

Project: ARK – Project Union – UP4

Date: 21/07/2025

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Issue: P02

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Subject Building 4 – Plant Noise Limits During Normal and Emergency Operation

1 Introduction

This technical note addresses concerns regarding the acoustic limits defined in the new planning conditions imposed by the council's Environmental Health Officer (EHO) for Building 4, Project Union. It critically evaluates the appropriateness and feasibility of the EHO's acoustic planning conditions in the context of Auric's detailed acoustic assessment.

2 Site Description

The site, located northwest of North Hyde Gardens in Hayes, currently comprises a commercial office building and an open car park. It is bounded by a railway line to the north, a river to the southwest, and ongoing construction for Blocks 1-3 to the east, in a predominantly industrial area.

The approximate proposed site extent is shown in red in Figure 1.1 below:

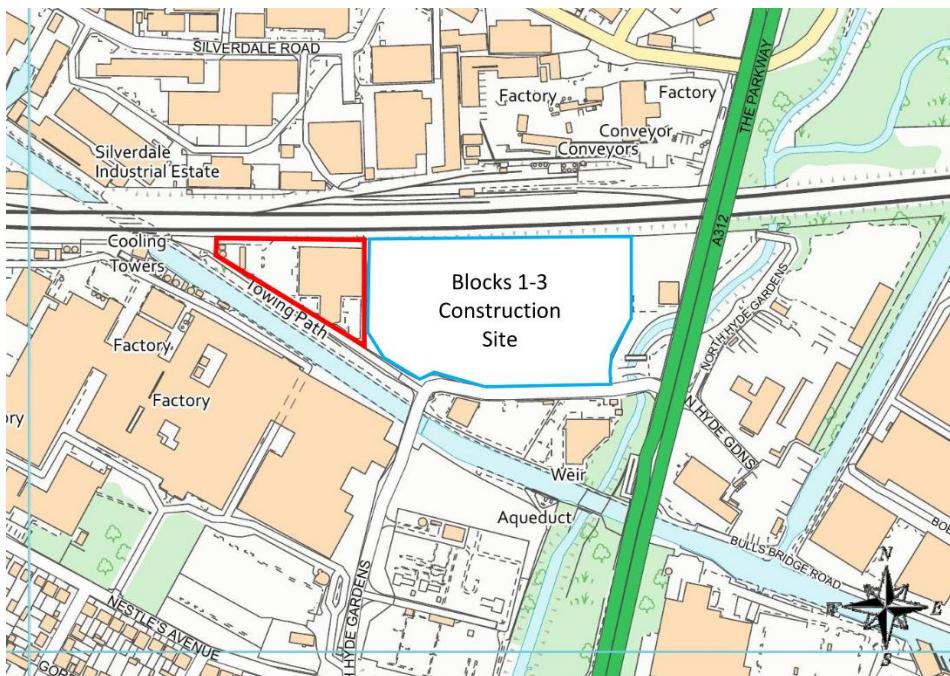


Figure 1

3 Nearest Noise Sensitive Property

The nearest noise-sensitive properties are identified as the residential units located at the northeast corner of the recently completed Hayes Village development, directly southwest of the project site. The proposed site plan for this development is shown in Figure 2.



Figure 2

4 Acoustic Criteria and Measured Background Noise Levels

Auricl conducted an extensive noise survey between 1 November and 5 November 2024, confirming typical measured background noise levels at the nearest noise-sensitive property:

Table 1: Typical Measured Background Noise Levels @ Nearest Noise Sensitive Property

Typical Measured LA90, T Background Noise Level (dB)	
Daytime (07:00 – 23:00 hours, T = 1 hour)	Night-time (23:00 – 07:00 hours, T = 15 min)
50	49

5 Recommended Plant Noise Limits (Auricl Report)

Based on these measurements and the local authority's noise criteria (5 dB below existing background noise levels), Auricl recommended the following noise limits:

Operation Type	Period	Noise Limit (dB)
Normal Operating Plant	Daytime (07:00 – 23:00 hours)	45 dB
	Night-time (23:00 – 07:00 hours)	44 dB (adjusted to 42 dB by logarithmic subtraction)
Emergency Plant	Daytime operation (testing only)	60 dB (adjusted to 58 dB by logarithmic subtraction)

As noted above, above, the nearest noise sensitive properties to the site are the residential properties at the north-eastern corner of the Hayes Village development (located to the south-west of the data centre site).

6 Proposed Plant Noise Emissions

Auricl's acoustic assessment demonstrates that the proposed plant configuration for Block 4 meets the above noise limits:

Parameter	Predicted Noise Level (dB)	Noise Limit (dB)
Normal Operation	42	42
Emergency Operation (Daytime Only)	58	58

Auricl has confirmed compliance with these noise limits, provided the specified noise attenuation measures are implemented.

7 Review of EHO Acoustic Planning Condition

The EHO's new planning condition states:

"For the lifetime of the development hereby permitted, the rating level (LAr) of noise caused by its operation shall not exceed: 40 dB LAr 15 min for any fifteen-minute period between 2300 and 0700, and 50 dB LAr 1 hour for any one-hour period between 0700 and 2300, determined one metre free field external to any window or door of any permanent residential, or equivalently noise sensitive premises, in accordance with BS4142:2014. During an emergency, the rating value limits shall be increased to 55 dB."

7.1 Issues with the EHO Condition

The EHO's limits are problematic and inappropriate for several reasons:

- Inconsistency with Background Noise Levels:** The EHO noise limits do not correlate with the measured background noise levels detailed in AuricI's report, particularly during night-time conditions.

Background Noise Level

	AuricI Measured Data (dB)	Revised Planning Condition (dB)
Background Noise Night	49	40
Background Noise Day	50	50

- Emergency Operation Constraints:** The EHO's emergency plant noise limit (55 dB) is lower than AuricI's calculated and justified limit (58 dB), making the EHO condition overly restrictive and impractical to achieve.
- Ambiguity in Definition:** The term "equivalently noise sensitive premises" is ambiguous and should be removed or clarified explicitly as the Hayes Village residential development, aligning with AuricI's assessment.

8 Conclusion and Recommendations

The acoustic limits proposed by the EHO are not achievable, practical, or reflective of the site-specific noise survey and analysis conducted by Auricl. It is therefore recommended that:

- **Normal Operation Limits:** The council adopts Auricl's recommended plant noise limits (42 dB at night, 45 dB during the day) which are 5dB below the measured background noise level of 50dB are practically achievable and supported by empirical data.
- **Emergency Operation Limits:** A separate condition is created for emergency operations, setting the plant noise limit at 58 dB during daytime hours for routine testing and emergency operation, consistent with Blocks 1-3's previously approved planning conditions and Auricl's detailed noise assessment.
- **Clarification of Sensitive Premises:** Explicitly define "nearest noise-sensitive premises" as the residential properties within Hayes Village.

It is recommended that these adjustments are clearly communicated to the London Borough of Hillingdon to ensure clarity, compliance, and practical enforceability, in line with established criteria and precedents for Blocks 1-3.

8.1 Proposed Planning Conditions

Condition 1 – Noise Limits for Normal Operation:

For the lifetime of the development hereby permitted, the rating level (LAr) of noise emitted from the operation of all fixed plant and machinery shall not exceed:

- 45 dB LAr 1 hour between 0700 and 2300 hours (daytime); and
- 42 dB LAr 15 minutes between 2300 and 0700 hours (night-time),

when measured or calculated at 1 metre from the façade of the nearest residential premises at Hayes Village, in accordance with BS 4142:2014 (as amended).

Condition 2 – Noise Limits for Emergency Plant Operation and Testing:

The routine testing of equipment designed to operate only in emergency conditions shall take place only on normal working days (Monday to Friday) between 0800 and 2000 hours, unless otherwise agreed in writing by the local planning authority. During both routine testing and actual emergency operation, the rating level (LAr) shall not exceed 58 dB LAr 1 hour at 1 metre from the façade of the nearest residential premises at Hayes Village, in accordance with BS 4142:2014 (as amended).