

ACOUSTIC TECHNICAL NOTE



Reference:	8231.ATN03.PlantCommiss.1
Revision:	1
To:	Stephen Pargiter (Barratt London)
From:	Alex J Wyatt (RBA Acoustics)
Date:	04 December 2020
Project:	Former Nestle Factory, Nestle Avenue, Hayes
Subject:	Planning Condition 25 Proposed Plant Noise Commissioning Methodology

This Acoustic Technical Note is prepared on behalf of Barratt London to address Planning Condition 25 of the above development in order to achieve a partial discharge for each Block as the build-program develops. The condition relates to noise commissioning of the installed plant on site to prove compliance with the project plant noise criteria

Planning Condition 25 states as follows;

The rating level of noise emitted from the plant and/or machinery hereby approved shall be at least 5 dB below the existing background noise level. The noise levels shall be determined at the nearest residential property. The measurements and assessment shall be made in accordance with British Standard 4142:2014. A post installation noise assessment shall be carried out where required to confirm compliance with the noise criteria and additional steps to mitigate noise shall be taken, as necessary. Approved details shall be implemented prior to occupation of the development and thereafter be permanently retained.

RBA Acoustics issued our Energy Centre Acoustic Report titled 8231.RP05.ECA.1.28102019.CLB. In this report were the results of analyses and assessments of the proposed plant at the development site to ensure compliance with criteria based upon achieving -5dB below the measured background noise levels ascertained at the planning stage and as detailed in our Acoustic Assessment Report titled 8231.RP01.AAR.3.17102019.CLB (3rd revision, due to change to trickle ventilators in lieu of MVHR). The relevant criteria are repeated below for ease of reference;

2.3 Atmospheric Plant Noise Criteria - Summary

Based on our survey data (RBA Acoustics report 8231.RP01.AAR.0 dated 30 April 2018) and the above Sections 2.1-2.2, the following plant noise emission limits apply at the nearest noise sensitive receptors:

(a) Development and non-development windows to the south and east of site

Emergency plant items (testing between 09:00 – 17:00 hours)	65dBA
Daytime plant operation (07:00 – 23:00 hours)	50dBA
Night-time plant operation (23:00 – 07:00 hours)	47dBA

(b) Development and non-development windows to the west of site

Emergency plant items (testing between 09:00 – 17:00 hours)	66dBA
Daytime plant operation (07:00 – 23:00 hours)	51dBA
Night-time plant operation (23:00 – 07:00 hours)	47dBA

(c) Development and non-development windows to the north of site

Emergency plant items (testing between 09:00 – 17:00 hours)	64dBA
Daytime plant operation (07:00 – 23:00 hours)	49dBA
Night-time plant operation (23:00 – 07:00 hours)	47dBA

(d) Development windows facing the centre of site

Emergency plant items (testing between 09:00 – 17:00 hours)	63dBA
Daytime plant operation (07:00 – 23:00 hours)	48dBA
Night-time plant operation (23:00 – 07:00 hours)	43dBA

These limits apply to the cumulative effect of all plant as measured at the nearest neighbouring noise-sensitive façade.

Please note that the noise limits detailed in (b) are relevant to the future nearest noise-sensitive receptors to the proposed Block D energy centre, i.e. based upon data from Measurement Position 2, as per the attached Figure 1.

The majority of plant is installed within the Energy Centre that is situated in Block D, so most of the commissioning will take place once this is operational, which is due soon. So, the levels in paragraph (b) of Section 2.3 of the above would be the most relevant, namely the 24-7 criterion of 47dBA.

Section 2.4 of the ECA report did in fact draw attention to the requirement for commissioning of plant noise at completion.

Three main receptors were identified – see Sections 5.1 & 5.2 of the ECA Report – as the immediate adjacencies to the noise 'sources' of the proposed plant installation, as follows;

Nearest NSR to Energy Centre ventilation openings:

NSR 1: First floor level windows belonging to plot 505, ~10m east from energy centre supply louvre location (master bedroom)

NSR 2: Second floor level windows belonging to plot 514, ~1m above CHP fans exhaust discharge location (living room/kitchen) and ~3m east from energy centre exhaust louvre location (master bedroom)

The nearest NSR to the roof-level boiler and CHP flue terminations:

NSR 3: Ninth floor level windows belonging to plot 576, ~5m from nearest flue discharge location (living room/kitchen)

When commissioning plant noise levels, measurements are made at 1m outside of the nearest window. Levels are taken both with the plant in operation and with all the plant turned off. When designing to -5dB below background, this results in up to a 1dB increase in the background level, i.e. there should be no more than 1dB difference in the two measured values (on and off). This is the proposed methodology for general, 24-7 plant operations. Subjective listening tests will also be undertaken simultaneously, and comments made in the report, to give further confidence in the resultant noise levels. When commissioning the flues specifically, a limit of 60dBA @ 1m from each termination was stated in our ECA report, and therefore direct, near-field measurements of the flues will be undertaken and assessed against this limit.

A similar methodology will be utilised to assess any other plant at the development site on other Blocks, which we currently understand is generally limited to emergency smoke extract fan systems, at the time of completion of each Block.

Similarly, as specifically requested by the Local Authority, a similar methodology will be adopted to assess the noise emissions from any operational plant that is installed on the Segro distribution centre site. This would namely be at the façade of the nearest adjoining blocks, those being Blocks F1, F2, F3 and G. Measurements will be undertaken at 1m external from the façades of these blocks with noise levels stated in a report. In addition, levels will be measured along the western boundary of the site to assess any impact from existing mechanical services on the Squirrels Trading Estate.