

IMPERIAL PARK SUBSTATION

Preliminary Ecological Appraisal



ECO22022
Imperial Park Substation
1
June 2025

PRELIMINARY ECOLOGICAL APPRAISAL

Document status

Version	Authored by	Reviewed by	Approved by	Review date
1 – For Planning Application Submission	Georgia Kelly	Lloyd Richards	Lloyd Richards	25/06/2025

Approval for issue

Lloyd Richards

June 2025

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1 INTRODUCTION

1.1 Purpose and Scope of this Report

- 1.1.1 RPS were commissioned by SSE to undertake a Preliminary Ecological Appraisal (PEA) of a site proposed for the development of a new 132kv substation in Dyffryn, Newport, referred to hereafter as 'the Site'. The Site is illustrated by the red line as displayed on Figure 1 of this report.
- 1.1.2 SSE is seeking to construct a new 132kv substation which includes a Gas Insulated Switchgear building and associated electric infrastructure, within the existing Imperial Park substation complex, hereafter referred to as the 'Proposed Development'. The designs are set out in Appendix B. The existing substation site currently supports a 400kv substation operated by National Grid. A planning application for construction and operation of the Proposed Development is to be submitted to Newport City Council for planning consent.
- 1.1.3 The aim of this PEA is to provide an initial assessment of the Site's ecological value, considerations for biodiversity and the resultant implications for the development. The assessment comprises the following elements:
- A desk study search for designated sites and records of protected species and other species that require consideration as part of the development proposals.
 - A habitat survey of the habitats within and in proximity to the Site
 - An assessment of the Site for its potential to support protected and/or notable species or other species that could require consideration, and appropriate recommendations for further survey work if necessary.
- 1.1.4 The findings of the PEA are presented in this report and the accompanying Habitat Maps based on a Habitat Survey. This report is referred to as a Preliminary Ecological Appraisal Report (PEAR) in accordance with CIEEM (2017).
- 1.1.5 This assessment is considered 'preliminary' until any required protected species, habitat or invasive species surveys are completed. Where such surveys are considered necessary, this is identified in the PEAR.
- 1.1.6 The PEAR also provides outline recommendations for avoidance, minimisation, mitigation and where necessary compensation measures as appropriate; and makes recommendations for appropriate biodiversity enhancements in line with national and local planning policy.

1.2 Background

- 1.2.1 Ecological surveys have been undertaken by RPS of land adjoining the Site to the west. These surveys have been undertaken to support development proposals for a cable route which will extend from the Site to a proposed data centre switchroom west of Celtic Way, north/north west of the Site.
- 1.2.2 The cable route proposals will be subject to a separate planning application to the Proposed Development. The findings of surveys undertaken on the wider Imperial Park land will be presented in a separate PEA document as part of the planning application submission for the cable route. It should be noted that the design for the cable route is indicative at the current stage
- 1.2.3 Ecological surveys and assessments for otter *Lutra lutra*, water vole *Arvicola amphibus* and great crested newt *Triturus cristatus* have been undertaken within suitable habitats outside of the Site, primarily to support the proposed cable route. At the current stage, the surveys and assessments are part complete. The full findings of these surveys will be presented as part of the proposed cable route's planning application submission. The interim results of these surveys have been presented in this report (in brief) to provide context on the ecological baseline relative to the Site.

1.3 Site Description

- 1.3.1 The Site is located within the existing 400kv National Grid substation complex off Dyffryn Lane, located west of Newport (near Marshfield), South Wales. The Site is approximately centred on Ordnance Survey Grid Reference ST 286 837.
- 1.3.2 The Proposed Development would be located within the western section of the substation complex. The existing substation complex comprises several buildings, electrical infrastructure and hardstanding. Duffryn road extends north and south from the substation.
- 1.3.3 Beyond the substation complex to the west and north are extensive areas of dense scrub intersected by reens and ditches. Areas of neutral grassland, tall ruderal, reedbed and a pond are also present. Imperial Park business site is located 0.44 km to the north of the substation.
- 1.3.4 To the east of the Site are areas of scrub and marshy grassland. Percoed Reen is located to the south of the Site, beyond which are arable fields.

1.4 Legislation and Policy

- 1.4.1 Relevant legislation, policy and guidance are referred to in this report where appropriate. Their context and application are explained in the relevant sections of this report. The relevant legislation, policy and guidance include:
- The Environment (Wales) Act 2016
 - The Environment (Air Quality and Soundscapes) Act 2024
 - The Conservation of Habitats and Species Regulations 2017 (as amended)
 - The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019
 - The Wildlife and Countryside Act 1981 (as amended)
 - The Protection of Badgers Act 1992
 - The Countryside and Rights of Way Act 2000 (as amended)
 - Technical Advice Note 5 (TAN5)
 - Newport Local Biodiversity Action Plan
 - Greater Gwent Nature Recovery Action Plan
 - Planning Policy Wales (PPW) 12
 - Future Wales: The National Plan 2040
- 1.4.2 A summary of legislation relevant to protected or other species identified as potential constraints in this report is provided in Appendix A.

2 METHODS

2.1 Desk Study

- 2.1.1 Biodiversity records were requested from South East Wales Biological Records Centre (SEWBRc). Additional information on statutory designated sites was accessed via the 'MAGIC' website (<https://www.magic.defra.gov.uk>), the Joint Nature Conservation Committee website (<http://jncc.defra.gov.uk>) and DataMapWales (<https://datamap.gov.wales>)
- 2.1.2 The following data were obtained:
- Records of protected species or other species of conservation interest recorded within the last ten years and within 2 km of the Site;
 - Non-statutory sites of nature conservation interest within 2 km of the site e.g., Sites of Importance for Nature Conservation (SINCS) and Local Wildlife Sites (LWSs);
 - Local and national statutory sites of nature conservation interest within 2 km of the site e.g., Sites of Special Scientific Interest (SSSIs), Local Nature Reserves (LNRs) and National Nature Reserves (NNRs); and
 - International statutory sites of nature conservation interest within 5 km of the site e.g., Special Protection Areas (SPAs) and Special Area of Conservation (SACs)
- 2.1.3 A 1:25,000 OS map was used to identify nearby features such as ponds that could provide habitat for protected and/or notable species, or connectivity to other areas of suitable habitat, which would influence the assessment.

2.2 Habitat Survey

- 2.2.1 The survey was undertaken on 11th June by a suitably competent ecologist. Habitats within the Site were assessed and mapped broadly in line with the JNCC Phase 1 Handbook (JNCC, 2010) and the UK Habitat Classification (UKHab, 2023). The survey followed the standard methodology as described in the Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). In summary, this comprised walking over the Site and areas in proximity to the Site and recording the habitat types and boundary features present.
- 2.2.2 The habitat survey element of the PEA consisted of two components: a Habitat Survey and a scoping assessment for protected species and other species of conservation concern which would require consideration as part of development proposals.
- 2.2.3 The suitability of adjacent off-Site habitats, and the Site's connectivity with suitable habitats in the surrounding area was considered when assessing the Site's potential to support protected and/or notable species.
- 2.2.4 Where habitat or features suitable to be used by protected and/or notable species, this was noted. A preliminary search was made of suitable habitat for evidence of use by protected species although this search was not exhaustive.

2.3 Notes and Limitations

Desk Study

- 2.3.1 The desk study data is third party controlled data, purchased for the purposes of this report only. RPS cannot vouch for its accuracy and cannot be held liable for any error(s) in these data.

Habitat Survey

- 2.3.2 It should be noted that while every effort has been made to provide a comprehensive description of the Site, no investigation can ensure the complete characterisation and prediction of the natural environment.
- 2.3.3 The protected and/or notable species scoping assessment provides a preliminary view of the likelihood of these species occurring on the Site, based on the suitability of the habitat, known distribution of the species in the local area (based on the desk study) and any direct evidence on the Site. It should not be taken as providing a full and definitive survey of any protected/notable species group.

Accurate Lifespan of Ecological Data

- 2.3.4 Most ecological data remain valid for only short periods due to the inherently transient nature of the subject. The survey results contained in this report are considered accurate for 18 months to two years as per best practice guidance (CIEEM, 2019), assuming no significant considerable changes to the site conditions.

3 RESULTS

3.1 Desk Study

Designated Sites

- 3.1.1 The Site is located within the Gwent Levels – St Brides Site of Special Scientific Interest (SSSI). The section of Dyffryn Lane within the Site is also located within LG Duffryn Site of Importance for Nature Conservation (SINC).
- 3.1.2 The substation is also located within a wider area identified by Natural Resources Wales (NRW) as being Priority Areas – Lowland Wetland.
- 3.1.3 A further six statutory designated sites lie within 5 km of the Site. A total of four non-statutory designated sites were identified within 2 km of the Site. A summary of the designated sites within the search area is provided in Table 3.1. The locations of designated sites are illustrated on Figure 1.

Table 3.1: Statutory Designated Sites within 5km

Designation	Distance from Site	Description and Features of Interest
Statutory Designated Sites		
Gwent Levels- St Brides SSSI	Within Site	The Gwent Levels covers 5,700 ha of low-lying land along the Severn Estuary where the land lies below high mean water level and is traditionally drained through a system of furrows and ditches, the larger of which are referred to as reens. The reens support a wide range of aquatic plants, including many rare or scarce species, that in turn support a wide variety of other wildlife. The Gwent Levels have also been found to be an important area for shrill carder bee, with the un-mown ditch banks and rough grassland areas provide ideal habitat for the species. The Gwent Levels is divided into six management units. The Gwent Levels: St Brides SSSI has three special features; • Reen and Ditch Habitat • Insects and other Invertebrates • Shrill carder bee The reens in the St Brides area support a number of interesting plant species most notably thread-leaved water-crowfoot <i>Ranunculus trichophyllus</i> and small pondweed <i>Potamogeton berchtoldii</i>. Reen bank and green lane habitats in this area are also important for relict meadow plant species such as the regionally notable grass vetchling <i>Lathyrus nissolia</i> and common meadow-rue <i>Thalictrum flavum</i>. The St Brides area also supports rich invertebrate communities with a number of nationally notable and notable marshland species, e.g. the true fly <i>Chrysogaster macquarti</i> and the beetle <i>Hydaticus transversalis</i>. It is the only area on the Gwent Levels where the rare fly <i>Stenomicra cogani</i> has been recorded.

Designation	Distance from Site	Description and Features of Interest
Severn Estuary Ramsar, SAC, SPA	2.5 km east	The Severn Estuary SAC hosts the following habitats covered by EC Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna: estuaries, mudflats and sandflats not covered by seawater at low tide, Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>), sandbanks which are slightly covered by sea water all the time, and reefs. The site also supports the following species covered by EC Directive 92/43/EEC: Annex II sea lamprey (<i>Petromyzon marinus</i>), Annex II river lamprey (<i>Lampetra fluviatilis</i>) and Annex II and V twaite shad (<i>Alosa fallax</i>). The Severn Estuary SPA supports overwintering Bewick's swan (<i>Cygnus columbianus bewickii</i>); on passage ringed plover (<i>Charadrius hiaticula</i>) and overwintering curlew (<i>Numenius arquata</i>), dunlin (<i>Calidris alpina alpina</i>), pintail (<i>Anas acuta</i>), redshank (<i>Tringa tetanus</i>), and shelduck (<i>Tadorna tadorna</i>). It also regularly supports at least 20,000 waterfowl. Ramsar The site's qualifying interest features of Ramsar overlap with those of the Severn Estuary SPA and SAC. The site is of particular importance for hosting internationally important populations of several species of waterbirds as well as its fish species migrating between the sea and rivers via the Estuary.
River Usk SAC, SSSI	3.2 km east	The site supports the following species covered by EC Directive 92/43/EEC on the conservation of natural habitats and of wild flora and fauna: Atlantic stream crayfish <i>Austropotamobius pallipes</i> - Annex II and V Common otter <i>Lutra lutra</i> - Annex II and IV Atlantic salmon <i>Salmo salar</i> - Annex II and IV Bullhead <i>Cottus gobio</i> - Annex II Twaite shad <i>Alosa fallax</i> - Annex II and V Allis shad <i>Alosa alosa</i> - Annex II and V River lamprey <i>Lampetra fluviatilis</i> - Annex II and V Brook lamprey <i>Lampetra planeri</i> - Annex II Sea lamprey <i>Petromyzon marinus</i> - Annex II Freshwater pearl mussel <i>Margaritifera margaritifera</i> - Annex II and V
Newport Wetlands NNR	3.2 km east	Notified for nineteen species, thirteen of which were entirely down to the reserve's creation and management. Newport Wetlands has achieved its aim of attracting two species of waterfowl in nationally important numbers and becoming a "functional component of the Severn Estuary SPA" as required by the Secretary of State in 1996 (Austin et al. 2006). The created reedbed supports five species in nationally significant numbers. The saline lagoons have been notified for three breeding wader species. The Newport Wetlands field ditch habitat has a much higher proportion of notifiable aquatic plants than any other ditch in the Gwent Levels SSSI. Saltmarsh habitat within the NNR boundary is now more diverse than it was twenty years ago. Future challenges include reversing the poor productivity of wader species.
Non-statutory Designated Sites		
LG Duffryn Site 2 SINC	Within Site	Large area of neutral grassland adjacent to Gwent Levels.
LG Duffryn Site 1 SINC	0.16 km east of site	Pond / Phragmites reedbed, Cettis Warbler.
Celtic Springs SINC	0.75 km east of site	Post-industrial mosaic habitat. Neutral grassland. Calcareous grassland.

Designation	Distance from Site	Description and Features of Interest
Duffryn Pond SINC	0.81 km east of site	Pond with emergent swamp vegetation, which supports a range of important invertebrates, plant, reptile, amphibian and mammal species.

Abbreviations used in Table 3.1: **SAC** - Special Area of Conservation. **SPA** – Specially Protected Area. **SSSI** – Site of Special Scientific Interest. **SINC**: Newport Site of Importance for Nature Conservation. **NNR** – National Nature Reserve

Priority Habitats and Ancient Woodland

- 3.1.4 The desk study identified 12 parcels of ancient woodland within 2 km of the Site. This comprised six parcels of Ancient Semi-Natural Woodland, five parcels of Restored Ancient Woodland Sites and one site of Unknown Category. The closest parcel was of an Ancient Semi-Natural Woodland located 1.10 km west of the Site.
- 3.1.5 The substation is located at the northern edge of an area identified as an NRW Priority Area for Lowland Wetland habitat.
- 3.1.6 Land 0.78 km south of the Site is identified as a B-Line. B-lines are described as ‘a series of ‘insect pathways’ running through countryside and towns, which Buglife are restoring and creating to develop a series of wildflower-rich habitat stepping stones.
- 3.1.7 The locations of Priority Habitats and ancient woodland sites are illustrated on Figure 1.

Species Records

- 3.1.8 A summary of the protected and/or notable species records obtained from SEWBReC is provided in Table 3.2.
- 3.1.9 The table provides records of legally protected species or other species of conservation interest which have been recorded within 2 km of the proposed development within the past 10 years and for which there is suitable habitat on or adjacent to the Site.

Table 3.2: Summary of Species Records within 2km of the Site within the Last 10 Years

Species	Scientific Name	Number of records	Distance of closest record (km)	Year of closest record	Year of most recent record	Species Protected Status
Bats						
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	158	Within site	2023	2024	EPS, HDirIV, WCA5, S7, RDB2(UK)
Noctule	<i>Nyctalus noctula</i>	105	0.08	2024	2024	EPS, HDirIV, WCA5, S7, RDB2(UK)
Brown Long-eared Bat	<i>Plecotus auritus</i>	14	0.18	2024	2024	EPS, HDirIV, WCA5, S7, RDB2(UK)
Nathusius's Pipistrelle	<i>Pipistrellus nathusii</i>	34	0.17	2024	2024	EPS, WCA5, RDB2(UK)
Pipistrelle	<i>Pipistrellus pipistrellus</i>	46	0.20	2024	2024	EPS, WCA5, RDB2(UK)

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Species	Scientific Name	Number of records	Distance of closest record (km)	Year of closest record	Year of most recent record	Species Protected Status
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	107	0.08	2024	2024	EPS, WCA5, S7, RDB2(UK)
Daubenton's Bat	<i>Myotis daubentonii</i>	43	0.08	2023	2024	EPS, WCA5, RDB2(UK)
Greater Horseshoe Bat	<i>Rhinolophus ferrumequinum</i>	12	0.19	2024	2024	EPS, HDirII, WCA5, S7, RDB2(UK)
Brandt's Bat	<i>Myotis brandtii</i>	11	0.17	2023	2024	EPS, WCA5, RDB2(UK)
Whiskered Bat	<i>Myotis mystacinus</i>	14	0.18	2024	2024	EPS, WCA, RDB2(UK)
Natterer's Bat	<i>Myotis nattereri</i>	4	0.26	2023	2024	EPS, WCA5, RDB2(UK)
Barbastelle	<i>Barbastella barbastellus</i>	2	0.26	2024	2024	EPS, HDirII, WCA5, S7, RDB2(UK)
Grey Long-eared Bat	<i>Plecotus austriacus</i>	2	0.40	2024	2024	EPS, WCA5, RDB2(UK)
Leisler's Bat	<i>Nyctalus leisleri</i>	13	0.26	2024	2024	EPS, WCA5, RDB2(UK)
Serotine	<i>Eptesicus serotinus</i>	13	0.26	2024	2024	EPS, WCA5, RDB2(UK)
Myotis Bat species	<i>Myotis</i>	1	0.30	2024	2024	EPS, WCA5
Pipistrelle Bat species	<i>Pipistrellus</i>	1	0.25	2021	2021	EPS, WCA5
Bat	<i>Chiroptera</i>	1	0.62	2023	2023	EPS, WCA5
Whiskered/Brandt's Bat	<i>Myotis mystacinus/brandtii</i>	1	1.10	2015	2015	EPS, WCA5
Other Mammals						
Hazel Dormouse	<i>Muscardinus avellanarius</i>	12	0.11	2024	2024	EPS, WCA5, S7, RDB2(UK)
Hedgehog	<i>Erinaceus europaeus</i>	58	0.08	2022	2024	S7, LBAP(NEW)
Water Vole	<i>Arvicola amphibius</i>	6	0.08	2023	2023	WCA5, S7
American Mink	<i>Neovison vison</i>	1	0.44	2022	2022	WCA9, INNS
Hare	<i>Lepus europaeus</i>	2	0.56	2017	2024	S7
Otter	<i>Lutra lutra</i>	4	0.57	2023	2024	EPS, WCA5, S7, RDB2(UK)
Weasel	<i>Mustela nivalis</i>	2	0.75	2021	2024	LBAP(NEW)
Reptiles						
Grass Snake	<i>Natrix helvetica</i>	9	0.25	2022	2024	WCA5, S7
Slow-worm	<i>Anguis fragilis</i>	3	0.34	2022	2022	WCA5, S7
Amphibians						
Common Toad	<i>Bufo bufo</i>	16	0.25	2023	2024	WCA5, S7

Abbreviations: **EPS**: European Protected Species. Fully protected under the Conservation of Habitats and Species Regulations 2012. **WCA5**: Fully protected under the Wildlife and Countryside Act 1981 – as amended. **S7**: Listed as a species of principal importance for conservation in Wales under Section 7 of the Environment (Wales) Act 2016. **LBAP**: Local Biodiversity Action Plan priority species in Newport. **INNS**: Invasive Non-Native Species, CITES: Convention on International Trade in Endangered Species, **HdirII**: EU Habitats Directive Species Annex II species, **RD2 (UK)**: UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce), WCA9. Invasive species listed on Schedule 9 of the Wildlife and Countryside Act (1981)

- 3.1.10 Invertebrates recorded within the search area include shrill carder bee *Bombus sylvarum*, a qualifying feature for the Gwent Levels SSSI, which was recorded within the Imperial Park area. SEWBRc holds no records of other invertebrate species listed within the SSSI citation for the St Brides section of the Gwent Levels SSSI.
- 3.1.11 SEWBRc holds no records of protected plant species from within the Site. Arrowhead *Sagittaria sagittifolia*, an uncommon species associated with the Gwent Levels reed habitats was recorded 1.39 km from the site. SEWBRc holds no records of other plants listed within the SSSI citation for the St Brides section of the Gwent Levels SSSI.
- 3.1.12 The following species of bird listed on the Birds of Conservation Concern (BoCC) red and amber list for Wales, and Wildlife and Countryside Act Schedule 1 have been recorded within 2km of the Site:
- **BoCC Wales Red List:** Linnet *Linaria cannabina* (also S7), Whitethroat *Curruca communis*, Kestrel *Falco tinnunculus* (also S7), Goldcrest *Regulus regulus*, Starling *Sturnus vulgaris* (also S7), Lapwing *Vanellus vanellus* (also S7), Herring Gull *Larus argentatus* (also S7), Greenfinch *Chloris chloris*, Swift *Apus apus*, Black-headed Gull *Chroicocephalus ridibundus*, Lesser Black-backed Gull *Larus fuscus* (also S7), Pochard *Aythya ferina*, and Meadow Pipit *Anthus pratensis*.
 - **BoCC Wales Amber List:** Green Woodpecker *Picus viridis*, Bullfinch *Pyrrhula pyrrhula* (also S7), Oystercatcher *Haematopus ostralegus*, Grey Heron *Ardea cinerea*, Dunnock *Prunella modularis* (also S7), Fieldfare *Turdus pilaris*, House Sparrow *Passer domesticus* (also S7), Coot *Fulica atra*, Mistle Thrush *Turdus viscivorus*, Glaucous Gull *Larus hyperboreus*, Shoveler *Spatula clypeata*, Grey Wagtail *Motacilla cinerea*, Pintail *Anas acuta*, Skylark *Alauda arvensis*, Wheatear *Oenanthe oenanthe*, Firecrest *Regulus ignicapilla*, Mediterranean Gull *Ichthyaeetus melanocephalus*, and Garganey *Spatula querquedula*.
 - **WCA Schedule 1:** Cetti's Warbler *Cettia cetti*, Red Kite *Milvus milvus*, Redwing *Turdus iliacus*, Fieldfare *Turdus pilaris*, Peregrine *Falco peregrinus*, Kingfisher *Alcedo atthis*, Pintail *Anas acuta*, Firecrest *Regulus ignicapilla*, Mediterranean Gull *Ichthyaeetus melanocephalus*, Garganey *Spatula querquedula*, and Barn Owl *Tyto alba*.

3.2 Habitat Survey

- 3.2.1 Habitats within and adjoining the site are described in Table 3.3 3.4 (overleaf). The location and extent of habitats is shown on the Habitat Plan (Figure 2).

Table 3.3: Habitat Descriptions

Habitat	Description	Photographs
Dense mixed scrub	Extensive areas of dense scrub adjoin the substation. The scrub comprises large areas of bramble <i>Rubus fruticosus</i> with other species present in lower abundance including hawthorn <i>Crataegus monogyna</i>, blackthorn <i>Prunus spinosa</i> and willow <i>Salix sp.</i>	
Neutral / regenerating grassland	Narrow sections of neutral grassland are present along Dyffryn Lane. The grassland is characterised by Yorkshire fog <i>Holcus lanatus</i>, creeping bent <i>Agrostis stolonifera</i> and false oat-grass <i>Arrhenatherum elatius</i>. The grassland supports limited forbs including silverweed <i>Potentilla anserina</i>, common ragwort <i>Jacobaea vulgaris</i>, perforate St. John's-wort <i>Hypericum perforatum</i> and creeping buttercup <i>Ranunculus repens</i>.	

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Habitat	Description	Photographs
Tall ruderal	Two small areas of tall ruderal vegetation are located on the perimeter of the substation. The habitat supported a limited rage of common and widespread species including great willowherb <i>Epilobium hirsutum</i> , teasel <i>Dipsacus fullonum</i> , broadleaved dock <i>Rumex obtusifolius</i> , pendulous sedge <i>Carex pendula</i> and creeping thistle <i>Cirsium arvense</i> .	

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Habitat	Description	Photographs
Buildings, built infrastructure and hardstanding	The substation consists of two buildings in the western section and the substation infrastructure including transformer, switchgear and powerlines in the eastern section. The substation sits on a hardstanding base. The buildings comprise prefabricated panels with flat roofs. The section of Dyffryn Lane extending north from the substation is a paved single lane road.	

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Habitat	Description	Photographs
Bare ground	Sections of bare ground are present within and around the substation. The section of Dyffryn Lane extending south of the substation is unpaved.	
Offsite Habitats		
Ditches / reens	Percoed reen is located 50 m south of the substation. The reen is approximately 2.5 m wide with steep 1.5 m high banksides. Common reed <i>Phragmites australis</i> is present along the banksides. The water was clear and had a depth of approximately 0.5 m at the time of the habitat survey. A cycle path is located to the south of the reen, referred to as Green Lane. A smaller ditch is located 40 m east of the substation and flows into Percoed reen. The ditch is 1.5 m wide with steep 1.5 m high banksides. The banksides support common reed, reed canary grass <i>Phalaris arundinacea</i>, hemlock water dropwort <i>Oenanthe crocata</i> and false oat-grass. The water was clear and had a depth of approximately 0.5 m at the time of the survey walkover.	
Pond	A pond is visible on aerial images of the surrounding area, located 80m west of Dyffryn Lane. The pond was not accessible during the survey due to the surrounding dense bramble.	-

3.3 Protected and Notable Species Evaluation

3.3.1 The potential value of habitats within and adjoining the Site for protected and notable species is described in Table 3.5 below.

Table 3.4: Protected Species Evaluation

Species	Potential to be present within the Imperial Park Area
Bats	The prefabricated buildings are unlikely to have suitable features for roosting bats. There were no trees considered suitable for roosting bats within or in proximity to the Site. The scrub in the wider area including Percoed reen, ditches and grassland provide suitable habitat for foraging bats. The scrub edge, reens and ditches provide potential flightlines.
Otter	The Site is considered unsuitable for otter given its largely artificial nature. The dense scrub provides suitable cover for use as potential resting places with connectivity to Percoed reen and ditches in the wider area. SEWBRcC holds records of otter sighted along Percoed reen. Signs of otter have been recorded in the wider area during surveys undertaken by RPS in June 2025 (to support the proposed cable route). This includes spraint recorded at several locations to the west of the Site. The closest location where spraint has been recorded is 480 m west of the Site. Locations of otter evidence is displayed on Figure 4.
Dormouse	The dense scrub in the wider area provides suitable habitat for dormouse to nest and forage. More open areas along fringes of the dense scrub could support hibernating dormouse The scrub is connected to habitat to the south and south-west of the Site where SEWBRcC hold records of dormouse.
Water vole	The Site is considered unsuitable for water vole given its largely artificial nature. The ditch to the west of the Site and Percoed reen to the south provide suitable habitat for water vole. SEWBRcC hold records of water vole from Percoed reen to the south of the Site. Footprints and droppings characteristic of water vole have been recorded along a woodland stream 440 m west of the Site during RPS' targeted survey in June 2025. Locations of water vole evidence is displayed on Figure 4.
Nesting birds	The dense scrub adjacent to the Site provides nesting suitability for breeding birds. Dense sections of reed along the ditches and reens also provide suitable habitat for nesting and foraging. There is potential for birds to nest on the roofs of buildings within the substation complex, though no nesting behaviour was observed during the habitat survey.
Great crested newt	The pond visible on aerial photographs located 80 m west of the site may have aquatic habitat suitable for GCN to breed within. The pond was inaccessible during the habitat survey. The ditch 30 m west of the Site has a slow flow and would provide suitable habitat for GCN if the flow remains slow throughout the breeding season (March – June). The ditch connects to a heavily shaded section of ditch to the north-west which had a water depth of below 0.1 m and was unsuitable for GCN to use as breeding habitat. GCN are unlikely to breed within Percoed reen which had a moderate flow during the habitat survey.

Species	Potential to be present within the Imperial Park Area
	The Site does not support habitat or features of value for GCN and it is bounded by bare ground and hardstanding habitats which are likely to provide a barrier to dispersal. Previous surveys undertaken by Ecus (2023) targeted a series of waterbodies in the wider Imperial Park area. Results indicated likely absence of GCN. RPS obtained water samples from the ditch network to the west of the Site to ascertain the presence of likely absence of GCN (primarily to support the proposed cable route). Laboratory analysis of eDNA samples taken from the ditches to the west of the Site (in June 2025) concluded a negative result for GCN DNA. Additionally, no records of GCN were provided by SEWBRcC. GCN are considered likely absent from the surrounding ditch network.
Reptiles	The areas of grassland and scrub adjoining Dyffryn Lane provide suitable basking and refuge habitat for reptiles. Scrub undergrowth may also provide hibernation suitability.
Badger	There is potential for setts to be present within the dense scrub adjoining the Site, though no setts were identified within accessible areas during the habitat survey.
Invertebrates	The habitats within and in proximity to the Site (i.e. scrub, bare ground, regenerating grassland and tall ruderal) are expected to support a limited invertebrate population. There is potential for uncommon species to be associated with the ditches / reens and grassland / short ephemeral habitat in the wider area. Shrill carder bee, which forms part of the criteria for the Gwent Levels SSSI, has been recorded proximal to the Site and the surrounding Imperial Park area. Larger areas of grassland in the wider Imperial Park area are expected to provide the highest value foraging habitat for shrill carder bee though they may also forage on plants within the short ephemeral / perennial vegetation.

4 IMPLICATIONS FOR DEVELOPMENT AND RECOMMENDATIONS

4.1 Designated Sites

Gwent Levels SSSI and Priority Lowland Grassland

- 4.1.1 Based on the current built footprint of the Proposed Development (see Appendix B for Proposed Development designs), features for which the Gwent Levels SSSI are designated would be avoided from direct impacts.
- 4.1.2 The development includes a 40 m stand-off from the ditch to the west of the Site and a 50 m stand-off from Percoed reen (to the south), reducing the potential for direct and indirect impacts on the ditch network / watercourses.
- 4.1.3 Grassland within and adjoining the Site is limited to very narrow sections along Dyffryn Lane. There are no large areas of species-rich grassland or habitats expected to be of value for shrill carder bee within the Site.
- 4.1.4 The current drainage scheme at the existing substation discharges into a narrow ditch to the south of the Site (shown on general arrangement drawing B2494900-JAC-ZZ-XX-DR-C-003 produced by Jacobs (Jacobs, 2025)), before discharging into Percoed Reen. As per the Conceptual Drainage Strategy for the Proposed Development (RPS, 2025^b), surface water drainage would remain as per the existing scheme, with the appropriate level of attenuation and intercepting infrastructure implemented to prevent pollutants discharging into the ditch network.
- 4.1.5 A Construction Environment Management Plan (CEMP) would be prepared for the Proposed Development which sets out environmental best practice measures to protect adjoining habitats from adverse impacts that include dust emissions, pollution and siltation. Materials should be stored on hardstanding or bare ground and away from watercourses. A CEMP would be secured by a condition of planning consent.
- 4.1.6 Whilst the Proposed Development would be sited within habitats and features that are not considered to be qualifying features of the Gwent Levels SSSI, SSSI assent is likely to be required from NRW following successful planning consent and prior to construction. This is due to the Proposed Development's location within the boundary of a SSSI.
- 4.1.7 A request for advice was submitted to NRW in March 2025 as part of the optioneering for Proposed Development, and associated cable route (the latter forming part of a separate future planning application submission) in relation to the Gwent Levels SSSI. NRW provided a response on 26th June 2025 advising on the necessary measures and activities required to be implemented as part of the cable route and Proposed Development design.

LG Duffryn SINC

- 4.1.8 While the Site overlaps with the LG Duffryn SINC, the built Proposed Development footprint will be located outside of the SINC boundary, 0.20 km to the south. There are no proposed works to Dyffryn Lane which extends through the SINC and is to be used as the access route for Proposed Development only.
- 4.1.9 Given the distance between the SINC and the built Proposed Development footprint, there are no anticipated impacts on the SINC.

Other Designated Sites

- 4.1.10 There are no anticipated impacts on other designated sites given their distance from the Site.

4.2 Habitats

- 4.2.1 The Proposed Development is to be sited within areas of hardstanding and bare ground within the existing substation complex. A relatively small area of tall ruderal and regenerating neutral grassland would be permanently lost to facilitate the built Proposed Development. It is estimated that 0.02 ha would be lost, which comprises mostly of tall ruderal. The tall ruderal and neutral grassland habitats comprise a limited range of common ruderal species associated with disturbed ground, common and widespread grasses and low growing forbs.
- 4.2.2 Dense scrub and the connected grassland features along the perimeter of the Site would be retained.
- 4.2.3 The development proposals would seek to provide a Net Benefit for Biodiversity (as set out in Section 5 of this report). The extensive sections of the dense scrub within and adjoining the Site are dominated by bramble and localised cutting back and replanting with a wider range of native species could increase the biodiversity value of the area. Tall ruderal would be targeted to reduce undesirable species, encouraging native grassland species to flourish. Bare ground areas would be targeted with the aim of creating grassland or enabling colonisation of tall forbs.

4.3 Protected and Notable Species

Bats (Foraging and Commuting)

- 4.3.1 The dense scrub within the Site which provides flight lines and foraging habitat for bats will be retained.
- 4.3.2 No external lighting on the western and southern elevation is proposed based on Proposed Development designs (see Appendix B). Whilst hit and miss brickwork will be installed on the western and eastern facades, louvres sat behind the brick work would direct any internal light downwards.
- 4.3.3 The use of lighting during construction and operation would be minimised and light spill on the dense scrub and adjoining vegetation, ditches and reens should be minimised in accordance with published guidance (ILP, 2023).

Badger

- 4.3.4 While no signs of badger were recorded during the habitat survey or found during the desk study, there is potential for setts to be present within the areas of dense scrub adjoining the site.
- 4.3.5 The development proposals will retain the dense scrub within the site. It is recommended that a check is undertaken within three months of the start of construction to check for new setts within proximity to the Site.

Otter

- 4.3.6 There would be a 40 m standoff from the ditch to the west of the Site and 50 m standoff from Percoed reen, reducing the potential for indirect impacts on otter should they use this area.
- 4.3.7 Areas of dense scrub which could be used by otter will be retained. It is recommended that the scrub, ditches and Percoed reen are checked for places otter may use for resting within three months of the start of construction to check for new signs of otter.
- 4.3.8 Construction activities should be restricted to daytime hours only to prevent disturbance during periods when otters are likely to be most active within the wider ditch network.

Water Vole

- 4.3.9 The 40 m standoff from the ditch to the west of the Site and 50 m standoff from Percoed reen would safeguard water vole should they be present in burrows along the watercourse. Whilst no burrows were recorded as part of otter and water vole surveys along within the ditch network during targeted surveys, evidence of water vole (droppings and footprints) were recorded to the west of the Site (see Figure 4), confirming their potential presence in the area.
- 4.3.10 It is anticipated that impacts on water vole or their habitat would be relatively limited as a result of the Proposed Development given the stand offs from suitable habitat.

Dormouse

- 4.3.11 The Proposed Development will retain the dense scrub habitats along the edge of the Site, protecting dormouse from direct impacts (habitat loss and direct injury / mortality). Whilst indirect impacts through construction noise and vibration could disturb dormice occupying surrounding scrub, it is likely that the local dormouse population would be acclimatised to noise levels within the area given the presence of the existing substation.
- 4.3.12 Any lighting required during construction and operation would be minimised and light spill on dense scrub avoided, as summarised in paragraph 4.3.3 above

Nesting Birds

- 4.3.1 The dense scrub and buildings will be retained within the Site, maintaining habitat for nesting birds. Any lighting required during construction and operation should be minimised and light spill onto these habitats and adjoining scrub, ditches and reens avoided.

Reptiles and Amphibians

- 4.3.2 There will be minimal vegetation removal required to facilitate the Proposed Development. Adjoining terrestrial habitats including the dense scrub and grassland would be retained as part of the Proposed Development, with a relatively small amount of tall ruderal to be cleared.
- 4.3.3 Notwithstanding the relatively minimal amount of tall ruderal habitat to be cleared, site and vegetation clearance should be undertaken methodically under a Precautionary Method of Works (PMoW) to safeguard any reptiles present within the surrounding habitats. The PMoW would form part of a CEMP.
- 4.3.4 Nearby ditches, Percoed reen and retained terrestrial habitat would be safeguarded through environmental best practice within a CEMP. This would include dust minimisation and pollution control.

Invertebrates

- 4.3.5 Higher value habitat for invertebrates in the wider Imperial Park area would be retained and would be protected from impacts from dust emissions and surface water run-off through a CEMP.
- 4.3.6 The removal of a small section of tall ruderal and regenerating neutral grassland would not significantly affect invertebrate populations associated with the wider Imperial Park area. Given the relatively small, isolated area of habitat to be removed as part of the Proposed Development, and its lack of suitability for shrill carder bee, no adverse effects on shrill carder bee are anticipated. Proposed management measures for the surrounding bare ground, tall ruderal and neutral grassland habitats would provide a benefit to shrill carder bee and invertebrate assemblage.

4.4 The Biodiversity Duty and Net Benefit for Biodiversity

- 4.4.1 Section 6 of the Environment (Wales) Act 2016 sets out the requirement for development in Wales to deliver a Net Benefit for Biodiversity and to improve or enable the improvement of ecosystem resilience (the 'Biodiversity Duty').
- 4.4.2 The Biodiversity Duty sets out considerations for assessing biodiversity net benefit and ecosystem resilience. This includes the DECCA framework which should inform the development design and comprises the following aspects:
- Diversity - the need to consider diversity at all levels from genetic to ecosystem and landscape scale diversity in underpinning biodiversity and ecosystem resilience.
 - Extent – consideration of the scale at which a feature contributes to biodiversity and ecosystem resilience, and the importance of strategic integration.
 - Condition – consideration of the ecological condition and health of biodiversity features and the factors that contribute or detract from good condition such as climate change, recreational pressure, pollution and invasive non-native species.
 - Connectivity – consideration of the importance of connectivity in maintaining ecosystem function and particularly in ecosystem resilience by allowing species to move in response to environmental pressures such as climate change.
 - Adaptability– considering all aspects of biodiversity and ecosystem and their interaction with the human environment in promoting the ability to adapt to and recover from environmental pressures.
- 4.4.3 The stepwise approach is necessary in demonstrating the delivery of the Biodiversity Duty (Welsh Government, 2023). The stepwise approach is a mitigation hierarchy for which development proposals should adhere to when undergoing design optioneering, and includes the following steps:
1. Avoid
 2. Minimise
 3. Mitigate / restore
 4. Compensate on site
 5. Compensate off site
- 4.4.4 At each level the additional value of habitat enhancement and the importance of long-term management is recognised in delivering net benefit for biodiversity.
- 4.4.5 Newport City Council were consulted in relation to outline plans for the Proposed Development in relation to local biodiversity interests and the Gwent Levels SSSI. A teleconference meeting was arranged in April 2025 to discuss elements of the Proposed Development and the associated cable route design, and the potential impacts on biodiversity.
- 4.4.6 Information to support the Proposed Development's adherence to the stepwise approach (considering the ecological baseline as set out above) and its aim for delivering a Net Benefit for Biodiversity is summarised in Section 5, below.

5 GREEN INFRASTRUCTURE STATEMENT

- 5.1.1 Habitat surveys have been undertaken across the wider Imperial Park area since February 2025. Otter, water vole and GCN survey work has been undertaken on the local ditch network. Otter and water vole surveys are ongoing and will be completed in July 2025 to further support the associated cable route development (which would connect into the Site and extend to the west and south). Tree surveys have also been undertaken in support of the Proposed Development and proposed cable route (RPS, 2025^c).
- 5.1.2 The Proposed Development has sought to adhere to the stepwise approach by first avoiding direct impacts on biodiversity. This has been achieved through siting the majority of the Proposed Development footprint within existing, hardstanding habitats (i.e. existing substation complex). Whilst it is acknowledged that Section 6, paragraph 6.4.26 of PPW 12 states (in relation to development within SSSIs):
- 'There is a presumption against all other forms of development in a SSSI as a matter of principle and this presumption should be appropriately reflected in development plans and development management decisions. There is also a presumption against development not within a SSSI but likely to damage a SSSI.'*
- 5.1.3 Paragraph 6.5.27 also states:
- 'In wholly exceptional circumstances and only where development is considered to be appropriate and is not likely to damage a SSSI and there is broad and clear agreement for mitigation and enhancement as part of a development plan should development be proposed.'*
- 5.1.4 In relation to paragraph 6.5.27, it is important to reiterate that the Site is largely artificial, comprises primarily hardstanding. Moreover, the Proposed Development has been conceived to support energy connections for previously consented developments in the wider Imperial Park area. Further, It is anticipated that the Proposed Development would not lead to impacts on the LG Duffryn SINC.
- 5.1.5 As part of the optioneering process, the Proposed Development has sought to minimise its footprint as far as practicably possible. To support access, laydown and security requirements, a limited amount of tall ruderal and regenerating neutral grassland vegetation in the north of the Site is to be removed. At the current stage, it is anticipated that up to 0.02 ha of tall ruderal habitat would be permanently lost as part of the Proposed Development. This habitat contains an assemblage of vascular plant species that are colonisers of disturbed ground and are common and widespread across Wales. The habitats (in their current state) are not considered an inherently valuable biodiversity feature, though the habitats may be used as a foraging resource by certain species of fauna. The vegetation is not associated with the qualifying features of the Gwent Levels SSSI and does not qualify as a Section 7 Priority Habitat.
- 5.1.6 To mitigate for the estimated loss of 0.02 ha of tall ruderal habitat, the proximal areas of bare ground, tall ruderal, neutral grassland and dense scrub (located to the north, west and south of the Site) would be targeted to control undesirable species, with the aim of restoring, creating and enhancing grassland habitat with higher quality features comprising valuable tall and meadow forbs and grasses, improving its ecosystem functioning. Up to 0.06 ha of the surrounding bare ground, tall ruderal, grassland and scrub would be managed and controlled to mitigate for the permanent loss of habitat. This has been calculated using a 1:3 ratio adapted from the woodland replacement/planting metric referred to in Section 6 of PPW 12. The proposals would increase vegetation cover with native vascular plants, reduce pressure from undesirable species and increase ecosystem functioning through expanding vegetation cover (in existing bare ground sections) and reconnecting areas of isolated habitat.
- 5.1.7 Whilst the preferred approach would be to control species such as creeping thistle *Cirsium arvense* and broadleaved dock *Rumex obtusifolius*, and sow select areas using local green hay (or

seed from a local nursery) including local yellow rattle *Rhinanthus minor*, detailed measures would be developed in collaboration with Newport City Council. The measures will require agreement from NRW given the proposals would be located within the Gwent Levels SSSI. The measures would be developed with the aim of maintaining the ecosystem functioning of the wider Gwent Levels SSSI. Detailed biodiversity measures would be secured through a planning condition, should the Proposed Development receive planning consent. This would be in the form of a 'Biodiversity Enhancement and Restoration Scheme' or similar.

- 5.1.8 It should be noted that habitat restoration of the wider Imperial Park area is being targeted as part of the proposed cable route. The approach would be to combine measures for both the Proposed Development and the proposed cable route into an overarching Biodiversity Strategy, with all agreed measures set out within one document.
- 5.1.9 Whilst it is not confirmed when construction would take place, it is anticipated that construction of the Proposed Development and the subsequent cable installation would overlap. As a result, biodiversity restoration and enhancement measures for both the cable route and the Proposed Development could be delivered within the same time period.
- 5.1.10 Biodiversity measures for the Proposed Development (and proposed cable route) would be targeted to areas outside of existing, consented habitat enhancement measures for other recently consented infrastructure developments.

6 CONCLUSION

- 6.1.1 The Proposed Development is located within the Gwent Levels SSSI and overlaps NRW Priority Lowland Wetland area. The Proposed Development's access route (in the north of the Site) is also located within LG Duffryn SINC.
- 6.1.2 While the Site is located within an area designated as a SSSI and overlaps with a SINC, the development proposals would be sited largely within an existing substation complex, on areas of bare ground and hardstanding. Removal of vegetated features would be limited to a small section of tall ruderal and isolated patch of neutral grassland adjoining the Proposed Development footprint, to the north
- 6.1.3 Whilst the Proposed Development is to be sited largely on existing hardstanding adjacent to the existing 400kv substation and away from qualifying features of the Gwent Levels SSSI, SSSI assent would likely be required from NRW.
- 6.1.4 A CEMP should be prepared prior to construction of the Proposed Development which should set out measures to protect adjoining habitats from adverse impacts including pollution and siltation. Materials should be stored on hardstanding or bare ground and away from watercourses.
- 6.1.5 The areas of bare ground, tall ruderal and dense scrub adjoining the substation provide an opportunity to deliver a Net Benefit for Biodiversity by increasing the species diversity and controlling growth of undesirable species. These habitats would be targeted as part of a Biodiversity Restoration and Enhancement Scheme (or similar) to deliver up to 0.06 ha of mitigation and enhancement. This would include creation, enhancement and restoration measures and would be agreed with Newport City Council and NRW. Measures would form part of an overarching Biodiversity Strategy for both the Proposed Development and proposed cable route.
- 6.1.6 There is suitable habitat for foraging bats, dormouse, otter, water vole, badger, nesting birds, reptiles, GCN and notable invertebrate species in the wider Imperial Park area, outside of the Site.
- 6.1.7 Given the siting of the Proposed Development within areas of bare ground, hardstanding and tall ruderal there is limited potential for protected or notable species to be affected by the works.
- 6.1.8 The use of lighting during construction and operation should be minimised and light spill on the dense scrub and adjoining vegetation outside of the Proposed Development footprint (particularly ditches and reens) should be minimised in accordance with published guidance (ILP, 2023).
- 6.1.9 It is recommended that a check is undertaken within three months of the start of construction to check for the presence of badger setts and otter resting places, proximal to the Site.

7 REFERENCES

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- Ecus (2023) Celtic Lakes – Great Crested Newt Survey Report. 20919-001-2.
- Institute of Lighting Professionals (2023) Bats and Artificial Lighting in the UK. Guidance note 08/18. Bats and the built environment series.
- JNCC (2016) Handbook for Phase 1 habitat survey – a technique for environmental audit, JNCC, Peterborough, ISBN 0 86139 636 7.
- RPS (2025^b) Flood Consequence Assessment and Conceptual Surface Water Drainage Strategy. Imperial Park Substation.
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- Welsh Government (2023). Letter to Local Authorities Heads of Planning. Available at <https://www.gov.wales/sites/default/files/publications/2023-10/addressing-the-nature-emergency-through-the-planning-system.pdf> . Accessed 22nd May 2024).
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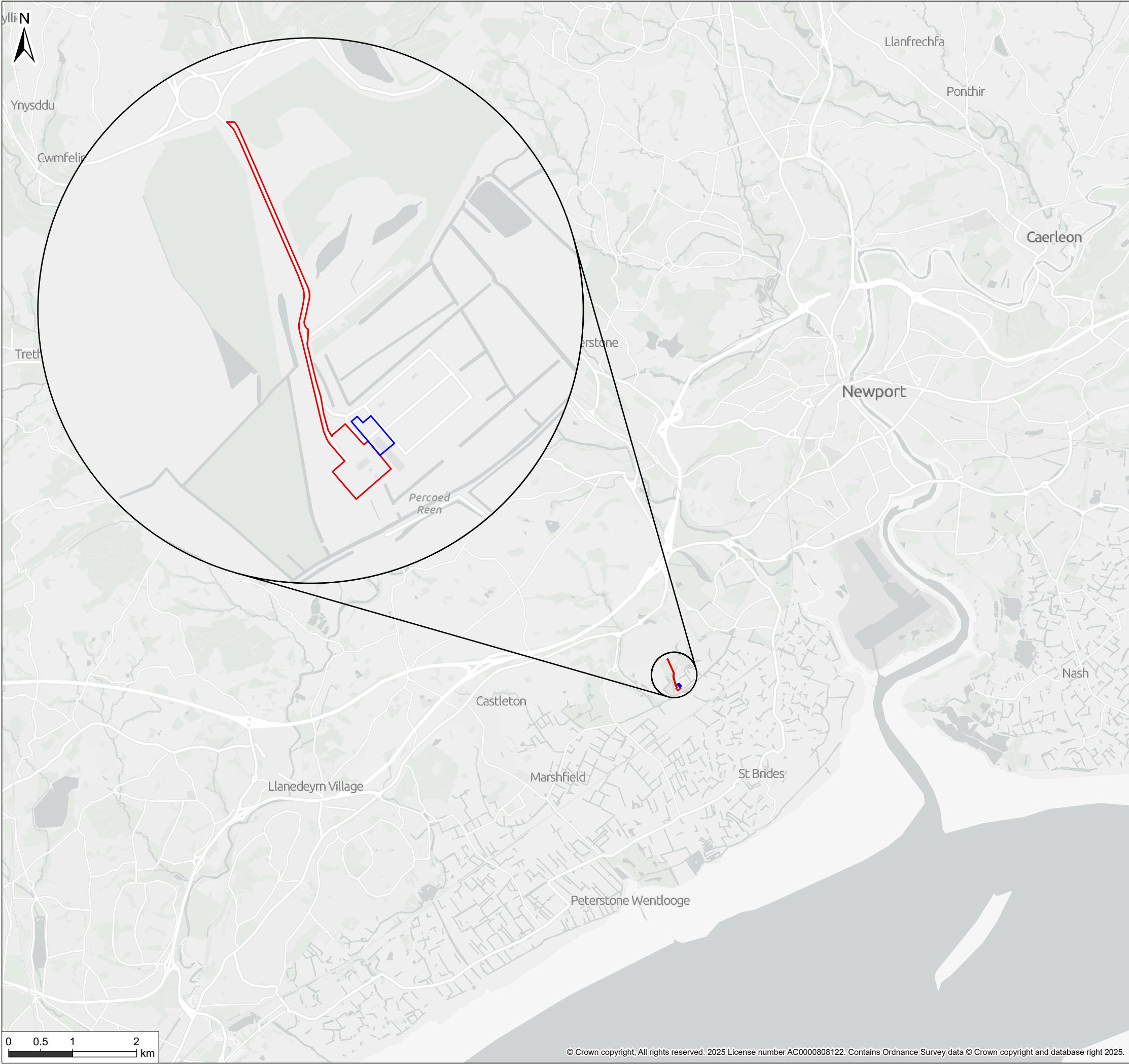
Figures

Figure 1: Site Location

Figure 2: Designated Sites Plan

Figure 3: Habitat Plan

Figure 4: Otter, Water Vole and GCN Survey





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Legend

Application Boundary

Ownership Boundary



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Project Name

Imperial Park Substation

Drawing Title

Location Plan

Figure Number

1

Drawing Number

22022-0005-01

01	28/06/2025	FINAL	AC	LR
Rev	Date	Status	By	CB

Scale @ A3

Plot Size

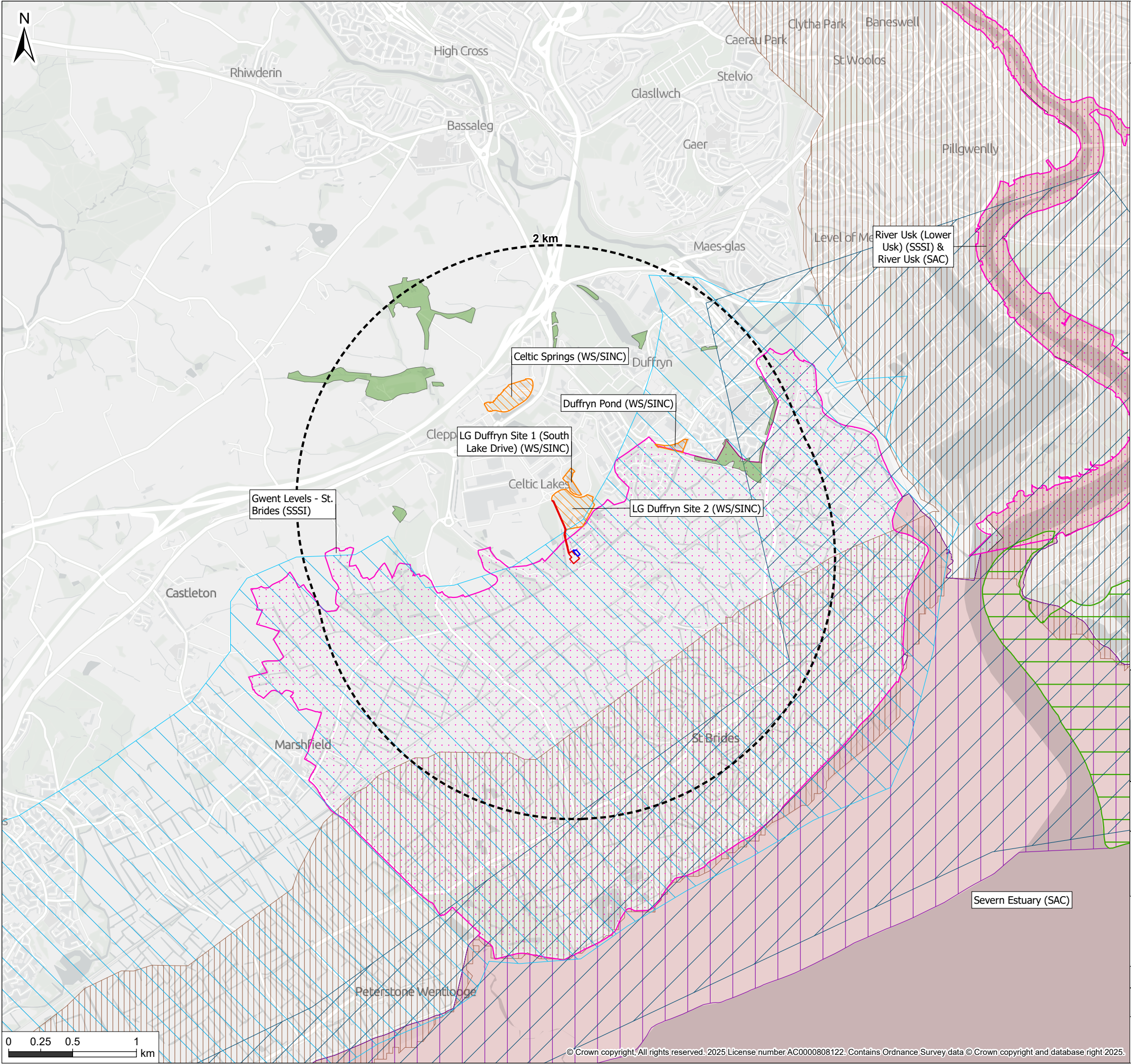
Datum

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294 x 277 mm

OSGB 1936

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Legend

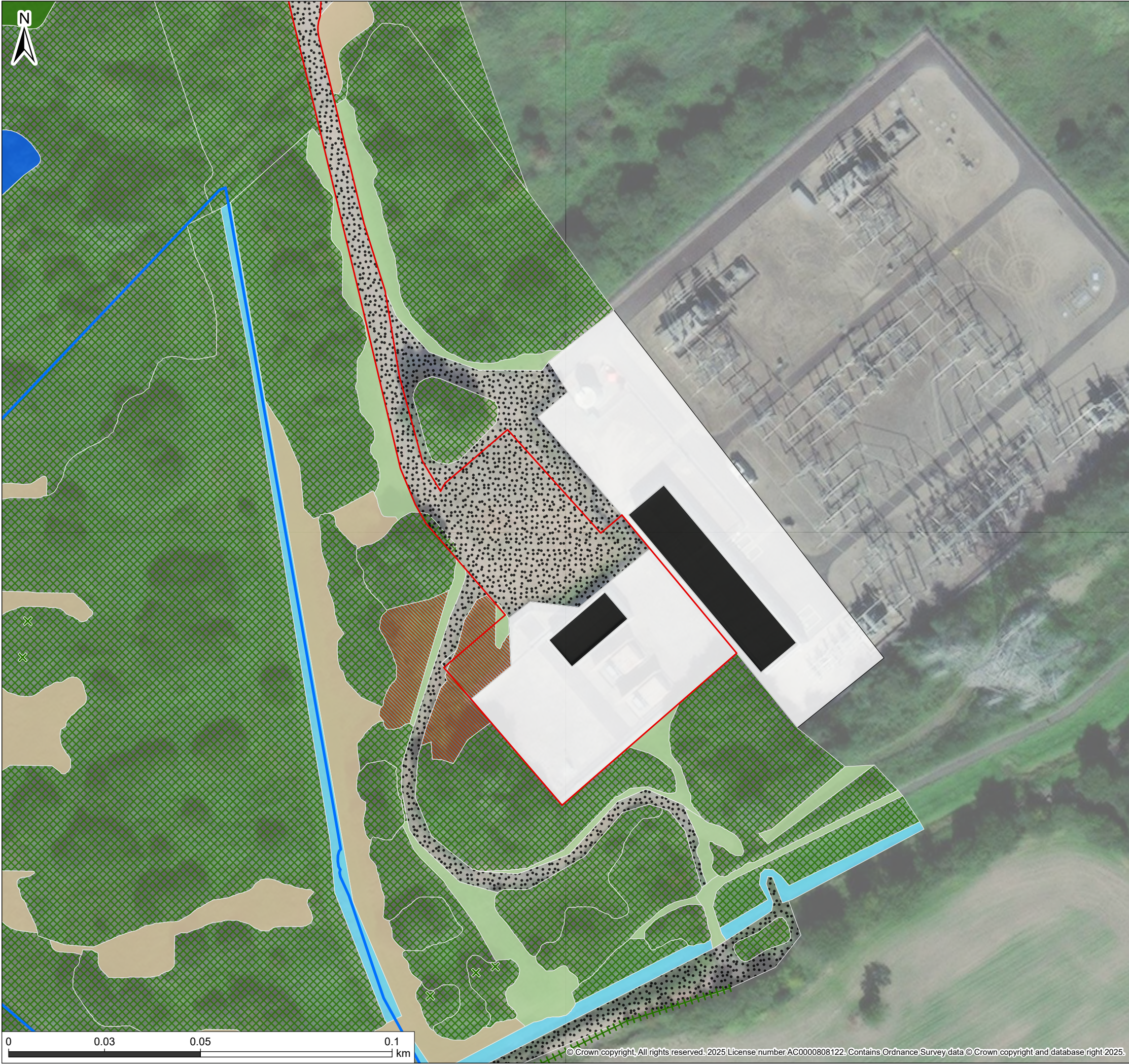
- Application Boundary
- Ownership Boundary
- 2 km Study Area
- Source: Natural Resources Wales, South East Wales Biodiversity Records Centre
- Site of Special Scientific Interest (SSSI)
- Wildlife Site / SINC -Adopted (WS/SINC)
- NRW Priority Area - Coastal Saltmarsh
- NRW Priority Area - Lowland Wetland
- Ancient Woodland
- Newport Wetlands National Nature Reserve (NNR)
- Severn Estuary Special Protection Area (SPA)
- Special Area of Conservation (SAC)
- B-Lines Network (Buglife)



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Project Name		Imperial Park Substation		
Drawing Title		Designated Sites within 2 km		
Figure Number		2		
Drawing Number		22022-0003-04		
01	28/06/2025	FINAL	AC	LR
Rev	Date	Status	By	CB
Scale @ A3		Plot Size	Datum	
1:30,000		294 x 277 mm	OSGB 1936	

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Legend

Application Boundary

Phase 1 Habitat Data

A1.1.1 - Broadleaved woodland - semi-natural

A2.1 - Dense scrub

B5 - Marsh/marshy grassland

C3.1 - Tall ruderal

F1 - Swamp (reedbed)

G1 - Standing water

J4 - Bare ground

J6 - Buildings

Hard standing

Neutral grassland

Regenerating grassland

G1 - Wet ditch

J2.3.2 - Hedge with trees - species-poor

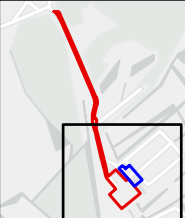
A2.2 - Scattered scrub



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Project Name

Imperial Park Substation

Drawing Title

Habitat Map

Figure Number

3

Drawing Number

22022-0002-05

05	27/06/2025	FINAL	AC	GK
Rev	Date	Status	By	CB

Scale @ A3

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Plot Size

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Datum

OSGB 1936

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