

ENVIRONMENTAL STATEMENT

CHAPTER 11: ECOLOGY

Land South of Rover Way, Cardiff, CF24 5PH

Harsco Metals Group Limited

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11.1.0 Introduction

- 11.1.1 This chapter of the Environmental Statement (ES) has been prepared by SLR Consulting Limited and assesses the likely effects of the proposed development upon the application site and the surrounding area with respect to ecology and biodiversity.
- 11.1.2 The Chapter describes the methods used to assess the effects, the baseline conditions currently existing at the application site; the mitigation measures that could be required to prevent, reduce or offset any significant negative effects and the likely residual effects after these measures have been adopted.
- 11.1.3 This Chapter has been written on the basis of the findings contained within the following supporting documents:
- Preliminary Ecological Appraisal, Land South of Rover Way, Cardiff prepared by SLR Consulting Limited (SLR) (ref: 416.09604.00001_HarscoMetals_RoverWayEcologyPEA_JH_MPM_AW_vf June 2019); and
 - Shadow Habitats Regulations Assessment, Land South of Rover Way, Cardiff prepared by SLR (ref: 416.09604.0001_HarscoMetals_ShadowHRA_MPM_vf).
- 11.1.4 The Preliminary Ecological Appraisal (PEA) is provided as Appendix 11-1, and the Shadow Habitats Regulations Assessment (sHRA) is provided as Appendix 11-2.
- 11.1.5 This chapter, and its associated figures and appendices, is intended to be read as part of the wider ES, with particular reference to Chapter 9 (Air Quality).
- 11.1.6 This Chapter has been revised and re-issued in October 2019 following feedback from Natural resources Wales and Cardiff Council, and subsequently in November 2019 following revision of the air quality assessment.

Site Description

- 11.1.7 The application site is located to the south of Rover Way in Cardiff, covers approximately 1.13 hectares (ha) and is centred on Ordnance Survey Grid Reference ST 21485 76274. The application site and survey boundaries can be seen on Drawing 11-1.
- 11.1.8 The application site lies wholly within the confines of an existing actively-used metals recycling facility and the proposed development footprint lies on an existing concrete pad. The site is industrial in character with no semi-natural habitats present within the development footprint.

Details of the Proposed Development

- 11.1.9 Detailed description of the development proposals can be found in Chapter 3 of the ES. However, in summary the application relates to the installation of an Asphalt Batching Plant with associated infrastructure and works. Drawing 11-2 shows the proposed plant.
- 11.1.10 The proposed Asphalt Batching Plant and associated materials storage area will be in keeping with the existing use of the Celsa Steel site and its designation within the Cardiff Local Development Plan (allocation EC1.3). The proposed Asphalt Batching Plant will fall within a Class B2 (General Industrial)

use as defined within the Town and Country Planning (Use Classes) Order 1987 (as amended).

- 11.1.11 The plant will be located within the central confines of the red line site area, with an area to the west utilised for vehicular access, fill and departure via entry and exit weighbridges. Within the eastern confines of the site, there will be a total of five bunded materials storage bays located along the northern and southern boundaries, thereby leaving a central area for the manoeuvring of vehicles.
- 11.1.12 There is an existing concrete pad on site and this will be utilised as part of the proposals. This will be upgraded where necessary to support the weight of the Asphalt Batching Plant, weighbridges and associated HGVs. The plant will also be anchored to this pad by way of minor piles and anchor points (*i.e.* tensile cables to a fixed point).

Purpose of this Chapter

- 11.1.13 The purpose of this chapter is to:
- To describe the baseline data collection and assessment methods used;
 - To summarise the baseline ecological conditions;
 - To identify and describe all potentially significant ecological effects associated with the proposed development;
 - To set out the design, mitigation and compensation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects;
 - To identify how mitigation and compensation measures could be delivered;
 - To provide an assessment of the significance of any residual effects in relation to the effects on biodiversity and the legal and policy implications; and
 - To identify appropriate enhancement measures and how these could be delivered.

Evidence of Technical Competence and Experience

- 11.1.14 This chapter has been produced by Martyn Macefield MSc BSc MCIEEM, an Associate Consultant at SLR. He has over seventeen years' experience in ecological consultancy and the production of ecological appraisal and ecological impact assessment reports. He is a full Member of the Chartered Institute of Ecology and Environmental Management.
- 11.1.15 The technical competence and experience of the other members of the ecology team involved in this project are presented within the appended technical reports to which they directly contributed.

11.2.0 Methodology

Legislation, Guidance and Planning Policy

Legislation

- 11.2.1 A summary of legislation relevant to (onshore) biodiversity in England and Wales is provided below. Note that the summary provided here is intended for general guidance only and the original legislation should be consulted for definitive information.

Conservation of Habitats and Species Regulations 2017

- 11.2.2 The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. Under the Habitats Regulations it is an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

Wildlife & Countryside Act 1981

- 11.2.3 The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act;
- intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act; or
- Plant or cause to grow in the wild any plant species listed under Schedule 9 of the Act.

Protection of Badgers Act 1992

- 11.2.4 The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Natural Environment & Rural Communities (NERC) Act 2006

- 11.2.5 Section 40 of the NERC Act 2006 places a duty on public authorities to have regard to the purpose of conserving biodiversity to have due regard for biodiversity and nature conservation during the course of their operations. Public authorities include government departments, local authorities and statutory undertakers.
- 11.2.6 Section 42 of the Act requires the publication of a list of habitats and species publish which are of principal importance for the purpose of conserving biodiversity. The Section 42 list is used to guide authorities in implementing their duty to have regard to the conservation of biodiversity.
- 11.2.7 Note that Sections 40 and 42 were superseded in Wales by the Environment (Wales) Act 2016 (see below).

Environment (Wales) Act 2016

- 11.2.8 The Environment (Wales) Act puts in place the legislation needed to plan and manage Wales' natural resources in a more proactive, sustainable and joined-up way. Part 1 Section 6 of the Act introduces a new biodiversity duty, which replaces and enhances the biodiversity duties set out in the NERC Act 2006 and requires public authorities to seek to maintain and enhance biodiversity in the exercise of their functions and in so doing promote the resilience of ecosystems. Section 7 of the Act lists living organisms and types of habitat in Wales, considered to be of key significance to sustain and improve biodiversity in relation to Wales.

Planning Policy

National Planning Policy

- 11.2.9 Planning Policy Wales (PPW) sets out the land use planning policies of the Welsh Government. The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales. Section 6.4 of PPW relates to biodiversity and ecological networks.
- 11.2.10 Paragraph 6.4.3 of PPW states that:
- *"The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement."*
- 11.2.11 It goes on to state that: *"Development plan strategies, policies and development proposals must consider the need to:*
- *support the conservation of biodiversity, in particular the conservation of wildlife and habitats;*
 - *ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;*
 - *ensure statutorily and non-statutorily designated sites are properly protected and managed;*
 - *safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological*

networks and the components which underpin them, such as water and soil, including peat; and

- *secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.”*

11.2.12 Section 6.4 goes on to set out policy in respect of:

- *The Biodiversity and Resilience of Ecosystems Duty, as set out in Section 6 of the Environment (Wales) Act 2016;*
- *Designated Sites, including:*
 - *Sites of Special Scientific Interest;*
 - *Special Protection Areas, Special Areas of Conservation and Ramsar Sites;*
 - *Proposed Special Areas of Conservation, Special Protection Areas and Ramsar sites; and*
 - *Non-statutory Designations.*
 - *Protected Species; and*
 - *Trees, Woodlands and Hedgerows.*

11.2.13 PPW is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. TAN 5 deals with Nature Conservation and Planning and states in paragraph 2.4: *“When considering policies and proposals in local development plans and when deciding planning applications that may affect nature conservation, local planning authorities should:*

- *Pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective;*
- *Contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment;*
- *Promote the conservation and enhancement of statutorily designated areas and undeveloped coast;*
- *Ensure that appropriate weight is attached to designated sites of international, national and local importance;*
- *Protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans;*
- *Ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation;*

- *Ensure that the range and population of protected species is sustained;*
- *Adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered."*

Local Planning Policy

11.2.14 The Cardiff Adopted Local Development Plan (2016) includes policies of relevance to ecology and biodiversity at the application site. Key policies provide overarching guidelines that are supplemented by more detailed and specific policies known as Environmental Policies:

- *Key Policy 5 Good Quality and Sustainable Design states that all new development will be required to be of a high quality, sustainable design and make a positive contribution to the creation of distinctive communities, part of which includes ensuring high levels of environmental sustainability and low impact.*
- *Key Policy 16 Green Infrastructure states that proposed developments should demonstrate how green infrastructure has been considered and integrated into the proposals and that the development does not result in a loss of green infrastructure.*

11.2.15 Environmental Policy 5, *Designated Sites* states that:

- *'Development will not be permitted that would cause unacceptable harm to sites of international or national nature conservation importance.*
- *Development proposals that would affect locally designated sites of nature conservation and geological importance should maintain or enhance the nature conservation and/or geological importance of the designation. Where this is not the case and the need for the development outweighs the conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development which avoids nature conservation impacts, and compensation measures designed to ensure that there is no reduction in the overall nature conservation value of the area or feature.'*

11.2.16 Environmental Policy 6, *Ecological Networks and Features of Importance for Biodiversity* states that: *'Development will only be permitted if it does not cause unacceptable harm to:*

- *Landscape features of importance for wild flora and fauna, including wildlife corridors and 'stepping stones' which enable the dispersal and functioning of protected and priority species;*
- *Networks of importance for landscape or nature conservation.*
- *Particular priority will be given to the protection, enlargement, connectivity and management of the overall nature of semi natural habitats. Where this is not the case and the need for the development outweighs the nature conservation importance of the site, it should be demonstrated that there is no satisfactory alternative location for the development and compensatory provision will be made of comparable ecological value to that lost as a result of the development.'*

11.2.17 Environmental Policy 7, *Priority Habitats and Species* states that: ‘Development proposals that would have a significant adverse effect on the continued viability of habitats and species which are legally protected or which are identified as priorities in the UK or Local Biodiversity Action Plan will only be permitted where:

- The need for development outweighs the nature conservation importance of the site;
- The developer demonstrates that there is no satisfactory alternative location for the development which avoids nature conservation impacts; and
- Effective mitigation measures are provided by the developer.
- Where harm is unavoidable it should be minimised by effective mitigation to ensure that there is no reduction in the overall nature conservation value of the area. Where this is not possible compensation measures designed to conserve, enhance, manage and, where appropriate, restore natural habitats and species should be provided.’

11.2.18 Environmental Policy 8, *Trees, woodlands and hedgerows* states that:

- ‘Development will not be permitted that would cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value, or that contribute significantly to mitigating the effects of climate change.’

Scoping Opinion

11.2.19 A Scoping Opinion was sought from Cardiff Council by way of a Scoping Request Report submitted on 4th April 2019. A formal Scoping Opinion, reference SC/19/00005/MJR, was adopted by Cardiff Council on 17th May 2019. A copy of the Scoping Opinion is provided within Appendix 5-4.

11.2.20 In respect of Ecology, the Council relied upon the consultation responses from the Council’s own Ecologist and Natural Resources Wales. Further information regarding the content of the Scoping Opinion is provided within Table 11-1 below.

Table 11-1: Scoping Opinion

Page & Paragraph No.	Scoping Opinion	Comments	Outcome	Reference within ES
Section 3, Page 3, Ecology and Landscape	HRA	The assessment should address whether the overburden to the frag tip has been, or will be removed, as this material currently obscures the asphalt batching plant site from the Severn Estuary. This information will help inform the Council’s ability to undertake an HRA	The potential removal of the frag tip has been duly considered within the Cumulative Assessment. A Shadow HRA has also been prepared to assist the Council in the undertaking of an HRA.	Section 11.4.0 – Cumulative Effects Appendix 11-2 – Shadow HRA
Section 3, Page 4,	Severn Estuary SAC,	The applicant needs	The Ecology chapter	Section 11.4.0 –

Page & Paragraph No.	Scoping Opinion	Comments	Outcome	Reference within ES
Natural Resources Wales	SPA, Ramsar and SSSI	to fully consider all the potential impacts on the features of the Severn Estuary SAC, SPA, Ramsar and SSSI	has duly considered all potential impacts on the Severn Estuary SAC, SPA, Ramsar and SSSI, including noise, air quality and hydrological links	Assessment of Effects Appendix 11-2 – Shadow HRA
Section 3, Page 4, Natural Resources Wales	Cumulative Effects on the Severn Estuary SAC, SPA, Ramsar and SSSI	The applicant needs to fully consider all cumulative effects on the Severn Estuary SAC, SPA, Ramsar and SSSI, including a comprehensive Air Quality Assessment.	The Ecology chapter has duly considered all potential impacts on the Severn Estuary SAC, SPA, Ramsar and SSSI, including noise, air quality and hydrological links	Chapter 9 – Air Quality Section 11.4.0 – Assessment of Effects Appendix 11-2 – Shadow HRA
Section 4, Page 5, Scoping Conclusion	Full consideration of impacts on the Severn Estuary SAC, SPA, Ramsar and SSSI	Consideration of all potential impacts on the features of the Severn Estuary designated sites (including cumulative effects)	The Ecology chapter has duly considered all potential impacts on the Severn Estuary SAC, SPA, Ramsar and SSSI, including noise, air quality and hydrological links	Section 11.4.0 – Assessment of Effects Appendix 11-2 – Shadow HRA
Section 4, Page 5, Scoping Conclusion	Ecological Matters	A consideration of ecological matters (including a detailed description and illustrations of the proposed works)	The ecology chapter has considered all relevant ecological matters, whilst supporting detailed reports are provided within the technical appendices	Section 11.4.0 – Assessment of Effects Appendix 11-1 Phase 1 Habitat Survey Appendix 11-2 – Shadow HRA
Section 4, Page 5, Scoping Conclusion	Protected Species Surveys	The provision of further ecological specific surveys (following the extended Phase 1 habitat survey already undertaken, which has been extended to consider the potential of the site to support legally protected species.	Following the undertaking of the Phase 1 Habitat Survey, it was not deemed necessary to undertake further ecological specific surveys.	Not required but explained within Appendix 11-1

11.2.21 The content of this ES Chapter and its supporting Technical Appendices are considered to have adequately responded to the content and requirements laid out within the Scoping Opinion adopted by Cardiff Council.

Additional Consultation

11.2.22 Following the initial submission of the Planning Application and Environmental Statement in July

2019, comments were received from Natural Resource Wales planning department. The comments contained the following requirement: *“Requirement 1: Designated Sites – further information is required to determine if changes in air quality will avoid significant and adverse effects on the integrity of the Severn Estuary SAC/SSSI”*. In addition, Cardiff Council Air Quality Officer also identified the need for a detailed assessment of potential air quality impacts on the Estuary. As such, a detailed assessment of the air quality impacts on the Severn Estuary SAC/SSSI habitats, including the Atlantic Salt meadow feature, has been undertaken, and is presented in this Chapter and Chapter 9 – Air Quality.

Assessment Methodology

- 11.2.23 The ecological evaluation and impact assessment approach used in this report is based on Guidelines for Ecological Impact Assessment in the United Kingdom and Ireland (“CIEEM guidelines”) (CIEEM, 2018).

Study Area

- 11.2.24 The physical inspection survey of the application site comprised all land within the development footprint plus a minimum of a 30m radius from the site boundary where this was accessible. The survey area can be seen in Drawing 11-1. It was considered that this area would be sufficient to enable the identification of all important ecological receptors that would potentially be at risk of direct impact from the proposed development.
- 11.2.25 Following appraisal of the potential sources of indirect impact that may result from the proposed development, the desk top study requested information from South East Wales Biodiversity Records Centre (SEWBReC) pertaining to all statutory designated wildlife sites within 10km of the applications site, in accordance with Environment Agency guidance. Data was also sought pertaining to all non-statutory designated wildlife sites and notable species within 1km of the application site.
- 11.2.26 The identified and appraised potential impact pathways (noise and air quality) were considered to have a negligible risk of causing significant impact outside these ranges, and the study area is therefore considered to be complete.

Sensitivity Criteria

- 11.2.27 **Error! Reference source not found.**

Table 11-2: Generic guidelines for establishing sensitivity criteria for ecological receptors

Sensitivity	Definition
Very High	<ul style="list-style-type: none"> A receptor that has fundamental characteristics that contribute significantly to the distinctiveness, rarity, and character of the resource, and is of a very high importance and rarity that is international in scale (e.g. designated sites including Special Protection Areas, Ramsar sites, Special Areas of Conservation etc.), with very limited potential for replacement/recreation. A receptor with no, or very limited, capacity to accommodate physical or chemical changes.

Sensitivity	Definition
High	<ul style="list-style-type: none"> A receptor that has key characteristics that contribute significantly to the distinctiveness, rarity, and character of the resource, and is of high importance and rarity that is national in scale (e.g. designated sites including Sites of Special Scientific Interest and National Nature Reserves etc.), with limited potential for replacement/recreation. A receptor with limited capacity to accommodate physical or chemical changes.
Medium	<ul style="list-style-type: none"> A receptor that has key characteristics that contribute significantly to the distinctiveness, rarity, and character of the resource, and is of medium importance and rarity that is regional in scale (e.g. designated sites including County Wildlife Sites etc.), with limited potential for replacement/recreation. A receptor with limited capacity to accommodate physical or chemical changes.
Low	<ul style="list-style-type: none"> A receptor that is locally distinctive only, and is of low to medium importance and rarity that is local in scale (e.g. designated sites including Local Nature Reserve, Sites of Importance for Nature Conservation etc.), and can potentially be substituted or recreated. A receptor with moderate capacity to accommodate physical or chemical changes.
Negligible	<ul style="list-style-type: none"> A receptor that does not make a significant contribution to local character or distinctiveness, is ubiquitous, not designated, and easily substituted or replaced. A receptor that is generally tolerant of physical or chemical changes.

Magnitude of Change (Impact)

11.2.28 The impact assessment process involves the following steps:

- identifying and characterising potential impacts;
- incorporating measures to avoid and mitigate (reduce) these impacts;
- assessing the significance of any residual effects after mitigation;
- identifying appropriate compensation measures to offset significant residual effects (if required); and
- identifying opportunities for ecological enhancement.

11.2.29 When describing impacts, reference has been made to the following characteristics as appropriate:

- Positive or negative;
- Extent;
- Magnitude;
- Duration;
- Timing;
- Frequency; and
- Reversibility.

- 11.2.30 The consideration of effects is contained within Section 11.4 of this chapter.
- 11.2.31 The impact assessment process considers both direct and indirect impacts: direct ecological impacts are changes that are directly attributable to a defined action, e.g. the physical loss of habitat occupied by a species during the construction process. Indirect ecological impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or feature, e.g. the illumination of woodland that could disturb bat commuting, or increase in noise which could disturb over-wintering bird populations.
- 11.2.32 Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance:
- Habitats – conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area.
 - Species – conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

Significance of Effect

- 11.2.33 Ecological features can be important for a variety of reasons and the rationale used to identify them is explained in the text. Importance may relate, for example, to the quality or extent of the site or habitats therein; habitat and/ or species rarity; the extent to which such habitats and/ or species are threatened throughout their range, or to their rate of decline.
- 11.2.34 The concept of ecological significance is addressed in paragraphs 5.24 through to 5.28 of CIEEM guidelines. Significance is a concept related to the weight that should be attached to effects when decisions are made. For the purpose of EclA, a 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. Conservation objectives may be specific (e.g. for a designated site) or broad (e.g. national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity). Effects can be considered significant at a wide range of scales from international to local and the scale of significance of an effect may or may not be the same as the geographic context in which the feature is considered important.
- 11.2.35 The importance of an ecological feature should be considered within a defined geographical context. The following frame of reference has been used in this case, relying on known/ published accounts of distribution and rarity where available, and professional experience:
- International;
 - National (i.e. Wales/UK);
 - Regional (i.e. South Wales);
 - County (Glamorgan); and
 - Local (i.e. within circa 5km).
- 11.2.36 The above frame of reference is applied to the ecological features identified during the desk study

and surveys to inform this report.

- 11.2.37 The value of habitats has been measured against published selection criteria where available. Examples of relevant criteria include: descriptions of habitats listed on Annex 1 of the Habitats Directive; descriptions of habitats of principal importance for biodiversity under Section 7 of the Environment (Wales) Act 2016; Local Wildlife Site Selection Criteria; and Habitat Action Plans (HAPs) contained within Local Biodiversity Action Plans. Add LBAP(s) or LWS guidance specific to project where appropriate.
- 11.2.38 In assigning a level of value to a species, it is necessary to consider its distribution and status, including a consideration of trends based on available historical records. Reference has therefore been made to published lists and criteria where available. Examples of relevant lists and criteria include: species of European conservation importance (as listed on Annexes II, IV and V of the Habitats Directive or Annex 1 of the Birds Directive); species of principal importance for biodiversity under Section 7 of the Environment (Wales) Act 2016 and Birds of Conservation Concern¹.

For the purposes of this report ecological features of local level or greater and/or subject to legal protection have been subject to detailed assessment. Effects on other ecological features are considered unlikely to be significant in legal or policy terms.

Table 11-3: Significance Matrix

Magnitude of Effect	Importance of Receptor				
		High	Medium	Low	Negligible
	High	Substantial / Major	Substantial / Major	Moderate	Neutral / Negligible
	Medium	Substantial / Major	Moderate	Minor	Neutral / Negligible
	Low	Moderate	Minor	Minor	Neutral / Negligible
	Negligible	Neutral / Negligible	Neutral / Negligible	Neutral / Negligible	Neutral / Negligible

- 11.2.39 Where appropriate, the significance of effect will be classified as being direct/indirect effects, secondary, cumulative, short/medium/long term, permanent/temporary and beneficial/adverse effects arising from the development. The consideration of effects is contained within Section 11.4 of this Chapter.

Mitigation Hierarchy

- 11.2.40 When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at a county scale should ensure no net loss of the population at a county scale. The relative geographical scale at which the effect is significant will have a bearing on the required outcome which must be achieved.
- 11.2.41 Where potentially significant effects have been identified, the mitigation hierarchy has been

¹ Eaton, M.A., Aebischer, N.J., Brown, A., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A., & Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. *British Birds*, 108: 708-746.

applied, as recommended in the CIEEM Guidelines. The mitigation hierarchy sets out a sequential approach beginning with the avoidance of impacts where possible, the application of mitigation measures to minimise unavoidable impacts and then compensation for any remaining impacts. Once avoidance and mitigation measures have been applied residual effects are then identified along with any necessary compensation measures, and incorporation of opportunities for enhancement.

11.2.42 It is important for the EclA to clearly differentiate between avoidance mitigation, compensation and enhancement and these terms are defined here as follows:

- Avoidance is used where an impact has been avoided, e.g. through changes in scheme design;
- Mitigation is used to refer to measures to reduce or remedy a specific negative impact in situ;
- Compensation describes measures taken to offset residual effects, i.e. where mitigation in situ is not possible; and
- Enhancement is the provision of new benefits for biodiversity that are additional to those provided as part of mitigation or compensation measures, although they can be complementary.

Baseline Data Collection

Desk Study

11.2.43 In March 2019, a desk study was undertaken for the site. The desk study included a review of the following sources of information:

- www.magic.defra.gov.uk for statutory designated sites, UK Priority Habitats and Ancient Woodland;
- <https://www.cardiff.gov.uk/ENG/resident/Planning/Planning-Policy/Pages/default.aspx> for local planning policies and site designations;
- South East Wales Biodiversity Records Centre (SEWBReC, the local biological records centre) data request for protected and notable species records and non-statutory designated wildlife sites within 1km, and statutory designated wildlife sites within 10km, in accordance with Environment Agency guidance; and
- The Cardiff planning portal was also searched for recent planning applications close to the application site and any relevant ecological information was reviewed.

Field Survey

11.2.44 The Study Area was subject to survey on 20th March 2019 using methodology based on the Phase 1 Habitat Survey methodology², extended to include preliminary checks and surveys for notable, protected or rare species of both flora and fauna, and modified to suit smaller scale anthropogenically developed sites, in accordance with published guidance. Particular features of

² Joint Nature Conservation Committee (2010) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (Revised reprint). Joint Nature Conservancy Council, Peterborough.

interest were recorded on the field map using target notes, the locations of which are shown in Drawing 11-1 together with the survey extents.

- 11.2.45 A Phase 1 Habitat Survey provides an inventory of the basic habitat types present and allows identification of areas of greater potential which may require more detailed botanical survey. This level of survey includes the documentation of habitats to a recognised standard, but also includes the recording of field evidence indicating the presence or potential presence of species that could constitute a material consideration in planning terms, such as protected or notable plant or faunal species. Notes of principle habitat types, supported by photographs, were recorded.
- 11.2.46 Whilst not a full botanical or protected species survey, the Extended Phase 1 method of survey enables experienced ecologists to obtain an understanding of the ecology of a site such that it is possible either:
- to confirm the conservation significance of the site and assess the potential for impacts on habitats or species likely to represent a material consideration in planning terms, or
 - to establish the scope and extent of any additional specialist ecological surveys that will be required before such confirmation can be made.
- 11.2.47 In addition, the presence of plant species included within Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) was searched for during the survey. Plants included within the schedule are considered derogated pest species that are pernicious or injurious, such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*). It is an offence under the Act to plant or cause the spread of these species in the wild.
- 11.2.48 The Preliminary Ecological Appraisal Report has been appended as Appendix 11-1.

Shadow Habitat Regulations Assessment (sHRA)

- 11.2.49 The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law and under this legislation a 'Habitats Regulations Assessment' is required where a likely significant effect on a European site may occur.
- 11.2.50 As detailed above in Paragraph 11.2.19, the preliminary scoping works and field survey identified the potential for the proposed development to have indirect impacts on internationally designated wildlife sites through the impact pathways associated with noise and air quality. The internationally designated wildlife sites are associated with the Severn Estuary, namely the Special Protection Area (SPA), Special Area of Conservation (SAC) and Ramsar site designations. Collectively such sites are referred to as Natura 2000 sites, and they are assessed in further detail in Section 11.4, below.
- 11.2.51 As Natura 2000 sites were considered to be at potential risk of significant impact, a sHRA was conducted to appraise the likelihood and significance of these potential impacts. This document is appended as Appendix 11-2.
- 11.2.52 The identified indirect impact pathways pertain to noise and air quality issues, and those chapters should be read in conjunction with this chapter for further detail.

Limitations

- 11.2.53 Desk study data is unlikely to be exhaustive, especially in respect of species, and is intended mainly to set a context for the study. It is therefore possible that important habitats or protected species not identified during the data search do in fact occur within the vicinity of the site. Interpretation of maps and aerial photography has been conducted in good faith, using recent imagery, but it has not been possible to verify the accuracy of any statements relating to land use and habitat context outside of the field study area.
- 11.2.54 Third party technical reports, both those specifically produced for this assessment and those available in the public domain, have been reviewed during the production of this chapter. It has been taken in good faith that the findings, results and conclusions of these reports are accurate and unbiased.

11.3.0 Baseline Ecological Conditions

Designated Sites

Statutory Designated Sites

- 11.3.1 The application site itself does not support any statutory designated sites for nature conservation.
- 11.3.2 The Severn Estuary is located approximately 230m to the south and east of the application site boundary. At this location the Severn Estuary supports multiple overlapping statutory wildlife site designations including:
- Special Area of Protection (SPA) (Site reference UK9015022);
 - Special Area of Conservation (SAC) (Site reference UK0013030);
 - Ramsar (Site reference UK11081); and
 - Site of Special Scientific Interest (SSSI).
- 11.3.3 The boundaries of these sites in relation to the application site can be seen in Drawing 11-3. Whilst there is no risk of direct negative impact on these designated sites, the potential for indirect impacts exists, for example from construction or operational noise, or emissions from the proposed asphalt or construction process that may affect air quality. A summary of the qualifying features of the statutory wildlife sites is provided below, with further description presented in Appendix 11-1.
- 11.3.4 The SPA qualifying features include the following populations of European importance:
- Overwintering Bewick's Swans: 280 individuals, representing at least 4.0% of the wintering population in Great Britain (5 year peak mean 1991/2 - 1995/6);
 - Overwintering Curlew: 3,903 individuals representing at least 1.1% of the wintering Europe - breeding population (5 year peak mean 1991/2 - 1995/6);
 - Overwintering Dunlin: 44,624 individuals representing at least 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2 - 1995/6);
 - Overwintering Pintail: 599 individuals representing at least 1.0% of the wintering North-western Europe population (5 year peak mean 1991/2 - 1995/6);
 - Overwintering Redshank: 2,330 individuals representing at least 1.6% of the wintering Eastern Atlantic - wintering population (5 year peak mean 1991/2 - 1995/6);
 - Overwintering Shelduck: 3,330 individuals representing at least 1.1% of the wintering North-western Europe population (5 year peak mean 1991/2 - 1995/6); and
 - Ringed Plover, on passage: 655 individuals representing at least 1.3% of the Europe/Northern Africa - wintering population (5 year peak mean 1991/2 - 1995/6).
 - The estuary also regularly supports at least 20,000 waterfowl which meets the SPA qualifying

criterion of being a wetland of international importance. This is summarised as follows:

- Over winter, the area regularly supports 93,986 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: gadwall, shelduck, pintail, dunlin, curlew, redshank, Bewick's Swan, wigeon, lapwing, teal, mallard, shoveler, pochard, tufted duck, grey plover, white-fronted goose and whimbrel.

11.3.5 The qualifying habitats and features for the SAC are listed as follows:

- Qualifying habitats: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:
 - Estuaries;
 - Sandbanks which are slightly covered by sea water all the time (Subtidal sandbanks);
 - Mudflats and sandflats not covered by seawater at low tide (Intertidal mudflats and sandflats);
 - Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*); and
 - Reefs.
- Qualifying species: The site is designated under Article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:
 - Sea Lamprey (*Petromyzon marinus*);
 - River Lamprey (*Lampetra fluviatilis*); and
 - Twaite Shad (*Alosa fallax*).

11.3.6 The Ramsar site is designated as a wetland of international importance under the following criteria:

- Criterion 1 - Immense tidal range, the second largest in the world, which affects both the physical environment and the biological communities;
- Criterion 3 - The presence of unusual estuarine communities, with reduced species diversity and high productivity;
- Criterion 4 - Important for the run of migratory fish, including salmon, sea trout, sea lamprey, river lamprey, allis shad, twaite shad and eel;
- Criterion 8 - The fish assemblage of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded;
- Criterion 6 - regularly supports 1% or more of the individuals in a population of one species or subspecies of waterbird (i.e. internationally important), including: Bewick's swan, European white-fronted goose, dunlin, redshank, shelduck and gadwall;
- Criterion 6 - Regularly supporting internationally important populations of ringed plover (spring/autumn), Eurasian teal (winter), northern pintail (winter), and lesser black-backed gull

(breeding);

- Criterion 5 – Supports an assemblage of international importance. The 1998/9 to 2002/3 five year peak mean was 70,919 waterfowl; and
- Nationally important wintering populations of: wigeon, teal, pintail, pochard, tufted duck, ringed plover, grey plover, curlew and spotted redshank. Also, nationally important breeding population of lesser black-backed gull.

11.3.7 The Severn Estuary SSSI covers approximately 15,000 hectares of foreshore and intertidal habitat. The features for which it is designated are captured within the qualifying features of the Severn Estuary Natura 2000 site designations (SPA/SAC/Ramsar) described above.

11.3.8 By virtue of their international level of designation, the Natura 2000 sites are considered to be features of very high importance and high sensitivity.

Non-statutory Wildlife Sites

11.3.9 The application site itself does not support any non-statutory designation for nature conservation.

11.3.10 Two non-statutory designated Sites of Importance for Nature Conservation (SINCs) occur within a 1km radius of the site, and these are described within below. Descriptions have been taken from data provided by South-East Wales Biodiversity Records Centre (SEWBREC).

Table 11-4: Non-Statutory Designated Wildlife Sites within a 1km Radius of the Application Site

Name	Grade	Description	Distance and Direction from the Site
Pengam Moors	Site of Importance for Nature Conservation (SINC)	Pengam Moors SINC occupies the former site of Cardiff airport, and later the Rover Car Works. Following demolition, the site has reverted to saline, marshy conditions. It includes a network of drainage channels with good emergent aquatic vegetation. It also includes areas of bare ground and scrub. The SINC supports a number of locally rare plants including sea clover, brackish water crowfoot and water whorl-grass. It is also considered important for water fowl and wintering birds of prey.	Approximately 400m to the north of the site.
Tidal Sidings	Site of Importance for Nature Conservation (SINC)	Tidal Sidings supports a mix of flower-rich neutral and calcareous grassland and scrub.	Approximately 850m to the south -west of the site.

11.3.11 During the scoping appraisal it was determined that the proposed development would have no significant impact on any non-statutory wildlife site, and therefore this aspect was scoped out and will not be considered further.

Habitats

- 11.3.12 The habitats of the application site and immediate surrounds are described in detail in the Preliminary Ecological Appraisal, provided as Appendix 11-1. In summary, at the time of survey the application site comprises existing concrete hard-standing, overlain in places by pools of ephemeral standing water that had collected following recent heavy rainfall.
- 11.3.13 The habitats of the application site were considered to have no significant ecological or nature conservation importance. Therefore, they were scoped out from further assessment.
- 11.3.14 The habitats listed as qualifying features of the Severn Estuary SAC and Ramsar sites were considered to be potentially at risk of significant negative impact as a result of air quality issues (e.g. dust deposition or chemical deposition). This is appraised further in Section 11.4.

Species

- 11.3.15 As a consequence of the application site comprising concrete hard-standing and being an actively used part of the metals recycling facility, no significant populations of species, either notable or common, were recorded. The appraisal and findings are described in detail in the Preliminary Ecological Appraisal, provided as Appendix 11-1.
- 11.3.16 The application site is not considered to support any population of any species that is of nature conservation or ecological importance. Therefore, this was scoped out of further assessment.
- 11.3.17 The species listed as qualifying features of the Severn Estuary Natura 2000 sites were considered to be potentially at risk of significant negative impact as a result of air quality issues (e.g. dust deposition or chemical deposition) or noise impact. This is appraised further in Section 11.4.

Summary of Important Ecological Features

- 11.3.18 A summary of the important ecological features identified as being at potential risk of impact as a consequence of the proposed development, following scoping and survey, is provided in Table 11-5: Summary of Identified Important Ecological Features below:

Table 11-5: Summary of Identified Important Ecological Features

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Severn Estuary SPA (Site reference UK9015022);	International	Habitat Regulations 2017. Predominantly designated for over-wintering bird populations
Severn Estuary SAC (Site reference UK0013030)	International	Habitat Regulations 2017. Predominantly designated for maritime and coastal habitats and fish populations.
Severn Estuary Ramsar (Site reference UK11081)	International	Habitat Regulations 2017. Predominantly designated for wild bird populations and estuarine habitats.

Ecological Feature	Scale at which Feature is Important	Comments on Legal Status and/or Importance
Severn Estuary SSSI	National	Designated features subsumed as part of above Natura 2000 site designations.

11.3.19 No other important ecological features were identified as being at significant risk of impact from the proposed development.

11.4.0 Assessment of Effects

- 11.4.1 This section appraises and describes the predicted impacts of the proposed development on the identified important ecological features. It should be noted that the predicted impacts are appraised on the qualifying features of the Natura 2000 sites only, as the conservation objectives of these sites relate to the qualifying features. Other species or habitats that may be present are not addressed and are not considered to be important features sensu legislation or policy.
- 11.4.2 The following design principles and “designed-in” mitigation have informed the assessment of impacts.
- Within the design of the proposal good practice environmental and pollution control measures are employed with regard to current best practice guidance such as, but not limited to, the following:
 - CIRIA C532, ‘Control of water pollution from construction sites: guidance for consultants and contractors’ (2001).
 - CIRIA C741, ‘Environmental good practice on site guide’ (2015 4th Ed.).
- 11.4.3 Detailed analysis of the anticipated effects of the proposed development can be found in the shadow HRA appended as Appendix 11-2.

Noise

- 11.4.4 An assessment of the potential impact of operational noise for the asphalt plant was produced undertaken by TNEI Energy Consultancy³. This document is provided as Appendix 11-3. This document has been used to inform the assessment of impact for the operational phase of the development. No formal acoustic appraisal has been conducted of the potential impact noise occurring during the construction phase, and here standard figures for construction noise have been taken from British Standard BS 5228-1:2009 +A1:2014 *Code of Practice for Noise and Vibration Control on Construction and Open Sites*.
- 11.4.5 Whilst the boundaries of the designated Natura 2000 sites lie approximately 230m from the boundary of the application site, noise has the potential to travel and indirectly impact sensitive important ecological features over a significant distance. This can be affected not only by the volume of the noise, but also the sound profile: typically consistent droning or rumbling noises are less disturbing than sudden, unpredictable noises as wildlife can more easily become acclimated to the former.
- 11.4.6 Not all the qualifying features of the Severn Estuary Natura 2000 sites are noise sensitive. For example, the habitats listed under the SAC qualifying features will not be significantly affected by noise. With regards to the species listed, whilst the listed fish species can be noise sensitive, there is only a limited period during which the high tide could them close enough to the application site to potentially be affected (the mean low water mark is approximately 1km away from the site boundary), and the potential impact would only occur over an infinitesimally small proportion of the Severn Estuary SAC’s 73,715 hectares.

³ Noise Impact Assessment of Asphalt Plan: Rover Way, Celsa Site produced by TNEI Services Limited. Reference 13331-001-R2

- 11.4.7 However, noise does have the potential to disturb the over-wintering bird populations for which the SPA and the Ramsar (in part) sites are designated.

Construction Phase Effects

- 11.4.8 Noise arising from site construction activities could result in an indirect, cumulative, medium term, temporary, adverse effect on the over-wintering bird populations of the Severn Estuary Natura 2000 sites, should they be of sufficient intensity. This could potentially result in birds being displaced from within the vicinity of the application site and losing access to foraging territory or other resources.
- 11.4.9 The profile of the construction noise will involve random loud noises with an unpredictable start, that commence at full or near full intensity; for example, concrete breaking or pile driving. Such noise profiles are particularly disturbing to birds as they do not give the opportunity for acclimation.
- 11.4.10 The construction process involves upgrading the existing concrete pad and installing a modular asphalt plant onto it, anchoring the plant using minor piles and anchor points with tensile cables. A settlement lagoon will also be created. Concrete breaking and pile driving are anticipated the most potentially disturbing element of the construction works from an acoustic perspective.
- 11.4.11 Figures from BS 5228 consider the average volume of noise from a hand-held concrete breaker to be 93dB at 10m (louder than similar equipment mounted on plant, as less insulation is typically added) and piling to be 120dB at 10m. It is typically accepted that point noise sources decrease in volume by 6dB every time the distance from the source doubles, when taken across a flat plane with no baffles. On this basis, one would anticipate the noise level from concrete breaking on the application site boundary to be approximately 66dB at the boundary of the Severn Estuary Natura 2000 sites, and the pile-driving to be approximately 93db. This is approximately equivalent to a running dishwasher and a lawn mower, respectively.
- 11.4.12 However, the intervening landscape between the application site and the Severn Estuary is not a flat unobstructed plane. To the east and south of the application site the landscape rises in a high bank covered in woodland (Figure 11-1). Both the bank and woodland will act as an effective baffle, likely to significantly reduce the noise level at the estuary.



Figure 11-1: A view across the application site with the wooded embankment along the east and south of the application site seen on the centre-right of the image.

- 11.4.13 A winter bird survey by Sturgess Ecology conducted in 2015⁴ is referenced in documentation supporting the consented development on the moto-cross site lying between the Harsco Metals application site and the Severn Estuary Natura 2000 sites. This document reports the findings of 36 hours of wintering bird study, including sources of potential disturbance, and noted that a dump truck driving along the foreshore five hours before high tide had no discernible effect on the birds feeding on the mudflats. A dump truck is considered to have a typical noise level of 85dB at 10m.
- 11.4.14 This would support the view that the anticipated noise from the concrete breaking (66dB) would have no significant impact on feeding birds at low tide, and the noise from the pile driving (93dB) is unlikely to either, particularly once the baffling effect of the intervening bank and woodland are taken into account.
- 11.4.15 The surrounding landscape is also industrial in character, with the application site being constructed within the grounds of an operational metals recycling facility and close to a steelworks. The existing soundscape is therefore not one of undisturbed peace, but one in which industrial noises including operating plant and metal processing are normal. Local bird populations will be habituated to a considerable degree of anthropogenic noise.
- 11.4.16 Further, the resource available to the over-wintering birds is not a fixed point located along the edge of the Natura 2000 site boundary. The mudflats extend out approximately 800m to the low tide line and run for many kilometres up and down the coast. Temporary displacement from the small area of mud flat temporarily affected during piling, if displacement occurs, is highly unlikely to have a significant negative impact on the ability of the bird species to maintain their population or the qualifying features of the Natura 2000 sites to meet their nature conservation goals.
- 11.4.17 It is considered that prior to the implementation of mitigation, there is a low risk of causing a

⁴ Sturgess Ecology (2015). Proposed Wind Turbine at Rover Way, Cardiff. Winter bird survey March 2015.

temporary, reversible, negative impact to a receptor of very high importance, but that this highly unlikely to significantly negatively impact the ability of the Natura 2000 sites being to maintain the conservation status of their qualifying features. Foraging birds may be temporarily displaced a short distance, but not permanent loss of carrying capacity will occur.

Operational Phase Effects

- 11.4.18 TNEI Limited have undertaken an assessment of the operational noise emissions of the asphalt plant (Appendix 11-3). This has indicated that the highest predicted noise level at the boundary of the Natura 2000 sites arising from the operation of the plant will be 35 dB, and significantly lower across the majority of the designated sites. Figure 3 in Appendix 11-3 presents a noise contour plot illustrating this.
- 11.4.19 35dB is equivalent to a whispered conversation or running refrigerator. It is therefore considered that there will be no significant risk of negative impacts on the Natura 2000 sites arising operational noise.

Air Quality

- 11.4.20 The Air Quality Chapter of this ES (Chapter 9) lists a number of potential sources for air pollution that could potentially impact the Natura 2000 sites of the Severn Estuary. These include:
- dust and particulate matter emissions (PM10 and PM2.5) generated during construction activities, for example, site clearance, stockpiling, materials transport and trenching;
 - increases in nitrogen dioxide (NO₂)/ nitrogen oxides (NO_x), PM10 and PM2.5 concentrations due to exhaust emissions arising from construction traffic and Non-Road Mobile Machinery (NRMM) plant;
 - increases in NO₂/NO_x, PM10 and PM2.5 concentrations due to exhaust emissions arising from traffic generated by the proposed development once operational;
 - increase in PM10 concentrations due to stack emissions associated with the operational phase; and
 - increase in fugitive emissions (dust and odour) due to operational activities.

Construction Phase Effects

- 11.4.21 Based on the IAQM *Guidance on the Assessment of Dust from Demolition and Construction* the Air Quality chapter considered that there was no risk of significant negative impact from construction dust on ecological receptors (Paragraph 9.3.23). The Guidance considers that impacts from construction dust should be considered on ecological receptors within 50m of the site boundary, and the Severn Estuary Natura 2000 site boundary is approximately 230m away.
- 11.4.22 The Air Quality chapter appraised the anticipated changes in pollutant concentration from emissions of NO_x, PM10, and PM2.5 from traffic and plant particulate emissions arising from construction as being insignificant and at negligible risk of causing significant negative impact to the Severn Estuary Natura 2000 sites.
- 11.4.23 The Air Quality chapter concluded that there would be no risk of significant negative impacts to the

qualifying features of the Severn Estuary Natura 2000 sites during the construction phase (Table 9-21).

Operational Phase Effects

- 11.4.24 Following review, the Air Quality chapter concluded that there was the potential for changes in dust emissions from operational activities to potentially have a negligible to minor negative direct impact on the Severn Estuary Natura 2000 sites.
- 11.4.25 The IAQM minerals guidance, applicable to the operational dust assessment, states that receptors within 250m from dust generating activities should be considered. In addition, the EA's AERA guidance states that assessment will need to consider SPAs, SACs or Ramsar sites within 10km of an installation (Paragraph 9.3.23).
- 11.4.26 Figure 9-4 in Chapter 9 comprises a plan showing the operational dust buffer of 250m and the evanescently small fraction of the Natura 2000 site boundary which falls within this buffer zone.
- 11.4.27 The habitats present within this region of the Natura 2000 site comprise mud flats that are washed twice daily by the tide. There is no significantly vegetated habitat with plants that could be negatively impacted by coating with dust (such as the Atlantic Salt Meadows for which areas of the Severn Estuary SAC are designated). The twice daily washing of the mud flats would also prevent the build-up of any dust that may reach this far. Consequently, the qualifying features of the Natura 2000 within the potentially affected area are considered to have a low sensitivity to negative impacts from dust deposition.
- 11.4.28 The Air Quality chapter appraised the anticipated impacts of the proposed development on the Natura 2000 sites that may arise as a result of any increased vehicular traffic during operation. This was assessed using the worst-case scenario that every vehicle movement generated by the proposed development would head east from the application site and travel along the road closest to the Severn Estuary SAC (*i.e.* approximately 20 to 25m from the edge of qualifying Atlantic salt-meadow habitat).
- 11.4.29 The Air Quality assessment concluded that predicted increases in annual mean NO_x, nutrient nitrogen and nitrogen contribution to acidity are all below 1% of the relevant Critical Level or Critical Load levels and so are considered to be 'insignificant'. The predicted increase in 24-hour mean NO_x is less than 10% of the Critical Level across all the Severn Estuary SAC and is also considered to be 'insignificant'. Therefore, the air quality modelling has shown that air quality emissions arising from predicted traffic associated with the scheme would not be significant, even when using a worst case assumption.
- 11.4.30 No significant negative impacts arising from air quality issues during operational phase are anticipated.

Cumulative Effects

- 11.4.31 The proposed development has the potential to contribute to cumulative effects with other proposed or planned developments in the study area.

Cumulative Noise Impacts

- 11.4.32 Committed developments at the Cardiff Motocross Centre MX and the SIMS Metal Recovery site are

considered relevant as they are adjacent to the Site boundary. Construction impacts are temporary in nature and dependent on activities on any given day, with the likelihood of activities coinciding at a single location being limited.

- 11.4.33 Any cumulative noise-related impacts that may exist are limited to prolonged exposure to risk of effects rather than heightened risk on any given day (e.g. two sites may break concrete at different times, increasing the duration of noise). In addition, it is anticipated that appropriate mitigation measures will be employed during the construction phases for both developments, further reducing the risk to exposure to construction impacts.
- 11.4.34 The completion of the Cardiff Motocross Centre development to the east of the application site would ultimately provide a significant baffle to any construction noise arising from the application site. In addition to the construction of a biomass plant and industrial units, the proposals incorporate the construction of a large bund to provide visual and acoustic screening for the development from the coast. Should the Motocross Centre development be completed first, any risk of construction noise from the application site having a significant negative impact on the Severn Estuary Natura 2000 sites would be significantly reduced.
- 11.4.35 The proposed development is considered to have a negligible risk of contributing significantly to significant cumulative effects on the identified important ecological features with respect to noise and acoustic impact.

Cumulative Air Quality Impacts

- 11.4.36 As set out in The Air Quality Chapter (Chapter 9), an assessment has been undertaken of the air quality impacts of operational traffic from the proposed development on Atlantic Salt Marsh within the Severn Estuary SAC that considers both the proposed plant, and the cumulative effect of the plant with traffic from committed developments and also traffic that could occur from nearby land allocations.
- 11.4.37 The assessment has involved detailed air dispersion modelling has been undertaken using the Cambridge Environmental Research Consultants (CERC) ADMS Roads v4.1 air dispersion model, following guidance provided in LAQM.TG(16) to predict annual mean concentrations of nitrogen oxides (NO_x).
- 11.4.38 The assessment has considered the likely changes in air quality as a result of the proposals according to the scenarios detailed above, on ambient NO_x Air Quality Objectives (refer to as Critical Levels) and on nitrogen and acid deposition (refer to as Critical Loads). The assessment makes a number of 'worst case' assumptions in accordance with the instructed method, including:
- 100% of traffic generated by the scheme would travel north on Rover Way;
 - 100% of traffic from committed developments would travel north Rover Way;
 - That all committed development would be constructed;
 - That the nearby allocated land will be entirely developed with traffic generating uses; and
 - a single air quality model verification factor was applied across the modelled grid and transects, irrespective of their distance from the road.

- 11.4.39 When the cumulative effect of the scheme alongside committed developments and traffic arising from allocated land is considered, the air quality modelling does show that increases in annual mean NO_x are seen above 1% of the Critical Level at parts of the Severn Estuary SAC nearest to Rover Way. The air quality modelling shows that such exceedances only occur within a narrow strip of land on the periphery of the SAC that is nearest to Rover Way (Figure 11-2) and limited to an area of 1,327 m². This equates to approximately 0.0095% of the 1,400 hectare of the SAC Atlantic Salt Marsh resource).

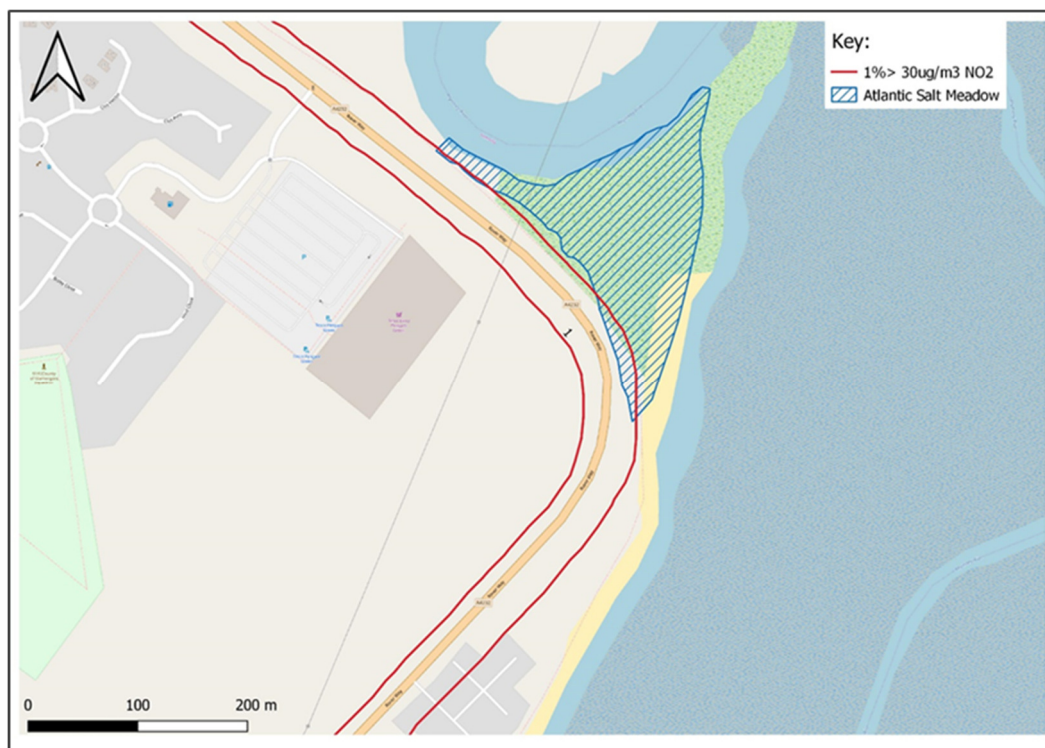


Figure 11-2: Annual mean NO_x concentration >1% of the AQO

- 11.4.40 When the cumulative Do-Minimum and Do-Something scenarios are considered, it is clear that these exceedances would occur anyway in 2023 as a result of committed development, development of allocated land and the worst-case assumptions used for committed and allocated land inputs to the model. The emissions arising from already consented biomass facility development to the south-east alone would result in exceedance of the threshold in light of the worst-case scenario methodology.
- 11.4.41 Therefore, whilst the vehicle emissions anticipated as a result of the proposed development are insignificant when assessed alone, they will result in further exceedance of the threshold breached by the previously consented development (however negligibly). Likewise, any future development that generates traffic within the land allocation area will result in the threshold being breached further when assessed using the worst-case scenario methodology.
- 11.4.42 The anticipated physical impact of the threshold exceedance by the proposed development on the Atlantic salt-meadow is very difficult to quantify. At the worst-affected locations it is anticipated that the proposed development would contribute 0.42 µg/m³ (0.00042 thousandths of a gram) to the existing background levels of nitrous oxides. Some of this may be deposited onto the Atlantic salt-meadow as nitrates, which would increase nutrient levels. Over time this fertilisation effect could result in reduced species diversity within the meadow, as less competitive plant species lose

their advantage as nutrient levels increase. However, it is considered highly unlikely that the effect attributable to the portion of the increased nutrient load arising from the proposed development would be measurable.

11.5.0 Mitigation

Construction Noise

- 11.5.1 In accordance with the mitigation hierarchy, the avoidance of noise creating activities during construction should be the priority. All measures to reduce noise should be taken in line with best practice principles, for example ensure equipment is fitted with exhaust silencers, pneumatic breakers are fitted with sound insulation, and plant is not left idle with the engine running, etc.
- 11.5.2 The noise sensitive receptors of the Natura 2000 sites predominantly pertain to the Severn Estuary's populations of over-wintering birds. Avoiding demolition or construction activities during the winter would avoid the risk of causing significant negative impacts on the qualifying features and minimise the risk of negatively impacting the conservation goals of the of the designated Natura 2000 sites.
- 11.5.3 Whilst the Severn Estuary is designated for the over-wintering bird populations it supports, populations of many of these species remain present year-round. At low tide more of the mud flats are exposed and the birds can more easily relocate to a comfortable distance and continue to forage. At high tide the mud flats are not exposed and birds are more concentrated along the shoreline, closer to the application site. The potential for having a negative impact on the bird populations would be significantly reduced by avoiding concrete breaking, pile-driving, or any other activity creating noise levels over 90dBa at 10m during the three-hour period around high tide. Whilst this would be critical in winter, it should also be adopted during the rest of the year in order to minimise disturbance.
- 11.5.4 Whilst the application site is considered to have negligible potential value of bats, the external lighting scheme should still be designed to be bat friendly. The minimal amount of external lighting required should be used, it should be low level and directional in order to minimise light spill. Cows and hoods should be used to minimise the amount of lighting shining upwards, and particular care should be taken to avoid increasing the amount of light pollution falling on trees and scrub outside the application site to the east and south.
- 11.5.5 A Construction Environmental Management Plan should be produced and agreed with the Local Authority. This document should cover all mitigation and enhancement measures to be included within the development proposals, from pre-construction, through construction, to the post-development management of the ecological features and enhancements.

Air Quality

- 11.5.6 The worst-case scenario assessment methodology for vehicle emissions indicates that the threshold for significant impacts is breached by the already-consented adjacent development, and therefore mitigation for vehicle movements from the application site will reduce the potential impact but not remove it.
- 11.5.7 Consideration should be given to routing plans that direct traffic to the west, so that it does not pass along the road adjacent to the Severn Estuary SAC Atlantic salt-marsh. Whilst potentially unrealistic to assume that all vehicles can be routed to the west, if vehicles do not pass to the east along Rover Way, they will not have an impact on the salt-meadow.
- 11.5.8 Whilst figures are not currently available, with the introduction of legislation aimed to increase the number of electric vehicles and reduce the reliance on fossil fuels, over time the levels of NOx

emissions along Rover Way are anticipated to decrease. Consideration could be given to encouraging or incentivising site staff to adopt electric or hybrid vehicles. However, limitations on this front with regard to the heavy haulage vehicles are noted.

Compensation

- 11.5.9 For any portion of the impact that cannot reliably be mitigated for, then compensation should be considered. This could take the form of contributing to restoration or enhancement of areas of the salt-meadow outside the anticipated impact area, in association with local conservation organisations.

11.6.0 Ecological Enhancement

- 11.6.1 The preliminary ecological appraisal (Appendix 11-1) made the following recommendations for ecological enhancement.

- If space permits, establishment of a bank of species-rich wildflower grassland, ideally south-facing. This will potentially benefit local populations of bees, including the brown-banded carder-bee (*Bombus humilis*), and other insects such as the long-winged conehead (*Conocephalus discolor*). The adjacent moto-cross site was noted to have an assemblage of aculeate hymenoptera (bees) of potentially county level importance, and introduction of species-rich wildflower grassland would provide an additional resource for this, and other, groups of invertebrates;
- Installation of bird boxes on buildings, trees and boundary fencing within application site and/or the wider metals recycling facility. Three house sparrow terrace nesting boxes and three boxes appropriate for other commensal species such as starlings should be incorporated; and
- Inclusion of two invertebrate boxes within the landscaping to provide over-wintering and nesting sites for a range of invertebrates.

11.7.0 Residual Effects

- 11.7.1 Following the worst-case scenario methodology for air quality impact measurement, and assuming no mitigation or compensation it is considered that the proposed development will contribute negligibly to the already exceeded threshold for impacts on the Severn Estuary Atlantic salt-meadow, through increased NO_x emissions from vehicles along Rover way to the east.
- 11.7.2 The anticipated negative impact is considered to be of uncertain, but highly likely negligible, magnitude on a receptor of Very High Sensitivity (an international designated site). Due to the international level of protection, even a negligible negative impact must be considered to be of moderate importance. Any development with the potential to have a significant negative effect on a Natura 2000 qualifying feature, however small, must be subjected to Appropriate Assessment by the Local Authority.
- 11.7.3 The anticipated residual effect on the Atlantic salt-marsh is considered to be a negligible permanent, reversible negative impact, with it being noted that the increase in the proportion of electric vehicles in the future should render the effect temporary over a long-timescale.
- 11.7.4 Following the implementation of the recommended site-level ecological enhancements, there should be a minor, positive, permanent impact on ecological receptors for biodiversity and nature conservation at the local level, although these will not affect the Natura 2000 sites.

11.8.0 Summary of Effects

11.8.1 A summary of potential impacts, proposed mitigation and residual effects is provided for each important ecological feature included in the assessment in Table 11-5. Table 11-5 also includes a summary of proposed biodiversity enhancements.

Table 11-6: Summary of Impacts

Ecological Feature	Potential Impacts	Significance of Impact	Proposed Mitigation	Means of Delivering Mitigation	Residual Effects
Severn Estuary Natura 2000 site (SPA/Ramsar) overwintering bird populations.	Disturbance of overwintering bird populations from construction noise.	Potential temporary minor negative effect.	Avoidance of demolition and loud construction noises in winter and within the three hours of high tide at all times.	Planning Condition	Not significant.
Severn Estuary SAC qualifying habitats. (estuaries; subtidal sandbanks; intertidal mudflats and sandflats; Atlantic salt meadows and reefs).	Potential impacts from operational dust emissions.	Not significant.	Standard industry practice dust control.	-	Not significant.
Severn Estuary SAC qualifying habitats: Atlantic salt meadows.	Additional 0.42ug/m3 of NOx above the critical threshold that will have been already exceeded by the consented adjacent development.	Negligible permanent negative impact to a Very High sensitivity receptor.	Vehicle routing to west, away from the Atlantic salt marsh.	Planning condition	Negligible negative effect.
-	To provide biodiversity enhancement, the installation of bird boxes and invertebrate boxes. If space permits, the creation of a species-rich wildflower bank.	Minor positive effect at the local level	-	Planning condition	Minor positive effect at Local Level

11.9.0 Conclusions

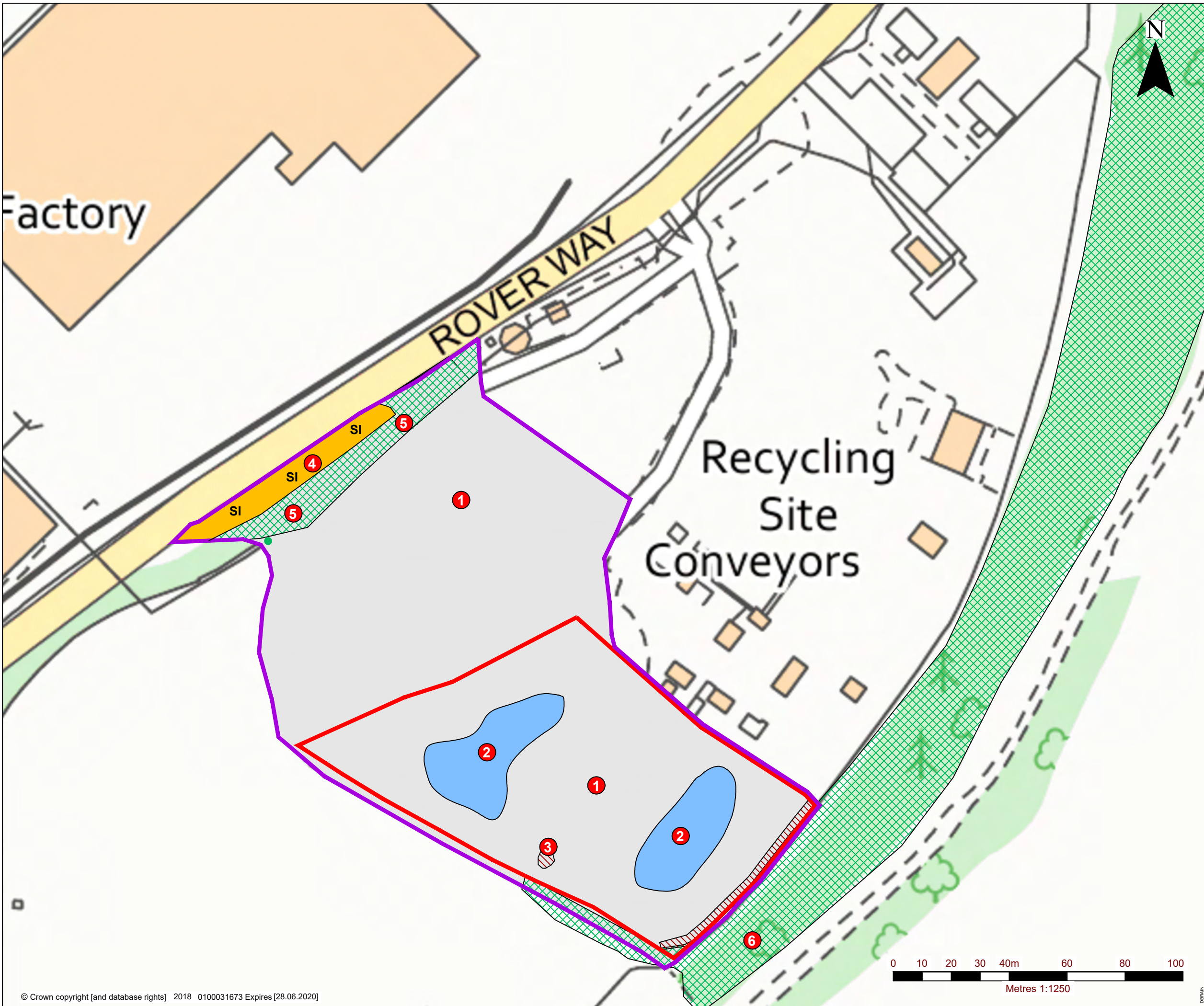
- 11.9.1 The proposed development of an asphalt plant at the application site is considered to have no risk of causing any significant direct negative impacts to either ecology or biodiversity, as the application site comprises concrete hard-standing with no ecological or biodiversity importance.
- 11.9.2 Located approximately 230m to the east and south of the application site is the Severn Estuary which supports a number of the highest level of wildlife site designations, including Special Protection Area, Special Area of Conservation and Ramsar site. The designations are predominantly related to the presence of internationally significant populations of over-wintering birds, but also include the presence of important populations of other species and notable habitats.
- 11.9.3 Potential pathways for indirect impact on the Severn Estuary designated wildlife sites were identified, including construction and operational noise, and construction and operational air quality impacts.
- 11.9.4 Following appraisal, it was determined that with regard to the construction and operation of the asphalt plant itself only construction noise had the potential to result in significant negative impacts if left unmitigated. The operational air quality impacts (dust) were considered to have an insignificant risk of causing a significant negative impact to the qualifying features of the Severn Estuary Natura 2000 sites.
- 11.9.5 Recommendations for mitigation of construction noise impacts have been made and, if implemented, the proposed development is considered to have no significant risk of causing significant negative impacts to any of the Severn Estuary Natura 2000 site qualifying features.
- 11.9.6 With regard to air quality, the plant itself was considered to have no significant negative effects during operation or construction. However, the cumulative impacts of the site's vehicle movements and emissions when considered with nearby consented developments and local plan allocations, would add to an already exceeded threshold for NO_x deposition onto an area of Atlantic salt-meadow that is a qualifying feature of the Severn Estuary SAC.
- 11.9.7 A 'worst-case scenario' assessment model was adopted that routed all traffic from the proposed asphalt plant and nearby consented developments east along Rover Way, adjacent to an area of Atlantic salt-meadow. This resulted in exceedance of the NO_x deposition threshold across 1,327 m² of salt-meadow, equating to approximately 0.0095% of the 1,400 hectares of salt-meadow within the SAC. Previously consented developments are anticipated to result in exceedance of the threshold by themselves, before the contribution from the proposed asphalt plant is taken into consideration.
- 11.9.8 The contribution of the proposed development to the nutrient loading impacts on the salt-meadow is considered to be very difficult to quantify, representing in effect a very small increase in nutrient input that may result in reduced species diversity over time. Whilst the magnitude of the impact is uncertain, it is considered highly likely to represent a negligible/unmeasurable fraction of the overall effect, which is likely to reduce in time with the introduction of higher proportions of electric vehicles.
- 11.9.9 Mitigation has been proposed in the form of routing plans/requirements that would direct all traffic west, away from the SAC and Atlantic salt-meadow, which would reduce the potential impact from the proposed asphalt plant's contribution to vehicle movements.

- 11.9.10 If it is not possible to direct all traffic to the west, then it is considered that there will be a negligible permanent reversible negative effect on a feature of Very High sensitivity (an internationally designated site). Due to the high sensitivity and international designation, any negative impact upon the qualifying features of a Natura 2000 site must be subjected to Appropriate Assessment by the Local Authority.
- 11.9.11 Recommendations for ecological enhancement have also been made within the application site in line with national and local planning policy. If followed, the proposed development should have a minor positive impact on biodiversity at the local level, but this will have no significant impact, positive or negative, on the Natura 2000 sites.

DRAWINGS

DRAWING 11-1

Phase 1 Habitat Survey Plan



LEGEND	
	APPLICATION SITE BOUNDARY
	SURVEY BOUNDARY
	HARDSTANDING
	EPHEMERAL STANDING WATER
	TALL WEEDS
	SPECIES-POOR SEMI-IMPROVED GRASSLAND
	DENSE SCRUB
	SCATTERED TREES
	TARGET NOTE

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CELSEA STEEL, ROVER WAY, CARDIFF

PHASE 1 HABITAT PLAN

DRAWING 1

Scale 1:1250 (A3)	Date JUNE 2019
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DRAWING 11-2

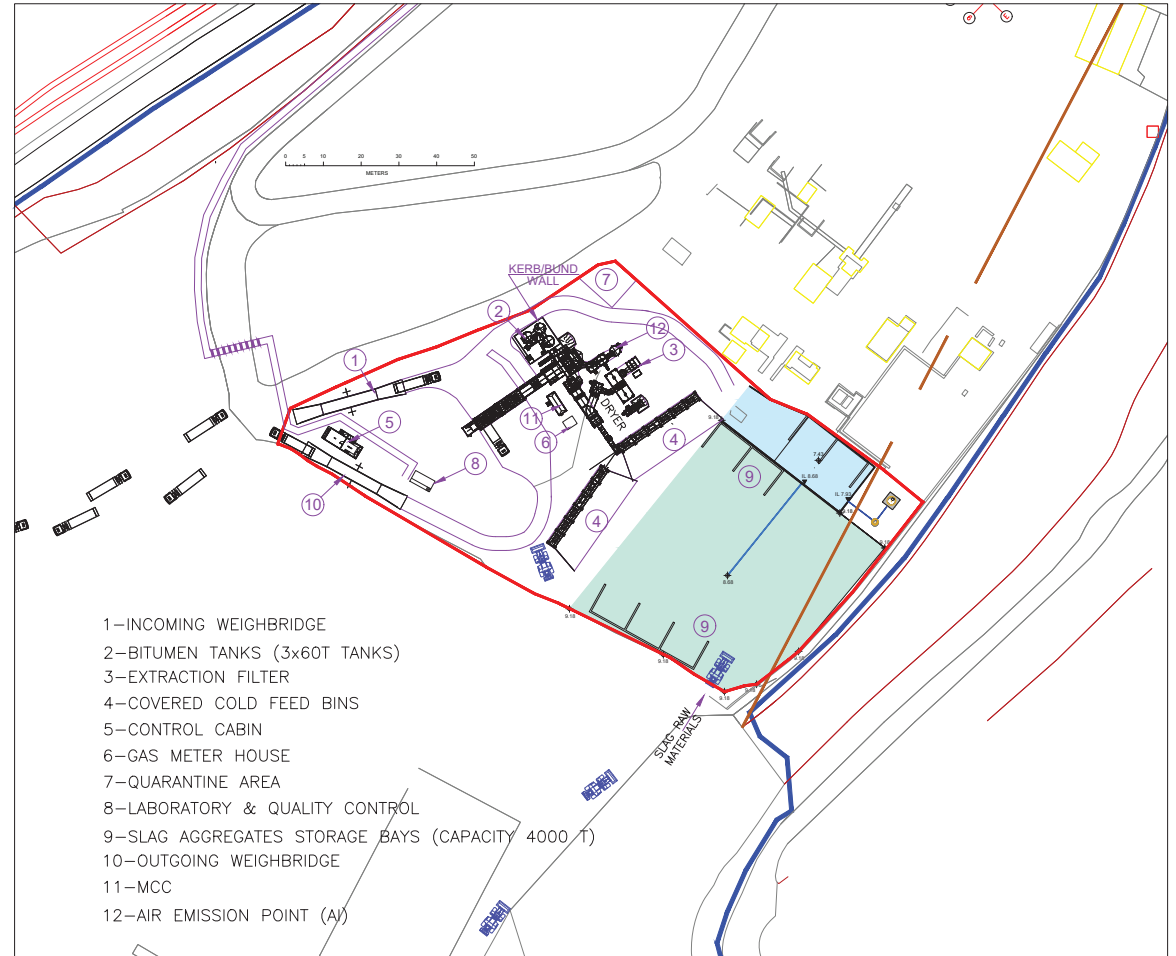
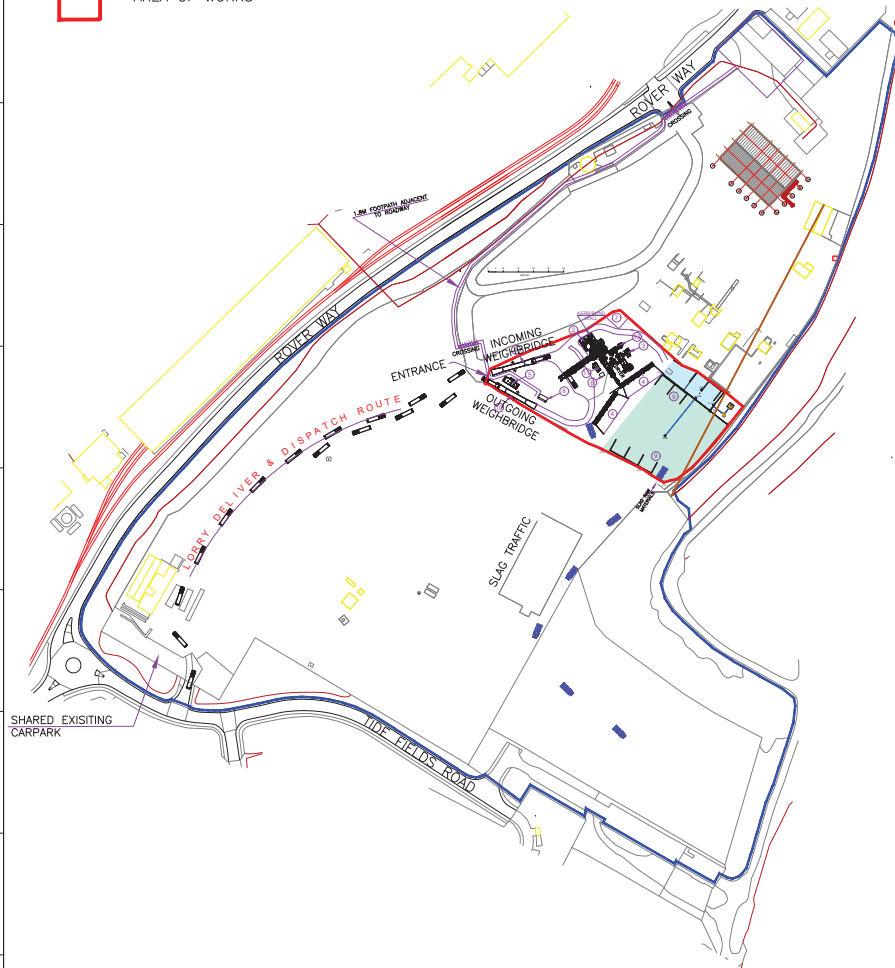
Development Proposals Plan



LEGEND

— DENOTES CELSA SITE OWNERSHIP
AREA = 150,669m² (15.07ha)

□ AREA OF WORKS





- 1—INCOMING WEIGHBRIDGE
- 2—BITUMEN TANKS (3x60T TANKS)
- 3—EXTRACTION FILTER
- 4—COVERED COLD FEED BINS
- 5—CONTROL CABIN
- 6—GAS METER HOUSE
- 7—QUARANTINE AREA
- 8—LABORATORY & QUALITY CONTROL
- 9—SLAG AGGREGATES STORAGE BAYS (CAPACITY 4000 T)
- 10—OUTGOING WEIGHBRIDGE
- 11—MCC
- 12—AIR EMISSION POINT (A)

ASPHALT PLANT AREA (CIRCA 10,022 M²) SCALE 1:500 ON A0

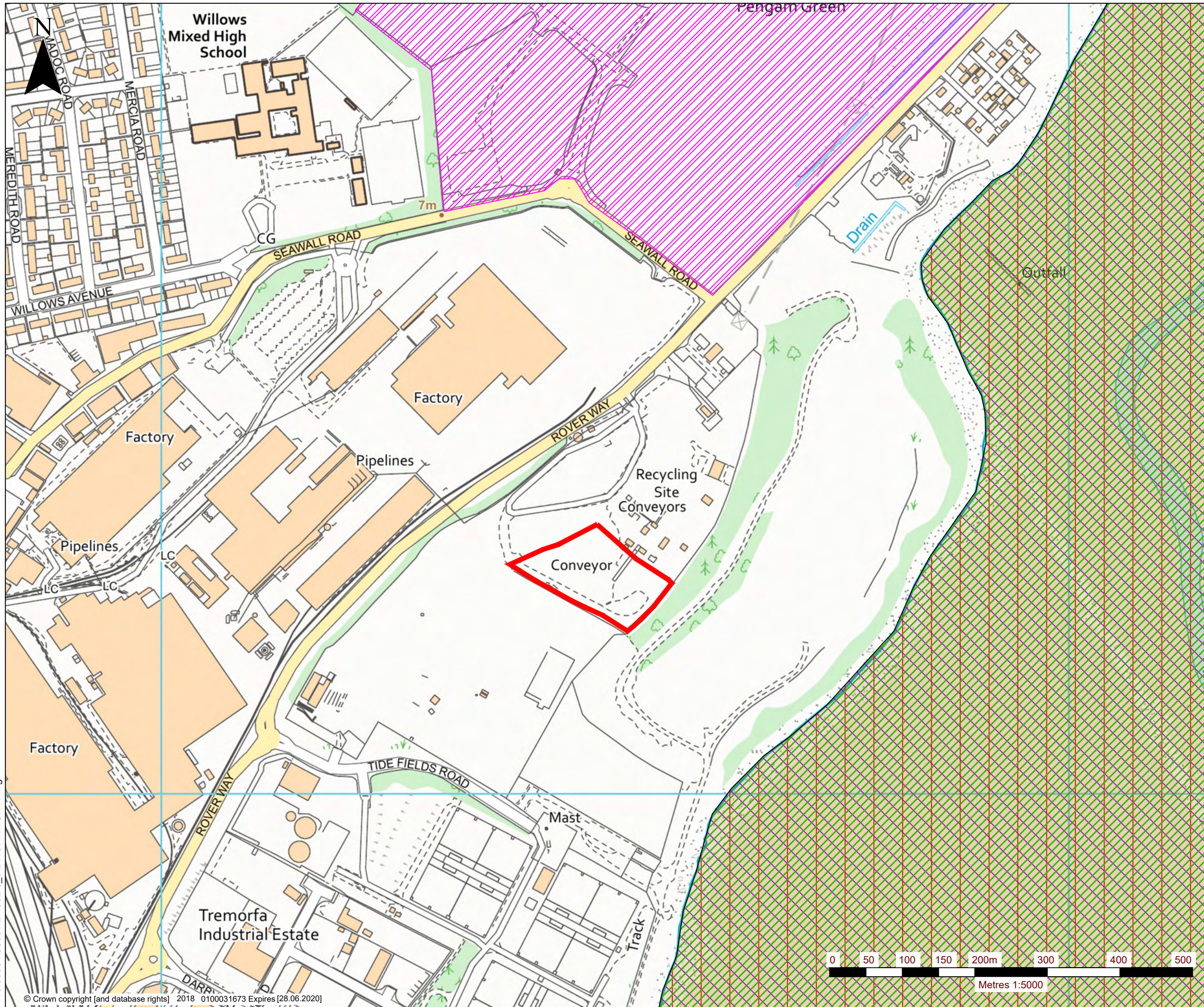
NOTES

1. Do not scale from this drawing
2. Dimensions are for reference only
3. Plants' components and their locations are preliminary and may change during design stage
4. This drawing is prepared, in part, based on information provided by others. While this information is believed to be reliable, Harsco Metals assume no responsibility for inaccuracies, errors or omissions that might have been incorporated into this drawing as a result of incorrect information provided to us
5. This drawing is for planning purposes only. Not to be used for construction

2	GENERAL UPDATE FOR PLANNING	25.06.2019	AUM	RM
1	STREET NAMES ADDED	01.10.2019	AI	
0	RELEASED FOR DISCUSSION	26.09.2019	AI	
RevNo	Revision note	Date	Signature	Checked
OWNER: <div> ENGINEERING DEPT. HARSCO HOUSE, Bradmarsh Business Park, The Point, Bradmarsh Way Rotherham, S60 1BW, UK. TELEPHONE +44(0)11799 536850, FAX +44(0)11799 536850</div>				
VENDOR/CONSULTANT:				
PROJECT: ASPHALT PRODUCTION AT CELSA CARDIFF				
PROJECT No.: 01994		TITLE:		SCALE
NAME	SIGN	DATE	NEW ASPHALT PLANT AT CELSA CARDIFF. LOCATION PLAN OPTION 7.5	
ENGR	AI	25.09.19		
DRAWN	AI	26.09.19		
CHECK				
DRG. NO. 01994-00-01-07.05				SIZE REV.
			A0	2
RELEASED FOR				
<input type="checkbox"/> PRELIMINARY <input type="checkbox"/> INFORMATION <input type="checkbox"/> APPROVAL <input type="checkbox"/> FABRICATION <input type="checkbox"/> CONSTRUCTION				

DRAWING 11-3

Location Plan of Designated Wildlife Sites



NOTES

DESIGNATION INFORMATION TAKEN FROM MAGIC DEFRA WEBSITE 25.06.2019.

LEGEND

- APPLICATION SITE BOUNDARY
- RAMSAR SITE
- SPECIAL PROTECTION AREAS (SPA)
- SPECIAL AREAS OF CONSERVATION (SAC)
- SITES OF SPECIAL SCIENTIFIC IMPORTANCE (SSSI)
- SITES OF IMPORTANCE FOR NATURE CONSERVATION (SINC)

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CELSA STEEL, ROVER WAY, CARDIFF

DESIGNATIONS

DRAWING 2

Scale 1:5000 (A3) Date JUNE 2019

416.09604.00001.27.002.0 DESIGNATIONS.dwg

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DRAWING 11-1

Phase 1 Habitat Survey Plan

DRAWING 11-2

Development Proposals Plan

DRAWING 11-3

Location Plan of Designated Wildlife Sites

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