



ASSOCIATED BRITISH PORTS

NEWPORT DOCKS – PROPOSED PLASTERBOARD MANUFACTURING FACILITY

ECOLOGICAL IMPACT ASSESSMENT

JANUARY 2020

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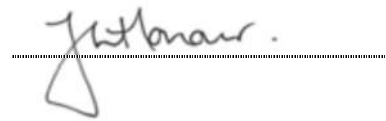
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PREPARED BY:

Jo Honour Associate Director



REVIEWED AND

APPROVED BY:

Ali Bennett Technical Director



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CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION.....	3
2 BACKGROUND AND PREVIOUS SURVEYS.....	6
3 PLANNING POLICY AND LEGISLATION	8
4 METHODOLOGY	9
5 BASELINE CONDITIONS AND NATURE CONSERVATION EVALUATION	23
6 ASSESSMENT OF EFFECTS, MITIGATION AND RESIDUAL EFFECTS	40
7 ENHANCEMENTS.....	70

APPENDICES

Appendix 1	Technical Information to inform Habitats Regulations Assessment
Appendix 2	Preliminary Ecological Appraisal Report dated June 2019 (Revision 003)
Appendix 3	Target Notes – Additional Habitat Enhancement Area
Appendix 4	Breeding Bird Survey Report
Appendix 5	Bat Survey Report
Appendix 6	Reptile Survey Report
Appendix 7	Preliminary Terrestrial Invertebrate Assessment Report
Appendix 8	Planning Policy and Legislative Framework
Appendix 9	Nature Conservation Evaluation Criteria
Appendix 10	International Designations - Conservation Objectives
Appendix 11	Extracts from Air Quality Assessment Report
Appendix 12	Precautionary Working Method Statement for Reptiles

DRAWINGS	TITLE	SCALE
153091-STL-00-00-DR-A-ZZZZ-00002	Existing Site Location Plan	1:2500 @A1
153091-STL-00-00-DR-A-ZZZZ-01001	Proposed Site Plan	As indicated @A1
CA11637-008	Additional Habitat Enhancement Area- Phase 1 Habitat Plan	1:5,000@A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Gleeds Management Services Ltd (on behalf of Associated British Ports) in August 2019 to undertake an Ecological Impact Assessment of a site located at Newport Docks, in connection with a proposed plasterboard manufacturing facility and associated infrastructure.

A Preliminary Ecological Appraisal (PEA) was produced by Thomson Environmental Consultants in May 2019 which identified that the following may be affected by the proposed development and which have therefore been considered as part of this EclA:

- Statutory designated sites;
- Non-statutory designated sites;
- Section 7 Priority Habitat ‘Open mosaic habitats (OMH) on previously developed land’;
- Protected and Section 7 Priority species:
 - Birds;
 - Bats;
 - Reptiles;
 - Invertebrates;
- Badger; and
- Non-Native Invasive species (Japanese knotweed).

Further surveys undertaken by Thompson Environmental Consultants confirmed the part of the application site surveyed is used by foraging bats (common pipistrelle, soprano pipistrelle and Nathusius pipistrelle, noctule, Leisler’s, brown long-eared bat and a *Myotis* species), a small population of slow worms, potentially used by birds for nesting and foraging and badgers. The OMH at the site also has the potential to support notable terrestrial invertebrates including shrill carder bee, which is a Section 7 Priority Species.

An additional area of land within Newport Docks was subject to a Phase 1 Habitat Survey by WA in October 2019 to consider its potential to provide off site mitigation. ABP is offering to manage and retain OMH on this land in connection with the development proposals.

Measures have been specified in this report to include protection of fauna species from harm and disturbance and habitat creation measures to mitigate the significant adverse effects of the proposed development on ecological receptors.

In order to mitigate impacts and to maintain best working practice and accord with relevant legislation, mitigation measures will be provided for the following habitats and species:

- Severn Estuary Special Area of Conservation (SAC), Special Protection Area (SPA), Ramsar and Site of Special Scientific Interest (SSSI) (impacts on these designations are considered in a separate Habitats Regulation Assessment);
- River Usk SAC and SSSI;
- Gwent Levels – St Brides SSSI;
- Afon River Ebbw Site of Importance for Nature Conservation (SINC);
- Section 7 Priority Habitat OMH;
- Foraging bats;
- Breeding birds;
- Common reptiles;
- Terrestrial Invertebrates;
- Badgers; and
- Non-native species – Japanese knotweed.

With the implementation of suitable mitigation, no significant residual effects on the ecological features are anticipated.

Biodiversity enhancements (including erection of bird and bat boxes) and management specifications for habitats and species will be implemented via Ecological Management Plans to cover a 20-year period for each of the proposed Habitat Enhancement Areas.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Gleeds Management Services Ltd (on behalf of Associated British Ports (ABP)) in August 2019 to undertake an Ecological Impact Assessment (EclA) of a proposed development located at land at Newport Docks, Newport centred on approximate Grid Reference ST 31347 84186.

1.1.2 Site Location and Description

1.1.3 The site is situated within the Alexandra Docks, Port of Newport. The planning application boundary for the site is shown on Drawing Number 153091-STL-00-00-DR-A-ZZZZ-00002 (Existing Site Location Plan). The site is located towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road that heads towards the head of the docks.

1.1.4 The site currently supports scrub and ephemeral / short perennial habitats characteristic of previously developed industrial land. The application area is 4.5268 hectares (ha) of which 3.39 ha will be utilised for the proposed Plasterboard Manufacturing Facility (PMF), hereafter referred to as the 'development site'. The remaining planning application boundary area will remain undeveloped and managed for the benefit of nature conservation i.e. 0.5162ha Habitat Corridor and 0.5620ha Habitat Enhancement Area (on-site).

1.1.5 A separate and additional off-site 1.1287ha Habitat Enhancement Area) within the wider Newport Docks land is being offered in connection with the proposed development by ABP to be managed in the long-term to retain ephemeral / short perennial and scattered scrub habitat to compensate for the loss of this habitat type to the built development.

1.1.6 To the north east of the development site is South Docks, beyond which are industrial units and port related land. To the east, the development site adjoins an access road (Tom Lewis Way) and a sand and gravel supplier and industrial works site are immediately adjacent to the dock entrance. Immediately south of the site is the River Usk and estuary. The Ebbw River is located along the south western boundary beyond which lies fields and agricultural land.

1.1.7 Topographically the development site is 9m above ordnance datum (AOD) at its highest point within the northern corner of the site.

1.2 Description of Development

1.2.1 Planning permission for the redevelopment of the site at Newport Docks is currently being sought by ABP for a 14,940m² (approx.) PMF. The development site is covered by the Newport Local Development Plan 2011-2026 under the allocation for “Newport Docks” justified as *“surplus of land within Newport Docks which could better meet Newport’s economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8”*.

1.2.2 The manufacturing facility will comprise a simple warehouse-type structure enclosing production lines, conveyor belts, storage loading areas, hoppers and four flues. Externally there will be storage areas/bays, hardstanding parking and an administrative office. A strip of vegetation approximately 10m wide (approximately 0.5162ha) will be maintained along the western boundary of the development site to maintain connectivity of habitats. An area of approximately 0.5620ha to the south of the development site will be maintained for ecological mitigation and enhancement.

1.3 Scope of Report

1.3.1 EclA is a process of identifying, quantifying and evaluating potential effects of development on habitats, species and ecosystems. EclA supports implementation of national biodiversity strategies and national planning policies for safeguarding biodiversity and supporting the delivery of sustainable development. This assessment demonstrates how the project accords with relevant planning policy and legislation.

1.3.2 The purpose of this report is to provide an EclA which includes:

- Details of relevant national and local planning policy with regards to nature conservation and relevant legislative background;
- Description of survey and assessment methodology;
- A description of the baseline conditions for the application site;
- An evaluation of the application site in terms of its value for nature conservation;
- An assessment of potential ecological impacts of the proposed development including habitat loss and fragmentation, disturbance and potential off-site impacts and whether those impacts are likely to result in significant effects on Important Ecological Features;
- Proposed mitigation measures in terms of significant adverse effects on Important Ecological Features;
- A description of measures that can be implemented to enhance biodiversity; and

- Identification of residual effects taking into account proposed mitigation measures.

1.3.3 The report attached as Appendix 1 provides information to inform a Habitats Regulations Assessment (HRA) for the proposed development. The object of the HRA is to identify any aspects of the project that would cause ‘Likely Significant Effects’ (LSE) on the interest features of the Natura 2000 sites, specifically:

- Severn Estuary Special Protection Area (SPA) and Ramsar;
- Severn Estuary Special Area of Conservation (SAC); and
- River Usk SAC.

1.4 **Quality Assurance & Environmental Management**

1.4.1 The EclA assessment has been completed by Joanne Honour, Associate Director for Ecology at WA, based on the results of the surveys conducted by TEC. Joanne has over 20 years of experience in ecological consultancy, is a member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and holds a BSc (Hons) in Environmental Science. Jo has experience of undertaking numerous ecological surveys and assessments, making recommendations for ecological mitigation and enhancements for habitats and species across a range of sites and development projects in the UK.

1.4.2 This assessment has been reviewed and approved by Ali Bennett, Technical Director and Service Lead for Ecology at WA who has 20 years’ experience in professional ecology, having worked on a variety of ecological assessments for complex projects. Ali is a full member of CIEEM and holds a BSc (Hons) in Environmental Science.

2 BACKGROUND AND PREVIOUS SURVEYS

- 2.1.1 A Preliminary Ecological Appraisal (PEA), comprising a desk study and Extended Phase 1 (EP1) Habitat Survey was undertaken in May 2019 by Thompson Environmental Consultants (TEC). A copy of the PEA report (PEAR)¹ is provided in Appendix 2. The EP1 Habitat Survey undertaken in May 2019 covered a survey area of 4.64ha, hereafter referred to as the 'EP1 survey area' as shown on Figure 2 in Appendix 2.
- 2.1.2 Since the PEA was commissioned, the overall development site area for the PMF has been reduced to 3.45ha. The EP1 Habitat Survey covered the proposed development site as shown on Drawing Number STL-00-00-DR-A-ZZZZ-00002 (Existing Site Location Plan).
- 2.1.3 The remaining land proposed for habitat mitigation/enhancement was not included within the red line at the time of the EP1 Habitat Survey in May 2019. In October 2019 the Habitat Enhancement Area (refer to Figure 4 in Appendix 2) was subject to a Phase 1 Habitat Survey by TEC.
- 2.1.4 In November 2019, a further Phase 1 Habitat Survey was undertaken by WA on additional land within Newport Docks identified for potential habitat enhancement (refer to Drawing Number CA11637-008-Additional Habitat Enhancement Area - Phase 1 Habitat Plan and Target Notes attached as Appendix 3). Information on the likely fauna species using these habitats have been inferred from observations of adjacent land uses and from survey information for the May 2019 EP1 survey area.
- 2.1.5 The PEAR identified that the following may be subject to potential adverse effects from the proposed development:
- Statutory designated sites;
 - Non-statutory designated sites;
 - Priority Habitat 'Open mosaic habitats (OMH) on previously developed land';
 - Priority species (invertebrates, common toad and European eel);
 - Birds;
 - Bats;
 - Reptiles;
 - Invertebrates;

¹ Thompson Environmental Consultants, Preliminary Ecological Appraisal, Newport Docks Plasterboard Factory, Report Reference (AABP122/001/001/001), June 2019 (Revision Number 003).

- Badger; and
- Non-Native Invasive species (Japanese knotweed).

2.1.6 Further specialist surveys considered relevant following the completion of the PEAR included the following, which were undertaken by TEC on behalf of ABP:

- Breeding Bird Survey – Appendix 4;
- Bat Survey – Appendix 5;
- Reptile Presence/Absence Survey – Appendix 6; and
- Preliminary Terrestrial Invertebrate Assessment – Appendix 7.

2.1.7 The above ecological receptors are therefore considered further within this EclA.

3 PLANNING POLICY AND LEGISLATION

3.1 Planning Policy

3.1.1 Planning policy at the national, regional and local level and its relevance to environmental design and assessment is discussed in the Planning Statement submitted as part of this planning application.

3.1.2 National and local planning legislation and policy requires the protection and conservation of wildlife sites, habitats and species. The relevant legislation and policy are listed below, with details provided in Appendix 8.

- *Planning Policy Wales (PPW) December 2018;*
- *Technical Advice Note (TAN) 5-Nature Conservation and Planning (2009);*
- *Newport Local Development Plan 2011-2026 (Adopted 2015); and*
- *Newport Wildlife and Development Supplementary Planning Guidance (SPG) August 2015.*

3.2 Legislative Framework

3.2.1 The main statutory species protection is provided by The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 and the Wildlife and Countryside Act 1981 (as amended).

3.2.2 The degree of protection varies between species; in general, it is an offence to intentionally kill or injure individual animals or disturb their roosts or hibernacula. A licence may be required to interfere with any protected species or their roosts and resting places.

3.2.3 Priority species and habitats agreed under the UK BAP are those which were identified as being the most threatened and requiring conservation action. The UK BAP was superseded by 'The UK Post-2010 Biodiversity Framework' which was published in July 2012 with work focusing at the country level, but the list of priority habitats and species remain the basis for the biodiversity work in the countries. Therefore, habitats and species listed under Section 7 of the Environment (Wales) Act (2016) (hereafter referred to as S7) were reviewed as they consider habitats and species of key significance to sustain and improve biodiversity in relation to Wales.

3.2.4 An overview of species (fauna) protection and legislation is provided in Appendix 8.

4 METHODOLOGY

4.1.1 Baseline data for the development site was collected through desk studies and field surveys (EP1 Habitat Survey and further specialist surveys). This data provides current ecological baseline conditions (in the absence of proposed activities) which is required to inform this EClA.

4.2 Desk Study

4.2.1 The desk-based assessment was undertaken in May 2019 as part of the PEA. Detailed methodology is provided in Appendix 1; however, a summary is provided below.

4.2.2 Specific information on ecological features was sought from the South East Wales Biological Records Centre (SEWBRc) for the EP1 survey area and within a particular radius from the EP1 survey area boundary as outlined in Table 1.

Table 1: Desk Study – Study Areas	
Feature	(Search Area Radius from the EP1 Survey Area Boundary)
International Designated Sites and European Protected Species	5km
Nationally Designated Sites, Ancient Woodland, Priority Habitat	2km
Protected and Priority Species	1km

4.2.3 Newport Borough Council’s Local Plan was also reviewed for relevant information.

4.3 Relevant Background Information

4.3.1 In addition to reviewing the PEAR, the following documents have also been reviewed to gather details on the existing baseline conditions in the vicinity of the site:

- *Report to Inform an EIA Screening Request, July 2019²;*
- *Addendum to Report to Inform an EIA Screening Request, 2nd August 2019³;*

² ABP, Plasterboard Manufacturing Facility Newport Docks, Report to Inform an EIA Screening Request, July 2019;

³ ABP, Plasterboard Manufacturing Facility Newport Docks, Addendum to *Report to Inform an EIA Screening Request*, 2nd August 2019 – reference R/4732/01/jfo/SCH

- Addendum to Report to Inform an EIA Screening Request, 29th August 2019⁴; and
- Welsh Government (2015) M4 Corridor around Newport Environmental Statement Volume 3: Appendix 10.31.

4.4 Field Surveys

4.4.1 All field surveys and assessments have been undertaken with reference to the current specialist best practice guidance by appropriately skilled and licensed ecologists, as detailed within each survey report provided in the appendices.

Extended Phase 1 (EP1) Habitat Survey

4.4.2 An EP1 Habitat Survey was undertaken by an ecologist from TEC on the 14th May 2019 and land to the south of the development site was surveyed by TEC on the 4th October 2019.

4.4.3 An EP1 Habitat Survey of the Additional Habitat Enhancement Area was conducted by an ecologist from Wardell Armstrong LLP on the 11th November 2019.

4.4.4 Habitats were mapped and classified according to vegetation type broadly in accordance with standard JNCC methodology (JNCC, 2010). Each of the main habitats were classified according to the relevant criteria including vegetation composition expressed according to the DAFOR⁵ system. Figure 2 (Phase 1 Habitat Survey Map) shows the location of ecological features and target notes on the development site and Figure 4 (Phase 1 Habitat Survey Map) of the Habitat Enhancement Area (HEA) to the south of the development site. Full details are provided in the PEAR attached as Appendix 2.

4.4.5 The result of the Phase 1 Habitat Survey for the Additional Habitat Enhancement Area (AHEA) is shown on Drawing Number CA11637-008 and Target Notes attached within Appendix 3.

Protected and Notable Species Surveys

Breeding Birds

4.4.6 A Breeding Bird survey was undertaken by TEC in 2019. The survey was based on the Common Bird Census (CBC) methodology and included the development site and land

⁴ ABP, Plasterboard Manufacturing Facility Newport Docks, Addendum to *Report to Inform an EIA Screening Request*, 29th August 2019 – reference R/4732/01/jfo/NJF/SCH

⁵ D – Dominant, A – Abundant, F – Frequent, O – Occasional, R – Rare.

immediately adjoining it to the south. The breeding bird survey area, which covered the proposed development site and land immediately adjoining it to the south (as shown on Figure 1 attached within Appendix 4), was visited on five occasions in the period between the 15th May to 12th July 2019 with at least seven days in between surveys.

- 4.4.7 During each visit a route was walked that allowed the surveyor to pass within at least 50m of every part of the survey area. The starting point varied during each survey visit to sample each point at a different time of the day. During each walkover, the location and species of all birds encountered (including both those seen and heard) were recorded on a map using standard British Trust for Ornithology (BTO) species codes. The birds recorded included those observed up to 50m outside the survey area.
- 4.4.8 Records of birds made on each visit were collated to determine the approximate location and numbers of breeding pairs for territorial and semi-colonial species. An indicative total for non-territorial species was also calculated for the survey area as a whole. The territorial analysis was based on a standard technique (Marchant 1983⁶; Bibby et al, 1992⁷). However, given that only five, rather than the optimum eight visits were made, this technique was altered slightly so that a single record of a pair of birds, or a singing male in suitable breeding habitat was considered sufficient evidence of a breeding pair.
- 4.4.9 Species were also classified as non-breeding, possibly, probably or confirmed breeding according to the criteria below:
- *Non-breeding birds*: birds seen flying over only, or in unsuitable breeding habitat;
 - *Possibly breeding*: birds seen in suitable breeding habitat on at least one visit;
 - *Probably breeding*: singing males, displaying birds or breeding pairs recorded on at least one visit; or territories identified by standard territorial analysis; and
 - *Confirmed breeding*: birds seen carrying food and/or faecal sacs or active nests found.

⁶ Marchant, J.H. (1983) *BTO Common Birds Census instructions*. BTO, Tring.

⁷ Bibby C.J, Burgess N.D, Hill D.A, and Mustoe S.H, (2000). *Bird Census Techniques*, 2nd Edition. Academic Press, London.

4.4.10 Further details on methodology including timing and weather conditions during the breeding bird surveys are provided in the Breeding Bird Survey Report (TEC, October 2019 Revision 007), Appendix 4.

Bat Activity Surveys

4.4.11 The PEA assessed the survey area as having low suitability for commuting and foraging bats. TEC were subsequently appointed to undertake baseline activity surveys which, in accordance with good practice guidelines (Collins ed, 2016⁸), comprised the following:

- Three dawn and dusk walked transect surveys with a visit in July, August and September; and
- Deployment of one automated detector on the line of scrub along the western boundary of the development site for a period of 5 days, in conjunction with each walked transect survey.

4.4.12 Full details on the survey methodology and results are provided within the Bat Survey report attached as Appendix 5.

Walked Transect Surveys

4.4.13 The activity surveys comprised a single walked transect covering all of the main habitats within the survey area that could be used by bats for foraging and commuting. The survey area comprised the proposed development site and land immediately adjoining it to the south. Dusk surveys began at sunset and ended two to three hours after sunset. The dawn survey began two hours before sunrise and ended at sunrise. Each transect was walked at a steady pace by a pair of ecologists equipped with Elekon Bat Loggers M detectors and the internal recording function on the Bat Logger was used to record all bat passes. The transect was surveyed twice in one night with the second survey being undertaken from the same start point to show variation in bat activity throughout the night. Bat activity, including species, number of passes, direction of flight paths, habitat and number of bats was recorded along the transects and at each spot count location. The survey route is shown on Figure 2, Appendix 5.

⁸ Bat Conservation Trust, "Bat Surveys for Professional Ecologists – Good Practice Guidelines. 3rd Edition. February 2016.

Automated Survey

4.4.14 To supplement the walked transect survey, one automated bat detector was deployed per survey, within the scrub along the western boundary of the development site. The detectors were programmed to record ultrasound continuously from 30 minutes before local sunset to 30 minutes after local sunrise for five consecutive nights. The location of the automated bat detector is shown on Figure 2 in Appendix 5.

4.4.15 The data files were analysed using Bat Explorer and quality assurance was undertaken on 10% of the bat call sound/noise files along with any rare or notable species.

4.4.16 The number of recordings of each bat species on the automated bat detector has been summed for each night the detector was in operation and bat activity scores applied to the data using the following formula for each survey visit:

$$\text{Bat Activity Score} = \left(\frac{\text{Total number of passes}}{\text{Survey Duration (min)}} \right) * 100$$

4.4.17 The activity level was then assessed based on the criteria in Table 2 devised by TEC.

Table 2: Categorisation of activity level based on an analysis undertaken by Thomson Ecology between 2006 and 2007	
Assessment of Activity Level	Activity Score
Very Low	Up to 5
Low	6 – 30
Medium	31-50
High	51-90
Very High	90 plus

4.4.18 The TEC Bat Survey report states *“that the activity score allows activity levels between survey locations across and within sites to be broadly standardised. The activity level is not necessarily a reflection of the level of importance of the survey location for bats and must be considered in conjunction with other data for that location. For example, a high level of activity could be due to 30 bats commuting along a hedgerow or one bat foraging beneath a tree for 30 minutes. Likewise, a low level of activity could be one bat emerging from a building and commuting away or one bat commuting along the edge of the site”*.

Reptiles

- 4.4.19 During the EP1 Habitat Survey, the dense scrub and standing water habitat were identified as providing potential suitable habitat for grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*). Several mounds of concrete rubble within the 4.3 ha survey area also could provide daytime refuges for reptiles or offer potential hibernation habitat.
- 4.4.20 There is presently no definitive methodology for surveying for reptiles. The methodology for this survey uses artificial refugia which provide an opportunity for reptile species to hide and to heat up (during suitable weather conditions) whilst minimising exposure to predators. In addition, a visual search for basking reptiles was also undertaken.
- 4.4.21 The optimum months for surveys are April, May or September when reptiles are more likely to use refugia to warm their bodies during cool periods in the day. Survey visits were undertaken between July and September.
- 4.4.22 The reptile survey area encompassed the EP1 Habitat Survey area plus a 50m buffer. A total of 150 artificial reptile refuges (approximately 0.5m x 0.5m squares of roofing felt) were placed in suitable locations within the survey area on the 26th June 2019 giving an approximate density of 50 artificial refugia per ha. The refugia locations are shown on Figure 3 in Appendix 6.
- 4.4.23 The artificial refugia were then left in place for a minimum of one week before the presence/absence survey commenced. 7 survey visits were undertaken, a minimum of 2 days apart, where the refugia were cautiously checked (i.e. the surface and beneath) for reptiles.
- 4.4.24 An estimation of population size class was made for each species of reptile recorded as present within the reptile survey area. The size class is an estimate of reptile density i.e. a qualitative indication of the likely numbers of reptile per ha. It is therefore a measure which is independent of the size of the development site.
- 4.4.25 The reptile survey report states that *“the size class for each species was estimated as small, medium or large, based on the results of the presence/absence survey and the habitat suitability assessment. Where a species of reptile was recorded, it is estimated that the population will be small in poor habitat, medium in good habitat and large in exceptional habitat. This estimate is revised upwards if the survey peak count (maximum number of adults and juveniles recorded in any one survey visit) is*

exceptionally large, or downwards if exceptionally small". For the purposes of the habitat suitability assessment, 'Exceptional habitat' is considered to be undisturbed, relatively open and often south facing i.e. sunny location with a high degree of structural diversity, with 'Poor habitat' comprising intensively managed (highly disturbed; e.g. frequently grazed/managed grasslands, lacking shelter and sunny aspect).

4.4.26 Where a species of reptile was recorded, it is estimated that the population will be small in poor habitat, medium in good habitat and large in exceptional habitat. This estimate is revised upwards if the survey peak count (maximum number of adults and juveniles recorded in any one survey visit) is exceptionally large, or downwards if exceptionally small.

4.4.27 A population assessment survey (comprising an additional 13 survey visits⁹) was not undertaken however the information obtained from the presence / absence survey. Further surveys are considered unlikely to make any material difference to the assessment of effects and proposed mitigation.

Invertebrates

4.4.28 ABPmer commissioned TEC on the 4th September 2019 to undertake a preliminary habitat assessment of the value of the existing semi-natural habitats for terrestrial invertebrates.

4.4.29 No formal methodology exists for a preliminary habitat assessment for terrestrial invertebrates. However, in their advice note '*Good Planning Practice for Invertebrates: Surveys*', Buglife recommend a scoping visit to assess the various habitat features of a site (Buglife, undated). Natural England guidance recommends that the scoping visit '*focuses on the structure of the habitats, and plant species present since habitats with varied physical structure, and species diversity generally support a greater number of invertebrates*' (Natural England, 2011a¹⁰).

4.4.30 Buglife has produced a range of guidance on methods for the survey of terrestrial invertebrates, including a handbook for the survey and assessment of OMH for invertebrates (Lush et al, 2013¹¹), which has been used as the basis for this preliminary

⁹ Guidance given in the Froglife Advice Sheet 10: Reptile Survey leaflet⁹

¹⁰ Natural England (2011a). Organising surveys to site quality for invertebrates. A framework guide for ecologists.

¹¹ Lush.M.J.Kirby. P.Shepherd,P. (2013) Open Mosaic Habitat Survey Handbook. exegesis SDM Ltd.

habitat assessment.

4.4.31 The preliminary habitat assessment comprised a walkover survey of the EP1 Survey Area to undertake a visual assessment of the main habitats for invertebrates. No direct sampling for invertebrates was undertaken. The survey comprised a single site visit undertaken on the 5th September 2019.

4.4.32 The purpose of the walkover survey was to gather further details on habitats likely to be of value to invertebrates than had been collected during the EP1 Habitat Survey. This included observations on the following:

- connectivity to offsite habitats;
- aspect, topography and substrate;
- presence of water features;
- vegetation structure; and
- presence of nectaring plants.

4.4.33 Opportunities for management and enhancement measures were also noted. Photographs were taken of each habitat present and additional target notes made.

4.4.34 In addition to the data search request made to SEWBRc as part of the PEA, on-line research of published literature relating to the site and surrounding locality was undertaken. This comprised a review of Environmental Statements for developments within or close to the study area, scientific papers on the invertebrate species recorded within the proposed development site and planning policy and policy guidance relating to the management of OMH for terrestrial invertebrates.

4.4.35 Further details are provided in the Preliminary Terrestrial Invertebrate Assessment report attached as Appendix 7.

4.5 Limitations

4.5.1 Ecological surveys are limited by factors that affect the presence of plants and animals such as time of year, weather, migration patterns and behaviour. The EP1 habitat survey was undertaken in May and therefore the survey data may not be representative of other times of year.

4.5.2 The absence of desk study records cannot be relied upon to reliably infer absence of a species/habitat. Often, the absence of records is a result of under-recording within the given search area.

- 4.5.3 Full survey limitations for each of the species surveys are detailed in each of the corresponding survey reports attached as appendices to this EclA report. However, main limitations for each report are summarised below.
- 4.5.4 The bat survey limitations are detailed in full in Section 2.4, Appendix 5. The report acknowledges that ideally the survey programme would include a visit during the spring period i.e. May. However, given the spread of visits through the remainder of the season and the relatively consistent pattern of activity and species diversity recorded, it is considered unlikely that a spring visit would give rise to significantly different results and therefore unlikely to make any material difference to the assessment of effects and proposed mitigation.
- 4.5.5 In addition, a number of bat recordings could not be identified to species level due to the quality of the recording, although they could be assigned to genus level. Four detections that could be assigned to a bat from the genera *Myotis* were recorded during the visit conducted in August (Visit 2). It can be assumed that the unidentified pipistrelle detections were one of the 3 pipistrelle species recorded on the site.
- 4.5.6 Limitations of the reptile surveys (e.g. weather conditions) conducted are outlined in paragraph 2.4.1 of the Reptile Survey report attached as Appendix 6. Surveys commenced in July which is not an optimal month as higher air temperatures increases reptile activity thus making them more difficult to detect. Therefore, not all presence/absence reptile surveys were undertaken during the optimal survey months. However, all surveys undertaken avoided temperature extremes and as some visits were undertaken in September which is one of the optimal survey months, therefore it is considered unlikely that the timing of the survey have compromised the accuracy of the presence /absence survey.

4.6 Nomenclature

- 4.6.1 Vascular plant names follow '*New Flora of the British Isles*' (Stace 2019)¹² with vernacular names as provided in the Botanical Society of the British Isles website (BSBI, 2013). All other flora and fauna names follow the National Biodiversity Network (NBN) Atlas (NBN, 2017)¹³. The common and scientific name of species/taxa is provided (if

¹² Stace, C. (2019) *New Flora of the British Isles*. [4th Edition] C&M Floristics

¹³<https://nbnatlas.org/>

available) when first mentioned in the text, with only the vernacular name referred to thereafter.

4.7 Assessment Methodology and Significance Criteria

Determining Value of Ecological Receptors

4.7.1 The conservation status of a site is defined in the Habitats Directive as this relates to internationally designated sites. The CIEEM guidance modifies the definition in order for it to be applicable to sites, habitats or species within any defined geographical area.

4.7.2 The assessment of the nature conservation value of the site has been based on the PEAR, protected species surveys and the widely applied criteria described in ‘A Nature Conservation Review’ (Ratcliffe, 1977)¹⁴. These include i) Size; ii) Diversity; iii) Naturalness; iv) Typicalness; v) Rarity and vi) Potential Value. A summary of these criteria is set out in Appendix 9.

4.7.3 The levels of conservation value are detailed in Table 3.

Table 3. Nature Conservation Value		
Category Value	Relevance to Site	Examples
International	EU	Special Areas of Conservation, Special Protection Areas, RAMSAR Sites (or a site proposed for, or considered worthy of such a designation); a regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive).
National	Wales	A nationally designated site (e.g. Site of Special Scientific Interest (SSSI), or a site proposed for, or considered worthy of such designation); a viable area of habitat type listed in Annex 1 of the Habitats Directive or a smaller areas of such habitat which are essential to maintain the viability of a larger whole, a regularly occurring substantial population of a nationally important species (e.g. listed on Schedules 5 & 8 of the Wildlife and Countryside Act 1981 (as amended)); A site where field study shows that the site would meet published SSSI Selection Guidelines.
Regional	South East Wales	Areas of internationally or nationally important habitat that are degraded but are considered readily restorable; a regularly occurring locally significant population of a

¹⁴ Ratcliffe, D.A. (1977). *A Nature Conservation Review*. Cambridge University Press, Cambridge.

Table 3. Nature Conservation Value		
Category Value	Relevance to Site	Examples
		species listed as being nationally scarce.
County	Newport	A site designated as a statutory county wildlife site (Local Nature Reserve) or a non-statutory designated site (e.g., Sites of Importance for Nature Conservation (e.g. Local Wildlife Sites (LWS), County Wildlife Sites (CWS)) or a site listed on the Ancient Woodland Inventory (AWI). A site where field study shows the site would meet published county LWS/CWS selection criteria. Viable areas of priority habitat identified in the LBAP where protection of all areas of that habitat a published target is; a regularly occurring, locally significant population of species which is listed in a County Red Data Book or LBAP on account of its regional rarity or localisation.
District	Newport Docks	A site designated as a non-statutory district wildlife site. A good example of common or widespread habitat in the local area (e.g. those listed as broad habitats on the LBAP); Habitats that are scarce in the district or appreciably enrich the district ecological resource. A population of a species that is listed in the LBAP because of its rarity in the locality.
Local	Parish to site	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest. Value within the context of the survey area (e.g. small areas of semi-improved grassland, isolated mature trees).

4.7.4 Individual species may be protected under European or National legislation. Such protection is relevant to the assignment of value to such species, but additional factors, such as population size and the nature of the distribution of the species are also considered.

4.7.5 The assignment of undesignated features, such as UK Priority habitats and species or areas of Ancient Woodland may not fall clearly into the designations as described above. Therefore, a number of other criteria are used to assess the nature conservation value of a defined area of land.

- 4.7.6 Some features that are currently of no particular ecological interest in themselves may nevertheless perform an ecological function. For example, they may act as a buffer against negative effects. This affects their value.

Evaluation of Significance

- 4.7.7 The Ecological Impact Assessment (EclA) follows the methodologies within the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) ‘*Guidelines for Ecological Impact Assessment (EclA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.1*, hereafter referred to as the ‘CIEEM guidelines’.

- 4.7.8 CIEEM Guidelines paragraph 4.1 indicates that the assessment of impacts should take into account both the value and sensitivity of ecological receptors:

‘One of the key challenges in EclA is to decide which ecological features are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project.’

- 4.7.9 Paragraph 5.8 of the CIEEM Guidelines indicates that it is important to assess the significance of the effects of impacts upon each ecological feature:

‘There could be any number of possible impacts on important ecological features arising from a development. However, it is only necessary to describe in detail the impacts that are likely to be significant’.

- 4.7.10 For the purpose of this report, it has been assumed that each important ecological receptor likely to be encountered within the site and the wider landscape will have potential to be affected by the proposed development. The assessment of likely significant effects within this report will therefore focus upon a receptor’s value and the significance of effects upon it.

- 4.7.11 The CIEEM guidelines define a significant effect as:

‘An effect that either supports or undermines biodiversity conservation objectives for important ecological features’.

Characterising Ecological Effects

- 4.7.12 Effects are described and assessed with reference to the following characteristics:

- Positive or negative – is the change in accordance with nature conservation policy regarding that ecological feature?
- Extent – over what area will the impact occur?
- Magnitude – what will the quantifiable effect in terms of size, amount, intensity and volume be on ecological features?
- Duration – over what periods of time will the effect last?
- Timing – when would the effect occur?
- Frequency – how often over a period of time would the effect occur?
- Reversibility – can the effects be recovered from over a reasonable timescale?

Evaluation of Significance – Designated Sites

- 4.7.13 The CIEEM Guidelines detail how ecologically significant effects should be determined for designated sites, ecosystems, habitats and species.
- 4.7.14 For designated international sites, use can be made of published conservation objectives for each site against which the significance of impacts can be assessed.
- 4.7.15 For sites of national value, published SSSI guidelines for the selection of SSSIs, the SSSI site citation and Natural England’s published condition summary for each unit of an SSSI can be used.
- 4.7.16 Designated conservation sites of County value (i.e. Local Wildlife Sites) will have been assessed for inclusion by a partnership of organisations, usually associated with the county environmental record centre. The citation and/or reasons for inclusion of the site as a LWS can be requested to assist with assessing the significance of effects upon such sites.
- 4.7.17 For sites of lesser value, including district/local, there may be available information on their rationale for selection based upon the Radcliffe criteria. These are all useful resources to assist with the assessment of significance of an effect on a district or local designated site.

Evaluation of Significance – Ecosystems

- 4.7.18 No published conservation objectives or designation criteria are normally available for ecosystems, however, determining whether effects on ecosystems are significant should be based upon whether or not the effect is likely to result in a change in

ecosystem structure and function. This is based upon consideration of whether or not the impacts will result in an effect on:

- Processes or key characteristics and / or;
- The nature, extent, structure and function of component habitats and / or; and
- The average population size and viability of component species.

Evaluation of Significance – Habitats and Species

4.7.19 Habitat types listed on Annex 1 of the Habitats Directive and species listed on Annex II have published accounts which provide information on their status and distribution in the UK as well as a description and summary of ecological characteristics. This information can be used against which to assess the significance of effects on their conservation status, even if they are not designated.

4.7.20 For habitats and species of lesser value, published information is less readily available, however, reference to UKBAP priority habitat and species action plans, county or local BAPs will provide information on the conservation status of habitats and species against which impacts can be assessed for their effects on the extent, structure and function of habitats and the abundance and distribution of species.

4.7.21 In addition, reports or publications, often written at the county-scale can provide useful context against which to assess the significance of impacts upon a habitat or species. For instance, County Bird Reports and County Floras will provide more detail with regard the status and current trends for birds and habitats, plants in a given area.

5 BASELINE CONDITIONS AND NATURE CONSERVATION EVALUATION

5.1.1 The baseline conditions are those which are anticipated to exist at the time the proposed development commences. The baseline conditions have been informed by the PEAR and protected species surveys. It is considered unlikely that the habitats will change significantly between the time of writing and the start of the development activities expected in 2020. Therefore, this data is considered to be a reliable indication of the baseline conditions.

5.1.2 The following section also evaluates the ecological features making up the baseline for the site which were scoped in during the PEA stage. Each ecological feature is given a site value used to assess the significance of the impact of the proposed development. The categories of values are detailed in Table 3.

Sensitive Receptors

5.2 Nature Conservation Designations

5.2.1 As detailed in the PEAR (Appendix 2), SEWBReC identified 2 international nature conservation designations within 5km of the site, 2 national nature conservation designations and 5 non-statutory nature conservation designations within 2km of the EP1 survey area boundary. A summary of these designations and their location in relation to the EP1 survey areas is provided in Table 4 below.

Table 4: Designated Sites		
Site Name and Status ¹⁵	Reason for Designation	Approximate Distance and Location from the EP1 survey area boundary (km)
Statutory Nature Conservation Designations		
International Sites		
Severn Estuary SPA, SAC, Ramsar, and SSSI	The area within 5km of the site is part of the wide estuary that has extensive intertidal mudflats and sandflats, rocky platforms and islands. Along the margins there is grazing marsh with freshwater ditches and occasional brackish ditches seabed is rock and gravel with sub-tidal sandbanks. Key qualifying criteria include overwintering populations of Bewicks Swan (<i>Cygnus columbianus bewickii</i>) curlew	SPA/SAC/Ramsar 0.1km to the south west. SSSI 0.037km south west

¹⁵ SPA – Specially Protected Area, SAC – Special Area for Conservation, Ramsar – site designated under the Ramsar Convention, SSSI – Site of Special Scientific Interest, SINC – Site of Importance for Nature Conservation, NNR – National Nature Reserve.

Table 4: Designated Sites

Site Name and Status ¹⁵	Reason for Designation	Approximate Distance and Location from the EP1 survey area boundary (km)
	<i>(Numenius arquata)</i> and redshank (<i>Tringa acuta</i>) amongst others. It also qualifies as a wetland of international importance. Its habitats of primary importance are; estuaries, mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows.	
River Usk SAC and River Usk (Lower Usk) SSSI	A large river system primarily selected due to the presence of sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), Atlantic salmon (<i>salmo salar</i>) and otter (<i>Lutra lutra</i>) amongst others. The Lower Usk is particularly of interest as it has not been subject to significant modification by man.	0.18km south east
National Sites		
Gwent Levels – St Brides SSSI	The Gwent Levels are an example of one of the most extensive areas of reclaimed wet pasture in Great Britain. Reens at St Brides support a number of interesting plant species most notably thread-leaved water-crowfoot (<i>Ranunculus trichophyllus</i>) and small pondweed (<i>Potamogeton berchtoldii</i>). St Brides also supports rich invertebrate communities with a number of nationally notable and locally notable marshland species.	0.17km west
Newport Wetlands SSSI and National Nature Reserve (NNR)	This site is of special interest for its breeding and over-wintering birds, invertebrates, and aquatic and marginal flora. Also of special interest are the ditch habitat and reed beds. It is part of the compensation for the loss of the Taf/Ely Estuary SSSI following the construction of the Cardiff Bay Barrage.	0.47km south east
Non-Statutory Nature Conservation Designations		
Afon Ebbw River SINC	Major river system with associated semi-improved neutral grassland and marshy grassland, swamp, scrub and semi-natural woodland. Grass snake (<i>Natrix natrix</i>) have been found here.	0.04km north west
Julian’s Gout Land SINC	Maritime influenced semi-improved neutral grassland, with willow car and large populations of marsh helleborine (<i>Epipactis palustris</i>), marsh orchids (<i>Dactylorhiza spp.</i>) and narrow leaved bird's-foot trefoil (<i>Louts glaber</i>).	1.54km east
Duffryn Pond SINC	Pond with emergent swamp vegetation, which supports a range of important invertebrates, plant, reptile, amphibian and mammal species.	183 km north west
Gwent Wetland Reserve SINC	Mosaic of wet grassland reed beds, open water, hedgerows and saline, lagoon, which supports internationally important numbers of wildfowl as well as UK BAP.	1.08km east

Table 4: Designated Sites		
Site Name and Status ¹⁵	Reason for Designation	Approximate Distance and Location from the EP1 survey area boundary (km)
Marshalls SINC	Mosaic neutral grassland, post-industrial, wetland along the banks of the Usk.	1.52km north east

5.2.2 The Severn Estuary SPA, SAC, Ramsar, and SSSI and River Usk SAC and River Usk (Lower Usk) SSSI are considered to be of **international** value for nature conservation.

5.2.3 The Gwent Levels – St Brides SSSI and Newport Wetlands SSSI and National Nature Reserve (NNR) are considered to be of **national** value for nature conservation.

5.2.4 The SINCs are considered to be of **county** value for nature conservation.

5.2.5 There are also five parcels of ancient woodland within the 2km search area which are located between 1.2-1.9 km from the EP1 survey boundary and on the western side of the Ebbw River. The majority of the ancient woodland is found within the Gwent Levels – St Brides SSSI. Ancient woodlands outside of international/national designations are likely to qualify as priority habitat under S7 of the Environment (Wales) Act 2016 and are therefore considered to be of **county** value for nature conservation.

5.3 **Habitats**

5.3.1 The PEAR identified that the ‘Open Mosaic Habitats (OMH) on previously developed land’ which is present on site could be subject to potential adverse effects from the proposed development. The ephemeral / short perennial and scattered scrub mosaic that comprises this habitat is summarised, below. Full details can be found within the PEAR and on Figure 2 (Phase 1 Habitat Survey Map) and Figure 4 (Phase 1 Survey of Habitat Enhancement Area) provided in Appendix 2 and Drawing Number CA11637-008 (Additional Habitat Enhancement Area – Phase 1 Habitat Plan). The EP1 survey areas are currently unmanaged. A description of the habitats within the habitat management areas is provided in a separate paragraph.

Dense scrub

5.3.2 Dense scrub is the dominant habitat on site ranging in height between 1-2m high and is present in five main blocks totalling an area of approximately 2.2ha. This scrub adjoins similar scrub habitat just outside of the survey boundary. Silver birch (*Betula*

pendula) was the dominant species recorded with abundant bramble (*Rubus fruticosus*), butterfly-bush (*Buddleja davidii*), grey willow (*Salix cinerea*) and goat willow (*Salix caprea*). Elder (*Sambucus nigra*) and gorse (*Ulex europaeus*) were recorded as occasionally occurring on site. The dense scrub within the development site is considered to be of **Local** nature conservation value.

Ephemeral/short perennial and scattered scrub mosaic (ESP/SS)

- 5.3.3 Approximately 1.1ha of ephemeral/short perennial habitat and scattered scrub mosaic habitat (referred to as ESP/SS on the Habitat Plan) is present between the dense scrub blocks and appears to have established on the footprints of former buildings and access routes within the development site boundary.
- 5.3.4 Previous site clearance within the EP1 survey area has resulted in the substrate comprising hard packed rubble and gravels in varying sizes. This has resulted in the majority of the development site being free draining although flora indicative of damp / wet conditions, such as hard rush (abundant), bulrush (*Typha latifolia*) (frequent), yellow iris (*Iris pseudacorus*) (occasional) and hemlock water-dropwort (*Oenanthe crocata*) (rare in occurrence), are present within the EPS/SS habitat suggesting that water may seasonally pool on site during periods of high rainfall.
- 5.3.5 ESP/SS is at an early successional stage and there is a high diversity of plant species present within the development site. Overall 61 species were recorded within the EP1 survey area. Whilst no species were recorded as being dominant, bramble, bush vetch (*Vicia sepium*), cut-leaved crane's-bill (*Geranium dissectum*), perforate St John's-wort (*Hypericum perforatum*), bristly ox tongue (*Helminthotheca echioides*) and field forget-me-not (*Myosotis arvensis*) were recorded as abundant. There were a few areas of bare ground or patches where moss is present in a thin layer.
- 5.3.6 The PEAR assessed the ESP/SS habitat as being '*Open Mosaic Habitat (OMH) on previously developed land*' which is a priority habitat as listed on S7. This was for the following reasons:
- The ESP/SS habitat is greater than 0.25ha in extent;
 - The site has been severely modified in the past with extraneous materials and soil types added;
 - Early successional and stress tolerant species are present;
 - There is loose bare substrate present; and

- Mosaic of early successional communities.

5.3.7 The ESP/SS habitat within the survey area is therefore considered to be of **County** nature conservation value.

Non-Native Invasive Species

5.3.8 Japanese knotweed (*Reynoutria japonica*) was identified within the EP1 survey area (refer to Target Note 3, Figure 2, Appendix 2), and is within the planning application boundary, located to the south of the development site.

5.3.9 Japanese knotweed is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and it is an offence to "*plant or otherwise cause to grow in the wild*" any plant listed Schedule 9, Part II of the Act.

5.3.10 This plant is considered to be of no value for nature conservation.

On-Site Habitat Enhancement Area

5.3.11 A 0.5620 ha area of land at the mouth of the River Ebbw, to the south of the development site has been set aside as a Habitat Enhancement Area (HEA).

5.3.12 The 0.5620 ha HEA currently supports a similar EPS/SS to the development site area (0.36 ha) with area of dense scrub (0.182 ha) and a small are of hard standing (0.02ha). A band of scrub on the southern boundary of the site grades into the intertidal mudflat habitat at the mouth of the River Ebbw.

Off-Site Habitat Enhancement Area

5.3.13 An Additional Habitat Enhancement Area (AHEA) of 1.1287 ha, approximately 500m to the of the development site which is centred on National Grid Reference ST 31205 85162 has been identified by ABP as having the potential to provide off-site mitigation. The 1.1287ha AHEA principally comprises dense butterfly bush *buddleja davidii* scrub (1.1 ha) with occasional (0.04 ha) bramble *Rubus fruticosus agg.*, with a 0.15 ha common reed *Phragmites australis* dominated swamp.

5.4 **Fauna Species**

Birds

Desk Study

5.4.1 The desk study returned 22 bird records within 1km of the survey area for the last 10 years (as listed in Table 2 of the PEAR report in Appendix 2). Of these 7 (Cetti's warbler

Cettia cetti, fieldfare *Turdus pilaris*, marsh harrier *Circus aeruginosus*, peregrine *Falco peregrinus*, redwing *Turdus iliacus*, ruff *Calidris pugnax* and whimbrel *Numenius phaeopus*) are listed on Schedule 1 of the WCA 1981 (as amended).

5.4.2 The desk study identified the following priority bird species as listed on S7:

- Bar tailed godwit / *Amber list*;
- Black-headed gull - *Chroicocephalus ridibundus* / *Red list*;
- Bullfinch / *Amber list*;
- Curlew - *Numenius arquata* / *Red list*;
- Dunnock / *Amber list*;
- Fieldfare – *Turdus pilaris* / *Red list*;
- House sparrow – *Passer domesticus* / *Red list*;
- Kestrel / *Amber list*;
- Lapwing - *Vanellus vanellus* / *Red list*;
- Linnet - *Linaria cannabina* / *Red list*;
- Reed bunting / *Amber list*;
- Ringed plover - *Charadrius hiaticula* / *Red list*;
- Ruff - *Calidris pugnax* / *Red list*;
- Skylark - *Alauda arvensis* / *Red list*;
- Song thrush - *Turdus philomelos* / *Red list*;
- Starling - *Sturnus vulgaris* / *Red list*; and
- Yellow wagtail - *Motacilla flava* / *Red list*.

5.4.3 Of the bird species listed in paragraph's 5.3.1 and/or 5.3.2 of this report, bar tailed godwit *Limosa lapponica*, bullfinch *Pyrrhula pyrrhula*, dunnock *Prunella modularis*, kestrel *Falco tinnunculus*, marsh harrier, reed bunting *Emberiza schoeniclus* are

included in the Birds of Conservation Concern (BoCC) 'Amber list'¹⁶. The remainder, with the exception of peregrine, are included on the BoCCs 'Red list'.

- 5.4.4 Overall, 9 of the 22 bird species identified in the desk study, (bullfinch, Cetti's warbler, dunnock, house sparrow, lapwing, linnet, ringed plover, skylark and song thrush) could potentially utilise the scrub and ESP/SS within the development site for breeding.
- 5.4.5 The EIA Screening Request references "*a winter estuarine bird survey undertaken between October 2017 and March 2018 in areas surrounding the development site, as part of works undertaken to prepare the Newport Docks; Port Redevelopment Plan Environmental Statement*". In the area of the River Ebbw adjacent to the development site, the survey recorded teal *Anas crecca* (highest count of 66 feeding and loafing birds on the ground/water recorded on 15/02/2018), mallard *Anas platyrhynchos* (highest county of 117 feeding and loafing birds on the ground/water recorded 31/10/2017), shoveler *Anas clypeata* (one loafing bird recording on 20/12/2017), curlew *Numenius arquata* (8 birds recorded on 31/10/2017) and redshank (highest county of 480 feeding, loafing and preening or bathing birds on the ground/water recorded on 15/11/2017).

Field Surveys

- 5.4.6 A total of 24 bird species were recorded either within or flying over the survey area during the 5 breeding bird survey visits. A full list of the bird species recorded, their breeding activity in the survey area, numbers of territories or peak counts (where applicable) and national conservation status is presented in Table 3 in Appendix 4. The locations of birds recorded during each visit are shown on Figures 3 to 7, provided within Appendix 4.
- 5.4.7 No confirmed evidence of breeding activity was recorded on site (nests but in accordance with the criteria listed in paragraph 4.4.4 of this report:
- 9 of these species were considered as 'probably breeding': oystercatcher (Amber listed), chiffchaff, whitethroat, wren, blackbird, song thrush, robin, house sparrow and dunnock (Amber listed); and

¹⁶ Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man

- 4 were considered as ‘possibly breeding’: wood pigeon (*Columba palumbus*), magpie (*Pica pica*), carrion crow (*Corvus corone*) and blue tit (*Cyanistes caeruleus*); and
- 8 species were classified as not breeding: linnet, kestrel, great black-backed gull (*Larus marinus*), house martin (*Delichon urbicum*), lesser black-backed gull (*Larus fuscus*), mallard (*Anas platyrhynchos*) and shelduck (*Tadorna tadorna*).

5.4.8 House sparrow, song thrush, linnet and kestrel are also S7 Priority Species.

5.4.9 Only one Schedule 1 species, peregrine, was considered to be breeding, however this species was recorded outside, but close, to the southern survey area boundary.

5.4.10 Whitethroat and wren were probably breeding in the dense scrub close to the south western boundary (8 and 6 territories respectively). Whitethroats territories were also recorded in the scattered scrub in the southern part of the survey area. Chiffchaff were also present in the dense scrub in the south western part of the survey area.

5.4.11 Although off site, 4 breeding colonies of house sparrow¹⁷ were recorded in dense scrub habitat close to the northern and eastern boundaries of the development site.

5.4.12 The remaining territories (blackbird x3); dunnock (x 2); robin (x 2) and song thrush (x 1) were scattered throughout the dense scrub habitat on either side of the site.

5.4.13 Peak counts for non-breeding species were calculated based on the highest number of individuals recorded during any single visit. Of the non-breeding species, linnet is the most notable, both in terms of numbers (peak count = 36) and conservation status (Priority Species under S7, and BoCC Red list). Linnet occurred throughout the survey area, although the species is primarily associated with the ephemeral / short perennial and scattered scrub habitat. The diversity of flowering plants within this habitat is considered likely to provide a rich source of food for this seed eating species.

5.4.14 Of the other non-breeding species, lesser black-backed gull was the next most numerous species with a peak count of 27. The survey area offers high tide roosting habitat for this and other seabird species.

5.4.15 Based on the desk study results and field surveys, the assemblage using the application site area (3.439 ha) is considered to be of **Local** value. Whilst the bird assemblage is of local nature conservation value, breeding birds will be taken forward for further

¹⁷ House sparrow is a colonial breeder. Colonial territories were counted rather than a breeding pair.

assessment as the application site provides suitable habitat for notable and S7 species. In addition, breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended) and therefore must be considered to determine whether or not there is potential to contravene the governing legislation.

Bats

5.4.16 Full survey results are provided within Appendix 5, but a summary of the results is provided below.

5.4.17 At least 7 bat species were identified during the surveys (common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and Nathusius pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctula*, Leisler’s *Nyctalus leisleri*, brown long-eared bat *Plecotus auritus* and *Myotis* species).

Walked Transect Survey

5.4.18 A total of 4 species were recorded on the site over the three walked transect surveys (common pipistrelle, soprano pipistrelle, noctule and an unidentified *myotis* bat). Common pipistrelle was the most frequently recorded (187 recordings across the 3 months) followed by soprano pipistrelle (67 recordings) and noctule (44 recordings). A single *Myotis* species was recorded during the July survey. Table 5 below provides a summary of the bat activity scores for the walked transects.

Table 5: Bat Activity Scores			
	July	August	September
1-2 (northern boundary)	4.17 – Very low	0	0
2-3 (northern section of the western boundary)	183.33 – Very high	29.17 – Low	114.58 – Very high
3-4 (southern section of the western boundary)	25 – Low	16.67 - Low	43.75 – Medium
4-5 (centre of the site)	47.92 – Medium	37.50 – Medium	2.08 – Very low

Table 5: Bat Activity Scores			
	July	August	September
5-6 (north eastern boundary)	43.75 – Medium	41.67 - Medium	35.42 – Medium
Total	60.83 - High	25 - Low	39.17 - Medium

5.4.19 The highest activity scores were recorded along the transect leg (2-3) which adjoins the scrub habitat on the northern section of the western boundary of the development site during the July survey. The second highest score was also recorded along this leg during the September survey. The lowest activity score was recorded along the transect leg (1-2) which adjoins the northern boundary of the development site. Adjacent to this boundary is a well-lit factory and car park which may limit foraging opportunities.

5.4.20 Overall, the total number of recordings was relatively consistent across the 3 transect visits ranging from 326 during the first visit to 383 on visit 2.

Automated Detector Results

5.4.21 At least 7 bat species were identified across the 3 survey visits (common pipistrelle, soprano pipistrelle and Nathusius pipistrelle, noctule, Leisler’s, brown long-eared bat and a *Myotis* species).

5.4.22 Common pipistrelle occurred most frequently, with a total number of 475 recordings across all 3 visits, followed by noctule, 289, and soprano pipistrelle, 249. *Myotis* species were only recorded during the August survey (4 recordings). A single Leisler was recorded during the September survey and a single brown long eared was recorded during the July survey.

5.4.23 The bat activity scores for the automated detectors are provided below:

- July (12.21 – low);
- August (11.28 – low); and
- September (8.18 – low).

5.4.24 The highest number of recordings (383) were during the deployment of the static detector in August (12th to 17th August), with the largest contribution to the total

being on 13th/14th August of 225 recordings. Common and soprano pipistrelles were the most frequently recorded with 94 and 110 respectively.

5.4.25 The results from the automated detector in July (2nd to 7th July) had the highest bat activity score (12.21), due to the number of species (6) recorded during this visit. The greatest number of noctule detections, 224, were also recorded during this visit.

5.4.26 Given the upward trend in the British populations of common and soprano pipistrelle bats and noctule as well as the availability of higher quality habitat within the wider landscape, these species are considered to be of **local** nature conservation value.

5.4.27 Nathusius' pipistrelle, Leisler and brown long-eared bats are not considered particularly rare of the 15 species which are resident in Wales and were only recorded in low numbers during the surveys. Therefore, it is considered that these species are of **Local** nature conservation value. The bat survey report states that the *myotis* species recorded is likely to be Daubenton's bat given the site conditions (i.e. near the River Ebbw) as they are known to actively forage over water bodies) and as they are one of the more common species in this genus. Daubenton's are not considered to be one of the priority species of conservation concern in Wales and as *Myotis* species were only recorded in low number, they are considered of **Local** nature conservation value.

5.4.28 Based on their conservation value alone, the population of bats using the application site is not considered to be an 'important' ecological feature for the purposes of this assessment. However, bats are legally protected species under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018. Common pipistrelle, soprano pipistrelle, noctule and brown long-eared are also listed as S7 species therefore must be considered to determine whether or not there is potential to contravene the governing legislation. They will therefore be taken forward for an assessment of effects of development upon them.

Invertebrates

5.4.29 The desk study identified the following notable and priority invertebrates as being present within 1km of the EP1 survey area:

- *White-letter hairstreak butterfly* – is protected under Schedule 5 of the WCA 1981 (as amended) and is a S7 Priority Species. The principal food plant for the

caterpillar, wych elm (*Ulmus glabra*), is not present within the survey area and therefore this butterfly is considered unlikely to be present;

- *Shrill carder bee (Bombus sylvarum)* - is a S7 Priority Species. The species was not observed during the EP1 Habitat Survey or during the walkover survey conducted in September 2019 but the ephemeral/short perennial habitats support the bees key food plants (i.e. red clover, common birds-foot trefoil, (*Lotus corniculatus*) and bush vetch (*Vicia sepium*)). In addition, a significant colony of shrill carder bee was recorded on similar OMH within the Newport Docks immediately to the north of the development site during surveys for the M4 motorway road corridor scheme (Welsh Government, 2015).

Relevant Studies

5.4.30 Terrestrial invertebrate surveys were undertaken in summer 2015 on a series of sites within the M4 corridor, including Newport Docks, to support an EclA for junction improvement works on the M48 (Welsh Government, 2015¹⁸). The survey covered undeveloped and previously developed land within the central and northern parts of the docks. Although it did not include the proposed development site, one of the seven compartments of land surveyed (Compartment C) lies immediately north east of the warehouse building adjoining the northern boundary of the development site, adjacent to Alexandra Docks. The habitats represented in the seven surveyed compartments are similar in nature to those on the proposed development site.

5.4.31 329 species of invertebrate were recorded during 3 days' survey in July and August 2015. Of these 32 were considered to be Key Species, defined as being listed in the UK Red Data Book (RDB) or Nationally Scarce. Eight of the 32 Key Species are considered rare or very rare in Wales, including the shrill carder bee.

5.4.32 Compartment C was found to be the most diverse, supporting 137 species, of which 12 have national conservation status. However, the report concludes that the most valuable habitats are those with the least scrub encroachment.

¹⁸ Welsh Government (2015) M4 Corridor around Newport Environmental Statement Volume 3: Appendix 10.31. Terrestrial Invertebrate Survey 2015. M4CaN-DJV-EBD-ZG_GEN-AX-EN-0017.

Preliminary Habitat Assessment

5.4.33 The TEC report attached in Appendix 7, evaluates the habitats in terms of their potential to support terrestrial invertebrates based on observations made during the site visit in September, and the criteria used in paragraph 3.3.1 of the OMH handbook (Lush et al, 2013¹⁹).

Connectivity to offsite habitats

5.4.34 Connectivity to nearby areas of semi-natural habitat is important as these may act as a reservoir for species diversity and allow meta-populations to move between habitats. The development site is connected to the River Ebbw corridor to the west which supports scrub, intertidal mudflat and other coastal habitats. To the east, the development site adjoins an access road and an industrial site immediately adjacent to the dock entrance. Similar ESP/SS habitat lies to the east of the dock entrance. Connectivity with semi-natural habitat is therefore considered to be good, particularly to the west.

Aspect, topography and substrate

5.4.35 The TEC report concluded that the range of topography and substrate within the development site, combined with a south western aspect contributes to the diversity of flowering species which provide nectar sources for a wide range of phytophagous or plant eating invertebrates.

Vegetation structure

5.4.36 The early colonising ephemeral/short perennial habitats of less than 5cm in height, are of particular importance to invertebrates. In addition, the vegetation structure also ranges from dense scrub over 10m in height, through scattered scrub and tall ruderal plants between 1 and 5m and therefore the development site is considered to have high structural diversity.

Presence of nectaring plants

5.4.37 Over 60 flowering plants were recorded during the EP1 Habitat Survey in the ESP/SS habitat of which some are identified in the OMH handbook as important nectaring species (which are plants that have flowers that provide valuable nectar or pollen resources). These include common bird's-foot trefoil, bush vetch (*Vicia sepium*), St

¹⁹ Lush, M.J. Kirby, P. Shepherd, P. (2013) Open Mosaic Habitat Survey Handbook. ExeGesIS SDM Ltd.

John's wort (*Hypericum perforatum*), ox-eye daisy (*Leucanthemum vulgare*), and great mullein (*Verbascum thapsus*).

5.4.38 In the scrub habitats, gorse (*Ulex europaeus*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus* agg.) are identified as important nectaring species. Butterfly bush (*Buddleja davidii*) is also an important nectar source for many invertebrate species although it is not native to the UK.

5.4.39 The development site contains habitat with the potential to support notable and S7 species. The conclusion of the TEC report states that further invertebrate surveys should be undertaken to inform mitigation and management measures for the retained habitat.

5.4.40 As there is potential for the site to support notable and S7 species, invertebrates will be considered further to assess whether the construction and operational phase activities have the potential to give rise to significant adverse effects.

Reptiles

5.4.41 Information received from SEWBRc provided one record for one species of reptile, common lizard, within 2km of the site in the last 10 years.

5.4.42 Grass snake have also been noted within the Afon Ebbw SINC 0.04km to the north west of the site.

5.4.43 During the survey visit on 11th September 2019 one female slow worm was recorded within the reptile survey area under a refuge outside of the development site boundary (refer to Figure 3 (Reptile Refugia Locations)). No other reptiles were recorded during the survey. The development site is therefore considered to support a small population of slow worms which are considered to be of **Local** nature conservation value.

5.4.44 Based upon their conservation value alone, the population and assemblage of common reptiles using the site is not considered to be an 'important' ecological feature for the purpose of EclA. However, common reptiles are S7 Priority Species and are also afforded legal protection under the provisions of the Wildlife & Countryside Act 1981 (as amended) therefore they must be assessed to determine whether or not there is the potential to contravene the governing legislation. They will therefore be taken forward for an assessment of the effects of development upon them.

Badgers

5.4.45 The PEAR states that whilst no evidence of badgers was identified within the survey area and there are no records of badger within 2km of the development site, it is possible they could colonise the survey area as there is suitable foraging habitat and the survey area is relatively undisturbed. As badgers are protected through the Protection of Badger Act 1992 which makes it an offence to intentionally kill, injure or take a badger or to interfere with a badger sett which includes damaging, destroying or obstructing access, they will be taken forward for an assessment of effects of the development on them.

Summary

5.4.46 Table 6 below summarises the Nature Conservation Value for each ecological feature, identifies the sensitive receptors (important ecological features) and the reasons for including / excluding this feature from further assessment.

Table 6: Summary of Evaluation of Significance & Sensitive Receptors				
Category	Feature	Nature Conservation Value	Sensitive Receptor (Important ecological feature to be considered further)	Reason for excluding / including within further assessment ²⁰
Statutory and Non-Statutory Designated Sites	Severn Estuary SPA, SAC, Ramsar and SSSI	International	Yes	Internationally/nationally designated site.
	River Usk SAC and River Usk (Lower Usk) SSSI	International	Yes	Internationally/nationally designated site.
	Gwent Levels – St Brides SSSI	National	Yes	Nationally designated site.
	Newport Wetlands SSSI and National	National	No	Scoped out in PEAR given the distance of the designation from the proposed development site.

²⁰ **WCA** – Wildlife and Countryside Act 1981 (as amended); **BA** – Badger Act 1992; **CHSR** - The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018, **S7** – Section 7 of The Environment (Wales) Act 2016.

Table 6: Summary of Evaluation of Significance & Sensitive Receptors				
Category	Feature	Nature Conservation Value	Sensitive Receptor (Important ecological feature to be considered further)	Reason for excluding / including within further assessment²⁰
	Nature Reserve (NNR)			
	Afon Ebbw River SINC	County	Yes	Local Wildlife Site - located approximately 44m to the NW of the development site.
	Julian's Gout Land SINC	County	No	Scoped out for further assessment in the PEAR
	Duffryn Pond SINC	County	No	Scoped out for further assessment in the PEAR
	Gwent Wetland Reserve SINC	County	No	Scoped out for further assessment in the PEAR
	Marshalls SINC	County	No	Scoped out for further assessment in the PEAR
	Ancient woodland	County	No	Scoped out for further assessment in the PEAR
Habitats	OMH (ESP/SS)	County	Yes	S7 Priority Habitat
Flora Species	Invasive Species	No value	Yes	Japanese knotweed located in planning application boundary. WCA
Fauna Species	Birds	Local	Yes	WCA and S7 Priority Species (Breeding and Wintering Birds)
	Bats	Local	Yes	WCA, CHSR, S7 Priority Species
	S7 Invertebrates	-	Yes	S7 Priority Species
	Reptiles	Local	Yes	Present on adjacent, similar habitat, WCA, S7 Priority Species

Table 6: Summary of Evaluation of Significance & Sensitive Receptors				
Category	Feature	Nature Conservation Value	Sensitive Receptor (Important ecological feature to be considered further)	Reason for excluding / including within further assessment²⁰
	Badgers	-	Yes	BA

Baseline Conditions without Development (the ‘Do Nothing’ scenario)

- 5.4.47 The application site which includes the development site is currently unoccupied, and the habitats are unmanaged.
- 5.4.48 If the habitats within the application site continue to be unmanaged, the dense and scattered scrub will continue to mature. Over time, the dense scrub will continue to encroach into the ESP/SS1 would eventually be lost resulting in the loss of this S7 OMH Priority Habitat from the application site.
- 5.4.49 In the long term the application site will continue to provide habitat for the majority of species already recorded using the application site including slow worms, bats and breeding birds. However, invertebrates associated with the ESP/SS and relying on early successional vegetation for their presence within the development site would be lost if the ESP/SS were succeeded by dense scrub.

6 ASSESSMENT OF EFFECTS, MITIGATION AND RESIDUAL EFFECTS

6.1.1 The CIEEM Guidelines state:

“The assessment should include potential impacts on each ecological feature determined as ‘important’ from all phases of the project (e.g. construction, operation and decommissioning)”

and

“One of the key challenges of Ecological Impact Assessment is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment....it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable” .

6.1.2 The rationale used to select or deselect species, habitats and sites from detailed impact assessment needs to be clearly explained in relation to its value and whether or not there is potential for legislation to be contravened. In the case of this EclA, all ecological features that are assessed as being of **District** to **International** value are considered to be ‘important’ and therefore require further assessment. In addition, where protected species are present and their population/assemblage has been assessed as being of **Local** value and the project has the potential to contravene legislation, these are also considered to be important ecological features and will be assessed further.

6.1.3 In accordance with CIEEM Guidelines, significant adverse effects are assessed for each stage of the proposed development, mitigation measures proposed, and the significance of residual effects identified for each ecological receptor in turn. Where significant adverse effects are identified, the objective of the assessment is to recommend changes to the project to avoid such effects and, where significant effects on site integrity cannot be avoided, to propose compensatory measures to off-set those effects.

6.1.4 For International sites, the EclA must consider if the proposed development will adversely affect the integrity of the site concerned in view of the designated site’s conservation objectives. Information on the conservation objectives of the Internal designations were obtained from the Joint Nature Conservation Committee (JNCC)

website (www.jncc.gov.uk) and a summary of the objectives for each designation are attached in Appendix 10.

Mitigation

- 6.1.5 Impacts in the first instance should be avoided in line with the ‘mitigation hierarchy’:
- Avoidance – Seek design options that avoid harm to ecological features.
 - Mitigation – Adverse effects should be avoided or minimised through the implementation of mitigation measures.
 - Compensation – Where there are significant residual adverse effects, despite the mitigation measures proposed, these should be offset by appropriate compensatory measures.
 - Enhancement – Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.
- 6.1.6 The CIEEM Guidelines refers to avoiding and/or minimising impacts by incorporating measures into the scheme design at the earliest stages. This approach has been adopted to inform the size and location of the development site, thereby avoiding some significant effects upon ecological features from the outset.
- 6.1.7 Approximately 3.439ha (76%) of the application site will experience permanent habitat loss as a result of the proposed plasterboard manufacturing facility development, landscaping and the infrastructure.

Design Solutions and Assumptions

- 6.1.8 A Habitat Corridor covering 0.5162ha (approximately 10m wide with an average height of 1-2m) is being created between the built development and the River Ebbw to the west.
- 6.1.9 The ground levels across the development site area within the application area will be raised by up to 2m to reduce flood risk.
- 6.1.10 An area of 0.5620 ha will be managed to ensure EPS/SS habitat type is maintained as part of the development proposals. An AHEA is being offered separately as off-site mitigation.

Construction Programme

6.1.11 Works are anticipated to take in the region of 12 months and will be split into 2 phases:

- Phase 1 - Initial site clearance and preparation of development platform (approximate 10 weeks duration) to include:
 - Formation of contractor's site compound;
 - Site clearance and removal of existing vegetation and site obstructions;
 - Raising of site levels utilising imported engineered fill to achieve required flood protection;
 - Ground engineering stabilisation works to mitigate differential settlement;
 - Piled foundations and associated substructure work; and
 - Reinforced ground floor concrete slab.
- Phase 2 - Construction of industrial building, car parking, infrastructure and soft landscaping – (approximate 10-month duration).

Assessment of Effects

Statutory Designated Sites

Severn Estuary SPA, SAC, Ramsar, and SSSI & River Usk SAC and River Usk (Lower Usk) SSSI

6.1.12 The Severn Estuary SPA, SAC, Ramsar site is located approximately 100m from the development site at its closest point. The Severn Estuary SSSI is approximately 30m from proposed the development site. The Severn Estuary is designated for its marine habitats, fish species (refer to Paragraph 6.1.15 and wintering bird populations it supports.

6.1.13 The Severn Estuary is designated for the following habitats (species are listed in Paragraph 6.1.15):

- Sandbanks which are slightly covered by sea water all the time (Severn Estuary SAC and Ramsar);
- Subtidal sandbanks (SAC, Ramsar and SSSI);

- Estuaries (SAC, Ramsar and SSSI);
- Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats (SAC, Ramsar and SSSI);
- Reefs/rocky platforms (SAC and SSSI); and
- Atlantic salt meadows (SAC, Ramsar and SSSI).

6.1.14 The River Usk SAC and River Usk (Lower Usk) SSSI is located approximately 290m to the south of the development site. The River Usk is designated as a watercourse of plain to montane levels with the *Ranunculion fluitantis* (aquatic mosses) and *Callitriche-Batrachion* (water-starwort) vegetation. The River Usk is also an important site for otters *Lutra lutra* and the otter is a qualifying feature of this designation along with fish species, as detailed in Paragraph 6.1.15 below.

6.1.15 The following species are qualifying features of the Severn Estuary SAC, SPA, Ramsar and SSSI and The River Usk SAC, SSSI as listed below:

- Sea lamprey *Petromyzon marinus* (Severn Estuary SAC, Ramsar and SSSI / River Usk SAC);
- River lamprey *Lampetra fluviatilis* (Severn Estuary SAC, Ramsar and SSSI /River Usk SAC and SSSI);
- Atlantic salmon *Salmo salar* (Severn Estuary Ramsar, SSSI / River Usk SAC and SSSI);
- Twait shad *Alosa fallax* (Severn Estuary SAC, Ramsar and SSSI / River Usk SAC and SSSI);
- European eel *Anguilla Anguilla* (Severn Estuary Ramsar and SSSI / River Usk SSSI);
- Allis shad *Alosa alosa* (Severn Estuary Ramsar, SSSI / River Usk SAC and SSSI);
- Sea trout *Salmo trutta* (Severn Estuary Ramsar and SSSI / River Usk SSSI);
- Bewick's swan (non-breeding) *Cygnus columbianus bewickii* (Severn Estuary SPA and Ramsar);
- Common shelduck (non-breeding) *Tadorna tadorna* (Severn Estuary SPA and Ramsar);
- Gadwall (non-breeding) *Anas Strepera* (Severn Estuary SPA and Ramsar);

- Dunlin (non-breeding) *Calidris alpina alpina* (Severn Estuary SPA and Ramsar);
- Common redshank (non-breeding) *Tringa tetanus* (Severn Estuary SPA and Ramsar);
- Greater white-fronted goose (non-breeding); *Anser albifrons albifrons* (Severn Estuary SPA, Ramsar); and
- Waterbird assemblage (Severn Estuary SPA and Ramsar).

6.1.16 The proposed development site lies outside of the boundary of these designations, however given their proximity there is the potential for indirect effects to the qualifying features of the designations by increasing noise, vibration, light, air quality and dust emission levels and reducing water quality through contamination during construction.

Construction Phase Effects - Direct disturbance/habitat loss - Otter

6.1.17 Scrub habitat borders the development site to the west and may provide suitable otter habitat. Access to the banks to check for signs of otter activity was not possible during the Phase 1 Habitat Survey due to impenetrable scrub. The proposals will comprise the installation of a drainage outfall which will disturb an area of 0.09 ha (approx.). As there will be no significant loss of riparian otter habitat (potential resting or foraging areas) to construct the proposed development, no significant long-term adverse effect on otter is predicted however there is potential for harm to animals that might be present at the time of construction of the outfall during the construction works.

Construction Phase Effects – Disturbance (Noise and Vibration)

6.1.18 Sudden high levels of noise, in particular from piling or concrete breaking operations have the potential to cause disturbance to the birds using the Severn Estuary. A bird's ability to respond to disturbance varies depending on the species, flock size, habitat, cold weather and food availability. The frequency of the disturbance event will also affect the extent to which birds in the SPA and Ramsar can habituate to noise. The severity of this temporary adverse impact will also depend on the timing of the construction works and is considered to be of greater significance if construction is undertaken between November and February.

6.1.19 Although distances of 200m have been recorded for some bird species, evidence reported indicates that water birds generally show a flight response to construction activities and presence of people on the foreshore at distances of between 20m and

100m (IECS, 2009²¹). However, birds can habituate to regular noise resulting from piling activity after a short period (ERM, 1996²²; ABP Research, 2001²³) It is therefore considered that there will be a short term significant adverse effect whilst water birds using the designations become habituated to construction noise.

6.1.20 Underwater noise and vibration caused by construction activities has the potential to disturb fish species which could adversely affect their migration. However, as the development site is not located immediately adjacent to the Severn Estuary and River Usk designations and construction including piling will not take place within or immediately adjacent to these watercourses or banks and mudflats, there will be no significant adverse effect on these species from noise or vibration during construction of the development.

Construction Phase Effects – Disturbance (Lighting)

6.1.21 Increased light levels have the potential to temporarily disturb wintering birds if the construction works are undertaken during hours of darkness between November and February and if lighting is not directed away from the western boundary. The Habitat Corridor along the western boundary which will act as a buffer and will be unlit to maintain a bat foraging corridor therefore no significant effects on wintering birds from lighting is expected.

Construction Phase Effects – Disturbance (Dust)

6.1.22 There is potential that construction activities such as the breakup and removal of hard ground could generate elevated levels of dust beyond the site boundary and directly affect flora and affect habitats within the International and National designations by covering vegetation and reducing the plants ability to photosynthesise and other biological functions. This could also indirectly affect the SPA and Ramsar birds that are using these habitats for foraging and breeding.

6.1.23 As described in the Air Quality report²⁴, the risk of effects of dust emissions on ecological receptors has been assessed following guidance in the Institute of Air

²¹ Construction and waterfowl: Defining Sensitivity, Response Impacts and Guidance Institute of Estuarine and Coastal Studies Report to Humber INCA.

²² ERM (1996). South Humber Power Station, Pyewipe, Bird Monitoring Study, April 1996.

²³ ABP Research (2001). ABP Grimsby & Immingham, Immingham Outer Harbour Environmental Statement, ABP Research and Consultancy Ltd, Research Report No. R.903.

²⁴ Hawkins Environmental, Air Quality Assessment, ABP New Manufacturing Plant, Newport, 22nd January 2020.

Quality Management's (IAQM) Guidance on "*The Assessment of Dust from Demolition and Construction*".²⁵

- 6.1.24 With regards to ecological receptors, the IAQM guidance states that an assessment will normally be required where there are existing ecological receptors within 50m of a site boundary and/or within 50m of the route(s) used by construction vehicles on the public highway, up to 500m from a site entrance(s). The Severn Estuary SSSI designation falls within 50m of the development site area.
- 6.1.25 With reference to the IAQM guidance, the air quality consultant assessed the site as a 'high risk site' for earthwork and construction phases and a 'low risk site' for trackout activities; which is the transportation of soil and demolition arisings unsuitable for re-use in the works area, by vehicles from a construction site onto the public road network. Overall, the site was considered a 'high risk site' in terms of emissions of dust during the construction phase on ecological receptors (i.e. the Severn Estuary SSSI designation).
- 6.1.26 Therefore, in the absence of site-specific mitigation measures to control dust emissions, there will be a significant adverse effect on the saltmarsh vegetation of the Severn Estuary SSSI designation and consequently potential bird foraging habitat although this would be temporary for the duration of the construction works.

Construction Phase Effects – Water Quality

- 6.1.27 The proposed development site is located close to the River Ebbw which joins the River Usk before flowing into the Severn Estuary. Given the proximity of the Severn Estuary designated sites there is potential for oils and other materials such as cement, concrete, paints and solvents if accidentally released during construction activities to enter the marine environment resulting in reduced water quality and damage to habitats of the designated sites. This would result in a significant adverse effect on the habitat condition of the designations. In addition, fish, foraging birds and otter using the habitats of the designated sites could subsequently be adversely affected from the uptake of contaminants resulting in significant adverse effects on these species.

²⁵ The Institute of Air Quality Management's Guidance on "*The Assessment of Dust from Demolition and Construction*" February 2014.

Mitigation

- 6.1.28 Prior to commencement of the drainage outfall works, checks will be undertaken by a suitably qualified ecologist for otter activity as detailed in the CEMP. If evidence of otter activity is found, work will cease and licence applications prepared and submitted to Natural Resources Wales to allow the works to proceed.
- 6.1.29 Mitigation for otter as outlined above will ensure that the proposed development does not result in significant effects on the favourable conservation status of this species, in accordance with The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018.
- 6.1.30 Whilst no significant adverse effect to birds and fish using the International and National designations from noise and vibration has been identified, measures will be implemented by the application of best working practices to reduce noise and vibration emissions. The construction works will follow the guidelines in BS5228-1 and the guidance in BRE controlling particles, vapour and noise pollution from construction sites, Parts 1 to 5, 2003²⁶.
- 6.1.31 Best practice measures to reduce noise levels generated will be specified in a Construction and Environmental Management Plan (CEMP) and these measures include the following to minimise noise emissions (as referenced in the Noise Report²⁷):
- *Quietest plant available should be selected, or where possible existing plant modified to reduce noise. Manufacturers often have attenuation kits for their equipment.*
 - *All equipment shall be properly maintained and switched off/throttled down to the minimum required when not in use, so no unnecessary noise is caused.*
 - *All access roads should be kept clean and maintained in a good state of repair to avoid unwanted rattle and “body slap” from vehicles.*
 - *Any reversing alarms fitted to vehicles should be minimised as far as is reasonably practicable and subject to maintaining site safety. This could involve automatic alarm volume setting relative to site ambient noise levels;*

²⁶ British Standard 5228-1:2009+A1:2014, *Code of Practice for Noise and Vibration Control on Construction and Open Sites. Noise.*

²⁷ Hunter Acoustics, Noise Impact Assessment, Manufacturing Facility Newport Docks, 5238/NAAI, 23rd January 2020.

and / or manoeuvring vehicles in a circular manner to avoid the use of reversing alarms.

- *Site layout should locate the noisiest stationary plant as far as is practicable from critical receivers and allow mobile plant to enter and exit site in a forward direction except where space limitations do not allow this.*
- *The operatives of the site should be made aware of noise control requirements and trained to employ appropriate techniques to keep site noise to a minimum including;*
 - i) The proper use and maintenance of equipment,*
 - ii) The positioning on site of machinery to limit emissions to critical neighbouring receivers and site personnel,*
 - iii) The avoidance of unnecessary noise when carrying out manual operations and when operating plant,*
 - iv) The protection of persons against excessive noise.*

6.1.32 In addition, to minimise effects to wintering birds using the SPA and Ramsar designations, piling works will be restricted to outside of the wintering bird period (October to March inclusive).

6.1.33 During the construction phase, security lighting will be kept to a minimum and directed away from western and southern boundaries.

6.1.34 A best practice dust mitigation plan will be written and implemented for the proposed development site via a CEMP. This will set out the practical measures that will be incorporated as part of a best working practice scheme. This will take into account the recommendations included within the IAQM guidance²⁸, which will include (but are not limited to):

- Plan site layout, locating dust generating activities away from receptors where possible or use of solid barriers;
- Use enclosed conveyors, chutes and covered skips;
- Avoid dry sweeping of large areas;
- Implement a dust suppression system;

²⁸ Institute of Air Quality Management Guidance on the Assessment of Dust from Demolition and Construction 2014 1v1 amended 2016.

- Ensure vehicles entering and leaving the site are covered to prevent escape of materials during transport.

6.1.35 Water pollution will be minimised and controlled through method statements and risk assessments of construction activities which will follow construction industry best practice guidance (Pollution Prevention Guidance (PPG) or Guidance for Pollution Prevention (GPP))²⁹ such as those described in: *‘Works and Maintenance in or near Water’ (GPP5)*, *Understanding Your Environmental Responsibilities – Good Environmental Practices (PP1)*; *Working at Construction and Demolition Sites (PPG6)*; *Safe Storage and Disposal of Used Oils (GPP8)*; *Regulatory Guidance available from Gov.UK*; *The Oil Care Code*³⁰; *CIRIA’s Environmental Good Practice on Site (CIRIA, 2010)*.

6.1.36 All plant will be well maintained to limit leakage from engines or hydraulic systems. Spill kits will be carried to contain any accidental releases. Refuelling will be undertaken in designated areas where any spills can be contained. Pumps and other similar equipment will be placed on drip trays with refuelling undertaken following strict procedures for spill control.

6.1.37 Chemicals and other construction materials will be stored and contained in areas where they will not be easily mobilised to reach the water. Procedures for the use of specific materials will be developed to reduce the risk of accidental release and ensure that water quality is appropriately protected.

6.1.38 Construction staff will remain within the works area and vehicles will be parked away from the River Ebbw.

6.1.39 All the above measures will be specified in a CEMP for the construction works.

Operational Phase Effects – Disturbance (Noise)

6.1.40 The operation of the PMF plant has the potential to generate noise, which could affect the birds using the International and National designations. A noise assessment has been prepared by Hunter Acoustics³¹ for the proposed manufacturing facility. The noise report included modelling noise levels both during the daytime and night-time periods for the operational phase of the development. The noise contour plan, Figure

²⁹ <http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>

³⁰ The Environment Agency and The Environment and Heritage Service (HO-3/99 150K-A-BEKA).

³¹ Hunter Acoustics, Noise Impact Assessment, Manufacturing Facility, 5328/NIA1- 23rd January 2020.

5.2 (Noise Map NM1: Daytime LAeq,1hr Levels at 4.0m Above Local Ground Height) in the noise report shows the daytime modelled noise levels within and around the site. Figure 5.3 (Noise Map NM2: Night LAeq,15min Levels at 4.0m Above Local Ground Height) shows the results of the modelled night-time noise levels and how they propagate around the site.

- 6.1.41 From a review of Figure 5.2, the ambient day time noise levels along the eastern bank of the River Ebbw closest to the development site during the operational phase are predicted to lie between 50 dB LAeq and 55 dB LAeq. Figure 5.3 indicates that night-time noise levels during the operational phase will be between 50 and 55 dB LAeq along the eastern bank of the River Ebbw closest to the development site.
- 6.1.42 In the document published by the University of Hull Institute of Estuarine and Coastal Studies "*Construction and Waterfowl Defining Sensitivity, Response, Impacts and Guidance*"³² a 'low level noise event' as one which is under 55dB at the bird's location. i.e. those events unlikely to cause disturbance in waterbirds using intertidal habitats.
- 6.1.43 As the proposed modelled noise levels for both the day and night-time periods are predicted to be 55 dB (A) or below along the eastern boundary of the River Ebbw, no significant adverse effects on the bird species using the International and National designations are predicted.

Operational Phase Effects – Pollution (Dust)

- 6.1.44 There is potential for dust to be generated during activities associated with unloading materials delivered to the site which could result in dust being deposited on qualifying habitats within the designations.
- 6.1.45 As measures including minimising drop heights for materials unloading and loaded, using sheeted wagons and use of dust suppression equipment will be implemented and are already well used within the Newport Docks area, no significant adverse effects arising from the operation of the facility on the Severn Estuary and River Usk designations from dust generating activities is expected.

³² University of Hull Institute of Estuarine and Coastal Studies, Report to Humber INCA "*Construction and Waterfowl Defining Sensitivity, Response, Impacts and Guidance*", February 2009.

Operational Phase Effects – Pollution (Airborne Emissions)

- 6.1.46 The PMF plant will have four flues, two for the drying process and two for the calcination process. These two processes have the potential to emit nitrogen oxide (NO_x) emissions from the PMF plant flues which may result in adverse air quality impacts on qualifying features of a designated site.
- 6.1.47 Emissions of NO_x can cause harmful effects to vegetation/habitats in gaseous form (dry deposition) and through its impact from deposition (wet deposition). There is no published evidence for any toxic effect of NO_x on fauna therefore direct effects on animals other than the impact upon habitats that the species depend on are considered in ECIAs.
- 6.1.48 A long-term (annual average) critical level of 30µg/m³ for gaseous emissions of NO_x is set in the European Union Ambient Air Quality Directive. Below this critical level, no significant harmful effects to vegetation from atmospheric NO_x are considered to occur.
- 6.1.49 A critical load relates to the potential effects of pollutant deposition and levels are set for nitrogen deposition which leads to eutrophication, and acid deposition which leads to acidification of soils and freshwater. The potential effects to vegetation/habitats from nitrogen deposition (measured in units of kilogrammes of nitrogen per hectare per year (kg N/ha/year) varies with habitat sensitivity. Nitrogen can also contribute to acid deposition.
- 6.1.50 The Air Quality Information System (APIS)³³ provides information on critical loads for habitat types. The air quality assessment has applied a critical deposition level for nitrogen deposition as 20kg/ha/year as the lower bound of the range quoted for the saltmarsh component of the Severn Estuary, a qualifying feature of the Severn Estuary SAC and SSSI. The saltmarsh provides potential suitable habitat for qualifying bird species of the Severn Estuary SAC, SPA and Ramsar (refer to paragraph 6.1.15).
- 6.1.51 The River Usk SAC and SSSI is designated as a watercourse of plain to montane levels with the *Ranunculion fluitantis* (aquatic mosses) and *Callitricho-Batrachion* (water-starwort) vegetation which is associated with upstream freshwater habitats. As the section of the river in close proximity to the development site comprises an estuarine environment, effects on this habitat have been scoped out of the assessment. The

³³ www.apis.ac.uk

qualifying fish species associated with the Severn Estuary SAC, Ramsar and SSSI and River Usk SAC and SSSI are associated with the estuary feature of the designations however an extract from the Severn Estuary citation³⁴ states that “*the high natural turbidity levels across most of the estuary lead to a conclusion that the estuary is not considered vulnerable to changes in nutrient loading*” therefore effects on the fish species associated with the estuary feature of the designated sites is scoped out for further assessment in this EclA.

6.1.52 Air quality modelling has been carried out to predict pollutant concentrations due to emissions of NO_x at designated sites with reference to The Institute of Air Quality Management’s (IAQM) *Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites* published in June 2019.

6.1.53 The air quality report³⁵ details the results of a screening assessment undertaken to identify the risk of the possibility of significant adverse effects on a statutory designation which could undermine the achievement of the designation’s conservation objectives. For statutory sites, if the modelled Process Contribution (PC) at the identified ecological receptor point is more than 1% of the air quality objective (critical level for atmospheric pollution) or critical load (deposition rate), an Appropriate Assessment may be required. The IAQM guidance also states: “*The Environment Agency risk assessment guidance states that if the Predicted Environmental Concentrations (PEC)³⁶ is less than 70% of the long-term criterion it can be deemed insignificant regardless of the PC*”.

6.1.54 A worst case approach of modelling an emission rate of 35mg/m³ NO_x for each flue has been used in the air quality assessment. The air quality assessment has calculated the PC and Predicted Environmental Concentrations (PEC) to identify if critical levels or critical loads for NO_x are exceeded at a total of 15 ecological receptor (ER) points. The ecological receptor points cover points within the Severn Estuary SAC and SSSI, River Usk SAC and SSSI and the Gwent Levels SSSI as shown on the air quality report Figure 8.1 provided within Appendix 11. The calculated PC and PECs for the 15 ER

³⁴ The Severn Estuary, European Marine Site, Natural England & The Countryside Council for Wales’ advice given under Regulation 33(2)(a) of the Conservation(Natural Habitats, &c.) Regulations 1994, as amended. June 2009.

³⁵ Hawkins Environmental, Air Quality Assessment, ABP New Manufacturing Plant, Newport, Stroma Built Environment Ltd, 22nd January 2020.

³⁶ PEC is a term used in Air Quality Assessments of industrial processes to describe the concentration of deposition (i.e. process contribution (PC) plus the baseline i.e. background levels).

points are shown in Tables 8.1 (PC) and 8.2 (PEC) in the air quality report. Tables 8.1 and 8.2 from the air quality report are provided within Appendix 11 of this report.

Assessment of effects of Atmospheric Emissions of NO_x

6.1.55 From review of Table 8.1 (Appendix 11), the PCs for NO_x for all 15 ERs ranged between 0.23 µg/m³ and 1.46 µg/m³ and an exceedance of more than 1% of the critical level for atmospheric NO_x (µg/m³) is recorded for ER points ER1, ER2, ER3, E4, ER5, ER6, ER7, ER9, ER11, ER12, ER13 and ER14 and ER15 and therefore are screened in for further assessment. For ER points ER8 and ER9, the predicted PC at these locations is below the 1% critical level for atmospheric NO_x (µg/m³) and therefore are screened out for further assessment as no significant adverse effect is predicted at these locations.

6.1.56 Table 8.2 provided in Appendix 11 shows that the PECs of NO_x µg/m³ across all 15 ER points range between 17.23 µg/m³ and 23.83 µg/m³. Whilst the 70% long-term criterion is exceeded for the ER points ER2 (78.57%), ER3 (79.03%), ER4 (79.43%), ER7 (76.73%), ER8 (75.53%), ER14 (76.37%) and ER15 (76.33%), all PECs modelled are below the critical load for NO_x of 30 µg/m³, therefore no significant long-term adverse effect from atmospheric emissions of NO_x from the operation of the PMF on vegetation within the statutory designations is predicted.

Assessment of effects of Nitrogen Deposition- Dry Deposition NO_x kg/ha/year

6.1.57 The modelled PC contributions for dry deposition of NO_x kg/ha/year range between 0.14 kg/ha/year to 0.89 kg/ha/year. There are exceedances of the 1% critical load of 20 kg/ha/year because the PC percentage of critical loads range between 0.70% to 4.45%. Although the 1% of the critical load criteria is exceeded for the PC for all ER points except ER10 (0.70%), a review of the PEC results in Appendix 11 indicates that none exceed the 70% long-term criterion as the percentages of PEC critical load for NO_x kg/ha/year for all 15 ER points range between 46.0% to 48.25% i.e. no significant adverse effect from dry deposition of NO_x kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC and SSSI.

Assessment of effects of Nitrogen Deposition- Wet (Acid Deposition) NO_x kq/ha/year

6.1.58 The modelled PC contributions for wet deposition of NO_x kq/ha/year range between 0.09 kq/ha/year to 0.55 kq/ha/year. There are exceedances of the 1% critical load of 20 kq/ha/year because the PC percentage of critical loads range between 0.45% to 2.75%. Although the 1% of the critical load criteria is exceeded for the PC for all ER

points except ER7 (0.65%), ER9 (0.45%), ER10 (65%), ER14 (0.50%), ER15 (0.70%), a review of the PEC results in Appendix 11 indicates that none exceed the 70% long-term criterion as the percentages of PEC critical load for NOx kg/ha/year for all 15 ER points range between 46.00% to 48.25% i.e. no significant adverse effect from wet deposition of NOx kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC and SSSI.

Assessment of effects of Total Nitrogen Deposition- NOx kg/ha/year

6.1.59 The modelled PC contributions for total deposition of NOx kg/ha/year range between 0.27 kg/ha/year to 1.44 kg/ha/year. There are exceedances of the 1% critical load of 20 kg/ha/year because the PC percentage of critical loads range between 1.35% to 7.20%. Although the 1% of the critical load criteria is exceeded for the PC for all ERs, a review of the PEC results in Appendix 11 indicates that the none exceed the 70% long-term criterion as the percentages of PEC critical load for NOx kg/ha/year for all 15 ER locations range between 46.65% to 52.70% i.e. no significant adverse effect from total nitrogen deposition of NOx kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC and SSSI.

6.1.60 The Habitat Regulations also requires projects to be assessed both alone and in combination with other projects. The air quality assessment considered the following developments:

- Newport City Council Planning Application 18/0911: Land to south of Balwins Crane Hire, West Way Road, Alexandra Docks, Newport – Non material amendment to Permission 17/1185 for variation of conditions relation to permission 15/1513 for the bulk drying and pelleting facility with on-site energy centre and other ancillary works. Amendment to proposed internal firing system;
- Newport City Council Planning Application 15/0775: Land Formerly Known As Whitehead Works, Mendalgief Road, Newport – Construction of 529no. residential units, 24no. assisted living units, pub/restaurant, retail units, primary school and associated landscape and highway infrastructure;
- Newport City Council Planning Application 14/1172: 3, West Way Road, Alexandra Docks, Newport – Installation and operation of a small biomass gasification plant processing untreated wood into producer gas, to produce 280 kWe of electrical energy and 400 kW of thermal energy;

- Newport City Council Planning Application 18/0360: 16, West Way Road, Alexandra Docks, Newport – Erection of an asphalt plan and associated ancillary development; and
- Natural Resources Wales – Marine Licencing - DML1636v1 - Application for a renewal of a non-EIA Marine Licence for the maintenance and dredge disposal at Newport Docks.

6.1.61 It was concluded in the air quality assessment that none of the developments listed above would have an impact on any ecological receptors affected by the proposed PMF and therefore no cumulative/in-combination impacts are expected.

6.1.62 In summary, no significant adverse effects on designated sites is predicted from NOx emissions during the operational phase of the development and in-combination with other proposed developments on the saltmarsh components of the Severn Estuary designations. Therefore, no indirect effects on qualifying fauna species which depend on these habitats is predicted either.

Operational Phase Effects - Water Quality

6.1.63 The proposed development is located within a zone identified as being at risk of flooding. A Flood Consequence Assessment (FCA) has been undertaken to accompany the planning application for the proposed development and mitigation involves the raising of the ground level in localised areas by up to 2m to give a Final Finished Level (FFL) of 9.63m. These works have the potential to give rise to adverse effects on water quality from run-off during the construction phase.

6.1.64 Water quality of surface run off may be reduced during the operational phase however the Sustainable Urban Drainage System (SuDS) will be designed and built in accordance with statutory national standards. All discharges off the site shall have formal approval from NRW.

6.1.65 With the implementation of raising ground levels and following appropriate design standards, no significant adverse effects on water quality of the designated sites is considered likely during the operational phase of the development.

Operational Phase Effects – Disturbance (Lighting)

6.1.66 Once the development has been completed, wintering birds could be adversely affected as a result of increased lighting within the development site, especially if the

lighting splays out into the estuary. This would result in a significant adverse effect to wintering birds using the International and National designations.

Mitigation

6.1.67 The final lighting scheme will be designed to not cause light spill outside the western and southern boundaries.

Residual Effects

6.1.68 There will be no significant long-term residual effects at any scale on the International and National designations and their qualifying features from noise, lighting and dust emissions associated with the construction and operational phases.

Gwent Levels – St Brides SSSI

6.1.69 The Gwent Levels - St Brides SSSI is located approximately 0.17km to the west of the development site at its nearest point. This SSSI supports some nationally notable and locally notable marshland species, including thread-leaved water-crowfoot and small pondweed.

Construction Phase Effects

6.1.70 Dust emissions generated during the construction phase (as detailed in paragraph 6.1.30) have the potential to significantly adversely affect the salt marsh vegetation within the SSSI and affect the water quality of the SSSI.

Mitigation

6.1.71 Implementation of measures to control dust emissions from the site boundary will be specified in the CEMP as detailed in paragraph 6.1.34 above.

6.1.72 As detailed in Paragraphs 6.1.46 to 6.1.62, no significant adverse effect on the SSSI arising from atmospheric NO_x emissions from the development are expected as a result of the operational phase of the proposed development.

Residual Effects

6.1.73 It is considered that there will be no significant adverse residual effects on the SSSI from the proposed development.

Non-statutory Nature Conservation Designations

SINCS

Afon Ebbw River SINC

6.1.74 The Afon Ebbw River SINC is located 40m to the north west of the development site at its nearest point. As detailed in Paragraphs 6.1.46 to 6.1.62, no significant adverse effect on the vegetation of the SINC arising from atmospheric NOx emissions from the development are expected as a result of the operational phase of the proposed development.

Construction Phase Effects

6.1.75 There will be no direct loss of SINC habitat as a result of the proposed development, however there is potential for a significant adverse effect on the SINCS habitats from dust generated during the construction phase.

6.1.76 No significant adverse effect on the SINC designation habitats from water pollution is expected as the SINC designation is located upstream of the development site.

Mitigation

6.1.77 Implementation of measures to control dust emissions from the site boundary will be specified in the CEMP as detailed in paragraph 6.1.30 above.

Operational Phase Effects

6.1.78 There is potential for dust to be generated during activities associated with unloading materials delivered to the site which could result in significant adverse dust levels on SINC habitats in the vicinity of the development site.

6.1.79 Dust suppression measures and use of sheeted vehicles will be used during the operational phase which are current best practice measures used within the Newport Docks area. Therefore, no significant adverse effects arising from the operation of the facility on the SINC designation from dust generated activities is expected.

Residual Effects

6.1.80 It is considered that there will be no significant adverse residual effects on the SINC from the proposed development.

Habitats

EPS/SS

Construction Phase Effects

6.1.81 Approximately 1.1 ha of ESP/SS habitat will be lost as a result of the proposed development, associated infrastructure and landscaping. This habitat loss will be a direct, permanent impact which is irreversible and will result in a significant adverse effect at a county scale.

On-Site Mitigation

6.1.82 Approximately 0.5602 ha has been set aside for habitat enhancement within the application site. 0.36 ha of EPS/SS is already present within the HEA. This area is not currently managed and if left would develop into scrub. The remainder of the HEA comprises dense scrub (1.1802 ha) and hardstanding (0.02ha).

HEA

6.1.83 A total of 0.182 ha of dense scrub and 0.02 ha of hardstanding will be removed from the HEA allowing this area to be colonised by the existing seed bank in the surrounding EPS/SS habitat or from collecting the seedbank from areas of EPS/SS removed from the development site.

Off-Site Mitigation AHEA

6.1.84 ABP is offering additional off-site mitigation to increase the area of ESP/SS habitat at Newport Docks and benefit a wider range of invertebrates. It is proposed to reduce and thin the coverage of 'buddliea' over 1.1 ha within the AHEA to improve the structural and species diversity of ephemeral/short perennial vegetation. An area of swamp vegetation will also be retained and managed to diversify the habitats available in the long term for invertebrates.

Management of HEA

6.1.85 EPS/SS is an early successional habitat and therefore requires regular monitoring and management to be maintained. The retained and created areas of EPS/SS will therefore be managed in order to maintain the structure and diversity of species present. The management measures will be set out and delivered through the implementation of an Ecological Management Plan (EMP) covering a 20 year period. The EMP for the Habitat Corridor and HEA within the southern part of the application site accompanies the planning application.

6.1.86 Two separate EMPs will be prepared for the application site, each covering a 20-year period. The EMP for the Habitat Corridor and HEA within the southern part of the application site accompanies the planning application.

Management of off-site AHEA

6.1.87 As with the HEA, the EPS/SS is an early successional habitat and therefore requires regular monitoring and management to be maintained. The retained and created areas of EPS/SS will therefore be managed in order to maintain the structure and diversity of species present. The management measures will be set out and delivered through the implementation of an Ecological Management Plan (EMP) covering a 20 year period.

6.1.88 A separate EMP will be prepared for the AHEA and if Newport City Council require, secured and approved via a planning condition.

Residual Effects

6.1.89 There will be no significant residual effect on the area of EPS/SS from either the construction phase or operational phase of the development after the mitigation is delivered.

Non-native Invasive Species

Japanese knotweed

Construction Phase Effects

6.1.90 Whilst no Japanese knotweed was identified within the development site, a stand was noted within the application boundary, within the scrub along the western boundary. Construction phase impacts are therefore unlikely (unless this species is found to be present in the future) but the vegetation clearance and habitat management/landscape works in relation to the western boundary has the potential to cause its spread, transporting rhizomes and plant material around the application site and off site via vehicle movements.

6.1.91 Any spread of this species has the potential to have a significant adverse effect on native flora at a local scale and contravene legislation.

Mitigation

6.1.92 Prior to commencement of works all stands of Japanese knotweed will be mapped and an eradication strategy for the treatment and disposal of Japanese knotweed will be prepared and agreed with Newport City Council.

6.1.93 The locations of these plants will be denoted by barrier fencing or another effective form of marking during vegetation clearance and habitat management/landscape works.

6.1.94 A toolbox talk will be given to contractors to inform them of the presence and location of this species and the appropriate measures to be undertaken to prevent this plant's spread.

Operational Phase Effects

6.1.95 No operational phase effects are anticipated as this species will be eradicated from site during the construction phase.

Residual Effects

6.1.96 There will be a long-term beneficial residual effect for nature conservation with the treatment and removal of Japanese knotweed from the site.

Species

Bats

Construction Phase Effects – Site clearance habitat loss and damage

6.1.97 The proposed development will result in the loss of approximately 2.2 ha of dense scrub habitat and 1.1ha of EPS/SS to facilitate the construction of the proposed development.

6.1.98 Works to undertake the land raising /flood mitigation works will not affect the scrub and ground flora along the western boundary adjacent to the development site.

6.1.99 The removal and damage of habitats could have two main effects on bats:

loss of / Isolation of Potential Roost Sites

6.1.100 No roosts were identified within the site.

Loss of / Disruption to Foraging / Commuting Habitat

- 6.1.101 The loss of 2.2 ha dense scrub and 1.1ha EPS/SS has the potential to reduce the amount of foraging habitat available to bats using the development site and alter the commuting corridors between roosting and foraging habitats.
- 6.1.102 The bat survey results indicate that bats are foraging across the application area, but the highest number of recordings were associated with the scrub belt on the western site boundary. High levels of bat activity were also associated with the EPS/SS.
- 6.1.103 The scrub belt along the western boundary of the site is being retained as part of the development proposals and will continue to provide foraging habitat for bats within the site and a north / south commuting route.
- 6.1.104 The creation of approximately 1.282 ha of good quality EPS/SS and retention of 0.36ha of EPS/SS within the application site will retain this habitat type in the locality for foraging bats.
- 6.1.105 Foraging/commuting habitat is not directly protected, but loss of habitat features used for this purpose need to be considered if it could impact on the functionality of a roost (this has been considered in the section above on loss of / potential isolation of roosts). It is considered unlikely that the effects arising from habitat loss / damage during the construction phase would contravene legislation pertaining to the protection of bats. However, it is considered likely that there will be adverse effects on the local bat population as a result of habitat clearance, although this is unlikely to be significant at a local level or above given the scrub habitat that is being retained along the western boundary of the application site, and the presence of EPS/SS habitat within the HEA/AHEA.

Construction Phase Effects -Disturbance from Lighting /Noise/Dust/Vibration

- 6.1.106 An increase in artificial lighting, noise, dust and vibrations during the construction phase of the development could result in disturbance to foraging / commuting bats in adjacent, retained habitats. Sudden high levels of human activity including elevated light and noise levels in close proximity to foraging/commuting habitats may cause bats to stop using specific foraging sites and commuting corridors and abandon their roosting sites. This could affect their local distribution and local abundance or indeed impair their ability to survive, breed, and reproduce or to rear their young in contravention of legislation.

6.1.107 The dominant species known to be using the site are considered to be tolerant with regards to artificial lighting and are known to roost in areas with high levels of disturbance, although recent research suggests that there are no benefits to common and widespread species from the presence of lighting³⁷. Studies have found that Nathusius' and soprano pipistrelle are also attracted to green and red light (Voigt et al 2017,³⁸ Voigt et al 2018³⁹). It is therefore unlikely that the population of pipistrelle species and noctule within the site will be significantly disturbed by the construction activities. Increased disturbance could however have a larger impact on the species more sensitive to light using the application site; albeit in low numbers, such as myotis sp. and brown long-eared bats. Bat species which are sensitive to light are less able to compete for food sources, especially if lighting with a high component of ultraviolet light and blue-rich emission light is used within a development which could attract insects away from dark corridors of foraging habitat. The effects however are likely to be short term and largely avoided as working hours will be restricted to minimise noise impacts and are unlikely to cause disturbance during the times when bats are active (i.e. at night). No significant adverse effects on foraging / commuting bats from disturbance impacts are therefore anticipated.

Operational Phase Effects – Vegetation Management

6.1.108 Inappropriate management would have an impact on the structure and diversity of species within the retained scrub and EPS/SS and on the invertebrate species they support which could affect foraging bats. However, given the versatility of the diet of the bat species found to be using the application site (opportunistic foragers) it is unlikely to have a significant adverse effect at the local scale.

Operational Phase Effects -Increased Disturbance

6.1.109 The proposed development has the potential to cause disturbance to bats in the form of post development interference from increased noise and lighting. This permanent increase in noise and light levels at the site has the potential to disrupt foraging and

³⁷ Mathews, F., [Roche](#), N., [Aughney](#), T., [Jones](#), N., [Day](#), J., [Baker](#), J. & [Langton](#), S. (2015) Barriers and benefits: implications of artificial night-lighting for the distribution of common bats in Britain and Ireland. Phil. Trans. R. Soc. B 370: 20140124.

³⁸ Voigt et al (2017) Migratory bats respond to artificial green light with positive phototaxis PLoS ONE 12(5): e0177748.

³⁹ Voigt et al (2018) Migratory bats are attracted by red light but not by warm-white light: Implications for the protection of nocturnal migrants. Ecology and Evolution.

commuting bats, in particular around the retained scrub along the western boundary. The species recorded on site, such as pipistrelle species, noctule and Leisler's bat, are known to forage around lighting and streetlamps. It is therefore unlikely that the population of pipistrelle species, noctule and Leisler's bat within the application area will be significantly disturbed by lighting during the operational phase of the development. Brown long-eared and Myotis species are more sensitive to lighting levels and therefore there is potential for these light sensitive species to be adversely affected by the proposed development in the absence of mitigation.

- 6.1.110 There could also be a potential increase in the risk of harm and disturbance to bats from an increase in traffic movements through the site. Bats could potentially collide with moving vehicles or be disturbed by headlights. The risk of collision is greater on wider roads and roads where high-sided vehicles are common or where vehicular speed is greater. Vehicle movements will reduce significantly after dark when bats are foraging / commuting, and vehicle speeds will also be low which will allow bats more time to take evasive action if required. Bats are also more likely to be using the scrub belt for commuting therefore no significant effects on local bat populations from increased traffic movements are anticipated.

Mitigation

- 6.1.111 The retained scrub along the western boundary will be protected during construction in accordance with the protected from development in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction*. Fencing will be in accordance with BS5837:2012. It is important that this fencing is maintained over the course of the construction phase with regular monitoring of its position and condition and any damage or re-positioning is rectified promptly.
- 6.1.112 In order to minimise the effects of increased lighting on bats, especially those more sensitive to light which have been recorded using the application site (*Myotis* sp. and brown long-eared), a dark corridor will be maintained along the western boundary.
- 6.1.113 Where possible, operational lighting will have a reduced spill below 70° to create a large volume of darker space at height in areas where night-time lighting is required to stay on i.e. pillar lighting which reduces vertical light spill.
- 6.1.114 The lighting scheme will include use of directional lighting aided by hoods for areas where lighting is required to be on all through the hours of darkness or in areas where

the lighting is controlled by movement sensors. Lamps will be used which emit low levels of ultraviolet light and have light with peak wavelengths higher than 550nm.

6.1.115 No mitigation is required for disturbance effects from noise and vehicular movements.

Residual Effects

6.1.116 It is likely that the local bat populations will be able to continue commute and forage around the development site and no residual effects are expected.

Breeding Birds

Construction Phase Effects

6.1.117 There is the potential for disturbance to breeding birds, and contravention of governing legislation, if any vegetation clearance is undertaken during the bird breeding season (March to August inclusive).

6.1.118 The construction works could also disturb breeding birds which could potentially be nesting within adjacent retained habitats. Sudden high level of human disturbance and noise may cause birds to abandon nests which could result in adverse effects on individual birds but are unlikely to affect the overall populations at a local level or above. As such, it is considered that noise disturbance during construction will not undermine the conservation status of the breeding birds currently using the application site at above the local scale and as such it is not a significant effect.

6.1.119 The proposed development will result in the loss of approximately 2.2 ha of dense scrub habitat and scattered scrub associated with 1.1 ha of ESP/SS. However, approximately 0.5620 ha (10m wide) scrub corridor will be retained along the western boundary of the planning application area and will continue to provide habitat for scrub nesting species. A further area of buddleia scrub covering 1.1 ha will be thinned out from the AHEA to create additional ESP/SS habitat. The birds recorded using the scrub are not solely dependent on this habitat for nesting and foraging and are also commonly associated with other habitats including grasslands and hedgerows, parks and gardens. These habitats are common and widespread in the Newport area therefore the loss of scrub is not considered to be a significant effect on the majority of birds using the application site. Loss of ESP/SS habitat from the development footprint will reduce the availability of this habitat for birds which use this habitat type for foraging including seed eating species such as linnet, which is a S7 Priority Species. However, ESP/SS habitat lost will be mitigated by the creation and management of this

habitat within the HEA and AHEA and therefore good foraging habitat for this species will be maintained in the long term.

6.1.120 Overall it is considered that the proposed development will not result in a significant adverse effect on the majority of bird species using the dense scrub and EPS/SS habitats within the application site. However, the mosaic of scrub and ESP/SS habitat is of particular value to foraging linnet, therefore its loss may result in a significant adverse effect on this species at a local level.

Mitigation

6.1.121 No vegetation clearance will be undertaken during the breeding season (March to August inclusive). If this is not possible then areas of vegetation requiring clearance will be checked by a suitably qualified ecologist 24 hours in advance of works for the presence of occupied nests. If any nests are found, works will cease and an ecologist consulted. Any subsequent advice provided by the ecologist, as to how to accord with legislation, will be followed. This mitigation will be implemented by way of inclusion within a CEMP for the development.

6.1.122 With the creation of ESP/SS to replace existing ESP/SS habitat loss to the development footprint, the introduction of a rotational management regime to maintain scrub and ESP/SS within the application area and in the off-site mitigation area habitats of value for species which currently utilise these habitats including linnet for foraging will be maintained in the long term.

Operational Phase Effects

6.1.123 There is potential for birds to be disturbed by an increase in noise and lighting during the operational phase of the development. The manufacturing plant will be housed within a building which will reduce noise break out to the surrounding area. There will be noise associated with vehicle movements but as the site is already located within a busy dock area, it is considered that birds in the locality will be habituated to such noise sources.

6.1.124 Lighting throughout the development will be located and designed in such a way that it does not splay onto adjacent retained habitats and therefore no significant adverse effect to birds from lighting is expected.

Mitigation

6.1.125 No mitigation is required.

Residual Effects

6.1.126 No significant long-term residual effects on nesting and foraging birds are anticipated from the development.

Reptiles

Construction Phase Effects

6.1.127 There is the potential for construction activities to kill or injure a low number of common reptiles, if present at the time of the works. Therefore, there is a risk that construction activities could contravene legislation pertaining to the protection of reptiles.

6.1.128 Habitat suitable for common reptiles are present within the application site including the dense/introduced scrub and ESP/SS habitats. Whilst there will be the loss of these habitats to construct the proposed development, both these habitats will be retained within the application site which will continue to provide habitat in the long-term. As the numbers of any reptiles which may be found on site are considered to be very low, the loss of some of the limited suitable habitats for reptiles within the application site is therefore not considered to be significant at a local level or above.

Mitigation

6.1.129 The risk of harming reptiles during the construction phase of the development can be reduced through the implementation of Reasonable Avoidance Measures under a Precautionary Working Method Statement (PWMS).

6.1.130 A detailed PWMS is provided in Appendix 12, however a summary is provided below:

- Reptiles will be discouraged from construction areas by vegetation management under the supervision of an Ecological Clerk of Works (EcOW) who will also deliver toolbox talks to contractors prior to commencement of any site works.
- Vegetation clearance will progress from the north eastern side of the development site towards the south west to allow any reptiles present to move into the retained habitat areas.
- Materials / debris, which could be used by reptiles as refuges, will not be stored in close proximity to retained scrub habitat while reptiles are active and will not be disturbed when reptiles are hibernating (i.e. between November to March).
- The retained scrub within and adjacent to the development footprint will be

protected by the erection of tree protection fencing in accordance with BS 5837:2012 *Trees in relation to design, demolition and construction*.

- If reptiles are discovered during the site clearance activities, these individuals will be translocated into suitable habitat within the HEA/AHEA.

Residual Effects

6.1.131 There will be no significant adverse residual effects on common reptiles.

Terrestrial Invertebrates

Construction Phase Effects

6.1.132 The loss of approximately 1.1 ha of EPS/SS (which represents 75% of the total EPS/SS within the planning application boundary) could result in the loss of suitable terrestrial habitat for invertebrates including shrill carder bee. This could have a significant effect on shrill carder bees and other notable terrestrial invertebrates which may be using the EPS/SS in the areas to be cleared in the development site.

Mitigation

6.1.133 Mitigation for the terrestrial invertebrates will, where possible, comprise collection of the seed bank from the EPS/SS within the development footprint prior to commencing site clearance and works to raise the ground levels across the footprint of the proposed development.

6.1.134 Areas of hardstanding will be removed from the HEA and seed collected from the development site will be scattered across the remaining bare area after the ground has been scarified. These areas will be left to recolonise. During the first-year post-completion of the development, a full invertebrate survey of the EPS/SS within the HEA/AHEA will be undertaken by a suitability qualified entomologist. The methodology for the full terrestrial invertebrate surveys will be agreed with Newport City Council's Ecologist. A full terrestrial invertebrate survey will be undertaken every 2 years for the first 6 years following completion of the proposed development. Any proposed changes to the management as specified within the EMPs for the HEA and AHEA based on the result of the terrestrial invertebrate surveys will be agreed with the Council's Ecologist and revised EMPs implemented accordingly. After the completion of the first 3 terrestrial invertebrate surveys, the frequency of terrestrial invertebrate surveys to inform the remainder of the 20-year management plan for the

HEA /AHEA will also be agreed with the Council's Ecologist. This can be secured via a planning condition for the proposed development.

6.1.135 The creation of EPS/SS within the HEA/AHEA will provide compensation for the loss of EPS/SS and habitat for terrestrial invertebrates from the development site.

6.1.136 Invasive buddleia will be controlled within the HEA/AHEA. Whilst some sallow scrub will be retained to maintain the habitat mosaic, scrub management will take place on a rotational basis to prevent succession to woodland. This will include partial annual cuts of remaining vegetation to enable taller grass and flower heads to be retained over the winter period with other areas intermittently scarified to create exposed substrate to encourage ruderal communities and maintenance of flower rich areas.

Operational Phase Effects

6.1.137 There will be no further loss of EPS/SS as a result of the operational phase of the proposed development. EPS/SS within the HEA/AHEA will be managed for at least a 20-year period and this will retain suitable habitat on site for a range of terrestrial invertebrates including shrill carder bee and other notable invertebrates associated with the EPS/SS. No significant adverse effects on the terrestrial invertebrate assemblage as a result of operation of the proposed development is expected with the implementation of an appropriate management regime for the EPS/SS.

Residual effect

6.1.138 No significant adverse residual effects on the terrestrial invertebrate assemblage are anticipated with long-term monitoring and review of the management regime for the EPS/SS within the HEA and AHEA.

Badgers

Construction Phase Effects

6.1.139 As no badger activity was identified during the EP1 Habitat Survey or subsequent species site visits within the application site, it is considered no long-term adverse effect on foraging badgers is expected. The PEAR however identified habitat within the development site which could potentially be used by badgers.

Mitigation

6.1.140 A pre-construction survey of the application area will be undertaken by a suitability qualified ecologist prior to commencement of any initial site clearance works including vegetation removal.

Operational Phase Effects

6.1.141 No significant adverse effect on badgers from the operation of the proposed development is expected as potential suitable foraging habitat would be removed from the footprint of the proposed development.

Mitigation

6.1.142 No mitigation is required.

7 ENHANCEMENTS

7.1.1 In accordance with the requirements of the Planning Policy Wales 2018, BSI 42020:2013, Newport's Local Development Plan 2011-2026 (2015) and Newport Wildlife and Development SPG (2015) ecological enhancements should be proposed which will result in a net gain in biodiversity.

7.1.2 There are numerous opportunities to enhance the site for biodiversity including the following:

Habitats

7.1.3 Planting of the proposed development will comprise native species of local provenance.

7.1.4 Enhancement of retained areas of ESP/SS within the HEA and AHEA will include controlling scattered scrub (willow, buddleia and bramble scrub) and coarse grass species and maintaining areas of disturbed and bare ground.

Species

7.1.5 Hibernacula and log piles will be placed within appropriate areas (i.e. sunny locations) of the HEA and AHEA. These will provide suitable habitat for invertebrates as well as reptiles.

7.1.6 Two bat boxes will be mounted on poles which will be erected within the retained scrub along the western boundary of the development site planning application area.

7.1.7 Two pole mounted bird boxes will be erected within the retained scrub along the western boundary of the development site.

7.1.8 Post construction monitoring surveys for breeding birds and invertebrates will be undertaken as described in the EMP.

Summary of Effects, Mitigation, Enhancement Measures and Residual Effects

7.1.9 Table 8 summarises the effects, mitigation, enhancement measures and residual effects.

Table 8: Summary of effects, mitigation, enhancement measures and residual effects				
Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
<i>Designated Sites</i>				
Severn Estuary SPA, SAC, Ramsar, and SSSI	Significant adverse effect to qualifying features of the designations from noise, lighting, dust emissions and reduced water quality in the absence of mitigation.	<p>No piling works during the overwintering bird period (October to March). will be implemented via a Construction and Environmental Management Plan (CEMP)</p> <p>Best practice measures to reduce noise and dust emissions will be implemented via a CEMP</p> <p>Ensure that all lighting used during construction and during operation has minimal height and light spill, is directed away from the western boundary adjacent to the development site.</p> <p>Best practice pollution prevention guidance will be followed during construction and implemented via a CEMP</p>	None	Not significant

Table 8: Summary of effects, mitigation, enhancement measures and residual effects				
Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
		Raising ground levels to meet flood risk requirements and following appropriate SuDs design standards		
River Usk SAC and River Usk (Lower Usk) SSSI	<i>As detailed for Severn Estuary SPA, SAC, Ramsar, and SSSI</i>	<i>As detailed for Severn Estuary SPA, SAC, Ramsar, and SSSI</i>	None	Not significant
Gwent Levels – St Brides SSSI	No significant adverse effect on water quality of the reen system. Significant adverse effect on marshy grassland habitat from dust emissions in the absence of mitigation.	Dust mitigation plan to be implemented via CEMP	None	Not significant
Afon Ebbw River SINC	Significant adverse effect at the county scale on SINC habitats from dust generated during construction.	Dust mitigation plan to be implemented via CEMP	None	Not significant
Habitats				
Ephemeral and Short Perennial/Scattered Scrub Habitat (EPS/SS)	Significant adverse effect at the county scale from direct loss of habitat	Enhancement and management of retained EPS/SS within the on-site Habitat Enhancement Area (HEA) and off-site Additional Habitat Enhancement Area. Management specifications for a 20-year period	Any additional planting/seed mixes within the HEA and AHEA to include species native to UK and of local provenance	Not significant

Table 8: Summary of effects, mitigation, enhancement measures and residual effects				
Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
		will be detailed in Ecology Management Plans (EMP). Protection of retained scrub via BS 5837:2012 Trees in relation to design, demolition and construction.		
Japanese knotweed	Significant adverse effect at the local scale and potential contravention of legislation	Eradication programme to be implemented.	N/A	Not significant
<i>Species</i>				
Bats	Loss of foraging / commuting habitat & Increased disturbance from lighting – significant adverse effect at local scale	Protection of retained scrub via BS 5837:2012 Trees in relation to design, demolition and construction A 10m wide (0.5162 ha) unlit strip of scrub vegetation along the western edge of the site to be retained to ensure connectivity of remaining habitats on and off site Ensure that all lighting used during construction and during operation has minimal height and light spill, is directed away from the western	Erection 2 bat boxes on a pole within Habitat Corridor within the application area.	Not significant

Table 8: Summary of effects, mitigation, enhancement measures and residual effects				
Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
	Fragmentation and risk of collision no significant adverse effect.	<p>boundary. Lighting strategy for the development will be designed with measures to minimise impacts to local bat population (i.e. lighting which emits low levels of ultraviolet light and blue spectral content (use of lights with peak wavelengths higher than 550nm).</p> <p>Toolbox talk to be given to contractors and delivered via the CEMP.</p> <p>Appropriate management of retained habitats (i.e. structure and diversity of species) to maximise foraging potential for bats and delivered via an EMP.</p>		

Table 8: Summary of effects, mitigation, enhancement measures and residual effects				
Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
Breeding Birds	Disturbance during breeding season would contravene legislation	Vegetation clearance outside of bird breeding season (detailed in a CEMP). Retention of dense scrub areas within the Habitat Corridor to maintain habitat for Priority S7 species including whitethroat.	Erection of 2 bird boxes poles within Habitat Corridor within the application area	Not significant
Common Reptiles	Potential harm to individuals and contravention of legislation	Reasonable Avoidance Measures via a Precautionary Working Method Statement to be included within the CEMP	Creation of hibernacula and log piles within the HEA and AHEA.	Not significant.
Terrestrial Invertebrates	Potential loss of habitat	Compensate for habitat loss to the development site. Implementation of a 20-year management plan to retain EPS/SS within the HEA.	-	Not significant
Badgers	Potential harm and contravention of legislation	Pre-construction survey (as detailed in a CEMP).	None	Not significant
Otter	Potential harm and contravention of legislation	Pre-construction survey prior to works for outfall (as detailed in a CEMP).	None	Not significant

APPENDICES

Appendix 1
Technical Information to Inform Habitats Regulation Assessment

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT



ASSOCIATED BRITISH PORTS

**NEWPORT DOCKS - PROPOSED PLASTERBOARD
MANUFACTURING FACILITY**

TECHNICAL REPORT TO INFORM HABITATS REGULATION ASSESSMENT

JANUARY 2020

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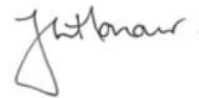
NEWPORT DOCKS – PROPOSED PLASTERBOARD MANUFACTURING FACILITY

TECHNICAL REPORT TO INFORM HABITATS REGULATION ASSESSMENT

JANUARY 2020

PREPARED BY:

Jo Honour Associate Director



REVIEWED AND APPROVED BY:

Ali Bennett Technical Director



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CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 METHODOLOGY	5
3 DESCRIPTION OF THE PROJECT	9
4 EUROPEAN SITES WITHIN 2KM OF THE PROJECT	11
5 STAGE 1 - LIKELY SIGNIFICANT EFFECT (LSE) SCREENING TEST	15
6 STAGE 2 - APPROPRIATE ASSESSMENT (AA)	28
7 HRA SUMMARY AND CONCLUSIONS	36

APPENDICES

Appendix 1	Figures 2 and 4 Extended Phase 1 Habitat Plan (Terrestrial Ecology)
Appendix 2	Figure 1 – Locations of Designated Sites (Site Location, Study Area and Desk Study Results)
Appendix 3	Extracts from Air Quality Assessment Report

DRAWINGS

	TITLE	SCALE
153091-STL-00-00-DR-A-ZZZZ-00002	Existing Site Location Plan	1:2500 @A1
153091-STL-00-00-DR-A-ZZZZ-01001	Proposed Site Plan	As indicated @A1

EXECUTIVE SUMMARY

Associated British Ports (ABP) are applying for planning permission for redevelopment of a site at Newport Docks for a 14,940m² Plasterboard Manufacturing Facility. This report, prepared by Wardell Armstrong LLP (WA), sets out the Habitat Regulations Assessment (HRA) Screening (Stage 1) and Appropriate Assessment (AA) (Stage 2) components of the HRA for the proposed development, which is centred on National Grid Reference ST 31347 84186.

The AA has concluded that disturbance effects (air emissions, noise, lighting, reduced water quality) can be mitigated by the implementation of construction industry best practice measures and through design and operational procedures of the manufacturing facility. Details of measures to be employed during the construction phase will be provided within a Construction Environmental Management Plan (CEMP). With the implementation of mitigation measures there will be no adverse disturbance effects arising from the project, or in combination with other developments, on the ecological integrity of the Severn Estuary Special Protection Area, Special Area of Conservation (SAC) and Ramsar and River Usk SAC.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Associated British Ports (ABP) are applying for planning permission for redevelopment of a site at Newport Docks for a 14,940m² Plasterboard Manufacturing Facility (PMF). Wardell Armstrong LLP (WA) have been commissioned by ABP to undertake a Habitat Regulations Assessment (HRA) in connection with the proposed scheme.

1.2 Site Location

1.2.1 The 4.5268 Hectares (ha) site is situated within the Alexandra Docks, Port of Newport. The planning application boundary for the site is shown on Drawing Number 153091-STL-00-00-DR-A-ZZZZ-00002 (Existing Site Location Plan). The site is located towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside a private access road that heads towards the head of the docks.

1.3 Summary of the Proposed Development

1.3.1 The PMF will comprise a simple warehouse-type structure enclosing production lines, conveyor belts, storage loading areas and hoppers. Externally parking and hardstanding. A strip of vegetation approximately 10m wide (approximately 0.5162 ha) will be maintained along the western boundary of the development site to maintain connectivity of habitats and an area of approximately 0.5620ha in the southern part of the planning application site will be maintained for ecological mitigation and enhancement. An additional 1.1287ha, located 500m to the north of the PMF is also not included within the planning application boundary but will be managed by the applicant to enhance biodiversity.

1.4 Habitat Regulations Consenting and Assessment Process

1.4.1 The requirement for an assessment of impacts on Natura 2000 sites is set out within Article 6 of the EC Habitats Directive 1992 and interpreted into British law by the Conservation of Habitats and Species Regulations 2018 (as amended). The aim of the Directive is to “*maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of Community interest*” (Habitats Directive, Article 2(2)). This aim relates to habitats and species, not the European sites themselves, although the sites have a significant role in delivering favourable conservation status.

- 1.4.2 The Habitats Directive applies the precautionary principle to European sites. Plans and projects can only be permitted having ascertained that there will be no adverse effect on the integrity of the site(s) in question. Plans and projects with predicted adverse impacts on European sites may still be permitted if there are no alternatives to them and there are Imperative Reasons of Overriding Public Interest (IROPI) as to why they should go ahead. In such cases, compensation would be necessary to ensure the overall integrity of the site network is maintained.
- 1.4.3 In order to ascertain whether or not site integrity will be affected, an assessment should be undertaken of the plan or project in question.
- 1.4.4 The phrase ‘Habitats Regulations Assessment’ (HRA) has come into use to describe the overall process set out in the Conservation of Habitats and Species Regulations from screening through to Imperative Reasons of Overriding Public Interest (IROPI). This has arisen in order to distinguish the process from the individual stage described in the law as an ‘appropriate assessment’ (AA). Throughout this report, we use the term HRA for the overall process and restrict the use of AA to the specific stage of that name.
- 1.4.5 The legislative basis for HRA is as follows:

Habitats Directive 1992, Article 6 (3) states that:

“Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives.”

The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018 state that:

“A competent authority, before deciding to ... give any consent for a plan or project which is likely to have a significant effect on a European site ... shall make an appropriate assessment of the implications for the site in view of that sites conservation objectives... The authority shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site”.

1.5 Scope and Structure of Report

- 1.5.1 This report, prepared by Wardell Armstrong LLP (WA), sets out the HRA Screening (Stage 1) and Appropriate Assessment (AA) (Stage 2) components of the HRA for the proposed development.

1.5.2 The objective of these assessments is to identify any aspects of the project that would cause ‘Likely Significant Effects’ (LSE) on the interest features of the Natura 2000 sites, specifically:

- Severn Estuary Special Protection Area (SPA) and Ramsar;
- Severn Estuary Special Area of Conservation (SAC); and
- River Usk SAC.

1.5.3 The report is set out as follows:

- Section 2: sets out the **methodology** of the assessment including the objectives and scope of the assessment, the collection of baseline data, the prediction of impacts and identification and quantification of Likely Significant Effect (LSE), including in-combination effects;
- Section 3: summarises the **project proposals** which comprise the proposed development works;
- Section 4: provides details of **European Sites within 2km** of the project.
- Section 5: presents an initial **screening** of European sites to identify those for which potentially significant effects are predicted;
- Section 6: presents the **assessment of the impacts – AA** for the project on the European sites screened into the HRA; and
- Section 7: provides details of the **conclusions** of the HRA on the European sites.

2 METHODOLOGY

2.1 Habitats Regulations Assessment (HRA)

2.1.1 HRA of projects can be broken down into three discrete stages, each of which effectively culminates in a test. The stages are sequential, and it is only necessary to progress to the following stage if a test is failed. The stages are:

Stage 1 – Likely Significant Effect (LSE) Screening Test

2.1.2 This is essentially a risk assessment, typically utilising existing data, records and specialist knowledge. The purpose of the test is to decide whether ‘full’ AA is required. The essential question is:

“Is the project, either alone or in combination with other relevant projects and plans, likely to result in a significant [adverse] effect upon European sites?”

2.1.3 If it can be demonstrated that significant effects are unlikely, no further assessment is required. As a result of the People over Wind C-323/17 (Court of Justice of European Union, 12 April 2018) the ECJ have clarified that *...it is not appropriate at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.*

2.1.4 The tasks undertaken to complete Stage 1 are:

- identification of European sites potentially affected by the proposed project;
- review of the proposed development works and identification of likely impacts;
- identification and consideration of other plans and projects; and
- an assessment of LSE.

Stage 2 – Appropriate Assessment (AA)

2.1.5 If it cannot be satisfactorily demonstrated that significant effects are unlikely, an “Appropriate Assessment” will be required. This is focussed entirely upon the designated interest features of the European sites in question. The essential question here is:

“Will the project, either alone or in combination with other relevant projects and plans, actually result in an adverse effect upon the integrity of any European sites, without mitigation?”

- 2.1.6 If it is concluded that significant adverse effects will occur, measures will be required to either avoid the impact in the first place, or to mitigate the ecological effect to such an extent that it is no longer significant. Note that, unlike standard Ecological Impact Assessment (EclA), compensation for adverse effects (i.e. creation of alternative habitat) is not permitted at the AA stage.

Stage 3 - Assessment of alternative solutions

- 2.1.7 The process examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the European designated sites.

Stage 4: Assessment of compensatory measures – Imperative Reasons of Overriding Public Interest (IROPI) Test

- 2.1.8 If a project will have a significant adverse effect upon a European site, and this effect cannot be either avoided or mitigated, the project cannot proceed unless it passes the IROPI test. In order to pass the test, it must be objectively concluded that no alternative solutions exist. The project must be referred to Secretary of State on the grounds that there are IROPI as to why the project should nonetheless proceed.

Confirming Other Plans and Projects That May Act ‘In Combination’

- 2.1.9 It is a requirement of the Regulations that the impacts of any plans or projects being assessed are not considered in isolation but in combination with other plans and projects that may also be affecting the European site(s) in question.

- 2.1.10 In this case the Newport Local Plan is considered as being the major point of information for the in-combination assessment. The following is an extract from the Newport HRA¹ which informed the Newport Local Plan and summarises the way development in Newport can potentially impact upon European sites. The effects are considered in detail in section 6.

“Urbanisation Impacts and Recreational: *Resulting from an expanding population within and around the Eastern Expansion Area, issues including disturbance from construction and an increased population, pollution (water, air, noise, light);*

Land take: *From proximal and adjacent development to European sites, including impacts on surrounding ‘buffer’ habitats/ green space areas not designated for European interest but part of wider habitats connectivity supporting site integrity*

¹ Habitats Regulations Screening Report, Newport City Council, Newport Local Development Plan 2011-2026, Adopted Version, January 2015. Produced by Newport City Council in conjunction with Atkins Limited.

(important when considering the features of the designated sites, e.g. otters require riparian habitat, bird features of the SPA and Ramsar require terrestrial habitat;

Water Resources and Water Quality: *Resulting from increased demand for water consumption and discharge requirements arising from new/ expanded housing and commercial developments and the potential for increased point source pollution, changes to surface water/ run-off which may have implications for water dependant sites; and,*

Atmospheric Pollution: *Arising from a growth in traffic and transport and general development (emissions from construction/ building). Policies that lead to development could result in an increase of oxides of nitrogen (NOx) and sulphur dioxide (SOx) “.*

2.2 Data Collection (Evidence Base)

Literature Review

2.2.1 The evidence base to inform the assessment has been derived from a review of published literature.

2.2.2 The key sources of published literature used to inform this assessment, in addition to the Newport Local Plan, are the various documents that were used to support the planning application for the proposed development. These sources:

- Wardell Armstrong LLP (WA), Associated British Ports, Plasterboard Manufacturing Facility, Ecological Impact Assessment, dated November 2019; and
- Thompson Environmental Consultants, Breeding Birds Survey, Newport Docks Plasterboard Factory, October 2019 (Appendix 4 of WA January 2020 EclA).

Field Surveys

Habitat Survey

2.2.3 WA has undertaken an EclA of the application area and identified measures which will be implemented to minimise the significance of effects on the habitats and species because of the proposed development.

2.2.4 The EclA provides the methodology and results Extended Phase 1 Habitat Surveys of the application site undertaken in 2019.

2.2.5 The Extended Phase 1 Habitat survey area included the terrestrial land within the proposed working area for the development is shown on Figures 2 and Figures 4 proved in Appendix 1.

Bird Surveys

2.2.6 The EclA provides the methodologies and results of a breeding bird survey undertaken by Thompson Environmental Consultants at the proposed development site in 2019.

2.3 Identification of Interest Features and Conservation Objectives

2.3.1 Information on the qualifying features of the European sites were obtained from the Joint Nature Conservation Committee (JNCC) website (www.jncc.gov.uk).

2.3.2 Conservation Objectives are documents which set out Natural Resources Wales targets for designated site which have been devised to protect and enhance the species or habitats that led to the site's European designation.

2.3.3 These are very lengthy documents and have not been incorporated into this report but have been reviewed to identify those Conservation Objectives which are relevant to this assessment.

2.4 Prediction of Impact

2.4.1 Predicted impacts are characterised in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM, 2018) *'Guidelines for Ecological Impact Assessment (EclA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.1.*

2.4.2 The CIEEM guidelines are considered by ecologists as the most appropriate methodology for predicting likely impacts on the qualifying features of European sites.

3 DESCRIPTION OF THE PROJECT

3.1 The Proposed Development

- 3.1.1 The planning application site occupies an area of approximately 4.5268 ha and comprises a facility with associated hardstanding (3.439ha), outfall (0.0096ha) and a 10m landscape buffer along the western boundary (0.5162ha) extending south to an area of land of 0.5620ha retained for ecological mitigation and enhancement. An additional 1.1287ha area of land within the Newport Docks area will also be managed for the benefit of ecological enhancements. The Proposed Site Plan is shown on Drawing Number 153091-STL-00-00-DR-A-ZZZZ-01001.
- 3.1.2 The main building of the proposed PMF will be over 202m in length at its longest point with a height of 12.5m to the ridge (9.2m to the eaves) and would occupy an area of approximately of 14,940m². There is also a tower element in the west of the building which has a maximum height of approximately 21m. The building will be approximately 110m at its widest point.
- 3.1.3 Plasterboard is produced by a process known as calcination which occurs within a tower contained within the industrial building. This involves a dehydration process of gypsum via heating. The operation will also include recycling of used plasterboards which are reintroduced into the early stages of the process after crushing and separation. The warehouse building will house production lines, conveyor belts, storage loading areas, two hoppers and two chimney flues. Covered and external storage areas/bays, hardstanding parking and administration office areas also form part of the proposals.
- 3.1.4 The majority of HGV movements are expected to be internal within the dock to transfer raw materials. This is predicted to be an average of 15 (30 two-way) HGV trips per day with part of these movements will relating to raw materials delivered to the site via the port.
- 3.1.5 An average of 10 (20 two-way) HGV trips are expected to arrive at the site from outside of the port and is expected to have a minimal impact on the local highway network when spread across the opening hours. In addition, the manufactured plaster will also generate HGV product trips and is predicted to be an average of 20 HGV (40 two-way) trips per day. The product deliveries will only occur during the traditional office working hours and can be scheduled to minimise impact on the local highway peak hours.

3.1.6 The site is located within a flood zone and a development platform will be created by raising the ground levels using sustainably sourced inert material to reduce the risk of flooding.

3.1.7 Surface water will be managed by a Sustainable Drainage System (SuDs) which will be designed to meet current Statutory SuDs Standards.

3.2 **Project Programme**

3.2.1 Construction works are anticipated to take in the region of 12 months and will be split into 2 phases:

- Phase 1 - Initial site clearance and preparation of development platform (approximate 10 weeks duration) to include:
 - Formation of contractor's site compound;
 - Site clearance and removal of existing vegetation and site obstructions;
 - Raising of site levels utilising imported engineered fill to achieve required flood protection;
 - Ground engineering stabilisation works to mitigate differential settlement;
 - Piled foundations and associated substructure work; and
 - Reinforced ground floor concrete slab.
- Phase 2 - Construction of industrial building, car parking, infrastructure and soft landscaping – (approximate 10-month duration).

4 EUROPEAN SITES WITHIN 2KM OF THE PROJECT

4.1.1 As detailed in the EclA, SEWBReC identified the Severn Estuary SPA, SAC and Ramsar and the River Usk SAC European nature conservation designations within 2km of the application site. A plan showing their boundaries in relation to the application area is shown on Figure 1 provided in Appendix 2.

4.1.2 A summary of reasons for the European site's designation is provided in paragraphs 4.1.5 to 4.1.6. Information on the conservation objectives for each site is detailed in paragraphs 4.2.1 to 4.2.3.

Severn Estuary SPA, SAC, Ramsar and the River Usk SAC

4.1.3 The Severn Estuary SPA, SAC, Ramsar site is located approximately 100m from the development site at its closest point. The Severn Estuary is designated for its marine habitats, fish species (refer to paragraph 4.1.6) and wintering bird populations it supports.

4.1.4 The Severn Estuary is also designated for the following habitats:

- Sandbanks which are slightly covered by sea water all the time (Severn Estuary SAC and Ramsar);
- subtidal sandbanks (SAC and Ramsar);
- Estuaries (SAC and Ramsar);
- Mudflats and sandflats not covered by seawater at low tide; intertidal mudflats and sandflats (SAC and Ramsar);
- Reefs/rocky platforms (SAC); and
- Atlantic salt meadows (SAC and Ramsar).

4.1.5 The River Usk SAC is located approximately 290m to the south of the development site. The River Usk is designated as a watercourse of plain to montane levels with the *Ranunculion fluitantis* (aquatic mosses) and *Callitriche-Batrachion* (water-starwort) vegetation. The River Usk is also an important site for otters *Lutra lutra* which is a qualifying feature of this designation along with fish species, as detailed in paragraph 4.1.6 below.

4.1.6 The following species are qualifying features of the Severn Estuary SAC, SPA, Ramsar and the River Usk SAC as listed below:

- Sea lamprey *Petromyzon marinus* (Severn Estuary SAC, Ramsar / River Usk SAC);
- River lamprey *Lampetra fluviatilis* (Severn Estuary SAC, Ramsar / River Usk SAC and SSSI);
- Atlantic salmon *Salmo salar* (Severn Estuary Ramsar / River Usk SAC);
- Twaité shad *Alosa fallax* (Severn Estuary SAC, Ramsar / River Usk SAC);
- European eel *Anguilla Anguilla* (Severn Estuary Ramsar);
- Allis shad *Alosa alosa* (Severn Estuary Ramsar / River Usk SAC);
- Sea trout *Salmo trutta* (Severn Estuary Ramsar);
- Bewick's swan (Non-breeding) *Cygnus columbianus bewickii* (Severn Estuary SPA and Ramsar)
- Common shelduck (Non-breeding) *Tadorna tadorna* (Severn Estuary SPA and Ramsar);
- Gadwall (Non-breeding) *Anas Strepera* (Severn Estuary SPA and Ramsar);
- Dunlin (Non-breeding) *Calidris alpina alpina* (Severn Estuary SPA and Ramsar);
- Common redshank (Non-breeding) *Tringa tetanus* (Severn Estuary SPA and Ramsar);
- Greater white-fronted goose (Non-breeding); *Anser albifrons albifrons* (Severn Estuary SPA, Ramsar); and
- Waterbird assemblage (Severn Estuary SPA and Ramsar).

4.2 Conservation Objectives of the Designated Sites

Severn Estuary SPA and SAC

4.2.1 The Conservation Objectives for the Severn Estuary SPA and SAC are intended to “ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features;*
- *The structure and function of the habitats of the qualifying features;*
- *The supporting processes on which the habitats of the qualifying features rely;*
- *The populations of the qualifying features; and*

- *The distribution of the qualifying features within the site”.*

Severn Estuary Ramsar

- 4.2.2 There are no specific Conservation Objectives for the Severn Estuary Ramsar site listed on the citation. However, Ramsar sites are designated under the Convention on Wetlands of International Importance with broad objectives to stem the loss and progressive encroachment on wetlands now and in the future. As several features of the Ramsar overlap with those of the Severn Estuary SPA and SAC, the conservation objectives for would be the same as for these designations.

River Usk SAC

- 4.2.3 Below is an extract from the Core Management Plan (March 2008) for the River Usk SAC. It provides a descriptive overview of what needs to be achieved for conservation on the site.

Extract:

“Our vision for the River Usk SAC is to maintain, or where necessary restore the river to high ecological status, including its largely unmodified and undisturbed physical character, so that all of its special features are able to sustain themselves in the long term as part of a naturally functioning ecosystem. Allowing the natural processes of erosion and deposition to operate without undue interference and maintaining or restoring connectivity maintains the physical river habitat, which forms the foundation for this ecosystem. The quality and quantity of water, including natural flow variability, and the quality of adjacent habitats, are maintained or restored to a level necessary to maintain the features in favourable condition for the foreseeable future. In places such as urban environments where natural processes are likely to cause significant damage to the public interest, artificial control measures are likely to be required.

The aquatic plant communities that characterise parts of the river are not only attractive but also give a good indication of the overall quality of the environment. They contain the variety and abundance of species expected for this type of river, in conditions of suitably clean water and bed substrate combined with a relatively stable flow regime. Locally, there are patches of white-flowered water-crowfoots. In the more shaded reaches, aquatic plants may be scarce, consisting mainly of mosses and liverworts.

The special fish species found in the river, both residents such as the bullhead and brook lamprey, and migratory species such as the Atlantic salmon, sea lamprey and shad, which swim up river to spawn and go through their juvenile stages in the river, are present in numbers that reflect a healthy and sustainable population supported by well-distributed good quality habitat. The migratory fish are able to complete their

migrations and life cycles largely unhindered by artificial barriers such as weirs, pollution, or depleted flows.

The abundance of prey and widespread availability of undisturbed resting and breeding sites, allows a large otter population to thrive. They are found along the entire length of the river and its main tributaries.

The presence of the River Usk SAC and its special wildlife enhances the economic and social values of the area, by providing a high quality environment for ecotourism, outdoor activities and peaceful enjoyment by local people and visitors. The river catchment's functions of controlling flooding and supplying clean water are recognised and promoted through appropriate land management. The river is a focus for education to promote increased understanding of its biodiversity and the essential life support functions of its ecosystems."

5 STAGE 1 - LIKELY SIGNIFICANT EFFECT (LSE) SCREENING TEST

5.1 Likely Significant Effect (LSE) Screening Test

5.1.1 The aim of the LSE test is to determine whether the project either alone, or in combination with other plans and projects, is likely to result in a significant effect on the qualifying features of European designated sites. The key questions asked are:

- Would the effect undermine the conservation objectives for the site?
- Can significant effects be excluded on the basis of objective information?

5.2 Review of Project and Identification of Likely Impacts

5.2.1 In broad terms, predicting potential impacts has involved assessing the activities associated with the construction and operational phases of the proposed development against the conservation objectives of relevant European sites that fall within 2km of the works area.

5.3 Identification and Consideration of Other Plans and Projects that May Act ‘In Combination’.

5.3.1 In-combination effects of the proposed works will be dealt with by consideration of both the construction and operation of the proposed development and the cumulative impact sites.

5.3.2 In summary, 6 schemes have been identified. Details of cumulative impact sites and their potential significant effects on the Severn Estuary and River Usk European designations are listed in Table 1 below.

Table 1: Cumulative Impact Sites			
Planning Reference Application	Approximate Distance and Direction from Application Site	Brief Project Description	Summary of Potential Cumulative Impacts
NCC18/0911 (previous application references: 10/1238, 15/1050, 17/1185)	350m to north	Development of bulk drying and pelleting facility with onsite energy centre and associated works.	Project identified potential cumulative air quality emissions (point source) and water quality, but none predicted after mitigation (via Environmental Permit process).

Table 1: Cumulative Impact Sites			
Planning Reference Application	Approximate Distance and Direction from Application Site	Brief Project Description	Summary of Potential Cumulative Impacts
NCC15/0775	2km to the north	Construction of 529no Residential Units 24 No. Assisted living units, pub/restaurant, retail units, primary school and associated landscape and highway infrastructure.	No significant adverse effects to air quality from traffic emissions identified for human health.
NCC14/1172	1.4km to the north	Installation and operational of a small biomass gasification plant processing untreated wood into a producer gas, to produce 280kWe of electrical energy and 400 km of thermal energy.	Biomass Plant has a thermal output no greater than 400kw - below the threshold for an Environmental Permit. No significant effects for ecology identified.
NCC18/0360	1.25km to northwest	Erection of an asphalt plant and associated ancillary development	With implementation of pollution control measures risks of adverse effects to controlled waters will be mitigated.
DML1 636v1 (Marine Licencing).	Newport Dock - to east	Application for renewal of a non-EIA Marine Licence for the maintenance and dredge disposal at Newport Docks.	Potential impacts on water quality from dredged silt but mitigation proposed.

5.4 Severn Estuary SPA, SAC, Ramsar Usk SAC

5.4.1 The proposed development has the potential to impact directly on the qualifying features (habitats and species) for which sites are designated, through habitat loss, disturbance from noise, vibration and light, changes to air quality and dust emissions levels and reducing water quality through contamination. Impacts arising from the development are associated with the construction (including piling activities) and

operational phases as outlined below.

Effects on Qualifying Features from Habitat loss

- 5.4.2 No habitats within the designations (estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows, sandbanks which are slightly covered by seawater all the time, reefs) will be lost as a result of the proposed development therefore no LSE on the qualifying habitats of the designations are expected.
- 5.4.3 There is no intertidal feeding area for birds within the development site therefore there will be no LSE on the qualifying bird species of the SPA and Ramsar from habitat loss alone, or in combination with other plans or projects.
- 5.4.4 No habitats within the Severn Estuary or River Usk will be lost as a result of the proposed development therefore there will be no LSE on the qualifying fish species of the designation sites from habitat loss during the construction of the proposed development.
- 5.4.5 Saltmarsh and scrub habitat border the development site to the west and may provide suitable otter habitat but as there will be no loss of riparian otter habitat to construct the proposed development. No LSE on otter using the River Usk SAC is therefore predicted.
- 5.4.6 It is therefore considered that the construction and operational phases of the development will not directly affect the qualifying features of the European designations in terms of habitat loss and is not considered further for assessment.

Disturbance to Qualifying Species from Noise and vibration

- 5.4.7 Sudden high levels of noise, in particular from piling or concrete breaking operations have the potential to cause disturbance to birds during construction. A bird's ability to respond to disturbance varies depending on the species, flock size, habitat, cold weather and food availability. The frequency of the disturbance event will also affect the extent to which birds using the SPA and Ramsar can habituate to noise. The severity of this temporary adverse impact will also depend on the timing of the construction works and is considered to be of greater significance if construction is undertaken between November and February.
- 5.4.8 The operation of the PMF has the potential to generate noise, which could affect the birds using the SPA and Ramsar.

5.4.9 Underwater noise and vibration caused by construction activities has the potential to disturb fish species which could adversely affect their migration and otter if using the designated sites. However, as the development site is not located immediately adjacent to the Severn Estuary and River Usk designations and construction including piling will not take place within or immediately adjacent to these watercourses or banks and mudflats, there will be no significant adverse effect on these species from noise or vibration during construction of the development.

5.4.10 It is therefore considered that noise impacts during the construction and operational phases of the development could potentially give rise to LSE on the qualifying features of the SPA and Ramsar and therefore noise and vibration effects are considered further through Stage 2 - AA.

Effects to Qualifying Species from Dust

5.4.11 There is potential that construction activities, such as the breakup and removal of hard ground, could generate elevated levels of dust beyond the site boundary and directly affect flora and qualifying habitats within the European designations by covering vegetation and reducing the plants ability to photosynthesise and other biological functions. This could also indirectly affect the SPA and Ramsar birds that are using these habitats for foraging and breeding and potentially otter if using riparian habitat.

5.4.12 As described in the Air Quality report² the impacts associated with dust during the construction phase of the development have been assessed in accordance with Institute of Air Quality Management Guidance³.

5.4.13 With regards to ecological receptors, the guidance states that an assessment will normally be required where there are existing ecological receptors within 50m of a site boundary and/or within 50m of the route(s) used by construction vehicles on the public highway and up to 500m from a site entrance(s). As there are no European designations within the distances described above, no LSE from dust emissions on the European designations are predicted.

² Hawkins Environmental, Air Quality Assessment, ABP New Manufacturing Plant, Newport, Stroma Built Environment Ltd, 23rd January 2020.

³ Institute of Air Quality Management (IAQM) Guidance on “The Assessment of Dust from Demolition and Construction” February 2014.

Disturbance to Qualifying Species from Lighting

- 5.4.14 Increased light levels during the construction and operational phases of the development have the potential to disturb otters and wintering birds which may use the European designations, if works are undertaken during hours of darkness between November and February, although the vegetation along the western boundary will provide some screening of light levels during the construction and operational phases of the development.
- 5.4.15 This could result in a LSE to wintering birds using the European designations.
- 5.4.16 The impacts of increased light levels upon the qualifying bird species and otter of the Severn Estuary SPA and Ramsar and River Usk SAC from the proposed development during the construction and operational phases will therefore be considered further through Stage 2 - AA.

Effects upon Qualifying Features from Adverse Water Quality

- 5.4.17 The proposed development site is located close to the River Ebbw which joins the River Usk before flowing into the Severn Estuary. Given the proximity of the Severn Estuary and River Usk designations and connectivity via the River Ebbw there is potential for oils and other materials such as cement, concrete, paints and solvents to enter the marine environment during the construction and operational phases resulting in reduced water quality and damage to habitats of the designated sites. This could result in a LSE on the habitat condition of the designations. In addition, fish, wintering birds and otter using the habitats of the designated sites could subsequently be adversely affected from contaminants resulting in LSE on these species.
- 5.4.18 The proposed development is located within a zone identified as being at risk of flooding. A Flood Consequence Assessment (FCA) has been undertaken to accompany the planning application for the proposed development and mitigation involves the raising of the ground level in localised areas by up to 2m to give a Final Finished Level (FFL) of 9.63m.
- 5.4.19 Water quality of surface run off may be reduced during the operational phase however the Sustainable Urban Drainage System (SuDS) will be designed and built in accordance with statutory national standards.

5.4.20 With the implementation of raising ground levels and following appropriate design standards, no LSE on water quality of the designated sites is considered likely during the operational phase of the development.

5.4.21 The impacts of potential contamination on the qualifying habitats and species of the Severn Estuary SPA, SAC and Ramsar and River Usk SAC during the construction phase only will therefore be considered further through Stage 2 - AA.

Effects upon Qualifying Features from Air Quality Impacts

5.4.22 The estuary, intertidal mud and sand and Atlantic salt meadow/salt marshes are habitats which are qualifying features of the Severn Estuary SAC. These habitats provide feeding, breeding and roosting habitat for designated bird interests of the Severn Estuary SAC, SPA and Ramsar. The estuary also provides migratory, breeding and foraging habitat for designated fish interests of the Severn Estuary SAC, Ramsar and River Usk SAC. In addition, the otter, which is a qualifying feature of the River Usk SAC may feed on the fish which use the River Usk SAC designation.

5.4.23 The PMF plant will have four flues, two for the drying process and two for the calcination process. These two processes have the potential to emit nitrogen oxide (NOx) emissions from the PMF plant flues which may result in adverse air quality impacts on the qualifying features of a designated site.

5.4.24 Emissions of NOx can cause harmful effects to vegetation/habitats in gaseous form (dry deposition) and through its impact from deposition (wet deposition). There is no published evidence for any toxic effect of NOx on fauna therefore direct effects on animals other than the impact upon habitats that the species depend on are considered in ECIAs.

Summary of LSE Screened In/Out

5.4.25 Based on the development proposals and the information on the European sites within Section 4, Table 2 overleaf summarises the LSE which have been screened in /out of further assessment for the Severn Estuary SPA, SAC and Ramsar and the River Usk SAC.

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
Severn Estuary SPA (and component SSSI)	Gadwall	Habitat Loss and Fragmentation.	No – no LSE to SPA birds as no important foraging or roosting habitat will be lost.
	Greater white-fronted goose		
	Dunlin	Temporary disturbance to qualifying birds from construction noise. Disturbance to qualifying birds from operational noise. Dust emissions during piling / construction activities. Dust emissions during operational phase. Increased light levels have the potential to temporarily disturb wintering birds if the construction works are undertaken during hours of darkness between November and February. Increased light levels have the potential to disturb wintering birds if lighting is not directed away from the western boundary.	YES – there is potential for a LSE on all qualifying bird species. YES – there is potential for a LSE on all qualifying bird species. No–LSE on nearby foraging /roosting habitats which could potentially be used by qualifying birds. No LSE on nearby foraging /roosting habitats which could potentially be used by qualifying birds. YES – there is potential for a LSE on all qualifying bird species during construction phase. YES – there is potential for LSE on qualifying birds during the operational phase of the development.
	Bewick’s swan		
	Common shelduck		
	Common redshank		
	Over wintering bird assemblage		

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
		Changes to water quality during construction activities affecting qualifying habitats and species.	Yes – potential for accidental contamination during construction affecting qualifying habitats and species.
		Changes to water quality during operational phase of the development affecting qualifying habitats and species.	No - with the implementation of raising ground levels and following appropriate design standards, no LSE on water quality and the qualifying features of the designated site is considered likely during the operational phase of the development.
Severn Estuary SAC	Estuaries Mudflats and sandflats Atlantic salt meadows Sea lamprey River lamprey Twaite shad	Habitat Loss and Fragmentation.	No – SAC boundary is 100m to the west of the development site & no direct loss of Qualifying habitats.
		Dust emissions during piling / construction activities.	No potential for LSE on flora and habitats.
		Dust emissions during operational phase.	No potential for LSE on flora and habitats
		Changes to water quality during construction activities affecting qualifying habitats and species.	YES – there is potential for LSE on qualifying features.

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
		Changes to water quality during operational phase of the development affecting qualifying habitats and species.	No - with the implementation of raising ground levels and following appropriate design standards, no LSE on water quality and the qualifying features of the designated site is considered likely during the operational phase of the development.
		Changes to air quality during operational phase of the development affecting qualifying habitats and species.	YES – there is potential for a LSE on qualifying habitat and fauna species which use the notified habitats as foraging, breeding, roosting and migratory habitat.
Severn Estuary Ramsar	Sandbanks Estuaries Mudflats and sandflats Atlantic salt meadows Atlantic salmon Sea trout Sea lamprey River lamprey Allis shad Twaite shad	Direct loss of habitat	No – Ramsar boundary is 100m to the west of the development site and no direct loss of qualifying habitats
		Temporary disturbance to Ramsar qualifying features from construction noise and vibration	YES – there is potential for a LSE for all qualifying Ramsar bird species.

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
	Eel	Disturbance to qualifying birds from operational noise.	YES – there is potential for a LSE on all qualifying bird species.
	Waterfowl (peak counts in winter)		
	Tundra swan	Dust emissions during piling / construction activities.	No potential for LSE on habitats which could potentially be used by qualifying species.
	Greater white-fronted goose		
	Common shelduck		
	Gadwall		
	Dunlin		
Common redshank	Dust emissions during operational phase.	No potential for LSE on nearby foraging /roosting habitats which could potentially be used by qualifying birds.	
Lesser black-backed gull (breeding season)			
Ringed plover (peak count spring/autumn)	Increased light levels have the potential to temporarily disturb wintering birds if the construction works are undertaken during hours of darkness between November and February.	YES – there is potential for a LSE on all qualifying bird species during construction phase.	
Teal (peak counts in winter)			
Northern pintail (peak counts in winter)			
Allis shad			
Twaite shad			
River lamprey			
Sea lamprey	Increased light levels have the potential to disturb wintering birds if lighting is not directed away from the western boundary.	YES – there is potential for LSE on qualifying birds during the operational phase of the development.	
	Changes to water quality during construction activities affecting qualifying habitats and species.	YES – there is potential for LSE on qualifying features during construction phase.	

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
		Changes to water quality during operational phase of the development affecting qualifying habitats and species.	No - with the implementation of raising ground levels and following appropriate design standards, no LSE on water quality and the qualifying features of the designated site is considered likely during the operational phase of the development.
		Changes to air quality during operational phase of the development affecting qualifying habitats and species.	YES – there is potential for a LSE on qualifying habitat and fauna species which use the notified habitats as foraging, breeding, roosting and migratory habitat.
River Usk SAC	Water courses of plain to montane levels with the <i>Ranunculon fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation Sea lamprey Brook lamprey River lamprey Twaite shad Atlantic salmon Bullhead Otter	Direct loss of habitat and Fragmentation	No – SAC boundary is 0.18km to the south east of the development site & no direct loss of qualifying habitats.
		Temporary disturbance to qualifying species from construction noise and vibration.	No – construction works including piling works will avoid works to the River Usk.

Table 2: Summary of Screening Likely Significant Effects			
Designated Site	Relevant Qualifying Feature	Potential Impact	Likely Significant Effect either alone or in-combination in the absence of Mitigation?
	Allis shad	Disturbance to qualifying species during operational phase from construction noise and vibration.	No – no LSE from operational noise will arise to qualifying species.
		Dust emissions during piling / construction activities.	No potential for LSE on qualifying habitats and species.
		Dust emissions during operational phase.	No potential for LSE on qualifying habitats and species.
		Changes to water quality during construction activities affecting qualifying habitats and species.	YES – there is potential for LSE on qualifying features during construction phase.
		Changes to water quality during operational phase of the development affecting qualifying habitats and species.	No - with the implementation of raising ground levels and following appropriate design standards, no LSE on water quality and the qualifying features of the designated site is considered likely during the operational phase of the development.
		Changes to air quality during operational phase of the development affecting qualifying habitats and species.	YES – there is potential for a LSE on qualifying habitat and fauna species which use the notified habitats as

Table 2: Summary of Screening Likely Significant Effects			
<i>Designated Site</i>	<i>Relevant Qualifying Feature</i>	<i>Potential Impact</i>	<i>Likely Significant Effect either alone or in-combination in the absence of Mitigation?</i>
			foraging, breeding, roosting and migratory habitat.

6 STAGE 2 - APPROPRIATE ASSESSMENT (AA)

6.1.1 The following aspects of a proposed development which may affect a European site should be included in the scope of assessment:

- All works within the designated site boundary; and
- Construction and operational phases of the development outside of the designated site boundary but linked through a known 'pathway' (discussed below).

6.1.2 Briefly, 'pathways' are routes by which a change in activity associated with a development can lead to an effect upon a European site which is not directly connected with or necessary to the management of the European site.

6.1.3 The Severn Estuary SPA, SAC and Ramsar and the River Usk SAC are screened into the AA because the LSE Screening Test concludes that the construction and operation of the proposed development could result in LSE from disturbance effects (noise, water pollution and lighting) and air quality emission effects on the designations. The severity of these effects, and proposed mitigation is discussed below.

6.2 Assessing the Impacts (in combination)

6.2.1 The HRA LSE Screening test considered whether the impacts arising from the construction and operation of the proposed development are likely to significantly affect the qualifying features of the European sites identified within 2km of the site. The following sections details the further analysis undertaken against the conservation objectives for the Severn Estuary SPA, SAC and Ramsar and the River Usk SAC to determine whether the likely significant effects identified will “ *actually result in an adverse effect upon the integrity of any European site, without mitigation*”, either alone or in combination with other plans or projects.

Disturbance to Qualifying Species from Noise and Vibration

Birds

6.2.2 Although distances of 200m have been recorded for some bird species, evidence reported indicates that water birds generally show a flight response to construction activities and presence of people on the foreshore at distances of between 20m and

100m (IECS, 2009⁴). However, birds can habituate to regular noise resulting from piling activity after a short period (ERM, 1996⁵; ABP Research, 2001⁶). It is therefore considered that there will be a short-term LSE whilst water birds using the designations become habituated to construction noise. No other construction works are proposed within 200m of the designations which could contribute to in-combination effects upon the qualifying features of the designations.

- 6.2.3 The operation of the PMF has the potential to generate noise, which could affect the birds using the European designations. A noise assessment has been prepared by Hunter Acoustics⁷ for the PMF. The noise report included modelling noise levels both during the daytime and night-time periods for the operational phase of the development. The noise contour plan, Figure 5.1 (Noise Map 5.1 NM1: Daytime LAeq,1hr Levels at 4.0m Above Local Ground Height) in the noise report shows the daytime modelled noise levels within and around the site. Figure 5.2 (Noise Map NM2: Night LAeq,15min Levels at 4m Above Local Ground Height) shows the results of the modelled night-time noise levels and how they propagate around the site.
- 6.2.4 From a review of Figure 5.1, the ambient day time noise levels along the eastern bank of the River Ebbw closest to the development site during the operational phase are predicted to lie between 50 dB LAeq and 55 dB LAeq. Figure 5.2 indicates that night-time noise levels during the operational phase will be between 50 and 55 dB LAeq along the eastern bank of the River Ebbw closest to the development site.
- 6.2.5 In the document published by the University of Hull Institute of Estuarine and Coastal Studies “*Construction and Waterfowl Defining Sensitivity, Response, Impacts and Guidance*”⁸ a ‘low level noise event’ as one which is under 55dB at the bird’s location. i.e. those events unlikely to cause disturbance in water birds using intertidal habitats.
- 6.2.6 As the proposed modelled noise levels for both the day and night-time periods are predicted to be 55 dB (A) or below along the eastern boundary of the River Ebbw, no

⁴ Construction and waterfowl: Defining Sensitivity, Response Impacts and Guidance Institute of Estuarine and Coastal Studies Report to Humber INCA.

⁵ ERM (1996). South Humber Power Station, Pyewipe, Bird Monitoring Study, April 1996.

⁶ ABP Research (2001). ABP Grimsby & Immingham, Immingham Outer Harbour Environmental Statement, ABP Research and Consultancy Ltd, Research Report No. R.903.

⁷ Hunter Acoustics, Noise Impact Assessment, Manufacturing Facility, 5328/NIA1- 23rd January 2020.

⁸ University of Hull Institute of Estuarine and Coastal Studies, Report to Humber INCA “*Construction and Waterfowl Defining Sensitivity, Response, Impacts and Guidance*”, February 2009.

significant adverse effects on the bird species using the European designations during the operational phase or in combination effects are predicted.

Fish

- 6.2.7 Underwater noise and vibration caused by construction activities has the potential to disturb fish species which could adversely affect their migration. However, as the development site is not located immediately adjacent to the Severn Estuary and River Usk designations and construction including piling will not take place within or immediately adjacent to these watercourses or banks and mudflats, there will be no significant adverse effect on these species from noise or vibration during construction of the development.

Disturbance to Qualifying Features from Lighting

- 6.2.8 Increased light levels have the potential to temporarily disturb foraging and roosting wintering birds using the Severn Estuary SPA and Ramsar, if the construction works are undertaken during hours of darkness between November and February. There is also potential for in combination effects if lighting is used at other cumulative impact sites at the same time.

Avoidance and mitigation measures

- 6.2.9 There will be no night-time working between November and February or during periods of extreme cold weather due to potential adverse effects on SPA and Ramsar birds. The lighting scheme for the operational phases of the development will ensure lighting is directed away from the western boundary.

Significance of effect after mitigation

- 6.2.10 With the condition of the no night-time working between November and February or during periods of extreme cold weather will implemented via the CEMP and with the lighting scheme for the development delivered via the planning application there will be no significant adverse lighting effects arising from the project alone or in combination with other cumulative impact sites on the ecological integrity of the Severn Estuary SPA and Ramsar.

Water quality

- 6.2.11 The proposed development site lies outside of the boundary of the designations, however given their proximity and connectivity via the River Ebbw, there is the potential for water quality to be reduced through contamination during construction.

There is also potential for in-combination effects from construction activities at cumulative impact sites if undertaken at the same time.

6.2.12 Water pollution/reduced water quality could adversely affect:

- Structure and function of qualifying natural habitats and habitats of qualifying species (i.e. increasing turbidity of water column, contaminating habitat and food sources, or affecting populations that may act as food sources of SPA and Ramsar qualifying features);
- Supporting processes on which qualifying natural habitats and habitats of qualifying species rely (i.e. smothering habitat/vegetation which could be used by SPA and Ramsar qualifying species);
- Populations of qualifying species (i.e. altering habitats and food sources affecting breeding/survival rates of SPA and Ramsar qualifying features); and
- Distribution of qualifying species within the designation (i.e. avoidance of breeding/foraging/roosting habitat).

Avoidance and mitigation measures

6.2.13 Water pollution will be minimised and controlled through construction activity method statements and risk assessments which will follow construction industry best practice guidance such as those described in 'Guidance for Pollution Prevention: Works and Maintenance in or near Water' (GPP5⁹).

6.2.14 All plant will be well maintained to limit leakage from engines or hydraulic systems. Spill kits will be carried to contain any accidental releases. Refuelling will be undertaken in designated areas where any spills can be contained. Pumps and other similar equipment will be placed on drip trays with refuelling undertaken following strict procedures for spill control.

6.2.15 Chemicals and other construction materials will be stored and contained in areas where they will not be easily mobilised to reach the water. Procedures for the use of specific materials will be developed to reduce the risk of accidental release and ensure that water quality is appropriately protected.

⁹ Natural Resources Wales (NRW), the Northern Ireland Environment Agency (NIEA) and the Scottish Environment Protection Agency (SEPA). *Guidance for Pollution Prevention: Works and Maintenance in or near Water; Version 1.2, February 2018.*

6.2.16 Construction staff will remain within the works area and vehicles will be parked away from the River Ebbw.

6.2.17 All the above measures will be specified in a CEMP for the construction works.

Significance of effect after mitigation

6.2.18 Adverse effects from water pollution on the qualifying features of European designations will be successfully mitigated with the implementation of best practice pollution control measures with reference to current industry standard guidance. In addition, as best practice pollution control measures for the construction phases of development would need to be implemented for any cumulative sites, there will be no LSE from water quality on the ecological integrity of the Severn Estuary SPA, SAC and Ramsar and River Usk SAC from the development alone or in combination with other cumulative impacts sites.

Air Quality

6.2.19 A long-term (annual average) critical level of $30\mu\text{g}/\text{m}^3$ for gaseous emissions of NO_x is set in the European Union Ambient Air Quality Directive. Below this critical level, no significant harmful effects to vegetation from atmospheric NO_x are considered to occur.

6.2.20 A critical load relates to the potential effects of pollutant deposition and levels are set for nitrogen deposition which leads to eutrophication, and acid deposition which leads to acidification of soils and freshwater. The potential effects to vegetation/habitats from nitrogen deposition (measured in units of kilogrammes of nitrogen per hectare per year ($\text{kg N}/\text{ha}/\text{year}$)) varies with habitat sensitivity. Nitrogen can also contribute to acid deposition.

6.2.21 The Air Quality Information System (APIS)¹⁰ provides information on critical loads for habitat types. The air quality assessment has applied a critical deposition level for nitrogen deposition as $20\text{kg}/\text{ha}/\text{year}$ as the lower bound of the range quoted for the saltmarsh component of the Severn Estuary, a qualifying feature of the Severn Estuary SAC. The saltmarsh provides potential suitable habitat for qualifying bird species of the Severn Estuary SAC, SPA and Ramsar.

¹⁰ www.apis.ac.uk

- 6.2.22 The River Usk SAC is designated as a watercourse of plain to montane levels with the *Ranuncion fluitantis* (aquatic mosses) and *Callitricho-Batrachion* (water-starwort) vegetation which is associated with upstream freshwater habitats. As the section of the river in close proximity to the development site comprises an estuarine environment, effects on this habitat have been scoped out of the assessment. The qualifying fish species associated with the Severn Estuary SAC, Ramsar and River Usk SAC are associated with the estuary feature of the designations however an extract from the Severn Estuary citation¹¹ states that “*the high natural turbidity levels across most of the estuary lead to a conclusion that the estuary is not considered vulnerable to changes in nutrient loading*” therefore effects on the fish species associated with the estuary feature of the designated sites is scoped out for further assessment in this HRA.
- 6.2.23 Air quality modelling has been carried out to predict pollutant concentrations due to emissions of NO_x at designated sites with reference to The Institute of Air Quality Management’s (IAQM) *Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites* published in June 2019.
- 6.2.24 The air quality report¹² details the results of a screening assessment undertaken to identify the risk of the possibility of significant adverse effects on a statutory designation which could undermine the achievement of the designation’s conservation objectives. For statutory sites, if the modelled Process Contribution (PC) at the identified ecological receptor point is more than 1% of the air quality objective (critical level for atmospheric pollution) or critical load (deposition rate), an Appropriate Assessment may be required. The IAQM guidance also states: “*The Environment Agency risk assessment guidance states that if the Predicted Environmental Concentrations (PEC)*¹³ *is less than 70% if the long-term criterion it can be deemed insignificant regardless of the PC*”.
- 6.2.25 A worst case approach of modelling an emission rate of 35mg/m³ NO_x for each flue has been used in the air quality assessment. The air quality assessment has calculated the PC and Predicted Environmental Concentrations (PEC) to identify if critical levels

¹¹ The Severn Estuary, European Marine Site, Natural England & The Countryside Council for Wales’ advice given under Regulation 33(2)(a) of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended. June 2009.

¹² Hawkins Environmental, Air Quality Assessment, ABP New Manufacturing Plant, Newport, 22nd January 2020.

¹³ PEC is a term used in Air Quality Assessments of industrial processes to describe the concentration of deposition (i.e. process contribution (PC) plus the baseline i.e. background levels).

or critical loads for NO_x are exceeded at a total of 15 ecological receptor (ER) points. The ecological receptor points cover points within the Severn Estuary SAC and SSSI, River Usk SAC and SSSI and the Gwent Levels SSSI as shown on the air quality report Figure 8.1 provided within Appendix 3 of this report. The calculated PC and PECs for the 15 ER points are shown in Tables 8.1 (PC) and 8.2 (PEC) in the air quality report. Tables 8.1 and 8.2 from the air quality report are provided within Appendix 3.

Assessment of effects of Atmospheric Emissions of NO_x

6.2.26 From review of Table 8.1 (Appendix 3), the PCs for NO_x for all 15 ERs ranged between 0.23 µg/m³ and 1.46 µg/m³ and an exceedance of more than 1% of the critical level for atmospheric NO_x (µg/m³) is recorded for ER points ER1, ER2, ER3, E4, ER5, ER6, ER7, ER9, ER11, ER12, ER13 and ER14 and ER15 and therefore are screened in for further assessment. For ER points ER8 and ER9, the predicted PC at these locations is below the 1% critical level for atmospheric NO_x (µg/m³) and therefore are screened out for further assessment as no LSE is predicted at these locations.

6.2.27 Table 8.2 provided in Appendix 3 shows that the PECs of NO_x µg/m³ across all 15 ER points range between 17.23 µg/m³ and 23.83 µg/m³. Whilst the 70% long-term criterion is exceeded for the ER points ER2 (78.57%), ER3 (79.03%), ER4 (79.43%), ER7 (76.73%), ER8 (75.53%), ER14 (76.37%) and ER15 (76.33%), all PECs modelled are below the critical load for NO_x of 30 µg/m³, therefore no LSE from atmospheric emissions of NO_x from the operation of the PMF on vegetation within the European statutory designations is predicted.

Assessment of effects of Nitrogen Deposition- Dry Deposition NO_x kg/ha/year

6.2.28 The modelled PC contributions for dry deposition of NO_x kg/ha/year range between 0.14 kg/ha/year to 0.89 kg/ha/year. There are exceedances of the 1% critical load of 20 kg/ha/year because the PC percentage of critical loads range between 0.70% to 4.45%. Although the 1% of the critical load criteria is exceeded for the PC for all ER points except ER10 (0.70%), a review of the PEC results in Appendix 3 indicates that none exceed the 70% long-term criterion as the percentages of PEC critical load for NO_x kg/ha/year for all 15 ER points range between 46.0% to 48.25% i.e. no LSE from dry deposition of NO_x kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC.

Assessment of effects of Nitrogen Deposition- Wet (Acid Deposition) NO_x (kq/ha/year)

6.2.29 The modelled PC contributions for wet deposition of NO_x kg/ha/year range between 0.09 kg/ha/year to 0.55 kg/ha/year. There are exceedances of the 1% critical load of 20 kg/ha/year because the PC percentage of critical loads range between 0.45% to 2.75%. Although the 1% of the critical load criteria is exceeded for the PC for all ER points except ER7 (0.65%), ER9 (0.45%), ER10 (65%), ER14 (0.50%), ER15 (0.70%), a review of the PEC results in Appendix 3 indicates that none exceed the 70% long-term criterion as the percentages of PEC critical load for NO_x kg/ha/year for all 15 ER points range between 46.00% to 48.25% i.e. no LSE from wet deposition of NO_x kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC.

Assessment of effects of Total Nitrogen Deposition- NO_x (kg/ha/year)

6.2.30 The modelled PC contributions for total deposition of NO_x kg/ha/year range between 0.27 kg/ha/year to 1.44 kg/ha/year. There are exceedances of the 1% critical load of 20 kg/ha/year because the PC percentage of critical loads range between 1.35% to 7.20%. Although the 1% of the critical load criteria is exceeded for the PC for all ERs, a review of the PEC results in Appendix 3 indicates that the none exceed the 70% long-term criterion as the percentages of PEC critical load for NO_x kg/ha/year for all 15 ER locations range between 46.65% to 52.70% i.e. no LSE from total nitrogen deposition of NO_x kg/ha/year is expected on the saltmarsh component of the estuary feature of the Severn Estuary SAC and SSSI.

6.2.31 The Habitat Regulations also requires projects to be assessed both alone and in-combination with other projects. The air quality assessment considered the developments listed in Table 1.

6.2.32 It was concluded in the air quality assessment that none of the developments listed above would have an impact on any ecological receptors affected by the proposed PMF and therefore no cumulative/in-combination impacts are expected.

6.2.33 In summary, no LSE on designated sites is predicted from NO_x emissions during the operational phase of the development and in-combination with other proposed developments on the saltmarsh components of the Severn Estuary designations. Therefore, no indirect LSE on qualifying fauna species which depend on these habitats is predicted either.

7 HRA SUMMARY AND CONCLUSIONS

- 7.1.1 The AA has concluded that the identified disturbance effects from noise, water pollution and lighting can be mitigated by the implementation of construction industry best practice measures and through design and operational procedures. Details of these measures would be provided within a CEMP which would require approval by the Local Planning Authority prior to commencement of the works. As a result, there will be no adverse disturbance effects arising from the project and in combination with other development sites on the ecological integrity of the Severn Estuary SPA, SAC and Ramsar and River Usk SAC.
- 7.1.2 Table 3 provides a summary of the LSE, proposed mitigation and residual effects on the ecological integrity of the Severn Estuary SPA, SAC and Ramsar and the River Usk SAC.

Table 3: AA - Summary of Likely Significant Effects, Mitigation and Residual Effects				
Designated Site		Likely Significant Effect either alone or in-combination with other development	Mitigation	Residual Effect
Severn Estuary SPA, SAC and Ramsar	<p><i>SPA qualifying features:</i> Gadwall Greater white-fronted goose Dunlin Bewick's swan Common shelduck Common redshank Over wintering bird assemblage</p> <p><i>Ramsar qualifying features:</i> Sandbanks Estuaries Mudflats and sandflats Atlantic salt meadows Atlantic salmon Sea trout Sea lamprey River lamprey Allis shad Twaite shad Eel Waterfowl (peak counts in winter) Tundra swan Greater white-fronted goose Common shelduck Gadwall Dunlin Common redshank Lesser black-backed gull (breeding season)</p>	<p>Noise and Vibration Impacts LSE on all qualifying SPA/Ramsar bird species from temporary disturbance from construction noise and vibration particularly at a times when bird populations may be stressed such as during severe winter weather.</p>	<p>No noisy piling activities will take place during the months of November and February or at times when the air temperature is below freezing. Best practice noise control measures will be implemented via a CEMP for following guidance in industry standard, British Standard BS5228-1 2009 + A1:2014 – 'Code of Practice for Noise and Vibration Control on Construction and Open Sites. Noise' and the guidance in Building Research Establishment (BRE) 'Controlling particles, vapour and noise pollution from construction sites.</p>	No significant adverse disturbance effects arising from the project and in-combination with other cumulative impact sites on the qualifying features of the SPA, SAC and Ramsar.
		<p>Lighting Impact LSE on SPA/Ramsar birds from increased light levels have the potential to temporarily disturb foraging and roosting wintering birds if the construction works are undertaken during hours of darkness between November and February and if lighting is not directed away from the designations.</p>	<p>A lighting strategy during construction will be detailed in a CEMP. No nighttime working will be undertaken during November and February or at times when the air temperature is below freezing. Lighting for the operational phase of the development will be directed away from the development site western boundary.</p>	

Table 3: AA - Summary of Likely Significant Effects, Mitigation and Residual Effects				
Designated Site		Likely Significant Effect either alone or in-combination with other development	Mitigation	Residual Effect
	Ringed plover (peak count spring/autumn) Teal (peak counts in winter) Northern pintail (peak counts in winter) Allis shad Twaite shad River lamprey Sea lamprey <i>SAC qualifying features:</i> Estuaries Mudflats and sandflats Atlantic salt meadows Sea lamprey River lamprey Twaite shad	Water Quality Impacts LSE from changes to water quality during construction activities affecting habitats which support qualifying SPA /Ramsar/SAC qualifying features	Regulatory standards and best practice pollution control measures construction will be detailed in a CEMP.	
River Usk SAC	<i>SAC qualifying features:</i> Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation	Water Quality Impacts LSE from changes to water quality during construction activities affecting SAC habitats and species.	Regulatory standards and best practice pollution control measures construction will be detailed in a CEMP.	
	Sea lamprey Brook lamprey River lamprey Twaite shad Atlantic salmon Bullhead Otter Allis shad			

APPENDICES

Appendix 1

Figures 2 and 4 Extended Phase 1 Habitat Plan (Terrestrial Ecology)

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\Working\AABP122_Fig2_Phase1Results_jul_230519.mxd



- Legend
- Photograph Location and Direction
 - Target Note
 - Target Note
 - Earth Bank
 - Dense Scrub
 - Standing Water
 - Ephemeral Short Perennial/Scattered Scrub Mosaic
 - Hard Standing
 - Development Area
 - Wider Site Boundary

This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

Site Grid Reference: 331,376 184,174

Contains Ordnance Survey data
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Drawing Ref		AABP122/27575/1	
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Drawn	JH	Checked	EA
Date	23/05/2019	Date	23/05/2019
Client			
ABPmer			
Figure Number		2	
Figure Title			
Phase 1 Habitat Survey Map			

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\Working\AABP122_Fig_4_Phase1_Results_EnhancementArea_EA_171019.mxd



- Legend
- +++ Fence
 - Dense Scrub
 - Ephemeral Short Perennial/Scattered Scrub Mosaic
 - Hard Standing
 - Wider Site Boundary
 - Habitat Enhancement Area Boundary

This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

Site Grid Reference: 331,545 183,973

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Client	
ABPmer	
Figure Number	
4	
Figure Title	

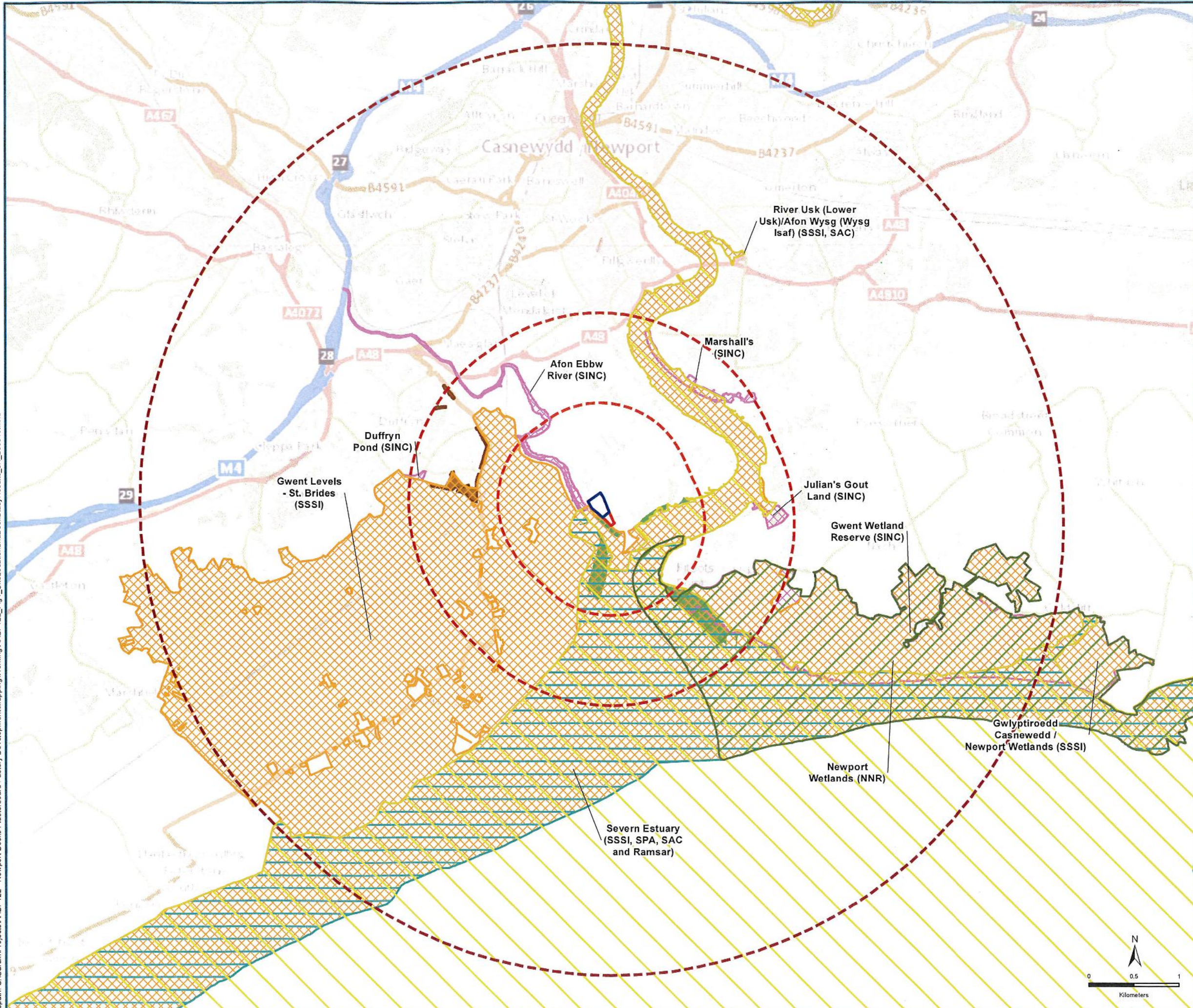


**Phase 1 Survey of
Habitat Enhancement Area**

Appendix 2

Figure 1 – Locations of Designated Sites (Site Location, Study Area and Desk Study Results)

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Maping\Working\AABP122_Fig_1_SiteLocationandDeskStudyResults_JH_230519.mxd



- Legend**
- National Nature Reserve (NNR)
 - Site of Special Scientific Interest (SSSI)
 - Special Area of Conservation (SAC)
 - Special Protection Area (SPA)
 - Sites of Importance for Nature Conservation (SINCs)
 - Ancient Woodland (AW)
 - Coastal saltmarsh
 - 1km Study Area Buffer
 - 2km Study Area Buffer
 - 5km Study Area Buffer
 - Development Area
 - Wider Site Boundary

Data originates from different sources and scales of mapping and should therefore be considered indicative of position and extent.

Site Grid Reference: 331,377 184,172
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Drawing Ref: **AABP122/27574/1**

Scale at A3: **1:40,000**

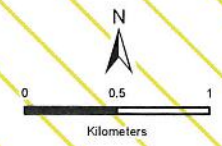
Drawn: JH	Checked: EA
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Date: 23/05/2019	Date: 23/05/2019
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Client: **ABPmer**

Figure Number: **1**

Figure Title: **Site Location, Study Area and Desk Study Results**



Appendix 3

Extracts from Air Quality Assessment Report

8. IMPACT ASSESSMENT – ECOLOGICAL RECEPTORS

8.1. Overview

The Institute of Air Quality Management's (IAQM) *Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites*, published in June 2019 covers primarily the screening stage that initially identifies the risk of the possibility of significant adverse effects on a European site which could undermine the achievement of its conservation objectives and which therefore would require further detailed examination through an "appropriate assessment". If risks which might undermine a site's conservation objectives can clearly be ruled out (based on the consideration of objective information), a proposal will have no likely significant effect and no appropriate assessment will be needed.

8.2. The Assessment of Air Quality Impacts

The assessment of ecological impacts is set out in three stages, as described below.

8.2.1. Stage 1: Scoping

It has been noted via the MAGIC website that the proposed development site is located in close proximity to the Severn Estuary Special Area of Conservation (SAC), the River Usk SAC, the Gwent Levels Site of Special Scientific Interest (SSSI), the River Usk SSSI and the Severn Estuary SSSI. Preliminary calculations indicate that the emissions from the stacks associated with the proposed development could extend over the SACs and SSSIs; therefore, it is considered that further consideration is required.

8.2.2. Stage 2: Quantification

In accordance with the IAQM guidance, the Process Contributions (PC) for both atmospheric NO_x at ground level as well as the rate of NO_x deposition have been calculated for fifteen representative points within the Severn Estuary and the River Usk SACs, as well as the Severn Estuary, River Usk and Gwent Levels SSSIs. A location plan of these receptors and the relevant ecological designations can be seen in **Figures 8.1** and **8.2** for the SACs and SSSIs respectively; with the results of the modelling shown in **Table 8.1**.

Table 8.1: Process Contributions

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)	% of Critical Level	Dry Deposition NO _x (kg/ha/y)	% of Critical Level	Wet (Acid) Deposition NO _x (kg/ha/y)	% of Critical Level	Total Deposition NO _x (kg/ha/y)	% of Critical Level
		Process Contribution (All Flues)		Process Contribution (All Flues)		Process Contribution (All Flues)		Process Contribution (All Flues)	
ER1	River Usk SAC/SSSI	0.95	3.16	0.58	2.90	0.40	2.00	0.97	4.85
ER2	River Usk SAC/SSSI	1.20	4.00	0.73	3.65	0.48	2.40	1.21	6.05
ER3	River Usk SAC/SSSI	1.34	4.46	0.81	4.05	0.52	2.60	1.33	6.65
ER4	River Usk SAC/SSSI	1.46	4.87	0.89	4.45	0.55	2.75	1.44	7.20
ER5	River Usk SAC/SSSI	1.25	4.18	0.76	3.80	0.44	2.20	1.20	6.00
ER6	River Usk SAC/SSSI	0.76	2.54	0.46	2.30	0.25	1.25	0.71	3.55
ER7	Severn Estuary SAC/SSSI	0.65	2.17	0.40	2.00	0.13	0.65	0.53	2.65
ER8	Severn Estuary SAC/SSSI	0.29	0.97	0.18	0.90	0.24	1.20	0.42	2.10
ER9	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	0.38	1.27	0.23	1.15	0.09	0.45	0.32	1.60
ER10	Severn Estuary SAC/SSSI	0.23	0.76	0.14	0.70	0.13	0.65	0.27	1.35
ER11	River Usk SSSI	1.02	3.4	0.62	3.10	0.34	1.70	0.95	4.75

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)	% of Critical Level	Dry Deposition NO _x (kg/ha/y)	% of Critical Level	Wet (Acid) Deposition NO _x (kg/ha/y)	% of Critical Level	Total Deposition NO _x (kg/ha/y)	% of Critical Level
		Process Contribution (All Flues)		Process Contribution (All Flues)		Process Contribution (All Flues)		Process Contribution (All Flues)	
ER12	Severn Estuary SSSI	0.83	2.76	0.50	2.50	0.27	1.35	0.77	3.85
ER13	Severn Estuary SSSI	0.63	2.09	0.38	1.90	0.25	1.25	0.63	3.15
ER14	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	0.54	1.81	0.33	1.65	0.10	0.50	0.43	2.15
ER15	Gwent Levels SSSI	0.53	1.76	0.32	1.60	0.14	0.70	0.46	2.30
Critical Level		30	-	20	-	20	-	20	-

The PCs for both atmospheric NO_x and NO_x deposition have then been added to the local background concentration/rate for each receptor, as obtained from the APIS database at 1km resolution for atmospheric concentrations and 5km resolution for deposition rates. This gives the Predicted Environmental Concentration/Deposition Rate. These can be seen in **Table 8.2**.

Table 8.2: Predicted Environmental Concentrations

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)	% of Critical Level	Dry Deposition NO _x (kg/ha/y)	% of Critical Level	Wet (Acid) Deposition NO _x (kg/ha/y)	% of Critical Level	Total Deposition NO _x (kg/ha/y)	% of Critical Level
		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)	
ER1	River Usk SAC/SSSI	20.17	67.23	9.68	48.40	9.50	47.50	10.07	50.35
ER2	River Usk SAC/SSSI	23.57	78.57	9.83	49.15	9.58	47.90	10.31	51.55
ER3	River Usk SAC/SSSI	23.71	79.03	9.91	49.55	9.62	48.10	10.43	52.15
ER4	River Usk SAC/SSSI	23.83	79.43	9.99	49.95	9.65	48.25	10.54	52.70
ER5	River Usk SAC/SSSI	17.85	59.50	9.86	49.30	9.54	47.70	10.30	51.50
ER6	River Usk SAC/SSSI	17.36	57.87	9.56	47.80	9.35	46.75	9.81	49.05
ER7	Severn Estuary SAC/SSSI	23.02	76.73	9.50	47.50	9.23	46.15	9.63	48.15
ER8	Severn Estuary SAC/SSSI	22.66	75.53	9.28	46.40	9.34	46.70	9.52	47.60
ER9	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	16.98	56.60	9.33	46.65	9.19	45.95	9.42	47.10
ER10	Severn Estuary SAC/SSSI	16.83	56.10	9.24	46.20	9.23	46.15	9.37	46.85

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)	% of Critical Level	Dry Deposition NO _x (kg/ha/y)	% of Critical Level	Wet (Acid) Deposition NO _x (kg/ha/y)	% of Critical Level	Total Deposition NO _x (kg/ha/y)	% of Critical Level
		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)		Predicted Environmental Concentration (All Flues)	
ER11	River Usk SSSI	17.62	58.73	9.72	48.60	9.44	47.20	10.05	50.25
ER12	Severn Estuary SSSI	17.43	58.10	9.60	48.00	9.37	46.85	9.87	49.35
ER13	Severn Estuary SSSI	17.23	57.43	9.48	47.40	9.35	46.75	9.73	48.65
ER14	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	22.91	76.37	9.43	47.15	9.20	46.00	9.53	47.65
ER15	Gwent Levels SSSI	22.90	76.33	9.42	47.10	9.24	46.20	9.56	47.80
Critical Level		30	-	20	-	20	-	20	-

8.2.3. Stage 3: Screening

Impacts of Atmospheric Concentrations

In accordance with the IAQM guidance, if the long-term PC is less than 1% of the long-term environmental standard at a European designated site, no further assessment is required. The long-term environmental standard for atmospheric concentrations of NO_x is considered to be the critical load, which is 30 µg/m³ of NO_x. Since it can be noted in **Table 8.1** that the increase in NO_x is greater than 0.3 µg/m³ of NO_x (i.e. more than 1% of the critical load), further assessment is required.

The Environmental Agency risk assessment guidance states that if the PEC is less than 70% of the long-term criterion, it can be deemed to be insignificant, regardless of the PC. However, it can be seen from **Table 8.2**, that impacts cannot be deemed insignificant at this stage, specifically in regard to atmospheric concentrations of NO_x.

Impacts of Deposition Rates

A critical deposition level of 20 kg/ha/y has been used above as this is the lower bound of the range quoted for Estuary feature in the APIS database. Although the predicted total deposition rates are less than 70% of this level, it should be noted that for many features shown for the Severn Estuary SAC, as well as all of those shown for the River Usk SAC and the three SSSIs, no Critical Level is given. It therefore requires the opinion of the Ecological Consultant to determine whether these impacts are significant or not.

Summary

At this stage, the impacts of the proposed development on the River Usk SAC, the Severn Estuary SAC; nor the SSSIs can be ruled out. The impacts are further considered within the Ecological Impact Assessment and Habitat Regulations Assessment prepared by Wardall Armstrong.

As previously discussed, the emission rates used in this assessment have been calculated using data provided by the operator, who have stated that the emission rates will be no greater than 35 mg/m³ of exhaust gases for each of the four flues. A worst-case approach has been adopted with the modelling using 35 mg/m³ of NO_x as the emission rate for each flue. If it is possible that the actual emission rate is lower, then subsequently any impact could also be lower.

Air Quality Assessment

ABP New Manufacturing Plant, Newport

Stroma Built Environment Limited • 22nd January 2020 • H2989 v5

Figure 8.1: Plume dispersion at ground level with modelled Ecological Receptors and SAC boundaries

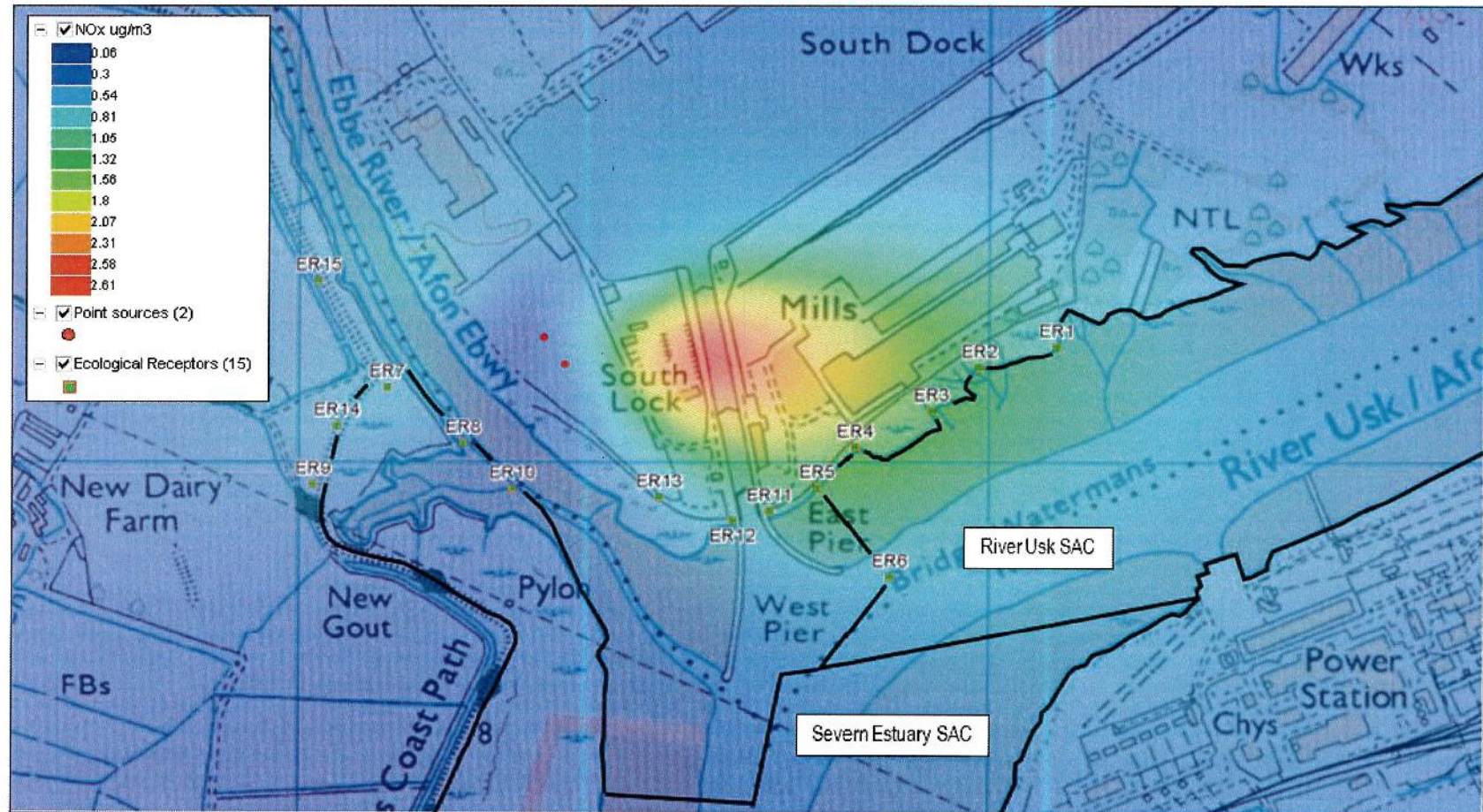
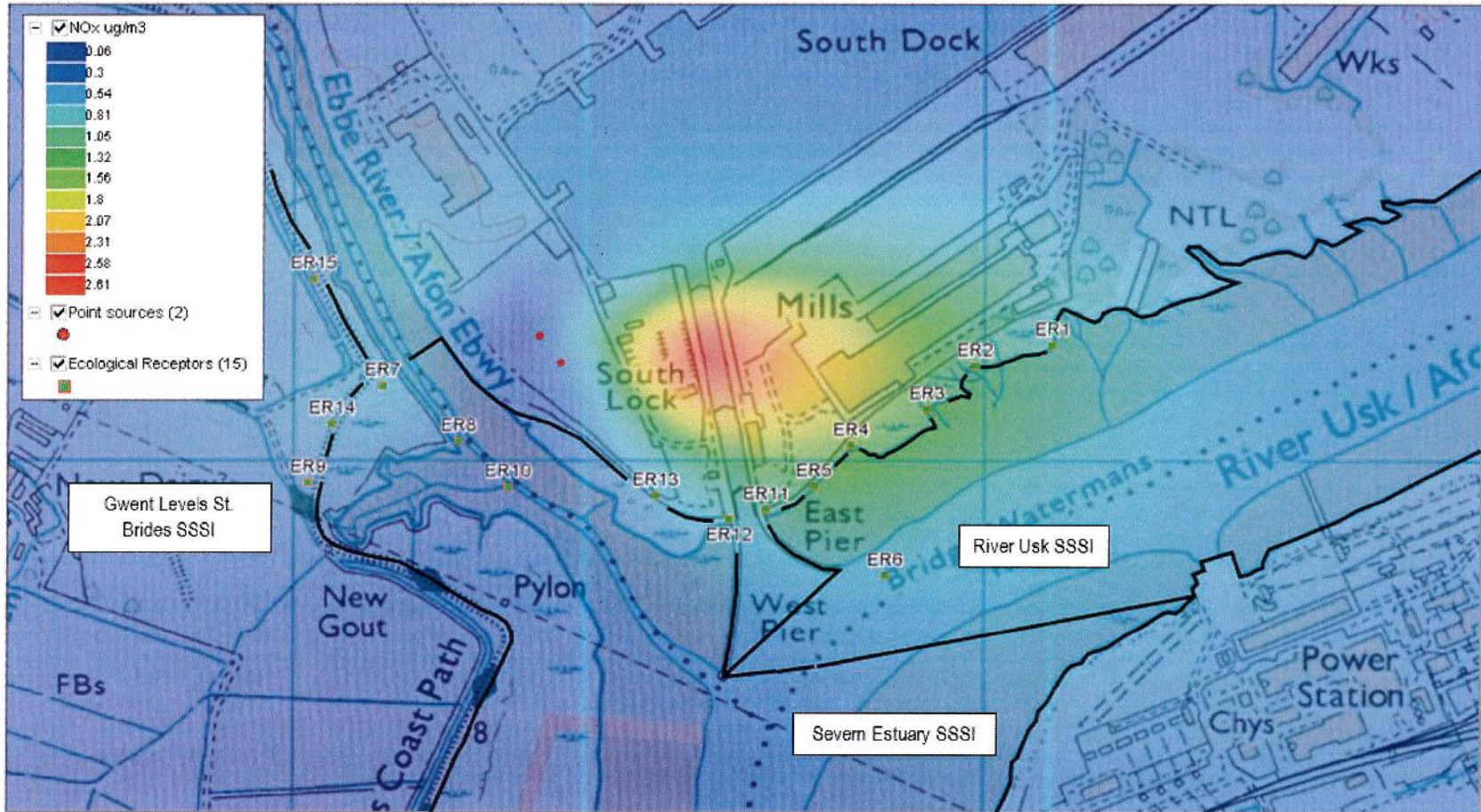


Figure 8.2: Plume dispersion at ground level with modelled Ecological Receptors and SSSI boundaries



9. IN-COMBINATION EFFECTS (CUMULATIVE EFFECTS)

A list of consented developments that require consideration of the cumulative impacts have been provided by the Planning Consultant which were used in connection with the M4 relief road. They are as follows:

- **Newport City Council Planning Application: 18/0911** - Land to south of Balwins Crane Hire, West Way Road, Alexandra Docks, Newport – Non material amendment to Permission 17/1185 for variation of conditions relation to permission 15/1513 for the bulk drying and pelleting facility with onsite energy centre, and other ancillary works. Amendment to proposed internal firing system.
- **Newport City Council Planning Application: 15/0775** - Land Formerly Known As Whitehead Works, Mendalgief Road, Newport – Construction of 529no. residential units, 24no. assisted living units, pub/restaurant, retail units, primary school and associated landscape and highway infrastructure.
- **Newport City Council Planning Application: 14/1172** - 3, West Way Road, Alexandra Docks, Newport – Installation and operation of a small biomass gasification plant processing untreated wood into producer gas, to produce 280 kWe of electrical energy and 400 kW of thermal energy.
- **Newport City Council Planning Application: 18/0360** - 16, West Way Road, Alexandra Docks, Newport – Erection of an asphalt plan and associated ancillary development.
- **Natural Resources Wales – Marine Licencing - DML1636v1** - Application for a renewal of a non-EIA Marine Licence for the maintenance and dredge disposal at Newport Docks

Upon consideration of the developments, all five are not considered to have air quality impacts that require the assessment of in-combination effects.

At Land to south of Balwins Crane Hire, West Way Road (ref. 18/0911), this consent is a variation of a planning consent (ref. 10/1238) which was accompanied by an Environmental Statement. The original Environmental Statement included a detailed assessment of the air quality impacts and showed that the air quality impacts would be very small at surrounding receptors, including ecological receptors. Whilst the details of the application have changed slightly since the original Environmental Statement, subsequent assessment has shown that the variations to the development have not significantly altered the air quality impact. Whilst the proposed development will increase pollutant concentrations, the increases are small and these increases are not generally in the geographical area where impacts are predicted in relation to the plasterboard manufacturing site. Consequently, cumulative impacts are not expected.

Regarding the development at Land Formerly Known As Whitehead Works, the air quality assessment associated with the planning application notes that there will be only small increases in pollution concentrations associated with increases in traffic generation. The results show that roadside receptors are expected to have absolute concentrations well below the National Air Quality Objective levels and therefore the cumulative impacts of traffic are unlikely to be significant. This development does not have any industrial processes as part of the application and therefore will not have any impact on the SACs or SSSIs.

At the biomass gasification plant at 3 West Way Road, the application was accompanied by an air quality assessment, which showed that in the River Usk, where concentrations of pollutants from the plasterboard manufacturing plant are at their highest, annual mean nitrogen deposition will be less than 0.001 kg/ha/yr and

the annual mean process contribution of NO₂ will be less than 0.01 µg/m³. Given that increases in pollutant concentrations are likely to be very small, in combination effects would not be anticipated.

With regards to the asphalt plant at 16 West Way Road, an air quality assessment was not carried out in connection with the application, as the air quality impacts were considered to be minimal, given its small size and the separation distance between the plant and any receptors. This approach was accepted by Newport City Council's Environmental Health Department. Consequently, it is considered that any in-combination effects are likely to be very small.

With reference to the marine licencing application, this is in relation to dredging and emissions to air are not anticipated.

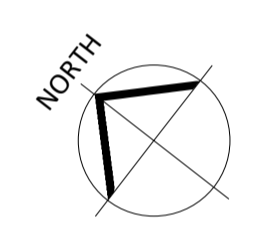
Consequently, it is not anticipated that any of the above developments would have a measurable impact at any receptors (human or ecological) affected by the proposed plasterboard manufacturing site. Consequently, cumulative impacts are not expected.

DRAWINGS

ALL DIMENSIONS IN METERS

- 1a** Single skin profiled metal cladding - Grey
- 1** Grey insulated built-up cladding system
- 2** Blue insulated built-up cladding system
- Heavy duty tarmac road and footpath
- Compacted Gravel
- Broom Finish Concrete
- 3** Concrete upstand
- 4** Double glazed PPC aluminium windows in RAL 7012
- 5** Translucent roof lights/windows as part of cladding system
- 6** Steel doors in RAL 7012
- 7** Roller shutter doors in RAL 7012

- Planning Application Boundary
- - - ABP Land Ownership Boundary
- 1** Manufacturing facility and habitat enhancement area



See drawing number 72689-CUR-00-XX-DR-C-SK001 for further detail regarding existing and proposed levels.
See drawing number 72689-CUR-00-XX-DR-C-92000 for details of drainage strategy proposals.

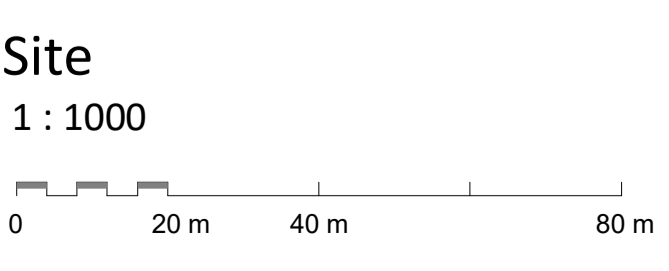
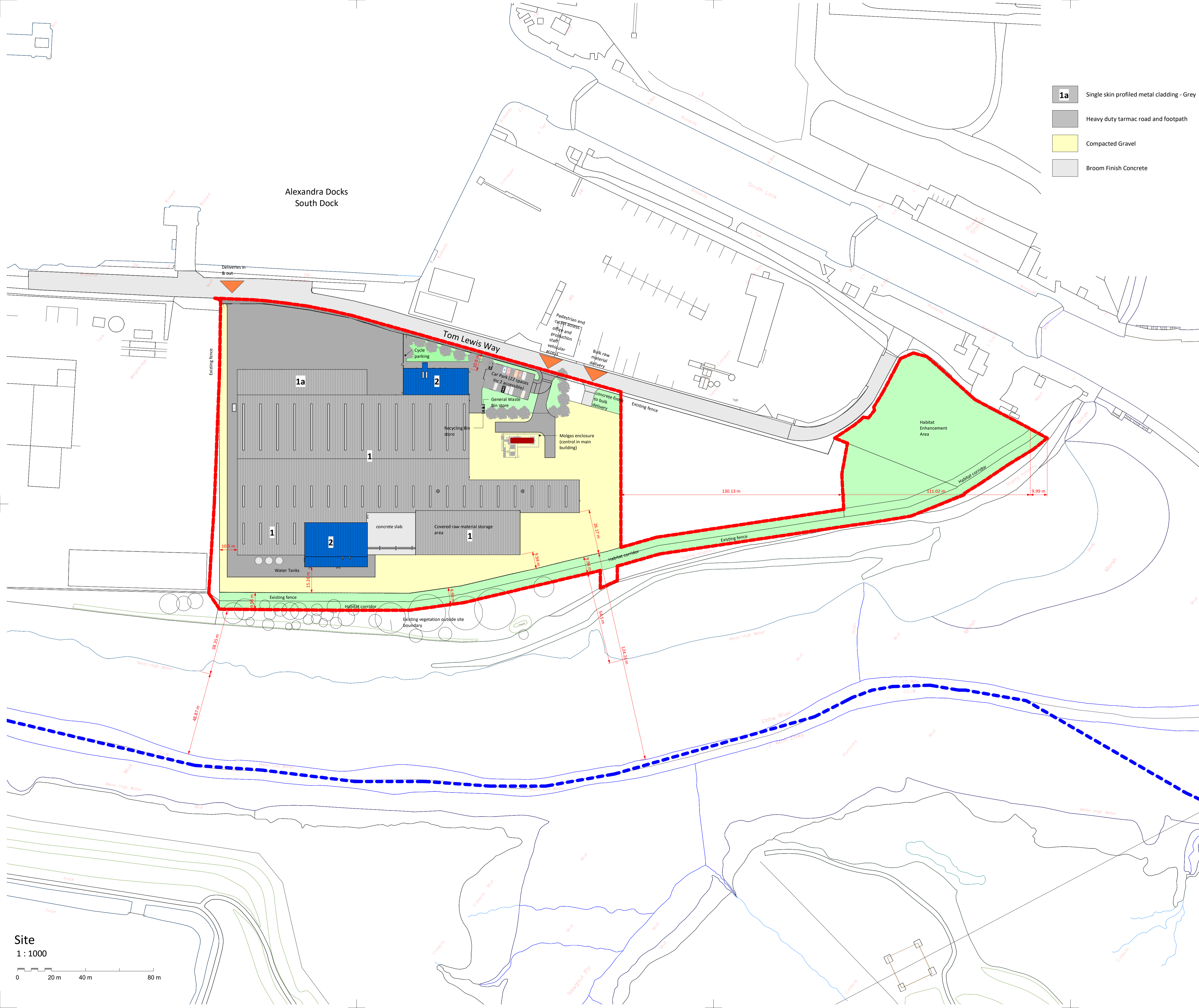
PL	P30	23/01/2020	Redline boundary amended
PL	P20	21/01/2020	PLANNING ISSUE
STATUS	REV	DATE	DESCRIPTION
CLIENT			
Associated British Ports			
REVISOR			
Gareth Brown			
CHECKED BY			
Martin Long			
ORIGINATOR NO			
153091			

CONSULTANT
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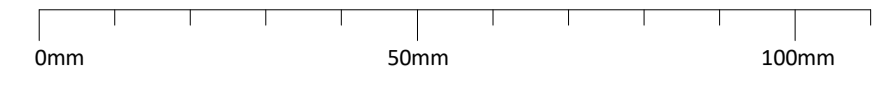
PROJECT
**ABP New Manufacturing Plant
Land adjacent West Way Road
Alexandra Docks
Newport**

DRAWING TITLE
Proposed Site Plan

SUITABILITY STATUS	SCALE
PL : PLANNING	As indicated @ A1
PROJECT ORIGINATOR ZONE LEVEL TYPE ROLE CLASS NUMBER	REVISION
153091-STL-00-00-DR-A-ZZZZ-01001	P30



Responsibility is not accepted for errors made by others in scaling from this drawing.
All construction information should be taken from figured dimensions only.

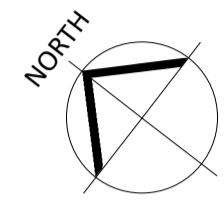


ALL DIMENSIONS IN METERS

Planning Application Boundary

ABP Land Ownership Boundary

1 Manufacturing facility and habitat enhancement area



River Usk

Alexandra Docks South Dock

W Way Road

Tom Lewis Way

Tom Lewis Way

River Ebbw

PL	P29	21/01/2020	PLANNING ISSUE	REVISED BY
STATUS	REV	DATE	DESCRIPTION	Gareth Brown
CLIENT				CHECKED BY
Associated British Ports				Martin Long
ORIGINATOR NO				153091

CONSULTANT
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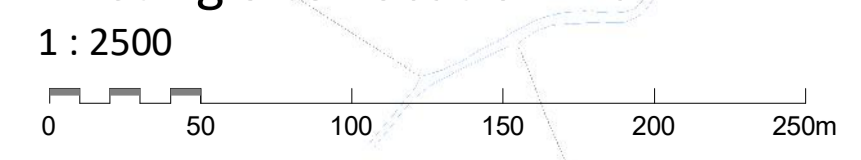
PROJECT
ABP New Manufacturing Plant
Land adjacent West Way Road
Alexandra Docks
Newport

DRAWING TITLE
Existing Site Location Plan

SUITABILITY STATUS	SCALE
PL : PLANNING	As indicated @ A1

PROJECT ORIGINATOR ZONE LEVEL TYPE ROLE CLASS NUMBER	REVISION
153091-STL-00-00-DR-A-ZZZZ-00002	P29

Existing Site Location Plan



STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LEEDS
36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER
76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY
29/6 Satpaev Avenue
Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW
21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67

Appendix 2
Preliminary Ecological Appraisal Report dated October 2019 (Revision 003)



Preliminary Ecological Appraisal
**Newport Docks Plasterboard
Factory**

For

ABPmer

Project No.: AABP122/001

October 2019

London & South East

Compass House
Surrey Research Park
Guildford
GU2 7AG . UK
t: +44 (0)1483 466 000

North & Borders

The Tannery
91 Kirkstall Road
Leeds
LS3 1HS. UK
t: +44 (0)113 247 3780

Wales & South West

Williams House
11-15 Columbus Walk
Cardiff
CF10 4BY . UK
t: +44 (0)2920 020 674

Midlands

Edmund House
12-22 Newhall Street
Birmingham
B3 3AS
t: +44 (0) 121 726 3494

Scotland

20-23 Woodside Place
Glasgow
G3 7QF . UK
t: +44 (0)141 582 1333

Enquiries

e: enquiries@thomsonec.com

w: www.thomsonec.com



Project Number	Report No.
A-ABP-122	001

Revision No.	Date of Issue	Author	Reviewer	Approver
001	12/06/2019	Justin Groves	Kate Taylor	Liz Bedford
002	13/09/2019	Annabel Moore	Tessa Harding	Tessa Harding
003	18/10/2019	Tessa Harding	Emily Greenall	Tessa Harding

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Contents

1.	Summary and Main Recommendations	6
1.1	Summary	6
1.2	Main Recommendations.....	7
2.	Introduction.....	10
2.1	Development Background	10
2.2	The Brief and Objectives	11
2.3	Limitations	12
2.4	Surveyors.....	12
3.	Methodology	13
3.1	Desk Study	13
3.2	Field Survey.....	13
4.	Results.....	15
4.1	Background	15
4.2	Desk Study	15
4.3	Field Survey: Development area and wider site.....	22
4.4	Field Survey: Proposed enhancement area	24
5.	Legislation and Planning Policy Considerations.....	26
5.1	Background	26
5.2	Designated Sites	26
5.3	Priority Habitats	27
5.4	Protected, Priority Species and those of Conservation Concern	28
5.5	Invasive species	29
5.6	Ecological Enhancement.....	29
6.	Potential Further Ecological Considerations	30
6.1	Background	30
7.	Recommendations.....	33
7.1	Mitigation	33
7.2	Invasive species	34
7.3	Ecological Enhancements	35
7.4	Further Survey.....	35
8.	Conclusion.....	37
9.	References	38
	Appendix 1 Assessment Methodology	39
10.1	Identification of Legal and Planning Policy Issues in England	39

10.2 Identification of Potential Further Ecological Issues.....	40
Appendix 2 Plant Species and Abundance (Development area and wider site).....	41
Appendix 3 Plant Species and Abundance (Proposed habitat enhancement area).....	44
Table 1 Designated sites.....	15
Table 2 Species records derived from the desk study	19
Figure 1 Site Location, Study Area and Desk Study Results	
Figure 2 Phase 1 Habitat Survey Map of Development Area	
Figure 3 Photographs of the Site	
Figure 4 Phase 1 Habitat Survey Map of Proposed Enhancement Area	

1. Summary and Main Recommendations

1.1 Summary

- 1.1.1** Associated British Ports (ABP) are planning to construct a plasterboard factory on land within Newport Docks (Figure 1). Thomson Environmental Consultants (TEC) were commissioned by ABPmer on behalf of ABP in April 2019 to undertake a Preliminary Ecological Appraisal (PEA) of the site.
- 1.1.2** A desk study and extended Phase 1 habitat survey were undertaken. The desk study area was defined as an area that encompassed the site and all land within 5km of the perimeter of the site. Records of designated sites and important species were then sought for the study area. This included international sites within 5km of the site boundary, national and local sites within 2km, and records of priority habitats, protected species and species of conservation concern within 1km.
- 1.1.3** As a result of discussions with the local planning authority during the period since the study was commissioned the overall site area has been reduced in size by 0.8ha from 4.2ha to 3.4ha. The survey area, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on habitats and species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although reference is made to the wider site for mobile species that will not be confined to the development area, and in evaluating the overall habitat mosaic (referred to as 'the wider site'). The phase 1 habitat survey of the 4.2ha site was conducted in May 2019.
- 1.1.4** In October 2019 a phase 1 habitat survey was conducted on a new area of the ABP site which had been identified as a potential enhancement area for the development (Plate 1).
- 1.1.5** The desk study highlighted four designated sites protected by European Directives and domestic legislation close to the site boundary: the Severn Estuary Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar and Site of Special Scientific Interest (SSSI) within 5m; the River Usk / Afon Wysg SAC and River Usk (Lower Usk) / Afon Wysg (Wysg Isaf) SSSI within 175m; the Gwent Levels - St Brides SSSI within 168m and Newport Wetlands SSSI National Nature Reserve. In addition, a further five non-statutory designated sites were identified within 2km of which one, Afon Ebbw River Site of Importance for Nature Conservation (SINC) is within 44m and should be considered via the Newport Local Development Plan 2011-2026.
- 1.1.6** In addition, one priority habitat woodland (ancient woodland) was identified as present outside of designated sites. It has also been determined that the priority habitat 'open mosaic habitats on previously developed land' is present at the site as listed by the Environment (Wales) Act 2016 for consideration by the Newport Local Development Plan 2011-2016.
- 1.1.7** The extended Phase 1 survey identified three habitat types within the development area, namely dense scrub; ephemeral/short perennial and scattered scrub mosaic; and hard standing. A further two habitat types (standing water and an earth bank) were recorded on the wider site on land to the south that are now no longer within the development (Figure 2). Photographs of the site are shown on Figure 3. Japanese knotweed was identified on the boundary of the site in the southwest corner of the wider site (Target Note 2 on Figure 2).
- 1.1.8** Seven bird species were recorded on the wider site, of which four could potentially breed on the site; breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended). Signs of rabbit

and fox presence on site were recorded. These mammal species are protected from harm via the Wild Mammals (Protection) Act 1996.

- 1.1.9** The desk study identified the presence of slender hare's-ear - a priority plant species listed by the Environment (Wales) Act 2016 within 1km of the site and further bird species, a number of which could breed on the site. Further records of priority species returned during the desk study comprised of two invertebrate species, common toad and European eel. Common lizard was also identified and is principally protected via the Wildlife and Countryside Act 1981 (as amended). European eel is unlikely to be impacted by the development and slender hare's-ear was not identified during the Phase 1 survey, which was undertaken at an appropriate time of year to detect the species.
- 1.1.10** Habitats and individual features on the site have also been identified with the potential to support invertebrates, bats and badgers.
- 1.1.11** The current development proposals are unlikely to impact upon the Newport Wetlands SSSI and NNR given the distance from the site, nor upon four of the five SINCs for the same reason.
- 1.1.12** The proposed development site is within close proximity to the Severn Estuary SPA, SAC and RAMSAR, the River Usk SAC, Lower Usk SSSI and Gwent Levels SSSI, and the Afon Ebbw River SINC. Prior to development commencing, any potential impact on designated sites will be assessed and appropriate mitigation measures incorporated to ensure no significant impact on designated features.
- 1.1.13** The priority habitat on the site will also require protection through design amendments and/ or compensation.

1.2 Main Recommendations

- 1.2.1** The following measures are recommended for the development to comply with relevant legislation and policy:
- Screening for Environmental Impact Assessment and Habitats Regulations Assessment screening assessment
 - Removal of the external storage areas from the southern end of the development (paragraph 2.1.3) reduces the development footprint from 4.2ha to 3.4ha and will ensure that the largest block of priority open mosaic habitat no longer forms part of the development site.
 - An area of land at the mouth of the River Ebbw will be set aside for a habitat enhancement area (Plate 1). Long term management of open mosaic habitat within the proposed enhancement area will help to offset some of the approximately 1.1ha of this habitat type that will be lost from the development area.
 - Toolbox talk will be provided to contractors by a suitably qualified ecologist prior to works commencing. The toolbox talk will identify key ecological constraints on site, and ensure contractors are aware of protocol to follow and best practice measures to follow. Should protected species be observed on site then work will be put on hold until advice is sought from the ecologist. Excavations will incorporate ramps to allow mammals safe entry and exit.
 - Should common toad be identified during the clearance of the site, site operatives will translocate individuals to suitable refugia. This would comprise vegetation or a log/rubble pile

depending on the time of year. Ramps should be installed in excavations which should be checked for toads prior to continued works.

- All vegetation clearance works at the site should be undertaken outside the bird breeding season. This would mean works should take place between September to February to ensure legislative compliance. If any vegetation clearance works needs to be carried out between March and August, an ecologist should visit the site immediately before vegetation clearance to identify nest locations (if present). If no nests are identified, works can proceed without further ecological supervision. If a nest is present, the nest should be protected with a suitable buffer until the young have fledged or the nest is no longer active.
- If rabbit burrows or fox earths are identified, care should be taken during clearance activities. They should be first assessed as to whether they are active before being destroyed slowly by hand or using a mini-digger. For fox earth this should take place between June to January.
- Chemical or physical removal of the invasive species, Japanese knotweed, identified on site boundary. Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act and it is an offence to cause it to spread in the wild. A management plan should be put in place to ensure safe and efficient removal of this species.
- Landscaping should incorporate species native to the UK and of local provenance, and include species that are known to be beneficial for biodiversity.
- Incorporating a mosaic of habitats that reflect the current site's habitats and ensure these connect with wider habitat along the western boundary of the site.
- Ensuring a strip of vegetation is left along the western edge of the site to ensure connectivity of remaining habitats on and off site.
- Incorporating at least one post along the western edge of the site near scrub with two bat boxes attached.
- Incorporation of bird boxes/ nesting areas
- Ensure that all lighting used during construction and during operation has minimal height and light spill, is directed away from the western boundary, timed where possible and uses lights unattractive to invertebrates.
- Avoiding particularly noisy construction works (i.e. piling) during the overwintering bird period (October to March) should be adopted based on the precautionary principle should wintering birds occur.

1.2.2 Following best practice guidelines, further surveys for the following species / groups of species are recommended because suitable habitat was found during the survey and they are legally protected or of conservation concern:

- Invertebrates;
- Reptiles;
- Birds;
- Badger; and
- Bats.

- 1.2.3** Following further surveys, mitigation measures may be required to avoid, mitigate and compensate for ecological impacts.

2. Introduction

2.1 Development Background

- 2.1.1** ABPmer are supporting Associated British Ports who are proposing to build a plasterboard factory on land within Newport Docks. The development comprises the factory building, areas of hardstanding and associated below and above ground infrastructure.
- 2.1.2** The site is towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road leading to the head of the docks (Grid Reference ST 31347 84186). The site location is shown on Figure 1 and photos of the site in Figure 2.
- 2.1.3** Since the original EIA screening request, further consideration has been given to the Proposed Development. A design review has determined that there is sufficient capacity within existing facilities at the Port to provide external storage areas for the Proposed Development. As a consequence, the land take needed has been reduced and the external storage areas originally proposed in the south east of the site have been removed from the Proposed Development.
- 2.1.4** This in turn has the benefit of reducing the amount of habitat loss associated with the development. The area of the site that is to be developed has been reduced by 0.8ha from 4.2ha to 3.4ha. As well as reducing habitat loss, this change in area also lessens the extent of the Proposed Development bordering the River Ebbw. It includes an area outside of the Proposed Development to act as a buffer to the adjacent Severn Estuary SPA, SAC and SSSI.
- 2.1.5** Furthermore, the strip of vegetation that will be retained or reinstated along the western boundary of the site (as proposed in the original EIA Screening Report), will be increased from a width of 5 m to approximately 10 m. This will serve to reduce the extent of overall habitat loss and increase connectivity with habitats on and off site, as well as provide further screening of on-site operations and act as buffer to protected habitats and species.
- 2.1.6** ABP will commit to managing a 0.63ha area that has been set aside in the south east of the site (referred to as 'Habitat enhancement area' in Plate 1). This is in order to enhance open mosaic habitats and other habitats at the confluence of the River Ebbw and Severn Estuary. This will be achieved via a 20-year management plan in discussion with NCC and wider consultees (paragraph 7.3.1).
- 2.1.7** A Phase 1 habitat survey of the proposed development site was conducted in May 2019, and of the proposed 0.63ha habitat enhancement area in October 2019. The findings of the survey are reported in Section 4 and outline management recommendations in Section 7. The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on habitats and species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although reference is made to the wider site for mobile species that will not be confined to the development area, and in evaluating the overall habitat mosaic (referred to as 'the wider site').
- 2.1.8** The site is covered by the Newport Local Development Plan 2011-2026 under the allocation for "Newport Docks" justified as "surplus of land within Newport Docks which could better meet Newport's economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8".

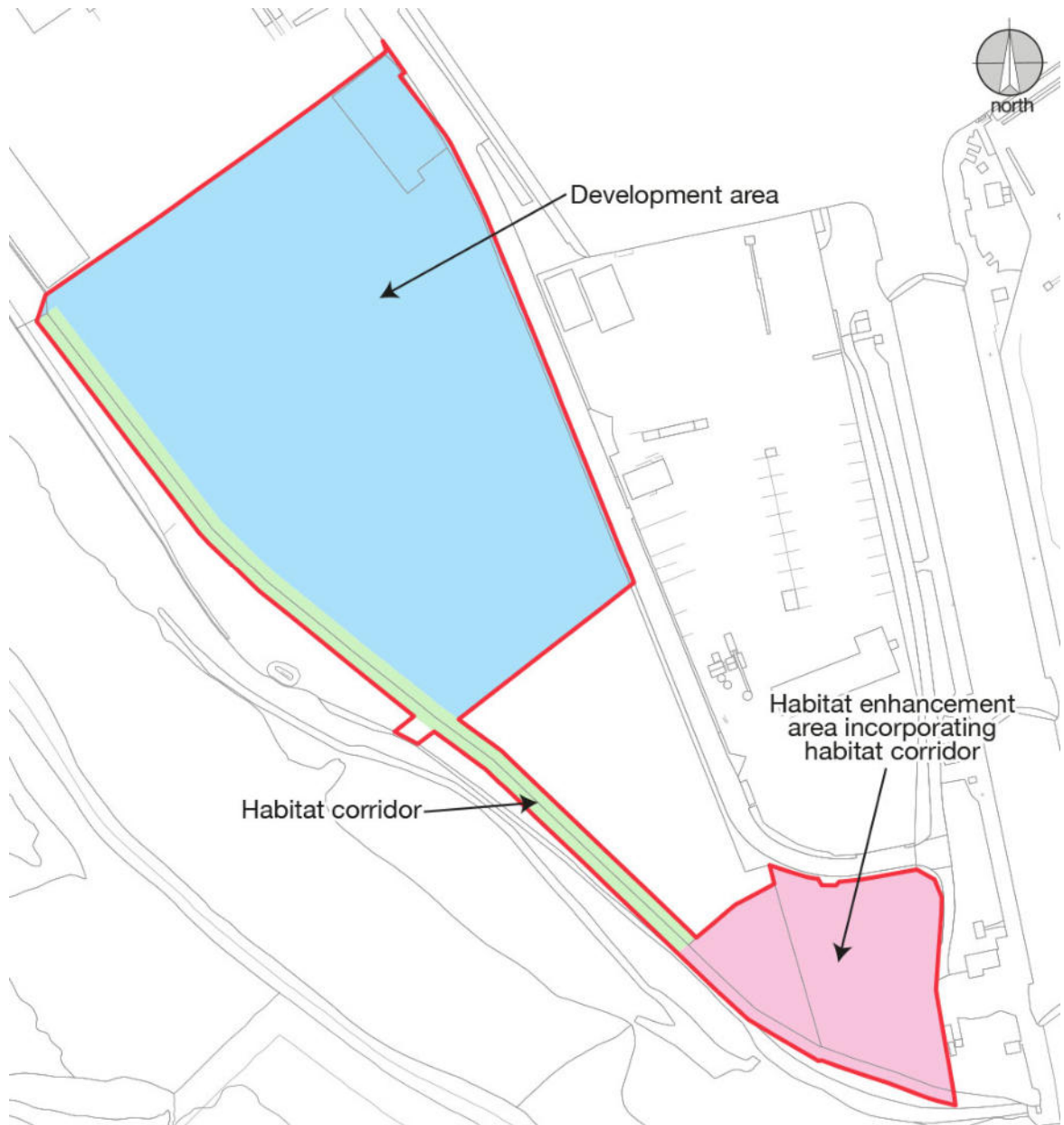


Plate 1: Site layout showing proposed habitat enhancement area and habitat corridor at mouth of the River Ebbw.

2.2 The Brief and Objectives

2.2.1 ABPmer invited Thomson Environmental Consultants on 1st May 2019 to undertake a Preliminary Ecological Appraisal (PEA) of the development site on behalf of Associated British Ports, to comprise the following:

- The collation of data on statutory and non-statutory designated sites within 2km (extended to 5km for European sites), priority habitats within 1km, and records of protected species and species of conservation concern within 1km of the proposed site.

- An extended Phase 1 habitat survey of the development site.
- A report, supported by appropriate digitised mapping, combining the findings of the desk study and extended Phase 1 habitat survey, giving the methodology and results of the surveys, a discussion of any relevant potential legal and/or planning considerations, and our recommendations.
- An extended Phase 1 habitat survey of the enhancement area and associated mapping.

2.3 Limitations

2.3.1 The following limitations were encountered whilst undertaking this survey and associated reporting:

- The species data collated during the desk study is mainly derived from records submitted by members of the public and *ad hoc* surveys undertaken by volunteers. Therefore, it should not be taken as a definitive list of the protected species and other species of conservation concern that occur at the site or within the immediate local area.

2.4 Surveyors

2.4.1 The extended Phase 1 habitat survey of the wider site was undertaken by Tansy Knight BSc (Hons) and the enhancement area was surveyed by Katie Rees BSc (Hons).

3. Methodology

3.1 Desk Study

3.1.1 A study area was defined as an area that encompassed the site and all land within 5km of the perimeter of the original 4.2ha site, see Figure 1. Records of designated sites and important species were then sought for the study area.

3.1.2 Sources of information were as follows:

- Newport Borough Council's Local Plan; and
- South East Wales Biodiversity Records Centre (SEWBRc).

3.1.3 Records of nationally designated sites, ancient woodland and priority habitats were sought within a 2km radius which was further expanded to 5km for those of European importance, whereas records for protected and priority species were sought for part of the study area encompassing the site and within 1km of the perimeter.

3.1.4 Requests for information were sent to the Biological Record Centre on 13th May 2019 with responses received on 21st May 2019.

3.2 Field Survey

3.2.1 A survey area was defined as an area that encompassed the original 4.2ha site boundary. The survey area is shown on Figure 2.

3.2.2 A Phase 1 habitat survey (JNCC, 2010) was conducted throughout the survey area. Phase 1 habitat survey is a standard technique for rapidly obtaining baseline ecological information over a large area of land. It is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas of land on the basis of the vegetation present. For this survey, the technique was modified (or extended) to give further consideration to protected and otherwise notable fauna (IEA, 1995).

3.2.3 The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare

3.2.4 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2010).

3.2.5 Target notes were made for any features which were too small to map or are of particular ecological interest.

- 3.2.6** Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. However, no specific faunal surveys were undertaken.
- 3.2.7** The survey was conducted on 14th of May 2019.
- 3.2.8** The survey of the enhancement area was conducted in October 2019 and followed the same methods listed above, with the survey area shown on Plate 1 as the habitat enhancement area.

4. Results

4.1 Background

- 4.1.1 The contents of the results section are the factual results of the desk study and extended Phase 1 habitat survey (Sections 4.2 and 4.3). Excluded from this section is the assessment of the site to support species of conservation concern not recorded during the survey. Instead, potential further ecological issues are discussed in Section 6.
- 4.1.2 The results of a Phase 1 habitat survey for the proposed enhancement area (Plate 1) are presented in Section 4.4.

4.2 Desk Study

- 4.2.1 Responses were received from SEWBRcC. The results are summarised below and the locations of designated sites and selected species of conservation concern are shown on Figure 1.

Designated Sites

- 4.2.2 The following statutory and non-statutory designated sites have been identified within 5km of the site boundary following the methodology set out in Section 3. These are detailed in Table 1.

Table 1 Designated sites

Site Designation	Grid Reference	Overall area (ha)	Distance to site (km)	Description
International Sites (SPA, SAC and Ramsar)				
Severn Estuary Special Protection Area (SPA), Special Area of Conservation (SAC), Ramsar Site and Site of Special Scientific Interest (SSSI)	ST 31773 82797	26769	0.005	The area within 5km of the site is part of the wide estuary that has extensive intertidal mud-flats and sand-flats, rocky platforms and islands. Along the margins there is saltmarsh, grazing marsh with freshwater ditches and occasional brackish ditches. The seabed is rock and gravel with sub-tidal sandbanks. Key qualifying criteria include overwintering populations of Bewicks Swan (<i>Cygnus columbianus bewickii</i>), curlew (<i>Numenius arquata</i>) and redshank (<i>Tringa acuta</i>) amongst others. It also qualifies as a wetland of international importance. Its habitats of primary importance are; estuaries,

Site Designation	Grid Reference	Overall area (ha)	Distance to site (km)	Description
				mudflats and sandflats not covered by seawater at low tide and Atlantic salt meadows.
River Usk / Afon Wysg SAC and River Usk (Lower Usk) /Afon Wysg (Wysg Isaf) SSSI	ST 32595 84163	1014	0.18	A large river system, primarily selected due to the presence of sea lamprey (<i>Petromyzon marinus</i>), brook lamprey (<i>Lampetra planeri</i>), Atlantic salmon (<i>Salmo salar</i>) and otter (<i>Lutra lutra</i>) amongst others. The Lower Usk is of particular interest as it has not be subject to significant modification by man.
National Sites (SSSIs)				
Gwent Levels - St Brides SSSI	ST 30478 83414	1305	0.17	The Gwent Levels are an example of one of the most extensive areas of reclaimed wet pasture in Great Britain. Reens at St Brides support a number of interesting plant species most notably thread-leaved water-crowfoot (<i>Ranunculus trichophyllus</i>) and small pondweed (<i>Potamogeton berchtoldii</i>). St Brides also supports rich invertebrate communities with a number of nationally notable and locally notable marshland species.
Newport Wetlands SSSI and National Nature Reserve (NNR)	ST 32949 82995	865	0.47	This site is of special interest for its breeding and over-wintering birds, invertebrates, and aquatic and marginal flora. Also of special interest are the ditch habitat and reed beds. It is part of the compensation for the loss of the Taf/Ely Estuary SSSI following the construction of the Cardiff Bay Barrage.

County and Local Sites (SINCs, LNRs, etc.)				
Afon Ebbw River Site of Importance for Nature Conservation (SINC)	ST30768496	17.3	0.04	Major river system with associated semi-improved neutral grassland and marshy grassland, swamp, scrub and semi-natural woodland. Grass snake (<i>Natrix natrix</i>) have been found here.
Julian's Gout Land SINC	ST33278410	4.6	1.54	Maritime influenced semi-improved neutral grassland, with willow car and large populations of marsh helleborine (<i>Epipactis palustris</i>), marsh orchids (<i>Dactylorhiza spp.</i>) and narrow leaved bird's-foot trefoil (<i>Louts glaber</i>).
Duffryn Pond SINC	ST29318454	1.0	1.83	Pond with emergent swamp vegetation, which supports a range of important invertebrates, plant, reptile, amphibian and mammal species.
Gwent Wetland Reserve SINC	ST34838282	403.4	1.08	Mosaic of wet grassland reed beds, open water, hedgerows and saline lagoon, which supports internationally important numbers of wildfowl as well as UK BAP Priority species such as water vole (<i>Arvicola amphibius</i>), great crested newt (<i>Triturus cristatus</i>) and brown hare (<i>Lepus europaeus</i>).
Marshalls SINC	ST32458568	10.3	1.52	Mosaic neutral grassland, post industrial, wetland along the banks of the Usk.

Ancient Woodland outside designated sites

- 4.2.3** Five parcels of ancient woodland were identified within 2 km of the site boundary. These are between 1.2-1.9 km from the site boundary and on the western side of the Ebbw River. Given that these are ancient woodland, they are likely to qualify as priority habitats under Section 7 of the Environment (Wales) Act 2016. Nonetheless, the majority of the ancient woodland is found within the Gwent Levels - St Brides SSSI.

Priority Habitats outside designated sites

- 4.2.4** No priority habitat outside of designated sites were identified.

Protected Species and Other Species of Conservation Concern

- 4.2.5** Table 2 summarises the results of the desk study for protected and priority species. Where multiple records for the same species were returned, the most recent and/or closest to the site have been listed. Records greater than 10 years old have been excluded to aid clarity to the results. Nonetheless, older records within the desk study have been included if they significantly change the outcomes of Sections 5 to 7. In addition to Table 2 below, a further 20 birds of conservation concern (Eaton et al., 2015) were identified within 1km of the site boundary but are not on schedule one of the Wildlife and Countryside Act 1981 (as amended) or are a priority species in Wales and therefore not included in Table 2. This includes 19 species of amber conservation concern and one species of red.

Table 2 Species records derived from the desk study

Common Name	Scientific Name	HSR Sch ¹ 2 or 5	WCA ² Sch1, 5 or 8	National Priority Species ³	Red Data Book/ BoCC ⁴	Grid Ref.	Distance from site	Source
Plants								
Slender hare's-ear	<i>Bupleurum tenuissimum</i>			✓		ST311518 3058	991	SEWBReC
Invertebrates								
Shrill carder bee	<i>Bombus sylvarum</i>			✓		ST302843	977	SEWBReC
White-letter hairstreak	<i>Satyrrium w-album</i>		✓ (5)	✓		ST3084	765	SEWBReC
Fish								
European eel	<i>Anguilla Anguilla</i>			✓		ST307846	621	SEWBReC
Amphibians								
Common toad	<i>Bufo bufo</i>		✓ (5 sale only)	✓		ST310837	494	SEWBReC
Reptiles								
Common lizard	<i>Zootoca vivipara</i>		✓ (5)	✓		ST316884 98	709	SEWBReC
Birds								
Bar tailed godwit	<i>Limosa lapponica</i>			✓	✓ (amber)	ST3183	494	SEWBReC

¹ Conservation of Habitats and Species Regulations 2010, as amended

² Wildlife and Countryside Act 1981, as amended

³ Species of Principal Importance within the relevant country of the United Kingdom

⁴ Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man

Common Name	Scientific Name	HSR Sch ¹ 2 or 5	WCA ² Sch1, 5 or 8	National Priority Species ³	Red Data Book/ BoCC ⁴	Grid Ref.	Distance from site	Source
Black-headed gull	<i>Chroicocephalus ridibundus</i>			✓	✓ (amber)	ST315839	76	SEWBReC
Bullfinch	<i>Pyrrhula pyrrhula</i>			✓	✓ (amber)	ST3183	494	SEWBReC
Cetti's warbler	<i>Cettia cetti</i>		✓ (1)			ST3183	494	SEWBReC
Curlwe	<i>Numenius arquata</i>			✓	✓ (red)	ST315839	76	SEWBReC
Duncock	<i>Prunella modularis</i>			✓	✓ (amber)	ST3184	200	SEWBReC
Fieldfare	<i>Turdus pilaris</i>		✓ (1)	✓	✓ (red)	ST3183	494	SEWBReC
House sparrow	<i>Passer domesticus</i>			✓	✓ (red)	ST3184	200	SEWBReC
Kestrel	<i>Falco tinnunculus</i>			✓	✓ (amber)	ST315839	76	SEWBReC
Lapwing	<i>Vanellus vanellus</i>			✓	✓ (red)	ST315839	76	SEWBReC
Linnet	<i>Linaria cannabina</i>			✓	✓ (red)	ST3184	200	SEWBReC
Marsh Harrier	<i>Circus aeruginosus</i>		✓ (1)		✓ (amber)	ST3083+	1025	SEWBReC
Peregrine	<i>Falco peregrinus</i>		✓ (1)			ST315839	76	SEWBReC
Redwing	<i>Turdus iliacus</i>		✓ (1)		✓ (red)	ST3183	494	SEWBReC
Reed bunting	<i>Emberiza schoeniclus</i>			✓	✓ (amber)	ST3183	494	SEWBReC
Ringed plover	<i>Charadrius hiaticula</i>			✓	✓ (red)	ST3183	494	SEWBReC
Ruff	<i>Calidris pugnax</i>		✓ (1)	✓	✓ (red)	ST317839	247	SEWBReC
Skylark	<i>Alauda arvensis</i>			✓	✓ (red)	ST3183	494	SEWBReC
Song thrush	<i>Turdus philomelos</i>			✓	✓ (red)	ST3183	494	SEWBReC
Starling	<i>Sturnus vulgaris</i>			✓	✓ (red)	ST3184	200	SEWBReC

Common Name	Scientific Name	HSR Sch ¹ 2 or 5	WCA ² Sch1, 5 or 8	National Priority Species ³	Red Data Book/ BoCC ⁴	Grid Ref.	Distance from site	Source
Whimbrel	<i>Numenius phaeopus</i>		✓ (1)		✓ (red)	ST315839	76	SEWBReC
Yellow wagtail	<i>Motacilla flava</i>			✓	✓ (red)	ST3183	494	SEWBReC

4.3 Field Survey: Development area and wider site

Habitats and Flora

4.3.1 The following Phase 1 habitat types were identified on the development area:

- Dense scrub;
- Ephemeral/ short perennial and scattered scrub mosaic;
- Hard standing.

4.3.2 The 3.4ha that comprises the development area supports habitats characteristic of previously developed industrial land. Dense scrub is the dominant component, occupying approximately 2.2ha and divided into a series of 5 main blocks. A mosaic of ephemeral/short perennial habitat and scattered scrub separates the scrub blocks and appears to have established on former building footprints and access tracks and covering. This habitat type occupies approximately 1.1ha and is considered to be open mosaic habitat (OMH), a Priority habitat under Section 7 of the Environment (Wales) Act 2016 (Section 5.3.1).

4.3.3 South of the development site, in the remaining 0.8ha which will not now be developed, the habitat mix is similar to the development site (i.e. the wider site). However, the OMH is a more dominant component of this area. A small area of ephemeral standing water and an earth bank also occurs within the wider site.

4.3.4 Paragraphs 4.3.55 to 4.3.137 present more detailed descriptions of the habitats that occur on the development area. The additional habitats that occur on the wider site that will not be affected by the development (i.e. the standing water and the earth bank) are described in paragraphs 4.3.8 to 4.3.9.

Dense scrub (DDS)

4.3.5 An area of approximately 2.2ha of dense scrub (DS1 on Figure 2 and Photograph 2 on Figure 3) in patches across the majority of the development area which is the dominant habitat type. The scrub is between 1-2m in height and is clearly the succession of adjacent habitats, i.e. from an ephemeral/short perennial and scattered scrub mosaic (ESP/SS1). This scrub is continuous with a similar habitat type outside the site boundary to the west. The dominant scrub species is silver birch (*Betula pendula*), but there is also abundant bramble (*Rubus fruticosus*), butterfly-bush (*Buddleja davidii*), grey willow (*Salix cinerea*) and goat willow (*Salix caprea*). Occasional elder (*Sambucus nigra*) and gorse (*Ulex europaeus*) are also present, representing a fairly diverse scrub species composition given the past disturbance of the site. See ESP/SS1 below.

Ephemeral/short perennial and scattered scrub mosaic (ESP/SS)

4.3.6 An area of approximately 1.1ha of ESP/SS occurs on the development area. Also known as open mosaic habitat (OMH), this is the second dominant habitat type on the site.(see Photographs 3, 5 and 6 on Figure 3). This habitat forms a grid and appears to have developed on former tracks through the site, with areas of dense scrub in between. The underlying substrate is composed of hard packed rubble and gravels in varying sizes as a result of previous clearance of the site. This makes the majority of the site free draining and very likely neutral to alkaline in pH. However, it is clear that water

does pool on the site (seasonally or in times of high rainfall) and therefore suggests a relatively impermeable layer is present. This is indicated by the presence of hard rush (abundant), bulrush (*Typha latifolia*) (frequent), yellow iris (*Iris pseudacorus*) (occasional) and hemlock water-dropwort (*Oenanthe crocata*) (rare in occurrence).

- 4.3.7 ESP/SS1 is at an early successional stage and is exposed to significant changes in both temperature and hydrological conditions. Many of the species are indicative of stress tolerance, along with low nutrient budgets. There are patches of bare ground or only a thin covering of moss. In addition, even though the area has been highly modified, the likely lack of any agriculture herbicide use has resulted (along with the ground conditions) in a high diversity of plant species occurring. No species was dominant due to the mosaic that occurred (overall 61 species), however, a large number were abundant including bramble, bush vetch (*Vicia sepium*), cut-leaved crane's-bill (*Geranium dissectum*), perforate St John's-wort (*Hypericum perforatum*), bristly ox tongue (*Helminthotheca echioides*) and field forget-me-not (*Myosotis arvensis*). Currently the area is unmanaged.

Hard standing

- 4.3.8 One area of hardstanding is present at the site (approximately 0.1ha), see Photograph 1, Figure 3. This is composed of tarmac with cracks colonised by plants from the surrounding area. These include biting stonecrop (*Sedum acre*) and annual pearlwort (*Sagina apetala*) that are all rare in occurrence.

Additional habitats that occur on the wider site that will not be affected by development

Standing Water

- 4.3.9 There is one area of standing water, a waterbody within the wider site (approximately 90sqm) (see Photograph 6, Figure 3) which is an ephemeral pool in an area that waterlogs in high rainfall events. The waterbody is 20-30cm deep (but found to be dry during subsequent breeding bird surveys by late May 2019) and cannot get deeper due to the shallow profile of the surrounding area. On the very edges of the waterbody within the area of ESP/SS1, hard rush (*Juncus inflexus*) was found rarely. At the time of survey, the waterbody had no vegetation within it, and the substrate was that of the surrounding ESP/SS1; rubble. It was noted that it is likely to be heavily used by the local seagull population due to significant numbers of footprints in the mud at the edges and within.

Earth Bank

- 4.3.10 One earth bank (EB1) is present towards the southern end of the site (approximately 50sqm), see Photograph 3, Figure 3. The substrate is that of ESP/SS1, but with a lower species diversity. EB1 is approximately 2.4m high by 4m wide at the base. Abundant species include bramble, bush vetch (*Vicia sepium*), fat-hen (*Chenopodium album*) and silver birch. Other species that are frequent include wood sage (*Teucrium scorodonia*) and wild strawberry (*Fragaria vesca*).

Fauna

- 4.3.11 A number of invertebrate and bird species along with evidence of other animals were observed across the development area and the wider site. These were:

- Orange-tip butterfly (*Anthocharis cardamines*);
- Small white butterfly (*Pieris rapae*);
- Seven spot ladybird (*Coccinella septempunctata*);
- Chaffinch (*Fringilla coelebs*);
- Chiffchaff (*Phylloscopus collybita*);
- Goldfinch (*Carduelis carduelis*);
- Kestrel (*Falco tinnunculus*), amber listed bird of conservation concern (Eaton et., 2015);
- Oystercatcher (*Haematopus ostralegus*), amber listed bird of conservation concern (Eaton et at., 2015);
- Swallow (*Hirundo rustica*);
- Whitethroat (*Sylvia communis*);
- Rabbit (*Oryctolagus cuniculus*); and
- Fox (*Vulpes vulpes*) (faeces).

Invasive species

- 4.3.12** Japanese knotweed (*Fallopia japonica*) was identified within the wider site in the southwest corner of the site (Target note 3, Figure 2). It will not be affected by the development, although control measures will be required to prevent its spread during management and enhancement. Control measures are discussed in Section 7.2.

Target Notes

- 4.3.13** The following specific points worthy of a target note (TN) were observed within the development area (Figure 2);
- TN1 - A mound of concrete rubble towards the north of the site, suitable for hibernating reptiles or daytime refugia, see Photograph 4, Figure 3;
- 4.3.14** A further two features were noted on the wider site:
- TN2 - A second mound of concrete rubble towards the south of the site, suitable for hibernating reptiles or daytime refugia; and
 - TN3 - stand of Japanese knotweed adjacent to the boundary approximately 15m long parallel to the boundary.

4.4 Field Survey: Proposed enhancement area

- 4.4.1** The following Phase 1 habitat types were identified on the proposed enhancement area and these are shown in Figure 4:
- Dense scrub;
 - Ephemeral/ short perennial and scattered scrub mosaic.

- Hard standing

Dense scrub

- 4.4.2 A stand of dense scrub extends from southern boundary of the enhancement area, northwards towards the centre of the site. A second block of scrub extends in a north south orientation through the centre of the site. Dense scrub occupies 0.25ha (approximately 39% of the site). Bramble (*Rubus fruticosus*) is the dominant species, with butterfly-bush, grey willow and goat willow abundant in both blocks of scrub. Gorse (*Ulex europaeus*), common broom (*Cytisus scoparius*), dog rose (*Rosa canina*) and hawthorn (*Crataegus monogyna*) are also occasional within the scrub community. The margins of the scrub blocks are dominated by dog rose (*Rosa canina*), spear thistle (*Cirsium vulgare*) and black mustard (*Brassica nigra*).

Ephemeral/ short perennial

- 4.4.3 Two blocks of ephemeral/ short perennial and scattered scrub mosaic habitat, occupying 0.36ha in total (approximately 57% of the site), occur to the east and west of the central block of scrub. The community is diverse, comprising 31 species of which none were considered dominant. A number of species were recorded as abundant including butterfly bush, dog rose, Yorkshire fog (*Holcus lanatus*) and perforate St John's wort (*Hypericum perforatum*).

Hard standing

- 4.4.4 An L-shaped area of hard standing extends east and northwards from the central block of scrub in the centre of the site. The hard standing occupies approximately 4% of the site.

5. Legislation and Planning Policy Considerations

5.1 Background

- 5.1.1 The content of the legislation and planning policy section is the legislation and planning policy considerations that we know are relevant based on this desk study and extended Phase 1 habitat survey. The legislation and policy considerations that might arise following further surveys are excluded. Potential further ecological considerations are discussed in Section 6. A detailed description of the method for this section is given in Appendix 1.

5.2 Designated Sites

- 5.2.1 The Severn Estuary SPA, SAC, Ramsar Site and SSSI is within 5m of the site boundary; the closest area being on the eastern bank of the Ebbw River. Along with the River Usk / Afon Wysg SAC and River Usk (Lower Usk) /Afon Wysg (Wysg Isaf) SSSI within 175m from the eastern boundary. Both sites are strictly protected through European Directives and domestic legislation, principally the Conservation of Habitats and Species Regulations 2017. In addition, the Environment (Wales) Act 2016 places a 'duty' (the biodiversity and resilience of ecosystems duty) on public authorities (the local authority) to "seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions". Planning Policy Wales (2018) (PPW) states "Statutorily designated sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management". The Environment (Wales) Act 2016 and PPW 2018 is applied by the Newport City Council through Policy SP9 of the Newport Local Development Plan 2011-2026 whereby they will ensure that such sites are "protected from inappropriate or damaging development". Given the proximity of these to the site, recommendations relating to these sites are given in Section 7 below.
- 5.2.2 The Gwent Levels - St Brides SSSI is within 168m to the west of the site. SSSIs are principally protected by the Wildlife and Countryside Act 1981 (as amended) and will be considered under Policy SP9 of the Newport Local Development Plan 2011-2026. Given the proximity of the SSSI to the site, recommendations are given in Section 7 below.
- 5.2.3 The Afon Ebbw River SINC is within 44m of the site boundary to the north. Although not a statutory designation, given the proximity to the site, the statement above regarding Policy SP9 of the Newport Local Development Plan 2011-2026 applies and as such, recommendations are given in Section 7 below.
- 5.2.4 The Newport Wetlands SSSI and NNR is within 0.47km of the site and is protected and considered as per the Gwent Levels - St Brides SSSI under subsection 5.2.2 and as notified by the National Parks and Access to the Countryside Act 1949, to be managed by the appropriate authority. However, it is unlikely the proposals will have any negative effect on the Newport Wetlands SSSI and NNR because:
- It is separated from the site by 0.47km to the south west, with no contiguous link (i.e. split from the SSSI by the mouth of the River Usk);
 - Waste water and run-off from the development will be treated to national standards before discharge;
 - Pollution will be controlled during construction works in accordance with all good practice documentation from refuelling to the use of machinery;

- The use of the site will be non-residential and therefore no increase in footfall would be expected at such a site;
- Any waste from the production of plasterboard will be disposed of in line with national standards. All materials used in the production will also be stored in line with national standards i.e. banded or in sealed containers.

5.2.5 The development proposals should therefore be compliant with the relevant legislation and policy with respect to the Newport Wetlands SSSI and NNR.

5.2.6 The proposed developments should not have direct or indirect effects on the remaining four SINCs within 2km of the site boundary; Duffryn Pond, Marshalls, Julian's Gout Land or Gwent Wetland Reserve and should be compliant with Policy SP9 of the Newport Local Development Plan 2011-2026.

5.3 Priority Habitats

5.3.1 A priority habitat; open mosaic habitats on previously developed land has been determined to be present at the site at ESP/SS1 as determined via Section 7 of the Environment (Wales) Act 2016 based upon the results of the field survey. This was for the following reasons:

- Greater than 0.25ha in extent;
- Although the full history of the site is not known, it is clear from the substrate it has been severely modified in the past with extraneous materials and soil types added. As an active dock, this is highly likely to have taken place;
- Early successional and stress tolerant species are present; in the case of this site they are a mix of mosses/liverworts, inundations species, flower rich grassland species and annuals;
- There is loose bare substrate present; and
- Mosaic of early successional communities.

5.3.2 Under PPW 2016 the local planning authority should ensure that habitats listed under the Environment (Wales) Act 2016 are considered through the planning process. Specifically, they must 'take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.' This duty is implemented locally through Policy SP9 of the Newport local Development Plan 2011-2026. Given that approximately 1.1ha of this habitat could be lost through the development of the site, recommendations are given in Section 7.

5.3.3 Ancient woodland is a priority habitat as determined via Section 7 of the Environment (Wales) Act 2016 and thus should be considered via Policy SP9 of the Newport Local Development Plan 2011-2026. However, it is unlikely that the development will impact such areas outside of the designated sites because:

- The distance between the site and the remaining ancient woodland parcels is between 1.2-1.9km;
- The ancient woodlands are disconnected from the site by the Ebbw River; and
- The ancient woodlands are upstream of the site and therefore any water born contaminants could not reach these sites, along with being over 200m inland from the river.

5.3.4 Woodland (ancient) will therefore be discussed no further as it is likely that the development will be compliant with regards to legislation pertaining to woodland outside of designated sites.

5.4 Protected, Priority Species and those of Conservation Concern

Plants

5.4.1 The desk study identified slender hare's-ear within 1km of the site boundary. This species is an annual and a colonist of thinly vegetated or disturbed coastal sites. Slender hare's-ear is a priority species under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plans 2011-2026. Nonetheless, this species was not recorded during the field survey at a time of year appropriate to detect the species. Therefore, slender hare's-ear will be discussed no further.

Birds

5.4.2 Four of the seven bird species noted during the field survey (chaffinch, chiffchaff, goldfinch and whitethroat) could breed at the site within DS1 or at ground level within ESP/SS1. In addition, nine of the 22 bird species identified from the desk study (Bullfinch, Cetti's warbler, dunnock, house sparrow, lapwing, linnet, ringed plover, skylark and song thrush) could also breed at the site, due to the presence of DS1 and ESP/SS1. The remaining species, both seen and from the desk study, are unlikely to breed on site for the following reasons:

- The vegetation was unsuitable for those species to breed;
- The species breed significantly further north of the site/outside of the UK; and
- The species are migratory and do not breed in the UK.

5.4.3 Birds are principally protected via Section 1 (1) of the Wildlife and Countryside Act 1981 (as amended) protecting them from being killed or injured, including damage or destruction of their eggs and nests. Further protection with regards to disturbance of nests is given to Cetti's warbler which is listed under Schedule 1 of the Wildlife and Countryside Act 1981 and could occur on the site. In addition, a number of identified species which could potentially breed on site, are listed under Section 7 of the Environment (Wales) Act 2016 as priority species with several listed as amber or red species of conservation concern. Due to the protection afforded to birds and their conservation importance, birds are considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026 as guided by PPW 2018 with regards to the conservation of biodiversity. Recommendations are given in Section 7 regarding the development of the site and birds.

Mammals

5.4.4 Rabbits were observed at the site along with the faeces of foxes. Both species of mammals are protected via the Wild Mammals (Protection) Act 1996 where it would be an offence to intentionally cause unnecessary suffering to any wild mammal, including by crushing or asphyxiation. Crushing or asphyxiation could occur if rabbit burrows or fox earths (most likely identified during site clearance) are not managed sensitively if located. Recommendations are given in Section 7 to protect these mammals.

5.5 Invasive species

5.5.1 Japanese knotweed was identified within the site boundary. It is an invasive species as listed under Section 9 of the Wildlife and Countryside Act 1981, as amended, and it is illegal to plant, spread or encourage the growth of Japanese knotweed in the wild, therefore control measures are recommended in Section 7 for the control and eradication of this species.

5.6 Ecological Enhancement

5.6.1 Central and local government policy now points towards ecological enhancement on development sites. For example, PPW 2018 states that development plans should “*secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks*”. This is further re-iterated in Policy SP9 of the Newport Local Development Plans 2011-26 which states “*National guidance sets out a clear requirement for the planning system to improve as well as protect the environment*”. Recommendations are given in Section 7 to enhance the site for wildlife at the completion of the development.

6. Potential Further Ecological Considerations

6.1 Background

- 6.1.1 The potential further ecological considerations section sets out our assessment of the potential of the site to support protected species and other species of conservation concern which were not detected during the extended Phase 1 habitat survey, either because their presence is seasonal or because specialist survey techniques are required. Further survey work or appropriate mitigation is likely to be required before these issues can be addressed. Further information on the methods of assessment is given in Appendix 1.

Protected and Priority Species

Invertebrates

- 6.1.2 The area of ESP/SS1 - the priority habitat open mosaic habitats on previously developed land - especially as complemented by the adjacent DS1 parcels, provides particularly suitable habitats for terrestrial invertebrates especially those species that require early successional stages associated with mosaics of colonising vegetation with variations in height, densities, clusters of plant species, varying hydrology and temperatures. Such invertebrate species are likely to be moths, bees, spiders and beetles that could be priority species in Wales under Section 7 of the Environment (Wales) Act 2016 and therefore considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026.
- 6.1.3 The shrill carder bee (*Bombus sylvarum*) and white-letter hairstreak butterfly (*Satyrion w-album*) were also identified from the desk study as occurring within 1km and are both priority species. The white-letter hairstreak butterfly is unlikely to occur on-site as there are no suitable food plants for the species to complete its lifecycle and will be discussed no further.
- 6.1.4 Although such invertebrates are not strictly protected, when coupled with the priority habitat found in this area, the species assemblage may be important locally. Recommendations are made in Section 7 to safeguard shrill carder bee and the overall potential invertebrate assemblage during development.

Fish

- 6.1.5 Records of European eel (*Anguilla anguilla*) were returned from the desk study as occurring within 1km of the site. The European eel is a priority species under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plans 2011-2026. Nonetheless, provided discharge of water from the site is controlled it is unlikely the development will affect local European eel populations and will be discussed no further.

Great crested newts and other amphibians

- 6.1.6 A shallow waterbody was identified on the wider site during the Phase 1 survey that is potentially suitable for amphibian species. Although the waterbody lies in the wider site and will not now be affected by the proposed development, any amphibians using the pond for spawning are likely to be using the scrub and OMH as terrestrial foraging and potentially hibernation habitat. A preliminary

assessment of both the development area and the wider site to support amphibians has therefore been presented below.

6.1.7 Common toad (*Bufo bufo*) was identified from the desk study as occurring within 1km of the site boundary and although there is limited connectivity to the site toads could migrate down the eastern bank of the Ebbw River. It is unlikely, however, that great crested newt could occur on the site for the following reasons:

- The waterbody is shallow and would rapidly dry in periods of low rainfall (as observed during the breeding bird survey in May 2019);
- The pond is small in area;
- There is limited connectivity outside of the site boundary (only alongside the Ebbw River);
- There are no other waterbodies within 1km of the site boundary that a great crested newt could migrate to and from to sustain a great crested newt meta-population;
- The pond is exposed and used extensively by gulls (a significant predation source for potential great crested newt as there is no vegetation within the waterbody);
- As a result of no waterbody vegetation, invertebrate food sources for great crested newt efts would be very limited; and
- There has been significant disturbance of the site in the past as evident from the ground substrate.

6.1.8 As a result, great crested newt will be discussed no further within this report.

6.1.9 Common toad receives protection from sale only under the Wildlife and Countryside Act 1981 (as amended) which is unlikely to occur as part of the development. Nonetheless, common toad is also a priority species under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plans 2011-2026. Recommendations are given in Section 7 to protect common toad.

Reptiles

6.1.10 The site contains suitable habitat for a number of common reptile species including common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*). Suitable habitat identified included rubble piles which presents as refuge and hibernacula potentials (TN1 and TN2, Figure 2). Grass snake have also been noted within the Afon Ebbw SINC. Particular areas of interest are found around the edge of the site where DS1 occurs. Common species of reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which protects them from killing and injury. These species are also designated priority species in Wales under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026. Recommendations are given in Section 7 to protect reptiles.

Bats

- 6.1.11** Both the development area and wider site have overall low-quality habitat to support roosting bats but there is one linear feature of scrub, along the western boundary of DS1, that provides connectivity alongside the site for commuting and foraging. This would allow bats to pass north and south, should they negotiate the hard and industrial nature of surrounding port infrastructure. All bats, including their habitats, are fully protected by the Conservation of Habitats and Species Regulations 2017 with further provision through the Wildlife and Countryside Act 1981 (as amended). Additionally, a number of bat species that could use the site, for instance common pipistrelle (*Pipistrellus pipistrellus*), are priority species under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026. Recommendations are given in Section 7 to protect bats during development.

Badger

- 6.1.12** Although no evidence of badgers (*Meles meles*) was identified, it is possible they could colonise the site, especially as there is suitable foraging habitat and the site is relatively undisturbed. Badgers are protected through the Protection of Badger Act 1992 which makes it an offence to intentionally kill, injure or take a badger or to interfere with a badger sett which includes damaging, destroying or obstructing access. Recommendations are given in Section 7 should badger occur.

7. Recommendations

7.1 Mitigation

- 7.1.1 The recommendations for mitigation (including avoidance, mitigation and compensation) measures given in this section are based on the findings of the desk study and extended Phase 1 habitat survey. It may include precautionary mitigation measures for some species which could occur on the site but excludes discussion of the mitigation measures that may be required following the results of the further surveys recommended in Section 7.3.

Designated sites

Statutory Designated Sites

- 7.1.2 Given the location of the development within the potential zone of influence of the Severn Estuary SPA, SAC, Ramsar Site and SSSI, River Usk / Afon Wysg SAC and River Usk (Lower Usk) /Afon Wysg (Wysg Isaf) SSSI and the Gwent Levels - St Brides SSSI, screening for an Environmental Impact Assessment is being undertaken with the Local Planning Authority. It is also advised that any potential impacts upon the Afon Ebbw River SINC are included in the screening assessment.
- 7.1.3 Furthermore, a Habitats Regulations Assessment screening assessment should be undertaken given the proximity of the site to the SPA, SACs and Ramsar Site to assess the likelihood of adverse significant effects from the development on the designated features of those sites as part of a planning application.

Priority Habitats

- 7.1.4 Removal of the external storage areas from the southern end of the development (paragraph 2.1.3) which reduces the development footprint from 4.2ha to 3.4ha will ensure that the largest block of priority open mosaic habitat on the wider site is not affected.
- 7.1.5 A further approximately 0.36ha of open mosaic habitat occurs on the proposed enhancement area (Plate 1 and Figure 4). Long term management of open mosaic habitat within the proposed enhancement area will help to offset some of the approximately 1.1ha of this habitat type that will be lost. This will include control of scrub to maintain the openness of the habitat, and disturbance of areas of the habitat in a rotation to promote growth of the early colonising species that are characteristic of this habitat type. Management prescriptions for these habitat areas will be covered in a separate management plan.

Protected Species, Priority Species and those of Conservation Concern

Invertebrates

- 7.1.6 To protect the shrill carder bee should it occur at the site, flower rich areas should be maintained, and areas of the open mosaic habitats on previously developed land maintained either on-site or nearby to ensure the survival of this species in a local context. Further survey is discussed below for invertebrates.

Common toad

- 7.1.7** Should any common toad be identified during the clearance of the site, site operatives should move the toad to a suitable refugia. During the winter this could be a log pile or rubble pile within the enhancement areas discussed under Section 7.2 or released into areas of dense vegetation during the summer to safeguard individual toads. Care should also be taken when excavating within the site boundary. Open excavations should not be left without an escape ramp for common toad to exit and should be checked for toads before works continue each day. To ensure the site operatives know how to identify common toad from other amphibian species, a tool box talk should be given.

Birds

- 7.1.8** All vegetation clearance works at the site concerning DS1 and ESP/SS1 should be undertaken outside the bird breeding season. This would mean works should take place between September to February to ensure legislative compliance. If vegetation clearance works are carried out between March and August, an ecologist should visit the site the day before vegetation clearance to identify nest locations (if present). If no nests are identified, works can proceed without further ecological supervision. If a nest is present, the nest should be protected with a suitable buffer until the young have fledged or the nest is no longer active.
- 7.1.9** Further survey for birds is discussed below give the extent of habitat to be cleared and proximity to nearby protected sites whose designations include birds.

Other mammals

- 7.1.10** If rabbit burrows or fox earths are identified care should be taken during clearance activities. Rabbit burrows should be first assessed by soft-stopping the holes with grass to see if the entrances are in use. If it is possible to show that the burrow is not in use then the burrow can be destroyed without any risk of causing harm to rabbits; if a rabbit burrow is active, however, it may be necessary to destroy the burrow slowly by hand or using a mini-digger to ensure that no rabbits are harmed and allow them to escape unharmed. No licence would be required.
- 7.1.11** For fox earths it is advised that one-way gates are installed one week prior to destruction of the earth and then the hole destroyed as per rabbits above. Any destruction of fox earths should take place between June to January to ensure young foxes are not trapped below ground.

7.2 Invasive species

- 7.2.1** Japanese knotweed was identified on site (TN3, Figure 2). It is advised that this species is removed via chemical or physical methods and that it is treated during summer. Specialist advice should be sought for treatment of Japanese knotweed but generally principals are outlined here: Physical removal includes the digging out of rhizomes and removal of all plant material. Disposal of plant material off-site must be through licensed landfill sites and through registered waste carriers; or on-site in banded sectioned off areas, or through burning (must be dry and must notify either EA or local council). Chemical control is generally cheaper and the most effective method of knotweed control. It takes approximately 3 years for Japanese knotweed to become dormant and requires approved herbicides; typically glyphosate-based. Regrowth must be treated. The spraying of herbicides presents a risk and must be carried out by a competent person aware of COSHH standards.

7.3 Ecological Enhancements

7.3.1 To ensure that the development will lead to the ecological enhancement of the area, the following are recommended:

- Landscaping to use species native to the UK and of local provenance. All new tree planting should be planned and implemented in accordance with BS8545:2014 *Trees: from nursery to independence in the landscape - recommendations.*;
- Incorporating a mosaic of habitats that represent the current sites habitats and ensure these connect up to the western boundary of the site;
- Ensuring a strip of vegetation is left along the western edge of the site to ensure connectivity with the enhancement area to the south (Plate 1);
- Incorporating at least one post along the western edge of the site near to scrub that will have two bat boxes attached; and
- Ensure that all lighting used during construction and during operation has minimal height and light spill, is directed away from the western boundary, is timed where possible and uses lights unattractive to invertebrates. This will minimise further impacts of light pollution on wildlife and not be above the background level of that of the nearby dock.
- Control of scrub within the open mosaic habitat on the enhancement site
- Regular disturbance of areas of the substrate within the open mosaic habitat on a rotation to promote the growth of the early colonising plant species which are characteristic of the habitat type.

7.4 Further Survey

7.4.1 The following further surveys are recommended at the site:

Invertebrates

7.4.2 An invertebrate survey across ESP/SS1 and along the edges of DS1 due to the richness and mosaics of the plant communities. Ideally, this should be undertaken once per season. Given the species that may occur, sweeping netting, beating and hand searching should be undertaken.

Reptiles

7.4.3 A reptile survey should be carried out around the edges of DS1 and throughout denser areas of ESP/SS1 in suitable weather conditions. This will involve the placement of refugia at a density of 50 - 100 per ha of suitable habitat with seven repeat visits.

Birds

7.4.4 Due to the proximity of the site to an SPA, SAC and SSSIs whose principal reasons for designation are birds, two types of survey are recommended at the site:

- A breeding bird survey within the site boundary comprising at least 5 visits from April to July, with notes made of any potential birds using the site that may be nesting adjacent to it.
- A wintering bird survey of the site and adjacent habitats, especially the Ebbw River lower mouth. This is because the SPA, SAC and SSSIs are designated for their wintering bird populations, and therefore may potentially use the site or nearby. This should consist of a minimum of four vantage point surveys covering the site and adjacent habitats. Surveys should take place from November to February. Alternatively, mitigation in the form of avoiding particularly noisy construction works (i.e. piling) during the overwintering bird period (October to March) should be adopted based on the precautionary principle.

Badger

- 7.4.5** To ensure badgers have not colonised the site, a walkover survey should be completed a maximum of one month prior to works beginning at the site to determine presence or absence.

Bats

- 7.4.6** As there is low quality habitat and one potential commuting and foraging route present at the site, it is advised that bat activity surveys are undertaken at the site. This will include a walked transect and the use of a static monitoring device that provides data over a longer time frame to assess use of the site by bats. It is recommended that this is undertaken once per season. However, as the survey is concerned with temporal changes in the use of the site by bats, surveys can be reduced to two weeks apart. It is also advised that the transect follows the river bank just outside the site to determine whether bats preferentially use this area (as it is likely to be more suitable) and therefore may help to influence future recommendations.

8. Conclusion

- 8.1.1** Given the location of the development within the potential zone of influence of the Severn Estuary SPA, SAC, Ramsar Site and SSSI, River Usk / Afon Wysg SAC and River Usk (Lower Usk) /Afon Wysg (Wysg Isaf) SSSI and the Gwent Levels - St Brides SSSI, screening for an Environmental Impact Assessment is being undertaken with the Local Planning Authority. A Habitats Regulations Assessment screening assessment may also be required given the proximity to the SPA, SACs and Ramsar Site. It is also advised that any potential impacts upon the Afon Ebbw River SINC are included in the screening assessment.
- 8.1.2** The development will result in the loss of approximately 1.1 hectares of ephemeral/short perennial habitat, also referred to as open mosaic habitats on previously developed land (OMH). This is identified as a priority habitat under Section 7 of the Environment (Wales) Act and as such the local planning authority must 'take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.'
- 8.1.3** The largest block of priority open mosaic habitat at the southern end of the wider site now no longer lies within the development area.
- 8.1.4** In addition, a 0.63ha area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). A Phase 1 habitat survey of this site found that open mosaic habitat occupies approximately 0.36ha (57% of the site), and dense scrub 0.25ha (39% of the site). Long term management of open mosaic habitat within the proposed enhancement area will help to offset some of the approximately 1.1ha of this habitat type that will be lost from the development area.
- 8.1.5** Further surveys are recommended for terrestrial invertebrates, reptiles, birds, badger and bats. The results of these surveys, and recommended mitigation measures are reported separately. Recommendations are also made for the treatment of Japanese knotweed which occurs towards the south western corner of the site.

9. References

- 9.1.1 CIEEM (2013) Guidelines for Preliminary Ecological Appraisal. Chartered Institute of Ecology and Environmental Management, Winchester, England.
- 9.1.2 Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment. E & FN Spon, London, England.
- 9.1.3 JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit. Joint Nature Conservancy Committee, Peterborough, England.
- 9.1.4 Stace, C. (2010) New Flora of the British Isles (third edition). Cambridge University Press, Cambridge, England.
- 9.1.5 Newport City Council (2015) Newport Local Development Plan 2011-2026, Newport City Council, Newport.
- 9.1.6 Eaton, et al., (2015) Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man. British Bird, 108 (1), 708-746
- 9.1.7 British Standards Institution (2014) BS8545:2014 Trees: from nursery to independence in the landscape - recommendations, British Standards Institution, London.

Appendix 1 Assessment Methodology

10.1 Identification of Legal and Planning Policy Issues in England

Scope of Assessment

- 10.1.1 The first step is to identify any biodiversity features found on the site that are subject to legal or policy controls, as follows:

Designated Sites

- 10.1.2 The location of the site is compared to the distribution of sites with a statutory or non-statutory nature conservation designation using information derived from the desk study. Consideration is given to designated sites that could be affected directly or indirectly by the proposed development.

Habitats outside Designated Sites

- 10.1.3 The habitats known to occur on the site are compared to those which receive some protection, in law or policy, outside of designated sites i.e. hedgerows, uncultivated land and semi-natural areas, habitats listed as priorities in the home nation biodiversity strategies, habitats listed as Habitats of Principal Importance for the Conservation of Biodiversity by the Secretary of State.

Ancient Woodland

- 10.1.4 The ancient woodland inventory is checked to determine whether any known ancient woodland occurs either on the site or nearby.

Protected Species

- 10.1.5 The species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, the Conservation (Habitats &c) Regulations 2010.
- 10.1.6 In addition, the species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in animal welfare legislation, i.e. the Badgers Act 1992 and the Wild Mammals (Protection) Act 1996.

Priority Species

- 10.1.7 The species known to occur on the site are compared with those listed as priority species (i.e. Species of Principal Importance for the Conservation of Biodiversity in the country concerned).

Other Species of Conservation Concern

- 10.1.8 The species known to occur on the site are compared with other nature conservation listings, such as red data books.

Invasive Plant Species

- 10.1.9** The species of plant present on the site are compared with those listed by government agencies as invasive non-natives, with particular attention given to those listed in the Wildlife and Countryside Act 1981, as amended.

Review of Legislation and Policy

- 10.1.10** If any of the above are found to occur on or near the site and are likely to be affected by the development in any way, the relevant legislation and planning policy (including national, regional, local policies) are examined to determine whether the proposed development is compliant.

Ecological Enhancement

- 10.1.11** Planning policy generally requires new developments to be enhanced for biodiversity. The existing proposals are considered to determine whether biodiversity enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional and local policies are considered.

10.2 Identification of Potential Further Ecological Issues

- 10.2.1** Further ecological issues are those which cannot be resolved during the preliminary ecological appraisal for any reason, including the following:
- The development is near a designated site and consultation with the relevant regulator is required in order to determine whether further assessment is required;
 - Suitable habitat is present on or near the site for a protected species/species of conservation concern and specialist survey techniques are required for their detection;
 - Suitable habitat is present on or near the site for a protected species/species of conservation concern and the extended Phase 1 habitat survey was not undertaken at a suitable time of year for their detection;
 - A protected species/species of conservation concern was found on or near the site but further information on population size or distribution is required in order to resolve any legal and planning policy issues (such as obtaining licences).
- 10.2.2** Discussion of issues raised by 3rd parties, e.g. reports of protected species from the site by local people, may also be discussed under this heading.
- 10.2.3** The desk study is used as a guide to the protected species/species of conservation in the local area, however, the list is not taken to be exhaustive and it is borne in mind that some species may no longer occur in the locality.
- 10.2.4** No attempt is made to evaluate the importance of the site for species not yet confirmed to be on or near the site, nor to discuss the implications for the development if the species were to be found on the site.

Appendix 2 Plant Species and Abundance (Development area and wider site)

Dense scrub DS1

Common Name	Scientific Name	Abundance
Dog-rose	<i>Rosa canina</i>	D
Wild teasel	<i>Dipsacus fullonum</i>	D
Bramble	<i>Rubus fruticosus agg.</i>	A
Butterfly-bush	<i>Buddleja davidii</i>	A
Cleavers	<i>Galium aparine</i>	A
Cut-leaved crane's-bill	<i>Geranium dissectum</i>	A
Goat willow	<i>Salix caprea</i>	A
Grey willow	<i>Salix cinerea subsp. cinerea</i>	A
Hedgerow crane's-bill	<i>Geranium pyrenaicum</i>	A
Traveller's-joy	<i>Clematis vitalba</i>	A
Blackthorn	<i>Prunus spinosa</i>	F
Great willowherb	<i>Epilobium hirsutum</i>	F
Hawthorn	<i>Crataegus monogyna</i>	F
Red clover	<i>Trifolium pratense</i>	F
Spear thistle	<i>Cirsium vulgare</i>	F
Elder	<i>Sambucus nigra</i>	O
Gorse	<i>Ulex europaeus</i>	O
Rowan	<i>Sorbus aucuparia</i>	R

Ephemeral/short perennial and scattered scrub mosaic ESP/SS1

Common Name	Scientific Name	Abundance
Common bird's-foot-trefoil	<i>Lotus corniculatus</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	A
Bush vetch	<i>Vicia sepium</i>	A
Cut-leaved crane's-bill	<i>Geranium dissectum</i>	A
Early forget-me-not	<i>Myosotis ramosissima</i>	A
Field forget-me-not	<i>Myosotis arvensis</i>	A
Germander speedwell	<i>Veronica chamaedrys</i>	A
Moss sp	-	A
Perforate St john's-wort	<i>Hypericum perforatum</i>	A
Dog-rose	<i>Rosa canina</i>	A
Wild teasel	<i>Dipsacus fullonum</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	A
Bristly oxtongue	<i>Helminthotheca echioides</i>	A
Primrose	<i>Primula vulgaris</i>	A
Common fleabane	<i>Pulicaria dysenterica</i>	A
Cuckooflower	<i>Cardamine pratensis</i>	A

Common Name	Scientific Name	Abundance
Hard rush	<i>Juncus inflexus</i>	A
Meadow buttercup	<i>Ranunculus acris</i>	A
Oxeye daisy	<i>Leucanthemum vulgare</i>	A
Smooth hawk's-beard	<i>Crepis capillaris</i>	A
Spear thistle	<i>Cirsium vulgare</i>	A
Wild strawberry	<i>Fragaria vesca</i>	A
Black medick	<i>Medicago lupulina</i>	F
Black medick	<i>Medicago lupulina</i>	F
Broad-leaved dock	<i>Rumex obtusifolius</i>	F
Bulrush	<i>Typha latifolia</i>	F
Cat's-ear	<i>Hypochaeris radicata</i>	F
Common mouse-ear	<i>Cerastium fontanum</i>	F
Creeping cinquefoil	<i>Potentilla reptans</i>	F
Daisy	<i>Bellis perennis</i>	F
Gypsywort	<i>Lycopus europaeus</i>	F
Greater chickweed	<i>Stellaria neglecta</i>	F
Greater stitchwort	<i>Stellaria holostea</i>	F
Great willowherb	<i>Epilobium hirsutum</i>	F
Hedge bedstraw	<i>Galium album</i>	F
Herb-robert	<i>Geranium robertianum</i>	F
Lesser stitchwort	<i>Stellaria graminea</i>	F
Lesser trefoil	<i>Trifolium dubium</i>	F
Petty spurge	<i>Euphorbia peplus</i>	F
Pineappleweed	<i>Matricaria discoidea</i>	F
Ribwort plantain	<i>Plantago lanceolata</i>	F
Scarlet pimpernel	<i>Anagallis arvensis subsp. arvensis</i>	F
Scented mayweed	<i>Matricaria chamomilla</i>	F
Garden lady's-mantle	<i>Alchemilla mollis</i>	F
Spear thistle	<i>Cirsium vulgare</i>	F
White clover	<i>Trifolium repens</i>	F
Wood sage	<i>Teucrium scorodonia</i>	F
Yellow wort	<i>Blackstonia perfoliata</i>	F
Gorse	<i>Ulex europaeus</i>	R
Meadowsweet	<i>Filipendula ulmaria</i>	R
Yellow iris	<i>Iris pseudacorus</i>	R
Biting stonecrop	<i>Sedum acre</i>	R
Burnet rose	<i>Rosa spinosissima</i>	R
False fox-sedge	<i>Carex otrubae</i>	R
Hemlock water-dropwort	<i>Oenanthe crocata</i>	R
Musk thistle	<i>Carduus nutans</i>	R
Oil-seed rape	<i>Brassica napus subsp. oleifera</i>	R
Smooth sow-thistle	<i>Sonchus oleraceus</i>	R

Common Name	Scientific Name	Abundance
Wild angelica	<i>Angelica sylvestris</i>	R
Yarrow	<i>Achillea millefolium</i>	R
Great mullein	<i>Verbascum thapsus</i>	R

Earth bank EB1

Common Name	Scientific Name	Abundance
Bramble	<i>Rubus fruticosus agg.</i>	A
Bush vetch	<i>Vicia sepium</i>	A
Fat-hen	<i>Chenopodium album</i>	A
Goat willow	<i>Salix caprea</i>	A
Silver birch	<i>Betula pendula</i>	A
Butterfly-bush	<i>Buddleja davidii</i>	F
Spear thistle	<i>Cirsium vulgare</i>	F
Wild strawberry	<i>Fragaria vesca</i>	F
Wood sage	<i>Teucrium scorodonia</i>	F
Yarrow	<i>Achillea millefolium</i>	F

Hard standing HS1

Common Name	Scientific Name	Abundance
Annual pearlwort	<i>Sagina apetala</i>	R
Biting stonecrop	<i>Sedum acre</i>	R
Giant fescue	<i>Schedonorus giganteus</i>	R
Smooth sow-thistle	<i>Sonchus oleraceus</i>	R

Appendix 3 Plant Species and Abundance (Proposed habitat enhancement area)

Ephemeral/short perennial (ESP 1)













Common Name	Scientific Name	Abundance
black mustard	<i>Brassica nigra</i>	O
sheep's fescue	<i>Festuca ovina</i>	O
scentless mayweed	<i>Tripleurospermum inodorum</i>	O
spear thistle	<i>Cirsium vulgare</i>	F
cock's-foot	<i>Dactylis glomerata</i>	F
yorkshire-fog	<i>Holcus lanatus</i>	A
perforate St John's-Wort	<i>Hypericum perforatum</i>	A
daisy	<i>Bellis perennis</i>	F
ribwort plantain	<i>Plantago lanceolata</i>	O
bramble	<i>Rubus fruticosus agg.</i>	A
butterfly-bush	<i>Buddleja davidii</i>	A
dog-rose	<i>Rosa canina</i>	A
bristly oxtongue	<i>Helminthotheca echioides</i>	F
hawthorn	<i>Crataegus monogyna</i>	O
grey willow	<i>Salix cinerea subsp. cinerea</i>	O
goat willow	<i>Salix caprea</i>	O
hogweed	<i>Heracleum sphondylium</i>	R
creeping thistle	<i>Cirsium arvense</i>	R
moss sp.	<i>Bryophyta sp.</i>	F
great mullein	<i>Verbascum thapsus</i>	O
dandelion	<i>Taraxacum officinale agg.</i>	R
wild strawberry	<i>Fragaria vesca</i>	F
rosebay willowherb	<i>Chamerion angustifolium</i>	R
false-brome	<i>Brachypodium sylvaticum</i>	R
white clover	<i>Trifolium repens</i>	R
vervain	<i>Verbena officinalis</i>	R
rough-meadow grass	<i>Poa trivialis</i>	R
wood sage	<i>Teucrium scorodonia</i>	R
Canadian fleabane	<i>Conyza canadensis</i>	A
lesser hawkbit	<i>Leontodon saxatilis</i>	R
yellow-wort	<i>Blackstonia perfoliata</i>	R

Dense scrub (DS1)

Common Name	Scientific Name	Abundance
bramble	<i>Rubus fruticosus agg.</i>	D
goat willow	<i>Salix caprea</i>	O
grey willow	<i>Salix cinerea subsp. cinerea</i>	F
hawthorn	<i>Crataegus monogyna</i>	F
spear thistle	<i>Cirsium vulgare</i>	F
Dog-rose	<i>Rosa canina</i>	A

Common Name	Scientific Name	Abundance
butterfly-bush	<i>Buddleja davidii</i>	A
gorse	<i>Ulex europaeus</i>	R
common-broom	<i>Cytisus scoparius</i>	R
black mustard	<i>Brassica nigra</i>	R

Legend

-  National Nature Reserve (NNR)
-  Site of Special Scientific Interest (SSSI)
-  Special Area of Conservation (SAC)
-  Special Protection Area (SPA)
-  Sites of Importance for Nature Conservation (SINCs)
-  Ancient Woodland (AW)
-  Coastal saltmarsh
-  1km Study Area Buffer
-  2km Study Area Buffer
-  5km Study Area Buffer
-  Development Area
-  Wider Site Boundary

Data originates from different sources and scales of mapping and should therefore be considered indicative of position and extent.

Site Grid Reference: 331,377 184,172
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Drawing Ref: **AABP122/27574/1**

Scale at A3: **1:40,000**

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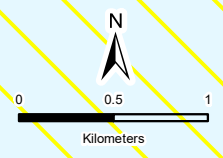
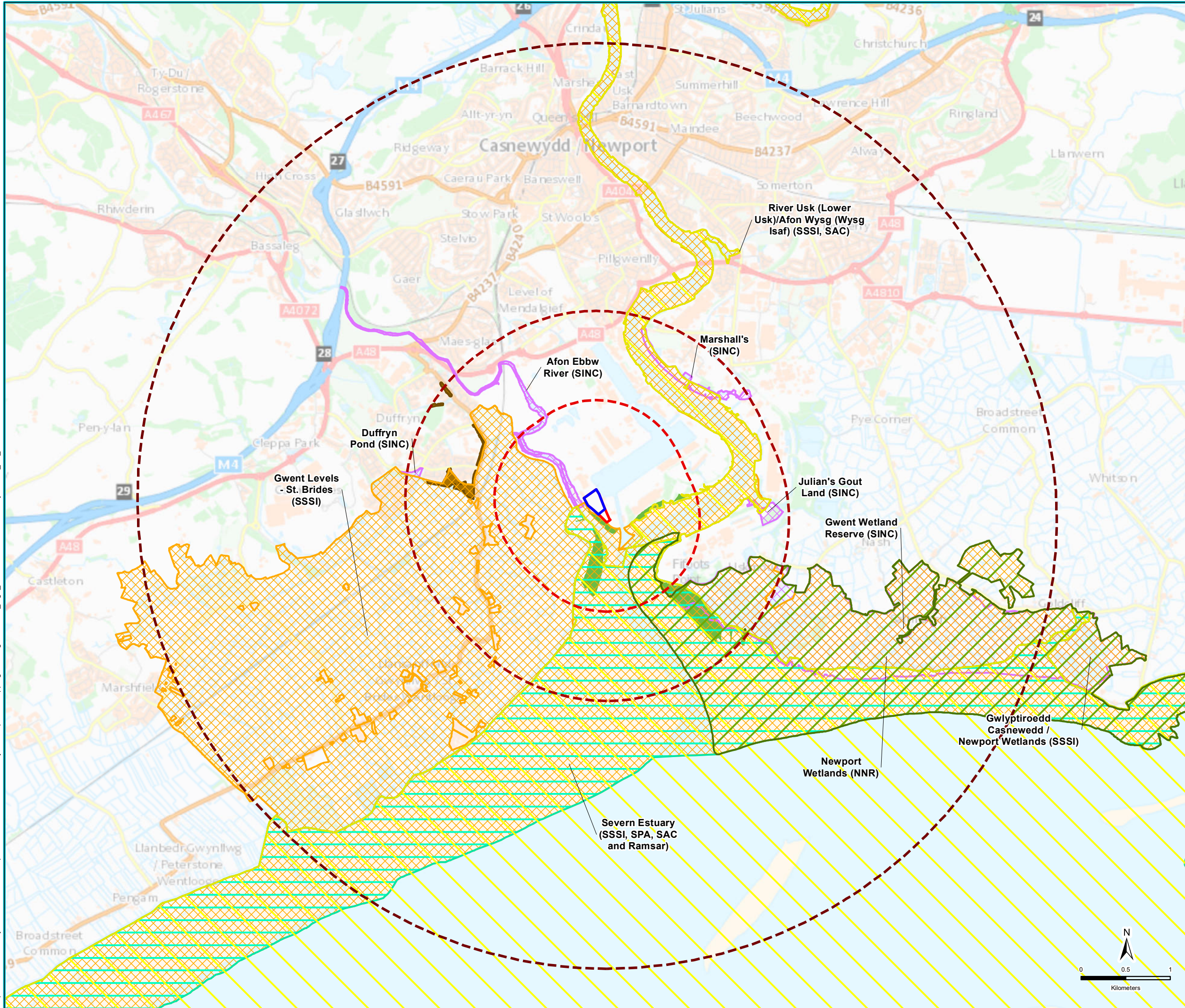
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



Client: **ABPmer**

Figure Number: **1**

Figure Title:

Site Location, Study Area and Desk Study Results



- Legend
-  Photograph Location and Direction
 -  Target Note
 -  Target Note
 -  Earth Bank
 -  Dense Scrub
 -  Standing Water
 -  Ephemeral Short Perennial/Scattered Scrub Mosaic
 -  Hard Standing
 -  Development Area
 -  Wider Site Boundary

This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

Site Grid Reference: 331,376 184,174

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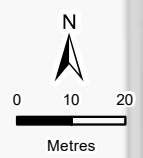
Drawn	Checked
JH	EA

Date	Date
23/05/2019	23/05/2019

Client: **ABPmer**

Figure Number: **2**

Figure Title: **Phase 1 Habitat Survey Map**





Photograph 1:
Looking south west across an area of hardstanding (HS1).



Photograph 2:
An area representative of dense scrub (DS1).



Photograph 3:
Looking towards the earth bank (EB1) and the ephemeral/short perennial and scattered scrub mosaic (ESP/SS1).

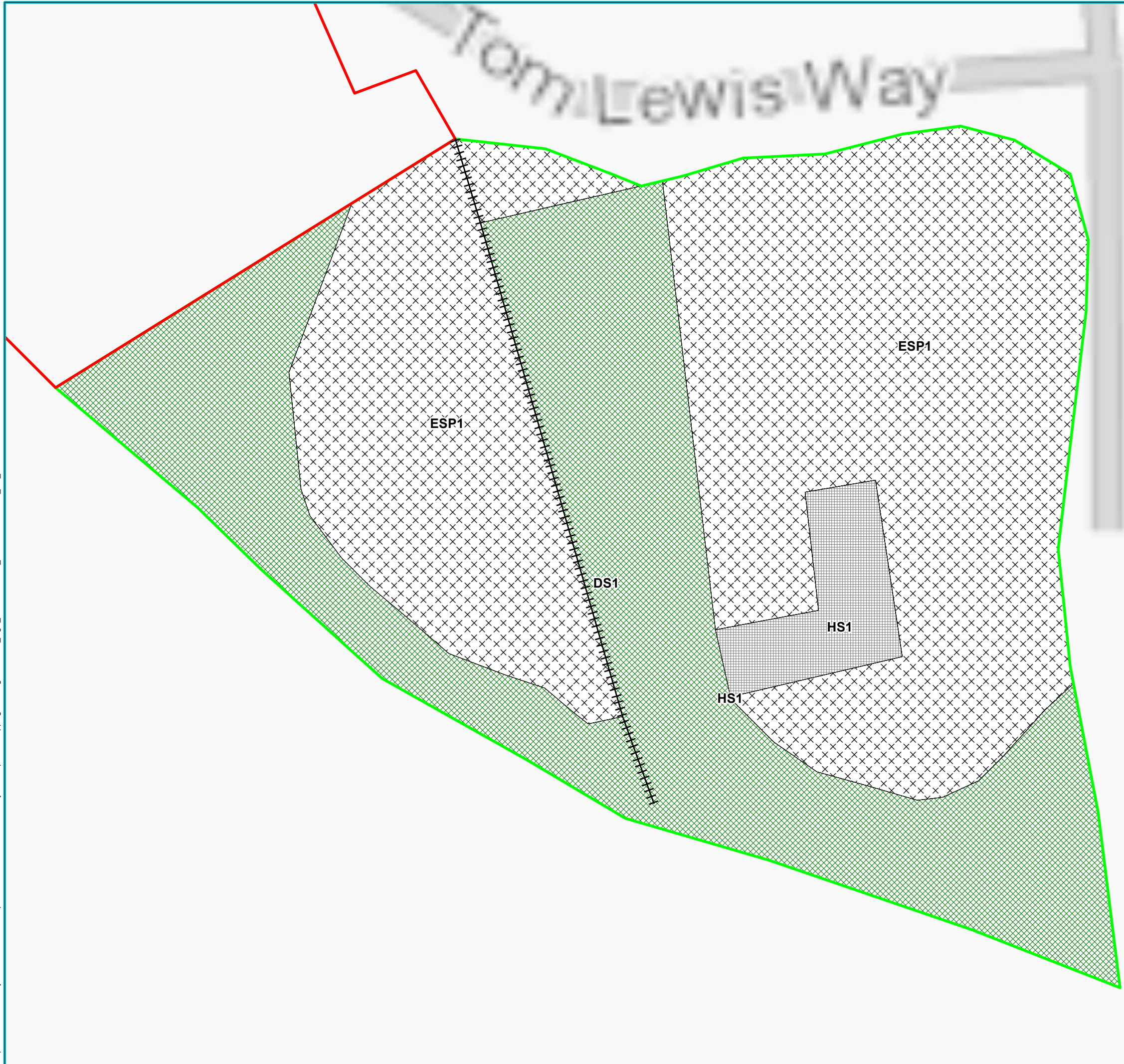
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Client	ABPmer		Drawing Ref	AABP122/27576/1	
Figure Number	3		Scale at A4	Not applicable	
Figure Title	Photographs of the Site		Drawn	JH	Checked
					EA
		Date	23/05/2019	Date	23/05/2019

Thomson
environmental
consultants

www.thomsonec.com
enquiries@thomsonec.com

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\AABP122_Fig4_Phase1Results_EnhancementArea_EA_171019.mxd



- Legend
- Fence
 - ▨ Dense Scrub
 - ▩ Ephemeral Short Perennial/Scattered Scrub Mosaic
 - ▧ Hard Standing
 - ▭ Wider Site Boundary
 - ▭ Habitat Enhancement Area Boundary

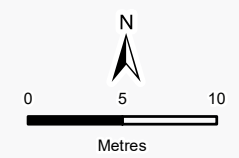
This map has been drawn at a sufficient level of accuracy to fulfil the requirements of a Phase 1 baseline habitat survey. The level of accuracy depends on both the size of the area involved and the base mapping. Every effort has been made to create a map that is as accurate as possible. However, this map is not intended to represent a scaled landscape survey so should not be used to pin-point accurate engineering work or as a basis for detailed site planning.

Site Grid Reference: 331,545 183,973

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Drawn	EA	Checked	TP
Date	17/10/2019	Date	17/10/2019
Client			
ABPmer			
Figure Number		4	
Figure Title			



**Phase 1 Survey of
 Habitat Enhancement Area**

Appendix 3
Target Notes – Additional Habitat Enhancement Area

**Appendix 3 Off-Site Additional Habitat Enhancement Area (AHEA)
Newport Docks – Habitat Descriptions**

A Phase 1 Habitat Survey of land under the ownership of ABP which potentially could be available for off-site habitat enhancement was undertaken in November 2019 by an ecologist of Wardell Armstrong LLP. The survey boundary and target notes are shown on Drawing Number CA11637-008 (Phase 1 Habitat Plan). The abundance of species is given using the DAFOR scale outlined in the table below:

Abundance	Approximate Percentage Cover
Dominant	>50%
Abundant	30-50%
Frequent	Many individuals
Occasional	Few individuals
Rare	Isolated individuals
Local	Distinct populations

1. Introduced Shrub

The survey area is mainly dominated by dense/continuous introduced shrub scrub approximately 3-4m in height. The dominant species is butterfly bush *Buddleja davidii*, with locally abundant bramble *Rubus fruticosus agg.* and frequent willow *Salix sp.* Other species recorded include teasel *Dipsacus fullonum*, field bind weed *Convolvulus arvensis* (A), traveller’s joy *Clematis vitalba* (A), and common nettle *Urtica dioica* (O), box *Boxus sempervirens* (R).

This habitat was recorded throughout the survey area.

A few stands of the invasive species Japanese knotweed *Reynoutria japonica* (R) were recorded in the northern and southern end of the survey area.

Species	Abundance	Species	Abundance
Trees / Shrubs			
Butterfly bush	D	Willow sp.	F
Bramble	LA	Silver Birch	O
Gorse	O	Hawthorn	O
Dog rose	O	Box	R
Forbs			
Teasel	O	Common nettle	O
Travellers joy	O	Field bindweed	O
Marsh thistle	O	Willowherb sp.	O



Photo 1: Dense Introduced Scrub

2. Bramble Dominated Scrub

Several areas of bramble dominated scrub is located within and adjacent to the butterfly bush dominated scrub.

Species	Abundance	Species	Abundance
<i>Trees / Shrubs</i>			
Bramble	D		



Photo 2: Bramble dominated scrub

3. Swamp

Wetter areas within the off-site habitat enhancement area are dominated by common reed swamp

Species	Abundance	Species	Abundance
<i>Forbs</i>			
Common reed	D	Bramble	O
Hard rush	O	Soft Rush	O



Photo 3: Swamp area



Photo 4: Swamp area

4. Willow carr

Within the introduced shrub is an area of willow carr adjacent to a wet area of swamp.

Species	Abundance	Species	Abundance
Trees / Shrubs			
Goat willow	A	Grey willow	A
Forbs			
Hard rush	O	Soft Rush	O



Photo 5: Willow carr

5. Bare ground

There is an area of hard core layed bare ground at the north of the survey area as well as a dirt road in the south.



Photo 6: Bare ground

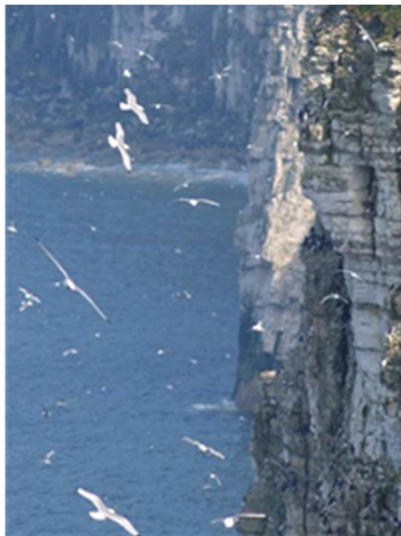
6. Invasive non-native species

Seven stands of Japanese knotweed are present in the survey area. Locations are shown on Drawing Number CA11637-009.



Photo 7: Stand of Japanese knotweed

Appendix 4
Bird Breeding Survey Report



Breeding Birds Survey

**Newport Docks
Plasterboard Factory**

Final

For

ABPmer

Project No.: AABP122/002

October 2019

London & South East
Compass House
Surrey Research Park
Guildford
GU2 7AG . UK
t: +44 (0)1483 466 000

North & Borders
The Tannery
91 Kirstall Road
Leeds
LS3 1HS. UK
t: +44 (0)113 247 3780

Wales & South West
Williams House
11-15 Columbus Walk
Cardiff
CF10 4BY . UK
t: +44 (0)2920 020 674

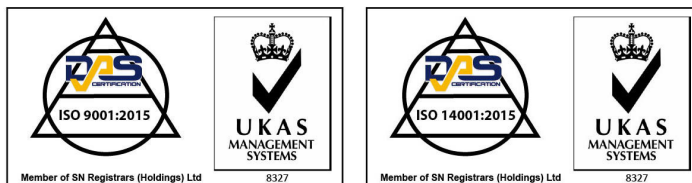
Midlands
Edmund House
12-22 Newhall Street
Birmingham
B3 3AS
t: +44 (0) 121 726 3494

Scotland
20-23 Woodside Place
Glasgow
G3 7QF . UK
t: +44 (0)141 582 1333

Enquiries

e: enquiries@thomsonec.com

w: www.thomsonec.com



Project Number	Report No.
AABP122/002	003 (Final)

Revision No.	Date of Issue	Author	Reviewer	Approver
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005	02/10/2019	Annabel Moore	Tessa Harding	Tessa Harding
006	04/10/2019	Annabel Moore	Tessa Harding	Tessa Harding
007	17/10/19	Annabel Moore	Emily Greenall	Tessa Harding

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Contents

1. Summary and Main Recommendations	5
1.1 Summary	5
1.2 Main Recommendations	5
1.3 Conclusions	6
2. Introduction	7
2.1 Development Background	7
2.2 The Brief and Objectives	8
2.3 Limitations	9
2.4 Surveyors.....	9
3. Methodology	10
3.1 General Approach	10
3.1 Previous studies	10
3.2 Field Survey.....	10
3.3 Data Analysis.....	11
3.4 Dates and Conditions of Survey.....	11
4. Results.....	13
4.1 General.....	13
4.2 Territorial Analysis.....	13
5. Legal and planning policy considerations.....	18
6. Recommendations.....	19
6.1 Mitigation and enhancement	19
7. Conclusions	20
8. References	21
Appendix 1	22
Table 1. Survey dates, times and weather	12
Table 2. Three point scale for recording weather conditions (derived from BTO, undated)	12
Table 3. Bird species recorded during the survey.....	15
Figure 1 Site location with photograph locations	
Figure 2 Site photos	
Figure 3 Bird Survey Results Visit 1	
Figure 4 Bird Survey Results Visit 2	
Figure 5 Bird Survey Results Visit 3	
Figure 6 Bird Survey Results Visit 4	
Figure 7 Bird Survey Results Visit 5	

1. Summary and Main Recommendations

1.1 Summary

- 1.1.1** Associated British Ports (ABP) are planning to construct a plasterboard factory on land within Newport Docks (Figure 1). Thomson Environmental Consultants (TEC) were commissioned by ABPmer on behalf of ABP to undertake a breeding bird survey of the site.
- 1.1.1** As a result of discussions with the local planning authority during the period since the study was commissioned the overall site area has been reduced in size by 0.8ha from 4.2ha to 3.4ha. The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that bird activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').
- 1.1.2** The survey was based on the Common Bird Census (CBC) methodology and included the development area, the wider site and land immediately adjoining it. The survey area was visited on five occasions in the period May to August with at least seven days between surveys.
- 1.1.3** 24 species were identified during the field survey. Of the 13 breeding species, 2 (song thrush and house sparrow) are priority species under the Environment (Wales) Act (2016), and on the BoCC4 red list (Eaton et al, 2015). The site also supports non-breeding linnet, another priority and red list species. A further 2 breeding and 6 non-breeding species are on the amber list of species of conservation concern.
- 1.1.4** Birds are protected from being killed or injured, including damage or destruction of their eggs and nests under Section 1 (1) of the Wildlife and Countryside Act 1981 (as amended). Further protection is afforded to priority species under Section 7 of the Environment (Wales) 2016 such that the local authority must '*take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.*'
- 1.1.5** A 10m buffer of scrub habitat will be retained or re-planted re on the western boundary of the development area. The reduction in the development footprint from 4.2ha to 3.4ha will ensure that the largest block of priority open mosaic habitat no longer forms part of the development site. An area of land at the mouth of the River Ebbw will be set aside for a habitat enhancement area (Plate 1). A 20-year plan will be prepared by ABP to guide the design and future management of the buffer and the enhancement area.

1.2 Main Recommendations

- 1.2.1** Management of the retained or re-planted scrub habitat within the 10m buffer will aim to ensure that dense areas valuable for species such as whitethroat, are safeguarded in the long term. Management will be undertaken in rotation to ensure that undisturbed areas are available as nesting habitat each year.
- 1.2.2** . The following additional measures should be incorporated into the mitigation zone:

- Building nest boxes and creating roosting features such as ledges.
- Creating small and frequent insect refuge units that are dry and located in sunny positions. The creation of this refuge will potentially increase insect populations, creating greater foraging opportunities for omnivorous birds such as song thrush.

1.2.3 Management measures to benefit each of the faunal groups and habitats within the 10m buffer and retained or re-planted area will be captured in a management plan. Monitoring surveys will be carried out at regular intervals following the completion of construction.

1.3 Conclusions

1.3.1 Loss of 3.4ha of semi-natural habitats in the development area, including dense scrub and ephemeral/short perennial habitat will reduce the number of breeding territories that can be supported for certain species. Long term management of open mosaic habitat within the proposed enhancement area, as well as the dense scrub habitat in the 10m buffer will help to offset some of the habitat that will be lost from the development area. By introducing a management regime which maintains the scrub and ephemeral/short perennial habitats, the value of the site can be maintained in the long term.

2. Introduction

2.1 Development Background

- 2.1.1** ABPmer are managing a planning application for a plasterboard factory at Newport Docks on behalf of Associated British Ports. The proposal will include the factory building, areas of hardstanding and associated above and below ground infrastructure. The proposals described are hereafter referred to collectively as the development.
- 2.1.2** The site is towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road leading to the head of the docks (Grid Reference ST 31347 84186). The site location is shown on Figure 1 and photos of the site in Figure 2.
- 2.1.3** Since the original EIA screening request, further consideration has been given to the Proposed Development. A design review has determined that there is sufficient capacity within existing facilities at the Port to provide external storage areas for the Proposed Development. As a consequence, the land take needed has been reduced and the external storage areas originally proposed in the south east of the site have been removed from the Proposed Development.
- 2.1.4** This in turn has the benefit of reducing the amount of habitat loss associated with the development. The area of the site that is to be developed is now approximately 3.4 ha, reducing habitat loss by 0.8 ha. This reduction in area also lessens the extent of the Proposed Development bordering the River Ebbw, with an area outside of the Proposed Development to act as a buffer to the adjacent Severn Estuary SPA, SAC and SSSI.
- 2.1.5** Furthermore, the strip of vegetation that will be retained or re-planted along the western boundary of the site (as proposed in the original EIA Screening Report), will be increased from a width of 5 m to approximately 10 m. This will serve to reduce the extent of overall habitat loss and increase connectivity with habitats on and off site, as well as provide further screening of on-site operations and act as buffer to protected habitats and species.
- 2.1.6** ABP will commit to managing a 0.63ha area that has been set aside in the south east of the site (referred to as 'Habitat enhancement area' in Plate 1). This is in order to enhance open mosaic habitats and other habitats at the confluence of the River Ebbw and Severn Estuary. This will be achieved via a 20-year management plan in discussion with NCC and wider consultees
- 2.1.7** The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that bird activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').
- 2.1.8** The site and development is covered by the Newport Local Development Plan 2011-2026 under the allocation for "Newport Docks" justified as "surplus of land within Newport Docks which could better meet Newport's economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8".

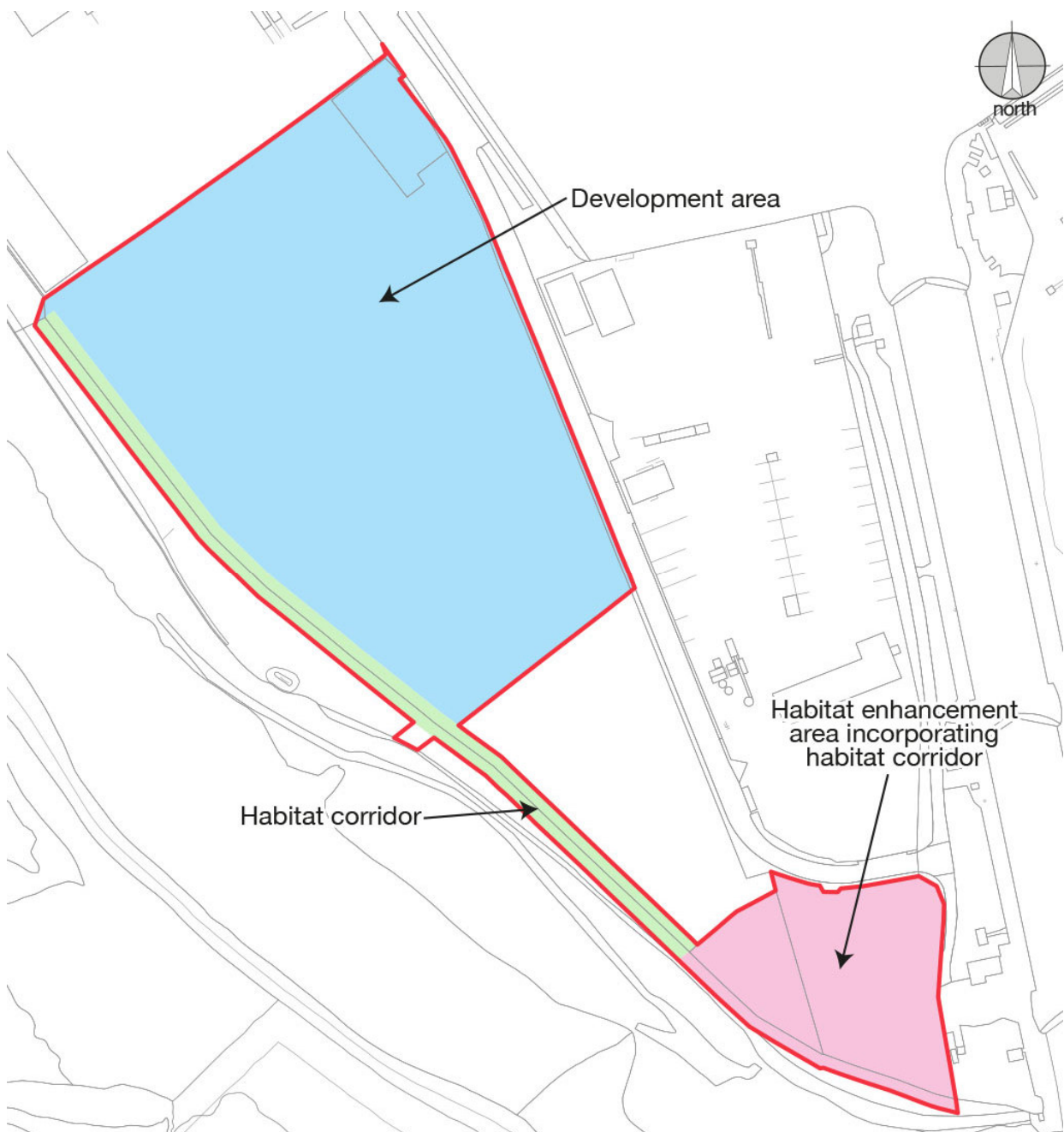


Plate 1: Site layout showing proposed habitat corridor and enhancement area at mouth of the River Ebbw.

2.2 The Brief and Objectives

2.2.1 ABPmer commissioned Thomson Environmental Consultants on 03/05/19 to undertake a breeding bird survey of the site on behalf of Associated British Ports. The brief was to:

- Undertake breeding bird survey visits between April to July following the Common Bird Census (CBC) methodology (Bibby *et al*, 1992; Marchant 1983).

- Walk a route covering several defined points; the starting point of which will vary during each survey visit to sample each point at a different time of the day;
- Recording the data using the standard British Trust for Ornithology species code, including species, sex and activity;
- Provide a report outlining an introduction, methods, results, legal and planning policy constraints and recommendations for the site (including further survey if necessary). The report will be supported by appropriate digitised mapping.

2.3 Limitations

2.3.1 Under standard CBC methodology between eight and ten survey visits are recommended and at least five visits are usually necessary for standard terrestrial analysis to be effective (Bibby *et al*, 1992: Marchant 1983). Since only five survey visits were carried out a precautionary approach was taken such that all singing male passerines were considered to be territory holders and territories were identified by counting the highest number of singing males on any single visit.

2.3.2 As during all CBC surveys, territory numbers should be regarded as estimates.

2.4 Surveyors

2.4.1 The surveys were undertaken by Tansy Knight BSc (Hons)

3. Methodology

3.1 General Approach

3.1.1 A survey for breeding birds was undertaken within a survey area shown on Figure 1 (labelled 'Wider site boundary'), with results from each of the survey visits shown in Figures 3 - 7.

3.1.2 For territorial and semi-colonial species, the method used in this survey was based on the registration mapping technique, similar to that used in the British Trust for Ornithology's (BTO's) Common Bird Census (Marchant, 1983; Bibby *et al*, 2000). The registration mapping technique allows the distribution of bird territories across the survey area to be determined and, subsequently, a count of the number breeding pairs for each species in the survey area as a whole can be derived. An advantage of this technique is that it allows the relative importance of different parts of the survey area to be evaluated.

3.1.3 For non-territorial species, the territory mapping technique is not appropriate. Instead, peak counts were derived from the survey for non-breeding species.

3.1 Previous studies

3.1.1 Breeding bird records within a 2km radius of the development site were obtained from the desk study undertaken to inform the Preliminary Ecological Appraisal (PEA) of the development undertaken by TEC (Thomson Environmental Consultants, 2019).

3.1.2 The desk study records showed that 22 species of birds were present in the area in the last 10 years. During the Phase 1 survey, seven bird species were recorded at the site, of which four could potentially breed on the site; breeding birds are protected under the Wildlife and Countryside Act 1981 (as amended). Of these 2 species (Kestrel (*Falco tinnunculus*) and Oystercatcher (*Haematopus ostralegus*) are amber listed under the Birds of Conservation Concern 4 (BoCC4) assessment (Eaton *et al.*, 2015), and 5 are green listed (Chaffinch (*Fringilla coelebs*); Chiffchaff (*Phylloscopus collybita*); Goldfinch (*Carduelis carduelis*); Swallow (*Hirundo rustica*); and Whitethroat (*Sylvia communis*).

3.2 Field Survey

3.2.1 The survey area was visited on five occasions in the period 15/05/2019 to 12/07/2019 with at least 7 days between each visit.

3.2.2 On each occasion, the survey area was walked following a route that allowed the surveyor to pass within at least 50m of every part of the site. During each walkover, the location and species of all birds encountered (including both those seen and heard) were recorded on a map using standard British Trust for Ornithology (BTO) species codes. The birds recorded included those observed up to 50m outside the survey area. Information was also recorded on bird activity, such as singing or calling (Marchant, 1983).

3.3 Data Analysis

3.3.1 Records of birds made on each visit were collated to determine the approximate location and numbers of breeding pairs for territorial and semi-colonial species. An indicative total for non-territorial species was also calculated for the survey area as a whole. The territorial analysis was based on a standard technique (Marchant 1983; Bibby *et al*, 1992). However, given that only five, rather than the optimum eight visits were made, this technique was altered slightly such that a single record of a pair of birds, or a singing male in suitable breeding habitat was considered sufficient evidence of a breeding pair.

3.3.2 Furthermore, species were classified as non-breeding, possibly, probably or confirmed breeding according to the criteria below:

- Non-breeding birds: birds seen flying over only, or in unsuitable breeding habitat;
- Possibly breeding: birds seen in suitable breeding habitat on at least one visit;
- Probably breeding: singing males, displaying birds or breeding pairs recorded on at least one visit; or territories identified by standard territorial analysis; and
- Confirmed breeding: birds seen carrying food and/or faecal sacs or active nests found.

3.4 Dates and Conditions of Survey

3.4.1 Poor weather conditions were avoided as far as possible. This included days with rain, high winds or poor visibility as this would limit bird activity and/or make accurate recording difficult. Notes were made on the weather conditions during the survey, including amount of cloud, rain and wind.

3.4.2 All survey visits were started within an hour of dawn and finished by 12 noon. The dates and times of the survey, together with the weather conditions are given in Table 1 below. The three point scale used to evaluate weather conditions is presented in Table 2.

Table 1. Survey dates, times and weather

Visit No.	Date of Survey	Name of Surveyor	Start Time	End Time	Cloud	Rain	Wind	Visibility
1	15/05/20 19	Tansy Knight	06.00am	08.00am	1	1	1	1
2	24/05/20 19	Tansy Knight	05.00am	07.00am	1	1	1	1
3	31/05/20 19	Tansy Knight	05.15am	07.15am	2	1	1	1
4	14/06/20 19	Tansy Knight	05.30am	07.00am	3	2	2	1
5	12/07/20 19	Tansy Knight	05.30am	07.30am	1	1	1	1

Table 2. Three point scale for recording weather conditions (derived from BTO, undated)

Cloud cover		Rain		Wind		Visibility	
0 - 33%	1	None	1	Calm	1	Good	1
33 - 66%	2	Drizzle	2	Light	2	Moderate	2
66 - 100%	3	Showers	3	Breezy	3	Poor	3

4. Results

4.1 General

- 4.1.1** A total of 24 bird species were recorded in or over the survey area during the five survey visits (Table 3). Of the 24 species identified, 13 were regarded as possibly or probably breeding according to the criteria outlined in Section 3.3.2. No confirmed breeding activity was recorded (i.e. active nests, or birds carrying nesting material or faecal sacs). Nine of the 13 species were classified as probably breeding (oyster catcher (*Haematopus ostralegus*), chiffchaff (*Phylloscopus collybita*, whitethroat (*Sylvia communis*), wren (*Troglodytes troglodytes*), blackbird (*Turdus merula*), song thrush (*Turdus philomelos*), robin (*Erithacus rubecula*), house sparrow (*Passer domesticus*) and dunnoek (*Prunella modularis*). The remaining four (wood pigeon (*Columba palumbus*), magpie (*Pica pica*), carrion crow (*Corvus corone*), and blue tit (*Cyanistes caeruleus*) were classified as possibly breeding.
- 4.1.2** Two of the species classified as probably breeding are priority species in Wales under Section 7 of the Environment (Wales) Act (2016), (song thrush and house sparrow). Both species are also on the red list of species of conservation concern (Eaton et al, 2015). A further two of the probably breeding species (oystercatcher and dunnoek) are on the amber list of species of conservation concern, and a further eight are on the green list (carrion crow, blue tit, chiffchaff, whitethroat, wren, blackbird, and robin).
- 4.1.3** One species; peregrine falcon (*Falco peregrinus*), was considered to be breeding, but outside the site boundary, to the south of the site. The result has been included in Table 3 but the mitigation and potential effects the development may have on this individual has not been discussed any further in this report.
- 4.1.4** A total of 10 species were classified as not breeding. Of these, two are priority species in Wales under Section 7 of the Environment (Wales) Act 2016 (linnet (*Linaria cannabina*), and kestrel (*Falco tinnunculus*). Linnet is also on the red list of species of conservation concern under BoCC4 (Eaton et al, 2015). A further 6 of the non-breeding species are on the BoCC4 amber list (great black-backed gull (*Larus marinus*), house martin (*Delichon urbicum*), lesser black-backed gull (*Larus fuscus*), mallard (*Anas platyrhynchos*), oystercatcher (*Haematopus ostralegus*) and shelduck (*Tadorna tadorna*),
- 4.1.5** A full list of bird species recorded, their breeding activity in the survey area, numbers of territories or peak counts (where applicable) and national conservation status can be found in Table 3. The locations of the birds recorded is presented in Figures 2 to 4.

4.2 Territorial Analysis

- 4.2.1** Territorial analysis was undertaken on the 24 species recorded. Of the 13 species identified to be potentially breeding, one species, the house sparrow, is a colonial breeder. For this species, breeding colonies were counted whereas for all other species one territory consists of one breeding pair.

- 4.2.2** Whitethroat was found to hold the largest number of territories (8no.), followed by wren (6no.). Both of these species typically breed in dense scrub and woodland edge habitat. Most of the whitethroat and wren territories occur in the dense scrub habitat close to the south western boundary of the site, although several whitethroat territories also occur in the scattered scrub habitat towards the southern end of the site. Four chiffchaff territories were also recorded in the dense scrub on the south western side of the site.
- 4.2.3** Four breeding colonies of house sparrow were recorded in dense scrub habitat close to the northern and eastern boundary of the site. The remaining territories consisted of blackbird (3no.); dunnoek (2no.); robin (2no.) and song thrush (1no.) and were scattered throughout the dense scrub habitat on either side of the site.
- 4.2.4** Peak counts for non-breeding species were calculated based on the highest number of individuals recorded during any single visit. Of the non-breeding species, linnet is the most notable, both in terms of numbers (peak count = 36) and conservation status (priority species under Schedule 7 of the Environment (Wales) Act 2016, and BoCC4 red list). Linnet occurs throughout the site, although the species is primarily associated with the ephemeral, short perennial and scattered scrub habitat. The diversity of flowering plants within this habitat is likely to provide a rich source of food for this seed eating species.
- 4.2.5** Of the other non-breeding species, lesser black-backed gull was the next most numerous species with a peak count of 27. The site offers high tide roosting habitat for this and other seabird species.
- 4.2.6** A full list of the bird species recorded; their breeding activity in the survey area; numbers of territories or peak counts (where applicable) and national conservation status can be found in Table 3. The locations of the birds recorded can be seen on Figures 3 -7.

Table 3. Bird species recorded during the survey

Common name	<i>Species name</i>	Status within Survey Area	Breeding habitat	Number of territories /colonies Δ	Peak count	BoCC4 Conservation Status	Priority and legal status (W&CA 1981) ¹
Shelduck	<i>Tadorna tadorna</i>	Not breeding.	In burrows on estuary margins or under bushes.	N/A	4	Amber	
Mallard	<i>Anas platyrhynchos</i>	Not breeding.	Along canals, rivers, woodland marshes, lakes, ponds and shoreline.	N/A	2	Amber	Schedule 2 and 3
Oystercatcher	<i>Haematopus ostralegus</i>	Probably breeding.	Shingle, rubble and bare ground.	0	2	Amber	
Great black-backed gull	<i>Larus marinus</i>	Not breeding.	Reservoirs, rubbish tips inland, bays and harbours.	0	5	Amber	
Lesser black-backed gull	<i>Larus fuscus</i>	Not breeding.	Cliffs, shingle and rooftops.	0	27	Amber	
Wood pigeon	<i>Columba palumbus</i>	Possibly breeding.	Woodland, arable farmland, parks and gardens.	N/A	6	Green	
Kestrel	<i>Falco tinnunculus</i>	Not breeding.	Buildings, cliffs and woodland.	0	1	Amber	Priority
Magpie	<i>Pica pica</i>	Possibly breeding.	Farmland and urban areas.	N/A	2	Green	Schedule 3
Carrion crow	<i>Corvus corone</i>	Possibly breeding.	Open woodland, tall trees in farmland.	N/A	5	Green	
Blue tit	<i>Cyanistes caeruleus</i>	Possibly breeding.	Woodland, hedgerows, parks and gardens.	0	2	Green	
House Martin	<i>Delichon urbicum</i>	Not breeding.	Buildings and cliffs (both inland or by the sea).	0	7	Amber	
Sand martin	<i>Riparia riparia</i>	Not breeding.	Rivers, other waterbodies and man-made gravel pits.	0	3	Green	
Swallow	<i>Hirundo rustica</i>	Not breeding.	Farmland and small villages.	0	18	Green	

¹ Wildlife and Countryside Act (1981 Schedule 2 - Birds which may be killed or taken outside the closed season; Schedule 3 - Birds which may be sold alive at all times and bred in captivity

Chiffchaff	<i>Phylloscopus collybita</i>	Probably breeding.	Woodland, farmland, heathland, urban areas and wetland.	4	N/A	Green	
Whitethroat	<i>Sylvia communighhgs</i>	Probably breeding.	Scrub, farmland, hedgerows and woodland edges.	8	N/A	Green	
Wren	<i>Troglodytes troglodytes</i>	Probably breeding.	Woodland with dense undergrowth, scrub, hedgerows and shrubs.	6	N/A	Green	
Blackbird	<i>Turdus merula</i>	Probably breeding.	Woodland, hedgerows, parks and gardens.	3	N/A	Green	Schedule 3
Song thrush	<i>Turdus philomelos</i>	Probably breeding.	Woodland, parks and gardens.	1	N/A	Red	
Robin	<i>Erithacus rubecula</i>	Probably breeding.	Woodland, gardens and parks.	2	N/A	Green	
House sparrow	<i>Passer domesticus</i>	Probably breeding.	Urban areas, farmland and open countryside.	4 ^Δ	23	Red	
Dunnock	<i>Prunella modularis</i>	Probably breeding.	Parks, gardens, hedgerows and open woodland.	2	N/A	Amber	Schedule 3
Linnet	<i>Linaria cannabina</i>	Not breeding.	Thick bushes, gardens, coastal heaths with gorse and orchards.	0	36	Red	Priority/ Schedule 3
Goldfinch	<i>Carduelis carduelis</i>	Not breeding.	Low lying deciduous woodland, orchards and pine plantation.	0	3	Green	Schedule 3
Outside boundary							
Peregrine falcon	<i>Falco peregrinus</i>	Breeding but just outside boundary to the south.	Rocky cliffs and upland areas.	1	0	Green	Schedule 1 and 4

Key

^Δ Indicates a colony rather than a territory.
Listed on Wildlife and Countryside Act 1981

Schedule 1 = Birds protected by special penalties at all times.
Schedule 2 = Birds which may be killed or taken outside the closed season
Schedule 3 = Birds which may be sold alive at all times and bred in captivity)
Schedule 4 = Birds which must be ringed and registered with the government if they are kept in captivity

Priority = Priority Species in Wales under Section 7 of the Environment (Wales) Act 2016.
Red = Listed on the Birds for Conservation Concern 4 Red List.
Amber = On the Birds of Conservation Concern 4 Amber List.
Green = On the Birds of Conservation Concern 4 Green List

5. Legal and planning policy considerations

- 5.1.1 Section 1 (1) of the Wildlife and Countryside Act 1981 (as amended) protects wild birds from being killed or injured, including damage or destruction of their eggs and nests. Further protection with regards to disturbance of nests is given to species protected under Schedule 1 of the Wildlife and Countryside Act 1981, including peregrine, which nests just outside the site.
- 5.1.2 Section 7 of the Environment (Wales) Act 2016 affords protection to the four priority species recorded on the site (song thrush, house sparrow, linnet and kestrel), by requiring that the local authority '*take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.*'
- 5.1.3 Furthermore, Section 6 of the Act requires that '*public authorities must seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing promote the resilience of ecosystems.*'
- 5.1.4 Due to the protection afforded to birds and their conservation importance, birds are considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026 as guided by PPW 2018 with regards to the conservation of biodiversity.

6. Recommendations

6.1 Mitigation and enhancement

- 6.1.1** The retention of a 10m buffer on the western boundary, and the removal of 0.8ha to the south of the site from the development footprint, will reduce impacts on breeding and non-breeding bird species compared with the previous development layout.
- 6.1.2** In addition, an area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). An extended Phase 1 habitat survey will be undertaken of this area to determine its current ecological value and inform potential enhancement proposals. A 20-year plan will be prepared by ABP to guide the design and future management of the habitats within the habitat corridor to the west of the site and the enhancement area (Plate 1).
- 6.1.3** The following management prescriptions are specifically aimed at maximising benefits for birds. In preparing the management plan these measures will be considered alongside, and integrated with, proposals to optimise the value of the sites for other faunal groups.
- 6.1.4** Management of the retained or replanted scrub within the 10m buffer will aim to maintain the existing habitat structure, with a focus on ensuring that dense areas valuable for species such as whitethroat, are safeguarded in the long term. Management of the retained or re-planted scrub will be undertaken in rotation to ensure that undisturbed areas are available as nesting habitat each year.
- 6.1.5** The following additional measures will be incorporated into the mitigation zone:
- Building nest boxes and creating roosting features such as ledges.
 - Creating small and frequent insect refuge units that are dry and located in sunny positions. The creation of this refuge will potentially increase insect populations, creating greater foraging opportunities for omnivorous birds such as song thrush.
- 6.1.6** Monitoring surveys will be carried out at regular intervals following the completion of construction. Surveys will take place during the bird breeding season (March to August exclusively) and be conducted by an experienced and suitably competent ecologist. Details of the monitoring proposals will be set out in the management and monitoring plan.
- 6.1.7** Given the potential for nesting birds, any required vegetation and habitat clearance works should occur outside the breeding bird season (March to August exclusively). If any nests are discovered, works within a 20m radius of the nest should stop and an ecologist consulted for further recommendations.

7. Conclusions

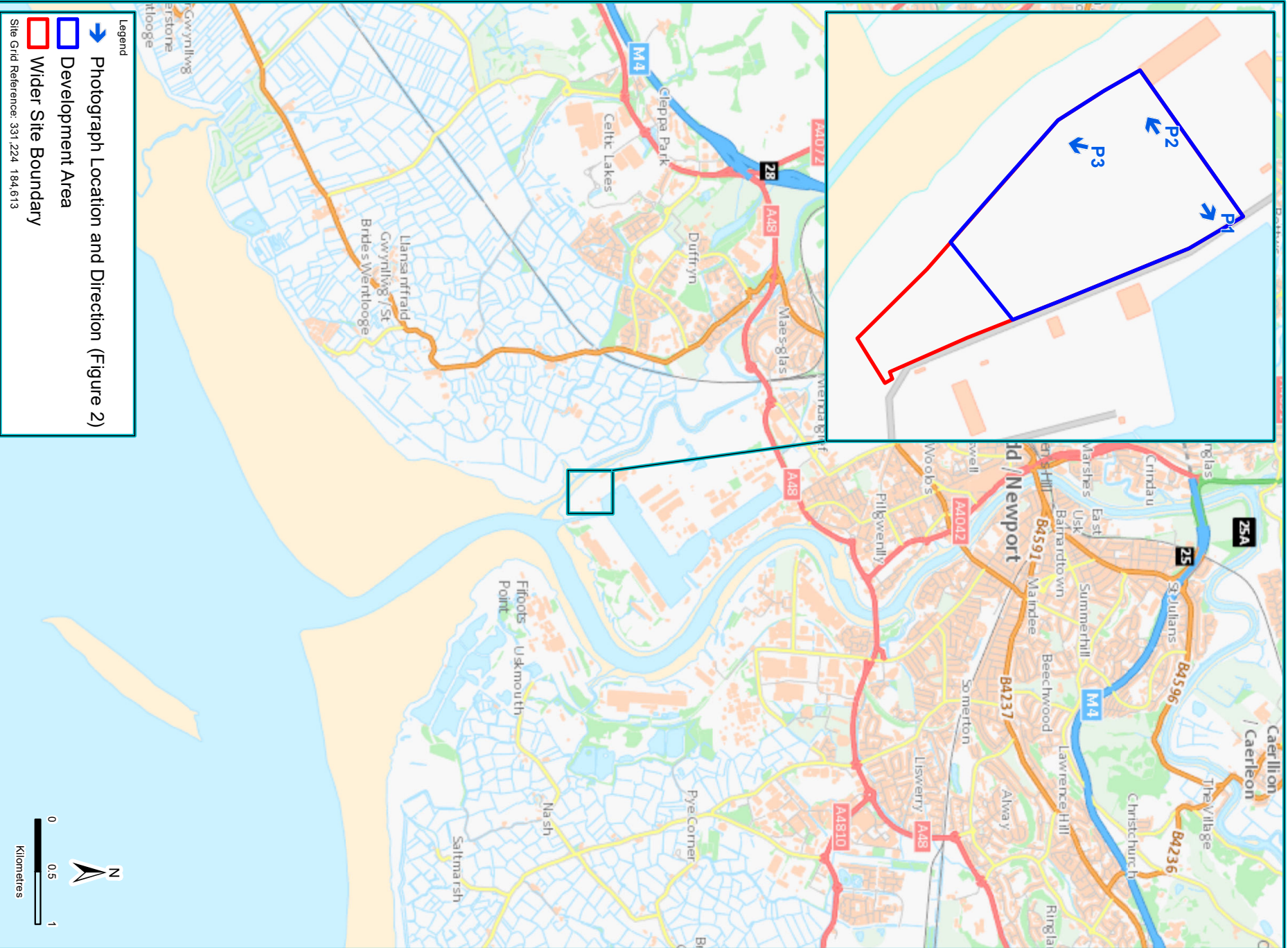
- 7.1.1** A total of 24 species were identified during the field survey. Of the 13 breeding species, two (song thrush and house sparrow) are priority species under the Environment (Wales) Act (2016), and on the BoCC4 red list (Eaton et al, 2015). The site also supports non-breeding linnet, another priority and red list species. A further two breeding and six non-breeding species are on the amber list of species of conservation concern.
- 7.1.2** Loss of approximately 2.2ha of the existing dense scrub habitats will reduce breeding potential for certain species such as whitethroat and wren, and woodland species such as chiffchaff. The foraging potential for linnet, and other seed eating species such as goldfinch will be reduced due to the loss of approximately 1.1ha of ephemeral/short perennial habitat. For example, the site currently supports eight breeding territories for whitethroat. It is unlikely that the 0.8ha that now lies outside the development footprint will be large enough to support this number.
- 7.1.3** A 0.63ha area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). Long term management of open mosaic habitat within the proposed enhancement area, as well as the dense scrub habitat in the 10m buffer will help to offset some of the habitat that will be lost from the development area. By introducing a management regime which maintains the scrub and ephemeral/short perennial habitats, the value of the site can be maintained in the long term.
- 7.1.4** Recommendations are made for management and enhancement measures which will maximise the value of the habitat corridor to the west of the site and enhancement area for birds, supported by a robust monitoring scheme.

8. References

- 8.1.1 Bibby CJ, Burgess ND, Hill DA and Mustoe SH (2000). *Bird Census Techniques*, 2nd Edition. Academic Press, London
- 8.1.2 BTO (undated). *Breeding bird survey instructions*. British Trust for Ornithology, Thetford.
- 8.1.3 Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (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.
- 8.1.4 Gilbert G, Gibbons DW and Evans J (1998). *Bird Monitoring Methods: A manual of techniques for key UK species*. RSPB, Bedfordshire. v
- 8.1.5 Thomson Ecology (2015) *Breeding Bird Survey Newport Docks for Associated British Ports*. Project no. AABP105/003.
- 8.1.6 Thomson Ecology (2017) *Year 1 Post-construction Breeding Birds Survey for ABP Marine Environmental Research Ltd*. Project no. AABP109/001.
- 8.1.7 Thomson Environmental Consultants (2019) *Preliminary Ecological Appraisal: Newport Docks Plasterboard Factory*. For ABPmer (Ref: AABP122/001).

Appendix 1

Maps of routes walked by surveyor.



Client	Associated British Ports
Figure Number	1
Figure Title	Site Location

Drawing Ref	AABP122/28200/1
Scale at A4	1:50,000
Drawn	EA
Checked	TP
Date	19/08/2019



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Photograph 1:
Hardstanding with scrub perimeter.



Photograph 2:
Short perennial scrubland with marginal young trees.



Photograph 3:
Hardstanding reclaimed by short, colonising plants.

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\Working\Breeding Bird Survey\AABP122_Fig2_SitePhotos_EA_190819.mxd
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Client	Associated British Ports		Drawing Ref	AABP122/28201/1	
Figure Number	2		Scale at A4	Not applicable	
Figure Title	Photographs of the Site		Drawn	EA	Checked
					TP
		Date	19/08/2019	Date	19/08/2019

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enquiries@thomsonec.com

Legend

- | | |
|------------------------------------|---------------------------|
| B. Blackbird | MG Magpie |
| CC Chiffchaff | OC Oystercatcher |
| GO Goldfinch | R. Robin |
| HS House Sparrow | SE Short-eared Owl |
| LB Lesser Black-backed Gull | SU Shelduck |
| LI Linnets | WH Whitethroat |
| MA Mallard | WP Woodpigeon |
| | WR Wren |
- - - Survey Transect
 [Blue Outline] Revised Site Boundary
 [Red Outline] Site Boundary

Site Grid Reference: 331,380 184,173

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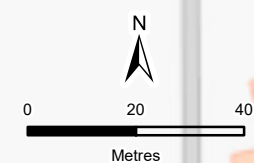
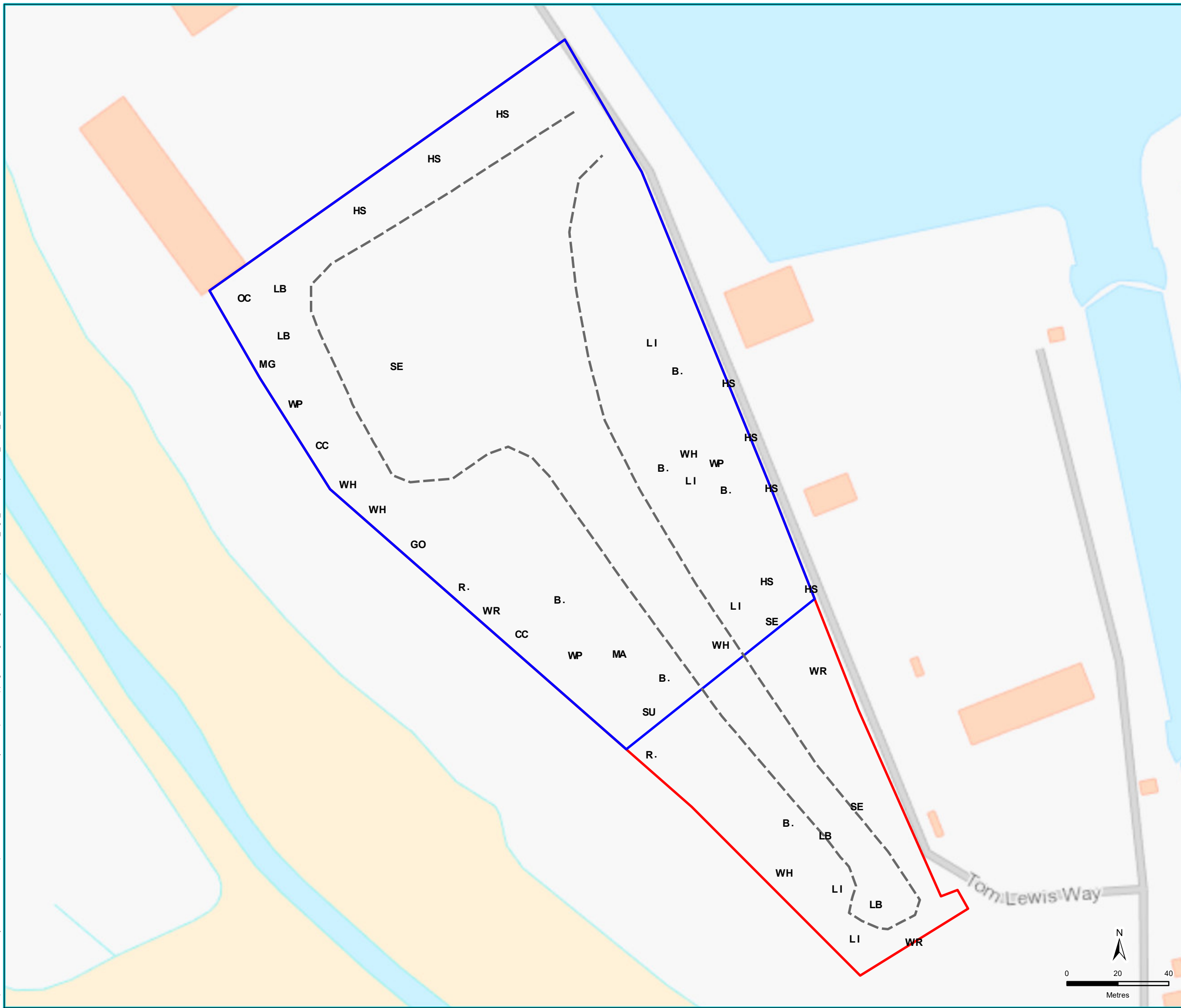
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Drawn EA	Checked TP
Date 19/08/2019	Date 19/08/2019

Client
Associated British Ports

Figure Number
3

Figure Title
Bird Survey Results - Visit 1



Legend

B. Blackbird	LI Linnet
BT Blue Tit	SL Swallow
C. Carrion Crow	SM Sand Martin
CC Chiffchaff	ST Song Thrush
D. Dunnock	SU Shelduck
GO Goldfinch	WH Whitethroat
HS House Sparrow	WP Woodpigeon
LB Lesser Black-backed Gull	WR Wren

- Survey Transect
- Revised Site Boundary
- Site Boundary

DRAFT

Site Grid Reference: 331,377 184,172

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Drawn EA	Checked TP
Date 19/08/2019	Date 19/08/2019

Client
Associated British Ports

Figure Number
4

Figure Title
**Bird Survey Results -
Visit 2**



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Legend	
B. Blackbird	MA Mallard
C. Carrion Crow	OC Oystercatcher
CC Chiffchaff	R. Robin
D. Dunnock	SL Swallow
GO Goldfinch	SU Shelduck
HS House Sparrow	WH Whitethroat
LB Lesser Black-backed Gull	WP Woodpigeon
LI Linnet	WR Wren
Linnet Survey Transect	
Revised Site Boundary	
Site Boundary	

Site Grid Reference: 331,379 184,173

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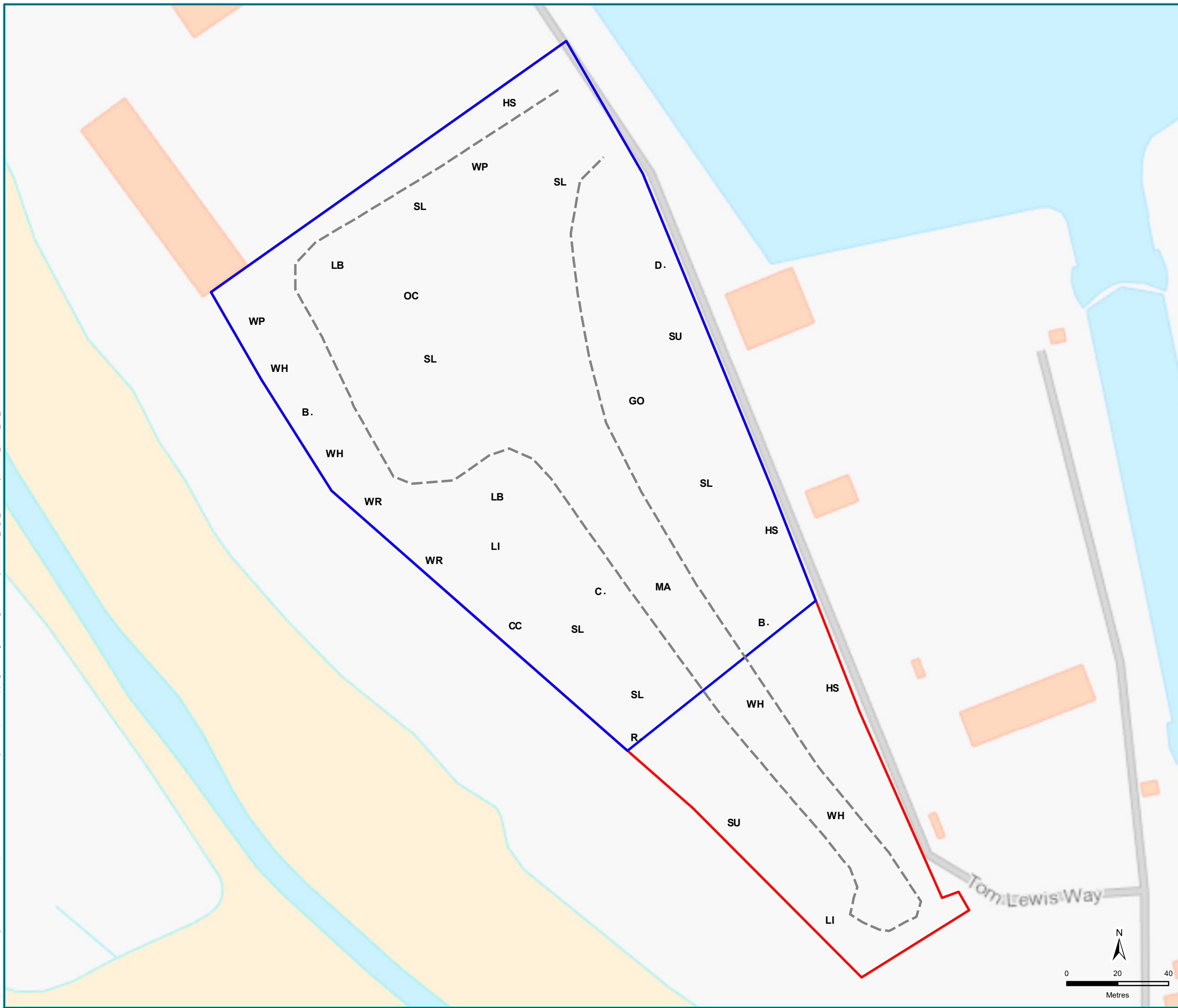
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Date 19/08/2019	Date 19/08/2019
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Client
Associated British Ports

Figure Number
5

Figure Title
**Bird Survey Results -
 Visit 3**



Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\Working\Breeding Bird Survey\AABP122_Fig6_BirdSurveyResults_Visit4_JB_090919.mxd

Legend

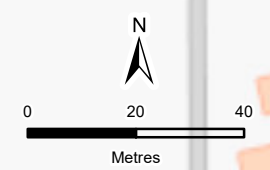
B. Blackbird	MA Mallard
C. Carrion Crow	OC Oystercatcher
CC Chiffchaff	SE Short-eared Owl
HS House Sparrow	SU Shelduck
LB Lesser Black-backed Gull	WH Whitethroat
LI Linnet	WP Woodpigeon
WR Wren	

Survey Transect
 Revised Site Boundary
 Site Boundary



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Drawing Ref	
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EA	TP
Date	Date
19/08/2019	19/08/2019
Client	
Associated British Ports	
Figure Number	
6	
Figure Title	



**Bird Survey Results -
 Visit 4**



Legend

B. Blackbird	LB Lesser Black-backed Gull
C. Carrion Crow	LI Linnet
CC Chiffchaff	MG Magpie
GB Great Black-backed Gull	PE Peregrine
GO Goldfinch	SL Swallow
HM House Martin	SU Shelduck
HS House Sparrow	WH Whitethroat
K. Kestrel	WP Woodpigeon
	WR Wren

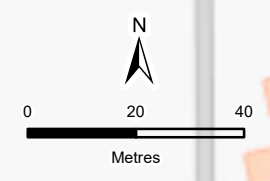
Survey Transect
 Revised Site Boundary
 Site Boundary

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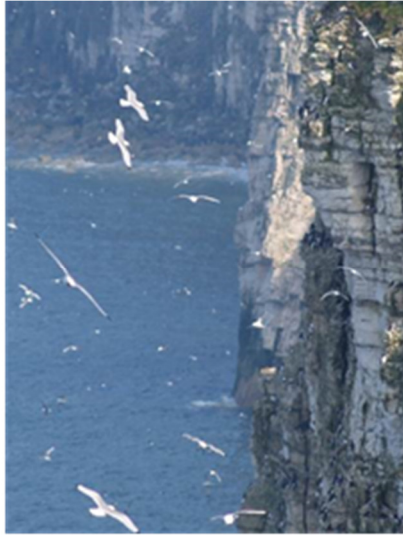
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Drawn	Checked	EA	TP
Date	Date	19/08/2019	19/08/2019
Client			
Associated British Ports			
Figure Number		7	
Figure Title			

Bird Survey Results -
Visit 5



Appendix 5
Bat Survey Report



Bat Survey

Newport Docks Plasterboard Factory

For

ABPmer

Project No.: AABP122/004

October 2019

London & South East
Compass House
Surrey Research Park
Guildford
GU2 7AG . UK
t: +44 (0)1483 466 000

North & Borders
The Tannery
91 Kirstall Road
Leeds
LS3 1HS. UK
t: +44 (0)113 247 3780

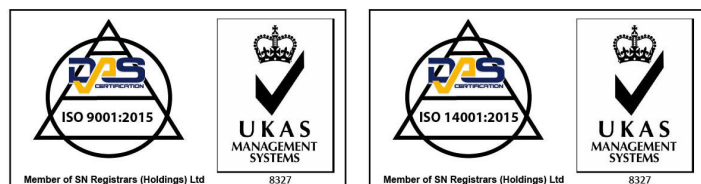
Wales & South West
Williams House
11-15 Columbus Walk
Cardiff
CF10 4BY . UK
t: +44 (0)2920 020 674

Scotland
20-23 Woodside Place
Glasgow
G3 7QF . UK
t: +44 (0)141 582 1333

Enquiries

e: enquiries@thomsonecology.com

w: www.thomsonecology.com



Project Number	Report No.
AABP/004	001

Revision No.	Date of Issue	Author	Reviewer	Approver
001	25/09/2019	Annabel Moore	Justin Groves	Tessa Harding
002	17/10/19	Annabel Moore Justin Groves	Emily Greenall	Tessa Harding

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Contents

1.	Summary and Main Recommendations	5
1.1	Summary	5
1.2	Main Recommendations	6
2.	Introduction	7
2.1	Development Background	7
2.2	Ecology Background	9
2.3	The Brief and Objectives	9
2.4	Limitations	9
2.5	Surveyors	10
3.	Methodology	11
3.2	Transect surveys	11
3.3	Static Monitoring	12
3.4	Weather Conditions	12
3.5	Bat Activity Score	13
3.6	Definition of a bat pass	13
3.7	Data analysis	13
4.	Results	15
4.1	Surveys	15
5.	Legal and Planning Policy Considerations	25
6.	Recommendations	26
7.	Conclusions	27
8.	References	28
	Appendix 1 - Further Information Regarding UK Bats	29
8.2	Introduction	29
8.3	Biology	29
8.4	Site Designation	30
8.5	Species Protection	31
8.6	UK Post-2010 Biodiversity Framework and Species of Principal Importance	33
8.7	References	33

Figure 1	Site Location
Figure 2	Bat Transect Results
Figure 3	Static Monitoring Results

1. Summary and Main Recommendations

1.1 Summary

1.1.1 Associated British Ports (ABP) are planning to construct a plasterboard factory on land within Newport Docks (Figure 1). Thomson Environmental Consultants (TEC) were commissioned by ABPmer on behalf of ABP to undertake a bat survey of the site.

1.1.1 As a result of discussions with the local planning authority during the period since the study was commissioned the overall site area has been reduced in size by 0.8ha from 4.2ha to 3.4ha. The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that bat activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').

1.1.2 ABPmer commissioned Thomson Ecology to carry out bat surveys within the development site. The bat surveys comprised;

- Three dawn and dusk transect surveys, to be undertaken by two ecologists of the site at Newport Docks;
- Three deployments and collection of one static monitoring device on the line of scrub along the western boundary of the development site at Newport Docks, which will be left on site for five days each time (total of 15 days);

1.1.3 A total of four species were recorded on the site over the three transect surveys (common pipistrelle, soprano pipistrelle, noctule and an unspicated myotis bat). Following the bat activity surveys, highest activity scores were recorded on the leg of the transect adjoining the scrub habitat on the western boundary of the site. Overall, the total number of recordings was relatively consistent across the three transect visits ranging from 326 during the first visit to 383 on visit two. Common pipistrelle occurred most frequently, with a total number of 475 recordings across all three visits, followed by noctule (289), and then soprano pipistrelle (249).

1.1.4 A total of six species were identified across the three static detector surveys (common, soprano and Nathusius pipistrelle, noctule, Leisler's and brown long-eared bat. The highest number of detections was recorded from visit two on 12th/13th August 2019. None of the bat species recorded are particularly rare in Wales, with single passes of Nathusius pipistrelle, Leisler's bat and Myotis bats to be expected if a device is on the site for an extended period of time. The Myotis species recorded is likely to be Daubenton's bat given the site conditions, which is one of more common species in this genus.

1.1.5 The results from the survey confirm that bats are foraging widely across the site, with the greatest number of detections recorded from the belt of scrub on the western boundary, immediately adjoining the development area. High activity was also recorded in the open

mosaic habitat in the centre, and towards the eastern edge of the site (paragraphs 4.1.8 to 4.1.9).

1.2 Main Recommendations

- 1.2.1** Under the proposed masterplan for the site a 10m buffer of the dense scrub habitat will be retained on the western boundary of the site. Mitigation for bats will include management of the retained or re-planted scrub habitat on the western boundary, and open mosaic habitat within the proposed enhancement area.
- 1.2.2** Lighting around the factory should be strictly controlled, and if possible avoided on the western boundary. Recommendations for controlling light levels are presented in section 6 and include the use of directional lighting aided by hoods, infrared movement-sensor controls and bulbs that emit low levels of ultraviolet light and peak higher than 550nm.

2. Introduction

2.1 Development Background

- 2.1.1** Associated British Ports (ABP) are proposing to build a new plasterboard factory within Newport Docks, Gwent. On behalf of ABP, ABPmer are managing scoping surveys to support the proposals which includes the factory building, areas of hardstanding and associated below and above ground infrastructure. The proposals described above are hereafter referred to collectively as the development.
- 2.1.1** The site is towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road leading to the head of the docks (Grid Reference ST 31347 84186). The site location is shown on Figure 1 and photos of the site in Figure 2.
- 2.1.2** Since the original EIA screening request, further consideration has been given to the Proposed Development. A design review has determined that there is sufficient capacity within existing facilities at the Port to provide external storage areas for the Proposed Development. As a consequence, the land take needed has been reduced and the external storage areas originally proposed in the south east of the site have been removed from the Proposed Development.
- 2.1.3** This in turn has the benefit of reducing the amount of habitat loss associated with the development. The area of the site that is to be developed has been reduced by 0.8 ha from 4.2ha to approximately 3.4 ha. As well as reducing habitat loss, this change in area also lessens the extent of the Proposed Development bordering the River Ebbw. It includes an area outside of the Proposed Development to act as a buffer to the adjacent Severn Estuary SPA, SAC and SSSI.
- 2.1.4** Furthermore, the strip of vegetation that will be maintained along the western boundary of the site (as proposed in the original EIA Screening Report), will be increased from a width of 5 m to approximately 10 m. This will serve to reduce the extent of overall habitat loss and increase connectivity with habitats on and off site, as well as provide further screening of on-site operations and act as buffer to protected habitats and species.
- 2.1.5** ABP will commit to managing a 0.63ha area that has been set aside in the south east of the site (referred to as 'Habitat enhancement area' in Plate 1). This is in order to enhance open mosaic habitats and other habitats at the confluence of the River Ebbw and Severn Estuary. This will be achieved via a 20-year management plan in discussion with NCC and wider consultees
- 2.1.6** The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that bat activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').

2.1.7 The site and development is covered by the Newport Local Development Plan 2011-2026 under the allocation for “Newport Docks” justified as “surplus of land within Newport Docks which could better meet Newport’s economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8”.

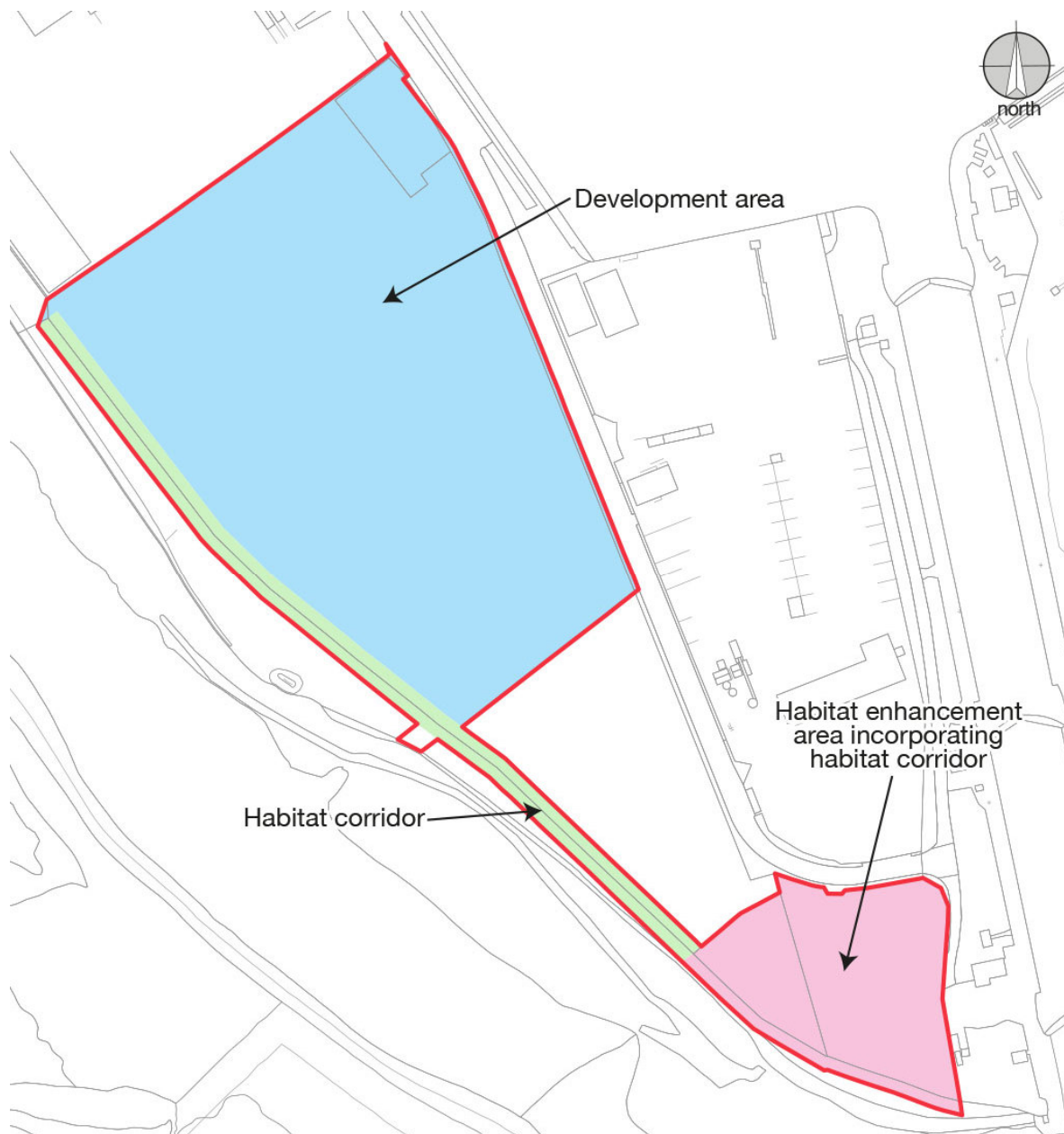


Plate 1: Site layout showing proposed habitat corridor and enhancement area at mouth of the River Ebbw.

2.2 Ecology Background

2.2.1 During the PEA conducted by Thomson's EC (2019), the site was assessed as having an overall low-quality habitat to support bats with one linear feature of scrub on the western boundary DS1.

2.2.2 A summary of the biology, conservation status and legal protection of British bats is given in Appendix 1.

2.3 The Brief and Objectives

2.3.1 ABPmer commissioned Thomson Ecology in June 2019 to undertake baseline activity surveys. Specifically, the brief was to undertake:

- Three dawn and dusk transect surveys, to be undertaken by two ecologists of the site at Newport Docks;
- Three deployments and collection of one static monitoring device on the line of scrub along the western boundary of the development site at Newport Docks, which will be left on site for five days each time (total of 15 days);
- Analysis of static monitoring data;
- A combined report to include the methods and results of these 2019 surveys and recommendations to overcome any negative impacts of the development, if necessary; and
- Appropriate digitised mapping.

2.4 Limitations

2.4.1 Ideally, the survey programme would include a visit during the spring period (May). However, given the spread of visits through the remainder of the season and the relatively consistent pattern of activity and species diversity recorded it is considered unlikely that a spring visit would have given rise to significantly different results.

2.4.2 Some bat surveys have taken place in September 2019. September is still a suitable month for bat activity surveys (depending on weather and location) as outlined within the Defra guidelines (Berthinussen and Altringham 2015). Given relatively high night time temperatures and settled weather conditions this is not considered a significant limitation.

2.4.3 Sub-optimal weather conditions (light drizzle) was recorded during two of the periods in which the static bat detectors were deployed (Visits 2; 13th and 15th August; and Visit 3; 12th September). However, the drizzle was light and air temperatures were sufficiently high that this is not considered to represent a significant limitation.

2.5 Surveyors

2.5.1 Bat surveys were undertaken by Tansy Knight, Justin Groves (Class Licence Level 2), Eleri Thomas and Cassian Wigley. All of the surveyors are qualified ecologists and experienced in carrying out bat surveys.

3. Methodology

3.1.1 The aim of the bat activity surveys was to collect baseline survey information on the presence or likely absence of bats from a given points on a transect and collect data on bat activity. This allows an assessment of impacts of the site development and effectiveness of mitigation on bat populations. The methodology for the bat activity surveys was adapted from the DEFRA guidelines (Berthinussen and Altringham 2015).

3.2 Transect surveys

3.2.1 During the Preliminary Ecological Appraisal conducted by Thomson in May 2019, an assessment was made of roosting commuting, foraging and habitat suitability of the wider site. This information and the proposed development layout were used to inform the number and location of transects for the bat activity survey. In this case a single transect was walked covering all of the main habitats on site that could be used by bats for foraging and commuting. The location of the transect is presented in Figure 2, The transect was divided into a series of five legs (Figure 2).

3.2.2 The overall habitat was defined as being of low suitability on the basis set out in Table 2. Survey effort for the activity surveys was determined in accordance with good practice guidelines (Collins ed, 2016). In accordance with these guidelines, three dusk surveys and three dawn surveys were undertaken during the season.

3.2.3 Dusk surveys began at sunset and ended two to three hours after sunset. The dawn survey began two hours before sunrise and ended at sunrise. Weather conditions including cloud cover, wind, precipitation, the air temperature at 1m were recorded by the lead surveyor at the start and end of the survey. Table 1 was used to determine whether the conditions were suitable for the activity survey. Any other limitations that could affect bat behaviour were recorded (such as night lighting and excessive high frequency noise).

3.2.4 Each transect was walked at a steady pace by a pair of ecologists equipped with Elekon Bat Loggers M detectors and the internal recording function on the Bat Logger was used to record all bat passes. The transect was surveyed twice in one night with the second survey being undertaken from the same start point to show variation in bat activity throughout the night.

3.2.5 Bat activity, including species, number of passes, direction of flight paths, habitat and number of bats was recorded along the transects and at each spot count location.

3.2.6 Details on weather conditions recorded and suitability for the type of survey are given in Section 3.5. below.

3.2.7 Details on bat activity scores are given in Section 3.6 below.

3.3 Static Monitoring

3.3.1 In addition to the transect surveys, an SM4 detector was deployed as a static monitoring device. The detector was mounted in the belt of scrub on the western boundary of the site (Figure 2).

3.3.2 The static monitoring location was selected to sample representative habitat on the transect. The static monitoring device was deployed on three occasions during the survey season, once per month during July, August and September. On each occasion, the static monitoring device was deployed for a minimum of five consecutive nights, until five nights recording in suitable weather conditions was achieved. The devices were set to commence recording 30 minutes before sunset and ended 30 minutes after sunrise.

3.3.3 The same model of static monitoring device was used on each occasion with identical settings and yearly calibration taking place to ensure accurate results. The device's microphone was positioned to maximise the amount of bat activity recorded - omnidirectional microphones were used, at heights between 2 to 4m. This was positioned to avoid background ambient noise, electrical interference and solid objects/scrub for instance blocking sound waves and therefore the detection of ultrasonic bat calls.

3.4 Weather Conditions

3.4.1 Weather conditions including the air temperature at 1m, wind speed and precipitation were recorded by the lead surveyor at the start and end of the survey. The suitability of weather conditions for the bat survey were then categorised as per Table 5. Any limitations that could affect bat behaviour were recorded. The GPS location of each surveyor was recorded and a photograph was taken of their survey view.

Table 1: Guidance on weather conditions for bat surveys (based on Slack and Tinsley, 2015)

Conditions	Temperature at dusk or dawn (°C)	Wind Speed (Beaufort windforce scale)	Precipitation
Optimal	>14	0 to 3 (calm to slight wind)	Dry
Acceptable	10-14	4 to 6.5 (moderate to strong breeze)	Light showers to moderate rainfall
Unsuitable	<10	6.5 and above (high wind and stronger)	Heavy rainfall

3.4.2 The overall suitability of the conditions is determined by the least suitable of the three parameters.

3.5 Bat Activity Score

3.5.1 Bat activity, including species, number of passes, presence of any emergences or re-entry to roosts, direction of flight paths, habitat and number of bats was recorded by each ecologist using an Elekon Bat Logger.

3.6 Definition of a bat pass

3.6.1 A pass is defined as an unbroken stream of echolocation calls up to five seconds long, heard as a series of ‘clicks, slaps, ticks or warbles’ on a bat detector as the bat passes in and out of the detector’s range (Barataud, 2002; Barataud & Giosa, 2012, 2014). Where more than one bat was observed, up to a maximum of five bats, the number of bat passes is calculated as below:

$$Bat\ Pass = \left(\frac{Bat\ call\ sequence}{5} \right) * Number\ of\ each\ bat\ species$$

3.7 Data analysis

3.7.1 All bat calls were recorded, and these were analysed using Bat Explorer. Quality assurance was undertaken on 10% of the bat call sound and noise files, and any rare or notable species.

3.7.2 Duplicate observations of bats recorded by surveyors (bats recorded commuting/crossing at the same time, height, distance and direction by more than one surveyor) were highlighted in post survey analysis and only recorded once. A species was then assigned to each crossing bat (if recorded by the detector) by matching up time of the sound recordings with each observation.

3.7.3 Bat activity score was calculated at each survey point using the following formula:

$$Bat\ Activity\ Score = \left(\frac{Total\ number\ of\ passes}{Survey\ Duration\ (min)} \right) * 100$$

3.7.4 The activity level was then determined as set out in Table 2.

Table 2: Categorisation of activity level based on an analysis undertaken by Thomson Ecology between 2006 and 2007

Assessment of Activity Level	Activity Score
Very Low	Up to 5
Low	6 - 30
Medium	31-50
High	51-90
Very High	90 plus

3.7.5 The activity score allows us to broadly standardise activity levels between survey locations across and within sites. The activity level is not necessarily a reflection of the level of importance of the survey location for bats and must be considered in conjunction with other data for that

location. For example, a high level of activity could be due to 30 bats commuting along a hedgerow or one bat foraging beneath a tree for 30 minutes. Likewise, a low level of activity could be one bat emerging from a building and commuting away or one bat commuting along the edge of the site.

4. Results

4.1 Surveys

Dates of Survey and Weather Conditions

- 4.1.1 Table 3 shows weather conditions during the three transect surveys. All surveys started in optimal conditions and only on days 2-4 did temperatures drop to a degree in which the survey would be deemed below optimal.

Table 3: Weather conditions during transect monitoring surveys.

Visit no.	Survey type	Date	Conditions	Temperature (°C)		Precipitation	Beau fort wind force scale	Suitability
				Max	Min			
1	Transect	01/07/2019	Some cloud	16	13	0	2	Optimal - Acceptable
1	Transect	02/07/2019	Clear	12	11	0	2	Acceptable
2	Transect	12/08/2019	Cloudy	13	11	0	1	Acceptable
2	Transect	13/08/2019	Clear	11	12	0	1	Acceptable
3	Transect	11/09/2019	Cloudy	15	14	0	2	Acceptable
3	Transect	12/09/2019	Light rain	15	14	1	2	Acceptable

- 4.1.2 Table 4 describes the weather conditions encountered whilst undertaking the 15 days (3 visits x 5 days per visit) of static monitoring. Light drizzle was encountered during visits 2 and 3.

Table 4: Weather conditions during static monitoring surveys.

Visit no.	Survey type	Date	Conditions	Temperature (°C)		Precipitation	Beau fort wind force scale	Suitability
				Max	Min			
1	SM4	02/07/2019 - 03/07/2019	Cloudy spells	16	12	0	2	Optima - Acceptable

Visit no.	Survey type	Date	Conditions	Temperature (°C)		Precipitation	Beaufort wind force scale	Suitability
				Max	Min			
1	SM4	03/07/2019 - 04/07/2019	Clear	14	12	0	2	Acceptable
1	SM4	04/07/2019 - 05/07/2019	Clear	17	15	0	1	Optimal
1	SM4	05/07/2019 - 06/07/2019	Clear	17	12	0	1	Optimal - Acceptable
1	SM4	06/07/2019 - 07/07/2019	Cloudy	17	13	0	2	Optimal - Acceptable
2	SM4	12/08/2019 - 13/08/2019	Cloudy, clearing by morning	13	10	0	2	Acceptable
2	SM4	13/08/2019 - 14/08/2019	Clear, then light drizzle in morning	15	12	1	1	Acceptable
2	SM4	14/08/2019 - 15/08/2019	Cloudy with some drizzle	16	15	1	3	Acceptable
2	SM4	15/08/2019 - 16/08/2019	Clear, clouding over later	15	13	0	2	Acceptable
2	SM4	16/08/2019 - 17/08/2019	Drizzle at start then cloudy	16	13	1	2	Acceptable
3	SM4	12/09/2019 - 13/09/2019	Cloudy with some drizzle	16	10	1	2	Acceptable
3	SM4	13/09/2019 - 14/09/2019	Clear	14	9	0	1	Acceptable
3	SM4	14/09/2019 - 15/09/2019	Clear	15	12	0	1	Optimal - Acceptable

Visit no.	Survey type	Date	Conditions	Temperature (°C)		Precipitation	Beau fort wind force scale	Suitability
				Max	Min			
3	SM4	15/09/2019 - 16/09/2019	Cloudy	15	14	0	2	Optimal-Acceptable
3	SM4	16/09/2019 - 17/09/2019	Cloudy	16	10	0	2	Optimal - Acceptable

Transect results

- 4.1.3** The results of three transect surveys are presented in Tables 5 to 7. A total of four species were recorded on the site over the three visits (common pipistrelle, soprano pipistrelle, noctule and an unspciated myotis bat). The greatest number of species per visit (4no.) was recorded during visit 1 on 1st and 2nd July. Common pipistrelle was recorded most frequently on the site, followed by soprano pipistrelle and noctule.
- 4.1.4** The number of recordings of each bat species has been summed for each leg of the transect and a bat activity scores assigned based on the methodology described in paragraph 3.7.3. Catergorisation of the total bat activity scores in described in Table 2.
- 4.1.5** During the first visit (1st and 2nd July) highest levels of activity were recorded on leg 2 - 3 of the transect which runs along the south west boundary of the site. This is mostly accounted for by common and soprano pipistrelle recordings (45 and 24 recordings respectively) and 18 noctule recordings. An overall activity score of 60.83 was assigned to this visit which is classified as high.
- 4.1.6** Medium activity levels were again recorded on legs 4-5 and 5-6 on the second visit (12th and 13th August). However, activity levels on the other two legs were low giving an overall activity score of 25 which is classified as Low.
- 4.1.7** On the third visit, very high activity levels were again recorded on leg 2-3 (comprised of 34 common pipistrelle and 21soprano pipistrelle recordings giving an activity score of 114.58). No noctules were recorded on leg 2-3 during this visit, although the species was recorded on legs 3-4 and 5-6, which run through the centre of the site, and along the eastern boundary respectively.
- 4.1.8** Overall, the greatest number of detections were recorded from legs 2-3 (157 bat passes in total across the 3 visits; Figure 3) which is classified as 'very high' in the categorisation system described in Table 2. Leg 2-3 coincides with the northern end of the scrub belt on the western boundary adjoining the development area. Bats commonly use linear features such as this for commuting.

- 4.1.9** A medium activity score was calculated for Legs 4-5 and 5-6, with 44 and 47 passes respectively. Leg 4-5 crosses the open mosaic habitat in the centre of the site, which is likely to support a diverse invertebrate community, and therefore represents suitable foraging habitat for bats.
- 4.1.10** Lowest activity scores were calculated for legs 1-2 and 3-4. Leg 1-2 lies on the northern boundary of the site, immediately adjoining a factory building and car parking area. Artificial lighting in this area is likely to be higher than the interior of the site, and although scrub habitat exists on this boundary, foraging opportunities may be more limited. Leg 3-4 lies towards the southern end of the wider site where the habitat is more open. Suitability for bats may be affected by lighting for the dock entrance.

Table 5: Number of recordings, species and activity scores for visit 1 (1st and 2nd July 2019)

01/07/2019 - 02/07/2019										
Survey Leg	Number of Recordings/species								Total Number of Recordings	Activity score
	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrelle species	Noctule	Leislars	Myotis species	Brown long-eared		
1-2	0	0	0	1	1	0	0	0	2	4.17- Very low
2-3	45	24	0	0	18	0	1	0	88	183.33 - Very high
3-4	12	0	0	0	0	0	0	0	12	25 - Low
4-5	19	0	0	0	4	0	0	0	23	47.92 - Medium
5-6	10	0	0	0	11	0	0	0	21	43.75 - Medium
Total	86	24	0	1	34	0	1	0	146	60.83 - High

Table 6: Number of recordings, species and activity scores for visit 1 (12th and 13th August 2019)

12/08/2019 - 13/08/2019										
Survey Leg	Number of Recordings/species								Total Number of Recordings	Activity score
	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrelle species	Noctule	Leislars	Myotis species	Brown long-eared		
1-2	0	0	0	0	0	0	0	0	0	0
2-3	8	5	0	0	1	0	0	0	14	29.17 - Low
3-4	4	3	0	0	1	0	0	0	8	16.67 - Low
4-5	10	5	0	0	3	0	0	0	18	37.50 - Medium
5-6	19	0	0	0	1	0	0	0	20	41.67 - Medium
Total	41	13	0	0	6	0	0	0	60	25 - Low

Table 7: Number of recordings, species and activity scores for visit 1 (12th and 13th September 2019)

12/09/2019 - 13/09/2019										
Survey Leg	Number of Recordings/species								Total Number of Recordings	Activity score
	Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrelle species	Noctule	Leislars	Myotis species	Brown long-eared		
1-2	0	0	0	0	0	0	0	0	0	0
2-3	34	21	0	0	0	0	0	0	55	114.58 - Very high
3-4	15	3	0	0	3	0	0	0	21	43.75 - Medium
4-5	0	1	0	0	0	0	0	0	1	2.08 - Very low
5-6	11	5	0	0	1	0	0	0	17	35.42 - Medium
Total	60	30	0	0	4	0	0	0	94	39.17 - Medium

Static Monitoring Results

Table 8: Static detector monitoring results

Location number	Visit number	Date	Number of Recordings/species								Total Number of Recordings	Activity Score
			Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrelle species	Noctule	Leislars	Myotis species	Brown long-eared		
Loc 1	1	02/07/2019-03/07/2019	4	1	0	0	22	0	0	0	27	12.21 - low
		03/07/2019-04/07/2019	18	2	0	2	59	0	0	0	81	
		04/07/2019-05/07/2019	32	7	2	4	51	0	0	1	97	
		05/07/2019-06/07/2019	29	4	0	4	36	0	0	0	73	
		06/07/2019-07/07/2019	10	3	1	0	56	0	0	0	70	
		Total	93	17	3	10	224	0	0	1	348	
Loc 1	2	12/08/2019-13/08/2019	22	18	0	3	3	0	2	0	48	11.28 - low
		13/08/2019-14/08/2019	94	110	0	5	15	0	1	0	225	
		14/08/2019-15/08/2019	8	9	0	0	3	0	0	0	20	
		15/08/2019-16/08/2019	32	28	0	3	15	0	1	0	79	

Location number	Visit number	Date	Number of Recordings/species								Total Number of Recordings	Activity Score
			Common pipistrelle	Soprano pipistrelle	Nathusius pipistrelle	Pipistrelle species	Noctule	Leislars	Myotis species	Brown long-eared		
		16/08/2019-17/08/2019	11	0	0	0	0	0	0	0	11	
		Total	167	165	0	11	36	0	4	0	383	
Loc 1	3	12/09/2019-13/09/2019	57	12	0	2	9	0	0	0	83	8.18 - low
		13/09/2019-14/09/2019	44	9	0	0	5	1	0	0	59	
		14/09/2019-15/09/2019	40	12	0	8	0	0	0	0	60	
		15/09/2019-16/09/2019	59	31	0	4	13	0	0	0	107	
		16/09/2019-17/09/2019	15	3	0	0	2	0	0	0	20	
		Total	215	67	0	14	29	1	0	0	326	

- 4.1.11** The number of recordings of each bat species on the static bat detectors has been summed for each night the detector was in operation and bat activity scores applied to the data. The results are presented in the Table 8.
- 4.1.12** A total of six species (common, soprano and Nathusius pipistrelle, noctule, Leisler's and brown long-eared bat) were identified across the three visits. In addition, a number of recordings could not be identified to species level due to the quality of the recording, although they could be assigned to genus or family level. Four detections that could be assigned to a bat from the Myotis family were recorded during Visit 2. The more commonly occurring Myotis species include Daubenton's and Natterer's bat. It can be assumed that the unspicated pipistrelle detections were one of the three species recorded on the site, since these are the pipistrelle species that occur in the UK.
- 4.1.13** The greatest number of recordings (383no.) were made on visit two (12th to 17th August), with the largest contribution to the total being on 13th/14th August (225 recordings). Common and soprano pipistrelles recordings were the most numerous (94 and 110 respectively).
- 4.1.14** Visit 1 (2nd to 7th July) had the highest bat activity score (12.21), due to the number of species (6no.) recorded during this visit. The greatest number of noctule detections (224) were also recorded during this visit. The only brown long-eared bat detection recorded during the survey was from this visit. Leisler's bat was also recorded only once during the survey - on the 13th/14th September 2019 during the 3rd visit.
- 4.1.15** Overall, the total number of recordings was relatively consistent across the three visits ranging from 326 during the first visit to 383 on visit two. Common pipistrelle occurred most frequently, with a total number of 475 recordings across all three visits, followed by noctule (289), and then soprano pipistrelle (249).

Comparison between transect and static monitoring data

- 4.1.16** A comparison of the transect data and that of the SM4 data suggests that overall the activity results recorded by the SM4 was lower than that of the transect (average of 10.5, low, against 41.66, medium). This however is not unexpected since the SM4 was in a single location, whilst the transect covers the entire site. In addition, the SM4 will not specifically record foraging unless bats consistently forage in its range of recording. However, since the SM4 records over multiple nights it reflects variation in bat activity under slightly different weather conditions. Also, with the longer recording period, the SM4 recorded a higher diversity of bats species.
- 4.1.17** None of the bat species recorded are particularly rare in Wales, with single passes of Nathusius' pipistrelle, Leisler's bat and Myotis bats to be expected if a device is on the site for an extended period of time. The Myotis species recorded is likely to be Daubenton's bat given the site conditions, which is one of more common species in this genus.

5. Legal and Planning Policy Considerations

- 5.1.1** The content of the legislation section is the legal considerations that we know are relevant based on the results of the bat surveys that have been conducted.
- 5.1.2** Details of the legislation pertaining to bats are provided in Appendix 1. Bats and their roosts are fully protected under the Conservation of Habitats and Species Regulations 2017, as amended. Bats are also afforded additional protection under the Wildlife and Countryside Act 1981, as amended, the Countryside and Rights of Way Act 2000 and Natural Environment and Rural Communities (NERC) Act 2006. Taken together, these make it an offence to:
- Deliberately disturb a bat in such a way as to be likely:
 - i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
 - ii. to impair its ability to hibernate or migrate; or
 - iii. to affect significantly the local distribution or abundance of the species to which they belong.
 - Damage or destroy a breeding site or resting place of a bat; or
 - Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.
- 5.1.3** A roost is any structure or place used by bats for shelter or protection. As bats tend to re-use the same roosts year after year, the roost is protected whether bats are present or not at the time.
- 5.1.4** Development affecting bats and their roosts is governed by a licensing procedure administered by Natural Resources Wales.
- 5.1.5** Four of the species recorded during the survey (common and soprano pipistrelle, noctule and brown long-eared bat) are listed as species of principal importance for the purpose of maintaining and enhancing biodiversity in Wales under Section 7 of the Environment (Wales) Act 2016. The Act places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species.
- 5.1.6** Planning Guidance, Technical Advice Note 5; Nature conservation and planning (TAN5) gives further direction with respect to land use and development. It states that protected species, including bats, should be a material planning consideration when local authorities are considering a development proposal that is deemed likely to result in disturbance or harm to the species or its habitat.

6. Recommendations

- 6.1.1** The results from the survey confirm that bats are foraging widely across the site, with the greatest number of detections recorded from the belt of scrub on the western boundary, immediately adjoining the development area. High activity was also recorded in the open mosaic habitat in the centre, and towards the eastern edge of the site (paragraphs 4.1.8 to 4.1.9).
- 6.1.2** Under the proposed masterplan for the site a 10m buffer of the dense scrub habitat will be retained or replanted on the western boundary of the site. An area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). An extended Phase 1 habitat survey will be undertaken of this area to determine its current ecological value and inform potential enhancement proposals. A 20-year plan will be prepared by ABP to guide the design and future management of the habitat corridor on the western boundary of the site and the enhancement area. Management of this habitat is likely to focus on maintaining open mosaic habitat which will benefit the invertebrate prey species on which bats depend.
- 6.1.3** Although some insects are attracted by artificial lighting, bats are generally deterred by lighting. Greatest bat activity was recorded on this site in the darkest areas. Lighting around the factory should therefore be strictly controlled, and if possible avoided on the western boundary. The following specific recommendations are made in relation to the lighting scheme:
- Ensure operational lighting has a reduced spill ideally below 70° to create a large volume of darker space above in areas where night time security lighting for public safety is a key consideration and is required to stay on. If possible install pillar lighting in such circumstances that restricts the vertical light spill.
 - Ensure that the lighting is directional as aided by hoods on the lighting to concentrate the beam, this should apply whether permanently on during the night or movement-sensor controlled.
 - Ensure that the remainder of the operational light (mainly for security purposes) is infrared movement-sensor controlled therefore leaving much of the site in darkness unless activated.
 - Ensure light does not spill towards natural vegetation particularly the buffer strip of vegetation along the western boundary of the site.
 - Use bulbs within the lighting scheme that emit low levels of ultraviolet light and peak higher than 550nm. In particular this should be followed where lighting will stay on permanently throughout the night, therefore limiting attraction to invertebrates.

7. Conclusions

- 7.1.1** The results from the transect and static detector surveys show that the site provides foraging and commuting habitat for a range of species, notably common and soprano pipistrelle and noctule. All three are priority species under Schedule 7 of the Environment (Wales) Act 2016.
- 7.1.2** None of the bat species recorded are particularly rare in Wales, with single passes of Nathusius' pipistrelle, Leisler's bat and Myotis bats to be expected if a device is on the site for an extended period of time.
- 7.1.3** Highest levels of activity were recorded from the belt of scrub on the western boundary, immediately adjoining the development area. High activity was also recorded in the open mosaic habitat in the centre, and towards the eastern edge of the site. Lower levels of activity were recorded on the northern boundary where the site adjoins a factory building and car parking, and the southern end of the wider site.
- 7.1.4** Artificial lighting around the factory building should be strictly controlled, and if possible avoided on the western boundary, in order to safeguard bat commuting habitat. Mitigation for bats will include management of the retained or re-planted scrub habitat on the western boundary, and open mosaic habitat within the proposed enhancement area.

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Appendix 1 - Further Information Regarding UK Bats

8.2 Introduction

8.2.1 A summary of the biology of British bats and the legislation and policy that protects them concern is provided below.

8.3 Biology

8.3.1 There are 18 British species of bats, belonging to two families; the horseshoe bats (*Rhinolophidae*) and vesper bats (*Vespertilionidae*). Of the 18 species, two species are horseshoe bats and belong to the genus *Rhinolophus*. The remaining 16 species are vesper bats and are sub-divided between six genera; *Myotis*, *Eptesicus*, *Nyctalus*, *Pipistrellus*, *Plecotus* and *Barbastella*. Whilst there are many differences in the biology of the different species, all share certain characteristics and these are described below.

Roosting

8.3.2 Bat species utilise roost sites of varying character; some preferring tree roosts whilst others are thought to be almost entirely dependent on built structures. Most bats will have a number of available roosting sites within their range, which they move between throughout the year. They are generally faithful to their roosts and a colony of bats may use the same roost site(s) year after year.

8.3.3 Bats hibernate during the winter and will often gather to hibernate communally, remaining in the same hibernation roost from November to February/March. Hibernation roost sites typically have a constant low temperature and high humidity levels. Sites include caves, mines, thick walled buildings and hollow trees. With the arrival of spring, the ambient temperature and day length increase and bats begin to leave their hibernation roosts, either moving immediately to summer roost sites or occasionally, to a transitional roost.

8.3.4 By June, breeding females will begin to congregate in maternity roost sites where they will give birth to, and nurture their young. Male bats are also occasionally found roosting in maternity roosts but during this period they mostly roost alone. Maternity roost sites include hollowed out trees, buildings and bridges. Male bats may use similar sites but also cracks and crevices in trees, under loose tiles or even amongst dense ivy growth during the summer period. Similar sites may be used by bats for brief periods during the night when they are resting or feeding on recently caught prey. In autumn, male bats establish mating roosts and are visited by females. A variety of roost sites may be used until the bats return to their hibernation roosts.

Foraging

8.3.5 All British bat species feed on invertebrates, with flies, beetles, moths and other insects making up much of their diet. Areas with an abundance of insect prey, such as woodlands, scrub, wetlands, river corridors and flower rich grasslands are therefore favoured foraging sites for

bats. Habitats such as intensively farmed arable land, and amenity grassland support a much lower invertebrate abundance and are therefore less favoured foraging habitats for bats.

Commuting

8.3.6 Bats favour roost sites in close proximity to suitable foraging habitat, however given variation in prey availability, land-use change, and competition with other bats, for at least part of the year bats must commute between their roosts and foraging habitat.

8.3.7 Commuting routes tend to follow linear features in the landscape such as hedgerows, woodland edges, rivers and other watercourses, particularly when crossing areas of less favourable habitat. The distance that bats commute between roost sites and foraging areas is dependent on local geography and also the species of bat. Some species will travel up to 18km, though shorter distances are more typical.

8.4 Site Designation

8.4.1 All bat roosts in the UK receive protection under the following legislation:

- Conservation of Habitats and Species Regulations 2017 (which replaces the Conservation (Habitats &c) Regulations 1994 as amended)
- Wildlife and Countryside Act 1981, as amended;
- The Countryside and Rights of Way Act 2000 (which amends the Wildlife and Countryside Act); and
- Natural Environment and Rural Communities Act 2006 (which amends the Wildlife and Countryside Act).

8.4.2 This is described in more detail under 'Species Protection' below. In addition, the most important sites for certain bat species in the UK receive further statutory protection through designation of Special Areas of Conservation (SACs) and/or Sites of Special Scientific Interest (SSSIs).

8.4.3 Four UK bat species, greater and lesser horseshoe, barbastelle and Bechstein's bats, are included on Annex II of the European Community Directive of the Conservation of Natural Habitats and of Wild Fauna and Flora, referred to as the Habitats Directive. The Habitats Directive is transposed into UK law by the Conservation of Habitats and Species Regulations 2017. This legislation requires that areas are designated as Special Areas of Conservation (SACs) to protect populations of these 4 bat species. To date, 9 SACs have been designated specifically to protect these species in Wales, with a further 3 SACs where their presence is a qualifying feature but not the primary reason for the statutory designation.

8.4.4 Sites designated under the Wildlife and Countryside Act 1981 (WCA) are known as Sites of Special Scientific Interest (SSSIs). SSSIs received further protection under the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities (NERC) Act 2006.

8.4.5 Some SSSIs are designated for the population(s) of bats that they support. The criteria for selecting SSSIs on the basis of their bat populations are provided in Guidelines for the Selection of Biological SSSIs (NCC, 1989):

- Greater horseshoe bat - all main breeding roosts and all winter roosts with 50 or more adult bats;
- Lesser horseshoe bat - all main breeding roosts containing 100 or more adult bats and all winter roosts containing 50 or more bats;
- Barbastelle, Bechstein's and grey long-eared bats - any traditional breeding roosts;
- Natterer's, Daubenton's whiskered, Brandt's, serotine, noctule and Leisler's bats - only exceptionally large breeding roosts or those with a long history of use; and
- Mixed Roost sites - all hibernacula containing 4 or more species and more than 50 individuals or 3 species and 100 or more individuals or 2 species and 150 or more individuals, though these criteria may be lower in some parts of the UK.

8.4.6 Sites that qualify as SSSIs for the bat populations they support are considered to be of at least national importance for the bats they support.

8.4.7 Sites designated for nature conservation at the county level may also include bat populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

Planning Policy

8.4.8 Planning Guidance, Technical Advice Note 5; Nature conservation and planning (TAN5) gives further direction with respect to land use and development. It states that protected species, including bats, should be a material planning consideration when local authorities are considering a development proposal that is deemed likely to result in disturbance or harm to the species or its habitat.

8.4.9 Furthermore, the Natural Environment and Rural Communities (NERC) Act (2006) places a duty on all public authorities to conserve biodiversity; conserve including preservation and enhancement.

8.5 Species Protection

Legislation

8.5.1 All bat species are protected by the Conservation of Habitats and Species Regulations 2017. The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat in such a way as to be likely:

- i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
- ii. to impair its ability to hibernate or migrate; or
- iii. to affect significantly the local distribution or abundance of the species to which they belong.

- Damage or destroy a breeding site or resting place of a bat;
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

8.5.2 In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017 already described, bats are also partially protected in Wales under the Wildlife and Countryside Act, which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

8.5.3 A roost is any structure or place used by bats for shelter or protection. As bats tend to re-use the same roosts year after year, the roost is protected whether bats are present or not at the time.

8.5.4 In this context, 'damage' would include such operations as treatment of wood with toxic preservatives or use of rodenticides near roosting bats while 'disturbance' includes any work in or affecting a bat roost.

8.5.5 If proposed actions, such as redevelopment of an existing building may lead to an offence under the above legislation, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence. Licences for 'scientific or educational', 'ringing or marking' and 'conservation' may be issued by Natural Resources Wales, licences for the reason of 'preserving public health or public safety' by the Welsh Assembly Government (WAG).

8.5.6 In addition to the above legislation, all bats are protected under the Bonn Convention, within which the Agreement on the Conservation of Bats in Europe (1991) or EUROBAT, establishes a mechanism for international collaboration to conserve bats and their habitats, including foraging habitats. All European bat species are covered under Appendix II of the Conservation of Migratory Species of Wild Animals (CMS).

8.5.7 The Hedgerow Regulations 1997 provide for the conservation of 'important' hedgerows and their constituent trees. The presence of a protected species such as bats is included in the assessment of whether a hedgerow is considered 'important' and applications to remove such hedgerows must be made to the planning authority.

8.6 UK Post-2010 Biodiversity Framework and Species of Principal Importance

8.6.1 Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Farming and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of country specific priority lists which, for Wales, are specified under Section 42 of the NERC Act 2006. The Section 42 list is used as a guide and a reference for ensuring that appropriate consideration is given to the conservation of biodiversity in all development activity, and affords legal protection to those species and habitats it includes.

8.6.2 Seven species of bats (Barbastelle, Bechstein's, greater and lesser horseshoe, brown long-eared, noctule and soprano pipistrelle) have been adopted as Species of Principal Importance for the Conservation of Biodiversity in Wales. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, TAN5 states that species of Principal Importance for the conservation of biodiversity should be protected from the adverse effects of development, which presumably includes those listed the former UK BAP and on Local or Regional priorities species lists.

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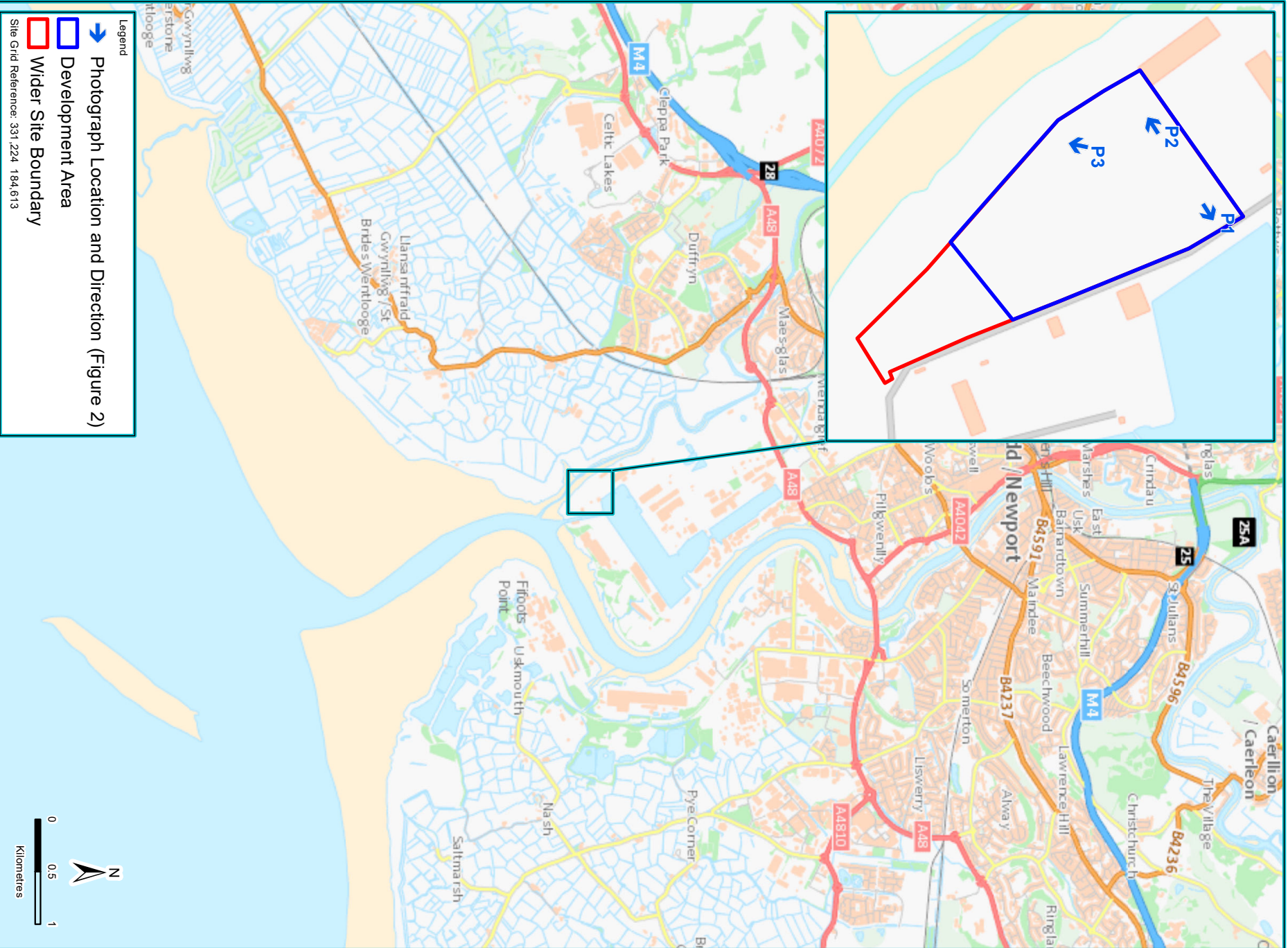
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Client	Associated British Ports
Figure Number	1
Figure Title	Site Location

Drawing Ref	AABP122/28200/1
Scale at A4	1:50,000
Drawn	EA
Checked	TP
Date	19/08/2019

www.thomsonec.com
 enquiries@thomsonec.com

Legend

Bat Static Monitoring

**Overall Activity Score -
Transect Leg**

Very High
 Medium
 Low
 Very Low

Habitats on Site

Dense Scrub
 Standing Water
 Ephemeral Short
Perennial/Scattered Scrub Mosaic
 Hard Standing
 Site Boundary

Site Grid Reference: 331,377 184,173

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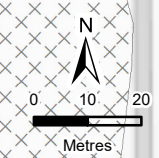
Date 25/09/2019	Date 25/09/2019
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Client
Associated British Ports















Figure Number
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Figure Title
**Results of the Bat
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and the Static
Monitoring Device Location**

Filepath: \\thomson.int\data\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Working\Bat Transect Survey\AABP122_Fig2_BatTransectResults_JB_250919.mxd



Legend

-  Bat Static Monitoring
- Bat Species Recorded**
-  Brown long-eared
-  Common pipistrelle
-  Leisler's
-  Myotis species
-  Nathusius's pipistrelle
-  Noctule
-  Pipistrelle species
-  Soprano pipistrelle
- Habitats on Site**
-  Dense Scrub
-  Standing Water
-  Ephemeral Short Perennial/Scattered Scrub Mosaic
-  Hard Standing
-  Site Boundary

Site Grid Reference: 331,377 184,173

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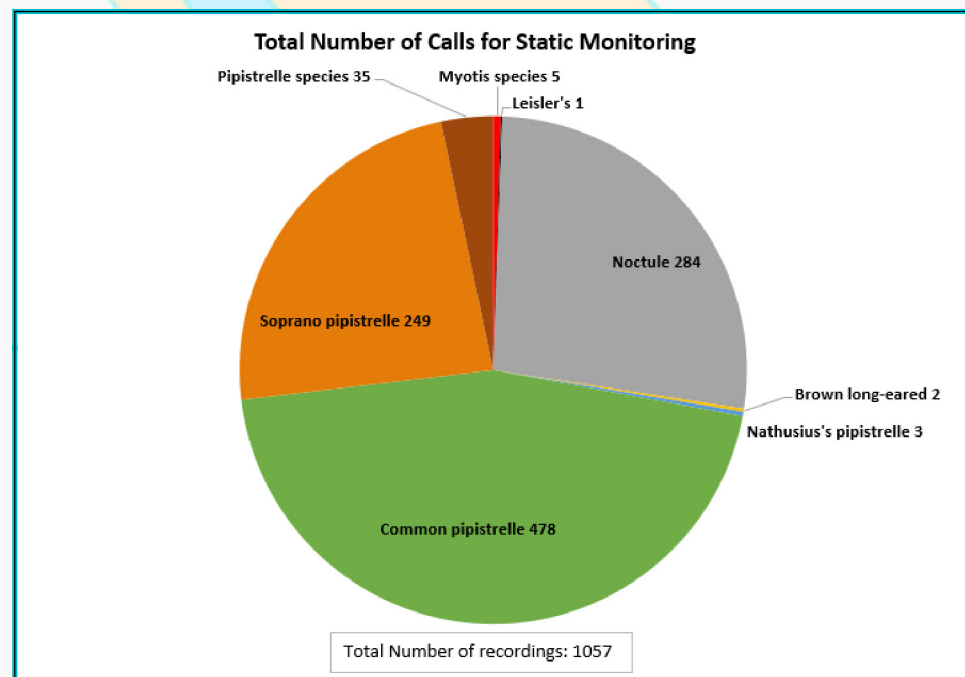
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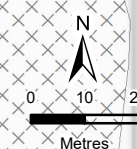
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Associated British Ports

Figure Number
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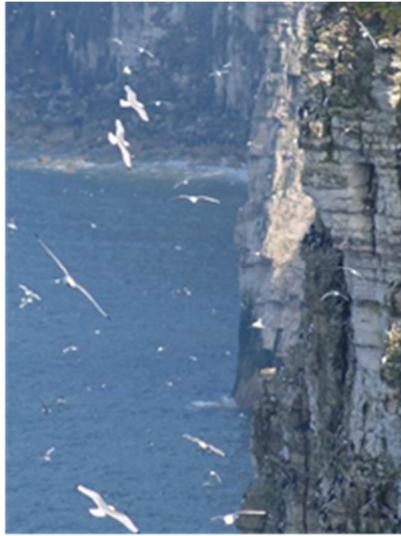
Figure Title
**Static Monitoring Device
Location and Results**



SM4 



Appendix 6
Reptile Survey Report



Reptile Survey

**Newport Docks
Plasterboard Factory**

For

ABPmer

Project No.: AABP122/003

October 2019

London & South East
Compass House
Surrey Research Park
Guildford
GU2 7AG . UK
t: +44 (0)1483 466 000

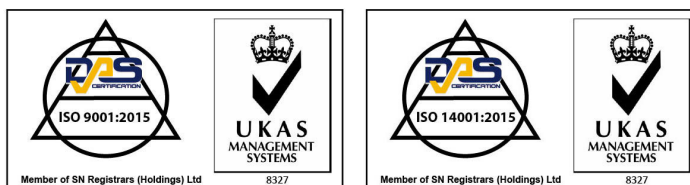
North & Borders
The Tannery
91 Kirkstall Road
Leeds
LS3 1HS. UK
t: +44 (0)113 247 3780

Wales & South West
Williams House
11-15 Columbus Walk
Cardiff
CF10 4BY . UK
t: +44 (0)2920 020 674

Midlands
Edmund House
12-22 Newhall Street
Birmingham
B3 3AS
t: +44 (0) 121 726 3494

Scotland
20-23 Woodside Place
Glasgow
G3 7QF . UK
t: +44 (0)141 582 1333

Enquiries
e: enquiries@thomsonec.com
w: www.thomsonec.com



Project Number	Report No.
AABP122/003	003

Revision No.	Date of Issue	Author	Reviewer	Approver
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002	25/09/19	Annabel Moore	Tessa Harding	
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004	04/10/19	Annabel Moore	Tessa Harding	
005	17/10/19	Emily Greenall	Emily Greenall	Tessa Harding

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Contents

1. Summary and Main Recommendations	6
1.1 Summary	6
1.2 Main Recommendations	6
1.3 Conclusions	7
2. Introduction	8
2.1 Development Background	8
2.2 Ecology Background	10
2.3 The Brief and Objectives	10
2.4 Limitations	10
2.5 Surveyors	10
3. Methodology	11
3.1 General approach	11
3.2 Desk Study	11
3.3 Presence / Absence Survey	11
3.4 Refugia Search	11
3.5 Population Size Class Estimate	12
3.6 Dates of Survey	12
4. Results	13
4.1 Visual and refugia search	13
5. Legal and Planning Policy Context	14
6. Recommendations	15
6.1 Background	15
6.2 Avoidance and Mitigation Measures	15
6.3 Enhancement Measures	15
7. Conclusion	16
8. References	16
Appendix 1 British Reptiles	17
8.2 Introduction	17
8.3 Biology	17
8.4 Site Designation	19
8.5 Species Protection	20
8.6 UK Post-2010 Biodiversity Framework and Species of Principal Importance	21
8.7 References	21

Table 1 Dates of Survey and Weather Conditions

Figure 1 Site Location

Figure 2 Site photos

Figure 3 Reptile refugia locations

1. Summary and Main Recommendations

1.1 Summary

1.1.1 Associated British Ports (ABP) are planning to construct a plasterboard factory on land within Newport Docks (Figure 1). Thomson Environmental Consultants (TEC) were commissioned by ABPmer on behalf of ABP to undertake a reptile survey of the site.

1.1.1 As a result of discussions with the local planning authority during the period since the study was commissioned the overall site area has been reduced in size by 0.8ha from 4.2ha to 3.4ha. The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that reptile activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').

1.1.2 The objective of the survey was to determine whether reptiles were present on the site, and if so, provide an estimate of population size and subsequent assessment of the potential effects of the development on reptiles.

1.1.3 Artificial reptile survey refugia were deployed on the site in areas of suitable habitat on the 26th June 2019. The refugia were checked for the presence of reptiles on seven separate survey visits, in conjunction with visual surveys. The methods used in the survey are consistent with those described in the Reptile Mitigation Guidelines.

1.1.4 One adult female slow worm (*Anguis fragilis*) was recorded on a refugia towards the western edge of the site on 11th September 2019. It was concluded that the site supports a small population of the species.

1.1.5 It is an offence to deliberately kill or injure reptiles and loss of the population would have a negative impact on biodiversity. Mitigation is required to avoid contravention of legislation as a result of the proposed works. The main recommendations for mitigation are set out below.

1.2 Main Recommendations

1.2.1 Due to low populations of reptiles recorded during the survey the following mitigation measures should be adopted during vegetation clearance:

1. Vegetation clearance, and subsequent removal of ballast and topsoil, should be carried out following a Precautionary Method of Works (PMoW) under the supervision of an Ecological Clerk of Works (ECoW).
2. It should progress systematically from the north eastern corner of the site towards the south west, allowing any reptiles present to move into the retained habitat area and 10m buffer;
3. If possible, vegetation clearance should avoid the winter months (i.e. November to March) when reptiles may be hibernating.
4. Any reptiles encountered during the works should be moved by the ECOW to suitable refugia within the retained adjacent habitat.

5. A toolbox talk will be provided to all site operatives in advance of vegetation clearance and ballast removal.

1.3 Conclusions

- 1.3.1 Taking into account the avoidance, mitigation and enhancement measures outlined above, the impacts on the slow worm population will be minimised to a level which is compliant with the legislation and planning policies which protects reptile populations.

2. Introduction

2.1 Development Background

- 2.1.1** On behalf of Associated British Ports, ABPmer is proposing to build a plasterboard factory - including factory building, areas of hardstanding and associated infrastructure above and below ground. The proposals listed are hereafter collectively known as the development.
- 2.1.2** The site is towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road leading to the head of the Docks (Grid Reference ST 31347 84186). The site location is shown on Figure 1 and photos of the site in Figure 2. The area affected by the development (i.e. all the land within the red line boundary indicated on Figure 1) is hereafter referred to as the site.
- 2.1.3** Since the original EIA screening request, further consideration has been given to the Proposed Development. A design review has determined that there is sufficient capacity within existing facilities at the Port to provide external storage areas for the Proposed Development. As a consequence, the land needed has been reduced and the external storage areas originally proposed in the south east of the site have been removed from the Proposed Development.
- 2.1.4** This in turn has the benefit of reducing the amount of habitat loss associated with the development. The area of the site that is to be developed has been reduced by 0.8 ha from 4.2ha to approximately 3.4 ha. As well as reducing habitat loss, this change in area also lessens the extent of the Proposed Development bordering the River Ebbw. It includes an area outside of the Proposed Development to act as a buffer to the adjacent Severn Estuary SPA, SAC and SSSI.
- 2.1.5** Furthermore, the strip of vegetation that will be retained or re-planted along the western boundary of the site (as proposed in the original EIA Screening Report), will be increased from a width of 5 m to approximately 10 m. This will serve to reduce the extent of overall habitat loss and increase connectivity with habitats on and off site, as well as provide further screening of on-site operations and act as buffer to protected habitats and species.
- 2.1.6** ABP will commit to managing a 0.65ha area that has been set aside in the south east of the site (referred to as 'Habitat enhancement area' in Plate 1). This is in order to enhance open mosaic habitats and other habitats at the confluence of the River Ebbw and Severn Estuary. This will be achieved via a 20-year management plan in discussion with NCC and wider consultees
- 2.1.7** The survey, and therefore the results presented in the report, cover the original 4.2ha site. The report focuses primarily on species present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that reptile activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').
- 2.1.8** The site and development is covered by the Newport Local Development Plan 2011-2026 under the allocation for "Newport Docks" justified as "surplus of land within Newport Docks which could better meet Newport's economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8".

2.1.9 Planning permission for the development is currently being sought by ABPmer. The site is covered by the Newport Local Development Plan 2011-2026 under the allocation for “Newport Docks” justified as “surplus of land within Newport Docks which could better meet Newport’s economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8”.

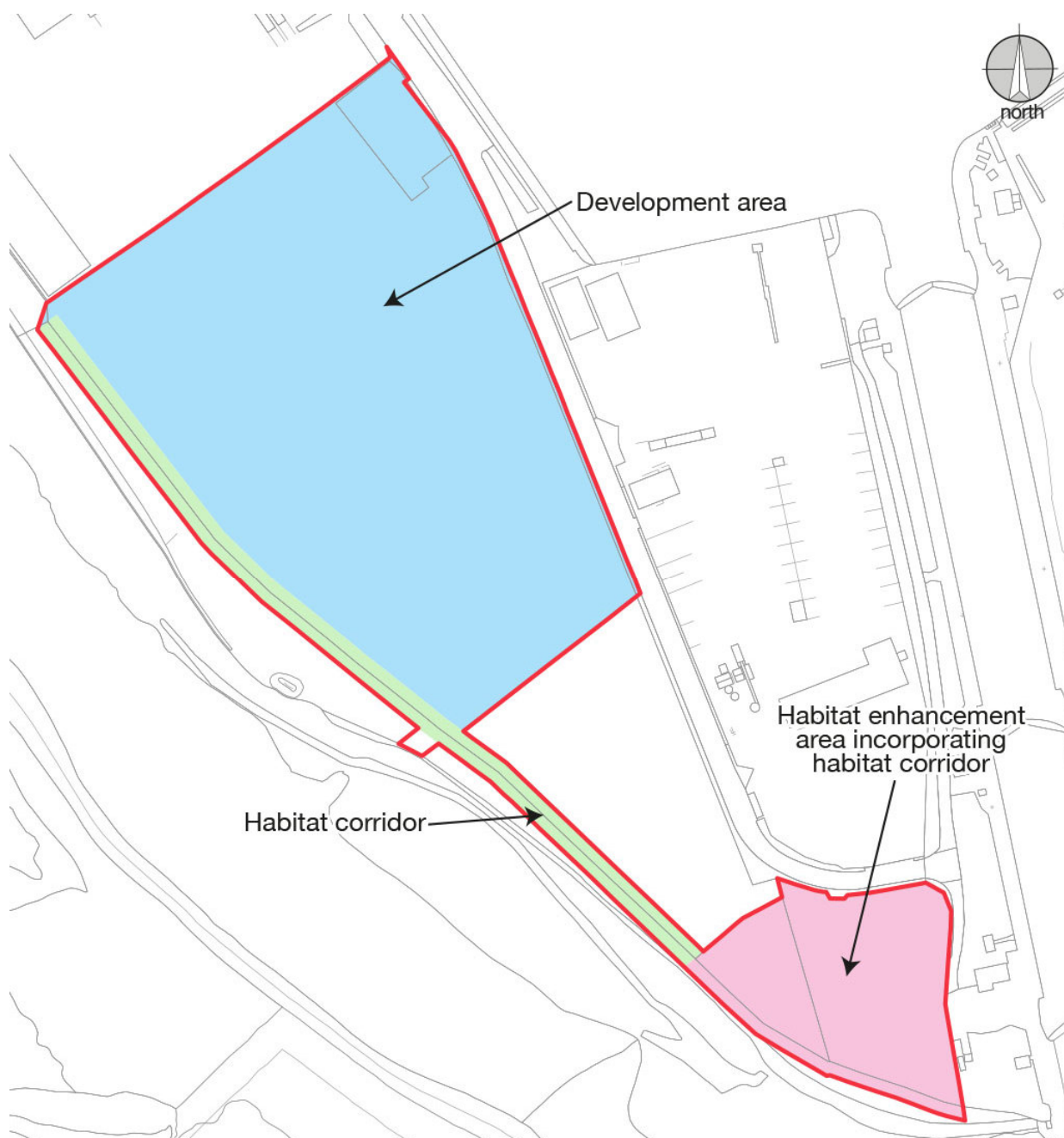


Plate 1: Site layout showing proposed habitat corridor and enhancement area at mouth of the River Ebbw.

2.2 Ecology Background

2.2.1 Suitable habitat for reptiles, including grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*) and common lizard (*Zootoca vivipara*) were identified during the Phase 1 survey undertaken in May 2019. Several mounds of concrete rubble were identified to be potential hibernation habitat or daytime refuge.

2.2.2 Reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill or injure any common reptile species. In addition, they are species of principle importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. ABP is a statutory undertaker and therefore bound by the biodiversity duty set out in Section 40 of this Act, which means it must have regard for the conservation of biodiversity. As such, the PEA recommended that, prior to any works commencing, reptile surveys of the site should be undertaken to determine the presence or likely absence of reptiles within the affected area and inform mitigation measures should it be required.

2.2.3 A summary of the biology, conservation status and legal protection of common reptiles is given in Appendix 1.

2.3 The Brief and Objectives

2.3.1 ABPmer commissioned Thomson Environmental Consultants in June 2019 to undertake a reptile survey within the development site. The brief comprised:

- One surveyor to deploy reptile refugia at a density of approximately 50/ha in suitable habitat;
- Seven survey visits to check reptile refugia, the refugia will be collected on the seventh visit; and
- A report of the survey giving the methods and results, discussion of the legal issues and our recommendations, including mitigation where necessary and appropriate digitised mapping.

2.4 Limitations

2.4.1 The optimum period for survey is April, followed by September when reptiles are more likely to use refugia to warm their bodies during cool periods in the day. In this case the survey commenced in July when reptiles are active from early morning due to higher air temperatures, and are less likely to use refugia. However, some survey visits were timed to occur in September when optimal conditions for survey also occur. Furthermore, adverse weather conditions such as very high temperatures were avoided where possible throughout the survey period. Overall, the timing of the survey is not considered to have compromised the accuracy of the survey.

2.5 Surveyors

2.5.1 Surveys were carried out by Tansy Knight BSc (Hons) and Emily Greenall BSc MSc MCIEEM.

3. Methodology

3.1 General approach

- 3.1.1 The survey area encompassed the wider site with survey effort concentrated in areas of suitable reptile habitat (identified as target notes 1 and 2 by Thomson Environmental Consultants, 2019). (Figure 3).
- 3.1.2 Two survey methods were used to determine the presence or likely absence of reptiles: (i) a visual search for basking reptiles and (ii) the checking of artificial refugia deployed specifically to attract reptiles which might be present in the area.
- 3.1.3 For each reptile species found to be present, a size class estimate was made, based on the peak counts from the survey data and the habitat suitability.
- 3.1.4 Survey visits were undertaken between July and September. Although late in the season (paragraph 2.4.1) this coincided with the active season for reptiles when weather conditions are most suitable for surveys. This excludes periods of heavy rain, strong wind and temperatures below 9°C and above 20°C (Gent & Gibson, 2003).

3.2 Desk Study

- 3.2.1 Records of reptiles within a 2km radius of the development site were obtained from South East Wales Biodiversity Records Centre (SEWBReC).

3.3 Presence / Absence Survey

Visual Search

- 3.3.1 On seven occasions between June and September the surveyor walked slowly around the survey area looking for basking reptiles. Any reptiles seen were approached cautiously to avoid disturbance and to allow for species identification. Where necessary, binoculars were used to aide identification. The number, species, life stage and location of any reptiles seen were recorded on a map of the survey area using a mobile mapper. Any evidence of reptiles such as sloughed skins (also egg laying burrows for sand lizards, rare reptile surveys) was also recorded.

3.4 Refugia Search

- 3.4.1 On 26th June 2019 a total of 150 artificial refugia were placed in suitable locations throughout the survey areas distributed at approximately 10m intervals, giving an approximate density of 50 artificial refugia per hectare (Figure 3).
- 3.4.2 The artificial refugia were comprised of 0.5m x 0.5m cuts of roofing felt. The refugia were positioned so that they were in contact with the ground, in areas of suitable habitat and exposed

to sunlight. To prevent interference in the survey, the refugia were not placed in areas where there was a high level of public activity.

- 3.4.3 The location of artificial refugia was mapped using a Tough pad and 'collector for ArcGIS' software.
- 3.4.4 The artificial refugia were then left in place for a minimum of one week before the survey commenced. Subsequently, on seven occasions, a minimum of two days apart, the refugia were cautiously checked for reptiles, both on top and underneath. If any reptiles were found, the refuge location, species, life stage and numbers of reptiles were recorded. Any evidence of reptiles such as sloughed skins or tracks was also recorded.
- 3.4.5 On days forecast to be hot and sunny, the survey was conducted during the morning or late afternoon, when the temperature beneath the refugia was not too high. On days forecast to be cooler or cloudy, the survey was conducted in mid- to late morning or early to mid- afternoon. The air temperature in the shade was recorded on each survey visit.
- 3.4.6 The artificial refugia were collected up and removed from the site after the end of the surveys.

3.5 Population Size Class Estimate

- 3.5.1 A population size class estimate was made for each species of reptile recorded as present within the survey area. The size class is an estimate of reptile density i.e. a qualitative indication of the likely numbers of reptile per hectare. It is therefore a measure which is independent of the size of the development site.
- 3.5.2 Size class for each species was estimated as small, medium or large, based on the results of the presence/absence survey and the habitat suitability assessment. Where a species of reptile was recorded, it is estimated that the population will be small in poor habitat, medium in good habitat and large in exceptional habitat. This estimate is revised upwards if the survey peak count (maximum number of adults and juveniles recorded in any one survey visit) is exceptionally large, or downwards if exceptionally small.

3.6 Dates of Survey

- 3.6.1 The table below shows the time of visit, the date, air temperature and temperature in the shade for each of the survey visits at each of the sites.

Table 1 Dates of Survey and Weather Conditions

Site	Visit No.	Date	Time (start/finish)	Air Temp °C
	Refugia deployment	26/06/2019		
	1	12/07/19	7.30am/8.30am	17°C
	2	19/07/19	6.30am/8.00am	15°C
	3	12/08/19	7.30am/8.30am	14°C
	4	17/08/19	8:30am/9.30am	17°C
	5	05/09/19	7.30am/8.30am	15°C

Site	Visit No.	Date	Time (start/finish)	Air Temp °C
	6	11/09/19	8:30am/9.30am	17°C
	7	18/09/19	8:30am/9.30am	17°C

4. Results

4.1 Visual and refugia search

- 4.1.1 One adult female slow worm (*Anguis fragilis*) was recorded beneath a refugia within the wider site, towards the south western end on 11th September 2019 (Figure 3). Weather conditions on the day were warm and sunny with an air temperature of 14-17 °C.
- 4.1.2 The area in which the slow worm was recorded will not be directly affected by the development, although given that the habitat in which it was recorded is ubiquitous across the site, this does not preclude them from being present in the development area.
- 4.1.3 No reptiles were recorded during the visual inspections of the site.
- 4.1.4 Given that only one individual was recorded it is not possible to undertake a population size class assessment. However, it can be concluded that the wider site, including the development area, supports a small population of slow worm.

5. Legal and Planning Policy Context

- 5.1.1** The content of the legislation and planning policy section is the legislation and planning policy that we know is relevant based on this reptile survey.
- 5.1.2** One species of reptile, slow worm, were recorded during the field survey. As set out in Appendix 1, these species are protected by the Wildlife and Countryside Act 1981, as amended, which makes it an offence to intentionally kill or injure these species.
- 5.1.3** The site contains suitable habitat for a number of common reptile species including common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*). Suitable habitat identified included rubble piles which presents as refuge and hibernacula potentials. Grass snakes have been noted within the Afon Ebbw SINC. Particular areas of interest are found around the edge of the site where DS1 occurs. Common species of reptiles are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which protects them from killing and injury. These species are also designated priority species in Wales under Section 7 of the Environment (Wales) Act 2016 and as a result should be considered as part of Policy SP9 of the Newport Local Development Plan 2011-2026. Recommendations are given in Section 6 to protect reptiles.
- 5.1.4** Without avoidance or mitigation measures, the development could contravene the legislation set out above with respect to reptiles, during the clearance of reptile habitat, earth removal and works on the embankments at each of these sites. This is because these actions could result in the killing or injury of reptiles.
- 5.1.5** To comply with legislation, mitigation measures are outlined within Section 6 which, if followed, should ensure any adverse impacts on reptiles at these sites are avoided.

6. Recommendations

6.1 Background

6.1.1 One female slow worm was recorded during the survey visit on 11th September 2019. No other reptiles were recorded during the survey. The site is therefore considered to support a small population of slow worms.

6.2 Avoidance and Mitigation Measures

6.2.1 Due to low populations of reptiles recorded during the survey the following mitigation measures should be adopted:

1. Vegetation clearance, and subsequent removal of ballast and topsoil, should be carried out following a Precautionary Method of Works (PMoW) under the supervision of an Ecological Clerk of Works (ECoW).
2. It should progress systematically from the north eastern corner of the site towards the south west, allowing any reptiles present to move out of the development area and 10m buffer;
3. If possible, vegetation clearance should avoid the winter months (i.e. November to March) when reptiles may be hibernating.
4. Any reptiles encountered during the works should be moved by the ECOW to suitable refugia within the retained adjacent habitat.
5. A toolbox talk will be provided to all site operatives in advance of vegetation clearance and ballast removal.

6.3 Enhancement Measures

6.3.1 The retention of a 10m buffer on the western boundary, and the removal of 0.8ha to the south of the site from the development footprint, will reduce impacts on the slow worm population compared with the previous development layout.

6.3.2 In addition, an area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). An extended Phase 1 habitat survey will be undertaken of this area to determine its current ecological value and inform potential enhancement proposals. A 20-year plan will be prepared by ABP to guide the design and future management of the retained areas.

6.3.3 The following management prescriptions are specifically aimed at maximising benefits for reptiles. In preparing the management plan these measures will be considered alongside, and integrated with, proposals to optimise the value of the sites for other faunal groups.

6.3.4 Management of the enhancement area should aim to maintain the existing habitat structure, while maximising the value for reptiles. This may include creating more 'edge' habitat where scrub transitions into grassland and ephemeral/short perennial habitat by careful shaping of the scrub blocks. Reptiles seek out these habitat transitions, particularly on south facing slopes

where the short grassland allows them to warm up whilst still remaining in close proximity to refuge from predators offered by the scrub.

- 6.3.5 Management of the retained scrub should be undertaken in rotation to ensure that reptiles have undisturbed areas available each year.
- 6.3.6 To enhance the value of the ephemeral/short perennial habitat, scrub and coarse grass species will be controlled, and areas of disturbed and bare ground, which offer basking habitat for reptiles maintained as a mosaic with longer vegetation.
- 6.3.7 Hibernacula in the form of rubble piles covered with earth will be created in the enhancement area.

7. Conclusion

- 7.1.1 One adult female slow worm (*Anguis fragilis*) was recorded beneath a refugia within the wider site, towards the south western end on 11th September 2019 (Figure 3). The area in which the slow worm was recorded will not be directly affected by the development, although given that the habitat in which it was recorded is ubiquitous across the site, this does not preclude them from being present in the development area.
- 7.1.2 Taking into account the avoidance, mitigation and enhancement measures outlined above, the impacts on the slow worm population will be minimised to a level which is compliant with the legislation and planning policies which protects reptile populations.

8. References

- 8.1.1 Gent and Gibson. 2003. Herpetofuana Workers Manual. JNCC, Peterborough.
- 8.1.2 Herpetofauna Groups of Britain and Ireland (HGBI). 1998. Evaluating local mitigation/translocation programmes: Maintaining Best Practice and lawful standards. HGBI advisory notes for Amphibian and Reptile Groups (ARGs). HGBI, c/o Froglife, Halesworth. Unpublished.
- 8.1.3 Thomson Environmental Consultants. 2019. Preliminary Ecological Appraisal Newport Docks Plasterboard Factory. AABP122/001/001/001

Appendix 1 British Reptiles

8.2 Introduction

8.2.1 A summary of the biology of British reptiles, the legislation that protects them and other mechanisms of highlighting species of conservation concern is provided below.

8.3 Biology

8.3.1 There are six British species of reptiles comprising three snake species, adder (*Vipera berus*), grass snake (*Natrix natrix*) and smooth snake (*Coronella austriaca*), and three lizard species, common lizard (*Zootoca vivipara*), sand lizard (*Lacerta agilis*) and slow worm (*Anguis fragilis*). In addition, occasional sightings of non-native alien species may occur, arising from escapes or illegal releases. A summary of each native reptile species is given below, based on information provided in Arnold (1995), Beebee and Griffiths (2000) and Gent and Gibson (1998).

Adder

8.3.2 Adders emerge from hibernation from March onwards and bask in open areas, particularly in spring. The mean temperature of a basking adder is about 33°C. Mating occurs every year throughout April and May and the young are born in late August to September. Hibernation commences in October. Adders have a distinctive zig-zag pattern running down the length of their spine. Males are generally white or pale grey with a black zigzag whilst females are a pale brown colour, with a darker brown zigzag. They are a venomous species with small mammals making up the majority of their diet.

8.3.3 The adder has a widespread but patchy distribution in Britain and is more abundant in the south than the north. Nevertheless, species records exist for northern Scotland. They require undisturbed, open sunny areas in proximity to thick cover. South-facing slopes with a mosaic of bare ground, bracken, tall heath and rocky outcrops may be ideal, although heathland, moorland, coarse grassland and scrub may also suffice.

Grass snake

8.3.4 The grass snake is the largest snake in Britain and is easily identifiable by its green/olive body, dark streaks on the flanks and a distinct yellow and black collar behind the head. They emerge from hibernation in March and, during spring in particular, bask in open areas in order to raise their body temperature. Active grass snakes maintain temperatures of between 26 and 30°C. Eggs are laid in June and July with the young hatching in September. Their main food items are amphibians and fish, which they hunt in both terrestrial and aquatic environments.

8.3.5 Grass snakes have a lowland distribution in Britain and are absent from Scotland. They are widespread and locally common in the south-east of England. The grass snake is essentially an aquatic species, occurring mainly where there are healthy populations of amphibians. Open areas with direct sunshine in proximity to dense cover are also important, as are suitable egg laying sites, such as compost or manure heaps.

Smooth snake

8.3.6 The smooth snake is superficially similar in appearance to the adder, though lacks the clearly defined zig-zag stripe running down the spine. They emerge from hibernation from late February onwards, however, still spend much of their time below ground. They bask mainly by wrapping themselves around vegetation, rather than in open areas, although they may also lie under sheet material, such as corrugated tin. Their preferred optimum temperature is between 28 and 33°C. Adults give birth to live young in August and September and they prey mainly on small mammals and other reptiles.

8.3.7 The smooth snake is the rarest species of reptile in the UK, occurring almost exclusively on lowland dry heathland in the southern counties of England, namely Dorset, Hampshire, Surrey and West Sussex.

Common lizard

8.3.8 The common lizard is the smaller of the two British lizards with the typical legged body form. Common lizards typically emerge from hibernation from March onwards, but earlier emergence can occur during exceptionally warm and sunny conditions. Common lizards bask in open sunny areas and try to achieve an optimum operating temperature of around 30°C. The young are born from mid-July to mid-September and hibernation commences in October. The main food items of this species are invertebrates.

8.3.9 Common lizards have a widespread distribution across England, Wales and Scotland and are also native to Ireland. They prefer undisturbed ground, with dense but short vegetation and patches of bare ground or promontories that are fully exposed to the sun. South facing slopes are often favoured. They are found in a variety of open habitats including roadside verges, railway embankments, woodland clearings, rough grassland, scrub, heathland and coastal sand dunes.

Sand lizard

8.3.10 The sand lizard is the other British lizard with the typical legged body form. The sand lizard is generally more bulky, with a blunt snout, and the males have vivid green flanks in the spring. Sand lizards emerge from hibernation from February onwards. They bask in open, sunny areas in spring but spend little time basking in the height of summer. They try to achieve a body temperature of between 27.5 and 32.5°C. Eggs are laid from the beginning of June to the end of August and hatch between 7 and 12 weeks later. Hibernation commences in early October. The main food items of this species are invertebrates.

8.3.11 The sand lizard has very specialised habitat requirements and only occurs naturally on lowland sandy heathland areas in Dorset, Hampshire and Surrey, and in Merseyside on coastal dunes densely vegetated with marram grass *Ammophila arenaria*. Sand lizards have also been introduced to parts of Berkshire, Cornwall, West Sussex, Devon and North Wales in recognition of the fact that the species used to occupy a wider range encompassing these areas.

Slow worm

8.3.12 The slow worm is a legless lizard that superficially resembles a snake. Slow worms emerge from hibernation from March onwards. When active, slow worms rarely bask in open areas and instead try to maintain a body temperature between 14.5 and 28°C, mainly by contact with warm

surfaces. The young are born from mid-August to mid-September and hibernation commences in October. The main food items of this species are invertebrates.

8.3.13 Slow worms have a widespread distribution across England, Wales and Scotland, but are particularly common in southern and eastern England. They require fairly thick vegetation interspersed with sunny areas for thermoregulation and underground or covered refuges. They are found in a wide variety of habitats including rough grassland, heathland, moorland, downland, hedgerows, scrub and woodland edge. Good populations can sometimes be found on railway embankments, motorway verges and allotments.

8.4 Site Designation

8.4.1 The most important sites for reptiles in the UK receive statutory protection under the following legislation:

- Wildlife and Countryside Act 1981, as amended;
- The Countryside and Rights of Way Act 2000 (which amends the Wildlife and Countryside Act); and
- Natural Environment and Rural Communities Act 2006 (which amends the Wildlife and Countryside Act).

8.4.2 Sites designated under the Wildlife and Countryside Act 1981 (WCA) are known as Sites of Special Scientific Interest (SSSIs). SSSIs received further protection under the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities (NERC) Act 2006.

8.4.3 Some SSSIs are designated for the populations of reptiles that they support. The criteria for selecting SSSIs on the basis of their reptile populations are provided in Guidelines for the Selection of Biological SSSIs (NCC, 1989):

- Sand Lizard - all important and established populations in Dorset and all established populations elsewhere;
- Smooth snake - all important and established populations in Dorset and all established populations elsewhere;
- Other reptiles - best locality in a given area with outstanding assemblages of at least 3 species of the 4 other reptile species.

8.4.4 Sites that qualify as SSSIs are considered to be of at least national importance for the reptiles they support.

8.4.5 Sites designated for nature conservation at the county level may also include reptile populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

Planning Policy

8.4.6 The National Planning Policy Framework (NPPF) gives further direction with respect to biodiversity conservation and land use change / development. The NPPF encourages local planning authorities to identify, conserve and restore, ecological networks, which should benefit amphibians, and it also states that planning permission should be refused if significant harm to biodiversity cannot be avoided, mitigated or compensated. In addition, the Government Circular 06/05, which relates to biodiversity conservation, states that all protected species, such as reptiles, are a material consideration for the planning authority when considering proposed developments.

8.5 Species Protection

Legislation

8.5.1 Both within and outside designated sites, individual smooth snakes and sand lizards are fully protected by law under the Conservation of Habitats and Species Regulations 2017 (which replaces the Conservation (Habitats &c) Regulations 1994). The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a smooth snake or sand lizard;
- Deliberately disturb a smooth snake or sand lizard in such a way as to be likely:
 - i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
 - ii. to impair its ability to hibernate or migrate; or
 - iii. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a smooth snake or sand lizard;
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead smooth snake or sand lizard, or any part of, or anything derived from a smooth snake or sand lizard.

8.5.2 In addition to the protection given to smooth snake and sand lizard under Conservation of Habitats and Species Regulations 2017 already described, smooth snake and sand lizard are also partially protected in England under the Wildlife and Countryside Act, which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

8.5.3 If proposed work has the potential to kill, injure or disturb either of these species, or damage their habitats, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence from Natural England.

8.5.4 Grass snake, common lizard, slow worm and adder also receive some protection under the WCA but are protected from intentional killing, injuring and selling only. If proposed work has

the potential to kill or injure grass snake, common lizard, slow worm or adder, appropriate mitigation should be devised and implemented with agreement from the local planning authority or Natural Resources Wales. However, mitigation for these species is not subject to licensing by Natural Resources Wales.

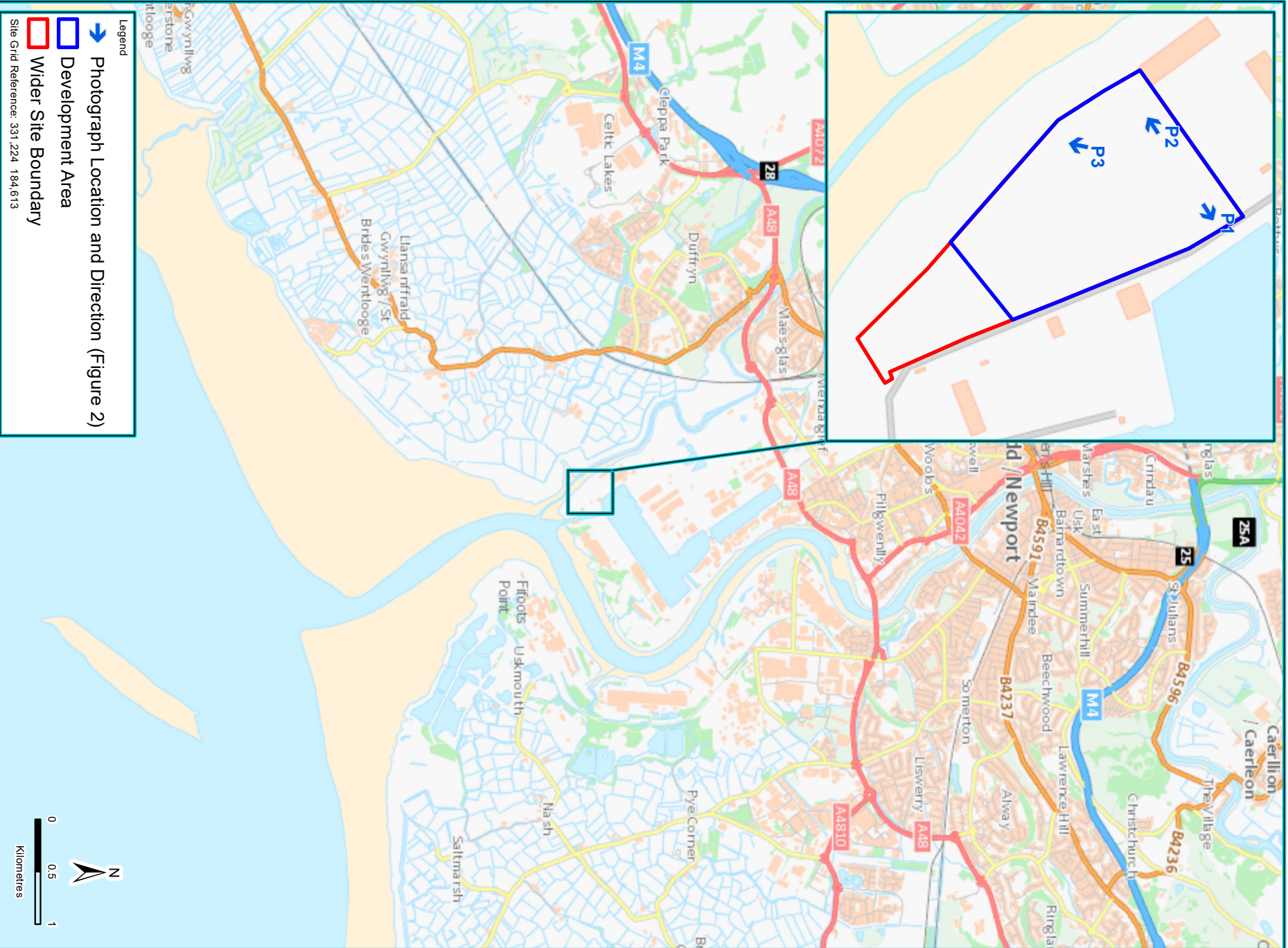
8.6 UK Post-2010 Biodiversity Framework and Species of Principal Importance

8.6.1 Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Farming and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of country specific priority lists, which for England, are specified under Section 41 of the NERC Act 2006. Targets for England's biodiversity strategy 'Biodiversity 2020': A strategy for England's wildlife and ecosystem services, are informed by this list.

8.6.2 British reptiles are one such group that have been adopted as Species of Principal Importance for the Conservation of Biodiversity in England. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, the NPPF states that local planning authorities should promote the protection and recovery of priority species populations linked to national and local targets, which presumably means those listed under the Section 41 of the NERC Act, the former UK BAP and on Local or Regional priorities species lists.

8.7 References

- 8.7.1 Arnold, H.R (1995) Atlas of amphibian and reptiles in Britain. HMSO. London.
- 8.7.2 Beebee, T.J.C and Griffiths, R.A (2000) Amphibians and Reptiles. Harper Collins Publishers. London
- 8.7.3 Gent, A.H and Gibson, S.D eds (1998) Herpetofauna Workers Manual. Joint Nature Conservation Committee, Peterborough.
- 8.7.4 Her Majesty's Stationery Office (HMSO) (2017) The Conservation of Habitats and Species Regulations 2017.
- 8.7.5 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). (2012). UK Post-2010 Biodiversity Framework. Available from: <http://jncc.defra.gov.uk/page-6189>.
- 8.7.6 NCC (1989) Guidelines for Selection of Biological SSSIs. Nature Conservancy Council, Peterborough.



Client	Associated British Ports
Figure Number	1
Figure Title	Site Location

Drawing Ref	AABP122/28200/1
Scale at A4	1:50,000
Drawn	EA
Checked	TP
Date	19/08/2019

Thomson
 environmental
 consultants

www.thomsonec.com
 enquiries@thomsonec.com



Photograph 1:
Hardstanding with scrub perimeter.



Photograph 2:
Short perennial scrubland with marginal young trees.



Photograph 3:
Hardstanding reclaimed by short, colonising plants.

Filepath: S:\Cardiff\Projects\AABP122 - Newport Docks Plasterboard Factory Development\Mapping\Working\Breeding Bird Survey\AABP122_Fig2_SitePhotos_EA_190819.mxd
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Figure Number	2		Scale at A4	Not applicable	
Figure Title	Drawn	EA	Checked	TP	
	Date	19/08/2019	Date	19/08/2019	

Thomson
environmental
consultants

www.thomsonec.com
enquiries@thomsonec.com

Legend

- Reptile Refugia Deployment
- Reptile Species Found**
- ◆ Slow Worm
- ▭ Revised Site Boundary
- ▭ Site Boundary



Site Grid Reference: 331,376 184,174

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Drawing Ref
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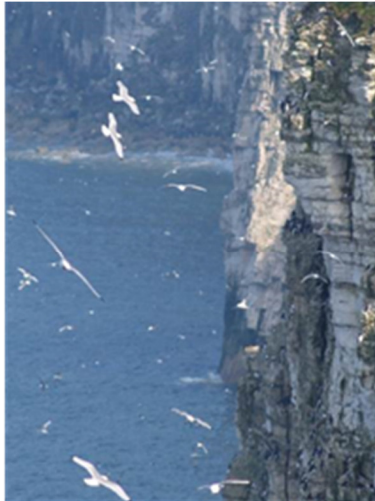
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Date 20/09/2019	Date 20/09/2019

Client
Associated British Ports

Figure Number
3

Figure Title
Reptile Refugia Locations

Appendix 7
Preliminary Terrestrial Invertebrate Assessment Report



**Terrestrial Invertebrate
Assessment**

**Newport Docks
Plasterboard Factory**

Draft

For

ABPmer

Project No.: AABP122/002

October 2019

London & South East

Compass House
Surrey Research Park
Guildford
GU2 7AG . UK
t: +44 (0)1483 466 000

North & Borders

The Tannery
91 Kirstall Road
Leeds
LS3 1HS. UK
t: +44 (0)113 247 3780

Wales & South West

Williams House
11-15 Columbus Walk
Cardiff
CF10 4BY . UK
t: +44 (0)2920 020 674

Midlands

Edmund House
12-22 Newhall Street
Birmingham
B3 3AS
t: +44 (0) 121 726 3494

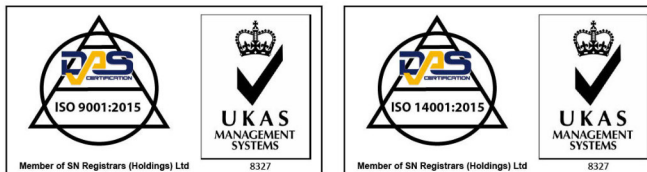
Scotland

20-23 Woodside Place
Glasgow
G3 7QF . UK
t: +44 (0)141 582 1333

Enquiries

e: enquiries@thomsonec.com

w: www.thomsonec.com



Project Number	Report No.
AABP122/006	006 (Final)

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002	27/09/2019	Tessa Harding	Emily Greenall	Tessa Harding
003	17/10/19	Tessa Harding	Emily Greenall	Tessa Harding

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Contents

1. Summary and Main Recommendations	5
1.1 Summary	5
1.2 Conclusions	6
2. Introduction	7
2.1 Development Background	7
2.2 The Brief and Objectives	8
2.3 Limitations	9
2.4 Surveyors.....	9
3. Methodology	10
3.1 General Approach	10
3.2 Desk study	10
3.3 Phase 1 habitat survey	11
3.4 Site visit	11
4. Results	12
4.1 Desk study	12
4.2 Relevant studies	12
4.3 Field survey	13
5. Legal and planning policy considerations.....	16
6. Recommendations.....	17
6.1 Mitigation and enhancement	17
7. Conclusions	17
8. References	18

Figure 1: Site location

Figure 2: Site photos

1. Summary and Main Recommendations

1.1 Summary

- 1.1.1** Associated British Ports (ABP) are planning to construct a plasterboard factory on land within Newport Docks (Figure 1). Thomson Environmental Consultants (TEC) were commissioned by ABPmer on behalf of ABP to undertake a preliminary assessment of the habitats within the site for terrestrial invertebrates.
- 1.1.2** Since no formal methodology exists for preliminary invertebrate assessments, the method was based on guidance published by Natural England on scoping sites for invertebrate survey, and a handbook for the survey and assessment of open mosaic habitats for invertebrates published by Buglife. This preliminary assessment includes the following three elements:
- Desk study - including review of records of protected and notable species obtained via desk study for the preliminary ecological appraisal, and a search of published and grey literature for the site and nearby areas;
 - Phase 1 habitat survey - review of habitat features recorded during the Phase 1 habitat survey and plant species lists recorded as target notes;
 - Site visit - walkover survey to provide further detail on habitat structure, supplemented by photographs.
- 1.1.1** As a result of discussions with the local planning authority the overall site area has been reduced in size by 0.8ha from 4.2ha to 3.4ha. This report focuses primarily on the potential of habitats present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that invertebrate activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').
- 1.1.2** The desk study returned records of two notable invertebrate species within 1km of the site. The white-letter hairstreak butterfly (*Satyrion w-album*) protected under Schedule 5 of the Wildlife and Countryside Act (1981), and the shrill carder bee (*Bombus sylvarum*), one of Britain's rarest and most threatened bumble-bee, and a Species of Principal Importance under Section 6 of the Environment (Wales) Act 2016. Although the white-letter hairstreak butterfly is unlikely to occur as Wych elm (*Ulmus glabra*)), the principal food plant for the caterpillar, is absent; a significant colony of shrill carder-bee was recorded on similar habitat within Newport Docks immediately to the north of the site during surveys for the M4 corridor project (Welsh Government, 2015).
- 1.1.3** The development area and wider site was evaluated against a range of criteria considered important for invertebrates, including connectivity to offsite habitats, topography and substrate, presence of water features, vegetation structure, and the presence of nectaring plants. Connectivity with nearby semi-natural habitat is considered to be good, particularly to the River Ebbw corridor to the west. The range of topography and substrate, combined with a south western aspect contributes to the diversity of flowering plant species. Over 60 flowering plants were recorded in the ephemeral short/perennial habitats across the wider site, of which some are identified in the OMH handbook as important nectaring species for a wide range of

phytophagous or plant eating invertebrates. Given the range of habitats present the development area and wider site are considered to have high structural diversity.

- 1.1.4** Based on the nature and diversity of habitats recorded during the Phase 1 habitat survey and subsequent site visit, the site is considered likely to have significant invertebrate potential. This is in agreement with the findings of surveys of similar habitat immediately to the north of the site within Newport Docks undertaken for the development of the M4 corridor around Newport (Welsh Government, 2015).

1.2 Conclusions

- 1.2.1** Based on the nature and diversity of habitats recorded during the Phase 1 habitat survey and subsequent site visit, the site is considered likely to have significant invertebrate potential. The focus of future management is likely to be on maintaining the open mosaic habitats.

2. Introduction

2.1 Development Background

- 2.1.1** ABPmer are supporting Associated British Ports who are proposing to build a plasterboard factory on land within Newport Docks. The development comprises the factory building, areas of hardstanding and associated below and above ground infrastructure.
- 2.1.2** The site is towards the head of Newport Docks, directly to the east of the Ebbw River, to the west of the River Usk, and alongside an access road leading to the head of the docks (Grid Reference ST 31347 84186). The site location is shown on Figure 1 and photos of the site in Figure 2.
- 2.1.3** Since the original EIA screening request, further consideration has been given to the Proposed Development. A design review has determined that there is sufficient capacity within existing facilities at the Port to provide external storage areas for the Proposed Development. As a consequence, the land take needed has been reduced and the external storage areas originally proposed in the south east of the site have been removed from the Proposed Development.
- 2.1.4** This in turn has the benefit of reducing the amount of habitat loss associated with the development. The area of the site that is to be developed has been reduced by 0.8ha from 4.2ha to approximately 3.4ha. As well as reducing habitat loss, this change in area also lessens the extent of the Proposed Development bordering the River Ebbw. It includes an area outside of the Proposed Development to act as a buffer to the adjacent Severn Estuary SPA, SAC and SSSI.
- 2.1.5** Furthermore, the strip of vegetation that will be retained or replanted along the western boundary of the site (as proposed in the original EIA Screening Report), will be increased from a width of 5m to approximately 10m. This will serve to reduce the extent of overall habitat loss and increase connectivity with habitats on and off site, as well as provide further screening of on-site operations and act as buffer to protected habitats and species.
- 2.1.6** ABP will commit to managing a 0.63ha area that has been set aside in the south east of the site (referred to as 'Habitat enhancement area' in Plate 1). This is in order to enhance open mosaic habitats and other habitats at the confluence of the River Ebbw and Severn Estuary. This will be achieved via a 20-year management plan in discussion with NCC and wider consultees.
- 2.1.7** This report focuses primarily on the potential of habitats present in the revised 3.4ha development area (referred to hereon as 'the development area'), although given that invertebrate activity will not be confined to this area reference is also made to the wider site (referred to as 'the wider site').
- 2.1.8** The site and development is covered by the Newport Local Development Plan 2011-2026 under the allocation for "Newport Docks" justified as "surplus of land within Newport Docks which could better meet Newport's economic development objectives if brought into alternative, productive, employment generating uses within Use Class B1, B2 or B8".

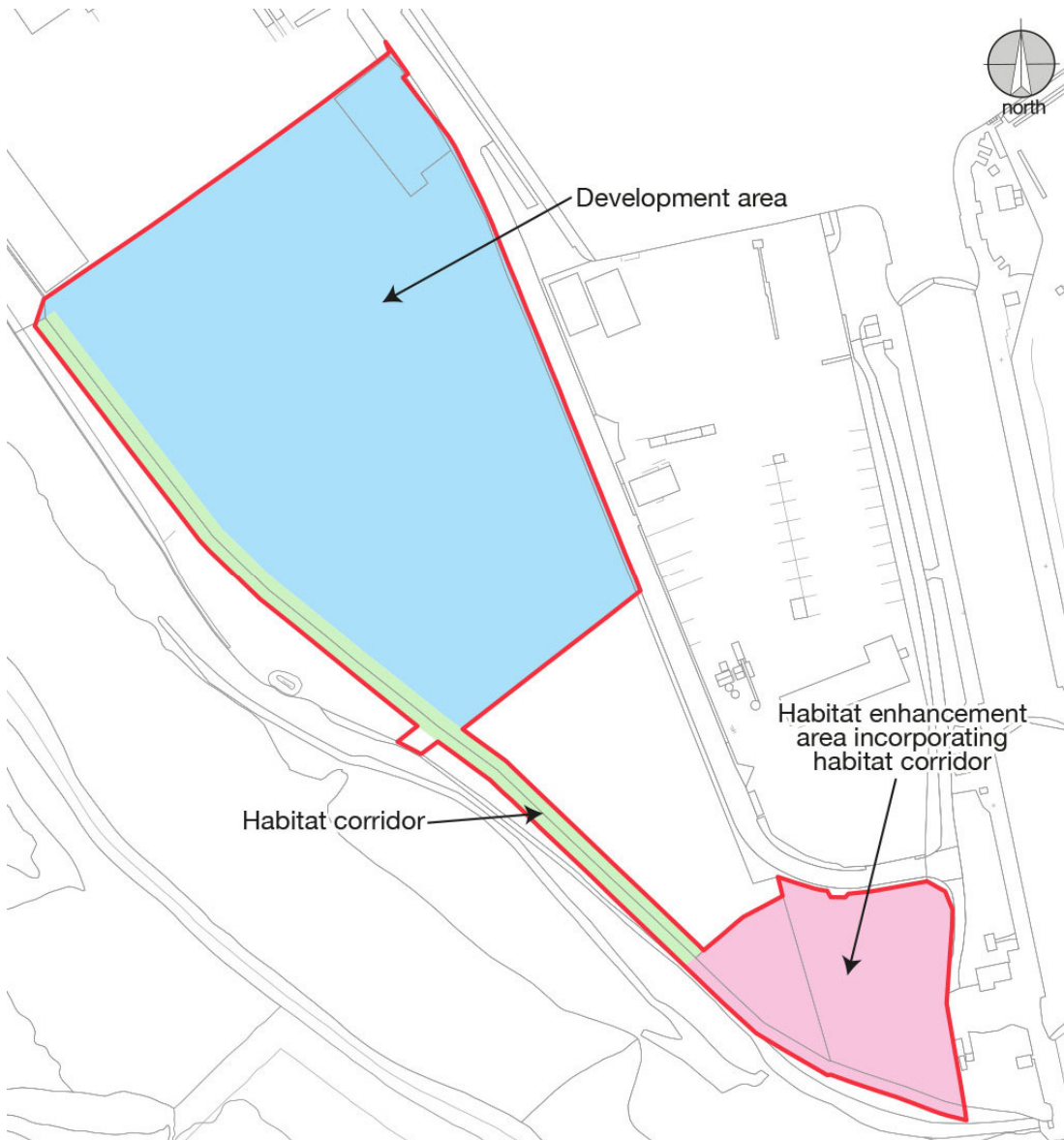


Plate 1: Site layout showing proposed habitat corridor and enhancement area at mouth of the River Ebbw.

2.2 The Brief and Objectives

2.2.1 ABPmer commissioned Thomson Environmental Consultants on 04/09/19 to undertake a preliminary assessment of the value of the existing semi-natural habitats for terrestrial invertebrates on behalf of Associated British Ports.

2.2.2 The brief was to:

- Walk the site within the boundary of the wider site and undertake a visual assessment of the main habitats for invertebrates, and take supporting photographs. Target notes of specific features or habitats within the site to be recorded for inclusion within the report.
- Prepare a report detailing the findings of the survey including consideration of relevant legal considerations and recommendations as to how these may be addressed. This will include any further surveys and/ or mitigation, if deemed necessary. The report will be supported by appropriate digitised mapping.

2.3 Limitations

- 2.3.1 No direct sampling for invertebrates was undertaken. The survey comprised a single visit completed late in the season, when not all species would be present. Conspicuous invertebrates identifiable in the field were recorded.

2.4 Surveyors

- 2.4.1 The survey visit was undertaken by Emily Greenall BSc (Hons), MCIEEM.

3. Methodology

3.1 General Approach

- 3.1.1** No formal methodology exists for a preliminary habitat assessment for terrestrial invertebrates. However, in their advice note 'Good planning practice for Invertebrates: Surveys', Buglife recommend a scoping visit to assess the various habitat features of the site (Buglife, undated). Natural England recommend that the scoping visit '*focuses on the structure of the habitats, and plant species present since habitats with varied physical structure, and species diversity generally support a greater number of invertebrates*' (Natural England, 2011a).
- 3.1.2** The development area supports approximately 1.1ha of open mosaic habitat (OMH) on previously developed land, a priority habitat under the Environment (Wales) Act 2016. Buglife has produced a range of guidance on methods for the survey of terrestrial invertebrates, including a handbook for the survey and assessment of OMH for invertebrates (Lush *et al*, 2013). This guidance has been used as the basis for the preliminary assessment of invertebrate habitats on the Newport plasterboard factory site.
- 3.1.3** This preliminary assessment includes the following three elements:
- Desk study - including review of records of protected and notable species obtained via desk study for the preliminary ecological appraisal, and a search of published and grey literature for the site and nearby areas;
 - Phase 1 habitat survey - review of habitat features recorded during the Phase 1 habitat survey and plant species lists recorded as target notes;
 - Site visit - walkover survey to provide further detail on habitat structure, supplemented by photographs
- 3.1.4** Further details of each of these elements are presented in sections 3.2 to 3.4.

3.2 Desk study

- 3.2.1** Records of designated sites and important species were sought for an area within 5km of the centre of the site. The data request was made on 13th May and the data received on 21st May
- 3.2.2** Sources of information were as follows:
- Newport Borough Council's Local Plan; and
 - South East Wales Biodiversity Records Centre (SEWBRc).
- 3.2.3** An on-line search was undertaken of published and grey literature relating to the site. They included Environmental Statements for developments within or close to the study area, scientific papers on the invertebrate species recorded on the site and planning and policy guidance relating to the management of OMH for terrestrial invertebrates.

3.3 Phase 1 habitat survey

3.3.1 A Phase 1 habitat survey (JNCC, 2010) of land within the redline boundary for the development was conducted on 14th May 2019. Phase 1 habitat survey is a standard technique for rapidly obtaining baseline ecological information over a large area of land. It is primarily a mapping technique and uses a standard set of habitat definitions for classifying areas of land on the basis of the vegetation present. For this survey, the technique was modified (or extended) to provide more detail over a smaller area and give further consideration to fauna (IEA, 1995).

3.3.2 The dominant and readily identified species of higher plant species from each habitat type within the survey area were recorded and their abundance was assessed on the DAFOR scale:

- D Dominant
- A Abundant
- F Frequent
- O Occasional
- R Rare

3.3.3 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2010).

3.3.4 Target notes were made for any features which were too small to map or are of particular ecological interest.

3.3.5 Incidental records of fauna were also made during the survey and the habitats identified were evaluated for their potential to support protected species and other species of conservation concern, including priority species. However, no specific faunal surveys were undertaken.

3.4 Site visit

3.4.1 The site was visited on 5th September 2019 by an experienced ecologist. A walkover survey was undertaken to gather further details than had been collected during the Phase 1 survey on habitats likely to be of value to invertebrates. This included observations on the following aspects:

- connectivity to offsite habitats,
- topography,
- substrate,
- presence of water features,
- vegetation structure; and
- presence of nectaring plants.

3.4.2 Opportunities for management and enhancement measures were also noted. Photographs were taken of each habitat present and additional target notes made.

4. Results

4.1 Desk study

- 4.1.1** The desk study returned records of two notable invertebrate species within 1km of the site. The white-letter hairstreak butterfly (*Satyrion w-album*) is protected under Schedule 5 of the Wildlife and Countryside Act (1981), and is a Species of Principal Importance under Section 6 of the Environment (Wales) Act 2016 and Section 41 of the Natural Environment and Rural Communities Act 2006. Elm (primarily Wych elm (*Ulmus glabra*)), the principal food plant for the caterpillar, does not occur on the site, and although there is abundant mixed scrub, the breeding habitat for the butterfly, it is considered unlikely to be present.
- 4.1.2** The shrill carder bee (*Bombus sylvarum*) is one of Britain's rarest and most threatened bumble-bee, and is a Species of Principal Importance under Section 6 of Environment (Wales) Act 2016. It is associated with dry grasslands on Salisbury Plain, and on the marshes of the Somerset and Gwent Levels. The species depends on flowering plants from the labiate family including white dead-nettle, hedge woundwort, black horehound, and legumes such as red clover, birds-foot trefoil and meadow vetchling. The species was not observed on the site, but the ephemeral/short perennial habitats support key food plants such as red clover (*Trifolium pratense*), common birds-foot trefoil (*Lotus corniculatus*) and bush vetch (*Vicia sepium*).

4.2 Relevant studies

- 4.2.1** Terrestrial invertebrate surveys were undertaken in summer 2015 on a series of sites within the M4 corridor, including Newport Docks, to support an environmental impact assessment for junction improvement works on the M48 (Welsh Government, 2015). The survey covered undeveloped and previously developed land within the central and northern parts of the Docks. Although it did not include the site of the proposed plasterboard factory one of the seven compartments of land (Compartment C) lies immediately north east of the warehouse building adjoining the northern boundary of the site, adjacent to Alexandra Docks. The habitats represented in the seven surveyed compartments are similar in nature to those on the proposed plasterboard factory site.
- 4.2.2** A total of 329 species of invertebrate were recorded during three days' survey in July and August 2015. Of these, 32 were considered to be Key Species, defined as being listed in the UK Red Data Book (RDB) or Nationally Scarce. Eight of the 32 Key Species are considered to rare or very rare in Wales, including the shrill carder bee. The colony of this species recorded at the site was considered '*part of an important meta-population that adds to the viability and significance of this species locally, especially as this bumblebee seems to occur at a higher density here than in most places across the Gwent Levels*'. In addition, a new species of Agromyzid fly (*Liriomyza intonsa*) was recorded on the site.
- 4.2.3** Compartment C was found to be the most diverse, supporting 137 species, of which 12 have national conservation status. However, the report concludes that the compartment adjoining the River Ebbw is the most important, and that the most valuable habitats are those with the least scrub encroachment.

4.3 Field survey

4.3.1 The following Phase 1 habitat types were identified on the development area:

- Dense scrub;
- Ephemeral/ short perennial and scattered scrub mosaic;
- Hard standing.

4.3.2 The 3.4 ha that comprises the development area supports habitats characteristic of previously developed industrial land. Dense scrub is the dominant component, occupying approximately 2.2ha and divided into a series of 5 main blocks. A mosaic of ephemeral/short perennial habitat and scattered scrub separates the scrub blocks and appears to have established on former building footprints and access tracks and covering. This habitat type occupies approximately 1.1ha and is considered to be open mosaic habitat (OMH), a Priority habitat under Section 7 of the Environment (Wales) Act 2016 (Section 5.1.1).

4.3.3 South of the development area in the remaining 0.8ha of the wider site that now lies outside the development the habitat mix is similar. However, the OMH is a more dominant component of this area. A small area of ephemeral standing water and an earth bank also occurs within the wider site.

4.3.4 Full descriptions of each habitat are presented in the Preliminary Ecological Appraisal (Thomson, 2019). The following section evaluates the habitats in terms of their potential to support terrestrial invertebrates based on observations made during the site visit in September, and the criteria used in the open mosaic habitat handbook (Lush *et al*, 2013)(paragraph 3.4.1).

Site connectivity

4.3.5 Connectivity to nearby areas of semi-natural habitat is important as these may act as a reservoir for species diversity and allow meta-populations to move between habitats. The site is connected to the River Ebbw corridor to the west which supports scrub intertidal mudflat and other coastal habitats. To the east the site adjoins an access road and an industrial site immediately adjacent to the dock entrance. Similar OMH habitat lies to the east of the dock entrance. Connectivity with semi-natural habitat is therefore considered to be good, particularly to the west.

Aspect, topography and substrate

4.3.6 The site is relatively flat, sloping slightly to the south west. The surface topography is slightly undulating with the depressions supporting species characteristic of wet or damp conditions including hard rush (*Juncus inflexus*), greater reed-mace (*Typha latifolia*) and meadowsweet (*Filipendula ulmaria*). Bare ground and ephemeral/short perennial habitats occur on drier areas with a gravel substrate, whilst the grassland and scrub habitats to the north of the site are likely to be underlain by top soil, either imported or originating from the site. This range of topography and substrate, combined with a south western aspect contributes to the diversity of flowering

plant species which provide nectar sources for a wide range of phytophagous or plant eating invertebrates.

Vegetation structure

- 4.3.7** The early colonising ephemeral/short perennial habitats have established on the more recently disturbed areas of the site, including a large block within the wider site (which will not be affected by the development), and two smaller blocks and former tracks within the development area (Plate 2). This habitat is characterised by short, sparse vegetation with visible areas of bare ground. These habitats are of particular importance to invertebrates. Grassland and scrub habitats have developed on original site soils which have been left undisturbed for a longer period. The vegetation structure represented on the site ranges from dense mature scrub over 10m in height, through scattered scrub and tall ruderal plants between 1 and 5m, down to ephemeral plant communities of less than 5cm and bare ground. The site is therefore considered to have high structural diversity.



Plate 2: Undulating topography supporting ephemeral/short perennial habitat and scrub habitats

Presence of water features

- 4.3.8** There are no water features within the development area. There is one waterbody approximately 90 sqm in an area that waterlogs in high rainfall events within the wider site. This will be unaffected by the development.

Presence of nectaring plants

- 4.3.9** Nectaring plants are flowers that provide valuable nectar or pollen resources. An evaluation of the habitats that occur on the site has been undertaken based on the species recorded during the Phase 1 habitat survey. Over 60 flowering plants were recorded in the ephemeral short/perennial habitats, of which some are identified in the OMH handbook as important nectaring species. They include common bird's-foot trefoil (*Lotus corniculatus*), bush vetch (*Vicia sepium*), St John's wort (*Hypericum perforatum*), ox-eye daisy (*Leucanthemum vulgare*), and great mullein (*Verbascum thapsus*).
- 4.3.10** Of the plants recorded in the scrub habitats, gorse (*Ulex europaeus*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*) and bramble (*Rubus fruticosus*) are identified as important nectaring species. Although not native to the UK, butterfly bush (*Buddleja davidii*) is an important nectar source for many invertebrate species.

5. Legal and planning policy considerations

- 5.1.1** In the UK, the rarest and most endangered species of invertebrate are assigned Red Data Book (RDB) status (Bratton, 1991). Species which do not qualify as RDB but are nonetheless uncommon are given one of the Nationally Scarce statuses. Neither RDB or Nationally Scarce status affords protection *per se*, although the rarest and most threatened species are listed on Schedule 5 of the Wildlife and Countryside Act (1981), and identified as Species of Principal Importance under Section 7 of the Environment (Wales) Act 2016.
- 5.1.2** Of the two protected invertebrate species occurring within 1 km of the site white-letter hairstreak butterfly is protected from intentional killing, injuring or possession and the trade in the wild under Section 9 of the Wildlife and Countryside Act (1981). It is further protected from disturbance. Both it and shrill carder-bee are Species of Principal Importance under Section 6 of the Environment (Wales) Act 2016. Open mosaic habitats on previously developed land is a priority habitat under Section 7 of the Environment (Wales) Act 2016.
- 5.1.3** Under PPW 2016 the local planning authority should ensure that species and habitats listed under the Environment (Wales) Act 2016 are considered through the planning process. Specifically, they must '*take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.*' This duty is implemented locally through Policy SP9 of the Newport local Development Plan 2011-2026. Given that approximately 1.1ha of this habitat could be lost through the development of the site, recommendations are given in Section 6.

6. Recommendations

6.1 Mitigation and enhancement

- 6.1.1** The retention of a 10m buffer on the western boundary, and the removal of 0.8ha to the south of the site from the development footprint, will reduce impacts on invertebrates compared with the previous development layout.
- 6.1.2** In addition, an area of land at the mouth of the River Ebbw has been set aside as a habitat enhancement area (Plate 1). An extended Phase 1 habitat survey will be undertaken of this area to determine its current ecological value and inform potential enhancement proposals. A 20-year plan will be prepared by ABP to guide the design and future management of the habitat corridor and the enhancement area (Plate 1).
- 6.1.3** The greatest diversity of invertebrates is likely to occur in the open mosaic habitat. In order to maintain the open nature of this habitat, control of invasive *Buddleia* will be required. Willow scrub will require management on a rotation to prevent succession to woodland, but some sallow should be retained so that the habitat mosaic currently present is maintained. Management of the open areas will require an annual partial cut i.e. some areas cut one year, another area within the same compartment the following year, so that some tall grass and flower heads are allowed to stand through the winter, but scrub encroachment is prevented. Additionally, some areas should be intermittently scarified to create exposed substrate to encourage the ruderal communities. These measures will be incorporated into the 20-year plan.

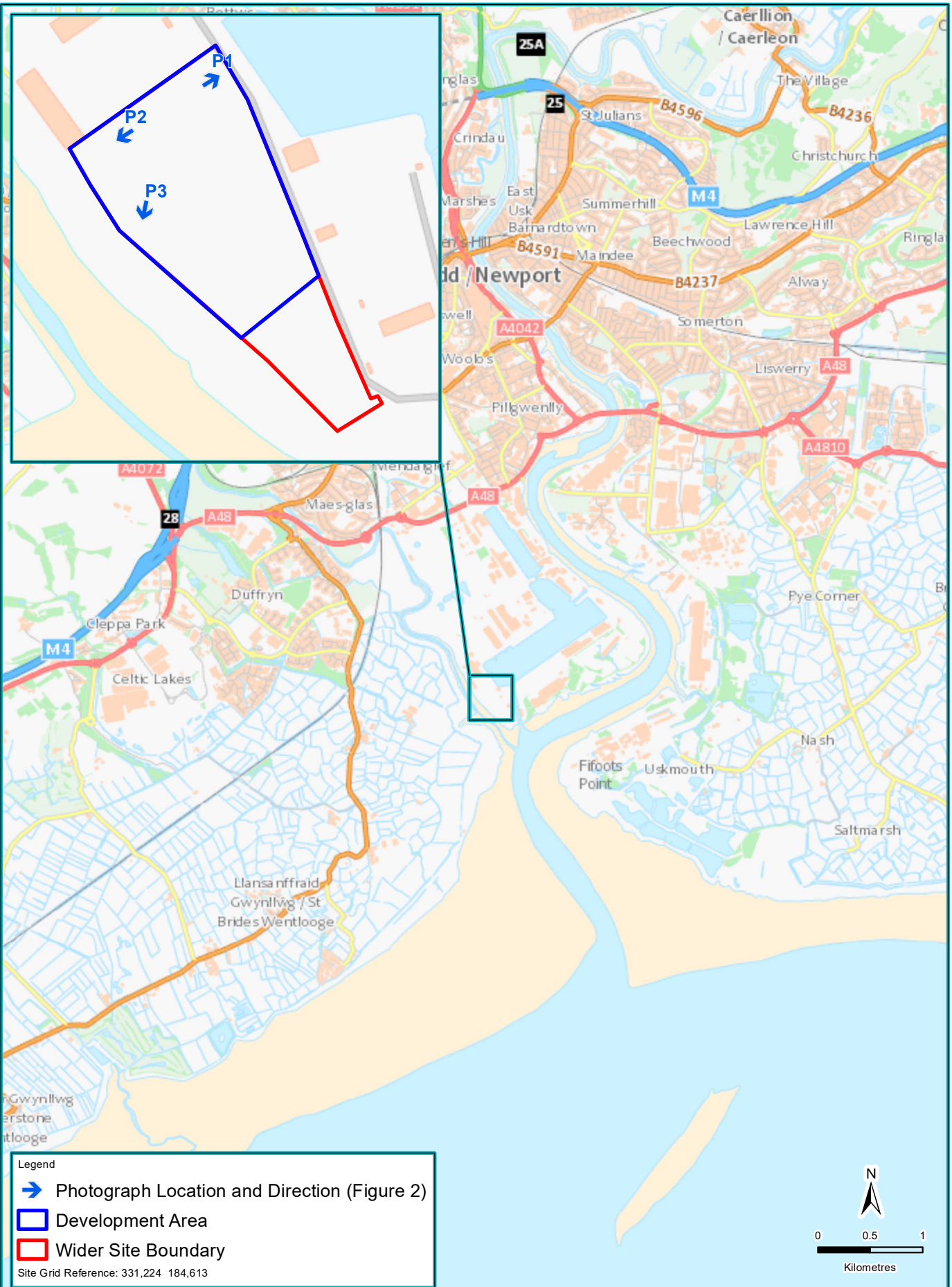
7. Conclusions

- 7.1.1** Based on the nature and diversity of habitats recorded during the Phase 1 habitat survey and subsequent site visit, the site is considered likely to have significant invertebrate potential. The focus of future management is likely to be on maintaining the open mosaic habitats.

8. References

- 8.1.1 Bratton (1991) Red Data Book of British Invertebrates.
- 8.1.2 Buglife (undated) Good planning practice for invertebrates: Surveys.
- 8.1.3 JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit.
- 8.1.4 Lush, M.J. Kirby, P. Shepherd, P. (2013) Open Mosaic Habitat Survey Handbook. exeGesIS SDM Ltd.
- 8.1.5 Natural England (2011a). Organising surveys to site quality for invertebrates: A framework guide for ecologists.
- 8.1.6 Natural England (2011b) Surveying terrestrial and freshwater invertebrates for nature conservation evaluation. Natural England Research Report NERR005.
- 8.1.7 Stace (2019) New Flora of the British Isles. 4th edition.
- 8.1.8 Thomson Environmental Consultants (2019) Preliminary Ecological Appraisal: Newport Docks Plasterboard Factory. For ABPmer (Ref: AABP122/001).
- 8.1.9 Welsh Government (2015) M4 Corridor around Newport Environmental Statement Volume 3: Appendix 10.31. Terrestrial Invertebrate Survey 2015. M4CaN-DJV-EBD-ZG_GEN-AX-EN-0017.

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Client	Associated British Ports		Drawing Ref	AABP122/28200/1	
Figure Number	1		Scale at A4	1:50,000	
Figure Title	Site Location		Drawn	EA	Checked
			Date	19/08/2019	TP
			Date	19/08/2019	

Thomson
 environmental
 consultants
 www.thomsonec.com
 enquiries@thomsonec.com



Photograph 1:
Hardstanding with scrub perimeter.



Photograph 2:
Short perennial scrubland with marginal young trees.



Photograph 3:
Hardstanding reclaimed by short, colonising plants.

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Client	Associated British Ports		Drawing Ref	AABP122/28201/1	
Figure Number	2		Scale at A4	Not applicable	
Figure Title	Drawn	EA	Checked	TP	
	Date	19/08/2019	Date	19/08/2019	
	Photographs of the Site				

Thomson
environmental
consultants

www.thomsonec.com
enquiries@thomsonec.com

Appendix 8
Planning Policy and Legislative Framework

Appendix 8 Planning Policy and Legislative Framework

National Planning Policy

Planning Policy Wales Edition 10 (December 2018)

Planning Policy Wales (PPW) is a material consideration for the purposes of planning decision making. PPW translates the principles of Sustainable Management of Natural Resources (SMNR) into use for the planning system.

The Environment (Wales) Act 2016 introduces the SMNR and sets out a framework to achieve this as part decision-making. The objective of the SMNR is to maintain and enhance the resilience of ecosystems and the benefits they provide.

Relevant key features of the SMNR relating to biodiversity include:

- improving the resilience of ecosystems and ecological networks;
- halting and reversing the loss of biodiversity; and
- maintaining and enhancing green infrastructure based on seeking multiple ecosystem benefits and solutions.

PPW states *"...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."*

Extract From PPW:

"Biodiversity and Resilience of Ecosystems Duty (Section 6 Duty):

6.4.5

Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.

In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- diversity between and within ecosystems;
- the connections between and within ecosystems;
- the scale of ecosystems;
- the condition of ecosystems including their structure and functioning; and
- the adaptability of ecosystems."

Extract: *"...When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought:*

a. This should normally take the form of habitat creation, or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity. It should also be informed by a full ecological assessment before habitat creation or restoration starts.

b. The Green Infrastructure Assessment should be used to identify suitable locations for securing offsite compensation. Where possible, a landscape-scale approach, focusing on promoting wider ecosystem resilience, should help guide locations for compensation. This exercise will determine whether locations for habitat compensation should be placed close to the development site, or whether new habitat or additional management located further away from the site would best support biodiversity and ecosystem resilience at a wider scale.

c. Where compensation for specific species is being sought, the focus should be on maintaining or enhancing the population of the species within its natural range. This approach might also identify locations for providing species-specific compensation further away from the site. Where they exist, Spatial Species Action Plans should be used to help identify suitable locations.

d. Any proposed compensation should take account of the Section 6 Duty (Biodiversity and Resilience of Ecosystems Duty), and the five key ecosystem resilience attributes that it outlines. It should also be accompanied by a long-term management plan of agreed and appropriate mitigation and compensation measures.”

Extract:

“Protected Species 6.4.22 The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.”

Section 7 of the Environment (Wales) Act 2016

Section 7 (S7) of the Environment (Wales) Act 2016 affords protection to priority species listed, by requiring that the local authority ‘take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.’

Technical Advice Note (TAN) -Nature Conservation and Planning

Extract:

“1.4.4 Section 40(1)) of Natural Environment and Rural Communities Act 2006 (NERC) places a duty on every public authority, in exercising its functions, to “have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. This TAN sets out the manner in which planning authorities should comply with this duty.”

Local Planning Policy

Newport Local Development Plan 2011-2026 (Adopted Plan 2015)

Relevant policies include:

Extracts:

“SP1 Sustainability

PROPOSALS WILL BE REQUIRED TO MAKE A POSITIVE CONTRIBUTION TO SUSTAINABLE DEVELOPMENT BY CONCENTRATING DEVELOPMENT IN SUSTAINABLE LOCATIONS ON BROWNFIELD LAND WITHIN THE SETTLEMENT BOUNDARY. THEY WILL BE ASSESSED AS TO THEIR POTENTIAL CONTRIBUTION TO:....

ix. CONSERVING, ENHANCING AND LINKING GREEN INFRASTRUCTURE, PROTECTING AND ENHANCING THE BUILT AND NATURAL ENVIRONMENT;”

GP5: “General Development Principles – Natural Environment

DEVELOPMENT WILL BE PERMITTED WHERE, AS APPLICABLE:

- i) THE PROPOSALS ARE DESIGNED AND MANAGED TO PROTECT AND ENCOURAGE BIODIVERSITY AND ECOLOGICAL CONNECTIVITY, INCLUDING THROUGH THE INCORPORATION OF NEW FEATURES ON OR OFF SITE TO FURTHER THE UK, WELSH AND/OR NEWPORT BIODIVERSITY ACTION PLANS;
- ii) THE PROPOSALS DEMONSTRATE HOW THEY AVOID, OR MITIGATE AND COMPENSATE NEGATIVE IMPACTS TO BIODIVERSITY, ENSURING THAT THERE ARE NO SIGNIFICANT ADVERSE EFFECTS ON AREAS OF NATURE CONSERVATION INTEREST INCLUDING INTERNATIONAL, EUROPEAN, NATIONAL, WELSH SECTION 4232 AND LOCAL PROTECTED HABITATS AND SPECIES, AND PROTECTING FEATURES OF IMPORTANCE FOR ECOLOGY;
- iii) THE PROPOSAL WILL NOT RESULT IN AN UNACCEPTABLE IMPACT ON WATER QUALITY;
- iv) THE PROPOSAL SHOULD NOT RESULT IN THE LOSS OR REDUCTION IN QUALITY OF HIGH QUALITY AGRICULTURAL LAND (GRADES 1, 2 AND 3A);
- v) THERE WOULD BE NO UNACCEPTABLE IMPACT ON LANDSCAPE QUALITY;
- vi) THE PROPOSAL INCLUDES AN APPROPRIATE LANDSCAPE SCHEME, WHICH ENHANCES THE SITE AND THE WIDER CONTEXT INCLUDING GREEN INFRASTRUCTURE AND BIODIVERSITY NETWORKS;
- Vii)THE PROPOSAL INCLUDES APPROPRIATE TREE PLANTING OR RETENTION WHERE APPROPRIATE AND DOES NOT RESULT IN THE UNACCEPTABLE LOSS OF OR HARM TO TREES, WOODLAND OR HEDGEROWS THAT HAVE WILDLIFE OR AMENITY VALUE.

“CE2 Waterfront Development

DEVELOPMENT IN A WATERSIDE LOCATION SHOULD INTEGRATE WITH THE WATERWAY AND NOT TURN ITS BACK ON IT, AND SHOULD TAKE ACCOUNT OF THE INTERESTS OF REGENERATION, LEISURE, NAVIGATION, WATER QUALITY AND FLOW, AND NATURE CONSERVATION.”

“CE3 Environmental Spaces and Corridors

IN AND ADJOINING THE URBAN AND VILLAGE AREAS, AND IN AREAS IDENTIFIED FOR COMPREHENSIVE DEVELOPMENT, SITES HAVING EXISTING IMPORTANCE FOR THEIR VISUAL QUALITIES, AS WILDLIFE HABITATS OR FOR RECREATIONAL OR AMENITY PURPOSES, WILL BE SAFEGUARDED AS “ENVIRONMENTAL SPACES AND CORRIDORS”. DEVELOPMENT IN THESE SPACES WILL BE PERMITTED ONLY WHERE:

- i) THE EXISTING OR POTENTIAL ENVIRONMENTAL QUALITIES OF THE SITE WILL BE IMPROVED OR COMPLEMENTED;
- ii) THERE IS NO ADVERSE IMPACT ON INTERNATIONAL, EUROPEAN, NATIONAL, REGIONAL OR LOCAL NATURE CONSERVATION INTEREST;
- iii) THERE IS NOT A LOSS, WITHOUT APPROPRIATE REPLACEMENT, OF A RECREATIONAL, OPEN SPACE, OR AMENITY RESOURCE FOR THE IMMEDIATE LOCALITY UNLESS IT CAN BE DEMONSTRATED THAT THERE IS AN EXCESS OF PROVISION OR FACILITIES CAN BE ENHANCED THROUGH DEVELOPMENT OF A SMALL PART OF THE SITE. “

PROPOSALS TO ENHANCE OR IMPROVE EXISTING ENVIRONMENTAL SPACE PROVISION WILL BE ENCOURAGED WHERE PRACTICABLE. ADDITIONAL PROVISION WILL BE SOUGHT IN AREAS WHERE A DEFICIT HAS BEEN IDENTIFIED.”

“CE8 Locally Designated Nature Conservation and Geological Sites

PROPOSALS AFFECTING LOCALLY DESIGNATED SITES WILL ONLY BE PERMITTED WHERE:

- i) THERE WOULD BE NO OVERALL LOSS OF THE NATURE CONSERVATION RESOURCE FOR WHICH THE SITE HAS BEEN DESIGNATED;
- ii) THERE WOULD BE NO SIGNIFICANT ADVERSE EFFECT ON THE GEOLOGICAL INTEREST OF THE SITE;
- iii) APPROPRIATE MITIGATION OR COMPENSATORY MEASURES CAN BE ACHIEVED.”

Newport Wildlife and Development - Supplementary Planning Guidance (SPG)

August 2015.

The SPG states that biodiversity must be actively considered by all development proposals and provides guidance on how biodiversity should be protected and enhanced through the planning process and draws on national and local policies within the Development Plan.

Extracts:

“Wherever possible, development should avoid impacting on any wildlife feature.”

“..The developer should show how their proposals have been designed in such a way as to minimise any adverse effects on those habitats or species present, this may involve incorporating appropriate new features or habitats within development.”

“..Please note: Where the development may affect an Internationally Designated Site, the developer must show that the proposals will have no adverse impacts on the features of site (see Box 2).”

“In some cases it isn’t possible to avoid or mitigate for certain wildlife features on a site. In these instances either on or off-site compensation is required.”

“Compensation will not be regarded as an alternative to avoidance or mitigation and where a habitat or feature is lost to development a greater quantity of the replacement will be required.”

“A replacement ratio for ‘like for like’ compensation is set at 1:1.5 or 50% above the area to be replaced.”

“Compensation does not necessarily need to be like for like replacement as the post-development site may not be appropriate for the habitat type. In these cases the replacement ratio may need to be much greater than 1:1.5 so as to guarantee net biodiversity gain and this will be discussed with the local planning authority on a case by case basis.”

Summary of Legislation

Protection for animals included on Schedule 5 of the Wildlife and Countryside Act 1981 (As Amended)		
Section 9	Part 1	Intentionally kill, injure, take a scheduled animal
	Part 2	Possess or control (live or dead animal, part or derivative)
	Part 4 (a)	Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by a scheduled animal for shelter or protection
	Part 4 (b)	Intentionally or recklessly disturb an animal occupying such a structure or place
	Part 5 (a)	Sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative)
	Part 5 (b)	Advertise for buying or selling such things

Protection for animals included on Schedule 2 of The Conservation of Habitats and Species and Planning (Various Amendments) (England and Wales) Regulations 2018		
A person commits an offence if he:		
Section 41	Part 1(a)	Deliberately captures, injures or kills any wild animal of a European protected species
	Part 1(b)	Deliberately disturbs wild animals of any such species. (1A) For the purpose of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely a) to impair their ability i. to survive, breed or reproduce or to rear or nurture their young; or ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate. b) to affect significantly the local distribution or abundance of the species to which they belong
	Part 1(c)	Deliberately take or destroy the eggs of such an animal
	Part 1(d)	Damage or destroy a breeding site or resting place of such an animal
	Part 3	To: a) be in possession of, or to control, b) transport, c) sell or exchange, or d) to offer for sale or exchange. (4) For the purpose of (3) this applies to: a) any live or dead animal or part of animal i) which has been taken from the wild, and ii) which is a species or subspecies listed in Annex IV(a) to the Habitats Directive; and b) anything derived from such an animal or any part of such an animal.

Badgers

Badgers are afforded full protection under the Protection of Badgers Act 1992, which makes it an offence to:

- Wilfully kill, injure or take a badger;
- Possess or control any live or dead badger or any part, or anything derived from, a dead badger;
- cruelly ill-treat a badger, or attempt to do so;
- To interfere with a sett by:
 - damaging or destroying it;
 - obstructing access to, or any entrance of, a badger sett;
 - causing a dog to enter a badger sett;
 - disturbing a badger when it is occupying a sett.;
- Sell a live badger or offer one for sale.

It is also an offence to mark, attach any ring, tag or other marking device to a badger unless authorised under licence.

Bats

All UK bat species are European Protected Species and afforded full protection through inclusion of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2018 (as amended). Barbastelle, Bechstein's, noctule, common pipistrelle, soprano pipistrelle, brown long-eared, greater horseshoe and lesser horseshoe bats are included within Section 7 of The Environment (Wales) Act 2016. Species included in this list are considered by the Secretary of State to be "*of principal importance for the purpose of conserving biodiversity*". Common pipistrelle, soprano pipistrelle, lesser horseshoe bat, greater horseshoe bat, brown long-eared bat, noctule, Daubenton's, Natterer's bat, Whiskered bat, Barbastelle and Bechstein's are included in the Newport BAP.

Birds

The European Community Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) is a framework for the conservation of wild birds in member states. Those bird species listed on Annex 1 of the Birds Directive are subject to special conservation measures through the designation of UK Special Protection Areas (SPA) in order to safeguard important sites within the member states. The species listed in Annex I of the Birds Directive are those in danger of extinction, rare, vulnerable to specific changes in their habitat or requiring particular attention for reasons of the specific nature of their habitat.

The Conservation of Habitats and Species Regulations 2018 (The Habitat Regulations) provides legal protection for UK SPAs. The Habitat Regulations also provide legal protection

to wetlands of international importance as designated under the Ramsar Convention. Proposals that are likely to affect a SPA or Ramsar site must address all relevant features that contribute to the integrity of the protected site, whether or not the proposal lies within or out with of the site. This allows for the protection of qualifying features (i.e. bird species) several kilometres from any development being proposed and is especially pertinent to migratory bird species.

The Wildlife & Countryside Act (WCA) 1981 and the Wildlife & Countryside Act (1981 as amended) provide legal protection to all wild birds¹, their nests and their eggs, making it an offence to intentionally kill or injure any wild bird, damage or destroy an active nest of any wild bird or destroy the eggs of any wild bird. Species listed in Schedule 1 of the Act are also protected by special penalties from reckless or intentional disturbance whilst nest building or at (or near) a nest with eggs or young; or disturbance to dependant young². Under the Wildlife & Countryside Act (1981 as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild form.

The Environment (Wales) Act (2016) Part 1 sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

Section 7 replaces the duty in section 42 of the NERC Act 2006. The Welsh Ministers will publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales. The Welsh Ministers must also take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section and encourage others to take such steps.

Local Biodiversity Action Plans (BAPs) exist throughout Wales. These highlight species that are considered to be under specific threat in a particular district or county or those considered to be at numbers to be a stronghold for that particular species. These plans do not offer the species any specific protection but help to highlight the importance of a species at a local level.

The UK's leading bird conservation organisations (i.e. Royal Society for the Protection of Birds (RSPB), British Trust for Ornithology (BTO) and BirdLife) undertake a five-yearly review of the status of birds that occur regularly in the UK. Species are divided between red, amber and

¹ Game birds are covered by *The Games Acts 1831*, which fully protects them during the closed season.

² Other offences apply but are of less relevance to this assessment.

green categories, according to their status over the previous five years as Birds of Conservation Concern (BoCC). The criteria used for assessment ensure that the BoCC listings reflect each species' global and European status as well as that within the UK, as well as measuring the UK population in international terms. Red-listed species have been subject to the greatest population loss, rate of decline and/or range contraction. Amber-listed species have been subject to moderate declines, followed by green listed species, which are not considered to be declining or do not qualify under any of the red or amber criteria. For a detailed breakdown of the BoCC criteria, see Eaton et al. (2015).

Reptiles

Six native reptiles occur in Britain: the adder (*Vipera berus*), the grass snake (*Natrix natrix*), the smooth snake (*Coronella austriaca*), the sand lizard (*Lacerta agilis*), the common lizard (*Zootoca vivipara*) and the slow worm (*Anguis fragilis*).

The smooth snake and sand lizard are afforded complete protection through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2018 (as amended).

These two species are very limited in their UK distribution and are not recorded in the Newport area. Other common reptiles (common lizard, grass snake, adder and slow worm) are protected against intentional killing and injuring, sale and possession.

Slow worm, grass snake, adder, common lizard and sand lizard are included under Section 7 of The Environment (Wales) Act 2016. Species listed on this section are considered to be of principal importance for the conservation of biodiversity in relation to Wales.

Otter

Otters are afforded full legal protection through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species (Amendment) Regulations 2018 (as amended).

Otters are included within Section 7 of The Environmental (Wales) Act 2016. Species listed on this section are considered to be of principal importance for the conservation of biodiversity) and are included in the Newport BAP.

Appendix 9
Nature Conservation Evaluation Criteria

Appendix 9: Nature Conservation Evaluation Criteria

Criteria	Description
<i>Size</i>	Large, continuous areas of habitat are considered to be of greater importance than small or fragmented areas.
<i>Diversity</i>	Species and habitat diversity, including variations in topography and wetness, increase the wildlife value.
<i>Naturalness</i>	This reflects man's intervention or management of the habitat. Most habitats of this survey are semi-natural. Naturalness indicates the amount of modification of the land by man. Generally a less modified area results in an increase in the nature conservation value.
<i>Rarity</i>	The scarceness of a habitat, and the presence of rare/uncommon species, relates to its importance and priority for nature conservation. Rarity is related to the frequency of occurrence at national or county level.
<i>Fragility</i>	Fragile habitats are those where changes due to man's intervention, environmental factors or natural succession can directly threaten it. Scrub invasion, agricultural improvement, fire and changes in hydrological regime are the most common threats.
<i>Typicalness</i>	This relates to the quality of the habitat in terms of how good an example it is of a recognised type.
<i>Position in an ecological/geographical unit</i>	The relationship of a site to adjacent areas of nature conservation value. It is important to recognise the important and characteristic formations, communities and species of a district.
<i>Recorded history</i>	The extent to which a site has been used for scientific study and research is a factor of some importance.
<i>Potential wildlife value</i>	The likely quality of the habitat for birds, mammals, reptiles, amphibians and invertebrates if it is managed for wildlife. If appropriate habitat management is undertaken, it is possible for an increase in the diversity and nature conservation value of an area.
<i>Intrinsic appeal</i>	The knowledge of the distribution and numbers of popular groups of species such as birds, is greater than for obscure groups. Similarly, colourful wild flowers and rare orchids arouse more enthusiasm than liverworts. It is pragmatic to give more weight to some groups than to others.
Criteria are based on Ratcliffe, D.A. (1977). <i>A Nature Conservation Review</i> , Cambridge University Press	

Appendix 10
International Designations - Conservation Objectives

Appendix 10: Information on International Designated Sites – Conservation Objectives

Severn Estuary Special Protection Areas (SPA) – Conservation Objectives

Extracts from JNCC:

“With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the ‘Qualifying Features’ listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site. “*

Qualifying Features:

A037 *Cygnus columbianus bewickii*; Bewick’s swan (Non-breeding)

A048 *Tadorna tadorna*; Common shelduck (Non-breeding)

A051 *Anas strepera*; Gadwall (Non-breeding)

A149 *Calidris alpina alpina*; Dunlin (Non-breeding)

A162 *Tringa totanus*; Common redshank (Non-breeding)

A394 *Anser albifrons albifrons*; Greater white-fronted goose (Non-breeding)

Waterbird assemblage”

Severn Estuary Ramsar

The JNCC data form for the Severn Estuary Ramsar site was reviewed. This Ramsar site covers 24662.98 hectares and is located in the south west of the UK between Wales and England.

The Severn Estuary is designated a Ramsar site because it meets the following criteria set out in the Ramsar Convention: Extracts from the citation sheet of the Ramsar criterion are listed below:

“Ramsar criterion 1

Due to immense tidal range (second-largest in world), this affects both the physical environment and biological communities.

Habitats Directive Annex I features present on the pSAC include:

H1110 Sandbanks which are slightly covered by sea water all the time
H1130 Estuaries
H1140 Mudflats and sandflats not covered by seawater at low tide
H1330 Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*”).

“Ramsar criterion 3

“Due to unusual estuarine communities, reduced diversity and high productivity”.

“Ramsar criterion 4

This site is important for the run of migratory fish between sea and river via estuary. Species include Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla*. It is also of particular importance for migratory birds during spring and autumn.”

“Ramsar criterion 8

The fish of the whole estuarine and river system is one of the most diverse in Britain, with over 110 species recorded. Salmon *Salmo salar*, sea trout *S. trutta*, sea lamprey *Petromyzon marinus*, river lamprey *Lampetra fluviatilis*, allis shad *Alosa alosa*, twaite shad *A. fallax*, and eel *Anguilla anguilla* use the Severn Estuary as a key migration route to their spawning grounds in the many tributaries that flow into the estuary. The site is important as a feeding and nursery ground for many fish species particularly allis shad *Alosa alosa* and twaite shad *A. fallax* which feed on mysid shrimps in the saltwedge.”

“Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:

70919 waterfowl (5 year peak mean 1998/99-2002/2003)”.

“Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):”

“Species with peak counts in winter:

- Tundra swan , *Cygnus columbianus bewickii*, NW Europe 229 individuals, representing an average of 2.8% of the GB population (5 year peak mean 1998/9- 2002/3)

- Greater white-fronted goose , *Anser albifrons albifrons*, NW Europe 2076 individuals, representing an average of 35.8% of the GB population (5 year peak mean for 1996/7-2000/01)
- Common shelduck , *Tadorna tadorna*, NW Europe 3223 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)
- Gadwall , *Anas strepera strepera*, NW Europe 241 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9- 2002/3)
- Dunlin , *Calidris alpina alpina*, W Siberia/W Europe 25082 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)
- Common redshank , *Tringa totanus totanus*, 2616 individuals, representing an average of 1% of the population (5 year peak mean 1998/9- 2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species regularly supported during the breeding season:

- Lesser black-backed gull , *Larus fuscus graellsii*, W Europe/Mediterranean/W Africa
- 4167 apparently occupied nests, representing an average of 2.8% of the breeding population
- (Seabird 2000 Census)

Species with peak counts in spring/autumn:

- Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa 740 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

- Eurasian teal , *Anas crecca*, NW Europe 4456 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
- Northern pintail , *Anas acuta*, NW Europe 756 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)”.

“Species Information

Species occurring at levels of international importance on the site.

Fish.

Alosa alosa (IUCN Red data book – threatened; Habitats Directive Annex II, Annex V (S1102)),

Alosa fallax (IUCN Red data book – threatened; Habitats Directive Annex II, Annex V (S1103))

Lampetra fluviatilis (IUCN Red data book – threatened; Habitats Directive Annex II (S1099)),

Petromyzon marinus (Habitats Directive Annex II (S1095))”.

Conservation objectives of Severn Estuary Ramsar

There are no specific Conservation Objectives for the Severn Estuary Ramsar Site listed on the citation sheet. Ramsar sites are designated under the Convention on Wetlands of International Importance. The broad objectives are to stem the loss and progressive

encroachment on wetlands now and in the future. As several features of the Ramsar overlap with those of the Severn Estuary SPA, the conservation objectives for the bird interest would be the same as for the SPA. For additional features the conservation objectives have been defined for the purposes of this document as those listed above.

Severn Estuary Special Area of Conservation (SAC)

Qualifying features

H1110. Sandbanks which are slightly covered by sea water all the time; Subtidal sandbanks
H1130. Estuaries
H1140. Mudflats and sandflats not covered by seawater at low tide; Intertidal mudflats and sandflats
H1170. Reefs
H1330. Atlantic salt meadows (*Glauco-Puccinellietalia maritima*); Atlantic salt meadows
S1095. *Petromyzon marinus*; Sea lamprey
S1099. *Lampetra fluviatilis*; River lamprey
S1103. *Alosa fallax*; Twaite shad.

Conservation objectives of Severn Estuary SAC

“ Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species*
- The structure and function (including typical species) of qualifying natural habitats*
- The structure and function of the habitats of qualifying species*
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely*
- The populations of qualifying species, and,*
- The distribution of qualifying species within the site. “*

River Usk SAC

Qualifying features

3260. Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation
1095. Sea lamprey *Petromyzon marinus*
1096. Brook lamprey *Lampetra planeri*
1099. River lamprey *Lampetra fluviatilis*
1103. Twaite shad *Alosa fallax*
1106. Atlantic salmon *Salmo salar*
1163. Bullhead *Cottus gobio*

1355. Otter *Lutra lutra*
1102 Allis shad *Alosa alosa*

Conservation objectives of River Usk SAC

In summary:

“Conservation objectives are required by the 1992 ‘Habitats’ Directive (92/43/EEC). The aim of the Habitats Directives is the maintenance, or where appropriate the restoration of the ‘favourable conservation status’ of habitats and species features for which SACs and SPAs are designated (Box 1).

(Box 1)

“Favourable conservation status as defined in Articles 1(e) and 1(i) of the Habitats Directive

“The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable.

The conservation status of a species is the sum of the influences acting on the species that may affect the long-term distribution and abundance of its populations. The conservation status will be taken as ‘favourable’ when:

- population dynamics data on the species indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and
- There is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.”

Appendix 11
Extracts from Air Quality Assessment Report

8. IMPACT ASSESSMENT – ECOLOGICAL RECEPTORS

8.1. Overview

The Institute of Air Quality Management's (IAQM) *Guide to the Assessment of Air Quality Impacts on Designated Nature Conservation Sites*, published in June 2019 covers primarily the screening stage that initially identifies the risk of the possibility of significant adverse effects on a European site which could undermine the achievement of its conservation objectives and which therefore would require further detailed examination through an "appropriate assessment". If risks which might undermine a site's conservation objectives can clearly be ruled out (based on the consideration of objective information), a proposal will have no likely significant effect and no appropriate assessment will be needed.

8.2. The Assessment of Air Quality Impacts

The assessment of ecological impacts is set out in three stages, as described below.

8.2.1. Stage 1: Scoping

It has been noted via the MAGIC website that the proposed development site is located in close proximity to the Severn Estuary Special Area of Conservation (SAC), the River Usk SAC, the Gwent Levels Site of Special Scientific Interest (SSSI), the River Usk SSSI and the Severn Estuary SSSI. Preliminary calculations indicate that the emissions from the stacks associated with the proposed development could extend over the SACs and SSSIs; therefore, it is considered that further consideration is required.

8.2.2. Stage 2: Quantification

In accordance with the IAQM guidance, the Process Contributions (PC) for both atmospheric NO_x at ground level as well as the rate of NO_x deposition have been calculated for fifteen representative points within the Severn Estuary and the River Usk SACs, as well as the Severn Estuary, River Usk and Gwent Levels SSSIs. A location plan of these receptors and the relevant ecological designations can be seen in **Figures 8.1** and **8.2** for the SACs and SSSIs respectively; with the results of the modelling shown in **Table 8.1**.

Table 8.1: Process Contributions

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)		Dry Deposition NO _x (kg/ha/y)		% of Critical Level		Wet (Acid) Deposition NO _x (kg/ha/y)		% of Critical Level		Total Deposition NO _x (kg/ha/y)	
		Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level		
ER1	River Usk SAC/SSSI	0.95	3.16	0.58	2.90	0.40	2.00	0.97	4.85				
ER2	River Usk SAC/SSSI	1.20	4.00	0.73	3.65	0.48	2.40	1.21	6.05				
ER3	River Usk SAC/SSSI	1.34	4.46	0.81	4.05	0.52	2.60	1.33	6.65				
ER4	River Usk SAC/SSSI	1.46	4.87	0.89	4.45	0.55	2.75	1.44	7.20				
ER5	River Usk SAC/SSSI	1.25	4.18	0.76	3.80	0.44	2.20	1.20	6.00				
ER6	River Usk SAC/SSSI	0.76	2.54	0.46	2.30	0.25	1.25	0.71	3.55				
ER7	Severn Estuary SAC/SSSI	0.65	2.17	0.40	2.00	0.13	0.65	0.53	2.65				
ER8	Severn Estuary SAC/SSSI	0.29	0.97	0.18	0.90	0.24	1.20	0.42	2.10				
ER9	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	0.38	1.27	0.23	1.15	0.09	0.45	0.32	1.60				
ER10	Severn Estuary SAC/SSSI	0.23	0.76	0.14	0.70	0.13	0.65	0.27	1.35				
ER11	River Usk SSSI	1.02	3.4	0.62	3.10	0.34	1.70	0.95	4.75				

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)		Dry Deposition NO _x (kg/ha/yr)		Wet (Acid) Deposition NO _x (kg/ha/yr)		Total Deposition NO _x (kg/ha/yr)		% of Critical Level
		Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	Process Contribution (All Flues)	% of Critical Level	
ER12	Severn Estuary SSSI	0.83	2.76	0.50	2.50	0.27	1.35	0.77	3.85	
ER13	Severn Estuary SSSI	0.63	2.09	0.38	1.90	0.25	1.25	0.63	3.15	
ER14	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	0.54	1.81	0.33	1.65	0.10	0.50	0.43	2.15	
ER15	Gwent Levels SSSI	0.53	1.76	0.32	1.60	0.14	0.70	0.46	2.30	
Critical Level		30	-	20	-	20	-	20	-	

The PCs for both atmospheric NO_x and NO_x deposition have then been added to the local background concentration/rate for each receptor, as obtained from the APIS database at 1km resolution for atmospheric concentrations and 5km resolution for deposition rates. This gives the Predicted Environmental Concentration/Deposition Rate. These can be seen in **Table 8.2**.

Table 8.2: Predicted Environmental Concentrations

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)		Dry Deposition NO _x (kg/ha/ly)		Wet (Acid) Deposition NO _x (kg/ha/ly)		Total Deposition NO _x (kg/ha/ly)	
		Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level
ER1	River Usk SAC/SSSI	20.17	67.23	9.68	48.40	9.50	47.50	10.07	50.35
ER2	River Usk SAC/SSSI	23.57	78.57	9.83	49.15	9.58	47.90	10.31	51.55
ER3	River Usk SAC/SSSI	23.71	79.03	9.91	49.55	9.62	48.10	10.43	52.15
ER4	River Usk SAC/SSSI	23.83	79.43	9.99	49.95	9.65	48.25	10.54	52.70
ER5	River Usk SAC/SSSI	17.85	59.50	9.86	49.30	9.54	47.70	10.30	51.50
ER6	River Usk SAC/SSSI	17.36	57.87	9.56	47.80	9.35	46.75	9.81	49.05
ER7	Severn Estuary SAC/SSSI	23.02	76.73	9.50	47.50	9.23	46.15	9.63	48.15
ER8	Severn Estuary SAC/SSSI	22.66	75.53	9.28	46.40	9.34	46.70	9.52	47.60
ER9	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	16.98	56.60	9.33	46.65	9.19	45.95	9.42	47.10
ER10	Severn Estuary SAC/SSSI	16.83	56.10	9.24	46.20	9.23	46.15	9.37	46.85

Ecological Receptor	Designations	Atmospheric NO _x (µg/m ³)		Dry Deposition NO _x (kg/ha/y)		Wet (Acid) Deposition NO _x (kg/ha/y)		% of Critical Level		Total Deposition NO _x (kg/ha/y)	
		Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level	Predicted Environmental Concentration (All Flues)	% of Critical Level		
ER11	River Usk SSSI	17.62	58.73	9.72	48.60	9.44	47.20	10.05	47.20	50.25	
ER12	Severn Estuary SSSI	17.43	58.10	9.60	48.00	9.37	46.85	9.87	46.85	49.35	
ER13	Severn Estuary SSSI	17.23	57.43	9.48	47.40	9.35	46.75	9.73	46.75	48.65	
ER14	Boundary of Severn Estuary SAC/SSSI and Gwent Levels SSSI	22.91	76.37	9.43	47.15	9.20	46.00	9.53	46.00	47.65	
ER15	Gwent Levels SSSI	22.90	76.33	9.42	47.10	9.24	46.20	9.56	46.20	47.80	
Critical Level		30	-	20	-	20	-	20	-	-	

8.2.3. Stage 3: Screening

Impacts of Atmospheric Concentrations

In accordance with the IAQM guidance, if the long-term PC is less than 1% of the long-term environmental standard at a European designated site, no further assessment is required. The long-term environmental standard for atmospheric concentrations of NO_x is considered to be the critical load, which is 30 µg/m³ of NO_x. Since it can be noted in **Table 8.1** that the increase in NO_x is greater than 0.3 µg/m³ of NO_x (i.e. more than 1% of the critical load), further assessment is required.

The Environmental Agency risk assessment guidance states that if the PEC is less than 70% of the long-term criterion, it can be deemed to be insignificant, regardless of the PC. However, it can be seen from **Table 8.2**, that impacts cannot be deemed insignificant at this stage, specifically in regard to atmospheric concentrations of NO_x.

Impacts of Deposition Rates

A critical deposition level of 20 kg/ha/y has been used above as this is the lower bound of the range quoted for Estuary feature in the APIS database. Although the predicted total deposition rates are less than 70% of this level, it should be noted that for many features shown for the Severn Estuary SAC, as well as all of those shown for the River Usk SAC and the three SSSIs, no Critical Level is given. It therefore requires the opinion of the Ecological Consultant to determine whether these impacts are significant or not.

Summary

At this stage, the impacts of the proposed development on the River Usk SAC, the Severn Estuary SAC; nor the SSSIs can be ruled out. The impacts are further considered within the Ecological Impact Assessment and Habitat Regulations Assessment prepared by Wardall Armstrong.

As previously discussed, the emission rates used in this assessment have been calculated using data provided by the operator, who have stated that the emission rates will be no greater than 35 mg/m³ of exhaust gases for each of the four flues. A worst-case approach has been adopted with the modelling using 35 mg/m³ of NO_x as the emission rate for each flue. If it is possible that the actual emission rate is lower, then subsequently any impact could also be lower.

Figure 8.1: Plume dispersion at ground level with modelled Ecological Receptors and SAC boundaries

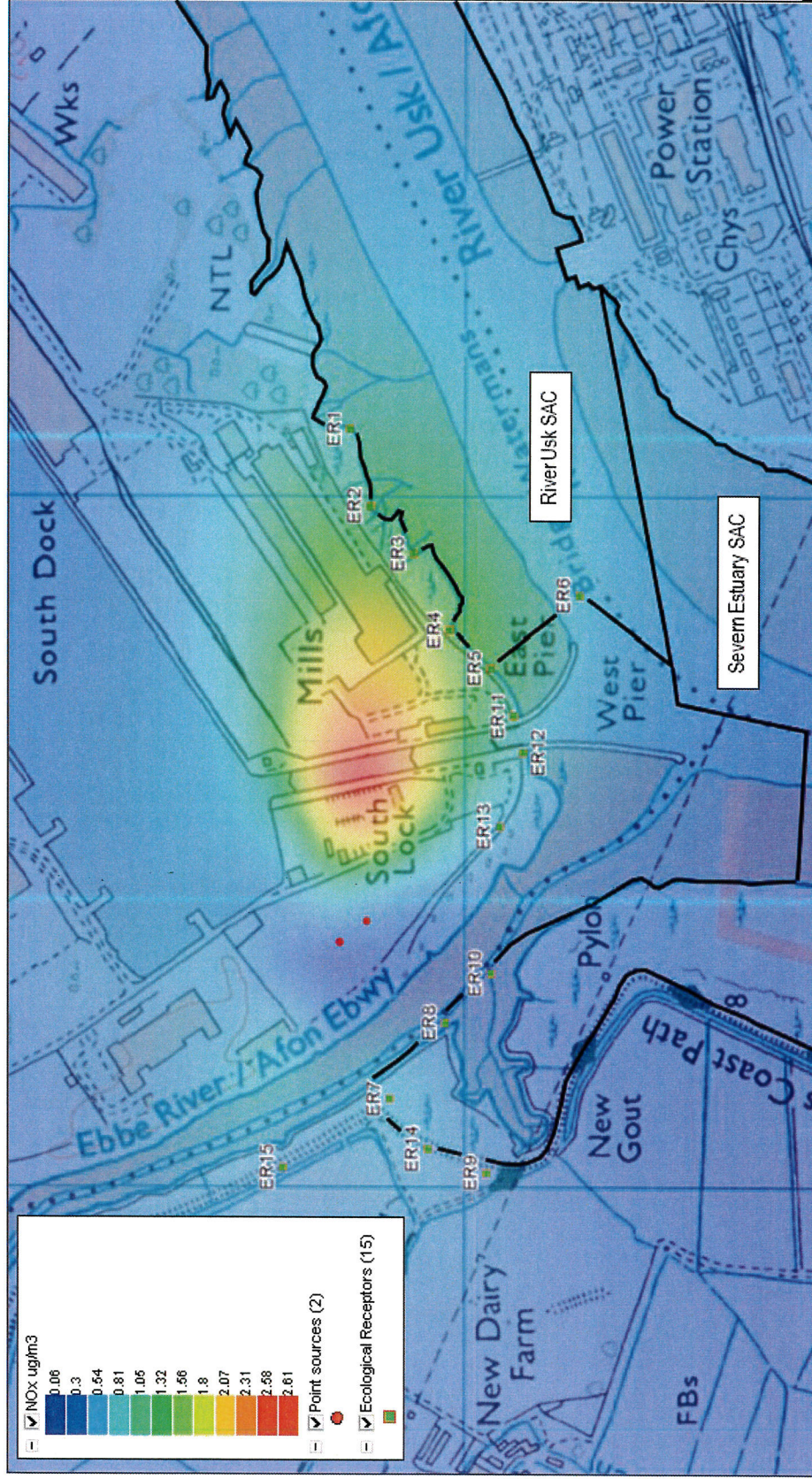
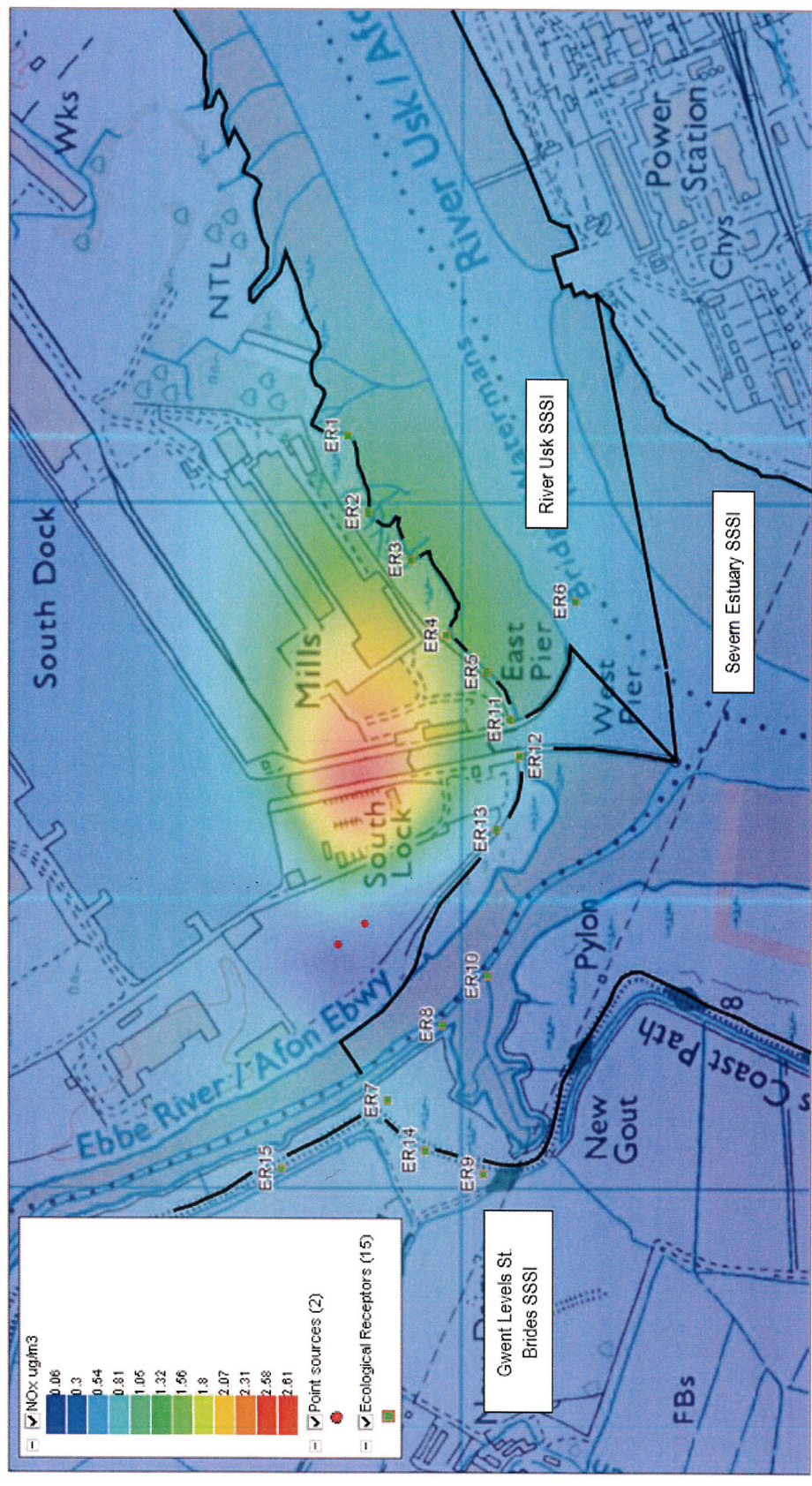


Figure 8.2: Plume dispersion at ground level with modelled Ecological Receptors and SSSI boundaries



9. IN-COMBINATION EFFECTS (CUMULATIVE EFFECTS)

A list of consented developments that require consideration of the cumulative impacts have been provided by the Planning Consultant which were used in connection with the M4 relief road. They are as follows:

- **Newport City Council Planning Application: 18/0911** - Land to south of Balwins Crane Hire, West Way Road, Alexandra Docks, Newport – Non material amendment to Permission 17/1185 for variation of conditions relation to permission 15/1513 for the bulk drying and pelleting facility with onsite energy centre, and other ancillary works. Amendment to proposed internal firing system.
- **Newport City Council Planning Application: 15/0775** - Land Formerly Known As Whitehead Works, Mendalgief Road, Newport – Construction of 529no. residential units, 24no. assisted living units, pub/restaurant, retail units, primary school and associated landscape and highway infrastructure.
- **Newport City Council Planning Application: 14/1172** - 3, West Way Road, Alexandra Docks, Newport – Installation and operation of a small biomass gasification plant processing untreated wood into producer gas, to produce 280 kWe of electrical energy and 400 kW of thermal energy.
- **Newport City Council Planning Application: 18/0360** - 16, West Way Road, Alexandra Docks, Newport – Erection of an asphalt plan and associated ancillary development.
- **Natural Resources Wales – Marine Licencing - DML1636v1** - Application for a renewal of a non-EIA Marine Licence for the maintenance and dredge disposal at Newport Docks

Upon consideration of the developments, all five are not considered to have air quality impacts that require the assessment of in-combination effects.

At Land to south of Balwins Crane Hire, West Way Road (ref. 18/0911), this consent is a variation of a planning consent (ref. 10/1238) which was accompanied by an Environmental Statement. The original Environmental Statement included a detailed assessment of the air quality impacts and showed that the air quality impacts would be very small at surrounding receptors, including ecological receptors. Whilst the details of the application have changed slightly since the original Environmental Statement, subsequent assessment has shown that the variations to the development have not significantly altered the air quality impact. Whilst the proposed development will increase pollutant concentrations, the increases are small and these increases are not generally in the geographical area where impacts are predicted in relation to the plasterboard manufacturing site. Consequently, cumulative impacts are not expected.

Regarding the development at Land Formerly Known As Whitehead Works, the air quality assessment associated with the planning application notes that there will be only small increases in pollution concentrations associated with increases in traffic generation. The results show that roadside receptors are expected to have absolute concentrations well below the National Air Quality Objective levels and therefore the cumulative impacts of traffic are unlikely to be significant. This development does not have any industrial processes as part of the application and therefore will not have any impact on the SACs or SSSIs.

At the biomass gasification plant at 3 West Way Road, the application was accompanied by an air quality assessment, which showed that in the River Usk, where concentrations of pollutants from the plasterboard manufacturing plant are at their highest, annual mean nitrogen deposition will be less than 0.001 kg/ha/yr and

the annual mean process contribution of NO₂ will be less than 0.01 µg/m³. Given that increases in pollutant concentrations are likely to be very small, in combination effects would not be anticipated.

With regards to the asphalt plant at 16 West Way Road, an air quality assessment was not carried out in connection with the application, as the air quality impacts were considered to be minimal, given its small size and the separation distance between the plant and any receptors. This approach was accepted by Newport City Council's Environmental Health Department. Consequently, it is considered that any in-combination effects are likely to be very small.

With reference to the marine licencing application, this is in relation to dredging and emissions to air are not anticipated.

Consequently, it is not anticipated that any of the above developments would have a measurable impact at any receptors (human or ecological) affected by the proposed plasterboard manufacturing site. Consequently, cumulative impacts are not expected.

Appendix 12
Precautionary Working Method Statement for Reptiles

Appendix 12: Precautionary Working Method Statement (PWMS) for Reptiles

The following describes the precautionary working methods to be implemented. They represent reasonable precautions or avoidance measures that aim to make the development areas unsuitable and unattractive to common reptiles in the period immediately prior to the commencement of development. Species deterrence measures and destructive searching will be used within the site in all areas considered suitable for reptiles. All areas which have been cleared of reptiles, but which are not used immediately for construction will be maintained in an unsuitable condition for reptiles until such time as construction operations commence.

Tool Box Talks

All site operatives, including contractor and sub-contractor staff, will receive a briefing by a suitably qualified and experienced ecologist. This will include details of the legal protection of reptiles, the precautionary methods of working, tips on identification of reptiles and relevant procedures should the species be discovered during works. The contents of this document will be made available to contractors / staff carrying out these works.

Vegetation Clearance

Dense Scrub & Scattered Scrub within Open Mosaic Habitat (OMH)

Removal of dense scrub and scattered scrub which is present within the OMH which lies within the proposed development footprint within the application boundary will proceed in a two-staged approach, with the first strim down to 15cm and left for as long as possible (ideally at least 24hrs) before the root stock is removed.

This phased approach will allow reptiles to disperse to adjacent suitable habitat whilst the vegetation is at a height of 15cm. The final clearance to ground level will make the area unsuitable for reptiles thereby reducing the risk of injury during ground disturbance works.

All vegetation arisings must be removed away from the working areas. If necessary, the area will be hand searched (see below) by an ecologist with any larger logs/rocks or other material suitable for use as a refuge being removed.

Reptiles, if present, are most likely to be encountered sheltering in the root stock of scrub habitat. As vegetation management is intended to encourage reptiles to move to retained scrub habitat on their own accord, clearance should be undertaken in a phased manner

(rather than in one go) i.e at this site from east to west.

All scrub habitat has the potential to support nesting birds, therefore will be subject to a nesting bird check no more than 48hrs before clearance works commence

Any suitable refuges should be removed during the main reptile 'active' season which is considered to be between April and September (works during these warmer months will increase the likelihood of reptiles having enough energy to move out of harm's way during the work activities).

Retained Scrub

In order to prevent damage to retained scrub, excavations near these habitats will be undertaken in accordance with BS5837:2012 – Trees in relation to construction.

Hand Searching and Site Work Supervision

Where deemed necessary by the site ecologist, the working area will be thoroughly hand searched by an experienced ecologist immediately prior (i.e. within 24 hours) to the second cut of vegetation / removal of hedgerow roots and onset of works (including the use of machinery). If necessary (i.e. during the removal of the scrub root stock) the ecologist will be present to assist with a destructive search. Utilisation of the working area by contractors will not be permitted until approved by the ecologist.

Storage of Materials

During the period when reptiles can be active (February to October), materials suitable for use as refuges (e.g. soil / rubble piles) should not be stored in close proximity to retained scrub.


Working Methods


All excavations should ideally be backfilled at the end of each working day so that no fauna become entrapped overnight. Alternatively, wooden planks should be placed in excavations to be left open overnight to provide a means of escape for any animals which may enter the excavations.

Time Constraints

Table 1 outlines the optimum period for undertaking the required activities on site.

Table 1 – Optimum period for undertaking activity												
Activity	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Above Ground vegetation Clearance / removal												
Removal of hedgerow roots stock / debris												

 - Sub Optimal period for undertaking activity


 - Optimum period for undertaking activity

DRAWINGS

Responsibility is not accepted for errors made by others in scaling from this drawing.
All construction information should be taken from figured dimensions only.

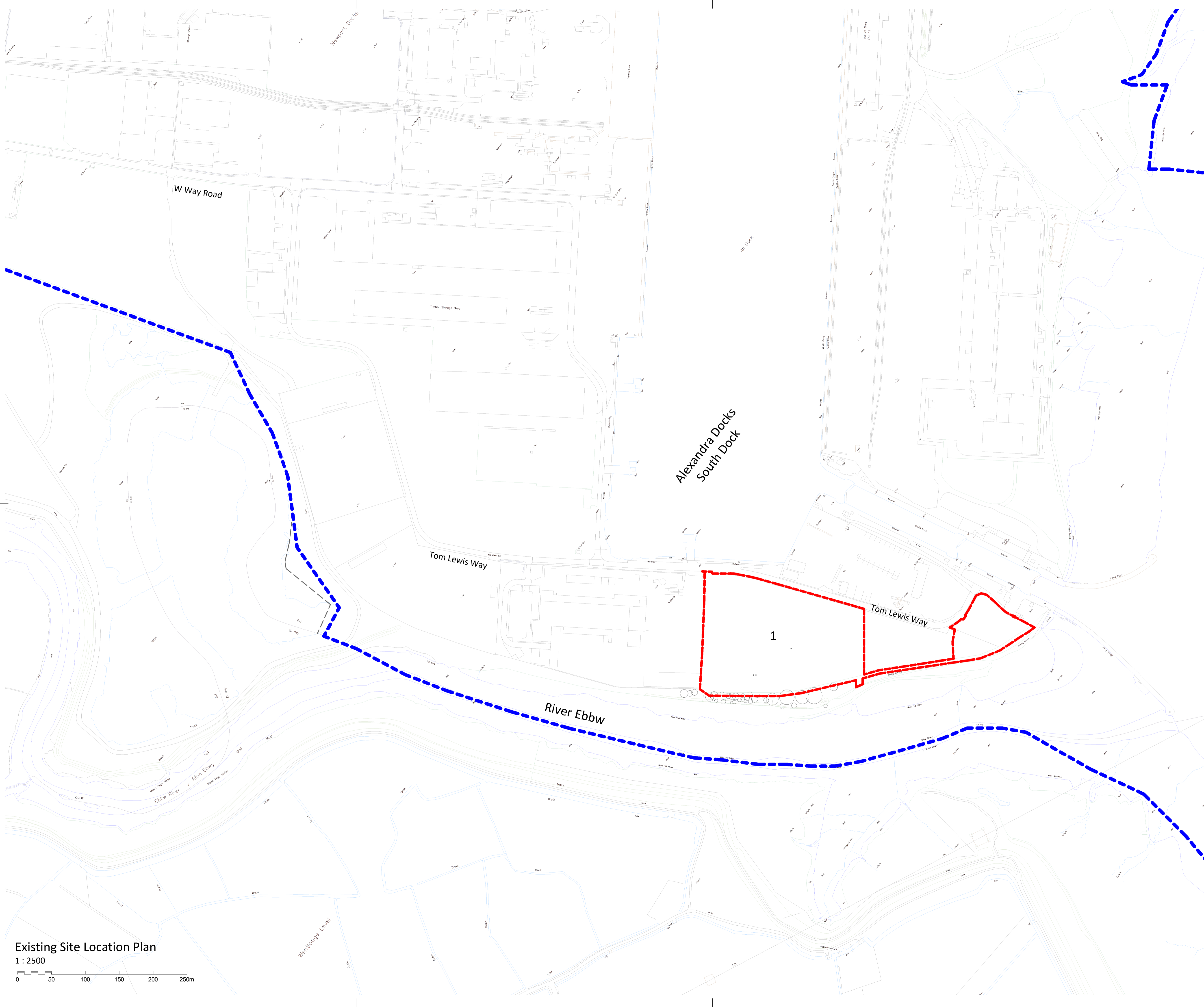
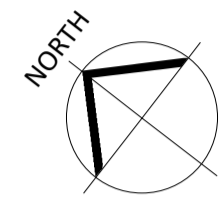
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ALL DIMENSIONS IN METERS

 Planning Application Boundary

 ABP Land Ownership Boundary

1 Manufacturing facility and habitat enhancement area



PL P20 21/01/2020 PLANNING ISSUE

STATUS REV DATE DESCRIPTION

CLIENT Associated British Ports

REVISED BY

Gareth Brown

CHECKED BY

Martin Long

ORIGINATOR NO

153091

CONSULTANT
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PROJECT
ABP New Manufacturing Plant
Land adjacent West Way Road
Alexandra Docks
Newport

DRAWING TITLE
Existing Site Location Plan

SUITABILITY STATUS
PL : PLANNING

SCALE

As indicated

@ A1

PROJECT | ORIGINATOR | ZONE | LEVEL | TYPE | ROLE | CLASS | NUMBER
153091-STL-00-00-DR-A-ZZZZ-00002

REVISION

P29

Existing Site Location Plan

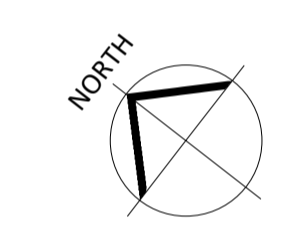
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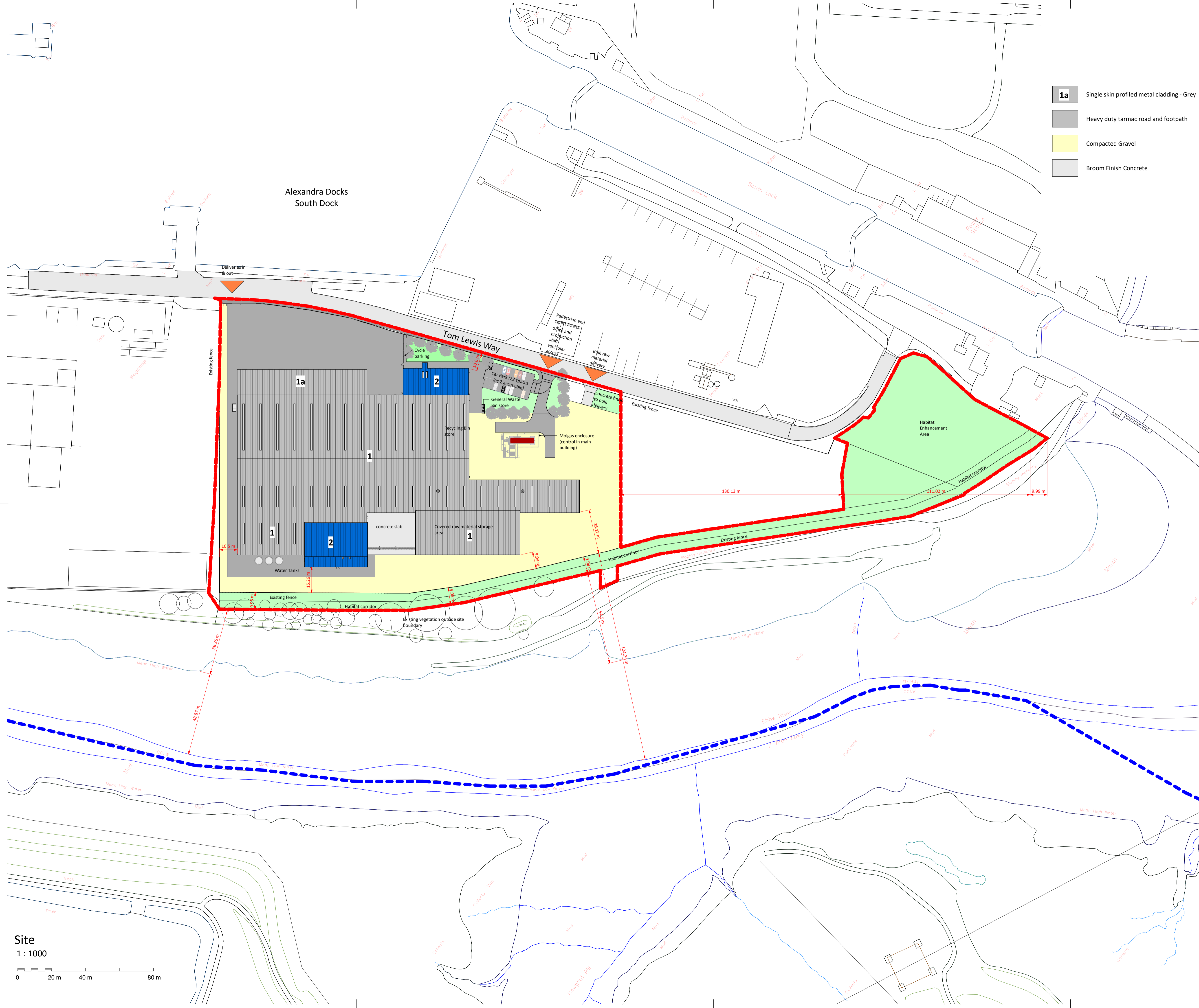
ALL DIMENSIONS IN METERS

- 1a** Single skin profiled metal cladding - Grey
- 1** Grey insulated built-up cladding system
- 2** Blue insulated built-up cladding system
- Heavy duty tarmac road and footpath
- Compacted Gravel
- Broom Finish Concrete
- 3** Concrete upstand
- 4** Double glazed PPC aluminium windows in RAL 7012
- 5** Translucent roof lights/windows as part of cladding system
- 6** Steel doors in RAL 7012
- 7** Roller shutter doors in RAL 7012

- Planning Application Boundary
- - - ABP Land Ownership Boundary
- 1** Manufacturing facility and habitat enhancement area



See drawing number 72689-CUR-00-XX-DR-C-SK001 for further detail regarding existing and proposed levels.
See drawing number 72689-CUR-00-XX-DR-C-92000 for details of drainage strategy proposals.



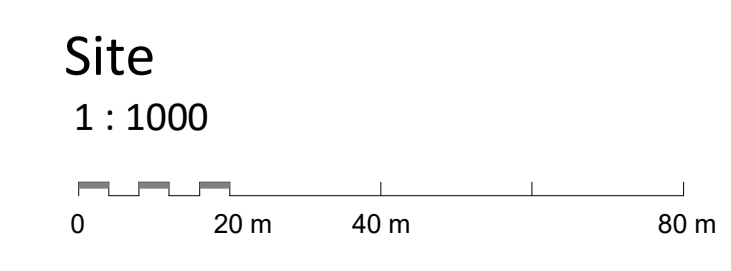
PL	P30	23/01/2020	Redline boundary amended
PL	P20	21/01/2020	PLANNING ISSUE
STATUS	REV	DATE	DESCRIPTION
CLIENT	Associated British Ports		
REVISOR	Gareth Brown		
CHECKED BY	Martin Long		
ORIGINATOR NO	153091		

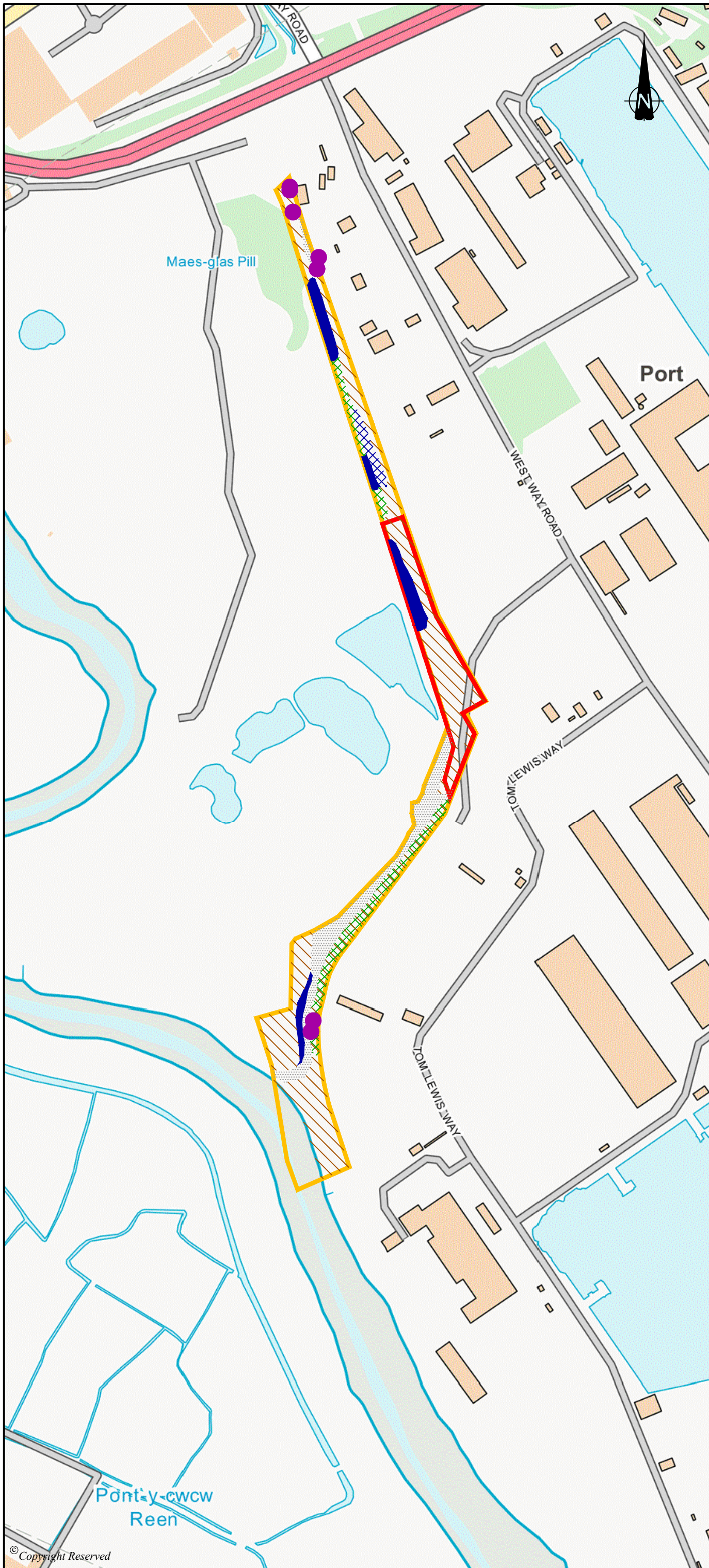
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PROJECT
**ABP New Manufacturing Plant
Land adjacent West Way Road
Alexandra Docks
Newport**

DRAWING TITLE
Proposed Site Plan

SUITABILITY STATUS PL : PLANNING	SCALE As indicated @ A1
PROJECT ORIGINATOR ZONE LEVEL TYPE ROLE CLASS NUMBER 153091-STL-00-00-DR-A-ZZZZ-01001	REVISION P30





DO NOT SCALE FROM THIS DRAWING

LEGEND

- Off-Site Habitat Enhancement Area
- Survey Boundary
- Introduced Shrub
- Swamp
- Willow Carr
- Bramble Dominated Scrub
- Bare Ground
- Japanese Knotweed

REVISION	DETAILS	DATE	DRN	CHKD	APPD
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CLIENT
Associated British Ports

PROJECT
**New Manufacturing Plant
Newport**

DRAWING TITLE
**Additional Habitat Enhancement Area
Phase 1 Habitat Plan**

DRG No. CA11637-008	SCALE 1:5000	REV DATE 21.01.2020
DRG SIZE A3	CHECKED BY KD	APPROVED BY JH

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WWW.WARDELL-ARMSTRONG.COM

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STOKE-ON-TRENT

Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM

Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON

41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

CARDIFF

Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE

Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH

Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW

2 West Regent Street
Glasgow
G2 1RW
Tel: +44 (0)141 433 7210

LEEDS

36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON

Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

MANCHESTER

76 King Street
Manchester
M2 4NH
Tel: +44 (0)161 817 5038

NEWCASTLE UPON TYNE

City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO

Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International offices:

ALMATY

29/6 Satpaev Avenue
Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

MOSCOW

21/5 Kuznetskiy Most St.
Moscow
Russia
Tel: +7(495) 626 07 67