

Appendix A7.4 - Tata Steel UK Limited (Tata Steel) Soundscape

A7.4.1 Background

The Welsh Government has published three documents since 2019 referring to the topic of soundscape:

- Soundscape; Future Wales: the national plan 2040': 2019; updated in 2021 (See Section A7.4.1.1),
- Noise and Soundscape Action Plan, 2023-2028 (see Section A7.4.1.3)
- Technical Advice Note 11: Air Quality, Noise and Soundscape (DRAFT) (see Section A7.4.2.1).

In addition, the International Organization for Standardization (ISO) has also prepared a standard (ISO 12913 parts 1-3, See Section A7.4.1.4) to consider the measurement and analysis of a soundscape.

A 'soundscape' refers to the acoustic environment or the overall auditory experience of a particular location, taking into consideration the combination of sounds that are present in that environment. Unlike noise, which often has a negative connotation and is associated with unwanted or disruptive sounds, a soundscape is a broader and more inclusive concept that encompasses all sounds, including those that are considered pleasant or desirable.

Soundscape analysis involves examining the quality, characteristics, and patterns of sounds in a given area. It takes into account both natural and human-made sounds, considering how they interact and contribute to the overall sensory experience of a place. Soundscape assessments are often conducted in various contexts, including urban planning, environmental impact assessments, and studies focused on enhancing the well-being and 'liveability' of spaces. Soundscape design involves intentional efforts to shape and create environments with specific acoustic qualities, promoting positive experiences and minimizing potentially harmful noise.

A7.4.1.1 Future Wales: the national plan 2040': 2019; updated in 2021

Future Wales is the national development framework for Wales addressing air quality, soundscape and noise. The documents provide criteria that seek no unacceptable adverse impacts by way of noise (Policy P18) and identify a desire to ensure that noise pollution is reduced or minimised.

A7.4.1.2 Noise and Soundscape Action Plan, 2023-2028, Welsh Government

The *Noise and Soundscape Action Plan* is the Welsh Government's central noise policy document. It outlines the Welsh public sector's strategic policy direction in relation to noise and soundscape management between 2023 and 2028.

A7.4.1.3 Technical Advice Note 11: Air Quality, Noise and Soundscape (DRAFT)

Although this is currently in draft (as of October 2024), there are some useful sections as to how a 'Soundscape Study' should be undertaken, and what it should include. The document advises that

“the soundscape assessment aims to create environments that are not only free from harmful noise but also enriched with sounds that enhance the overall experience and well-being of individuals in that space”. Therefore, looking beyond just limit levels and the magnitude of sound, but the character, and where possible a positive approach to design with respect to sound.

The approach to soundscape assessment, as outlined in this document, involves several key steps and principles to ensure that the sound environment is appropriate for the context and enhances the well-being of individuals. Although it does recognise very clearly that not all developments have the ability to enhance, and where this is not practical, it should seek to reduce the potential for ‘damaging’ an existing soundscape.

1. **Understanding the Context:** Soundscape design focuses on understanding the impact of the sound environment on people's “lived experiences” in a specific context. This involves considering how the collective sounds of a place, along with any physical and non-physical factors, affect people's perception of those sounds, their feelings, and their actions.
2. **Collaborative and Inclusive Process:** Good soundscape design requires a collaborative, creative, and inclusive process of problem-solving and innovation from the outset. This means involving stakeholders, including local communities, in the design process to ensure that the sound environment meets their needs and preferences.
3. **Integration with Placemaking¹:** Soundscape design is integrated with broader placemaking efforts. This involves considering soundscape alongside other design objectives to create high-quality, sustainable places that promote health, well-being, and quality of life.
4. **Noise and Soundscape Design Statement (NSDS):** For developments with significant noise risk or high potential for better placemaking through soundscape design, a Noise and Soundscape Design Statement (NSDS) is required. The NSDS should include a soundscape assessment and evidence of good soundscape design, demonstrating how the design will achieve appropriate sound environments.
5. **Proportionate Approach:** The level of detail in the soundscape assessment and design should be proportionate to the nature and scale of the development and the risks and opportunities it presents. This ensures that the assessment is thorough but not overly burdensome.
6. **Use of Standards and Guidelines:** The approach to soundscape assessment should refer to relevant standards and guidelines, such as those provided by the International Organization for Standardization (ISO) and the British Standards Institution (BSI), to ensure that the assessment is based on best practices and scientific principles.

A7.4.1.4 ISO 12913-1-3: 2014 Acoustics – Soundscape

Part 1 of this standard focuses on the context of the standard, but provides little in terms of methodology.

¹ “Placemaking” is a holistic approach to the planning and design of development and spaces, focused on positive outcomes. It draws upon an area’s potential to create high quality development and public spaces that promote people’s prosperity, health, happiness, and well-being in the widest sense.

PD ISO-TS12913-2 2018 Soundscape Data collection and reporting

This document specifies the requirements and supporting information on data collection and reporting for soundscape studies. It identifies the collection of data related to people, acoustic environment, and context. The document outlines various data collection methods, including soundwalks, questionnaires, guided interviews, and binaural measurements. It also provides guidelines on reporting requirements, such as the selection and classification of participants, characterisation of the acoustic environment, and data collection methods. The document emphasises the importance of considering human perception and context in soundscape studies

PD ISO-TS12913-3 2019 Soundscape Data analysis

This document provides requirements and supporting information on the analysis of data collected in-situ through methods specified in ISO/TS 12913-2. It covers the analysis of quantitative, qualitative, and binaural data, and emphasizes the importance of triangulation for validation. The document includes detailed guidelines on various analysis methods, such as descriptive statistics, inferential statistics, and systematic text analysis. It also discusses the analysis of binaural data and the creation of psychoacoustic maps. The document aims to provide a holistic understanding of soundscapes by integrating different data types and analysis methods

A7.4.1.5 Soundscape in design

The applicability of a soundscape design approach to a development depends on the opportunities for innovative, creative, and participatory design, which are influenced by the development's scale, nature, and context. When required, this approach aims to enhance placemaking as part of a holistic design strategy, ensuring an appropriate soundscape and contributing to a sustainable future.

It is clear from the draft TAN 11 (see Section A7.4.1.3) that preparation of a NSDS, or general ability to include soundscape within the design of all developments is limited. The NSDS should be implemented where there are significant noise risks, or where there is a high potential for increasing the soundscape of an area. We would consider that there is a fundamental difference between being able to add value to a given noise environment through design and reducing the impact on an existing environment through design.

First principles of design, particularly through the preparation of an Environmental Statement (ES) should be to limit impacts from a noise generating development to levels that are classed as 'not significant', then where possible and practical, the design should seek to improve the soundscape.

The practical ability of being able to influence the soundscape of an existing environment, by an existing industrial operator, is limited for a number of reasons. This includes limited ability to undertake works beyond their application site and/or ownership boundary (i.e. make additions or changes to off site areas and at receptors themselves), however they are better placed to protect the existing soundscape and to not have a detrimental impact on what is already present.

A7.4.2 General Approach

The approach to soundscape assessment within an ES is in its infancy and the following approach is what we believe to be required to satisfy the above documents, and has been discussed with NRW for general agreement. We would accept that further detailed study would be undertaken through the

detailed design process, and through the Environmental Permit Variation Application. However, at this stage we do not believe the Proposed Development should be subject to a NSDS.

The following provides an overview of the approach undertaken with regards to soundscape for the Proposed Development, with details of the actual study presented in Section A7.4.3.

1. **Identify Stakeholders & Communities** - Identify noise sensitive areas that have the potential to be impacted by a development (typically within a study area, or area of influence). This should include any areas that are defined as '*Quiet Areas*' within the Noise and Soundscape Action Plan, 2023-2028 (Policy EN10).
2. **Understanding the Context, Collaboration and Local Perception** – An exercise to understand the potential for impact of the development in context of the existing area. Where considered feasible and appropriate, undertake targeted community and stakeholder engagement. This exercise, alongside specialist surveys should look at the presence, and magnitude of different sound sources in a given environment, the existing perception of such sounds by a local population, and the ability to accept change (negatively or positively) to the existing soundscape.
3. **Soundscape through Design** – Identifying where, if possible, the design of a development can incorporate measures to improve a soundscape, and if not how the design can ensure an existing soundscape is not impacted negatively. Where a developer has direct ability to have a positive impact on a soundscape, measures should be included within the design (including preparation of the NSDS). Where the developer does not have the ability to make a positive impact on the existing soundscape, typically through the location or nature of the development, the focus should be on not impacting (changing) the existing soundscape (i.e. not making the soundscape perceptibly 'worse').
4. **Proportionality** – The draft version of TAN 11 specifically mentions proportionality. Following on from point 3 (above), the measures incorporated into a development design should be applied where practical, but proportionality in the context of the development should also be taken into account. Typically, this would account for practical considerations, local constraints, indirect negative impacts (on other disciplines) and cost versus benefit.
5. **Assessment against existing standards and guidelines** – The soundscape study should account for relevant local, national and international guidelines, both on soundscape and standards/guidelines relevant to the development.

A7.4.3 Soundscape Study

A7.4.1.6 Study Area (Stakeholder and Community Identification)

As part of the wider ES Noise Chapter the area of influence/study area has been identified for the subject of noise. Tata Steel UK Limited (Tata Steel) (the Applicant) already operates and generates noise from within the Site, and therefore this study area takes account of the distance from the Proposed Development where a quantifiable change to noise levels (magnitude or perception) could be experienced following the operation of the additional noise sources (EAF and Scrap Processing).

The study area for the soundscape assessment is considered to be the same as identified for the wider ES Noise Chapter (see Section 7.1.1).

In addition, for this specific study, Policy EN10 ‘*Quiet Areas*’ lists a number of areas of tranquillity that have been identified within urban locations. The following locations, within the Port Talbot urban area, have relevance to this development:

- Talbot Memorial Park, Port Talbot (Reference EN10/7); and
- Vivian Park, Port Talbot (Reference EN10/8).

This policy ‘*protects quiet areas from significant increases in noise or other impacts from development that would adversely affect these criteria*’. Where development is proposed near to a quiet area, it will be assessed in relation to its effects on the ‘pillars’ of urban tranquillity and will be required to ensure that there are no significant adverse effects.’ Both Talbot Memorial Park and Vivian Park are located at distances greater than 2.5km from the Proposed Development site and therefore any impacts from the proposal are considered to be negligible; however, through consultation with NRW and NPT, both have been considered for completeness.

The study area is of mixed use, combining residential, parkland, industry and commercial elements. There are also educational, religious and retail facilities within the study area. In terms of transport there are local roads (A roads, B roads and unclassified roads), the M4 motorway, a main railway line running between Cardiff and Swansea (Port Talbot Station approximately 1km to the northern extent), and the Bristol Channel to the western extent of the study area.

Depending on location within the study area, the contribution or dominance of any one noise source to the existing soundscape varies. The resultant soundscape can be as a result of any one of the above, or a combination of these. Inherently the soundscape will change over a given day, week and year in any location as a result of transport use, seasonal fluctuations in use of commercial and retail elements, temporal variance in use of outdoor and commercial spaces etc. However, there will be an underlying theme to the soundscape in each area.

The communities, ecological receptors and stakeholders within the chosen study area, have been considered as part of the study. This has been undertaken from a quantitative perspective (see Section 7.8 of the ES Noise Chapter), and qualitative perspective through this soundscape study.

A7.4.1.7 Monitoring and Engagement (Understanding the Context, Collaboration and Local Perception) – Studies undertaken

This section identifies the monitoring and engagement exercises undertaken to inform this study. It includes a combination of stakeholder and community engagement, quantitative noise monitoring, and targeted observational visits. It should be noted that the exercises are limited where engagement from stakeholders or communities is not forthcoming, and due to variances in soundscape identified above in Section A7.4.1.5.

While the study looks to subjectively describe the soundscape (directly through first person observations², or through consultation responses³), the exercises cannot capture the specific soundscape variances at all periods of a day, week or year. Therefore, the first person observations not only observe what is present during the survey, but what could be present in other periods not observed.

² Acoustic specialists as part of the team preparing the ES noise Chapter

³ Stakeholders and community

Three forms of survey were undertaken:

- **First Person Observational Visits** – Undertaken by acoustic specialists during, and in addition to quantitative monitoring visits. Visits were made to 10no. locations across the study area during day and night time periods. These visits were used to subjectively observe the existing acoustic environment/soundscape, and to identify evidence of other noise contributors which were not audible during the visit, but could conceivably add to the soundscape.
- **Community and Stakeholder Engagement** – Public Consultation Events & Stakeholder Holder Consultation. Direct targeted consultation was undertaken with a number of stakeholders across the study area. This was undertaken through written consultation and covered the project as a whole (i.e. reference to all environmental disciplines, including but not specific to noise⁴).

In addition, a consultation exercise invitation (in the form of a postcard – refer to the Pre-Application Consultation Report that has been submitted with the planning application) was sent to 3,559 addresses near the Port Talbot steelworks, within the study area. This was accompanied by a poster advertising the consultation and the events being displayed at a number of community venues near to the site. Details of the consultation was also notified to the Applicant's employees via email on a number of occasions, and through the use of posters at the Port Talbot Steelworks site. In total 3no. community events, 1no. community webinar, 1no. Tata Steel UK Limited (Tata Steel) employee webinar, and 1no. Tata Steel UK Limited (Tata Steel) employee event were held.

- **Quantitative Surveys** – Noise monitoring within the study area to quantify the existing acoustic environment. Baseline monitoring was undertaken at various positions representative of nearby noise sensitive areas during 2018, 2019, 2022 and 2024. This covered a combination of short and long term monitoring periods, covering both day and night time periods. Further detail on the methodology can be found in Section 3 of Appendix 7.1 (also replicated in Section 3 of Appendix 7.2). This survey data is used to consider the existing environment in relation to noise emissions from the Proposed Development. It can also provide an indication as to how the existing magnitude of sound in an area compares to guidance documents (See Section 7.2 of the ES Noise Chapter).

A7.4.1.8 Monitoring and Engagement (Understanding the Context, Collaboration and Local Perception) – Findings

The findings of the monitoring and engagement exercises are presented in the following section.

First Person Observational Visits

A series of observational visits (simple 'soundwalks'⁵) were undertaken across the study area. Further detail on the methodology, including observation locations, can be found in Section 3 of Appendix 7.1 (also replicated in Section 3 of Appendix 7.2).

⁴ At this stage of the project the consultation exercise with stakeholders and the community, for the purpose of noise, has been undertaken amongst other disciplines. This is to specifically avoid presenting leading questions within a questionnaire which could result in responses being biased, targeted and unhelpful to gaining a true feeling towards noise in the study area. Tata Steel UK Limited (Tata Steel) is committed to undertake a more targeted noise consultation (to aid the soundscape study with reference to ISO 12913-2 section C3.3) or consideration of a targeted 'soundwalk' (C3.1/C3.2 of ISO 12913-2). In addition with any engagement, limited responses can be concluded in different ways. A lack of responses can mean there are no noise issues, or alternatively that people are not interested in responding.

⁵ Soundwalk is a method to obtain human sensations/responses/outcomes, and encompasses a walk or visit through an environment

In general it is considered that the setting of the Proposed Development within an existing and historic industrial site, would mean that there would be relatively low potential for better placemaking through soundscape design, especially as the potential for any improvement to the surrounding soundscape would be limited to the design or incorporation of mitigation on the development site only. It is also acknowledged that due to the existing industrial noise contributions off site, the area is not likely to have the ability to 'accept or change' as discussed in the draft TAN 11 document.

The observed environment (specific to sound) at each position, and the potential sources of sound is described in Table A7.4.1 below.

Location	Name	Daytime Soundscape	Night-time Soundscape
R1	West End	- Urban location dominated by sounds generated by anthropogenic activity (human generated activity), specifically noise from nearby industrial site (Port Talbot Steel Works). Towards the end of West End, road traffic noise from A4241 becomes dominant. Occasional railway noise due to nearby line. - General commercial and light industrial noise (workshops and GV and HGV movements) associated with Llewellyn Quay will also add to the soundscape locally at the northern end of West End. - Due to the neighbouring residential premises, there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). - Sounds from nature include bird calls (both terrestrial habiting birds and water birds on the neighbouring water body) and some noise from foliage moving in the wind. There is a small flood relief channel under the A4241 which has the potential to generate water noise following heavy rains.	- Urban location dominated by sounds generated by human activity, specifically noise from nearby industrial site (including LGV and HGV movements). - Occasional road traffic noise from A4241 and M4, however this is infrequent. - Sounds from nature include some noise from foliage moving in the wind and insects during summer periods.
<u>Soundscape Summary</u> <i>Industrial Noise Descriptors:</i> indistinct background 'hummm', occasional indistinct clatters/bangs <i>Transport Noise Descriptors:</i> indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes <i>Commercial/Domestic Descriptors:</i> pedestrian movement, Llewellyn Quay commercial noise, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) <i>Natural Noise Descriptors:</i> bird call and song, wind through trees, rain noise, potential flood relief culvert The soundscape in this location is not considered to be unique or distinct from a similar urban environment close to transportational noise sources and on the edge of a large established industrial area. The observer would not describe the soundscape as 'pleasant', or 'calm'. As the industrial sound and transportation noise in the main is indistinct, the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.			
R2	Prince Street	- This urban location is dominated by sounds generated by human activity, specifically noise from nearby industrial site (Port Talbot Steel Works). Road noise from A4241 and M4 is also prominent. - There is also a small scale car repair shop which generates intermittent banging and car engine noise. This is localised only.	- This urban location is dominated by sounds generated by human activity, specifically noise from nearby industry. - Road traffic noise from the A4241, M4 motorway, and rail traffic noise is also clearly audible in this soundscape, however this is infrequent in nature. (particularly for rail movements) and becomes less frequent the later in the evening/night you go.

Location	Name	Daytime Soundscape	Night-time Soundscape
		- Due to the neighbouring residential premises (and a couple of primary schools), there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). - Sounds from nature include occasional bird calls and small amounts of foliage moving in the wind (vegetation is limited to a small number of isolated trees, and low level soft leaf vegetation). - Rail traffic noise is also apparent in this location but this is intermittent, and not prolonged in duration.	- Sounds from nature include foliage moving in the wind is also present, however due to absence of large scale vegetation this is a minor contributor to the soundscape.
		<u>Soundscape Summary</u> <i>Industrial Noise Descriptors:</i> indistinct background 'hummm', occasional indistinct clatters/bangs <i>Transport Noise Descriptors:</i> indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes <i>Commercial/Domestic Descriptors:</i> pedestrian movement, 'chatter', children play, small scale car repair shop, DIY noise (banging and electrical items such as lawn mowers etc.) <i>Natural Noise Descriptors:</i> bird call and song, wind through isolated trees, rain noise The soundscape in this location is not considered to be unique or distinct from a similar urban environment close to transportational noise sources and on the edge of a large established industrial area. There are also other sources of noise you would expect in such an environment including small scale commercial, and educational premises (primary schools). The observer would not describe the soundscape as 'pleasant', or 'calm'. As the industrial sound and transportation noise in the main is indistinct, the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	
R3	Brynhyfryd Road	- Urban location dominated by sounds generated through human activity, specifically noise from nearby industrial site (Port Talbot Steel Works, and Solar Heat Energy Demonstrator, Gas Turbine Research Centre) and roadway traffic from the elevated A4241 road, and ground level A48. - Occasional train noise - Due to the neighbouring residential premises, an educational premises (Brombil School and Afan College) there is an expectation that the environment would also include noise sources such as children playing, sports noise (playing fields), domestic noise, music, DIY activities and outdoor maintenance (grass cutting etc.). - Sounds from nature include bird calls and some noise from foliage moving in the wind depending on proximity to grass and woodland.	- Urban location dominated by sounds generated by human activity, specifically noise from nearby industrial sites (Port Talbot Steel Works, and smaller scale industry). - Occasional roadway traffic noise from A4241 and A48, however this is infrequent, and reduces further during the later night time, early morning periods. - Sounds from nature include some noise from foliage moving in the wind. - Occasional train movement noise however this is limited during the middle of the night once trains stop.

Location	Name	Daytime Soundscape	Night-time Soundscape
		<u>Soundscape Summary</u> Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs, occasional train noise movements Transport Noise Descriptors: indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, school noise, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through trees, rain noise The soundscape in this location is not considered to be unique or distinct from a similar urban environment close to transportational noise sources and on the edge of a large established industrial area. The observer would not describe the soundscape as 'pleasant', or 'calm'. As the industrial sound and transportation noise in the main is indistinct, the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	
R4	Longland Lane	- Urban location dominated by sounds generated by human activity, specifically noise from the nearby industrial site (BOC, Western Bio-Energy and Margam Green Energy Plant) and roadway traffic from the A48 and M4 motorway. - There are some high capacity electrical transmission lines which have the potential to generate corona discharge noise locally in humid and damp conditions, but this will be limited to areas directly below the lines. - There are some residential premises in this area, and therefore there is an expectation that the environment would also include small amounts of domestic noise such as children playing, bicycle movement (cycle path), music, DIY activities and outdoor maintenance (grass cutting etc.). - Sounds from nature include bird calls (land habiting birds and water habiting birds on the Eglwys Nunydd Reservoir) and some noise from foliage moving in the wind is likely to be reasonably high given the larger areas of grassland, woodland and scrub.	- Urban location dominated by sounds generated by human activity, specifically noise from the nearby industrial site (BOC, Western Bio-Energy and Margam Green Energy Plant). - Occasional roadway traffic noise from A48 and M4 however this is infrequent and becomes less frequent during late night and early morning periods. - Sounds from nature include some noise from foliage moving in the wind and as you get closer to grassland, scrub and wooded areas, insects and amphibians during summer night time periods will be present.
		<u>Soundscape Summary</u> Industrial Noise Descriptors: distinct background industrial 'hummm' from BOC facility (smaller contribution from other localised industries), distant occasional indistinct clatters/bangs Transport Noise Descriptors: distinct background traffic 'hummm' from M4 to east, revving and passing of local cars and motorbikes	

Location	Name	Daytime Soundscape	Night-time Soundscape
		Commercial/Domestic Descriptors: lower level of pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise The soundscape in this location is not considered to be unique or distinct from a similar urban environment close to transportational noise sources and on the edge of a large established industrial area. The observer would not describe the soundscape as 'pleasant', or 'calm', although in some areas the views of woodlands and grassland make the environment appear more 'tranquil'. Although the transportation noise in the main is distinct, and there is an obvious dominance of the BOC industrial site, the soundscape would not be described as 'monotonous'. Some people may consider the noise from the BOC as being 'annoying', depending on the time of day, distance from the site and sensitivity to the sound source. Due to the regular, and dominant nature of traffic movements on the M4 motorway, you could describe the soundscape as somewhat eventful (repetitive events). Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	
R5	Eglwys Nunydd	- This is in the main a suburban area on edge of a rural area, bounded to the west by a motorway (M4), and nature reserve (Eglwys Nunydd Reservoir) beyond this. There are a large number of open fields (agricultural and grassland). The soundscape is dominated by noise from motorised traffic on the nearby motorway (M4) and to a lesser extent the B4283 road. - The Afan Landscape business is present in the area and will add some small scale LGV noise and general mechanical noise. - As there are a small number of residential premises in the vicinity, there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). There is also likely to be some small scale agricultural noise. - Sounds from nature included occasional bird calls (both land and water habiting). There will also be insect and amphibian noise during summer night time periods. Soundscape Summary Industrial Noise Descriptors: indistinct background 'hum', occasional indistinct clatters/bangs Transport Noise Descriptors: distinct traffic 'hum' from M4 to the west, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: landscape business vehicle and mechanical noise, pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise	

Location	Name	Daytime Soundscape	Night-time Soundscape
		The soundscape in this location is not considered to be unique or distinct from a similar semi urban/rural environments directly adjacent to transportational noise sources and on the edge of a rural area. In some sections of this location the observer could consider the soundscape to be 'pleasant, but with a background noise of anthropogenic . In other parts of this area, observers would not describe the soundscape as 'pleasant' or 'calm', although the outlook (visually) and natural surrounds give the appearance of a calm and tranquil environment. Although the transportation noise in the main is distinct in large parts of this area, the soundscape would not be described as 'annoying' or 'monotonous'. However due to the regular, and dominant nature of traffic movements on the M4 motorway, you could describe the soundscape as somewhat eventful (repetitive events). Due to the relatively high contribution of anthropogenic noise within this area (transportation) across a 24 hr period, but natural appearance in some areas, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	
R6	Margam Moors	- Wilderness location adjacent to significant industrial site. - Acoustic environment varies depending on adjacency to industrial activities (Port Talbot Steel Works). - Noise from motorised traffic is limited to distant roads (likely to be M4). - Occasional noise from dogs being walked across the SSSI. - Sounds from nature included birds calls (water dwelling and ground habiting), insects and amphibians during summer months. Wildlife noise was more apparent in this area than at Receptors R1-R5, although the environment is influenced heavily by anthropogenic sources from industry sources.	- Wilderness location adjacent to significant industrial site. - Acoustic environment dominated by sounds generated by human activity, specifically from adjacent industrial activities. Occasional noise from the local road network (M4 motorway) and railway movements, however these were both infrequent. - Sounds from nature included birds occasional calls, amphibians and insects. Although this was a less built up area, at night anthropogenic sound source were still a significant contribution to the noise environment in this area as a result of industrial noise.
		<u>Soundscape Summary</u> Industrial Noise Descriptors: distinct background 'hummm', occasional indistinct clatters/bangs from north Transport Noise Descriptors: indistinct background traffic 'hummm' from east Commercial/Domestic Descriptors: occasional pedestrian movement, dog barking, human 'chatter' Natural Noise Descriptors: bird call and song, wind through trees, rain noise, insects an amphibians The soundscape in this location is not considered to be unique or distinct from a similar natural location on the edge of an industrialised urban area. At many parts in this area, the observer could consider the area as calm and pleasant, but with an underlying sound of industry and distant traffic. In areas closer to the industrial site at the Port Talbot Seel Works, the observer would not specifically describe the soundscape as 'pleasant', or 'calm' purely from a sound point of view, due of the presence of anthropogenic sources. However, this natural area, in the context of the wider area (being an urban and industrialised area), this location could be considered to be more 'relaxed' and subjectively 'calmer' to users of the area. Many of the localised viewpoints within this area also aid the feeling of being calmer with greenery, vegetation and presence of more avifauna.	

Location	Name	Daytime Soundscape	Night-time Soundscape
		Although the industrial sound is prominent in some areas, and transportation noise in the main is indistinct, the contribution of these sources to the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry) across a 24 hr period, but anticipated calmer perception of people who use this area, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape. Any significant changes to this noise environment could negatively impact the soundscape.	
R7	Eglwys Nunydd reservoir	- This is in the main a semi rural environment bounded by a motorway (M4) to the east, and nature reserve (Eglwys Nunydd Reservoir) to the west. There are a large number of open fields (agricultural and grassland). The soundscape is dominated by noise from motorised traffic on the nearby motorway (M4) and to a lesser extent the B4283 road. - As there are a small number of residential premises in the vicinity, and the Tata Steel UK Limited (Tata Steel) Sailing Club, there is an expectation that the environment would also include domestic noise sources such as sports noise, children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). There is also likely to be some small scale agricultural noise. - Sounds from nature included occasional bird calls (both land and water habiting). There will also be insect and amphibian noise during summer night time periods.	- Semi rural location dominated by noise from motorised traffic on the nearby motorway (M4) which is approximately 200 m west of the location and the B4283. Noise from vehicle movements reduces. - Sounds from nature included some noise from foliage moving in the wind, insect and amphibian noise through summer periods.
		<u>Soundscape Summary</u> Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs Transport Noise Descriptors: distinct traffic 'hummm' from M4 to the east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise The soundscape in this location is not considered to be unique or distinct from a similar semi rural environments directly adjacent to transportation noise sources and on the edge of a large established industrial area. In some sections of this location the observer could consider the soundscape to be 'pleasant, but with a background noise of anthropogenic . In other parts of this area, observers would not describe the soundscape as 'pleasant' or 'calm', although the outlook (visually) and natural surrounds give the appearance of a calm and tranquil environment. Although the transportation noise in the main is distinct in large parts of this area, the soundscape would not be described as 'annoying' or 'monotonous'. However due to the regular, and dominant nature of traffic movements on the M4 motorway, you could describe the soundscape as somewhat eventful (repetitive events).	

Location	Name	Daytime Soundscape	Night-time Soundscape
		Due to the relatively high contribution of anthropogenic noise within this area (transportation) across a 24 hr period, but natural appearance, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	
R8	Vivian Park	- Urban location dominated by sounds from nature, such as occasional bird calls and some noise from foliage moving in the wind. - Some sounds generated by human activity were audible, such as roadway traffic noise, however this was infrequent and non-localised. - Distant noise from small industrial estate at 'Port Talbot Business Units'. - Due to the neighbouring residential premises, there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). - Presence of sports pitches and hard surfaced sports facilities, noise from sporting activities will be present.	- Urban location where continuous sound generated by human activity, specifically noise generated from the nearby industrial site, was audible but not dominant. - Road traffic noise from the A4241 was louder, as were sounds generated by nature, such as foliage moving in the wind, however both were infrequent.
		<u>Soundscape Summary</u> <i>Industrial Noise Descriptors:</i> indistinct background 'hummm', occasional indistinct clatters/bangs <i>Transport Noise Descriptors:</i> indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes <i>Commercial/Domestic Descriptors:</i> pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) <i>Natural Noise Descriptors:</i> bird call and song, wind through trees, rain noise, barking dogs The soundscape in this location is not considered to be unique or distinct from a similar town park location on the edge of an industrialised urban area. The observer would not specifically describe the soundscape as 'pleasant', or 'calm' purely from a sound point of view, due of the presence of anthropogenic sources. However, in the context of the wider area (being an urban and industrialised area), this location (particularly the Stepping Stones Nature Reserve) could be considered to be more 'relaxed' and subjectively 'calmer'. Some of the localised viewpoints within this area also aid the feeling of being calmer with greenery, vegetation and presence of more avifauna. Although the industrial sound and transportation noise in the main is indistinct, the contribution of these sources to the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, but anticipated calmer perception of people who use this area (due to visual surroundings), we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	

Location	Name	Daytime Soundscape	Night-time Soundscape
R9	Talbot Memorial Park / Parc Coffa Talbot	- Urban location dominated by sounds generated by human activity, specifically noise from nearby industrial site. Some road traffic noise from A48 is also prominent, along with occasional rail movements. However traffic noise from the elevated M4 motorway which bounds the north-eastern corner of the site is dominates the soundscape. - Due to the neighbouring residential premises, there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.). - Sounds from nature include occasional bird calls and foliage moving in the wind. - Sports noise is also present during use of the sports pitches (rugby) .	- Urban location dominated by sounds generated by human activity, specifically noise from nearby industrial site. Some road traffic noise from A48 and more from the M4 motorway, however this is infrequent particularly in later night/early morning periods. - Sounds from nature include constant noise from a nearby water course (Ffwrdd Wyllt) and foliage moving in the wind, however this was in frequent.
		<u>Soundscape Summary</u> <i>Industrial Noise Descriptors:</i> indistinct background 'hum', occasional indistinct clatters/bangs on the distance and not local <i>Transport Noise Descriptors:</i> distinct background traffic 'hum' from the elevated M4 motorway, revving and passing of local cars and motorbikes <i>Commercial/Domestic Descriptors:</i> pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.), sports noise (cheers and shouts) <i>Natural Noise Descriptors:</i> bird call and song, wind through trees, rain noise, barking dogs The soundscape in this location is not considered to be unique or distinct from a similar town park location on the edge of an industrialised urban area. The observer would not specifically describe the soundscape as 'pleasant', or 'calm' purely from a sound point of view, due of the presence of anthropogenic sources (mainly the motorway to the north east corner). However, in the context of the wider area (being an urban and industrialised area), this location could be considered to be more 'relaxed' and subjectively 'calmer'. Some of the localised viewpoints within this area also aid the feeling of being calmer with greenery, vegetation and presence of more avifauna. The presence of dominant motorway noise could be classed as 'monotonous' or 'annoying' by local users of the Park depending on the time of day, however this could be offset by the more natural and green surroundings. Due to the relatively high contribution of anthropogenic noise within this area (mainly transportation) across a 24 hr period, but anticipated calmer perception of people who use this area (due to visual surroundings), we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	

Location	Name	Daytime Soundscape	Night-time Soundscape
Proxy	Heol Fach, North Cornelly	- Urban location dominated by sounds generated by human activity, specifically roadway traffic noise from the M4 motorway and B4283, and occasional rail movements. - Due to the neighbouring residential premises, there is an expectation that the environment would also include domestic noise sources such as children playing, music, DIY activities and outdoor maintenance (grass cutting etc.) - Sounds from nature include occasional bird calls and some noise from foliage due to wind.	- Urban location dominated by sounds generated by human activity, specifically roadway traffic noise from the M4 motorway and B4283. Sounds from nature include some noise some noise from foliage moving in the wind.
		<u>Soundscape Summary</u> Industrial Noise Descriptors: indistinct background 'hum', rail noise occasional indistinct clatters/bangs Transport Noise Descriptors: distinct background traffic 'hum' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through trees, rain noise The soundscape in this location is not considered to be unique or distinct from a similar urban environment close to transportational noise sources and on the edge of a large established industrial area. The observer would not describe the soundscape as 'pleasant', or 'calm'. As the industrial sound and transportation noise in the main is indistinct, the soundscape would not be described as 'annoying' or 'monotonous'. Due to the relatively high contribution of anthropogenic noise within this area (industry and transportation) across a 24 hr period, we do not consider this location has the capacity or ability to accept a change (perceived negative) to the existing soundscape.	

Table A7.4.1 Soundscape Observations - Baseline

The soundscape across the study area comprises a combination of natural, and anthropogenic sources. In general, anthropogenic are considered to be subjectively, and objectively, more dominant in their contribution to a soundscape than natural sounds. The dominance of any single source, at any one location in the study area is dependent on distance from source, dominance of other sources, time of day, weather conditions and time of year. However, in all locations distant and local road traffic was clearly distinguishable, as well as some form of industrial noise.

Subjectively through observational visits, the soundscape at each location was not considered to be of sole natural content, even within the SSSI. The SSSI has less local anthropogenic noise influences, but still a general background 'hum' of industry and traffic, and intermittent anthropogenic disturbances. None of the locations would be considered to be 'tranquil⁶' from a sound perspective, although many locations within the SSSI could be considered tranquil from a visual perspective given its rural setting. Actual tranquility will be determined by an individual, and is highly subjective.

Community and Stakeholder Engagement

A detailed analysis of the consultation exercise for the project can be found in the Pre-Application Consultation Report that has been submitted with the planning application. A summary is provided below:

- Of the 3,559 invites, in total 590 people attended the in-person and online consultation events (47 attended the in person community events, 83 attended the Tata Steel UK Limited (Tata Steel) employee in person event, 440 people attended the online Tata Steel UK Limited (Tata Steel) employee webinar, and 20 members of the public attended the community online webinar)
- A total of 18 feedback forms were received, and 15 emails were received in response to the consultation email.

No specific written responses were received relating to noise specifically. Comments relating to noise were received verbally from a small number of individuals and detailed the following:

- How noisy would the EAF be?,
- What type of noise would the EAF produce?,
- How does the EAF noise compare to the noise from the 'heavy end'?

There were no specific responses from the community to the subjective feeling or opinion on the current soundscape across the study area, with the exception of a minor comment around how the environment is likely to change from a Tata Steel UK Limited (Tata Steel) operations point of view (existing vs new). The main noise chapter in the ES provides the quantitative predictions on how noise will change in the area as a result of the development, whereas the section below discusses the likely changes to the soundscape from a non quantitative perspective.

⁶ The Welsh Government (The State of Natural Resources Report (SoNaRR): Assessment of the Sustainable Management of Natural Resources, 2012) provides an expanded definition of Tranquility: provides 'An untroubled state, which is peaceful, calm and free from unwanted disturbances. This can refer to a state of mind or a particular environment. Tranquility can be measured in terms of the absence of unwanted intrusions, or by a balancing of positive and negative factors. These include the presence of nature, feeling safe, visually pleasing surroundings and a relaxing atmosphere.'

Quantitative Surveys/Predictions

A quantitative study (surveys and predictions) has been undertaken for the purpose of the ES Noise Chapter, and the soundscape study. The **baseline** noise environment in the study area has been quantified through surveys undertaken between 2018 and 2024. A detailed analysis of this is presented in Section 7.6 of the ES Noise Chapter.

The **interim baseline** (following the shutdown of the 'heavy end') is currently being quantified through measurements, with the findings expected following the submission of the ES (end of 2024). However the interim baseline has been estimated for the purpose of the ES based on a worst case scenario, but with the commitment through conditions to ensure that an Operational Noise and Vibration Management Plan (ONVMP) will be prepared which will include the quantification and reporting of the interim noise environment. This will also be included within a subsequent noise study required in support of an Environmental Permit Variation Application.

The **future noise environment** has been quantified through computer noise modelling, accounting for embedded mitigation. The results of this are presented in Section 7.8 of the ES Noise Chapter.

The results of the quantitative study (worst case) show that the noise contribution from the EAF and associated scrap handling processes will be equal to, or lower to that experienced in the existing baseline environment. Therefore, industrial noise from the Site at Port Talbot will be reduced (quieter), or the experience will be no different at all receptors. Further details are presented in Section 7.12 of the ES Noise Chapter.

A7.4.1.9 Impacts on Soundscape

Due to the nature of the Proposed Development, and restrictions on areas accessible, and under the control of the Applicant, the soundscape across the study area cannot be directly influenced other than through control or change in noise emissions from either the existing operations, or the Proposed Development. For the Proposed Development, the Applicant has looked to ensure that the new operations will not have a detrimental impact on the existing baseline noise environment from a quantitative perspective, nor an impact on the existing soundscape from a qualitative perspective.

Table A7.4.2 provides an indication of how the soundscape is likely to change over the duration of the Proposed Development (covering both day and night periods). This will consider the following scenarios:

1. Baseline Soundscape – noise environment prior to the shutdown of the 'heavy end'
2. Interim Soundscape – noise environment between the shutdown of the 'heavy end' and the operation of the EAF
3. Future Soundscape – noise environment following operation of the EAF (and associated scrap processing)

Table A7.4.2 considers those changes to the soundscape which the Applicant has control over and does not seek to discuss or comment on any future changes in the area related to transport, other developments, or industry which it has no control over, or awareness of.

The impact of the 'heavy end' shutting down has the biggest impact at those areas closest to the area occupied by the 'heavy end', these being areas to the north and north east (R1-R4) of the Site boundary. Areas to the south east, and south (R5-R9) experience a lesser contribution from the 'heavy end' operations, and therefore will experience less of a change relative to the existing soundscape.

Receptors have been grouped where there is a similar change to the soundscape expected. It also should be noted that the key determining assessment is the future soundscape compared to the baseline soundscape (rather than interim), following legal opinion confirming this approach.

Reference to the magnitude of perceptible change, i.e. moderate, small etc.' is based on specialist acoustic subjective opinion rather than a quantitative value.

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
R1	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs Transport Noise Descriptors: indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, Llewellyn Quay commercial noise, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through trees, rain noise, potential flood relief culvert	<u>Daytime:</u> Industrial Noise Descriptors: There will be a moderate perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. The general background industrial 'hummm' will still be audible and noticeable, but much quieter than experienced at baseline. There will still be indistinct clatters and bangs, at a similar level to baseline, but likely to be fewer of these. Noise from construction and small scale demolition activities as part of the Proposed Development, will be audible, but unlikely to be distinguishable from the general industrial 'hummm' still present. The noise source will include mobile plant items (excavators, telehandlers, cranes and other earthmoving plant), and manual impact noises from small scale demolition, and erection of new buildings and barriers. Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes	<u>Daytime:</u> Industrial Noise Descriptors: There will be a moderate perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. There will be a small perceptible change in industrial 'hummm' when compared to 'interim' (increase in magnitude). The general background industrial 'hummm' will still be audible and noticeable, but quieter than experienced at baseline. There will still be indistinct clatters and bangs, at a similar level and frequency to those experienced as part of the baseline soundscape. Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes
R2	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs Transport Noise Descriptors: indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, small scale car repair shop, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through isolated trees, rain noise	<u>Daytime:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes	<u>Daytime:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes
R3	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs, occasional train noise movements	<u>Daytime:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes	<u>Daytime:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
	Transport Noise Descriptors: indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, school noise, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through trees, rain noise	Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be a slight <u>positive impact</u> on the soundscape during the interim period. This is as a result of the shutting down of the 'heavy end'. Industrial noise will be lower in perception (quieter) than the baseline environment. There will be some additional noise emissions audible during daytime periods (compared to night time) as a result of construction works at the Proposed Development, however these are likely to be of a similar character to other noise emissions already present in the baseline in interim soundscapes.	There will be a slight <u>positive impact</u> on the soundscape during the future period. This is a result of the EAF and associated scrap processing contributing less to the baseline noise environment than the 'heavy end'. Industrial noise will be lower in perception (quieter) than the baseline environment. This is relevant to both daytime and night time periods.
R4	Industrial Noise Descriptors: distinct background industrial 'hummm' from BOC facility (smaller contribution from other localised industries), distant occasional indistinct clatters/bangs Transport Noise Descriptors: distinct background traffic 'hummm' from M4 to east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: lower level of pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.)	<u>Daytime</u> Industrial Noise Descriptors: There will be a small perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. The general background industrial 'hummm' will still be audible and noticeable, but quieter than experienced at baseline. There will still be indistinct clatters and bangs, at a similar level to those experienced at baseline, but there are likely to be fewer of these. Noise from construction and small scale demolition activities as part of the Proposed Development, will	<u>Daytime</u> Industrial Noise Descriptors: There will be a small perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. There will be a small perceptible change in industrial 'hummm' when compared to 'interim' (increase in magnitude). The general background industrial 'hummm' will still be audible and noticeable, but quieter than at baseline. There will still be indistinct clatters and bangs, at a similar level and frequency to the baseline soundscape.

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
	Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise	be audible, and may be distinguishable from the general industrial 'hum' still present. The noise source will include mobile plant items (excavators, telehandlers, cranes and other earthmoving plant), and manual impact noises from small scale demolition, and erection of new buildings and barriers. Transport Noise Descriptors: no anticipated changes	Transport Noise Descriptors: potential for a small number of increased train movements being experienced, but the character of these will be similar to existing and will not change the soundscape character. Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes
R5	Industrial Noise Descriptors: indistinct background 'hum', occasional indistinct clatters/bangs Transport Noise Descriptors: distinct traffic 'hum' from M4 to the west, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: landscape business vehicle and mechanical noise, pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise	Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only). Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be a slight positive impact on the soundscape during the interim period. This is a result of the shutting down of the 'heavy end'. Industrial noise will be lower in perception (quieter) than in the baseline environment. The character of sound in the interim soundscape will be similar to the baseline soundscape.	<u>Night time:</u> Industrial Noise Descriptors: Same as daytime Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be a slight positive impact on the soundscape during the future period. This is a result of the EAF and associated scrap processing contributing less to the baseline noise environment than the 'heavy end'. Industrial noise will be lower in perception (quieter) than the baseline environment.

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
R6	Industrial Noise Descriptors: distinct background 'hummm', occasional indistinct clatters/bangs from north Transport Noise Descriptors: indistinct background traffic 'hummm' from east Commercial/Domestic Descriptors: occasional pedestrian movement, dog barking, human 'chatter' Natural Noise Descriptors: bird call and song, wind through trees, rain noise, insects and amphibians	<u>Daytime</u> Industrial Noise Descriptors: There will be a small perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. The general background industrial 'hummm' will still be audible and noticeable, but quieter than experienced at baseline. There will still be indistinct clatters and bangs, at a similar level to those experienced at baseline, but there are likely to be fewer of these. Noise from construction and small scale demolition activities as part of the Proposed Development, will be audible, and may be distinguishable from the general industrial 'hummm' still present. The noise source will include mobile plant items (excavators, telehandlers, cranes and other earthmoving plant), and manual impact noises from small scale demolition, and erection of new buildings and barriers. Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only).	<u>Daytime</u> Industrial Noise Descriptors: There will be a small perceptible change in the noise level associated with 'industry' (reduction in magnitude) when compared to baseline. There will be a small perceptible change in industrial 'hummm' when compared to 'interim' (increase in magnitude). The general background industrial 'hummm' will still be audible and noticeable, but quieter than at baseline. There will still be indistinct clatters and bangs, at a similar level and frequency to the baseline soundscape. Transport Noise Descriptors: potential for a small number of increased train movements being experienced, but the character of these will be similar to existing and will not change the soundscape character. Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes
R7	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs Transport Noise Descriptors: distinct traffic 'hummm' from M4 to the east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, insects, amphibian calls, wind through trees, rain noise	Noise from construction and small scale demolition activities as part of the Proposed Development, will be audible, and may be distinguishable from the general industrial 'hummm' still present. The noise source will include mobile plant items (excavators, telehandlers, cranes and other earthmoving plant), and manual impact noises from small scale demolition, and erection of new buildings and barriers. Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes <u>Night time:</u> Industrial Noise Descriptors: Same as daytime but no anticipated regular construction noise (majority of construction will be restricted to daytime periods only).	<u>Night time:</u> Industrial Noise Descriptors: Same as daytime Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
		Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be a slight <u>positive</u> impact on the soundscape during the interim period. This is a result of the shutting down of the 'heavy end'. Industrial noise will be lower in perception (quieter) than in the baseline environment. The character of sound in the interim soundscape will be similar to the baseline soundscape.	Natural Noise Descriptors: no anticipated changes There will be a slight <u>positive</u> impact on the soundscape during the future period. This is a result of the EAF and associated scrap processing contributing less to the baseline noise environment than the 'heavy end'. Industrial noise will be lower in perception (quieter) than the baseline environment.
R8	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs Transport Noise Descriptors: indistinct background traffic 'hummm' from east, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.) Natural Noise Descriptors: bird call and song, wind through trees, rain noise, barking dogs	Industrial Noise Descriptors: no anticipated changes Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be <u>no anticipated</u> changes to the baseline or interim soundscape as part of the Proposed Development.	Industrial Noise Descriptors: no anticipated changes Transport Noise Descriptors: no anticipated changes Commercial/Domestic Descriptors: no anticipated changes Natural Noise Descriptors: no anticipated changes There will be <u>no anticipated</u> changes to the baseline or interim soundscape as part of the Proposed Development.
R9	Industrial Noise Descriptors: indistinct background 'hummm', occasional indistinct clatters/bangs on the distance and not local		

Location	Baseline Soundscape	Interim Soundscape (Changes)	Future Soundscape (Changes)
	Transport Noise Descriptors: distinct background traffic 'hummm' from the elevated M4 motorway, revving and passing of local cars and motorbikes Commercial/Domestic Descriptors: pedestrian movement, 'chatter', children play, DIY noise (banging and electrical items such as lawn mowers etc.), sports noise (cheers and shouts) Natural Noise Descriptors: bird call and song, wind through trees, rain noise, barking dogs		

Table A7.4.2 Impact on Soundscape

A7.4.1.10 Acoustic Design (Soundscape through Design)

The achievement of good acoustic quality in the study area has been undertaken through good acoustic design of the Proposed Development. This is discussed further in Section 7.7 of the ES Noise Chapter. This includes high performance acoustic cladding around the EAF, other localised enclosures, and noise barriers.

Due to the nature of the Proposed Development, and restrictions on areas accessible and under the control of the Applicant, no additional offsite design measures can be implemented to influence the soundscape. Therefore positive impacts on the soundscape are restricted to a reduction in industrial contribution (i.e. making the contribution from existing operations at baseline quieter in the future through the implementation of new technology, sympathetic layout and noise control). The measures implemented as part of the design are considered to be proportionate when considered against the TAN 11 draft guidelines.

A7.4.1.11 Residual Impacts on Soundscape

Table A7.4.2 indicates that the Proposed Development will have either a slight **positive impact** on the soundscape across the area, in the form of a **quieter noise** contribution from industry, or **no impact** at all due to the distances involved (between sound emission points and receptors).

At locations where there is likely to be a positive impact, the character of noise within the soundscape (i.e. types of sounds audible or present) will be similar between those experienced at baseline, interim and the future. The Applicant, through its Proposed Development, does not have control over external sources in the baseline soundscape to change the character of sound experienced at baseline, however the Applicant has reduced the magnitude through the Proposed Development design (see Section A7.4.1.9).

A7.4.4 Conclusions

The limited response by the community on the Proposed Development, particularly around noise, does not aid the discussions on soundscape. As discussed earlier, the lack of responses can mean there are no noise issues, or alternatively that people are not interested in responding. As a result of this, the above approach and conclusions (positive impact) are based primarily on specialist observations undertaken across the study area for the purpose of the project. However, we do not envisage that a more comprehensive community response would change this, or the approach to the design of the Proposed Development with respect to noise.

An Operational Noise and Vibration Management Plan will be prepared, which will account for any updated quantitative assessment and/or soundscape context. It will include a quantitative assessment of the interim period.