

27 November 2020

Application: 2020/4336/P

## 81, Belsize Park Gardens

### Review and Commentary on the Noise Impact Assessment submitted in support of Application 2020/4336/P

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#### 1 Introduction

- 1.1 Scotch Partners LLP have been appointed by the Lancaster Stables residents and the Belsize Park Gardens West Group to review and comment on the assessment and recommendations within the *Noise Impact Assessment* RP01-20139 revision 2, dated 25 September 2020 prepared by Cass Allen Associates Ltd. in support of the proposed creation of the new Day Nursery.
- 1.2 This review and commentary is intended to inform the residents about the likely noise impact of the proposals and the robustness of the noise assessments being presented in support of the application.
- 1.3 The review presented here supersedes an earlier review undertaken on the original *Noise Impact Assessment* RP01-20139, dated 21 May 2020, which was submitted as part of an earlier application (2020/0929/P) for a scheme which has now been withdrawn.

#### 2. Review

- 2.1 The Noise Impact Assessment has been reviewed and issues raised using the same numbering as in the report.
  - 3.1 None of the national planning policy sets down specific objective noise limits to noise emission, however Appendix 3 of the Camden Local Plan does set limits for noise emission from commercial and industrial noise sources and entertainment noise.
  - 4.1 The thresholds advised here relate to noise intrusion into **new** noise sensitive residential development proposed in areas of existing noise. They do not apply specifically to noise intrusion into **existing** properties that may be set within a quieter environment and exposed to new noise sources. Adopting them for that purpose would need justification. It has also been assumed that the noise from children is anonymous in nature which many may judge not to be the case.
  - 4.5 The source of the noise level data used as representative of the noise from the children playing is not stated. It is unclear what the age of the children measured was, or the numbers of children or the environment in which they were playing. These factors can all be expected to influence the assumed noise level.
  - 4.6 The noise from the children has only been described using the  $L_{Aeq}$  index over an unspecified time period. Maximum noise levels from children may be as important as these energy-averaged levels.
  - 4.7 The predicted noise level has been compared with thresholds for noise intrusion into **new** noise sensitive residential development proposed in areas of existing noise. They are not specifically thresholds for noise intrusion into **existing** properties that may be set within a quieter environment and exposed to new noise sources, as is the case here.

- 4.8 Noise control measures are suggested for reducing noise emission from the secret garden by 10dB. The form of these treatments and their effectiveness is unclear. They will need to be weather-proof, “child-proof” as well as aesthetically acceptable.
- 4.10 Again, the predicted noise level has been compared with thresholds for noise intrusion into new noise sensitive residential development proposed in areas of existing noise. They are not specifically thresholds for noise intrusion into **existing** properties that may be set within a quieter environment and exposed to new noise sources
- 4.15 This paragraph appears out of context and is assumed to be included here in error.
- 4.17 The “typical lowest background noise level” measured during the survey during the operating times of the nursery has been established. This has assumed that plant will not operate outside these hours for example to preheat, precool, frost protect, or to purge ventilate the building prior to opening in a morning.
- 4.18 The noise level data provided for the plant in Appendix 3 of the report is for new plant measured under idealised laboratory conditions. In practice, old plant which has not operated for some time and is located in an external environment, can be expected to be noisier. Some of the plant cannot be identified and estimates of their noise emission have been used.
- 4.21 Reference is made to corrections to account for tonality and impulsivity in order to achieve a rating level. A detailed assessment would also need to consider the impact of intermittency and any other acoustic character that the plant may exhibit, not just tonality or impulsivity. Corrections for these may increase the rating level of the plant noise.
- 4.23 This result shows the plant noise is some 10-15dB above Camden Council’s recommended design level advised within the Local Plan.
- 4.24 The report recommends noise mitigation measures are considered but makes no suggestion what improvement might be achieved except that the Council’s design level is still “unlikely to be achieved”.
- The report asserts the new plant plus retained plant will be quieter than when the existing plant last operated. It is unclear how this conclusion has been reached on the basis of the information provided.
- The report suggests the plant will not generally all operate simultaneously, yet the time when this is likely to happen (peak cooling demand during the daytime) is likely to be the very time when residential neighbours will wish to enjoy their terraces.
- The report suggests that noise emission to other detached dwellings to the south will “generally” comply with the Council’s limit. No reasoning or evidence is presented to support this.
- 4.26 The report presumes windows will be closed for the totality of the school day to contain noise from the children. Unless there is some form of control over this, it is to be expected that teachers would want to open windows to introduce fresh air.
- 4.28 There is a presumption that the sound insulation of the separating walls between the former gym and dwellings was adequate. The sound insulation performance of the walls is unknown and their adequacy to control noise from either a gym or nursery must therefore also be unknown.
- 4.30 No suggestion is made as to the airborne or impact sound insulation performance standard that may be suitable between the nursery and the residential accommodation.

4.34 No detail is provided as to how the classroom noise level was modelled or the data used to allow this to be considered a “worst case” assumption.

4.36 The noise from the children has only been described using the  $L_{Aeq}$  index over an unspecified time period. Maximum noise levels from children may be as important and more disturbing than these energy-averaged levels.

Appendix 1 Survey data from continuous noise monitoring over a 6-day period has been provided and the background noise levels used for the assessment appear to have been taken from this data. The survey data shows appreciably lower ambient, background and maximum noise levels on the Friday and Saturday than it does for the Sunday or following weekdays. This seems unusual and not consistent with what might normally be expected in an urban setting when noise levels on Sunday’s are often much lower than any other day of the week.

The report advises that the weather conditions were generally favourable for noise measurements, but where unfavourable the results would have been excluded from the assessments presented. Historical weather data recorded at Savernake Road, 1,100m to the north-east of the site suggests that wind speeds would have been above 5m/s for the majority of the measurement period.

<https://www.wunderground.com/dashboard/pws/ILONDONL9/graph/2020-02-16/2020-02-16/weekly>

It is therefore considered likely that much of the survey data does not represent typical background noise levels at the site, as the measurements would have been influenced by high wind speeds.

### 3. Commentary

- 3.1 The Noise Impact Assessment reviewed above identifies three anticipated noise impacts; noise from children in the secret garden; noise from plant on the roofs; and noise transmission through the separating wall constructions, to the neighbouring dwellings. In all three instances it concludes that these sources of noise can be controlled to acceptable levels.
- 3.2 The report suggests a noise level to which it believes the children’s activity noise within the secret garden can be controlled outside the neighbouring residences and gardens. Other than comparing this with limits to be applied to new residential development, it does not offer a robust assessment of the likely impact on the residential neighbours. It is unclear how the numerical values for the children’s noise were established and so it is not possible to determine how robust the assessment and hence the findings are.
- 3.3 Noise from roof top plant is shown to fail to comply with the Authority’s preferred noise emission limit for building services plant by 10-15dB. At the predicted level, the plant noise could be expected to cause noise disturbance to owners of the adjacent terraces.
- 3.4 The assessment of plant noise has been based on noise data for new plant and does not appear to take account of the effects aging may have on the noise from any retained plant. The identity of some of the plant is unknown and estimates of its noise emission have been undertaken, the results of the predictions are therefore not robust.
- 3.5 The assessment of plant noise has not referred to the methodology from BS 4142 as expected by the Local Authority and highlighted in the Local Plan. Instead a simple comparison of the noise level with the LOAEL and SOAEL criteria has been provided. This is not robust. Not all the acoustic character corrections appear to have been considered or uncertainty in the assessment reviewed, as is required by the BS 4142 methodology. The context of the findings of the assessment have also not been considered.

- 3.6 The assessment has been based on background noise level data from a noise survey at the site which it appears may have been affected by unfavourable weather. It is therefore considered that there is a possibility the underlying background noise level has been over estimated and, at a position on the neighbouring roof terraces, may be somewhat lower than assumed.
- 3.7 The report suggests that the plant noise from the nursery will be quieter than from the former gym. As the gym has been closed for several years and the neighbours have become used to a quieter acoustic environment such comparisons are no longer considered valid. The plant noise from the nursery should be considered in the light of the Authority's current planning guidance if the risk of noise nuisance is to be satisfactorily minimised.
- 3.8 The sound insulation performance of the separating walls between the proposed nursery and dwellings is unknown. Without this information or a good understanding of these constructions, it is unclear what noise impact the nursery will have. No suggestion is made as to what might be considered an appropriate sound insulation performance or level of amenity for the residents and there is a presumption that the separating walls could be readily enhanced.
- 3.9 Although not specifically mentioned in the report, structure borne noise transmission from any operating plant needs to be considered. This transmission of vibration and noise from the plant into the building fabric, which is then reradiated as noise elsewhere, is usually controlled through the use of anti-vibration measures on the equipment. Anti-vibration mounts and pads perish over time and need to be correctly selected to prevent structure borne noise transmission. This is as important as providing the correct levels of airborne noise control and should be addressed.

#### **4. Comparison with previous Noise Impact Assessment**

- 4.1 The latest revision of the Noise Impact Assessment only makes minor changes compared to the original report. These include removing reference to BS 4142 for assessing any of the noise sources; the addition of a brief assessment of noise impact on the rear of the residential properties in Belsize Park Gardens; and renumbering of the respective paragraphs.
- 4.2 It seems strange that reference to BS 4142 has been omitted completely as this is the preferred method of Camden Council for assessing noise from commercial building services plant.
- 4.3 The latest revision also does not address the majority of concerns raised in Scotch Partner's review of the initial Assessment prepared for the previous planning application. These concerns included the use of inappropriate design targets; a lack of robustness in the reported assessment process; and inadequate information to provide reassurance that the residential neighbours will not be disturbed by noise from the new Nursery.

#### **5. Conclusion**

- 5.1 Overall, the report does not provide confidence that the development proposals are sufficiently robust to prevent noise disturbance to the residential neighbours. To provide such confidence it is suggested a more detailed assessment of the noise from the children in the secret garden is required. Plant noise emission should be controlled in line with the Authority's advised design limit of a rating level 10dB below the underlying background noise level. This may require substantial noise control measures not currently considered if existing plant is to be retained. Alternatively, plant may need to be relocated elsewhere away from neighbouring roof terraces. Finally, a full and robust assessment of noise propagation transmission, both airborne and structure borne, through the separating walls between the nursery and dwellings should be provided.

- 5.2 Of particular note is the suggestion that the Council specifically requested compliance with noise thresholds which the Local Plan make clear are applicable to noise sensitive residential development proposed in areas of existing noise. This is not the scenario being considered here which is that of new noise sources being introduced into an existing residential neighbourhood where compliance with the thresholds may be insufficient to prevent noise disturbance.
- 5.3 The Assessment makes reference on a number of occasions to the use Conditions to any planning approval to ensure suitable acoustic amenity is achieved. (Paras. 4.24, 4.30 & 5.7) Such conditions are essential and would need to cover every potential source of noise disturbance, identified in this review. The current level of detail provided on the predicted noise impacts is, however, still considered inadequate to provide comfort that, even with such Conditions, disturbance to the residential neighbours could be avoided.