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Prepared By: Thomas Leach
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Unit 11, Brunel Court, Gadbrook Park, CW9 7LP
tel 01565 632535
email info@solacoustics.co.uk
web www.solacoustics.co.uk

Technical Response 001

We have reviewed the Council's Statement of Case with regards to the proposed development in Epping and specifically paragraphs 70 – 72 which relate to loss of amenity within external spaces due to noise.

Paragraph 71 of the SoC states that:

'...the overall layout of the site does not appear to be working favourably to reduce noise and air impact for residents of Blocks A and B, especially with a number of bedrooms and living rooms, with openable windows and balconies, facing onto the Underground line.'

As set out in the acoustic report (P1812-REP01-REV C-TSL) the development is capable of achieving suitable internal ambient noise levels in accordance with *BS8233:2014* through the use of appropriate acoustic and non-acoustic glazing which has been calculated in accordance with *BS12354-3:2017* and specified as required per façade. Whilst open windows are part of the design intent, background ventilation in accordance with Approved Document F to the Building Regulations is provided through the use of either Mechanical Ventilation Heat Recovery or acoustic trickle vents, as specified in the report, which will suitably control noise ingress.

The provision of opening windows has been considered as part of the acoustic design of the scheme, and as detailed in Section 2.22 of *ProPG: Planning and Noise 2017*¹:

'Using fixed unopenable glazing for sound insulation purposes is generally unsatisfactory and should be avoided; occupants generally prefer the ability to have control over the internal environment using openable windows, even if the acoustic conditions would be considered unsatisfactory when open.'

It should be noted that in accordance with Figure 1 of ProPG that the development site clearly falls into the Low Noise Risk category, as such *"the site is likely to be acceptable from a noise perspective..."*.

Based on the information above it is considered that suitable internal acoustic conditions can be achieved which addresses the Council's concerns whilst still providing user openable windows as part of the good acoustic design of the scheme.

Paragraph 72 of the SoC states that:

'Block B includes flats which face the railway line. The Noise Assessment submitted stipulates that whilst balconies used for drying washing or pot plants only are not required to meet the standards contained within BS8233:14, however balconies which are suitable for sitting or relaxation should achieve levels of 55dB (L_{Aeq, T}) or less. It is likely that the balconies along the western elevation within Block B (proposed as affordable housing) will have a lower standard of amenity in terms of noise levels than that required by BS8233:14.'

¹ ProPG: Planning and Noise is a joint initiative from the Association of Noise Consultants, the Institute of Acoustics, and the Chartered Institute of Environmental Health to provide a guidance framework for assessing noise impact from transportation noise sources on new residential development within the planning system in England. ProPG is considered to form current best practice guidance.

Section 7.7.3.2 of *BS8223:2014* as referenced in the paragraph above states (emphasis added) with regard to suitable external noise levels within multi-residential development such as Block B that:

'Other locations, such as balconies, roof gardens and terraces, are also important in residential buildings where normal external amenity space might be limited or not available, i.e. in flats, apartment blocks, etc. In these locations, specification of noise limits is not necessarily appropriate. Small balconies may be included for uses such as drying washing or growing pot plants, and noise limits should not be necessary for these uses. However, the general guidance on noise in amenity space is still appropriate for larger balconies, roof gardens and terraces, which might be intended to be used for relaxation.'

No definition of small or large balconies is provided with *BS8233:2014* other than small balconies are suitable for drying washing.

Section 4.10 Private Open Space of the *Mayor of London interim London Housing Design Guide 2010*, gives guidance on minimum balcony sizes and thus small balconies and states (our emphasis) that:

'Private open space standards have been established in the same way as internal space standards, by considering the space required for furniture, access and activities and in relation to the number of occupants. A minimum of 5 sq m of private outdoor space is required for all 2 person dwellings and an extra 1 sq m should be provided for each additional occupant. The required minimum width and minimum depth for all balconies and other private external spaces is 1500mm. These minimum areas and dimensions provide sufficient space for either a meal around a small table, clothes drying, or for a family to sit outside with visitors.'

The proposed Block B balconies are the minimum 5 sq m with a depth of 1500mm, these are therefore considered to comply with the definition of a small balcony presented in *BS8233:2014*, and as such noise limits would not be appropriate.

As part of the design of the scheme, Block B forms a barrier block which provides significant screening to the rest of the development including the proposed podium garden. Guidance provided in Element 3 – External Amenity Area Noise Assessment of ProPG states (our emphasis) that:

'3(iv) Whether or not external amenity spaces are an intrinsic part of the overall design, consideration of the need to provide access to a quiet or relatively quiet external amenity space forms part of a good acoustic design process.'

3(v) Where, despite following a good acoustic design process, significant adverse noise impacts remain on any private external amenity space (e.g. garden or balcony) then that impact may be partially off-set if the residents are provided, through the design of the development or the planning process, with access to:

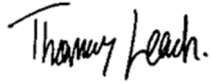
- *a relatively quiet facade (containing openable windows to habitable rooms) or a relatively quiet externally ventilated space (i.e. an enclosed balcony) as*
- *part of their dwelling; and/or*
- *a relatively quiet alternative or additional external amenity space for sole use by a household, (e.g. a garden, roof garden or large open balcony in a different, protected, location); and/or*
- *a relatively quiet, protected, nearby, external amenity space for sole use by a limited group of residents as part of the amenity of their dwellings; and/or*
- *a relatively quiet, protected, publicly accessible, external amenity space (e.g. a public park or a local green space designated because of its tranquillity) that is nearby (e.g. within a 5 minutes walking distance). The local planning authority could link such provision to the definition and management of Quiet Areas under the Environmental Noise Regulations.'*

Therefore, it is further considered that any potential adverse impact to residential small balconies will be suitably mitigated by access to nearby external amenity areas.

Based on the evidence above it is considered that the proposed balconies meet current guidance and would be suitable for the intended use.

Considering the noise levels incident on the façade and balconies of Block B in accordance with the prediction method in *BS12354-3:2017* Annex C, it is considered that should the Council impose the above noise limit of 55dB $L_{Aeq,T}$, the noise level could be suitably mitigated to comply during the detailed design stage though the use of an acoustically absorptive soffit above each balcony. This should therefore not provide a material concern during the planning phase.

For and on behalf of Sol Acoustics Limited

A handwritten signature in black ink that reads "Thomas Leach". The signature is written in a cursive, slightly slanted style.

Thomas Leach
Associate Director