



Hann Tucker Associates

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PROJECT TECHNICAL MEMORANDUM

JOB TITLE : Swan Street, Manchester
REF : HT: 25176/PTM5
DATE : 13 March 2024
FROM : James Hardacre
ISSUED TO : Design Team

RE: CONDITION 13 DISCHARGE

The Swan Street mixed use development has been granted planning permission subject to a number of conditions. Condition 13 relates to noise from fixed building services plant and this Technical Memorandum sets out the desktop study regarding any noise impacts from the proposed plant provided as part of the main contractor scope.

1.0 Condition 13

Planning Condition 13 is as follows:

“Notwithstanding the noise and vibration report prepared by Hann Tucker stamped as received by the City Council, as Local Planning Authority, on the 27 September 2018, prior to the (a) first occupation of the residential element and (b) first use of each commercial units, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval. The approved scheme shall be implemented prior to the first occupation of the residential element and each commercial unit and thereafter retained and maintained in situ.

Reason - To minimise the impact of plant on the occupants of the development pursuant to policies SP1 and DM1 of the Manchester Core Strategy (2012) and saved policy DC26 of the Unitary Development Plan for the City of Manchester (1995).”

2.0 Project Criteria

Based on the planning requirements, typical background noise levels recorded during the Hann Tucker Associates survey and BS8233:2014, we would propose the following plant noise limits to be achieved with plant operating cumulatively at 1m from noise sensitive windows, and within adjacent on site dwellings.



Receptor		BS 4142 Plant Noise Rating Limit
Off site	Daytime (07:00 – 23:00)	48 dBA
	Night time (23:00 – 07:00)	37 dBA

3.0 Proposed Plant

The following statement has been received from the MEP consultant, Brentwood, advising there to be no externally mounted plant items on either tower of the development:

“There are no items of plant that are externally mounted across both towers of the project. It is noted that the Hann Tucker acoustic report does not include for roof plantroom equipment that will generate noise, this will be revised separately to ensure all impacts on the surrounding spaces are included”.

On this basis, we have been advised there is to be 1No. VRF condensing unit in the roof plantroom space of Tower 2, this is to be ducted to the atmosphere. Due to the location of the VRF unit in relation to the external grille, no losses have been taken for the ductwork. Our assessment of this unit to both on-site and off-site receptors is outlined in the following Section.

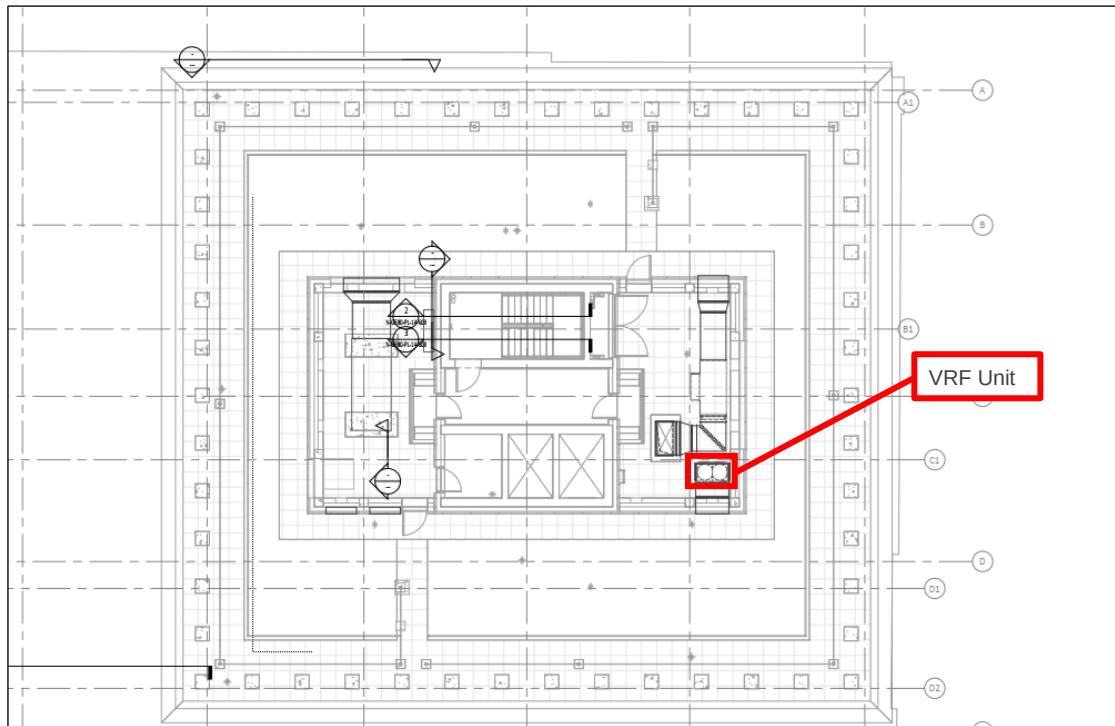
4.0 Plant Noise Assessment

4.1 Proposed Plant

We understand there to be 1No. unit ducted to the external L14 roof area of Tower 2. This is as follows:

Description	Manufacturer	Model	Number	Location
VRF Condenser Unit	Mitsubishi	PURY-EP400YNW-A2	1	L14 Roof

The following plan highlights the location of the unit on Tower 2.



Level 14 Plan indicating VRF Unit Location (c/o Brentwood)

We have been provided with the manufacturer noise data for the above unit, this is presented in the following table:

Unit	Sound Pressure Level (dB) at 1m at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
PURY-EP400TNW-A2	81	70	70	68	62	59	54	49	69

On the basis of the provided drawings the minimum roof build up on Tower 2 is a 225mm concrete slab. In house prediction models indicate this to provide sound reduction indices of approximately:

Sound Reduction Index at Octave Band Centre Frequency (Hz)							
63	125	250	500	1000	2000	4000	8000
43	50	55	58	66	72	77	77

Due to this, we would expect the maximum noise levels within the worst affected apartment below to be as per the below:



The AC Hotel by Marriot is situated opposite the development on Cable Street, the worst affected windows at this receptor are considered to be on the top floor. Due to the building geometry and the plant location there is significant screening present by the development itself. The following table outlines our prediction of the resultant noise level at 1m from the top floor windows of the AC Hotel, accounting for screening from Tower 2 itself.

	Sound Pressure Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
PURY-EP400TNW-A2	81	70	70	68	62	59	54	49	69
Distance Loss (0 – 26m)	-24	-24	-24	-24	-24	-24	-24	-24	
Barrier Correction	-12	-14	-17	-20	-20	-20	-20	-20	
Noise Level at NSR	45	32	29	24	18	15	10	5	27
Criteria									37
Difference									-10

Neighbouring the AC Hotel on Cable Street is the StayCity Aparthotel development. Similarly the worst affected windows are considered to be the top floor, and again significant screening is provided by Tower 2. The following table outlines our prediction of the resultant noise level 1m from these windows accounting for the aforementioned assumptions.

	Sound Pressure Level (dB) at Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1000	2000	4000	8000	
PURY-EP400TNW-A2	81	70	70	68	62	59	54	49	69
Distance Loss (0 – 38m)	-27	-27	-27	-27	-27	-27	-27	-27	
Barrier Correction	-10	-12	-15	-17	-20	-20	-20	-20	
Noise Level at NSR	44	31	28	24	15	12	7	2	26
Criteria									37
Difference									-11

5.0 Conclusion

On the basis of the above the installed external plant should comply with the wording of Condition 13.

Yours sincerely

James Hardacre

for HANN TUCKER ASSOCIATES