



MEMO

TO	Andrew Coote – Westfields Construction Ltd	FROM	Robert Marriner – WSP Acoustics
DATE	31 August 2022	CONFIDENTIALITY	Internal
SUBJECT	EHO queries in relation to reports submitted to discharge planning conditions 30 and 32		

Planning Conditions

Reports have been prepared to discharge planning conditions 30 and 32. For reference, these conditions read as follows.

Planning condition 30:

30) (a) Prior to the first occupation of a phase, details of any externally mounted ancillary plant, equipment and servicing shall be submitted for approval. **(b)** The approved scheme shall be implemented and prior to the first occupation of a phase and post construction survey (including appropriate mitigation measures and timescales for implementation if necessary) shall be submitted for approval in writing by the City Council, as Local Planning Authority. The measures agreed thereafter retained and maintained in situ.

Planning condition 32:

“32

(a) prior to the first occupation of the residential accommodation with a phase hereby approved, the accommodation shall be insulated in accordance with a scheme submitted for approval in writing by the City Council, as Local Planning Authority.

(b) The approved scheme shall be implemented and prior to the first occupation of the residential element within a phase and [sic.] [a] post construction survey (including appropriate mitigation measures and timescales for implementation as necessary) shall be submitted for approval in writing by the City Council, as Local Planning Authority.

The measures agreed thereafter retained and maintained in situ.”

Responses to EHO Queries

The queries received from the environmental health officer (EHO), and our responses to them, are as follows.

Comment Raised:

Condition 30 (external plant)

I have looked through our records and cannot find any documentation for the discharge of part a) other than a data sheet submitted for the condenser unit and the initial Noise Chapter 14 of the ES. Has part a) ever been discharged?

**WSP Response:**

Part (a) of condition 30 requires "details of any externally mounted ancillary plant, equipment and servicing" to be submitted. This does not require acoustic input specifically, and we were informed that this information had already been submitted to MCC by others.

Comment Raised:

I have reviewed the Plant Noise Assessment by WSP submitted with CDN/22/0380 and they have made reference to another report Angel Meadows Stage 4 report 70051606- 409 R01-V1. Do you whether this report has been submitted? Under condition 32 they have submitted Stage 4 70051606-409-R02 NOVEMBER 2021, but this is different to the report referenced. We need the report to establish whether we would accept the background noise levels stated in the Plant Noise Assessment by WSP. It is noted from the Noise Chapter 14 of the ES that sample measurements were taken at some measurement locations to include night-time measurements between the hours of 06:00 hours and 07:00 hours (ML1 and ML3) at the loudest night time period and then other night-time measurements (ML6) have been taken but it is not clear how the overall background noise levels have been derived at the site. Hopefully the missing report will give me the answers.

Response:

The spectral plant noise limits in the RIBA Stage 4 and plant noise assessment reports were derived using the lowest L_{A90} values measured in each octave band across all measurement positions. This is very much a worst case principle, and it has since been discovered that there was a mistake in the workings. As a result we have re-visited the approach and updated the assessment accordingly below.

We have reviewed Table 14-10 of the E.S. which contains the background noise levels, particularly with respect to those measured at night-time as these have the greatest influence on the plant noise assessment. Within that table, ML6, 7 and 8 have measurements of night-time background noise, and show representative night-time levels of 43, 44 and 44 dB L_{A90} respectively.

The E.S. explains that ML6 was screened from many noise sources due to being located between existing buildings, and is therefore not considered representative of upper storeys of plots 2 and 3 which have relatively uninterrupted views over the city.

ML7 and ML8 therefore represent a reasonable worst case, and an excerpt of this table is provided below for ease of reference.

Location	Period	$L_{A90,T}$
ML6	Daytime	53
	Night-time	43
ML7	Daytime	52
	Night-time	44
ML8	Daytime	49
	Night-time	44

The plant noise levels presented in the plant noise assessment report are compared against the ML8 background noise levels as follows:

Calculation step		Plot 2 plant (plot 3 receptor)	Plot 3 plant (plot 2 receptor)
Predicted rating level based on full duty operation, dB $L_{A,T,r}$		33	44
Background noise level, dB L_{A90}	Day	49	49
	Night	44	44
Rating level minus background	Day	-16	-5
	Night	-11	0
BS 4142 estimate of impact	Day	Low impact	Low impact
	Night	Low impact	Low impact

It can be seen from this assessment that the results would be at least 5 dB below the background under all scenarios, except if the plant serving plot 3 operated at full load during the night. In this scenario, the MCC requirement would not be met, although the impact would still be described as 'low' using the BS 4142:2014+A1:2019 assessment methodology. Furthermore, and as discussed in the report, this scenario is extremely unlikely, as the duty of the plant is chiefly controlled by the solar gains which would not occur during the night-time period.

Comment Raised:

They have applied for discharge of part b) under the condition:

Based on the report submitted, (Plant Noise Assessment Report, WSP) it gives the predicted noise levels of the various plant items (detailed in Table 2.2) on the rooftop of Plot 2 and Plot 3 at the NSR's to show that they will achieve our criteria of 5dB below background daytime but not at night for Plot 3 (background noise levels yet to agreed as above). As they assumed all the plant to be running at full load, which they say it wouldn't be a night they would expected a 3-5dB reduction at night and thus meet our criteria.

Response:

It is unclear whether a response is required to this point. We maintain that this is a reasonable and conservative assumption, based on our experience of similar equipment and a review of the heat gain calculation data for the units.

Comment Raised:

As Part b) of the condition states that, ' The verification report shall include post completion testing to confirm the noise criteria has been met' which has not been undertaken in the report, it is just predicted levels given, therefore part b) cannot be discharged for the condenser units. We accept that it would be difficult to measure at the NSR's to show that our criteria will be achieved as the levels predicted would be below the background levels, but we would accept noise measurements taken at the plant sources, in situ and then calculated to the NSR's to demonstrate conformity.

Response:

The cooling plant operates at a variable duty, depending on indoor temperature set points, heat gains, and ambient outside temperatures. It is rarely possible to force this type of plant to operate at full duty, which often results in on-site verification measurements that are significantly lower than the manufacturer's published noise data (which are based on full duty). As such, calculations based on the manufacturer's published noise data are considered to very much represent a worst case, and on-site measurements are expected to produce a more favourable outcome.

This same approach of using manufacturer's published data was taken to discharge this same condition at Plot 5 and was accepted by MCC.

Comment Raised:

Noise level measurements were taken outside the louvered plant room housing the generator, but as this is emergency plant this should only be maintained and serviced during weekday hours of 8am to 6pm.

Response:

No response required.

Comment Raised:*Condition 32 (Acoustic Insulation)*

I have reviewed the Stage 4 70051606-409-R02 NOVEMBER 2021, WSP and baseline noise measurements have been taken and calculated and put into a 3D noise model. Figure 4.3 and Table 4.1 show the façade levels/zones at Plots 2 and 3 with the required glazing given in Table 5.1. The glazing types are given in Section 5.3 of the report. Section 2.3 of the report states that the apartments will be mechanically ventilated but no details are given.

Response:

All apartments have mechanical ventilation with heat recovery (MVHR). The latest MVHR information that we are aware of is from RIBA Stage 3, so would recommend that the contractor provides a data sheet to append to this question.

Comment Raised:

No details have been given for the noise break-in from the operation and ceiling/ floor construction of the commercial areas, but this should be covered under Condition 31 of 124120/JO/2019

No details have been given for the noise impact of the residential gym which I would suggest may fall under this condition.

Response:p

The submitted noise assessment work was prepared for the discharge of conditions 30 and 32, and our proposed methodology was submitted by email to Sue Jones at MCC on 17/01/2022, with no comments received.