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External Noise Survey Ver1.2

3rd Floor Balcony
1 Stephen Street, London, W1T 1AL

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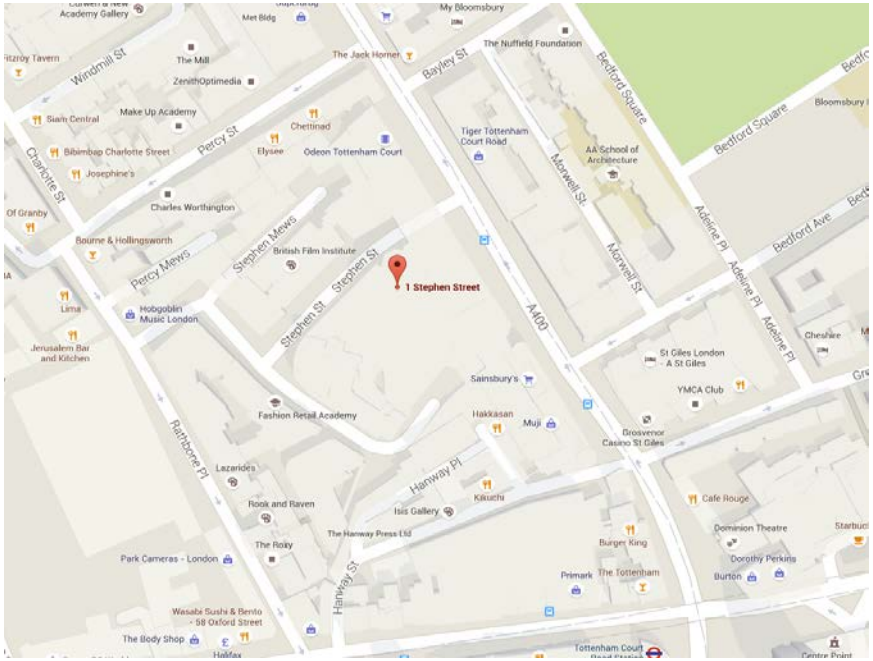
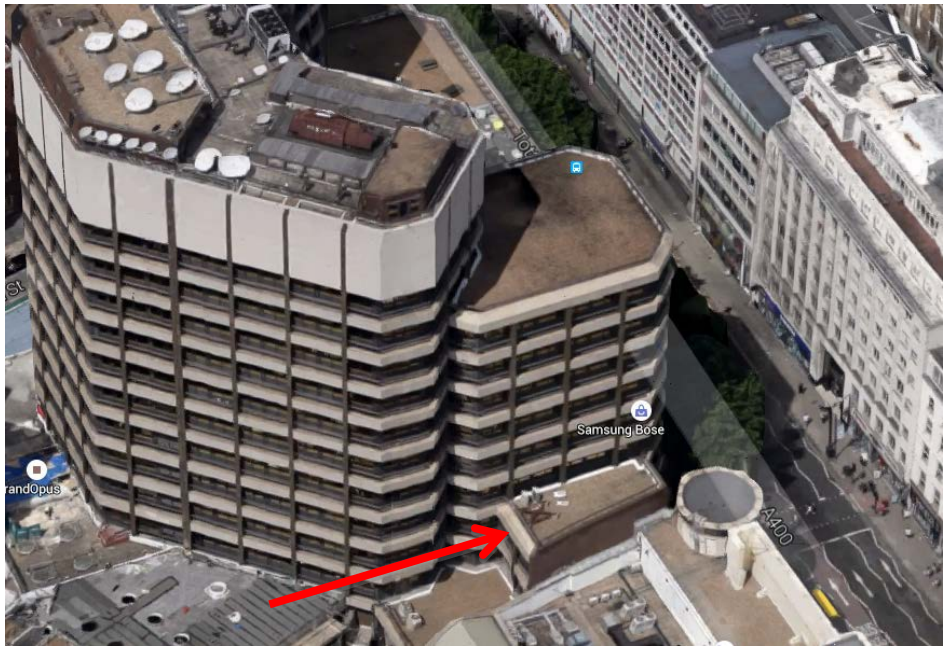
1.0 Introduction:

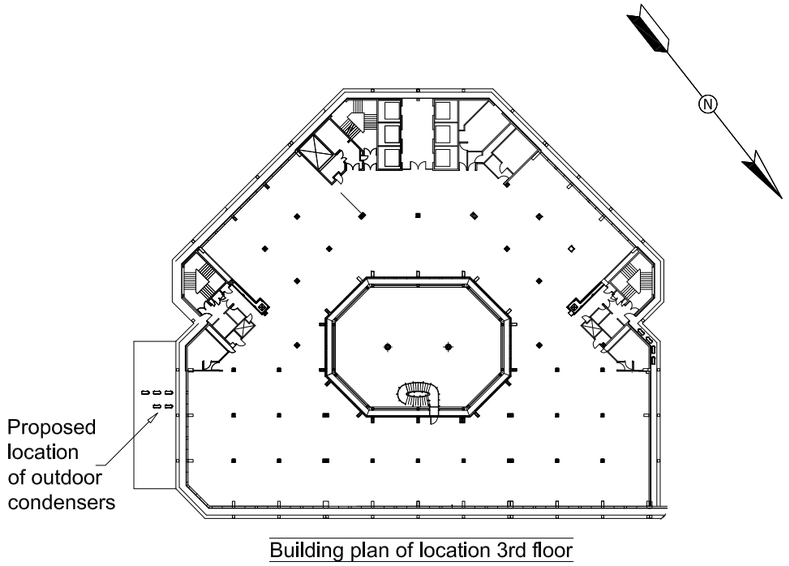
Fremantle Media Ltd, who occupies 1 Stephen Street, London, is expanding their facilities on the 4th Floor. Due to this expansion further air-conditioning units are required.

1.1 Site Information:

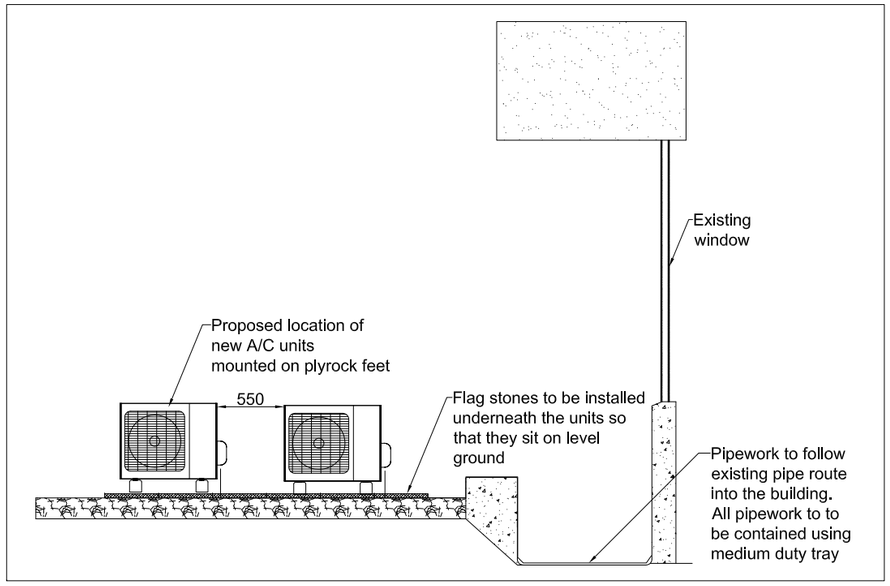
The proposed location of the new outdoor units is the 3rd floor balcony, which already houses a number of air-conditioning units. The planning application states a further five outdoor units to be installed, including one Mitsubishi PUHZ-ZRP35VKA, two Mitsubishi PUHZ-ZRP50VKA and two Mitsubishi PUHZ-ZRP71VHA4. 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.





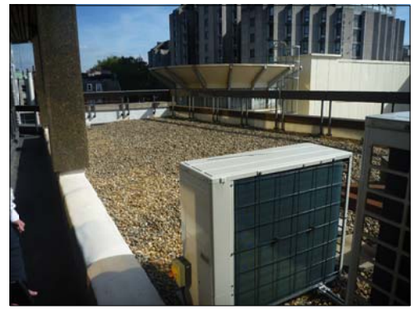


Building plan of location 3rd floor

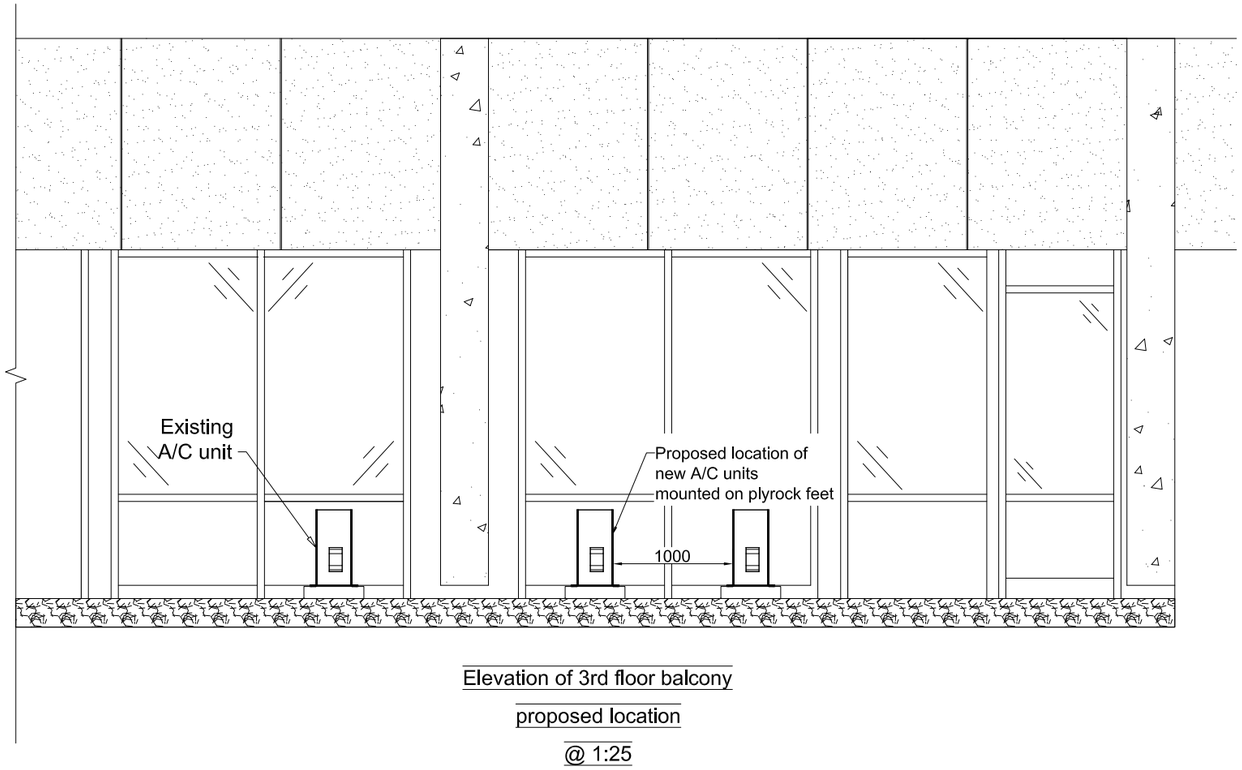


Section of proposed location

@ 1:25



Survey photos of proposed location



Elevation of 3rd floor balcony

proposed location

@ 1:25

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 stabilty.

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:

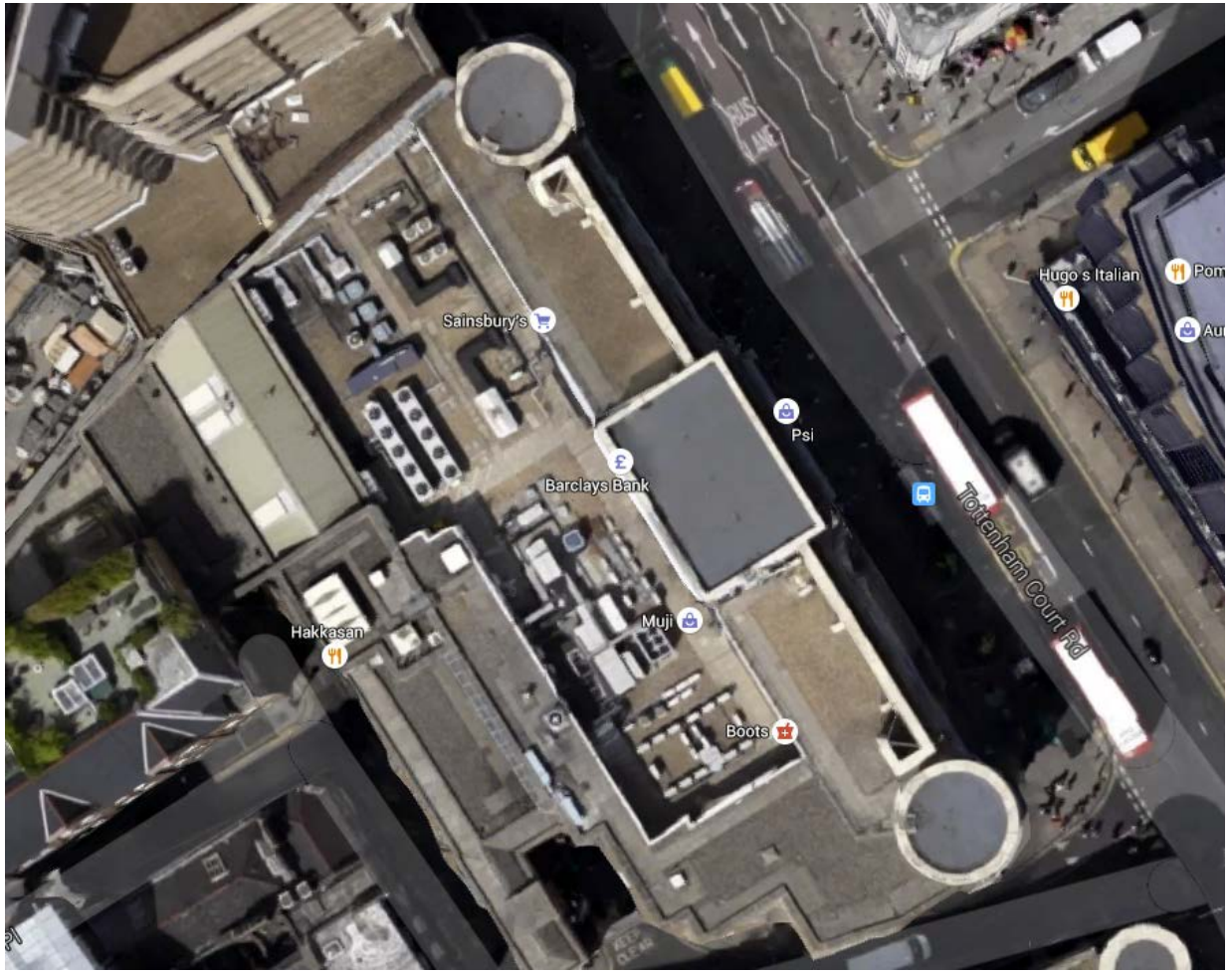
Proposed

Title: 31–02: HVAC Proposed Outdoor Location				
Filename: DGFM–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	

Studio People
Building creative environments

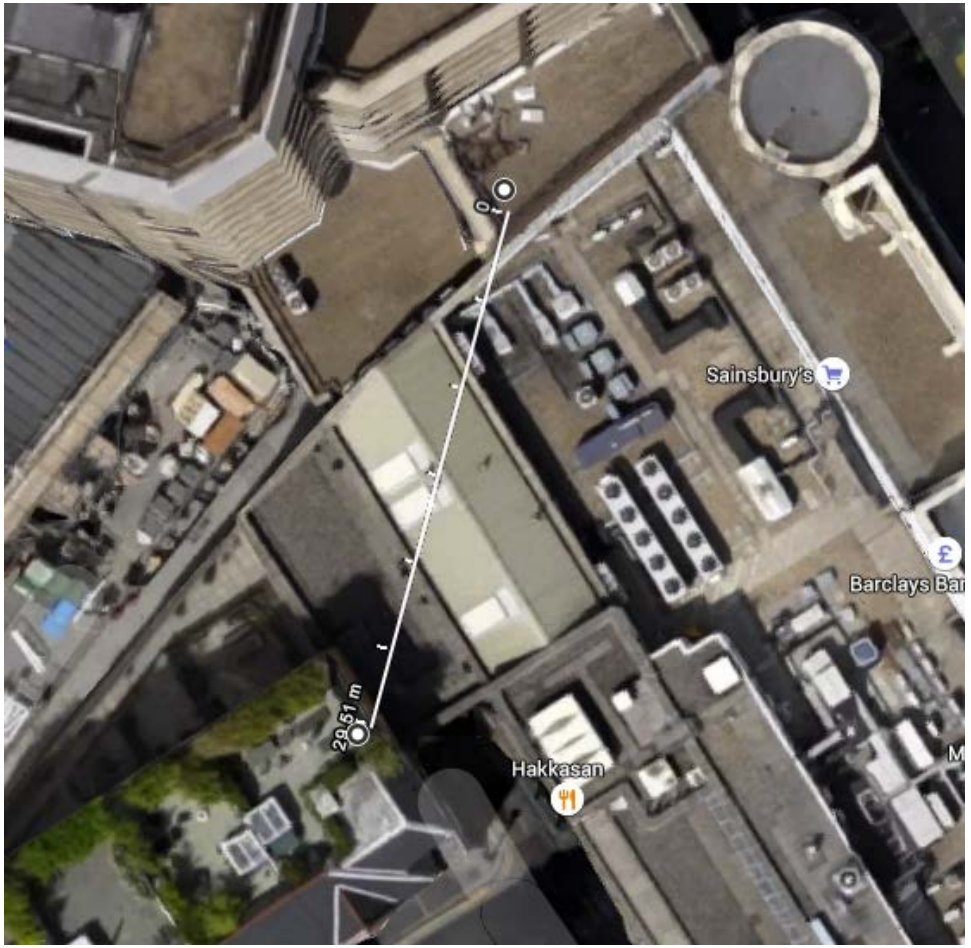
Client: Freemantle Media
Site address:
1 Stephen St
London
W1T 1AL

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

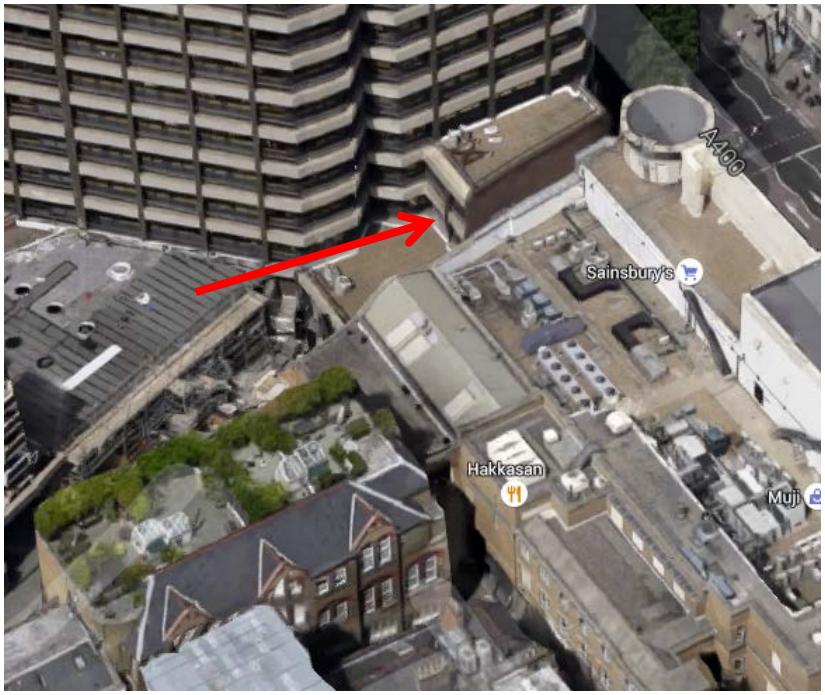
The proposed plant has none of the above characteristics and therefore no correction is to be added.

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:

On Monday 19th October at 12.28pm until 12.43pm, within the operating hours of the new plant, a LAeq (15minutes) and LA90 (15minutes) noise reading was taken.
The 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/Time	LAeq	LA90	Octave Band Centre Frequency (Hz)									
			31.5	63	125	250	500	1k	2k	4k	8k	16k
12:28 – 12.43 (DAYTIME)	64.7	53.4	79.1	79.2	76	73.8	71.5	69.1	67.4	63.6	53.5	39.2

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 52.7dB (A)
LA90 38.4dB (A)

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

Unit Description	**SPL dB(A)**
PUHZ-ZRP35VKA	46
PUHZ-ZRP50VKA	46
PUHZ-ZRP50VKA	46
PUHZ-ZRP71VHA4	48
PUHZ-ZRP71VHA4	48
Total dB(A)	**53.9**

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.

3.5 BS 4142:2014 Noise Assessment:

Results	**Daytime (08:00 – 18:00)**
Calculated Residential Sound Level	LAeq = 27.7 dB
Residual Sound Level	LAeq = 52.7 dB
Background Sound Level	LA90 = 38.4 dB
Specific Sound	LAeq = 27.7 dB
Acoustic Feature Correction (None)	+0dB
Rating Level	LAeq = 27.7 dB
Background Sound Level	LA90 = 38.4 dB
Excess of Rating Over Background Sound Level	-10.7 dB
Assessment Indicates	No Adverse Impact

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 on the 3rd floor balcony is 64.7dB(A), the proposed units have a combined SPL of 53.9dB. This is more than 10dB lower than the measured ambient noise level and will have no effect on the level at nearest noise sensitive receptor.

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