RESPONSE TO A14 C2H
STATEMENT OF OBSERVATIONS

HILTON A14
ENVIRONMENTAL NOISE MITIGATION
DESIGN STUDY

27th August 2015
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INTRODUCTION


Public Servants:

As a government-owned private company, Highways England will expect their representatives and agents to operate as public servants in their dealings with public bodies. As private companies therefore, with regards to the A14, we ourselves, Arup and Jacobs must operate to serve the public interest. This includes being wholly respectful, open-handed and transparent in all dealings with Hilton Parish Council and other public bodies.

Telephone Discussion with Colin Cobbing

Information from Jacobs for the A14 Noise Mitigation Design

On Friday 21st August, I had a telephone discussion with Colin Cobbing of Arup regarding the points raised in A142CH. Prior to this, I raised with Colin our difficulty in obtaining the required technical information from Jacobs for us to carry out a detailed study. On the one hand pressurising time constraints were being placed on ourselves and the Parish Council by Jacobs to respond, on the other hand information necessary for us to respond was not being provided.

We were unable to obtain basic layout CAD drawings, traffic loadings/diurnal profiles and bund designs/heights. We asked if Jacobs would at least be prepared to provide the coordinates of the PDF drawings used in public documents, however these were (surprisingly) also declined. All of this was done/or not done without explanation but with regard to Hilton Parish Council it was not serving the public interest.

Colin acknowledged this difficulty in obtaining information had been the case and added that had Arup been involved all information would have been openly provided. However, Arup have been involved for some time and the information has still not been provided.

Should all the relevant information now be provided, a further report could be produced but this would be at additional cost which Hilton Parish Council can ill-afford.

Noise Mitigation Design Study

Given the lack of information released, we were therefore never able to undertake a full noise impact assessment in line with DMRB. Furthermore that was not our intention or brief. We were not looking to oppose the work carried out by Jacobs in their impact assessment, rather to offer assistance by building upon it with regard to the mitigation design. Initially in our discussion it was apparent that this had not been wholly understood by Colin Cobbing and had thus skewed his assessment of the study work incorrectly.

We carried out, as stated in the title, a noise mitigation design study based on the work provided by Jacobs that is available in the public domain as part of the DCO submission.
Considering Hilton for Noise Mitigation

It is fully acknowledged that Hilton is outside the 600m corridor given in DMRB as an assessment criterion. As such it would normally not be assessed for noise under DMRB. However a bund has been designed by Jacobs into the scheme in front of Hilton which does serve to reduce the noise level in the village. This followed on from a bund being included in the Atkins design previously. Hilton Parish Council has assumed that this was for noise. In fact in past meetings, according to the Council its purpose for noise has been acknowledged by Jacobs with a view to raising its height.

Furthermore a low noise road surface is proposed for the A14 scheme including for the significant section or road in front of Hilton. Current Highways England policy is to use thin wearing surfacing on roads. These surfaces offer improved drainage and some noise attenuation however they are not as durable and require more frequent replacement.

We have therefore carried out our assessment on the assumption that acknowledgement has already been given to Hilton for noise mitigation, both by Atkins historically, then by Jacobs using bunds and low noise road surfaces despite the fact that it falls outside the 600m corridor; In other words to best serve the public interest for Hilton as a result of them voicing their concerns publically. Our approach has been to offer further design enhancements to ensure Hilton benefits sufficiently.

Colin Cobbing denied that any consideration for noise has ever been given to Hilton. He said that the bunds are purely landscaping features and that no discussion has ever taken place with Hilton Parish Council where they have been referred to in the context of noise. He also said that the low noise road surface was just ‘rolled out’ for the whole scheme past Hilton with no consideration to noise for Hilton. To us this does seem rather paradoxical bearing in mind this long stretch of low noise surface in front of Hilton will benefit no-one else but Hilton.

Respectfully I would therefore interpret the position Colin is presenting as being, ‘We have never ever offered any noise mitigation to Hilton so we are not going to start to consider any enhancements to noise mitigation now’.

It is apparent from our study that the inclusion of the Jacobs bunds does make an improvement to the noise level in the village of Hilton, especially for properties in the vicinity of Church End. Increasing the height and length of the bunds improves the noise level further. Any suggestion that the inclusion of bunds on the A14 makes no noise difference to Hilton is incorrect.

All this above provides the backdrop or context to our discussion going forward. In A14C2H Colin had laid out some basic questions which we have addressed below:

HE Questions and Information Requirements

1) Is it accepted that no assessment has been carried out in accordance with the DMRB and does not assess the noise impact relative to baseline noise levels without the scheme and so cannot be relied upon as a robust justification for additional mitigation? If not, why not?

This question is a bit confused, since the assessment method in DMRB is itself not a robust method for detailed noise mitigation design. The Calculation for Road Traffic Noise CRTN does not include for some of the basic parameters for noise barrier calculation such as sound insulation or absorption. It assumes that a concrete barrier is as effective as a sheet of tissue paper. In other words it has no measure of comparing barrier performance apart from basic geometrical effects. This is already acknowledged by Highways England who (we understand) is looking to bring in modifications to the method very soon to take this into account.
As stated above therefore we were not carrying out a noise impact assessment in line with the DMRB, nor were we trying to. We were seeking to offer enhancements to the proposed basic mitigation design.

2) Is it accepted that CRTN is the appropriate calculation method to be used for noise assessments in the UK? If not, why not?

CRTN is the required method specifically when carrying out a noise impact assessment according within DMRB. The confusion arises when it is then used in isolation as the method for noise mitigation design. This is outside its scope of use since it does not include some of the basic calculation parameters for noise mitigation (as stated above). Its sole use therefore cannot be regarded as industrially best practice.

3) Is it accepted that no consideration has been given to the visual and landscape impacts and so cannot be relied upon by itself to justify additional noise mitigation?

We find this question difficult to comprehend. If Colin is referring to the height of the proposed 4m bunds then this would have the joint effect of further reducing the visual impact whilst also mitigating the impact of the noise and would be a positive improvement.

If Colin is referring to his view that the bunds in front of Hilton were for landscape purposes and not for noise then neither we, nor Hilton Parish Council had previously been made aware of it. Hilton Parish Council however remain unpersuaded by this since, it appears to conflict with previous conversations with Atkins and Jacobs.

4) Is it accepted that no consideration of cost and benefits (in relation to government guidance) has been undertaken or presented and so cannot be relied upon to justify additional mitigation in accordance with the relevant policies and guidance?

Effective consideration to cost and benefits was rendered impossible by the lack of data provided by Jacobs.

5) Confirmation of the calculation methodology implemented in Mithra by SBS;

Since this was a mitigation study, we sought to employ a method that allowed for variations in insulation and absorption for potential mitigating features. Unlike CRTN, ISO9613 within Mithra offers this. As described in the report the model was in any case tuned to the Jacobs noise levels with the bunds in place. At the same time we characterised the noise level in terms of the normalised traffic spectrum given in EN 1793-3 in the absence of information being made available by Jacobs.

6) Confirmation of how levels were calculated for each property in the SBS report i.e. were they calculated by running noise grids and extracting levels from the noise grids for each receptor or were they determined by placing an individual calculation point at the receiver location for each house?

Calculation points have been taken at the most exposed facades at first floor level. This was proportionate the scope and size of the study undertaken.

7) Confirmation of the road surface assumptions that were implemented in the SBS model for each scenario modelled;

The road surface has assumed to be low noise throughout. Again in the absence of information being provided by Jacobs we employed a generic low noise road surface offering approximately
3dB noise reduction. Suffice to say the model was calibrated or tuned to the Jacobs levels with the bund in place.

8) Provision of an explanation for the apparent increased attenuation provided in the middle and far side of the village compared to the side of the village closest to the scheme.

- The Jacobs bund in front of Hilton is not continuous. The village of Hilton is still exposed to noise from the A14 at either ends of the bund. In fact the noise transmitted from the exposed ends contributes most to the noise levels in the village of Hilton.

- With the Option 3 scheme, the barrier extends further eastward. This will shield the eastern end of the A14 previously unshielded. In the Figure in A142CH it shows those properties to the Eastern side of Hilton receiving a greater level of attenuation than on the western side (more purples and oranges). This is to be expected.

- The properties at the north of the village closest to the carriageway are receiving almost all the noise from the unprotected ends of the A14. This is true with the Jacobs bund and with Option 3. They also receive the widest, unobstructed view of the unprotected ends, so even with the Option 3 barrier in place, they still receive noise from the far eastern end.

- The properties at the south end of the village, furthest from the carriageway are also partially shielded by surrounding houses. At this distance almost all the noise is coming from both two unshielded ends of the A14. In this case the Option 3 barrier substantially reduces the noise from the eastern end of the A14 for all southerly properties. In other words the noise contribution is almost confined to the western exposed end of the A14. As a result the difference between the two mitigation options at the north end of the village is greater, of the order of 3-4 dB.

- Another factor is the placement of the first storey receivers on properties which we have limited to being on the façade judged the most exposed to noise. In essence the results are therefore consistent with what one would expect for a relatively complex noise footprint.

**Arup Approach to Noise Mitigation Design & Specification**

With myself as the current chair of the BSI B/509/6 committee for highways noise barrier design, we have been instrumental in co-authoring and guiding specification standards for highways noise mitigation for Europe. These standards now help to form the backbone of the CE Marking for noise mitigation structures on highways for all present and future roads schemes in the United Kingdom. In my discussions with Colin Cobbing, he did not appear to be familiar with the specification standards. They are now more than ever a crucial element in the detailed design and specification of noise mitigation systems for highways.

I would therefore suggest that Hilton Parish Council ask Arup to provide in detail their approach to noise mitigation specification for the A14 scheme with reference to the current British Standards for noise mitigation and noise barrier design for highways. This is not currently covered by DMRB. With the emergence of the CPR (EU Construction Products Regulation) it is now mandatory for all products to be CE Marked in line with the specifiers (Arup) requirements. This had been voluntary under CPD (Construction Products Directive). Under CPR it is now a requirement to ensure that Highways England are not subject to future legal action should non-compliant methods be employed or structures installed.
My name is Giles Parker. I have an MA degree in Engineering for Cambridge specialising in Acoustics, Fluid Mechanics and Control. I am a Chartered member of the Institute of Mechanical Engineers and also a member of the Institute of Acoustics. I have 25 years’ experience working in environmental noise impact assessment and mitigation with over 20 years’ experience in noise barrier design and specification.

I am the founder and have been the Managing Director of Sound Barrier Solutions Ltd for more than 15 years, a UK consultancy specialising in noise barrier detailed design for all applications. For 10 years I have chaired the BSI 5/509/6 committee for highways noise barrier design and until 2010 was also the chair of the CEN TC226/WG6 Acoustic group tasked with writing the specification standards for highways noise barriers for Europe.

During this time I have worked closely with the highways agency, local authorities, industry and with land and property developers throughout the UK. I have also advised government agencies on noise barrier design and specification in Ireland, Australia and New Zealand.