

Observations on the letter from Clarke Saunders associates letter/report of 16 July 2013 under reference AS7531.130715.L1

This report has been obtained by concerned local residents and provided as a submission to the task group. Given the technical nature of this submission I have been asked to review and comment upon it.

This appears to be a desk study and I have to assume the author has not visited the site, on the basis that his sample calculations appear to assume flat ground. Nevertheless it is a useful contribution.

Clark Saunders (CSA) criticisms or comments can be summarised as follows with my observations *in italics*:

1. Mach Acoustics have miscalculated the source noise levels by 10 dB, which consequently raises the predicted impact by 10 dB.

CSA assume from the text that the MACH source data is quoted at 5m from source. Very fairly they then note that these levels are “quite a lot higher than measurements undertaken by us (CSA) at several sites”, but then fail to question whether the assumption that the quoted levels are for five metres from the source is correct.

In fact, although not clear from the text MACH acoustics source data is normalised to 1 metre from source and hence is correctly calculated. CSA’s criticism is therefore not justified. I would just add that I had had similar difficulties with the MACH report and had gone back to the authors to clarify the point.

2. CSA suggest that the use of minimum background levels between 08.00 and 2200 hrs for assessing the impact, suggesting that lower levels measured after midnight should be used for assessing the impact, on the basis that, unless the facility is secured, use may continue after 22.00 hrs.

I do not accept this criticism as being justified: The working assumption of use finishing at dusk has been used in other circumstances for sites that are not proposed to be floodlit and, indeed, appears to have been accepted by the same consultancy as recently as February 2013 in its assessment of a proposed facility in Steyning, West Sussex.

3. CSA takes issue with a statement in the MACH report about a statement that “impulsive noise from activity at the skatepark will not be audible over the existing maximum noise level climate at the residential properties.

I agree that the statement is not factually correct. Inaudibility is notoriously difficult to quantify and the statement is clumsy – it would have been accurate to say that “the impulsive noise from activity at the skate park will be lower than existing maximum noise levels at the residential properties”.

4. CSA criticises the baseline data used by Hoare Lea, but in doing so misquote from the report, stating that Hoare Lea have used $Leq = 69$ dBA at 3 metres from the source and $L_{Amax} = 88$ dBA at 3 metres. CSA state that this is lower by some 7 dB than would be expected from their library data.

Observations on the letter from Clarke Saunders associates letter/report of 16 July 2013 under reference AS7531.130715.L1

In point of fact, in their assessment, Hoare Lea have used a single bypass figure of 65.5 dBA and calculated a baseline figure of $L_{eq} = 72.5$ dBA at 3 metres, assuming five riders at any one time, which is 3.5 dB higher than CSA misquote and therefore, I assume some 3.5 dB below their library data. I would add that as MACH, Hoare Lea and CSA have each independently measured skate-park noise at different venues I would expect to see a range of levels found. In order to assist, I have tabulated below source data as provided by each of the consultants, all as sound power levels to allow direct comparison using the methodology of the CSA report:

<i>Sound Power levels calculated from levels provided by each consultant</i>			
	<i>Mach Acoustics</i>	<i>Hoare Lea</i>	<i>Clark Saunders Assocs</i>
<i>$L_{A,eq}$ dB</i>	94	90.5	94
<i>L_{Amax} dB</i>	116	105.5	112

There is a good correlation between the levels obtained by each consultant for the equivalent continuous noise levels and a rather greater spread for the maximum levels. If the project were to proceed to a detailed design I would recommend that the source data obtained by Mach Acoustics be adopted for design purposes.

I do not attach great significance to the fact that Hoare Lea's base data is the lowest quoted. This could be due to measuring on the best surface of all the consultants.

5. After summarising their conclusions, CSA refer to the "landmark case" of Richardson vs Devizes Town Council in order to support their assessment methodology before carrying out a desktop calculation for the nearest property in Sadlers Mead to support their contention that the impact has been underestimated by Mach Acoustics and Hoare Lea.

In point of fact, the case was simply a judgement on private nuisance decided in the County Court. It was decided on the facts and there is no case law resulting from it. CSA rightly say that the assessment criteria used in the case has been widely adopted, and in fact is being used to assess this proposal.

The sample calculations carried out then assume no attenuation due to either screening or propagation over soft ground, ignoring the natural topography of the site and the details of the attenuation proposed by both Mach acoustics and Hoare Lea. I find this approach extremely difficult to justify as an objective assessment and I cannot accept it as a valid conclusion.

Observations on the letter from Clarke Saunders associates letter/report of 16 July 2013 under reference AS7531.130715.L1

In conclusion, in the non-technical summary supplied to assist understanding the reports provided by Mach Acoustics and Hoare Lea we summarised their reports as follows:

Each consultant has worked independently and has concluded that, with appropriate mitigation, the proposed facility would be acceptable in acoustic terms.

The CSA report does not lead me to the view that the conclusions reached by the consultants are invalid.

Graham Steady MCIEH;

PGDip Env Acoustics (South Bank); Dip Mgt (Open).

5 August 2013

Observations on the letter from Clarke Saunders associates letter/report of 16 July 2013 under reference AS7531.130715.L1

Concerns about Background Levels measured by Mach Acoustics in relation to the proposed Skate Park facility in Monkton Park, Chippenham

In order to assess this proposal, background level surveys have been taken at a number of locations representing sensitive receptors around the site on some four different occasions. Concerns have been expressed as to whether these adequately assess the prevailing background levels around the site. The concerns can be summarised as:

1. That the surveys were taken in unsuitable weather conditions, particularly referring to wind and rain data.
2. That the choice of the Dutch Cottage tea rooms does not represent the noise climate for dwellings further down St Mary Street where lower levels might be obtained.

Weather data has been obtained from Lyneham weather station (a Met office station) and more locally from Hardenhuish School, which is more limited in scope, and supplied to the authority.

Mach Acoustics do not report on the weather on each occasion but there is an overall statement that "The weather remained dry, with no wind throughout the duration of the surveys."

Discussion

The background levels for the area are required in order to carry out an assessment in accordance with British Standard 4142: 1997. This method compares the "Rating Level" of the noise under consideration, with the pre-existing background levels, measured as LA,90 dB, which is the level exceeded for 90 percent of the time under consideration. For daytime activity a one hour period is used for the assessment.

The standard states that it is not suitable "for assessing..when the background levels and rating levels are both very low". It goes on to say that background levels below about 30 dB... are considered to be very low".

My starting point with any background level survey is to look at the figures and ask "are they sensible?", by which I mean, "Do they follow a typical daily pattern?" and "Are they what I would anticipate for the area?" In this case, all the readings in the report look robust and consistent with each other. In fact, three separate 24 hour surveys have been taken around the park on three different occasions, and a shorter daytime survey at the Monkton Park office. The surveys show good correlation and in the absence of any evidence to the contrary I would say that they together give a robust picture of the noise climate at properties around the park. It should be noted that Clark Saunders Associates (CSA) did not criticise the accuracy of the background levels obtained.

High winds can affect noise readings either by causing pressure fluctuations at the microphone or by raising levels generally by causing wind noise in trees and around structures. Although the use of a microphone wind shield can help to address the former problem, it is good practice to avoid taking readings when wind speeds exceed 5m/s at the microphone.

Observations on the letter from Clarke Saunders associates letter/report of 16 July 2013 under reference AS7531.130715.L1

Wet weather will also affect noise levels and so should be avoided, though older meters and microphones were prone to damage by water ingress and the avoidance of using meters in any dampness was also related to the avoidance of expensive repair bills.

It is one of the difficulties of unmanned measurements that weather can vary during the survey period without the direct knowledge of the consultant. However, in point of fact, the background levels, which are measured as the level exceeded for 90% of the time, is quite immune to short term fluctuations. To illustrate: in a one hour period, the background level is defined by the quietest 6 minutes (in aggregate) over that period. A noisy event such as an aircraft flyover, a few gusty periods or a few vehicle bypasses will not affect the measurement.

I have considered the weather data from Lyneham, and whether it causes real doubt as to the validity of the background level surveys.

Wind generally increases with height above ground and also with altitude. RAF Lyneham weather station is quoted to be at 145m AOD and the wind speed is measured on a ten metre mast on an open airfield. Work on wind data for power generation shows that the wind at ground level is about half that at 10 metres above the ground.

By contrast, Monkton Park is around 45m AOD and in a river valley.

Looking at the Lyneham wind data for 10/11 May 2012 during the period when one of the the surveys was being undertaken, show a range of hourly average wind speeds of 6-9 metres per second, with gusts of 10 – 14 metres per second in each hour. For comparison, the Hardenhuish data shows average wind speeds for 10 May (24 hour period) of 5.0 metres per second, and for 11 May 2.6 metres per second.

The rainfall data recorded at Hardenhuish records 24 hour precipitation on 0.6mm and 0.8mm for those dates, which is not significant, whilst the Lyneham data shows rainfall in four consecutive hours between 12.00 and 16.00 on 10 May.

I don't consider there is anything to suggest that the background levels are not robust, but I have arranged for some short-term spot checks to be undertaken at representative locations.

Turning to the use of the Dutch tea rooms for the survey to represent dwellings in St Marys Street, I am of the opinion that the levels are sufficiently representative, but the spot checks mentioned above will also consider this aspect.

Graham Steady

6 August 2013