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Project: The Landings, Land at Ford Airfield

Report Ref: 2205773-R06A

DOCUMENT CONTROL

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1. Introduction

Planning applications for the discharge of Condition 10 of the decision notice for the land at Ford Airfield have been made for the infrastructure (IRM) and RM1 (North)¹ phases of the wider development. Condition 10 relates to the submission of a Construction Environmental Management Plan (CEMP).

Environmental Health Officers at ADC have provided comments relating to the Noise Assessment² (the NIA) which was submitted as part of the application. This Technical Note accompanies the NIA and provides responses to the EHO comments.

2. ADC Comments & Responses

The comments provided by the EHO are set out below, with responses provided in *italics*.

1. Table 4.4 gives the calculated noise levels (LAeq,T) for the nearest noise sensitive dwellings. However, it becomes apparent from paragraph 5.8 that these results include a 10dB reduction for noise barriers. Environmental Health considers that the calculated noise levels at each of the nearest noise sensitive residences should be provided without mitigation in the first instance, so that it can be determined how effective the mitigation is. If the 10dB attenuation is removed from the

¹ Application references: F/15/26/DOC & F/16/26/DOC

² Report reference: 2205771-R44

calculations in Table 4.4, it becomes apparent that Category A, Table E1 of BS5228 is not complied with.

The site hoarding is inherent mitigation which is proposed to control noise levels at the closest dwellings, and it is therefore appropriate to include it in the calculations of noise levels at the closest dwellings. Whilst noise levels will be higher than those presented without the hoarding, this is not a scenario which is representative of the construction phase of IRM and RM1 (North).

2. A 10dB reduction from a noise barrier would be applied in optimal conditions. The information provided by the applicant indicates that optimal conditions may not be reached in this case because:
 - a) Paragraph 5.8 indicates that the barrier will have a minimum surface mass density of 10kg/m², however, standard acoustic barriers have a surface mass density of 20kg/m².

For a barrier to sufficiently resist the passage of sound so that it acts as a noise barrier, a minimum surface mass density of 10kg/m² is sufficient. The construction and specification for the site hoarding was established as part of the Noise Assessment³ which accompanied the planning application for the discharge of condition 10 in relation to the Enabling Works phase of the development⁴ (application reference: F/6/26/DOC), which has been discharged.

The specification for the hoarding is achievable with relatively standard construction materials, which have the potential to be reused or recycled following use, i.e., using relatively sustainable methods.

The hoarding barrier attenuation has been tested, at closest approach, 25m, the hoarding will provide 10dB attenuation. This has further been tested at greater separation distance and whilst the barrier attenuation reduces this is offset by the additional distance separation. This is shown in the following table.

³ Report reference: 2205771-R33

⁴ Application reference: F/6/26/DOC

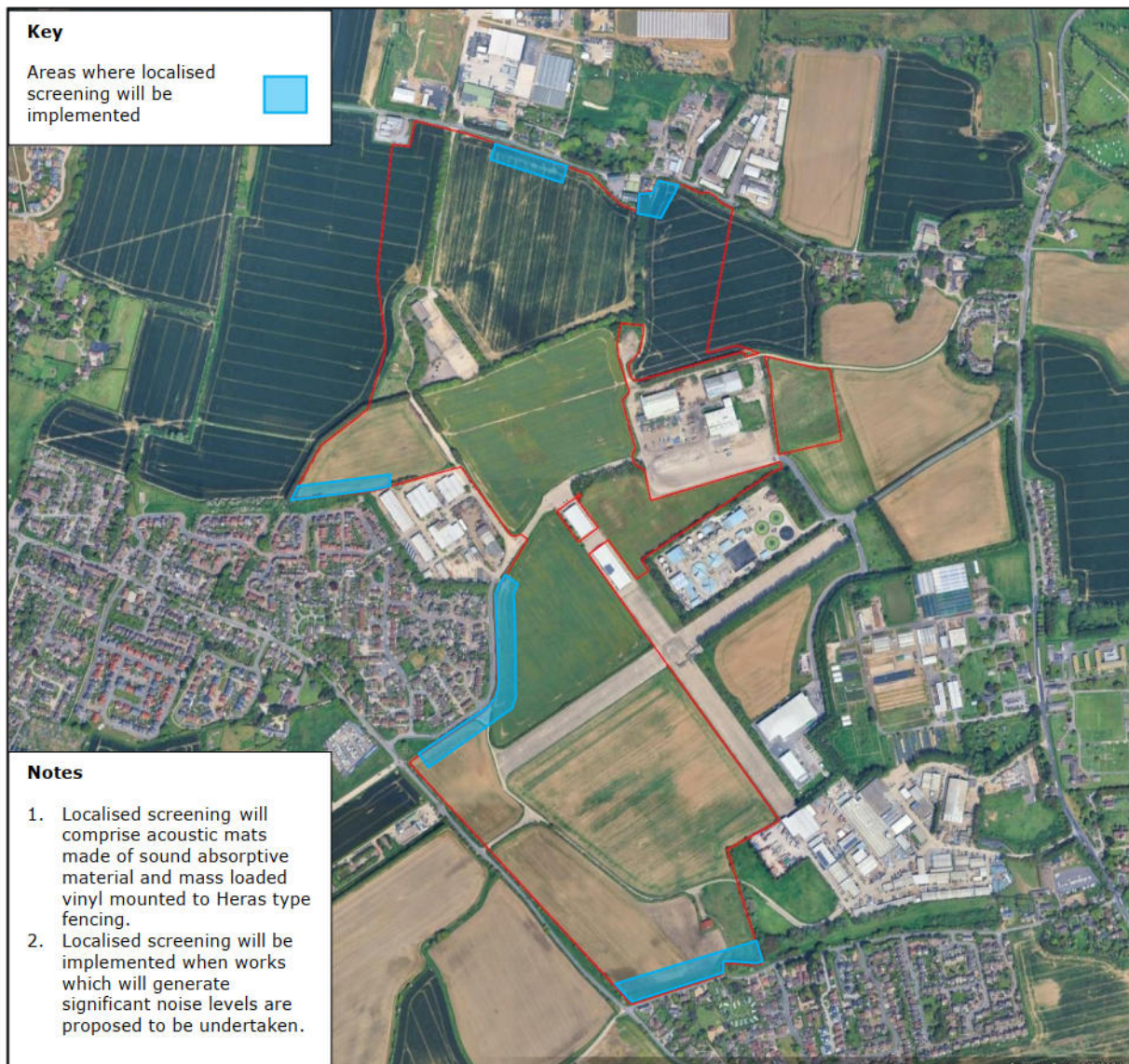
Total Distance, Works to Dwelling /m	Distance, Dwelling to Site Hoarding /m	Distance, Source to Site Hoarding /m	Reduction in Noise Levels due to Site Hoarding /dBA	Resultant Construction Noise Level /dB L _{Aeq,T}
25	15	10	10	68
		20	9	66
		30	8	65
		40	8	63
		50	8	62
35	25	10	9	66
		20	8	65
		30	8	63
		40	8	62
		50	7	61
45	35	10	9	64
		20	8	63
		30	7	63
		40	7	61
		50	7	60
55	45	10	9	62
		20	8	62
		30	7	61
		40	7	60
		50	7	59

The table above demonstrates that once the separation distance between works and dwellings reaches 45m, noise levels comply with the target noise levels. At a separation distance of 25-35m, noise levels are predicted to exceed the target noise level by 1-3dB.

The calculations of the site establishment phase of works assume a significant plant complement as a worst case i.e. 2 excavators, 2 HGVs and 2 bulldozers etc. operating in the same working area at the same time. This is unlikely to occur in reality, simply due to safe working and space, and some plant would be located in working areas which are further away from dwellings. Therefore noise levels would be lower than predicted.

As an additional preventative measure, localised screening will be installed where works which will generate significant noise levels, such as heavy machinery operations or the use of hand tools, such as angle grinders or jackhammers, are proposed within 45m of dwellings. The localised screening will comprise acoustic mats made of sound absorptive material and mass loaded vinyl mounted to Heras type fencing.

These fences are mobile and will be positioned as close as possible to areas of works to provide the highest reduction in noise levels, expected to be within 5-10m from the works. This removes the need to identify and react to potential exceedances. A markup of the areas where localised screening will be implemented is shown overleaf.



The localised screening only needs to reduce noise levels by a maximum of 3dB, based on the predicted noise levels. Through a combination of acoustic absorption and additional screening the localised screening is expected to comfortably provide this additional reduction and therefore noise levels will not exceed the target noise level.

- b) There is no consideration of the height of the source noise. The noise barrier is proposed to be 2m high, but it is entirely possible that construction vehicles may in parts be higher than this.

Works which generate the most significant noise levels will occur at ground level and below the height of the barrier. Engines and exhausts associated with construction plant are usually at a height of around 1.5m or lower. Excavator booms and similar may extend

above the height of the barrier but these are not typically noise generating parts of the plant.

- c) The construction noise by its very nature may be mobile. This means that the source noise will not necessarily be as close as possible to the acoustic fence.

This is acknowledged, works will not always be close to the barrier, but the separation distance and barrier screening is shown to balance out in the previous table. Localised screening will be installed where works which will generate significant noise levels are proposed within 45m of dwellings and therefore the target noise levels will be achieved.

- 3. In the absence of clear information to clarify assumptions made by the applicant, there is a lack of clarity as to the exact noise level predictions and Environmental Health considers that the predicted levels may not be an accurate reflection of the noise environment during the build.

The NIA is based on a worst case scenario that all plant is operating in the same area, at the same time and at the closest approach to dwellings, which is unlikely to occur in reality. The NIA also assumes continuous operation of all plant in the same area which is not necessarily realistic but again tends to the worst case.

Predicted noise levels exceed the target noise level by up to 3dB during the site establishment and up to 1dB during the fit out and external works phases at Nos. 1-7 Wicks Cottages and Nos. 20 & 26 Beagle Drive. The target noise level is met at all other dwellings. The localised screening will be installed whenever operations are predicted to exceed the criteria, i.e. within 45m of properties.

Once the separation distance is over 45m, predicted noise levels comply with the target noise level with just the site hoarding in place. At a distance of 110m predicted noise levels would comply with the target noise levels without the site hoarding, however this will remain in place during the works.

It is expected that works will occur within the 110m separation distance for a relatively short period of time during the construction phase of the development.

In reality operational areas will vary across the site and therefore activities and plant will be more distributed across the site. This would result in noise levels being significantly lower than those predicted as part of the NIA.

As an additional preventative measure, localised screening will be installed where works involving heavy machinery or power tools are proposed within 45m of dwellings. With this additional mitigation, the target noise levels will be achieved at all times.

4. Paragraph 5.11 states that if construction noise levels exceed the criteria with the site hoarding in place localised screening will also be implemented. However they then fail to detail how it will be determined that exceedances have taken place.

As noted earlier, localised screening will be installed where works which will generate significant noise levels are proposed within 45m of dwellings. This removes the need to identify and react to potential exceedances.

With regard to the diesel generators for the silt buster pumps, the applicant has not confirmed:

- a) How many generators are proposed to be on site, and how many are proposed to be used at any one time?

The maximum number of generators which are proposed on site is 8 at any one time.

- b) Whether the generators can be located any further than 10m from the current works site and therefore further from the dwellings at Wicks Cottages?

Generators cannot be located more than 10m away from works areas. However they will be located on the other side of works to dwellings. At the closest approach where works will occur to Wicks Cottages, noise from 1 generator is predicted to be no greater than 40dB $L_{Aeq,T}$. Therefore noise from 1 generator in operation close to Wicks Farm will not contribute significantly to overall construction noise levels.

As a sensitivity test, which is not considered realistic, 4 generators positioned at closest approach to Wicks Cottages would produce a noise level of 46dB $L_{Aeq,T}$ and this would not contribute to overall construction noise levels at sensitive receptors.

5. Paragraph 6.4 details information about the silenced diesel generator powered pump noise being no greater than the 45dB L_{Aeq} night target noise level. However, paragraph 5.4 states standard working hours during the daytime only, Please can this be clarified as there should be no working or equipment on outside of the conditioned hours?

All plant and equipment, including generators at the to be used during the construction phase of the development will operate only during the conditioned construction working hours.

No out of hours operations are proposed or will be permitted.

6. Paragraph 6.2 states that at the majority of dwellings the predicted noise levels will be below the target noise levels but does not indicate what will happen to those that exceed.

As noted earlier, localised screening will be installed where works which will generate significant noise levels are proposed within 45m of dwellings, and target noise levels will be achieved at all times.

7. Paragraph 6.4 'expects' that the generators and silt busters will only be required during periods of rain or when a new drainage run is being installed, but fails to give specific information about this.

The exact periods of operation are not known, and it is understood that the silt busters themselves do not produce significant noise levels. However as shown in 4b above the generators associated with the operation of silt busters will not contribute to overall construction noise levels.

8. In relation to Paragraph 6.5, there is no information provided in terms of management control should all noisy operations take place at the same time and exceedances occur.

As previously noted, localised screening will be installed where works which will generate significant noise levels are proposed within 4 of dwellings and so this removes the need to identify and react to periods of exceedance.

9. Please could the applicant clarify whether the generator(s) and silt pump(s) have been considered in the overall noise calculations as noise sources?

Noise from the generators have been included as a noise source in calculations at the closest approach for working areas to dwellings. The silt buster will not produce significant noise levels and has therefore not been included in the calculations.