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From: Carol Reynolds <Carol.Reynolds@arun.gov.uk>

Sent: 03 September 2021 13:16

To: James Stokes [REDACTED] Anita Gardner <Anita.Gardner@arun.gov.uk>

Subject: RE: BoKlok Littlehampton - Revised Acoustic Report, received 18th August 2021.

Dear Mr Stokes,

Thank you for submission of Revised RBA Acoustic Planning Assessment Number 3, Reference 10383.RP01.APR.3, Dated 16 August 2021.

I can report that the document largely meets with Arun Environmental Health approval, however I make the following comments.

Risk Apartments and Houses

- i. I will recommend an additional Planning Condition to be added to require AVO Level 2 Assessment to be carried out by a suitably qualified energy and sustainability consultant in accordance with TM59, in order to assess whether more robust ventilation and acoustic attenuation measures will be required for High Risk flats and Low to Medium Risk houses and apartments
- ii. BoKlok standard mechanical ventilation (MEV) is proposed to homes throughout this site, which implies a lesser standard e.g. based around intermittent, operator-controlled fans to kitchens/bathrooms and as stated, trickle vents through window frames. AVO Level 2 Assessment will better inform the situation, however for Risk flats and houses, it is anticipated that such mechanical means of ventilation will be based around a system of continuous air extraction and acoustically treated trickle ventilators, ideally with heat recovery, (MEV3 or MEV4, Building Regulations, Approved Document F, or equivalent).
- iii. Page 21 and DEFRA guidance. I do not agree with your assertion that an open patio door provides greater acoustic attenuation than an open window. Internal noise levels are therefore indicated to be at or above , 49 dBLAeq,16hr and at increased risk of significant adverse effect from road noise.

Points ii. and iii. can be satisfactorily addressed under the above Planning Condition request, however I would suggest that the applicant makes allowance for such increased provision. A condition will of course apply for post construction validation of acoustic attenuation provided to ensure compliance with all relevant standards/guidance.

Kind regards

Yours sincerely

Carol Reynolds

Carol Reynolds

Senior Environmental Health Officer
Environmental Health Department

T: 01903 737678

E: carol.reynolds@arun.gov.uk



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From: James Stokes

Sent: 18 August 2021 10:55

To: Carol Reynolds <Carol.Reynolds@arun.gov.uk>

Subject: RE: Boklok Littlehampton - Revised Acoustic Report

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Carol

Please find attached Revision 3 of our Acoustic Report for the Land South of Littlehampton Academy.

A summary of the main updates included in the report are given below, detailing each point and providing a comment/response in each case, to demonstrate that it has been considered:

- **Mechanical Extract Ventilation**

Although provided in the previous report, we have made the ventilation strategy clearer to confirm that Mechanical Extract Ventilation (MEV) is proposed. This approach utilises trickle ventilators, however results in higher ventilation rates due to the increased pressure differential generated by extract ventilation in various rooms of the unit.

- **Electrical Substation**

A high-level assessment of substation transformer noise has been included in Section 9.0 of the report. The resulting noise level prediction from the proposed transformer is 15dB below the predicted night-time background noise levels at the nearest receptor and therefore no noise disturbance issues are anticipated.

- **Nursery Noise Survey**

An additional survey of noise from the adjacent nursery has been undertaken over a period of 3 working days. Worst-case noise activity, including noise from the use of the children's cars on the wooden bridge were included in the unattended measured levels, as observed following the installation of the meter. Based on these measured levels, noise level predictions in the nearest gardens and at the nearest proposed facades meet the requirements of BS8233:2014.

- **External Amenity Noise**

Further acoustic modelling has been undertaken to investigate the potential improvements available for the 4no. gardens where external noise levels currently exceed 50dB. Further modelling showed that an increase in height (from 1.8m to 2.4m) would only further reduce noise level by around 2-3dB. As such, given that the increase in height of these fences will have other design implications (e.g. aesthetic/sunlight), it is not deemed that this undesirable design change would warrant the relatively small acoustic improvement of 2-3dB, where resulting noise levels in some gardens would still exceed 50dB. As such, on the basis of this further modelling, it is deemed that the existing design of 1.8m fences is still acoustically suitable.

Hopefully the above demonstrates that your comments have been considered, and where required, further surveys/assessments have been undertaken.

Please let us know if you have any further outstanding comments.

Kind regards



James Stokes

Senior Acoustic Consultant
RBA Acoustics Ltd.



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From: James Stokes

Sent: 28 July 2021 09:42

To: 'Carol Reynolds' <Carol.Reynolds@arun.gov.uk>

Subject: RE: Boklok Littlehampton - Acoustic discussion with EHO

Carol

Thanks for your time on the phone the other day – I think it was a very productive conversation.

I have summarised some of the key points of our discussion below:

- **Mechanical Ventilation** - I highlighted that the proposed ventilation scheme does indeed utilise Mechanical Extract Ventilation (MEV) in conjunction with the proposed trickle ventilators. We will ensure this is made clearer in the revised acoustic report.
- **Future Road Traffic Noise** - We discussed the possibility of future surveying of the Fitzalan Link Road once it is operational. To develop this strategy, we would need to better understand the key dates for the 'opening' of this road so that this could be coordinated with the site design programme. Are you able to provide any more information on this?
- **Nursery Noise Survey** - We will be undertaking an additional noise survey of noise from the adjacent nursery and including a robust assessment of this noise within our revised report. In your previous response you mentioned that you are happy for us to determine suitable target criteria/assessment methodology, in the absence of nursery-specific acoustic guidance, and the suitability of various 'similar' acoustic literature was discussed. We will undertake unattended noise monitoring over a period of 3no. working days, measuring nursery noise levels at the perimeter of the site, as well as taking attended spot measurements of key potentially noisy activities (e.g. children's cars on wooden bridge) to ensure the worst-case noises have been considered.
- **External Amenity Noise** – We clarified that BS8233:2014 states that it is not necessarily appropriate to set noise limits for small balconies. For gardens, the noise levels shown in Figure 5 are shown at a height of 4m and therefore not applicable for garden external amenity assessments of houses; For this, noise levels are shown in Figure 8 at a height of 1.5m (i.e. standing in a garden). We will review the possibility of additional screening to the north-west corner of the site to assess if any additional noise reduction can be achieved to the few houses with noise levels between 50-55dB.
- **Electrical Substation** – We will include a high-level assessment of substation transformer noise in the revised acoustic report, although it was highlighted that, given the large distances, the likelihood of any future noise issues is very minimal.
- **School fencing** – I understood you would ideally want to see solid fencing along the entire school boundary due to some subjective audibility of classroom noise during your recent site survey.

Kind regards

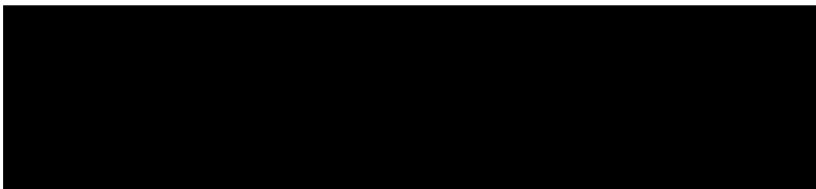


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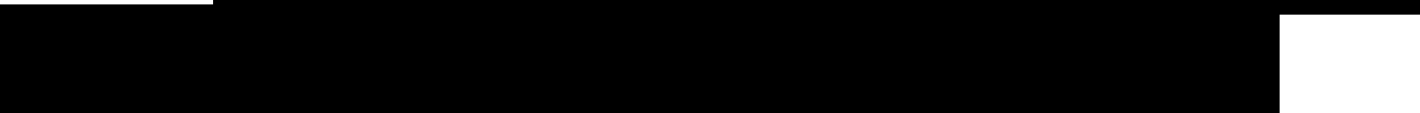


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From: Carol Reynolds <Carol.Reynolds@arun.gov.uk>

Sent: 21 July 2021 08:06

To: James Stokes



Subject: FW: Boklok Littlehampton - Acoustic Comments to EHO response

Dear James/Torben,

Thank you for your email, upon which I make the following comments/observations, noted in 'black.' I also note your statement that recommendations of your report will need to be integrated within the overall (final) design of the new buildings.

Please note that I will be on annual leave for two weeks from 27th July 2021.

Kind regards

Carol

Carol Reynolds

Senior Environmental Health Officer
Environmental Health Department

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E: carol.reynolds@arun.gov.uk



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From: James Stokes [REDACTED]
Sent: 14 July 2021 17:37
To: Carol Reynolds <Carol.Reynolds@arun.gov.uk>

Subject: RE: Boklok Littlehampton - Acoustic Comments to EHO response

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Carol

Thanks for getting back to us on this with your feedback.

To provide responses or further questions to your points, we have provided our comments below in red.

Kind regards

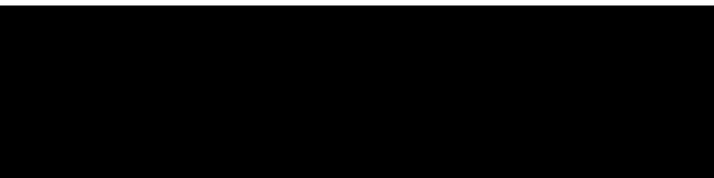


James Stokes

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From: Carol Reynolds <Carol.Reynolds@arun.gov.uk>
Sent: 29 June 2021 20:18
To: Anita Gardner <Anita.Gardner@arun.gov.uk>
Subject: FW: LU/116/21/PL (Rosemead Housing S of Littlehampton Academy)

Environmental Health:
Noise.

An assessment of the acoustic compliance has been submitted in a noise report provided by RBA Acoustics dated 8th March 2021, ref: 10383.RP01.APR.2 Rev2, upon which I make the following comments. Unfortunately, the report is not acceptable to this Department in its current format.

1. Fitzalan Link Road.

The resulting façade incident noise levels at the worst affected apartment units and houses facing the Fitzalan Link Road are stated to be :-

*Apartment units: 59 dB LAeq, 16hr i.e. during daytime hours and 54dB LAeq during the night with an LAfmax of 71dB.

* Houses at north-western corner: 57dB LAeq (daytime) and 52dB LAeq (night-time), with a LAfmax of 69dB.

a. The report considers double glazed units providing an Rw of 34dB with equivalent through frame, acoustically treated trickle ventilators and 'ventilation to Boklok standards,' but this is unspecified. Please provide suitable description of this standard.

Please clarify in which section/page of the report you are referring?

Thank you . Tables 8 & 9 and Page 2 (Open windows and mechanical ventilation)

b. I would support the acoustician's recommendations for a Level 2 AVO Assessment for all High Risk flats and for Low/Medium Risk houses (Table 10) so that the requirement for more robust ventilation and acoustic attenuation measures may be fully assessed. We await this report.

Level 2 AVO assessments are not typically undertaken at Planning stage, as this requires detailed information that is not necessarily available at Planning Stage. As such, we would suggest that this could be suitably covered through a Condition requiring that an AVO Level 2 assessment is undertaken.

Noted

c. Please ensure that the report states the number of times the LAfmax exceeds 60dB during 23:00 to 07:00 hours. I would refer you to the Planning Pro PG which states that the façade level of 60dB LAfmax, should be exceeded no more than 10 – 15 times during the night-time period. Please average such measurements over a period of not greater than 5 minutes.

This data does not exist as the proposed Fitzalan Link Road is not operational. Its therefore also not possible to measure the future maximum noise events.

Noted: In this case and since completion of the apartment block is likely to exceed that time during which the link road will be commissioned, then a condition can be put in place to ensure a suitable noise assessment and that this criteria is given due weight.

NB: Advice from EH Housing, 29th June 2021, may mean reconsideration of balcony doors originally envisaged for the apartment units.

2. Children's Day Nursery

It is considered that any assessment of a children's day nursery should not be over reliant on LAeq (BS8233) compliance, as the LAeq measure is likely to underestimate any adverse impact. Please provide a noise survey which properly describes the noise characteristics of the site and likelihood of potential detriment to the amenity of the new housing development from this activity, rather than a theoretical exercise.

Such a survey/report should provide an account of the hours of outdoor use and annotated time history graphs of the outdoor activity of the children to include dB and one minute LAfmax levels. Please describe the character of the noise. Only when the true impact is presented can the appropriateness of any mitigation be explored.

It is first worth noting the sound of children playing is generally considered to be a pleasant sound, and therefore significantly less likely to give rise to complaints or disturbance when compared to industrial/commercial sources at the same noise level. Furthermore, operating hours were specified in the acoustic report as 08:30-17:30 meaning noise from children will not disturb residents during early morning or evening hours when future residents may be relaxing.

It is acknowledged that the initial noise survey was undertaken during the second Covid-19 lockdown and during a winter period so it was not possible to measure/observe outdoor nursery

usage representative of the worst-case periods. For this reason, a highly onerous (worst-case) desktop assessment was provided in the acoustic report.

If an additional survey is required, can you please provide additional details on what would be deemed 'compliant' on the grounds of noise – For could you please confirm what noise levels are to be targetted for the LAeq and LAfmax parameters; on what basis these criteria have been targetted and where these levels need to be achieved (i.e. garden/façade).

It is clear that the introduction of new housing at the immediate western boundary to a long-established children's day nursery, has the potential to impose restrictions on the business which would not have been necessary were houses not built here. BS8233 guidelines have limited application in this case as these apply to steady noise, such as from roads. However, an LAeq of 54dB two metres from the existing boundary fence, as stated in the acoustic report, is already approaching 55dB, i.e. that level at which serious annoyance of receptors can be anticipated.

I acknowledge difficulty in this case, in that there is no prescribed/agreed method of assessing the noise impact of such businesses, however Arun's experience is that nearby residents certainly do not perceive children's play in day care facilities as pleasant, leading to protracted investigation by this Department and new restrictions on these businesses through the Planning system. Rear gardens of only 11 metres to potentially impacted proposed houses, provide little distance attenuation, although the LAeq experienced inside rooms, through a partly opened window might falsely indicate that the level of noise is 'just' acceptable. Whilst the stated hours of operation of the nursery are useful, residents should expect to be provided with quiet enjoyment of their gardens/houses during day-time hours. The fact that the gardens are east facing and would be shadowed by the properties after noon, suggests a monitoring location of midway into the gardens where your further investigation may indicate required noise mitigation, such the provision of a suitable acoustic barrier to replace the existing fence which has obvious openings in its structure (i*).

You will be aware that I called onsite at Littlehampton Day Nursery, midday, Thursday, 8th and again at 15:00 hours Friday, 9th July 2021. Here the owner and I discussed the possibility of moving the children's play area east to an alternative site within the grounds. However, this would only serve to relocate any potential noise detriment/nuisance to existing houses east of the nursery.

My further onsite observations were that children's play cars emit an obvious rumbling noise, particularly to the tarmacked southern section of the playground and that the sound of these vehicles passing over a wooden bridge joining the north and south sections is particularly audible. I also listened, outside the nursery in the proposed new gardens at a distance of approximately 10 metres from and half-way along, the nursery fence. The above noise, from children's play vehicles, as well as the children's clearly audible speech and even clearer teachers' speech was apparent.

Noise from what appeared to be a television programme, was also clearly audible from an open window at Littlehampton Academy that afternoon (east of the eastern playground), although it was not possible to make out individual words. I note that the section of wooden fencing at the Academy southern boundary (referenced in the acoustic report, page 2 and section 4.2) is not continuous, with sections east and west of this consisting open metal mesh style fencing with little sound reduction capacity (ii*).

*The incomplete nature of these wooden fences, (i) and (ii) as above, means that they should be discounted from the acoustic model at the position of the school car park and eastern playground and class rooms; and possibly nursery playground too.

Please clarify whether it is also intended that the developer would provide a 1.8m solid wood or acoustic fence in these areas.

The fact that I found different sources of noise on consecutive days indicates that any noise measurement carried out in this case should be over a period of not less than 3, weekdays and consistent with the hours of operation. This will also be of benefit now that the nursery is fully operational to give better representation of the actual noise climate. Operation of the nursery, car parks should also be considered. I have already requested that such a report/assessment provides an account of the hours of outdoor use and annotated time history graphs of the outdoor activity of the children.

The *Agent of Change* principle allows a developer to put in place suitable arrangements with an existing business/s to remediate the possibly detrimental effect of imposing a new sensitive receptor/s as in this case. You may consider a new acoustic barrier along the western length of the nursery playground and/or an alternative lower noise surface to replace the not overly large tarmacked play-ground surface and bridge useful in this case.

There being no standard method of assessing the noise impact of children's nurseries, then it is essentially for you to propose a mutually acceptable assessment method to predict the annoyance effect of characteristic noise from this business. Playground shouting tends to be loud, unpredictable and intermittent, occurring in short bursts lasting only a few seconds but recurring repeatedly. You may therefore wish to consider a BS 4142 assessment based around the $L_{A_{f,max}}$ of the children's shouting, corrected for the character of the noise, in which case the objective for noise mitigation should be that the Rating Level is no more than 5dB above the background sound level. You may also wish to have reference to guidelines provided in the case of animal boarding establishments which have similar considerations in respect of noise not traditionally considered to be industrial or commercial. Examples are Northern Ireland IOA Irish Branch Paul McCullough Dog Barking Assessment Methodology (June 2020) <https://youtu.be/U8PLvltCO38>, or Supplementary Planning Guidance – South Holland 1999

3. External Amenity Areas.

I note, figure 8, that daytime noise level predictions for those houses and flats to the north west and west of the site indicate a level between 55 and 60 dB L_{Aeq} .

The report suggests that higher noise levels in external amenity areas should be acceptable since the development site is considered to be an urban area with close proximity to a strategic transport network. I would suggest that this is not a suitable characterisation of the area, which is suburban in nature and only in peripheral proximity to the A259. As such, suitable mitigation should be provided to ensure that the noise level in amenity areas is equivalent to 50 dB L_{Aeq} , the level at which moderate annoyance, rather than 55dB L_{Aeq} where serious annoyance is anticipated.

There are no external amenity areas with noise levels 55-60dB, $L_{Aeq,16hr}$.

Figure 5 does not appear to concur with this statement since that area shown in yellow (north and west of flats and houses) would seem to represent an $L_{Aeq,16hr}$ of greater than 55, but less than 60 dB; whereas Figure 8 indicates a level higher than 55dB L_{Aeq} but lower than 60 dB for flats alone (although the colour key does not seem to match with the noise contours).

Please also note my comments as above, that contrary to paragraph 4.2 of the acoustic report, the existing wooden fences to the school carpark and eastern school grounds; and nursery, are incomplete/inadequate and should be discounted from any acoustic modelling.

The noise will be dominated by the Fitzalan Link Road which is by its very nature part of the strategic transport network – This has also been confirmed by RGP the team's appointed Traffic Consultants.

I accept that the Fitzalain Link road is part of the strategic transport network, but it will not have the same use as for example, the A259 to its immediate north. Your own report (page 4) points out that the nearest existing major road is the A259.

4. Balconies. It is agreed that should only small balconies be provided, then BS 8233 recommendations would not apply. This guidance would however apply where the balconies are used as general amenity space.

Noted

5. Electrical substation.

The acoustic report should include assessment of the proposed electrical substation on this site.

From experience this is unlikely to have any audibility at the nearest units, hence why this has not been assessed to date.

If necessary, this can be included, however due to the fire and ventilation requirements/constraints which are inherent to substation enclosures, no acoustic mitigation will be possible.

Thank you, please include. Any necessary mitigation would therefore need to rely on distance attenuation.

6. Littlehampton Academy Playground.

Specifically, Littlehampton Academy playground immediately to the north of proposed houses and Littlehampton Day Nursery. Thank you, the acoustic report provided is considered sufficient in this case.

Noted

Please see my note, as above, included under Point 2. Children's Day Nursery.

Please add the following Conditions to this application

Noise

1. Noise in habitable rooms.

Prior to the commencement of the development hereby approved, a scheme shall be provided to demonstrate that the internal noise levels within the residential units will conform to the "Indoor ambient noise levels for dwellings" guideline values specified within Table 4 under section 7.7.2 of BS 8233:2014.

Details shall be compiled by a competent acoustician on sound insulation and noise reduction for buildings and shall be submitted to and approved in writing by the Local Planning Authority. The scheme should take into account the correct number of air changes required for noise affected rooms and L_{Amax} as specified here and in the Planning Pro PG. The works specified in the approved scheme shall then be carried out in accordance with the approved details prior to occupation of the premises and be retained thereafter.

Reason: To protect the amenity of local residents in accordance with Policy QE DM1 of the Adopted Arun Local Plan 2011 – 2031

2. Noise in Amenity Spaces.

Prior to the commencement of the development hereby approved, a scheme will be provided to demonstrate that the external noise levels within the curtilage of residential units and amenity areas for the site will conform to the "Design criteria for external noise" upper guideline value of 55 dB L_{Aeq,T} and preferably with the desired L_{Aeq,T} level of 50 dB as specified in section 7.7.3.2 of BS 8233:2014.

Guidance on the noise mitigation works to be provided to ensure noise reduction for the proposed development shall be submitted to and approved in writing by the Local Planning Authority. The work specified in the approved scheme shall then be carried out in accordance with the approved details prior to occupation of the premises and be retained thereafter.

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