APPENDIX F – Noise

SYNTEGRA CONSULTING

24th September 2021

Our Ref: 19-6526 – Victoria Quarter, New Barnet – TN2

Syntegra Consulting's Response to Objector's Technical Note

This Technical Note has been produced to provide a response to the noise aspects contained in the objections submitted by the "Save New Barnet" group (dated August 2021). The objection relates to the proposed residential development at Victoria Quarter, New Barnet (planning application reference 21/3676/FUL). The following specific points are made in relation to Noise and Acoustics:

"Save New Barnet" Comments	Syntegra's Response
6.3. Private Amenity Space *In addition, the calculation of Private Amenity Space includes balconies in blocks E, F1, F2, F3, F4, G, B1, C1, D1, and A. According to the applicant's noise report, all of these blocks will be affected by high levels of noise such that the windows will be non opening to reduce noise intrusion into the flat. This is also confirmed in the applicant's energy report paragraph 7.5.* *The London Housing Design and Quality Standards states that "Private amenity space for each dwelling should be usable, and have a balance of openness and protection appropriate for its outlook and orientation.* ***Private outside space should not be located where it will be exposed to high levels of noise*** *or air pollution".* *As such, the statement of private amenity space should be recalculated to exclude these balconies. We would note that we did suggest an alternative scheme which would have addressed these problems but this was ignored by the applicant.*	The objector has used the mitigation measures suggested to control internal noise in order to demonstrate that noise levels in external amenity areas may be unacceptable. The objector's suggestion is somewhat misleading as the mitigation measures to control internal noise are based on three different noise criteria (daytime L_{Aeq}, night-time L_{Aeq} and night-time L_{Amax}) whereas external amenity area noise levels are judged only against daytime L_{Aeq} criteria. The objector appears to have missed, or ignored, Section 7.3 of Syntegra's Noise Report (ref 19-6526 rev. E dated 6th August 2021) which specifically addresses external noise levels stating: *"The site layout in Figure 2.2 above indicates communal amenity areas in the middle of Block H, Block J, Block A & the B Blocks, Blocks B1 & B2, Blocks C1 & C2, Blocks D1 & D2 and Blocks F1 & E. Additionally, all flats will have access to a small private balcony or terrace area.* *The noise levels at each façade have been predicted within the SoundPLAN noise model and are reproduced in Table 5.2. It is noted that all balconies are also likely to benefit from a small amount of shielding from the balustrade, approximately 5 dB, assuming a solid balustrade. Accordingly, the vast majority of terrace areas and balconies would achieve the higher guideline criterion set out in the ProPG of 55 dB $L_{Aeq,16hr}$, and many are likely to achieve the lower guideline criterion set out in the ProPG (50 dB $L_{Aeq,16hr}$). The balconies that would not achieve the guideline criteria are those with a line of sight to Victoria Road."* The section carries on and demonstrates that all communal amenity areas provided will achieve the identified criteria. Having a small number of balconies above the criteria, along with relatively quiet communal amenity areas is accepted practice in terms of national policy guidance (ref: para 11 of the Planning Practice Guidance on Noise https://www.gov.uk/guidance/noise--2) and nationally recognised good practice guidance documents and British Standards (notably the ProPG and BS 8233:2014, as referred to in Syntegra's report).

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7. Noise Report **7.1. Introduction** We have reviewed the amended noise report submitted on 6th August 2021. We note that the revised noise reading indicated the noise from the railway line is higher than stated in the original report submitted on 5th July. However, it does not take into account the fact that the first set of readings were taken in January, when the leaf cover of trees and shrubs would have been at their minimum, while the second reading taken in August 2021 when the trees and shrubs were in full leaf, reducing sound transmission. We have requested details from Network Rail of any track maintenance taking place during the measurement period which may have slowed line speeds. Critically, the embankment is not the property of the applicant and, as such, there is no guarantee that the trees will remain in the future, especially if Network Rail decide that leaves on the lines are causing problems and the trees are removed.	The objectors appear to be under the impression that a small stand of trees in foliage will significantly reduce noise levels. A very thick stand of very dense foliage can reduce noise levels by approximately 3 dB. The thin covering of foliage between the railway line and the site is likely to reduce noise levels by no more than 1 dB, and more likely less. Syntegra did review public notifications of works on the railway line prior to attending site, and no available sources on the internet indicated that works would be occurring in the vicinity of the site during the measurements. Most works are planned in advance and public notifications accessible via the internet. The measured noise levels also did not indicate that trains were running abnormally based on Syntegra's experience at similar sites. The increase in noise levels between the two measurement periods was due to the difference in height between the measurement positions and therefore the influence of ground attenuation from the embankment. This effect was taken into account during the assessment procedure through noise modelling procedures and did not significantly affect the noise mitigation recommendations.
7.2 Noise Intrusion We would note that the approved methodology for measuring train noise DoT CRN 1997 states that measurement should be taken 1 metre and 4 metres above track level.	The Calculation of Railway Noise (CRN) 1995 (note: last updated in 1996 to include high speed trains but continued to be referred to as 1995), is an approved *calculation* procedure. A measurement procedure is included for those instances where calculation is not appropriate. It is not, as stated, the "approved methodology for measuring train noise". Syntegra cannot see the reference to measuring 1 metre and 4 metres above track level referred to by the objector within the CRN measurement section. The pertinent British Standard for the measurement procedure is defined in *BS 7445-2, 1991 Edition, June 28, 1991 - Description and Measurement of Environmental Noise Part 2: Guide to the Acquisition of Data Pertinent to Land Use.*

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Nevertheless, the conclusion of the noise report is that the flats in blocks facing the railway line will be so affected by noise that the windows should remain closed. This is reinforced in the Energy report which states that windows **cannot** be opened for purge ventilation.	Please note that there appears to be confusion here between the different uses of the term "purge ventilation". In Syntegra's Noise Report (ref 19-6526 rev. E dated 6th August 2021), purge ventilation references are for the purposes of the Building Regulations Approved Document F: Ventilation (ADF). Purge ventilation is defined in ADF as: *"Purge ventilation is manually controlled ventilation of rooms or spaces at a relatively high rate to rapidly dilute pollutants and/or water vapour. Purge ventilation may be provided by natural means e.g. an openable window) or by mechanical means (e.g. a fan)."* This specifically does not include overheating, which is outside of the scope of the Approved Document. It is noted that this definition does not appear in the Syntegra report, which is an omission which will be rectified in the future. There are no acoustic standards for this type of purge ventilation as it for a short amount of time, hence openable windows being acceptable. Within the energy report references to purge ventilation would be in respect of the mitigation of overheating, which is an entirely different matter in terms of acoustics. This has not been addressed in Syntegra's noise report as the issue often falls outside of planning to be dealt with during the detailed design stage, post planning, and therefore is omitted from the planning stage report for clarity. Separate advice has been provided by Syntegra to the Energy assessors to influence the overheating strategy in terms of acoustics at this early stage, which is where the recommendation for a mitigation strategy that does not involve opening windows to certain façades/windows was provided. This is similar to the recommendations in terms of primary (background) ventilation and does not imply that windows should be sealed (non-openable). It is worth stressing that the scheme is proposing that the windows are openable, but due to the noise constraints we are putting in the infrastructure so that they aren't required to open for ventilation purposes. Opening them becomes a choice and not a necessity. This balanced approach is normally preferred by residents.
Considering the height of the embankment and the height of the blocks which face the embankment, taking sound readings at 4.5m-9 metres (which appears to be the height difference between the ground and the top of the embankment) would have given a more realistic perspective of the noise experienced by flats especially in floors 4,5,6 & 7.	The measurements relied upon in relation to the railway line for Syntegra's Noise Report (ref 19-6526 rev. E dated 6th August 2021) were taken at a height of approximately 8m above ground level. The information was then input into the noise model for the site, re-calculating noise levels for each floor. This procedure is explained within Syntegra's report.

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Set out overleaf are the noise standards recommendations in the affected blocks which make it clear the noise levels are too high to allow for opening windows in those flats facing the railway embankment or the Spine Road. In addition, paragraph 7.5 which states: ***"For the units facing the Railway and Victoria Road the acoustic assessments have identified that windows along these elevation must remain closed during day time and night time and therefore cannot be relied upon to provide purge ventilation for mitigating excess heat".***	The objector here is interspersing quotes from the energy report (which is assessing overheating) with Syntegra's noise report, which does not. That quote is therefore irrelevant. It is common and well accepted good practice to provide *an alternative means of ventilation to prevent the need to open windows* in noisier areas, and that this does not necessitate the sealing of windows. This means future residents do not have to open their windows to achieve a good quality internal living environment but can do if they choose to do so. It is noted that this logic is also applied to the mitigation of overheating where required, such that windows can remain shut at all times if required and a sufficient amount of air changes per hour are maintained, both for normal living conditions and during overheating episodes.
7.3 Summary The design of the scheme has created such serious noise issues that hundreds of the flats will be required to have non opening windows. This could have been overcome in all of the blocks, other than those facing Victoria Road, with better design, something the Save New Barnet campaign team shared with the applicant and their architects. As such, this scheme is in breach of London Plan Policy D14.	Syntegra refute this statement in the strongest possible terms. As stated above, it is common and well accepted good practice to provide *an alternative means of ventilation to prevent the need to open windows* in noisier areas and that does not necessitate the sealing of windows. This means future residents do not have to open their windows to achieve a good quality internal living environment but can do if they choose to do so. One of the purposes of the noise assessment is to identify where issues are occurring and to specify the mitigation required, thus highlighting the noisier areas of the site. In a more general sense, if development was only approved where windows could remain open for the purposes of primary (background) ventilation then this would necessitate building on greenfield sites or away from existing infrastructure only, rendering development in urban areas infeasible in nearly all cases. Current planning guidance and policy is focussed on the means by which development might be rendered feasible and sustainable by protecting residents appropriately in settings with higher noise levels. Any alternative design would experience the same noise levels at those façades and the same mitigation measures would be required in a similar manner. Finally, we stress again that we have not recommended sealed windows.

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Professional Statement:

David Yates is a full member of the Institute of Acoustics (MIOA) and has over ten years' experience in acoustic consultancy. David has particular expertise in environmental noise providing acoustic consultancy for residential and mixed use planning applications, plant noise and vibration, construction noise and the design of acoustic, noise and vibration control. David is also experienced in providing sound insulation testing and design advice. David is familiar with the application of all relevant standards associated with his work, including but not limited to, BS 4142, BS 8233, BS 7445, BS 6472, BS 5228, BS 140 series, BS 16283 series and BS 717 series. David manages the acoustic department and is responsible for maintaining Syntegra's ANC membership.