

Code of Construction Practice we do acknowledge that there will be special cases – schools are high on the list of those candidates for special cases – and I suggest that we look to make early progress with formulating a package of measures to cope with the construction effects of the scheme as they potentially affect this school. We will keep the Committee informed of progress as we go through. Of course I accept that that is without prejudice to the case which Miss Lieven will want to make, but that is what we will do in any event, as the Code of Construction Practice indicates.

128. MISS LIEVEN QC: Thank you, Mr McCaul. Sir, if I can then move on to the next slide and agricultural impacts and Mrs Gray. I've passed over the impact on the school slide because Mr McCaul had covered it. Mrs Gray, can you explain who you are and why you are here?

129. MRS GRAY: You have your maps around you. I was born at Road Farm. Road Farm is opposite Leather Lane. You visited and we were very, very grateful to the Select Committee for visiting. It made a very big difference to everybody to be able to voice their opinions to you.

130. I live actually on the opposite side of the valley to HS2, but I am very grateful for the opportunity to represent our neighbours today who will be extremely affected by the current plans for HS2, which will be taking 257 hectares during the construction phase and of that there will be 106 hectares of permanent land take. Seventeen farms are directly affected in forum area 10, which is the Wendover part, and sixteen in forum area 9, which is more the Great Missenden area.

131. If you go forward to the next slide, please – I'm going to come back to this one, but I'd just like to show you this next slide – it gives an example of the percentage loss to the farms of the area. Hunts Green Farm, which you passed, will be having a loss of 47.8 per cent of its hectarage. Obviously the red colours down that table highlight those farms which are going to be experiencing over 30 per cent loss of their land. The yellows highlighted are between 10 and 30 per cent. Those of you involved in business – I'm sure many of you are – are aware that if you're going to lose an average then it will be 22 per cent of their income-generating assets. Businesses that lose that amount are not likely to be able to continue as a viable enterprise.

132. MISS LIEVEN QC: Can I just stop you there for a moment, Mrs Gray, because

those are the construction losses. To what degree will the farms be able to recover when they then get some of that land back, do you think?

133. MRS GRAY: I think it's very difficult. Obviously there's compensation that's been offered through HS2, but there's a lot of problems regarding that compensation because it assumes that there is land available to buy in the area and of course there is no land available. There is a very high price on land. Also, there are issues which I think other people have brought to the Committee regarding inheritance tax and capital gains tax. If you're not able to invest that amount of money straightaway then it causes an awful lot of problems.

134. In terms of the impact on the economy within Wendover, the NFU has helped us to try to quantify the impact on farms by looking at the activity of the farm and using HSBC's forward planning figures to bring up a sum of effect for each of the farms.

135. If you move forward to the next slide, there are some photographs of a number of the farms affected. For instance, I can just tell you that when it comes up Road Barn Farm, although it's a very small farm, is going to be demolished. I'm sure you're aware that along the viaduct route there are a number of farms that will have their land severed and 37 per cent of Road Barn Farm's land would be taken. That would affect their annual output. Again, the NFU has helped with these figures. I do have some tables if the Committee would like to see them later. I won't trouble you with the figures now.

136. CHAIR: If it's of any help, we've come across farmers all the way up to Birmingham who've had similar problems about viability, losing land, soil testing, land take and how to get across the railway.

137. MRS GRAY: But it's very difficult to get around the aspects of transport if you've got to get out and water your livestock. You've got to check it daily. You've got to make your hay. You've got to harvest your corn. You've got to cultivate the land. During the construction phase it makes farming extremely, extremely difficult. Regarding the permanent issues, again, you're likely to have your farm severed.

138. MISS LIEVEN QC: Slide 2, please. That's it.

139. MRS GRAY: Thank you. If farmers aren't able to make their sums then obviously they don't have that money available to spend in the local community. Yes, farmers are often part of a local buying group, but that often uses local hauliers and they might use local contractors for the farming. If they don't have that money available then it's not going to be spent within Wendover. I'm sure you're all hugely aware that farmers are the stewards of the landscape. Most of these farmers for generations have been looking after that landscape. All of a sudden, they're not going to be able to do that any more. It's not going to be productive in any way. Okay, the economists in the cities may think it's productive to be able to get from A to B, but we're losing that chunk of land that's available for food production. Over the world farming is seen as something that's an economy of great importance and it seems there's a great frustration within the agricultural community that the Government seems to have lost track of that.

140. Just to break up the monotony of the slides, I've brought you a little bit of agriculture to Westminster. We've got some wheat and some oats. We've got some wool. Obviously in this area we have a lot of sheep. We have done since medieval times. I've even got a pyramidal orchid here that we have growing in the Chilterns on chalk grassland and on farmland that farmers have been managing sensitively for the environment, ensuring there are barn owls and so on and so forth, which I'm sure will be covered.

141. CHAIR: Should we label that as evidence?

142. MISS LIEVEN QC: Definitely!

143. MRS GRAY: The other thing that hasn't been brought up is that farmers diversify their businesses. There are a number of farm-stays up at Kings Ash, where you went to. You looked out from Kings Ransom. There is a farm-stay up there that nobody will be able to get to if Rocky Lane is cut off. There are other businesses. Nobody's going to be interested in coming to the Chilterns for the peace and quiet if there's noise thundering through.

144. As has already been mentioned, we have hundreds of thousands of people come out from London every weekend because they want a little bit of green. They see the fields. They're quite happy to see the agriculture. That will be lost if HS2 goes ahead in its current form.

145. CHAIR: Another issue that we've come across is that lots of farms have diversified with small businesses, holiday cottages and a whole range of leisure things.

146. MRS GRAY: Indeed.

147. CHAIR: The planning laws haven't quite caught up with how you deal with that when a farm has to be moved. You have all the other associated things.

148. MRS GRAY: This is another problem regarding planning laws. We are in an Area of Outstanding Natural Beauty apparently. At the moment we know we are. It means that there are regulations on building, so if farmers want to do additional things with their compensation payouts then it's going to be actually rather difficult to do so and rather difficult to employ more people from the local community and thereby prevent rural unemployment, which at the moment seems to be a likelihood. All of that not only causes a loss to the local economy but also, ultimately, to the national economy. We feel it's a great shame that this hasn't been valued more highly.

149. Could you go forward again now to the final slide: slide 5. This is just to summarise, gentlemen. I think you're all very aware already of many of the issues: the farms that are at risk because of the land take, the impact on the local economy because farms won't be able to input into that – and of course generally everybody's very involved with the local community, be it with the cricket club or the Rotary, which of course does an awful lot of fundraising for hundreds of good causes. That's going to be very much spoilt.

150. MISS LIEVEN QC: Just in terms of this table, Mrs Gray, just a couple of points to pull it together. First of all, I think you've based this, or whoever drew this up based it, on the NFU methodology. Is that right?

151. MRS GRAY: That's right. That's correct.

152. MISS LIEVEN QC: Just a couple of things that aren't included that go to agricultural impacts here. I think it is right that there is no consideration in here for losses to agricultural tourism.

153. MRS GRAY: No, there's no consideration for that. There's also no consideration for the reduction in productivity of the land that's returned and there's also no plan/no

clear detail as to what will happen. We know how much will be taken during construction and we've been given a figure for what will be lost permanently, but what will be happening after construction? How is that land going to be brought back into production and productivity? It's not clear at all. There are an awful lot of unclear messages which having spoken to several local farmers, even yesterday, is causing a great deal of frustration. So your economic loss isn't just during construction, it's right now because farmers aren't able to plan, which is something obviously with a crop you have to plan what's going in, and if you're not able to do that it ultimately has an impact on the farm. Other things that may not be included are the economic impacts. This table was drawn up purely looking at the farms that have land take from HS2, so it doesn't include any of the impacts at all on other farms in the area that will not be able to operate at full capacity because of the roads being blocked up by lorries, because of impasses to transport links, etc.

154. MISS LIEVEN QC: Thank you, Mrs Gray.

155. CHAIR: Mr Mould?

156. MR MOULD QC (DfT): I have just one question. Mrs Gray, in the figures on the penultimate line, have you included for the land take that will be required to create a 900-metre intervention gap and what I think was three or four vent shafts under the scheme?

157. MRS GRAY: The figures were drawn up by the NFU under instruction. I was not involved with drawing them up.

158. MISS LIEVEN QC: I think the answer is 'No'.

159. MR MOULD QC (DfT): All right.

160. MRS GRAY: No.

161. MR MOULD QC (DfT): Thank you, Mrs Gray.

162. MISS LIEVEN QC: Thank you very much.

163. MR MOULD QC (DfT): I won't say anything about the ongoing work with the NFU because you're aware of that.

164. CHAIR: Okay.

165. MISS LIEVEN QC: Can we then move on to the issue of noise. Mr Summers from ACCON, who is a noise expert, is going to give evidence. Mr Summers, given the limited time, we need to take this at some pace. You make the point in the first slide that with the HS2 proposed green tunnel there will of course be a reduction in noise – we completely accept that – but that there will still be significant noise impacts on the four locations you set out and a significant impact in respect of sleep disturbance at night. From that overview, can we turn to the specific slides please? The next one. First of all, you highlight the issues in relation to the church and the school. We can see the locations of those and the proximity to HS2 at those two locations. First of all, the church. What is your principal concern about noise impacts on the church?

166. MR SUMMERS: Well, the main concern is interference from maximum noise levels from train pass-bys particularly affecting concerts and other uses of the church, obviously services and the like. The church is a very well used facility, particularly for concerts and other events.

167. MISS LIEVEN QC: Of the HS2 figures, what are the peak noises, the LA maxes, both inside the church and then in the churchyard around?

168. MR SUMMERS: So the maximum noise level outside the church is 70 dB LA max, which is high, and we estimate inside the church to be in excess of 40 dB, probably up to 46 dB LA max. So as I say, that's likely to cause disturbance to concerts as well as other services or activities.

169. MISS LIEVEN QC: I'm sure this is a point that is being made up and down the line, but in contrast to the normal situation where you're talking about LA maxes occurring on an infrequent and unpredictable level, how many LA maxes at this level would one expect on HS2 per hour?

170. MR SUMMERS: There would be up to 36 train movements an hour so therefore 36 LA max events. So more than one every two minutes.

171. MISS LIEVEN QC: Thank you. That's in relation to the church. Next slide, please, in relation to the school. Just tell us what the LA max at the school is predicted

to be.

172. MR SUMMERS: So that's 71 dB, which is likely to equate to internal levels, allowing windows and open ventilation, of between 56 and 61 dB, which is likely to cause disturbance to teaching and learning when windows are open obviously.

173. MISS LIEVEN QC: Again, the Committee may have come across this on many other locations, but in terms of the ability to mitigate the internal noise in the teaching classrooms by putting in double glazing, for example, are there any issues with that in your experience?

174. MR SUMMERS: Well, in addition to double or secondary glazing, there would need to be an alternative means of ventilation. There are obviously practical and cost difficulties in installing such ventilation.

175. MISS LIEVEN QC: Then you've got a series of slides on operational noise in Wendover. Can you just take us through those and tell us what your primary concerns are?

176. MR SUMMERS: So in Wendover south, I'm just highlighting the highest noise impacts in terms of daytime operational noise levels. The closest houses would be subject to 62 dB LA, which is a 10 dB increase. At Bacombe Lane, although those three properties there would be offered noise insulation, the ES identified that that was a significant community effect affecting ten properties. What I want to highlight is if you look at the extent of the grey area, it shows you the daytime lowest adverse effect level in terms of the LAU, which is 50 dB daytime and 40 dB night, and that shows you that the majority of Wendover town is outside of that area.

177. So if we move on to the next slide, this shows you maximum noise level contours, so LA max contours, which are estimated from the noise data in the ES. On that basis, you can see that the green contour extends back quite a distance from High Speed 2 – which is up to 700 metres, where I've indicated at Honey Banks. So this shows you that obviously with 36 trains an hour, trains are going to be quite audible for quite a large part of the town. Also, given that the train service runs from 5.00 am in the morning until midnight, you've got three hours which are counted as the night time period in terms of assessment of noise and 60 dB LA max is the lowest adverse effect level in

terms of night time noise as identified in the ES. So basically I'm showing that, in terms of LA max and potential sleep disturbance, a large part of the town is above the lowest adverse effect level. According to information in paper E20, which sets out the HS2 objectives for noise mitigation, noise mitigation should be – I can actually take you to the quote.

178. MISS LIEVEN QC: Slide 15. Shall I read it whilst we are looking at it? So according to the information paper: '[HS2] will take all reasonable [measures] to design, construct, operate and maintain the operational railway so that airborne noise does not exceed the lowest observed adverse effect levels...' So I think what you're saying is that in Wendover it will exceed the 'lowest observed adverse effect level' in respect of night time LA max for a significant number of properties. Is that right?

179. MR SUMMERS: That's correct.

180. MISS LIEVEN QC: Is that likely to lead, on the Government's own approach to noise, to sleep disturbance?

181. MR SUMMERS: Yes. The approach in E20 is based on Government policy.

182. MISS LIEVEN QC: Just to emphasise – I'm sure the Committee has this point – this is permanent operational impacts and not construction impacts. Is that right?

183. MR SUMMERS: Yes, that's right.

184. MISS LIEVEN QC: Thank you. Just one final point, unless you've got anything else, just going back – we don't need to put the picture up again – to the church and HS2's proposal to mitigate the impact by doing work at the church. First of all, we know that the church is Grade II\*. From your experience, how easy would it be to mitigate the noise impacts inside the church by matters such as double glazing?

185. MR SUMMERS: I think there are a number of practical difficulties because the window reveals are quite shallow. I understand that various ceiling and roof constructions would potentially need quite a bit of work to increase the sound insulation appreciably.

186. MISS LIEVEN QC: Thank you. Is there anything else, Mr Summers, anything



critical that we haven't covered?

187. MR SUMMERS: No, I think that's summarised it.

188. MISS LIEVEN QC: Taken at a pace!

189. CHAIR: Mr Mould, do you have any questions of Mr Summers?

190. MR MOULD QC (DfT): Yes, thank you. Can we just go firstly to P7494(2), please, just on the church? This is about the internal noise environment. I'm sure you've seen this slide, Mr Summers. It's in our pack. You'll appreciate that we've carried out some noise surveys of the existing noise environment in the church but without events occurring. In other words, this is what you get. This is what concerts and other events build into. Do you see what I mean?

191. MR SUMMERS: Yes.

192. MR MOULD QC (DfT): All right. Just to be absolutely clear, this is measured over a series of five-minute intervals during an evening. The red shows you the spread of separate noise events as things are at the moment on a typical evening inside that church without an event occurring. Do you see that? The spread of noise events is between 32 and 66 dB LA max. Okay? Then what you see with the green is, when you fold in the predicted noise environment that concerts will be received into with the railway operational, you can see that the noticeable change is that you have train events, which is the green line that extends way up onto the Y axis, at around the 40 dB mark. You said 40 to 46 dB, I think, but there you are. That's the lower end of your range. What it shows you, doesn't it, is that the railway trains will be well within that existing range of noise levels? What you'll have is a greater frequency of noise events, which will be represented by those train events being added into the existing noise environment. That's the picture. Do you accept that?

193. MR SUMMERS: Well, I accept the general point, although I think there may be an error in that, in that we're looking at up to 36 events an hour.

194. MR MOULD QC (DfT): But that doesn't alter the basic picture that the key change is going to be the frequency of existing events, which will be towards the lower end of the mid range of the noise levels that already form the existing and separate noise

event picture within that church.

195. MR SUMMERS: I would argue that they might be slightly higher than 40 dB, up to 46 dB.

196. MR MOULD QC (DfT): Okay. Your case is that against that background, whereas it's now a successful concert venue, it'll cease to be a successful concert venue in the future?

197. MR SUMMERS: Concerts would be a lot more disturbed so I doubt the actual practicability of how that would work out.

198. MR MOULD QC (DfT): Okay. Well, I've showed you what our survey is. You know that we're going to continue to work closely with the church and others to seek to mitigate at source and at receptor on this. Can we just turn to the question of the peak noise that you mention? I'd just like to show you, please, P7499(1). In this way I can avoid calling a witness myself. You've seen the evidence that we've put in. On the left-hand side is a series of assessment locations within and on the edges of the settlement of Wendover. With the existing noise environment, the highest night time LA max is up at around the 70 dB mark. Do you see that?

199. MR SUMMERS: Yes.

200. MR MOULD QC (DfT): That's the extent of existing peak noise which people in Wendover experience. If we turn on to P7499(3), in the 'Do nothing (opening year baseline)', and again you're folding the train passes into that, you can see that for each of those assessment points we're predicting peak noise which is within that existing noise environment. Do you see that? It is below those levels that people are already experiencing. So again this will be a new noise event, but it will not increase the peak noise experienced that people have within the settlement of Wendover.

201. MR HENDRICK: Where is the current noise coming from?

202. MR MOULD QC (DfT): Sorry?

203. MR HENDRICK: Where is the current noise coming from?

204. MR MOULD QC (DfT): Traffic, existing railway trains, people shouting in the

street, all the things that make up the noise of existing life in a successful market town.

205. SIR PETER BOTTOMLEY: In the church?

206. MR MOULD QC (DfT): No, these are assessment points. You can see by looking back at P7496.

207. MR SUMMERS: Sorry, can we –?

208. MR MOULD QC (DfT): Sorry. I'm just showing the Committee. There you are. That is the spread of assessment points. The ones with square boxes around them give you an idea of the ones we've shown plotted on the table. Sorry. You wanted to go back to the previous slide and just make a comment. It was P7499(3), please.

209. MR SUMMERS: The bottom line on that slide is Bacombe Lane. They will receive noise insulation and so I accept that will provide mitigation, but for the five or six entries above that, the predicted maximum noise levels for HS2 are above the baseline LA maxes.

210. MR MOULD QC (DfT): Just look down the arrow.

211. MR SUMMERS: Yes. For example, at Hale Road the predicted maximum noise level from HS2 is 61 or 65 dB and the existing 'do nothing' maximum noise level is 46 dB.

212. MR MOULD QC (DfT): Where do you get the existing from?

213. MR SUMMERS: 'Do nothing'.

214. MISS LIEVEN QC: 'Do nothing (opening year baseline)'.

215. MR MOULD QC (DfT): Yes, but the point I'm making to you is that there is a spread. What you see with the 'do nothing' and proposed scheme is that the noise from the railway is broadly speaking within the noise environment that it would be folded into in terms of levels. Some may be above, but others will be below.

216. MR SUMMERS: I think that's a very simplified view because obviously properties that are next to an existing road which has got a fair amount of traffic will have a high LA max, whereas other properties which are distant from the major roads

will have a very low existing LA max.

217. MR MOULD QC (DfT): Yes.

218. MR SUMMERS: Some of those are exposed to quite high predicted maximum noise levels at night from HS2 or would be under current proposals.

219. MR MOULD QC (DfT): All right. I'm happy with that. That's the point I want to make. Thank you.

220. CHAIR: Fine. Thank you, Mr Mould.

221. MISS LIEVEN QC: Can I just go back on one point, sir? Can we have P7499(2) up, please? I hope I've got the right number. No. Sorry, I haven't got numbered slides.

222. MR MOULD QC (DfT): It's P7494(2).

223. MISS LIEVEN QC: The point that was put to you – you probably remember the slide, Mr Summers – was: 'Well, the LA max that's being caused by the HS2 trains passing by isn't as high as the highest LA max that you have at the moment', which is the 66 dB, which I don't know, might be a fighter jet coming past or something like that.

224. MR SUMMERS: A bird.

225. MISS LIEVEN QC: Or a very noisy bird. A very, very noisy bird outside the church. I don't know enough about birds to know what kind of bird would be quite that noisy. But in terms of the impact on people, whether in the church or around the town, in terms of LA max, how relevant is it that this is going to happen 36 times an hour as opposed to the number of times which these LA maxes are occurring at the moment?

226. MR SUMMERS: Large parts of Wendover effectively have fairly continuous noise. There may be the odd noise event due to heavy traffic or vehicles passing by, but the number of trains on the existing line is only four per hour. We're replacing that with up to 36 trains an hour which will each produce a noise event which will be audible over a fair portion of the town.

227. MISS LIEVEN QC: Just in terms of this graph – I didn't take you to it – do you understand that on the left-hand axis it says 'Number of events during seven-day survey

in evening period' and it's got 18 in relation to the train pass-bys. Do you know how that figure is arrived at?

228. MR SUMMERS: That, I understand, is the prediction of events from HS2 in the future, which as I said I think is out by – We should double that figure.

229. MR HENDRICK: Yesterday we were told that it was going to be 18 trains an hour. Where has the number 36 come from?

230. MISS LIEVEN QC: It's 18 in each direction, sir, so in terms of noise impact it's 36.

231. MR HENDRICK: All right.

232. MISS LIEVEN QC: I think that's the peak. My recollection from the litigation is that's the peak number of trains when Phase 2 is built and at full operation. That's why Mr Summers says 'up to 36'. I don't think it will be 36 on day one of opening. Mr Mould will tell me if I've got that wrong. Thank you very much, Mr Summers.

233. Sir, we're doing our best, I think, is the best that I can say. Hydrogeology next. There are quite a lot of slides. I won't go through Mr Johnson's qualifications and expertise, but he is a hydrogeological expert. Just by flicking through the slides, Mr Johnson, you're going to have to try and get your point across exceedingly fast.

234. MR JOHNSON: Okay, fine. So if we start with the second slide, please. This is the natural system as it exists at the moment in Wendover. We're standing to the north of Wendover and looking south. Rain falls on the chalk hills to Coombe Hill, to the south of Wendover, percolates into the chalk aquifer and flows towards Wendover and then discharges through the natural discharges in Wendover along a spring line. Spring one, to the left-hand side, which is towards the Chiltern Scarp, feeds into the Wendover Arm of the Grand Union Canal and that's the feeder that goes into the Grand Union Canal at the Tring Summit and provides the water at the Tring Summit, or a significant proportion of water at the Tring Summit, to keep those locks on both sides of the flight working. The second spring is Castle Brook and that feeds into Weston Turville Reservoir, which is an SSSI and a lake used for sailing. The third spring feeds into Wendover Brook, which flows off to the Thames. The fourth and