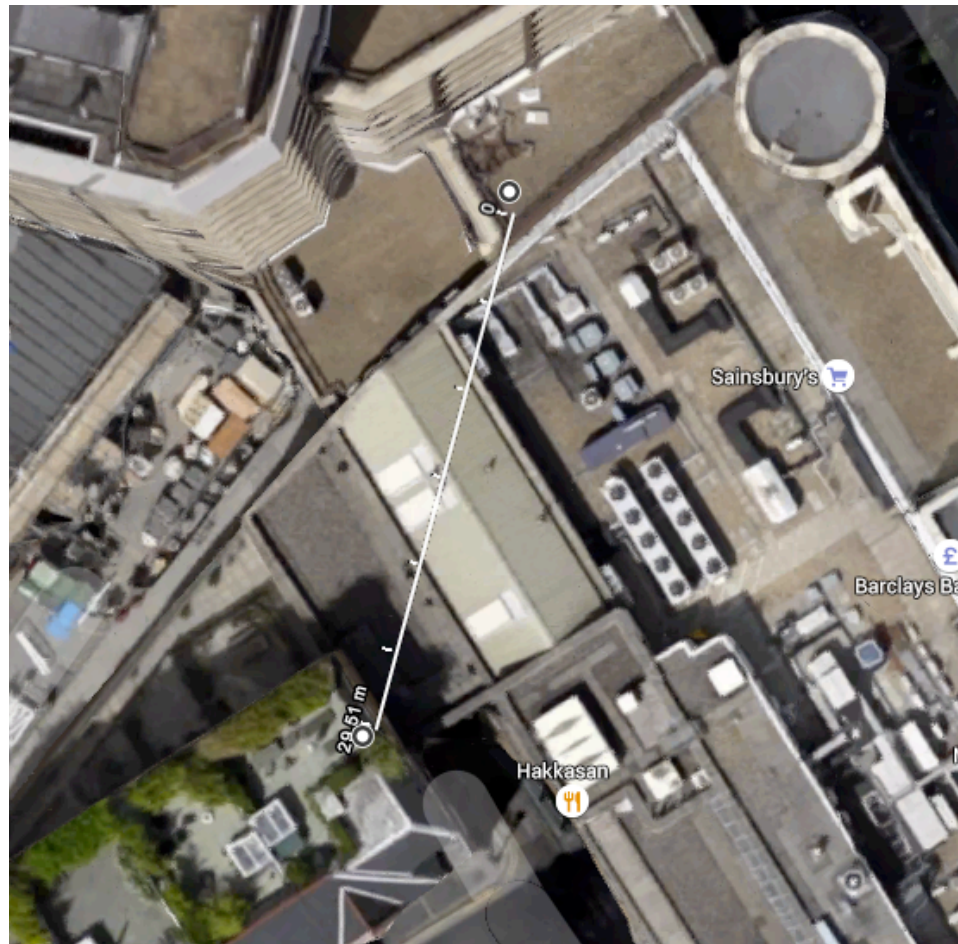


Further to the plant on the same roof balcony, there is a large amount of services on the adjacent building, as shown on the below image.



## 1.2 Noise Sensitive Receptor

The nearest noise receptor is 30meters from the third floor balcony as shown on the image below.



## **2.0 Standards**

### **2.1 UDP**

The London Borough of Camden, Unitary Development Plan of March 2000 set noise level limits for residential areas adjoining railways and roads. The below table is extracted from page 431, point 16.24:

| Period  | Time        | Sites adjoining railways | Sites adjoining roads |
|---------|-------------|--------------------------|-----------------------|
| Day     | 0700 - 1900 | 65 dB LAeq,12h           | 62 dB LAeq,12h        |
| Evening | 1900 - 2300 | 60 dB LAeq,4h            | 57 dB LAeq,4h         |
| Night   | 2300 - 0700 | 55 dB LAeq,1h            | 52 dB LAeq,1h         |

The operating hours of the facility, and when the proposed external units will be running, is between 8am and 6pm.

The building is adjoining a road and therefore the noise limit, 1meter from the noise sensitive façade, is 62 dB LAeq, 12h.

## 2.2 BS 4142:2014

British Standard 4142:2014 is used to assess the potential impact of noise from commercial or industrial noise sources affecting residential properties.

The standard sets a number of corrections depending on the noise source of the proposed plant; these can be seen in the table below:

| Commercial/industrial noise characteristic | Perceptibility   |                     |                    |
|--------------------------------------------|------------------|---------------------|--------------------|
|                                            | Just perceptible | Clearly perceptible | Highly perceptible |
| Tonality                                   | +2               | +4                  | +6                 |
| Impulsivity                                | +3               | +6                  | +9                 |
| Intermittency                              | 0                | +3                  | +3                 |
| Other sound characteristics                | 0                | +3                  | +3                 |

The proposed plant has none of the above characteristics and therefore no correction is to be added.



### **3.0 Noise Assessment:**

#### **3.1 Equipment:**

##### Test Meter:

Norsonic Nor140 Test meter  
Serial no: 1403791

##### Calibrator:

Circcus 94dB Calibrator  
Norsonic calibrated before and after testing, no  
deviation

#### **3.2 Existing Noise Survey:**

##### Test conditions:

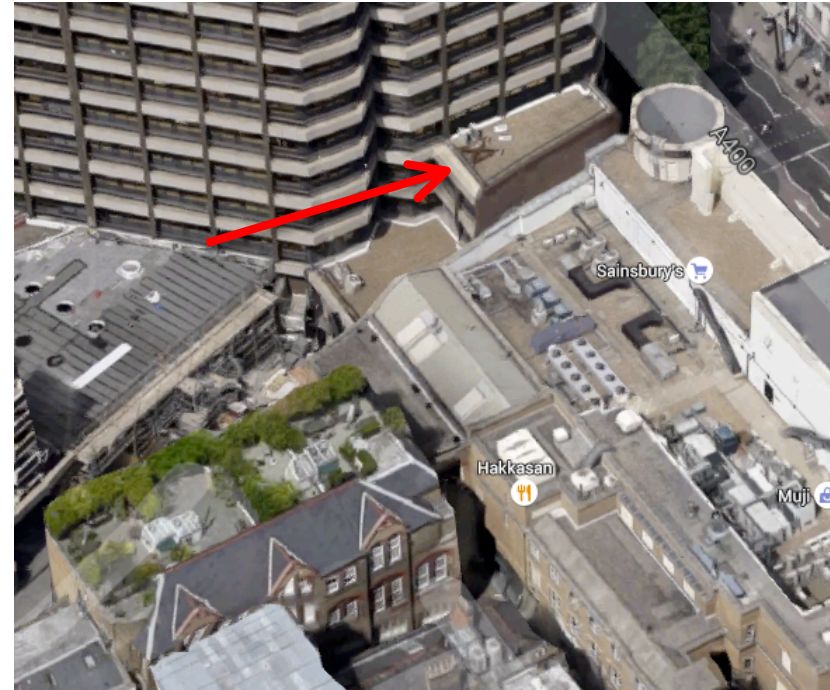
Date: Tuesday 12<sup>th</sup> January 2016

Period: 12pm – 1pm, 1pm – 2pm, 2pm – 3pm

Weather conditions: Low level of wind (< 2m/s). No fog. 6degrees Celsius.

Sound meter was set approximately 5meters from the existing external units towards the nearest noise sensitive building, as shown on the image adjacent.

The results can be found in the below table:





| Date/<br>Time | LAeq,T | LAe90,T | LAMAX,T | Octave Band Centre Frequency (Hz) |      |      |      |      |      |      |      |      |      |
|---------------|--------|---------|---------|-----------------------------------|------|------|------|------|------|------|------|------|------|
|               |        |         |         | 31.5                              | 63   | 125  | 250  | 500  | 1k   | 2k   | 4k   | 8k   | 16k  |
| 12pm – 1pm    | 64.9   | 63.2    | 74.3    | 73.9                              | 71.2 | 68.2 | 65.4 | 62.5 | 57.9 | 56.9 | 52.7 | 45.8 | 36.4 |
| 1pm – 2pm     | 65.0   | 63.6    | 81.6    | 74.4                              | 71.9 | 68.9 | 65.7 | 62.8 | 58.3 | 56.8 | 51.8 | 44.8 | 34.6 |
| 2pm – 3pm     | 65.2   | 64.1    | 81.2    | 74.4                              | 72   | 68.6 | 65.3 | 62.9 | 58.6 | 57.4 | 52.3 | 44.3 | 36.5 |

There is no dominant frequency and is therefore a broadband noise.

A real point source reduces by 6dB for each doubling of distance.

At a façade the noise level increases by 3dB due to reflection.

Based on this, the noise level at the nearest façade (30meters) will be:

**LAeq,T      52.9 – 53.2 dB**

**LA90, T     51.2 – 52.1 dB**

**LAMAX,T    62.3 – 69.2 dB**

### 3.3 New Plant Noise Levels:

The below table shows the Sound pressure level dB(A) of the new proposed units. The source of this information is from the Mitsubishi system brochure and is based at a distance of 1meter.

It should be noted that the following levels are when the units are running on heating mode, due to the nature of the rooms the units will always be run on cooling mode, which have a lower SPL rating. The heating levels have been used for a 'worst case' scenario.

### Equipment Specification

| <b>Unit Description</b> | <b>SPL dB(A)</b> |
|-------------------------|------------------|
| PUHZ-ZRP35VKA           | 46               |
| PUHZ-ZRP50VKA           | 46               |
| PUHZ-ZRP50VKA           | 46               |
| PUHZ-ZRP71VHA4          | 48               |
| PUHZ-ZRP71VHA4          | 48               |
| <b>Total dB(A)</b>      | <b>53.9</b>      |

The predicted noise level at the nearest façade (30meters) is **27.7dB (A)**

This is more than 10dB lower than the current noise level at the nearest noise sensitive receptor and will have no impact on the noise perceived at this location.

### 3.4 Vibration:

The building is not adjoined to the noise sensitive receptor and therefore vibration will have no effect.  
Residual + Background noise the same

### 3.5 BS 4142:2014 Noise Assessment:

| <b>Results</b>                               | <b>Daytime (08:00 – 18:00)</b> |
|----------------------------------------------|--------------------------------|
| Calculated Residential Sound Level           | LAeq = 52.9 – 53.2dB           |
| Residual Sound Level                         | LAeq = 52.9 – 53.2 dB          |
| Background Sound Level                       | LA90 = 51.2 – 52.1 dB          |
| Specific Sound                               | LAeq = 27.7 dB                 |
| Acoustic Feature Correction (None)           | +0dB                           |
| Rating Level                                 | LAeq = 27.7 dB                 |
| Background Sound Level                       | LA90 = 51.2 – 52.1 dB          |
| Excess of Rating Over Background Sound Level | -23.5 – 24.4 dB                |
| Assessment Indicates                         | No Adverse Impact              |

The air-conditioning noise is neither tonal nor intermittent, however, even if the source were tonal and/or intermittent it would not be perceived as this due to being lower than 10dB of the background noise level

### **4.0 Noise Plan:**

As the combined noise level of the new plant is less than 10dB than the current noise level it will have no impact on the overall noise level, and therefore it is not considered to be a noise sensitive development and no noise management plan is required.

### **5.0 DP28/DP29**

#### **5.1 DP28**

As covered in section 3 of this report, the new plant will not affect the overall noise level and therefore will be within the noise thresholds. The installation of the works is considered non-noisy works.  
DP28 is not affected by the proposed external plant.

### 5.2 DP29

No alterations are taking place in terms of access and therefore DP29 is not affected.

## **3.0 Conclusion**

The current noise level at the nearest residential dwelling is between LA90 51.2 – 52.1dB. The proposed units have a combined sound level at the nearest dwelling of LAeq 27.7dB. This is more than 10dB lower than the background noise level and therefore will have no effect on the overall level.

Following the BS 4142:2014 standard, the LA90 is more than 10dB lower than the background level and will have no adverse impact on the nearest noise sensitive receptor.

This report concludes that the new plant will have no effect surrounding noise sensitive areas.

END OF REPORT