The Landings, Ford Airfield

Phase RM4 (South)

Waste Infrastructure
Technical Note

RM4_12.A
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Vistry Group

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Project: The Landings, Land at Ford Airfield

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DISTRIBUTION

1. Introduction

1.1. Following submission of the Reserved Matters planning applications for infrastructure, parcel RM1 (North) and parcel RM4 (South)[1] of the wider development area at the land at Ford Airfield (hereafter referred to as the site), Environmental Health Officers at Arun District Council (ADC) and West Sussex County Council (WSCC) Minerals & Waste Officers have provided comments relating to noise, odour and landscaping.

1.2. This technical note provides responses to the comments provided by ADC and WSCC and details of the noise barriers and high sensitive receptors (in the context of odour) which are proposed at the site. This technical note accompanies the noise assessments which have been submitted as part of the Reserved Matters planning applications for parcels RM1 (North)[2] and RM4 (South)[3].

[1] Application references: F/14/24/RES, F/15/24/RES & F/16/24/RES
[2] Report reference: 2205771-R03
[3] Report reference: 2205771-R04

1.3. The noise assessments include further details of mitigation measures to provide suitable internal and external amenity noise levels to dwellings and an assessment of noise from the commercial and industrial noise sources around the wider development area. This technical note should be reviewed in conjunction with the assessments.

2. WSCC Waste and Minerals Comments

2.1. WSCC have provided comments in relation to the Infrastructure IRM, parcel RM1 (North) and parcel RM4 (South) Reserved Matters planning applications. The comments primarily relate to waste and minerals, in particular the impact of RM1 (North) and RM4 (South) on the existing, approved and allocated operations in the vicinity of the proposed development phases.

Noise

2.2. Noise from the various operations in the area have been assessed based on the following information.

- The noise survey conducted at the site, along with the subjective assessment conducted during the survey of noise from commercial and industrial operations (incl. HD White Scrap Yard in Ford Industrial Estate);
- Permitting information provided by the Environmental Agency;
- Publicly available information from planning applications regarding the approved schemes at each of the operations.

2.3. Based on the above information noise modelling has been undertaken. The noise modelling presented within the noise assessments shows the noise levels at RM1 (North) and RM4 (South) due to all commercial and industrial noise sources which were identified to have the potential to result in noise impacts at dwellings in each development phase.

2.4. The noise mitigation measures which are set out within the noise assessments take into account all noise sources at the development phases, inclusive of industrial and commercial noise. The mitigation measures will ensure that there is no adverse effect due to commercial and industrial noise sources in terms of the amenity of residents at proposed dwellings. Further detailed response are set out below.

RM1 (North)

2.5. WSCC noted that the noise assessment does not demonstrate that noise from the Circular Technology Park/Grundon Waste Facility (Grundon) will meet the requirements of Condition 28 of the planning application for the facility, i.e., a rating level no greater than 35dB at the nearest sensitive receptors.

2.6. A baseline review of the noise environment at the wider Land at Ford Airfield site was undertaken to inform the noise assessments the following consented schemes have been considered and included in the noise model, to inform the potential noise impact at dwellings which form part of RM1 (North):

- WSCC/096/13/F: Circular Technology Park;
- WSCC/027/18/F: Circular Technology Park;
- WSCC/026/16/F: Wicks Farm;
- WSCC/019/17/F: Wicks Farm;

2.7. The comments also note that noise levels from HD White (Ford Industrial Estate) would exceed the requirements of Condition 7, i.e. a rating level at the nearest sensitive receptors no greater than 5dB below the representative background sound level.

2.8. The assessment of commercial and industrial noise considers all source to be in operation, noise levels from individual operations will be lower than those shown in the noise assessment. Noise modelling of the noise levels due to operations at the Grundon site and HD White in isolation are shown below in Figure 1.

2.9. The modelled noise levels due to noise from HD White include the reduction in noise levels provided by to the 4m barrier which is proposed around Ford Airfield Industrial Estate.

Figure 1: Noise levels during the Day due to Consented Operations at the Grundon Site and HD White

2.10. As noted in the noise assessment, BS 4142 states that the standard is not intended to be applied to the assessment of indoor sound levels. As these operations take place during the day only, it is considered appropriate to assess the nearest proposed private gardens, to determine the level of impact.

2.11. When a 3dB acoustic feature correction for impulsivity is applied to the noise levels at the nearest dwellings, the rating level due to operations at HD White will be 25dB $L_{Ar,Tr}$, which equates to 14dB below the representative background sound level. When a 3dB acoustic feature correction for impulsivity is applied to the noise levels at the nearest dwellings, the rating level noise level due to operations at Grundon will be 34dB $L_{Ar,Tr}$.

2.12. The noise assessment which accompanied the planning application for the Grundon Site shows the modelled noise levels with the proposed future operations, an extract from the noise modelling is shown below in Figure 2. Based on the noise modelling, noise levels are predicted to be significantly below 35dB $L_{Ar,Tr}$ at RM1 (North).

2.13. Future phases of the development will be accompanied by updated noise assessments and modelling, to specify the appropriate mitigation measures to protect the implemented and allocated waste site.

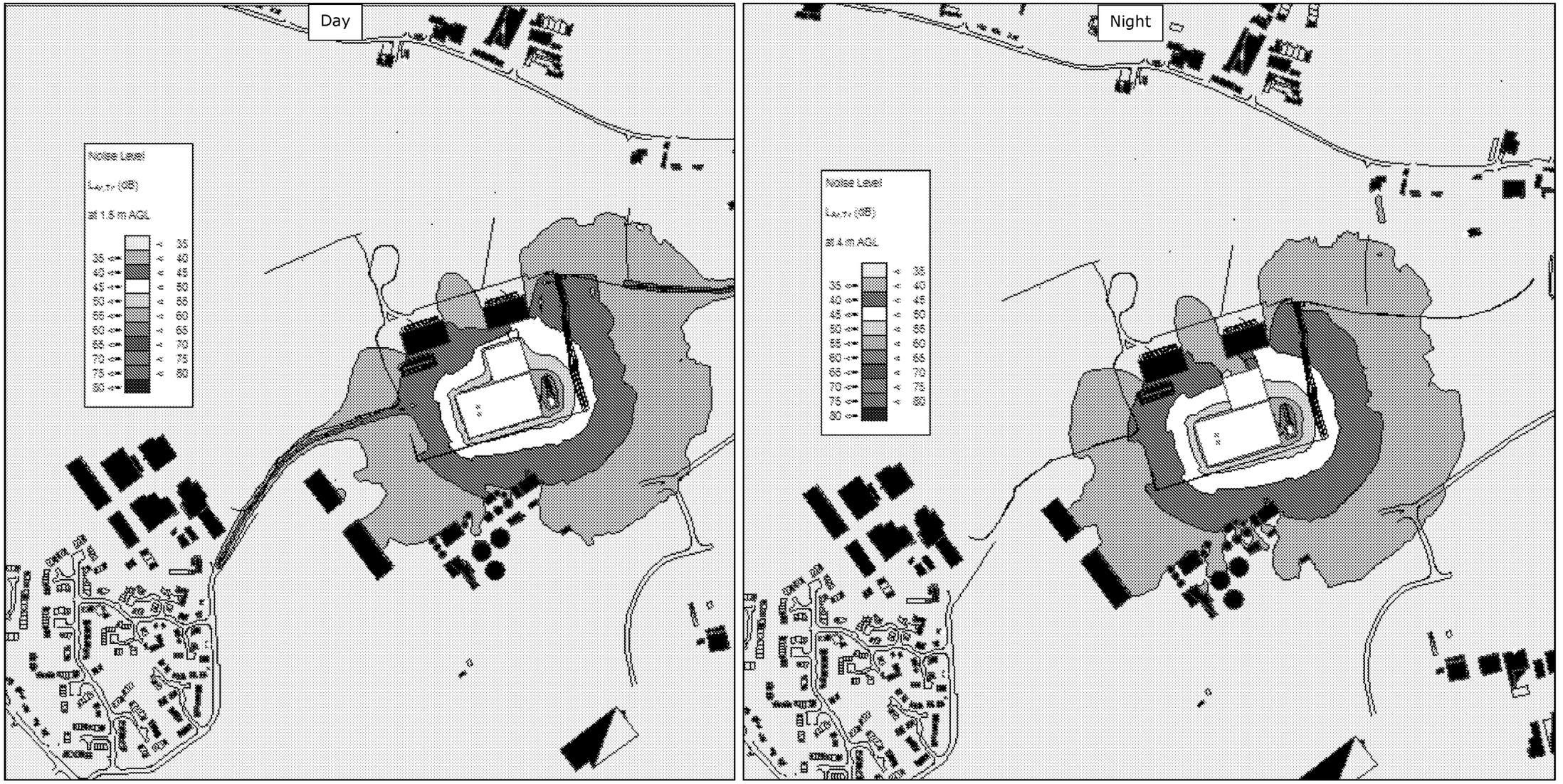


Figure 2: Noise levels due to Operations at the Grundon Site (Application Reference: WSCC/096/13/F and WSCC/027/18/F)

2.14. A review of the proposed access road at the Grundon site has been undertaken, also referred to as the New Circular Technology Park (application reference: WSCC/027/18/F). The previously consented operation at Grundon was predicted to generate 214 two way trips per day, HGVs comprise 120 of these trips. The proposed access road as a result of the potential increase in operation throughput is predicted to generate up to 334 two way trips per day, HGVs comprise 240 of these trips.

2.15. The number of HGV trips are proposed to double due to the proposed access road, with all other types of vehicles remaining the same. The proposed access route is approximately 300m from the closest boundary of RM1 (North) and will use the existing vehicle routing upon reaching the site.

2.16. The increase in vehicles movements at the Grundon site will not cause a significant increase in noise levels at RM1 (North). The predicted noise levels from the consented Grundon operations are significantly lower than the 44dB $L_{Aeq,T}$ residual sound level at measurement position 4, which is considered the representative of the closest dwellings at RM1 (North).

2.17. Once the development is occupied, the acoustic environment is expected to be controlled by development generated traffic. Noise from vehicles associated with the Grundon site will be indistinguishable from development generated traffic. Therefore the increase in vehicles at the Grundon site would not cause an adverse effect at RM1 (North).

2.18. The consented Wickes Farm site is located to the north of RM1 (North) on Ford Lane. The noise assessment for Wicks Farm was reviewed to inform the potentially significant noise sources at RM1(North). The noise assessment included noise modelling of noise from operations from Wicks Farm during the day and night, as shown in Figure 3.

FIGURE 5: SPECIFIC SOUND LEVEL MAP (DAYTIME)

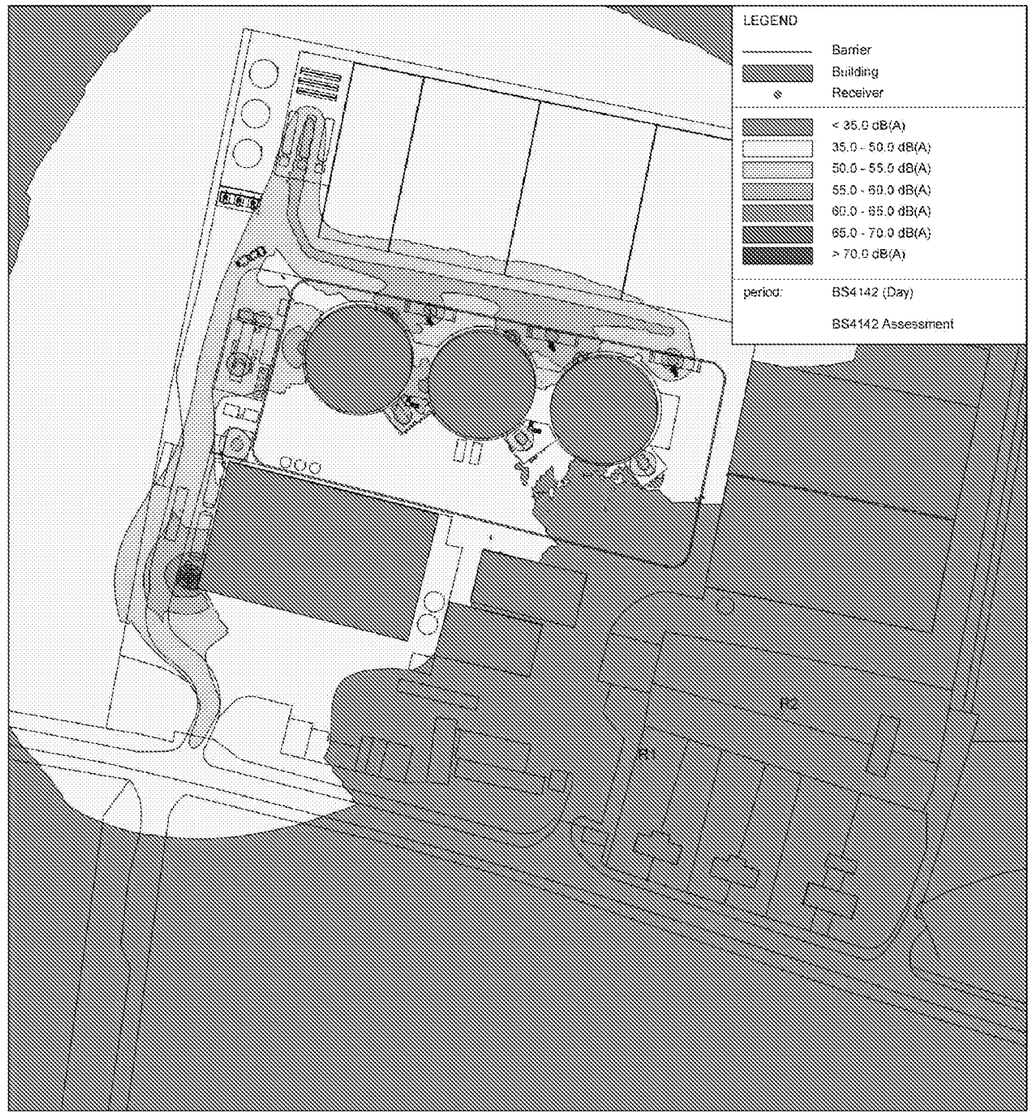


FIGURE 6: SPECIFIC SOUND LEVEL MAP (NIGHT TIME)

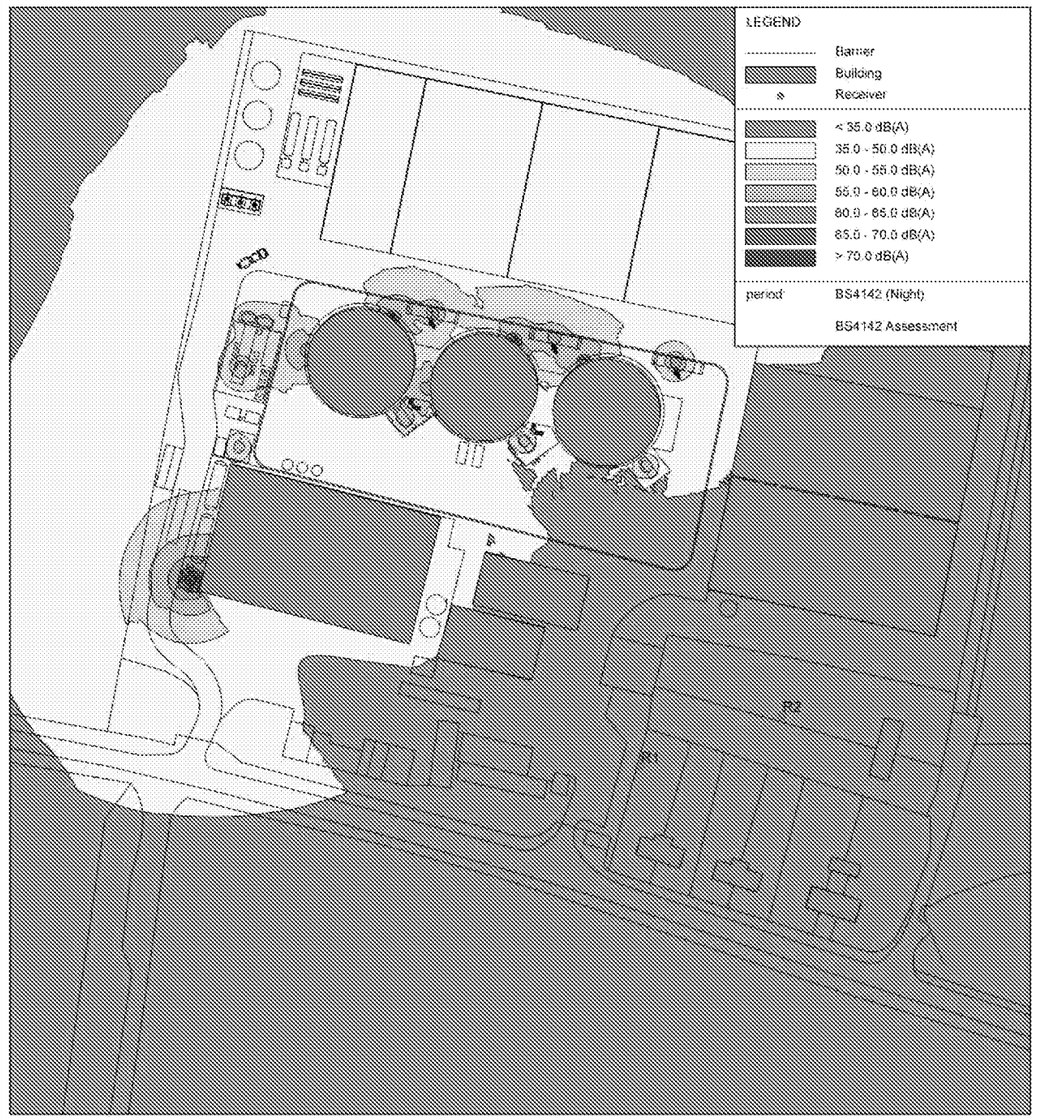


Figure 3: Modelled Noise Levels from the Wicks Farm Development (application reference: WSCC/026/16/F: Wicks Farm)

2.19. Based on the noise modelling, the specific sound level from operations at Wicks Farm would be no greater than 35dB $L_{Ar,Tr}$ during the day and night at the nearest dwellings at RM1 (North). A acoustic feature correction of 2dB for tonality is applied to the specific sound level.

2.20. The specific sound level is significantly below the residual sound level and therefore an acoustic feature correction would not normally be considered appropriate, however the correction has been applied as a conservative approach to the assessment of noise from operations at Wicks Farm.

2.21. The rating level will be 37dB $L_{Ar,Tr}$. The rating noise levels is 2dB lower and equal to the representative background sound levels during the day and night. The rating level is also 20dB and 12dB below the residual sound level during the day and night.

2.22. The noise environment at the nearest proposed receptors at RM1 (North) is dominated by road traffic noise from Ford Lane, noise from HGVs associated with Wicks Farm will not be distinguishable from road traffic noise.

2.23. Therefore, the noise impact when assessment in accordance with BS4142 is low and there will be no adverse effect due to the proposed operations at Wicks Farm.

2.24. No additional mitigation measures are required to reduce noise from Grundon, HD White or Wicks Farm beyond those set out in the noise assessment and noise from these operations will not cause an adverse effect at proposed dwellings at RM1 (North).

2.25. Given the existing and consented noise conditions placed on the extant Circular Technology Park / Grundon Waste Facility and Wicks Farm permissions, further noise impact assessments will be undertaken and appropriate mitigation will be considered in due course as part of future RM submissions.

RM4 (South)

2.26. WSCC noted that the noise assessment does not demonstrate that noise from the Viridor Materials Recycling Facility (MRF) will be mitigated so that there is no adverse effect.

2.27. The noise assessment for RM4 (South) considered all operations of the various commercial and industrial noise sources, noise levels from the MRF in isolation will be lower than those shown in the noise assessment. Noise modelling of the noise levels due to the MRF in isolation are shown below in Figure 4.

Figure 4: Noise levels due to Operations at the MRF

2.28. Based on the noise modelling, noise levels from operations at the MRF at the nearest proposed dwellings will be 30dB $L_{Aeq,T}$ and 20dB $L_{Aeq,T}$ during the day and night.

2.29. When a 3dB acoustic feature correction for impulsivity is applied to the noise levels at the nearest dwellings, the rating level due to operations at the MRF will be 33dB $L_{Ar,Tr}$ and 23dB $L_{Ar,Tr}$ during the day and night, i.e., 6dB and 10dB below the representative background sound level, which would be considered a low impact in accordance with BS4142.

2.30. Closed windows, but not sealed, and alternative ventilation are proposed at properties closest to the MRF. The noise assessment provides further details on the façade mitigation measures, as well as detailed calculations of the internal noise levels at dwellings, the calculations include noise from all sources.

2.31. When the façade mitigation measures set out in the noise assessment are taken into account, noise levels will be reduced by approximately 30-35dBA.

2.32. Therefore, no additional mitigation measures are required to reduce noise from the MRF beyond those set out in the noise assessment and noise from these operations will not cause an adverse effect at the proposed dwellings at RM4 (South).

Odour

RM4 (South)

2.33. Clarification is provided herein on WSCC's comment in relation to odour and parcel RM4 (South) Reserved Matters planning applications:

"It is unclear from the submission whether any of the proposed properties would fall within the area identified by Condition 35 of F/4/20/OUT, wherein further odour assessment to demonstrate no conflict with the operation of the existing Wastewater Treatment Works is required. This should be clarified."

2.34. Condition 35 of F/4/20/OUT states:

"Condition 35

Any reserved matters application that includes proposals for high sensitivity receptors (as defined by Table 2 of the IAQM 'Guidance on the assessment of odour for planning) within 300m of the Activated Sludge Plant, as shown on drawing no. RG-M-152 Rev A, shall be supported by adequate information observational evidence to demonstrate that there would be no unacceptable odour impacts upon those high sensitivity receptors.

Reason: In the interest of amenity in accordance with policies D DM1 and QE SP1 of the Arun Local Plan 2011-2031"

2.35. Table 2 of the IAQM 'Guidance on the assessment of odour for planning' is provided below:

For the sensitivity of people to odour, the IAQM recommends that the Air Quality Practitioner uses professional judgement to identify where on the spectrum between high and low sensitivity a receptor lies, taking into account the following general principles:	
High sensitivity receptor	Surrounding land where: • users can reasonably expect enjoyment of a high level of amenity; and • people would reasonably be expected to be present here continuously, or at least regularly for extended periods, as part of the normal pattern of use of the land. Examples may include residential dwellings, hospitals, schools/education and tourist/cultural.
Medium sensitivity receptor	Surrounding land where: • users would expect to enjoy a reasonable level of amenity, but wouldn't reasonably expect to enjoy the same level of amenity as in their home; or • people wouldn't reasonably be expected to be present here continuously or regularly for extended periods as part of the normal pattern of use of the land. Examples may include places of work, commercial/retail premises and playing/recreation fields.
Low sensitivity receptor	Surrounding land where: • the enjoyment of amenity would not reasonably be expected; or • there is transient exposure, where the people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use of the land. Examples may include industrial use, farms, footpaths and roads.

Table 1: IAQM Table 2 of the IAQM 'Guidance on the assessment of odour for planning'

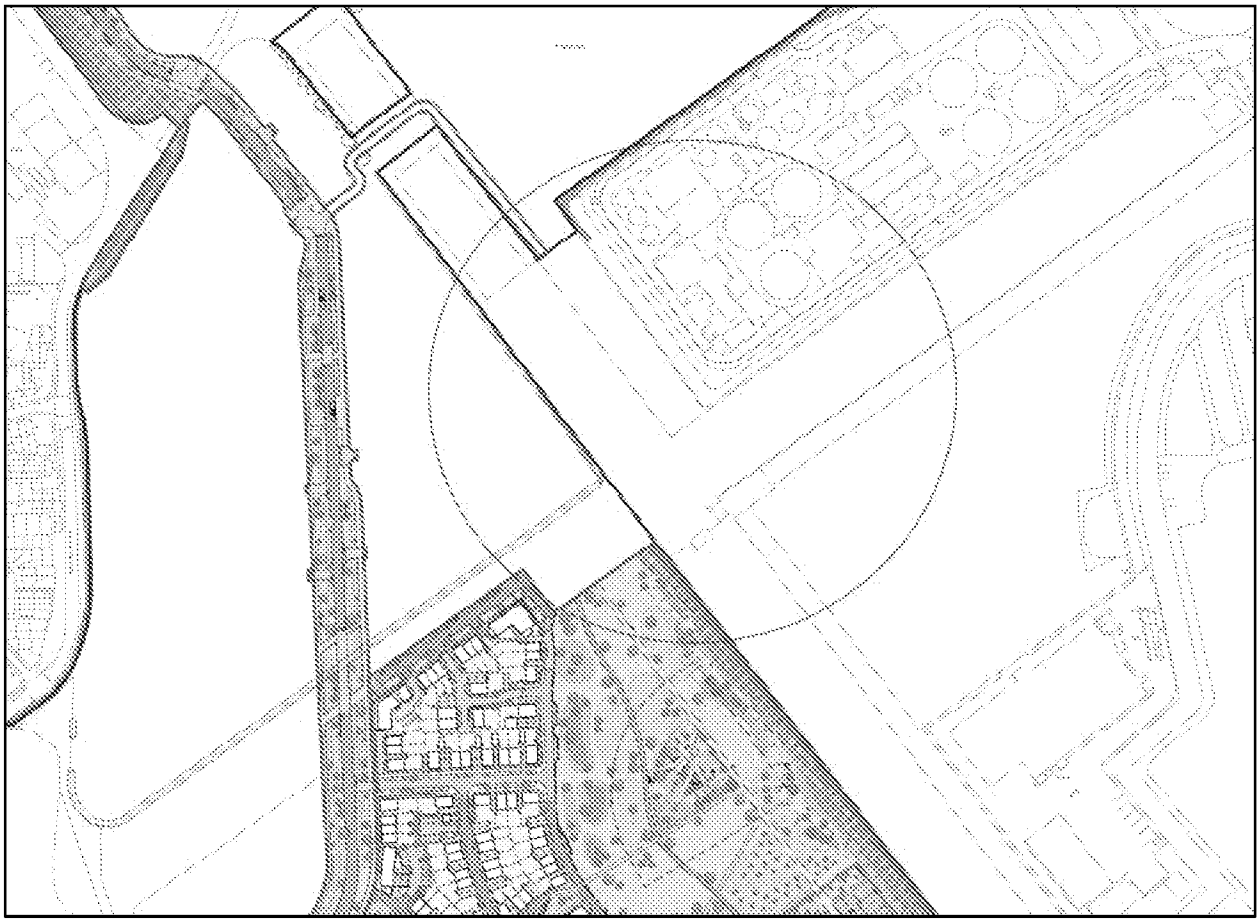


Figure 5: 300m buffer of the Activated Sludge Plant

2.36. As shown in 4 there are no proposed "High sensitivity receptors", such as residential dwellings, hospitals, or schools, within 300m of the Activated Sludge Plant.

3. ADC Environmental Health Comments

3.1. Officers at ADC have provided comments in relation to the infrastructure and RM1 (North) Reserved Matters planning applications.

3.2. The comments regarding the infrastructure Reserved Matters planning application noted that further details of the noise mitigation measures to provide suitable internal and external amenity sound levels at the site needed to be provided to support the discharge of Condition 25.

3.3. The noise assessments which supported the Reserved Matters planning applications for parcels RM1 (North) and RM4 (South) provide details of the assessment of noise at the proposed dwellings for which planning permission is being sought.

3.4. The comments in relation to the RM1 (North) application note that the application should be approved subject to planning conditions. Draft planning conditions have been proposed relating to a CEMP and noise from fixed mechanical plant, including air source heat pumps.

3.5. A CMP been submitted to the ADC planning portal[4]. The CMP is accompanied by a noise assessment which provides an assessment of the noise due to construction activities across the entire site and noise and vibration measures to control noise at the nearest sensitive receptors. Condition 10 of the Outline Permission (ref. F/4/20/OUT) requires a CMP to be submitted for approval prior to commencement of each phase.

3.6. The noise assessment considers the construction phase of the development in relation to the infrastructure, RM1 (North) and RM4 (South) Reserved Matters planning applications.

3.7. The draft condition related to fixed mechanical plant notes that plant should not exceed 5dB below the existing background sound level and if noise from plant has any distinguishable characterises, correction factors should be applied.

[4] Application reference: F/20/24/DOC

3.8. A rating level of 5dB below the representative background sound level is not in accordance with BS4142 and it is instead considered that commercial fixed mechanical plant should be designed to achieve a low impact.

3.9. For domestic heat pumps, an assessment in accordance with BS4142 is not considered the most appropriate guidance to adopt, as BS4142 describes methods for rating and assessing sound of an industrial and/or commercial nature.

3.10. It should be noted that the current proposals for RM1 (North) and RM4 (South) are ground source heat pumps instead of air source heat pumps. Ground source heat pumps typically produce lower noise levels than air source heat pumps, depending on the exact specification of the pumps. The assessment principles for both of these types of heat pumps are the same.

3.11. The Sussex Planning Noise Advice Document notes that noise from domestic air heat pumps should be assessed in accordance with the Microgeneration Certification Scheme planning standards (MC20) and consideration should also be given to the assessment methodology set out in the Chartered Institute of Environmental Health and Institute of Acoustics: Heat Pumps Professional Advice Note. This assessment methodology would also be appropriate for ground source heat pumps

3.12. An assessment in accordance with the documents set out in the Sussex Planning Noise Advice Document would be the most appropriate criteria for the proposed ground source heat pumps.

4. Noise Barrier and Landscaping

Noise Barrier Modelling

4.1. Noise modelling has been conducted based on the existing site and surroundings, the results of the noise survey and the topography of the wider development area. The noise survey conducted at the site consisted of a number of long term monitoring positions and detailed attended measurements of the various commercial and industrial noise sources in the area.

4.2. The noise assessments which accompany the planning applications for parcels RM1 (North) and RM4 (South) provide full details of the survey. The following scenarios are presented within the noise modelling:

- Baseline noise levels;
- Noise levels with the proposed 4m noise barriers;

4.3. Noise modelling is presented during the day, as operations at Ford Airfield Industrial Estate and Redstone Tyres do not occur at night. The noise modelling focuses on Ford Airfield Industrial Estate and Redstone Tyres, as these are the operations which require screening to reduce noise levels. Ambient sound levels (dB $L_{Aeq,T}$) are presented for all scenarios.

4.4. The locations of the 4m high noise barriers are shown in the primary street drawings which accompany the infrastructure Reserved Matters planning application. Structural woodland planting, basin shrub planting and trees are proposed, which will reduce the visual impact of the barriers. An extract of the drawings is shown in Figure 6.

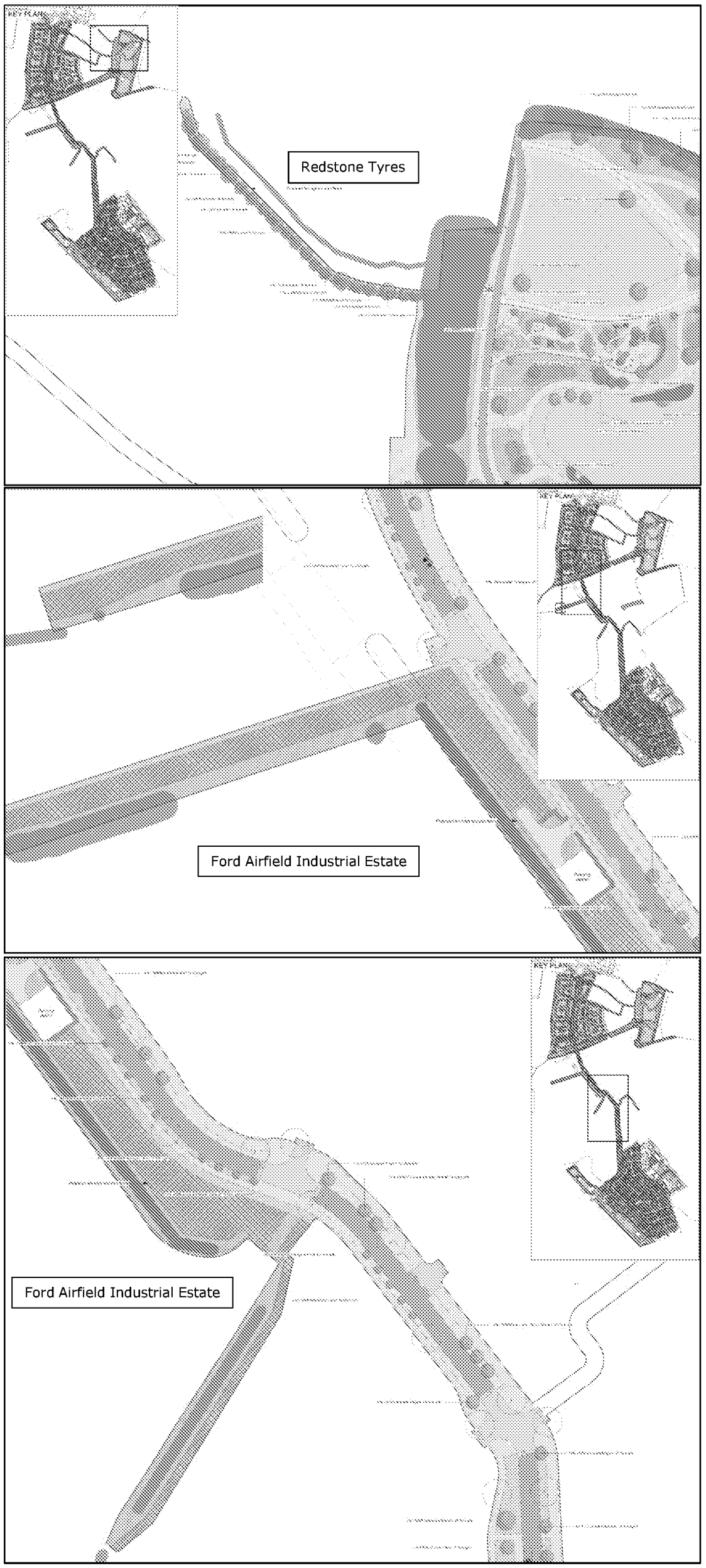


Figure 6: Proposed 4m High Noise Barrier Locations and Landscaping

4.5. A number of heights have been tested and the results of the noise modelling identify that a barrier height of 4m provides the best possible reduction in noise levels, whilst also taking into account other design considerations, such as landscaping and arboriculture. Taller structures would provide little additional acoustic benefit and would have an increased visual impact.

4.6. The results of the noise modelling with the proposed barriers is presented in Figure 7. The noise modelling presents noise from the Ford Airfield Industrial Estate and Redstone Tyres in isolation, to demonstrate the reduction in noise levels achieved by the noise barriers in relation to these operations.

Figure 7: Noise Modelling of the Baseline Noise Levels (Top) and with the Noise Barriers (Bottom)

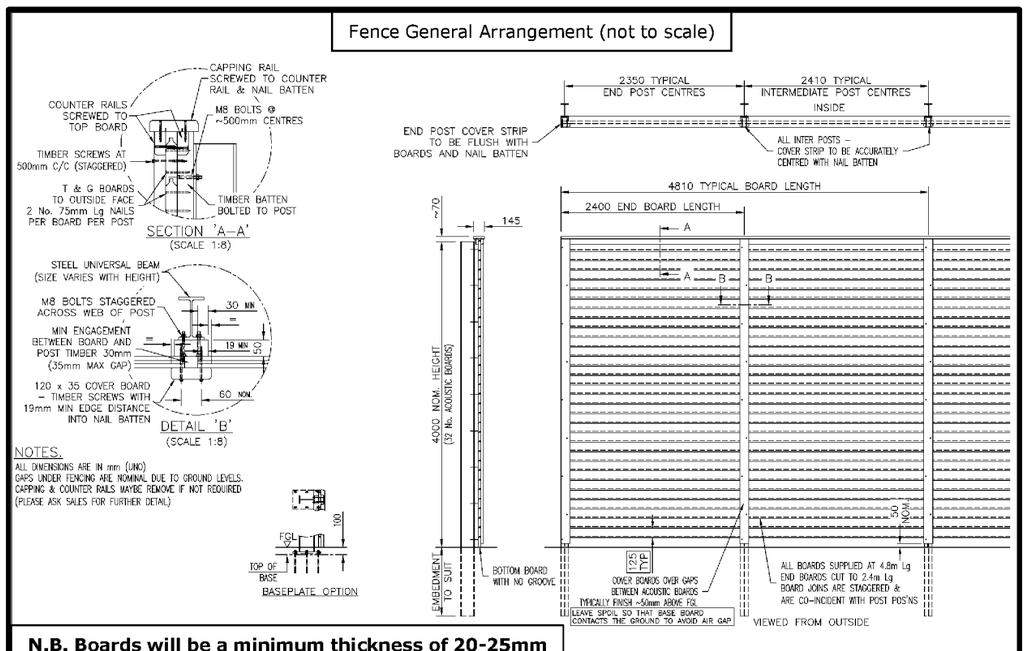
4.7. A significant reduction in noise levels is achieved by the proposed 4m noise barriers. All areas of the site close to Ford Airfield Industrial Estate experience noise levels which are below 47dB $L_{Aeq,T}$ and across the majority of the area noise levels are significantly lower than 43dB $L_{Aeq,T}$. At Redstone Tyres, noise levels are reduced to below 40dB $L_{Aeq,T}$ across the entire area of the site where residential dwellings are proposed.

Noise Barrier Design

4.8. The barriers are proposed to be 4m high fences, the fences will be designed appropriately so that they act as effective noise barriers, which includes:

- Abutted or overlapped panels to provide a continuous screen with no gaps at the base or between panels;
- The barrier will have a minimum surface mass density of 10kg/m^2, so that it will sufficiently resist the passage of sound. This can generally be achieved with 20-25mm thick fence boards.

4.9. Figure 8 shows a general arrangement drawing of the proposed 4m high fences, along with illustrative images. The fences will be constructed in accordance with the principles set out in this technical note.



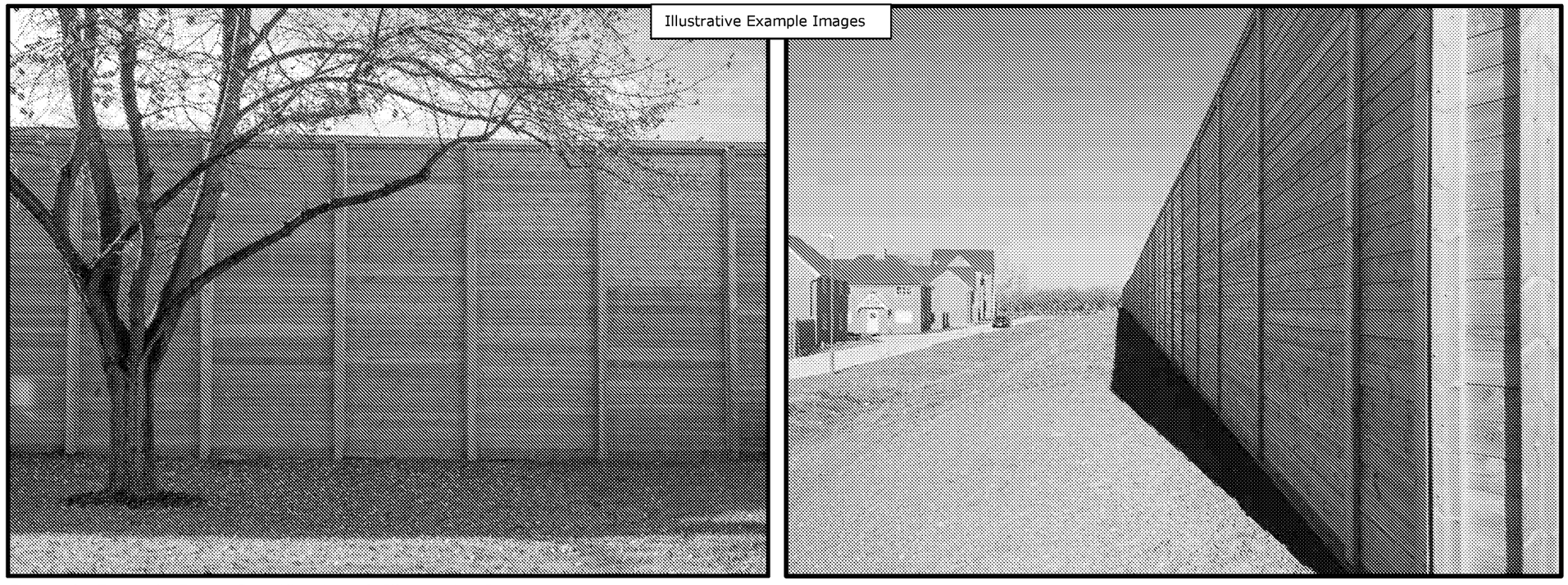


Figure 8: Example Fence Specifications & Illustrative Images

Landscape

4.10. As summarised within the landscape plans for each RM application, boundary landscape planting is proposed around the surrounding edges of each industrial/waste site(s) to ensure sufficient visual screening of neighbouring industrial/waste sites is delivered that safeguards existing and future industrial operations. This includes:

Wicks Farm (IRM)

4.11. Woodland structural planting which comprises an evergreen/deciduous mix is proposed to the front of the proposed 4.0m acoustic fence surrounding the Redstone Tyres site along Ford Lane.

4.12. In addition, individual tree planting is proposed comprising mixed deciduous and evergreen species all with ranging tree stem girths of 14-20cm at planting and expected height of c. 15-20m at full maturity.

Ford Industrial Estate

4.13. Along the boundaries of Ford Industrial Estate and to the rear of the proposed 4.0m acoustic fence are a range of 3m high Ash and Hawthorne hedgerows and a group of c. 15m high Ash trees which for the most part will all be retained.

4.14. To the front of the 4.0m acoustic fence is proposed woodland structural planting comprising a deciduous and evergreen mix which at full maturity will reach heights of c. 15-20m in height.

4.15. Noting WSCC comments in relation to the potential break to visual screening introduced by the location of the pumping station along the Spine Road, a small section of H1012 C (Hawthorne) will be removed and planted with a similar evergreen/deciduous woodland mix that blends with the proposed woodland structural planting to the north and south of the pumping station.

Circular Technology Park / Grundon Waste Facility (WS10 Waste Allocation)

4.16. Along the northern boundary of the Grundon Waste Facility site is an existing c. 11m high mature tree group of Leyland Cypress trees. This tree belt will be for the most part retained, but some limited removal of the tree group will be undertaken to allow for the limited introduction of evergreen species to ensure all-season visual screening between Landings Green and the Grundon Waste Facility. The proposed evergreen species will reach heights of c. 15-20m in height at full maturity.

4.17. Additional woodland structural planting is proposed in the southwest corner of Landings Green which includes mixed evergreen/deciduous planting along the Public Open Space boundaries.

4.18. As part of future RM phases additional woodland screening will be proposed along the western boundaries of the site to ensure future intervisibility will be adequately mitigated against.

5. Conclusions

Noise

5.1. Noise modelling has been undertaken of specific operations in insolation and also to inform the extent and height of the proposed barriers at the site.

5.2. This technical note should be read in conjunction with the noise assessments which accompany the RM1 (North) and RM4 (South) Reserved Matters planning applications.

5.3. Noise modelling of commercial and industrial operators in the area around the site has been based on the results of the noise survey, site observations and publicly available information from planning applications and EA permits.

5.4. Noise from the operations identified in the WSCC comments will be significantly lower than the requirements of the relevant planning conditions when assessed in accordance with BS4142. The mitigation measures to provide suitable internal and external amenity sound levels at dwellings take into account all sources of noise in the area around the development phases. Therefore there will be no adverse effect due to noise from commercial and industrial operations.

5.5. No additional mitigation measures are required to reduce noise from operations identified in the WSCC comments beyond those set out in the noise assessment and noise from these operations will not cause an adverse effect at the proposed dwellings at RM1 (North) and RM4 (South).

5.6. The barriers will comprise 4m high fences, a height of 4m provides the best possible reduction in noise levels, whilst also taking into account other design considerations. Taller structures would provide little additional acoustic benefit and would have an increased visual impact.

5.7. Based on the information set out in this technical note, the proposed barriers will achieve a suitable reduction in noise levels.

5.8. With the noise barrier specification and the mitigation and design measures set out in the noise assessments, noise at proposed dwellings will be controlled so that there is no adverse effect.

Landscape

5.9. The proposed landscape strategy includes a variety of deciduous and evergreen species along waste/industrial use boundaries, to ensure acceptable levels of visual screening will be achieved and to safeguard the existing/future use of neighbouring waste/industrial sites.

Odour

5.10. Further clarification has been provided to WSCC that no "High Sensitive Receptor" proposed properties would fall within the area identified by Condition 35 of F/4/20/OUT. Consequently, further odour assessment to demonstrate no conflict with the operation of the existing Wastewater Treatment Works is not required to support the current separate Reserved Matters proposals.