



VANTAGE SUBSTATION AND BURIED CABLES

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Non-technical Summary

Report purpose	This report describes the ecological baseline and evaluates the nature conservation importance of ecological features present within the zone of influence for the Proposed Scheme. The assessment identifies impacts (both positive and negative) on important ecological features, sets out agreed avoidance, mitigation, compensation and enhancement measures and provides details on the significance of residual effects for each important ecological feature.
Proposed Scheme	The Proposed Scheme comprises the construction of an electricity substation compound and installation of buried electrical cables beneath the existing road network in Imperial Park. Landscaping proposals to compensate for the habitat loss are located within the Development Site and within an off-site Compensation Site.
Desk studies and field surveys	This report is based on the following: ▪ A desk study undertaken in June 2023; ▪ Ecological walkover surveys undertaken in June 2023, April 2024 and June 2024; and ▪ Phase 2 surveys for National Vegetation Community (NVC), bat, hazel dormouse, otter and water vole, badger, breeding birds, wintering birds, great crested newt, reptile, and invertebrate, undertaken between July 2021 and August 2024.
Ecological features	There is one statutory designated site (Gwent Levels – St Brides Site of Special Scientific Interest) and nine non-statutory designated sites within 2 km of the Development Site, of which one, LG Duffryn Site 2 Site of Importance for Nature Conservation, is located within the Development Site. Phase 2 surveys have confirmed the presence of commuting and foraging bats, hazel dormice, reptiles, breeding birds, priority invertebrates, and invasive non-native plant species (INNPS) within the Development Site Survey Area.
Potential impacts and effects	The Proposed Scheme will result in the permanent loss of 0627 ha of mixed scrub and 0.086 ha bramble scrub, and temporary loss of 0.229 ha of other neutral grassland of which 0.219 ha is within the SINC and 0.026 ha of mixed scrub, within the Development Site, and the conversion of 1.084 ha of g3c6 neutral grassland into mixed scrub within the Compensation Site. The Proposed Scheme is anticipated to result in noise and vibration disturbance during construction and operation of the substation. External artificial lighting in the substation compound will be required during the operational phase for emergency night-time works.
Avoidance, mitigation, and compensation, measures	▪ Retention of 0.336 ha mixed scrub within the substation section of the Development Site; ▪ Acquiring a NRW Development Licence for hazel dormouse and vegetation clearance being undertaken using hand-held tools and in a two-stage clearance operation. ▪ Construction works to be completed in accordance with a Precautionary Method or Works (PMW) in relation to badgers, bats, reptiles, nesting birds, priority invertebrates and INNPS. An Ecological Clerk of Works will be employed for the duration of the construction works and pre-construction clearance works to ensure the implementation of the PMW; ▪ Creation of 0.476 ha of species-rich grassland within the Development Site; ▪ Creation of 1.437 ha of mixed scrub within the Compensation Site and the restoration of 0.026 ha of mixed scrub within the Development Site; ▪ Installation of seven hazel dormouse nest boxes within the Development Site and 20 within the Compensation Site;



	▪ Enhancement of 1.317 ha of neutral grassland within the Compensation Site; and ▪ Existing woodland habitats within the Compensation Site will be adaptively managed in the long-term for benefit of hazel dormice.
Enhancement measures	▪ Creation of a 61 m² wildlife pond within the Development Site; ▪ Creation of 134 m of native species-rich hedgerow within the Development Site, and a 220 m long and a 50 m long intersecting native species-rich hedgerow, and gap planting along 90m of an existing species-rich hedgerow within the Compensation Site; ▪ Creation of a 2 m x 2 m reptile hibernacula using arisings from cleared vegetation, 2 m x 2 m grass snake egg-laying heap, and installation of eight 50 cm x 50 cm corrugated reptile refugia within the Development Site in optimal locations within the Development Site; and ▪ Increased species richness of the proposed grassland within the Development Site and proposed scrub within the Development Site compared to the existing grassland and scrub within the Development Site.
Significance of residual effects	The Proposed Scheme in-combination with the adjacent Welsh Government NGED Substation scheme and nearby SPTS scheme, is anticipated result in a short-term significant residual effect at the Local level due to scrub loss, and grassland loss and fragmentation. In the long-term, once the compensation scrub and grassland establishes there is predicted to be no significant residual effect.
Net Benefit for Biodiversity	This report provides evidence on how the Proposed Scheme will deliver a net benefit for biodiversity using the DECCA (Diversity, Extent, Connectivity, Condition, and Adaptability) framework.

Report Validity

In the event of scope or programme changes or if works do not commence within 12 months of the date of this report, then updates to the surveys may be required to ensure the validity of the data, as per Chartered Institute of Ecology and Environmental Management guidance¹.

¹ CIEEM (2019) *Advice Note on the Lifespan of Ecological Reports and Surveys*.



1. Introduction

1.1 Terms of Reference

- 1.1.1. AtkinsRéalis UK Limited was commissioned by Vantage Data Centers to undertake an Ecological Impact Assessment (EcIA) in connection with a planning application for the construction of a 150 MVA substation and laying of buried cables (hereafter referred to as the Proposed Scheme). This EcIA is intended to demonstrate how the Proposed Scheme accords with relevant planning policy and legislation.
- 1.1.2. The Proposed Scheme is near Imperial Park, Newport, as identified by the planning red line boundary provided with the planning application submission and shown on Figure A-1 within Appendix A (hereafter referred to as the Application Site).
- 1.1.3. This report presents the results of the EcIA for the Proposed Scheme and considers both terrestrial and aquatic ecological receptors, which include statutory and non-statutory designated sites for nature conservation, terrestrial and freshwater habitats, protected plants, and animals.. The assessment has been informed by a desk study, field survey data, and consultation with relevant stakeholders and statutory bodies. This EcIA describes the ecological baseline and evaluates the nature conservation importance of ecological features present within the Zone of Influence² for the Proposed Scheme, characterises the impacts on Important Ecological Features³, sets out agreed avoidance, mitigation, compensation and enhancement measures, and assesses the significance of the residual effects of the Proposed Scheme on the Important Ecological Features.
- 1.1.4. This EcIA has been undertaken with reference to current good practice⁴ and forms part of the technical information lodged with the full planning application submission. The ecological specialists who have authored this report are committed environmental professionals who are appropriately qualified and have a demonstrable knowledge, experience, and competence in the field of nature conservation. The production of this EcIA report has been overseen by competent experts that are full members of the Chartered Institute of Environmental and Ecological Management (CIEEM).

1.2 The Application Site

- 1.2.1. The Application Site comprises two areas: the Development Site and a Compensation Site.
- 1.2.2. The Development Site is located near Imperial Park, Newport at Ordnance Survey (OS) national grid reference ST 28435 84138, as identified by the red line boundary on Figure A-1 in Appendix A and is bounded by hardstanding roads/ tracks to the north, east, and west, and scrub and grassland to the south. To the north of the Development Site is the Imperial Park industrial/ business park, whilst to the south is a scrub/ grassland mosaic and agricultural fields. The substation section of the Development Site is within land formerly a small part of the Welsh Government Celtic Springs site , which encompasses the southern half of Imperial Park.

² Zone of Influence is the area(s) over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities.

³ An important ecological feature is a species, habitat, ecosystem and/or their function/service that is considered to be important and potentially affected by the project. A full definition is provided in Section 2

⁴ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.2 (updated April 2022)*. Chartered Institute of Ecology and Environmental Management, Winchester.



- 1.2.3. The Development Site is approximately 2.72 ha, comprises mixed scrub, other neutral grassland, and developed land; sealed surface habitats, and is within the LG Duffryn Site 2 Site of Importance for Nature Conservation (SINC), whilst the Gwent Levels – St Brides Site of Special Scientific Interest (SSSI) is approximately 210 m south of the Development Site.
- 1.2.4. The Compensation Site (which is off-site and not connected by habitat to the Development Site) is comprises a privately owned agricultural grassland field bounded by bracken, hedgerows, grassland and woodland. The Compensation Site is approximately 3.65 ha and is centred at OSNGR ST 27061 85162 and is approximately 765 m north-west of the Development Site.

1.3 The Proposed Scheme

- 1.3.1. The Proposed Scheme includes the construction an electricity substation compound enclosed within security fencing. The substation site will include an impermeable access junction off Dyffryn Lane and internal road, sustainable drainage system, attenuation basin with integral wildlife pond and soft landscaping including mixed scrub, hedgerow, tussocky grassland and marshy grassland, as shown on Figure A-2 in Appendix A.
- 1.3.2. The Proposed Scheme also includes the installation of direct buried electricity circuits beneath the existing road network in Imperial Park, connecting the proposed substation site to the CWL12 Plot 7 development and to existing cable duct joint bays. The circuits will be installed into made ground, trenches will typically be 1.6 m and 1.8 m wide and will be laid on crushed granite or limestone and surrounded by cement bound sand.
- 1.3.3. As well as the landscaping and ecological measures within the Development Site, the Proposed Scheme includes an off-site Compensation Site comprising of native mixed scrub planting, hedgerow planting, installation of hazel dormouse nest boxes and enhancement of existing grassland, as shown on Figure A-3 and Figure A-4 in Appendix A.
- 1.3.4. It is not currently known when construction of the Proposed Scheme will begin. However, vegetation clearance will either be undertaken in two-stages between November and May, or in one stage in September to October, depending on what is most appropriate for the programme. Construction of the substation will start once the vegetation has been cleared, and the cables will be laid time for the completion of the substation. It is anticipated that construction will take approximately three years. The planting within the Compensation Site will be undertaken in the first full planting season following the commencement of the development of the substation compound.

1.4 Scope of Assessment

- 1.4.1. This report presents ecological information obtained during the following:
- A desk-study and ecological walkover survey of the Development Site undertaken in June 2023;
 - Surveys for protected and priority species; hazel dormouse, bats, otter, water vole, breeding and wintering birds, great crested newt, reptiles, badger, invertebrates, and National Vegetation Community (NVC) surveys within the Development Site undertaken between July 2021 and January 2024;
 - An ecological walkover survey of the Compensation Site undertaken in April and June 2024; and
 - Hazel dormouse footprint tunnel surveys within the Compensation Site undertaken between July and August 2024.



2. Methodology

2.1 Zones of Influence

- 2.1.1. The project Zone of Influence (ZoI) is defined as the area over which ecological features may be affected by biophysical changes as a result of the proposed project and associated activities. The size and shape of the ZoI will depend on the ecological features present at the Application Site and the nature of the proposals and predicted impacts. The ZoI typically extends beyond the project boundaries (for example where there are ecological or hydrological links beyond Application Site boundaries), and takes into account both on-site impacts, and impacts that may occur to adjacent and/or more distant ecological features. In order to determine the ZoI, the size, location, and nature of a project needs to be considered alongside the likely impacts, sensitivities of ecological features, and potential for in combination effects.
- 2.1.2. For each ecological feature within the ZoI, the individual zone of sensitivity of that feature will vary depending on their susceptibility to an environmental change or effect. Where there is overlap between the project ZoI and the receptors zone of sensitivity, impacts may occur.

2.2 Desk Study and Consultation

- 2.2.1. The geographical area for obtaining ecological data through desk studies (hereafter referred to as the Desk Study Search Area) has been informed by the project ZoI and zones of sensitivity for ecological features using best practice guidance and professional judgement. Baseline data have been gathered from a range of sources through data requests, consultation, and using online resources, as outlined below. This included data gathering in relation to statutory and non-statutory designated sites for nature conservation and protected and priority habitats and species (as defined by CIEEM⁵). The study areas used for the data gathering are detailed in Table 2-1.
- 2.2.2. The desk study was undertaken in June 2023. For species records collected, only those within 10 years of the data collection date have been considered within the assessment unless deemed relevant.
- 2.2.3. The following online resources were accessed:
- Multi-Agency Geographic Information for the Countryside (MAGIC) website⁶;
 - Data Map Wales⁷;
 - Woodland Trust Ancient Tree Inventory⁸; and
 - Newport Local Biodiversity Action Plan⁹.

⁵ As set out in Box 1 on page 4 of the CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester, priority habitats and species include those listed as a national priority for conservation (i.e. a Habitat of Principle Importance or Species of Principle Importance in Wales under Section 7 of the Environment (Wales) Act 2016 and/or local priority for conservation (e.g. in the local Biodiversity Action Plan (BAP)), International Union for the Conservation of Nature (IUCN) Red List or Amber List, Nationally Rare or Nationally Scarce, or endemic to a country or geographic location.

⁶ Multi-Agency Geographic Information for the Countryside (MAGIC) [Online]. Available at: <https://magic.defra.gov.uk/> [Accessed 01/06/2023]

⁷ Data Map Wales [online] Available at: <https://datamap.gov.wales/> [Accessed 01/06/2023]

⁸ Woodland Trust Ancient Tree Inventory [Online]. Available at: <https://ati.woodlandtrust.org.uk/> [Accessed: 01/06/2023]

⁹ The Newport Local Biodiversity Action Plan. Available at: <https://www.newport.gov.uk/documents/Leisure-and-Tourism/Countryside/NewportLocal-Biodiversity-Action-Plan.pdf> Accessed: February 2024

- 2.2.4. Ordnance Survey maps and aerial satellite imagery¹⁰ were used to identify the presence of waterbodies within 500 m of the Application Site boundary, in order to establish if the land within and immediately surrounding the Application Site could be used as terrestrial habitat for great crested newt. This species typically uses suitable terrestrial habitat up to 500 m from a breeding pond¹¹. However, there is a notable decrease in great crested newt abundance beyond a distance of 250 m from a breeding pond¹².
- 2.2.5. A review of the following ecological reports was undertaken:
- Arup, (2023). Celtic Lakes NGED Substation – Dormouse Conservation Strategy – Welsh Government;
 - Arup, (2023). Celtic Lakes NGED Substation – Habitats Regulations Assessment – Welsh Government;
 - Arup, (2023). Celtic Lakes NGED Substation – Landscape and Ecological Management Plan (LEMP) and SSSI Grassland – Welsh Government;
 - Capita, (2021). SPTS Technologies – Imperial Park, Duffryn, Preliminary Ecological Appraisal (PEA) – Plot 5; and
 - Capita, (2021). SPTS Technologies – Imperial Park, Duffryn, Preliminary Ecological Appraisal (PEA) – Plot 1.
 - Greater Gwent State of Nature Report¹³
- 2.2.6. South East Wales Biodiversity Records Centre (SEWBRc) were contacted on 26th May 2023 to request relevant desk study data, including details of non-statutory designated sites.
- 2.2.7. Consultation was undertaken with the following stakeholders:
- Welsh Government; and
 - Newport City Council.

Table 2-1 – Desk study search areas

Date type	Search area – distance from Proposed Scheme boundary
Protected and priority species ⁵	2 km
Statutory designated sites for nature conservation	2 km
Non-statutory designated sites for nature conservation	2 km
Irreplaceable habitats ¹⁴	1 km
Priority habitats ⁵	2 km
Waterbodies suitable for great crested newts	500 m
Ancient and veteran trees	1 km

¹⁰ Where's the Path [Online]. Available at: <https://wtp2recorder.appspot.com/wheresthepath.htm> [Accessed: March 2024].

¹¹ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

¹² English Nature (2004). *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (ENRR576)* [Online]. Available at: <http://publications.naturalengland.org.uk/publication/134002> [Accessed: March 2024].

¹³ Jones S M, Karran A, Bosanquet S, Barter G, Garrett H and Hancocks L. (2021). Greater Gwent State of Nature. Produced by the Resilient Greater Gwent Partnership. Available at: <https://www.monlife.co.uk/wp-content/uploads/2021/08/Greater-Gwent-State-of-Nature-4-002.pdf>. Accessed: June 2023

¹⁴ As defined within the NPPF (2023) "*Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.*"

2.3 Planning Policy Review

- 2.3.1. A review of national and local planning policy relevant to the Proposed Scheme was undertaken as part of the data gathering. The following policy documents were subject to review:
- Welsh Government, (2024). Planning Policy Wales, Edition 12;
 - Newport City Council, (2015). Newport Local Development Plan 2011 – 2026¹⁵; and
 - Newport City Council. The Newport Local Biodiversity Action Plan.
- 2.3.2. A summary of relevant planning policy and responses from consultees is provided in Appendix B. As not enough land was available within or adjacent to the Development Site to provide adequate ecological compensation, an off-site compensation site was required. Appendix B and the Dormouse Conservation Strategy¹⁶ evidence how having exhausted all efforts to identify connected sites, the search area was widened to include unconnected sites in the local area. Given the consultation responses, land available for compensation, and ecological baseline survey results of two potential sites, the Compensation Site put forward in this EcIA is the best and only option available.

2.4 Ecological Field Surveys

- 2.4.1. The geographical area for undertaking ecological field surveys has been determined using professional judgement, and the project ZoI, which have been determined based on the nature of the impacts arising from the Proposed Scheme.

Surveyor Competencies

- 2.4.2. All the surveys were led by surveyors who have been assessed¹⁷ to be at least of capable experience following the CIEEM competency framework¹⁸.

Preliminary Ecological Walkover Survey

- 2.4.3. An ecological walkover survey of areas within and adjacent to the Development Site, including land up to 50 m from the Development Site boundary where access was allowed (hereafter referred to as the Development Site Survey Area), was undertaken in June 2023 by surveyors with Field Identification Skills Certificate (FISC) level 4. The Compensation Site, including land up to 50 m from the Compensation Site boundary where access allowed (hereafter referred to as the Compensation Site Survey Area), was subject to an ecological walkover survey in April 2024.
- 2.4.4. Habitats within the Development Site and Compensation Site Survey were mapped, and the walkover surveys also included a search for evidence of the presence of, and the potential of each habitat to support, priority and protected species as recommended by CIEEM¹⁹.

¹⁵ Available here: <https://www.newport.gov.uk/documents/Planning-Documents/LDP-2011-2026/deposit%20plan%20text.pdf> [Accessed June 2024]

¹⁶ AtkinsRéalis, (2024). Hazel Dormouse Conservation Strategy. Vantage Substation and Buried Cables. 5222535-ATK-XX-XX-RP-E-0001

¹⁷ Assessment undertaken by AtkinsRéalis' ecological technical leadership team in accordance with CIEEM competency criteria.

¹⁸ CIEEM's Competency Framework. Available at: <https://www.cieem.net/competency-framework> [Accessed June 2023].

¹⁹ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

UKHab Survey

- 2.4.5. Habitats were mapped using the UK Habitat Classification (UKHab) v2.0 system²⁰. UKHab is a comprehensive and hierarchical habitat classification system for the UK that has been developed to benefit from recent changes in habitat categorisation, recording and analysis, and is suitable for digitally recording in the field using GIS. It is fully compatible with other major existing classifications, including priority habitat types and Habitats Directive Annex I habitat types²¹.
- 2.4.6. All habitats were recorded to at least Level 4 of the UKHab hierarchy, any Level 5 habitats have also been recorded, where possible. In addition, mandatory secondary codes have been recorded (up to secondary code number 49). All habitat features have been digitally mapped, using QGIS, as either polygons, lines or points and assigned to a UKHab Primary Habitat Code.
- 2.4.7. An assessment of the possible presence of priority habitats (as defined by CIEEM⁵) was also undertaken during the walkover survey.
- 2.4.8. Vascular plant names recorded during this survey follow Stace²².
- 2.4.9. Target notes (TNs) were used to record specific details on the plant species composition of the habitats, current management, and quality. TNs were also used to record features of ecological importance (e.g. ponds, veteran trees, and complex habitat mosaics).

Protected and Priority Species Walkover

- 2.4.10. In addition to mapping the habitats within the Development Site and Compensation Site Survey Area, the survey also included an assessment of the possible presence of protected or priority species. This included recording any incidental sightings or field signs from such species. The survey comprised assessing the suitability of the habitats present for, and recording any evidence of the following species (in line with current guidance):
- Amphibians (terrestrial and aquatic habitats);
 - Badgers²³;
 - Bats²⁴;
 - Breeding and non-breeding (wintering and passage) birds²⁵;
 - Hazel dormice²⁶;
 - Otters^{27,28};
 - Priority invertebrates^{29,30};

²⁰ UKHab Ltd (2023). *UK Habitat Classification Version 2.0* (at <https://ukhab.org>) [Accessed: August 2023].

²¹ Council Directive 92/43/EEC (1992) on the conservation of natural habitats and of wild fauna and flora (known as the 'Habitats Directive').

²² Stace (2019) *New Flora of the British Isles* 4th edition.

²³ Harris S., Cresswell P. and Jefferies D. (1989) *Surveying badgers*. Mammal Society – No9.

²⁴ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

²⁵ Bird Survey & Assessment Steering Group. (2023). *Bird Survey Guidelines for assessing ecological impacts, v.1.1.1*. Available at: <https://birdsurguidelines.org> [Accessed: June 2023].

²⁶ English Nature (2006). *The Dormouse Conservation Handbook* (2nd edition).

²⁷ Chanin and Smith (2003). *Monitoring the otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. Peterborough, English Nature.

²⁸ Liles G. (2003). *Otter Breeding Sites. Conservation and Management*. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.

²⁹ Buglife, Good planning practice for invertebrates: Surveys. Available at: <https://www.buglife.org.uk/resources/planning-hub/good-practice-planning-for-invertebrates/> [Accessed: June 2023]

³⁰ English Nature, Organising surveys to determine site quality for invertebrates. Available at: <https://publications.naturalengland.org.uk/publication/69045> [Accessed: June 2023].



- Priority plants³¹ and fungi³²;
- Reptiles³³; and
- Water voles³⁴.

2.4.11. Evidence of the presence of invasive species was recorded where seen, including but not limited to the following:

- Evidence of animal species as listed on the Invasive Alien Species (Enforcement and Permitting) Order 2019; muntjac deer and grey squirrel;
- Evidence of the presence of the following invasive non-native plant species (INNPS): Japanese knotweed, giant knotweed, hybrid knotweed³⁵, giant hogweed, Himalayan balsam, rhododendron³⁶, New Zealand pigmy weed, Virginia creeper³⁷, variegated yellow archangel, cotoneaster species³⁸, yellow azalea, few-flowered leak, montbretia, giant rhubarb, Japanese rose, and three-cornered garlic. These are listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and subject to strict legal control.

Further Ecological Surveys

2.4.12. Extensive ecological surveys have been undertaken within and surrounding the Development Site in 2021, 2022, and 2023, to support the adjacent Welsh Government NGED Substation scheme. As the Proposed Scheme is a joint venture between Welsh Government and Vantage Data Centers, Welsh Government agreed to share their Phase 2 survey data and reports with Vantage Data Centers to avoid duplicating survey effort. Details of the Phase 2 ecological surveys undertaken to support this EcIA, are detailed in Table 2-2 below. Full survey reports with detailed methods are provided in Appendix C, and include surveys for habitats and species as follows:

- National Vegetation Community (NVC)(C.1, C.2)^{39, 40};
- Bats – activity and preliminary roost assessment of buildings and trees (C.3)⁴¹;
- Hazel dormouse (C.4)⁴²;
- Otter and water vole(C.5, C.6)^{43,44};
- Badger (C.7)⁴⁵;

³¹ Chapter 15 of Hill, D.A. ed., 2005. Handbook of biodiversity methods: survey, evaluation and monitoring. Cambridge University Press.

³² At the present time there is no current survey guidance for fungi. However, the SSSI selection guidelines for non-licensed fungi provide some survey methodologies for some groups. Available at: <https://hub.incc.gov.uk/assets/d1fcb171-8086-4f5b-ade5-a34c5edc78c5>. [June 2023].

³³ Froglife (1999) *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife advice sheet 10.

³⁴ Dean, M. et al (2016) *The Water Vole Mitigation Handbook*. Mammal Society.

³⁵ Hybrid knotweed species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) include *Fallopia japonica* x *Fallopia sachalinensis*

³⁶ Although there are approximately 1,200 species of rhododendron, just one species and one of its hybrids are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended): *Rhododendron ponticum* and *Rhododendron ponticum* x *Rhododendron maximum*.

³⁷ Virginia creeper species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) include *Parthenocissus quinquefolia* and *Parthenocissus inserta*

³⁸ There are approximately 100 species of cotoneaster found in the UK, but only five are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended): *Cotoneaster horizontalis*, *Cotoneaster integrifolius*, *Cotoneaster simonsii*, *Cotoneaster bullatus* and *Cotoneaster microphyllus*.

³⁹ Sturgess Ecology, (2021). Celtic Lakes, Newport – Vegetation surveys. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁰ Ecus, (2023). Celtic Lakes – National Vegetation Classification Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴¹ Arup, (2023). Celtic Lakes, Newport – Bat Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴² Arup, (2023). Celtic Lakes, Newport – Dormouse Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴³ Arup, (2023). Celtic Lakes, Newport – Riparian Mammals Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁴ Ecus, (2023). Celtic Lakes – Otter and Water Vole Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁵ Arup, (2023). Celtic Lakes, Newport – Badger Survey Report. Prepared for Welsh Government (app. ref. 23/0878)



- Breeding birds (C.8)⁴⁶;
- Wintering birds (C.9)⁴⁷;
- Great crested newt (C.10)⁴⁸;
- Reptiles (C.11)⁴⁹; and
- Invertebrates(C.12, C.13)^{50, 51}.

- 2.4.13. In January 2024 AtkinsRéalis undertook a survey to validate that the habitats within and adjacent to the Development Site had not changed, check for evidence of mobile species such as badger within 50 m of the Site, and check for evidence of otter within 250 m of the Site including around three waterbodies.
- 2.4.14. In April 2023 five waterbodies within 500 m of Development Site were surveyed by Ramboll to inform a different scheme of the client. These survey results have been used within this EcIA.
- 2.4.15. In July 2024 hazel dormouse footprint tunnels surveys were deployed in suitable hazel dormouse habitat within and adjacent to the Compensation Site to gather recent evidence that hazel dormouse are present and that the proposed compensation measures would benefit them. These surveys are ongoing until October 2024.
- 2.4.16. Further ecological surveys have not been undertaken on the Compensation Site given the results of the ecological walkover survey and scope of works.

⁴⁶ Ecus, (2023). Celtic Lakes – Breeding Bird Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁷ Arup, (2023). Celtic Lakes, Newport – Wintering Bird Survey Report 2021/ 2022. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁸ Ecus, (2023). Celtic Lakes – Great Crested Newt Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁴⁹ Ecus, (2023). Celtic Lakes – Reptile Survey Report. Prepared for Welsh Government (app. ref. 23/0878)

⁵⁰ Boyce, D., (2021). Celtic Lakes, Newport – Summary of Invertebrates Survey Results. Prepared for Welsh Government, 2021 (app. ref. 23/0878)

⁵¹ Ecus, (2023). Celtic Lakes – Invertebrate Survey Report. Prepared for Welsh Government (app. ref. 23/0878)



Table 2-2 - Further Ecological Surveys

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
Bat activity surveys	250 m	August to October 2021	Transect survey walking along a pre-determined, single route around the eastern half of the Welsh Government Celtic Springs site to record bat activity, in accordance with Good Practice Survey Guidelines⁵². The static detectors were deployed in three locations across the Welsh Government Celtic Springs site. Static data was analysed by experienced bat ecologists using AnalookW software, whilst the transect data was analysed using BatExplorer.	Three static detectors were deployed due to the high suitability of habitats onsite for bats. Due to a delayed project start, the beginning of the bat activity season was missed, with transects and static monitoring commencing in August. Despite this, the data obtained provides a good indication of bat activity and distribution as well as identifying key foraging and commuting habitats within the site. Transect surveys are only a snapshot in time as the ecologist is only able to survey one location at a time which could result in activity missed elsewhere on site. The static at Location 1 only collected data during October, late in the bat activity season. This was a consequence of the equipment failure, as the static failed to record in August and September. Therefore, this data is to be understood in conjunction with transect survey data at stopping point 2 and compared to static detector data in Location 2 and Location 3. The statics at Location 2 and 3 are	Arup

⁵² Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
				considered to be within habitats of better suitability for foraging and commuting bats than the habitats within the Development Site and of static Location 1. Therefore, a precautionary approach has been taken, and the bat species assemblage and bat activity across all three statics is considered to represent the species assemblage and activity within the Development Site. As a result of issues with the static detectors, the number of monitoring nights between August and October, ranged from three to five nights at the different locations, rather than five consecutive nights as recommended in survey guidance. The mean number of bat records has been calculated which takes into consideration the number of monitoring nights. These limitations are not considered to compromise the objectives of the surveys detailed within this report.	
Bat Preliminary Roost Assessment (PRA) of buildings and trees	250 m	March 2023	Detailed external inspection of all trees and structures within the eastern half of the Welsh Government Celtic Springs site to determine the actual or potential presence of bats. The assessment was carried in accordance with the 3 rd edition of the Good Practice Survey Guidelines ⁵² (as the survey took place priory to the release of the most recent guidelines).	Due to dense scrub, some trees within the Site could not be fully assessed for potential roost features (PRFs). Therefore, some unidentified PRFs could be present, but given the age of the trees (less than 20 years old) this is considered unlikely and not a significant limitation.	Arup



Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
Botanical surveys	500 m	September 2021	National Vegetation Community (NVC) survey of habitats within Welsh government Celtic Springs site. The survey focused on the grassland, reën, and ponds habitats, 86 quadrats were recorded with the data analysed to determine NVC communities and sub-communities.	Dense vegetation in some locations made it inaccessible to enter, and thus surveys were undertaken from margins. Such scrub communities were not the focus of surveys as they were considered to hold less botanical significance than the grassland areas.	Arup (contracted to Sturgess Ecology)
		June to August 2023	NVC survey of habitats within Welsh government Celtic Springs site. Data collected was analysed using Modular Analysis of Vegetation Information System (MAVIS).	Many of the habitats were transitional making them difficult to categorise. This is not a significant limitation as the use of the Rodwell books (Rodwell, 2008 ^{53, 54, 55, 56}) by experienced habitat ecologists was used to verify MAVIS outputs for all habitat types.	Ecus
Hazel dormouse	500 m	July to November 2021	Hazel dormouse nest tube and nest box surveys were undertaken using the methodology described in the Dormouse Conservation Handbook ⁵⁷ . A total of 144 artificial nest tubes and 25 nest boxes were placed in woodland and scrub within and adjacent to Welsh Government Celtic Springs site.	No significant limitations of note.	Arup
	Compensation Site plus 200 m	July to October	Hazel dormouse footprint tunnel surveys were undertaken following best practice guidance ⁵⁸ . A total of 50 artificial tunnels with paper and ink	During the first survey check four wooden inserts were found on the ground, and during the second survey check six were	AtkinsRéalis

⁵³ Rodwell, J. S. (ed.) (2008) British Plant Communities, Volume 1: Woodland and scrub communities. Cambridge University Press, Cambridge.

⁵⁴ Rodwell, J. S. (ed.) (2008) British Plant Communities, Volume 3: Grasslands and montane communities. Cambridge University Press, Cambridge.

⁵⁵ Rodwell, J. S. (ed.) (2008) British Plant Communities, Volume 4: Aquatic communities swamps and tall-herb fens. Cambridge University Press, Cambridge

⁵⁶ Rodwell, J.S. (ed.) (2000). British Plant Communities, Volume 5: Maritime communities and vegetation of open habitats. Cambridge University Press, Cambridge.

⁵⁷ Bright, P. W., Morris, P.A. & Mitchell-Jones, T. (2006). The Dormouse Conservation Handbook. 2nd Edition. Natural England, Peterborough.

⁵⁸ Bullion, S. & Looser, A. (2019). Guidance for using Hazel Dormouse Footprint Tunnels. Suffolk Wildlife Trust and People's Trust for Endangered Species.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
		2024 (ongoing)	were deployed in woodland, scrub and hedgerows within and connected to the Compensation Site. The footprint tunnels were inspected and re-inked every two weeks by a suitably qualified ecologist. At the time of writing only two survey checks have been undertaken, with surveys continuing until October 2024. Further details on the survey methodology undertaken by AtkinsRéalis is provided in Appendix D.	found on the ground, likely pulled out by cows. However, as this averages at only 10% of footprint tunnels not being functional and hazel dormouse presence has been confirmed, this is not considered to be a significant limitation.	
Otter and water vole	250 m	September 2021	The otter/ water vole field surveys involved surveying all waterbodies within 250 m of the Development Site. Due to the cross-over in habitat requirements and survey methodology both species were surveyed for at the same time.	Dense vegetation meant not all of banks of waterbodies were accessible, however they could often still be viewed from a distance to assess the habitat suitability and it is considered that enough of each waterbody's banks was accessible for this not to be a significant limitation. The survey undertaken by Arup in 2021 mistakenly identified a possible otter footprint within 250 m of the Development Site. Having assessed the photographic evidence this has been ruled out as an otter footprint. The surveys undertaken in 2021 and 2023 did not survey the waterbody	Arup
		May to June 2023	The water vole survey was completed in accordance with the standard survey guidelines ⁵⁹ .		Ecus
		January 2024	⁶⁰ . The survey comprised walking the ditch and waterbody banks to search for signs of water vole presence, including but not limited to burrows, latrines, footprints, feeding remains and sightings of animals. The otter survey was conducted in line with relevant survey guidance ⁶¹ . This involved walking ditch and waterbody banks to search for evidence of otter presence such as resting		AtkinsRéalis

⁵⁹ Strachan R, Moorhouse T and Gelling, M. (2011). Water Vole Conservation Handbook, Third Edition, Wild Cru.

⁶⁰ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). The Mammal Society.

⁶¹ Chanin, P. (2003). Monitoring the Otter Lutra. Conserving Natura 2000 Rivers Monitoring Series No. 10. English Nature. Peterborough.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
			places, spraints, food remains, prints, slides and holts. Further details on the survey methodology undertaken by AtkinsRéalis is provided in Appendix D.	approximately 25 m east of the Development Site. However, this and all other waterbodies within the Development Site were surveyed by AtkinsRéalis in 2024.	
Badger	250 m	March 2023	The badger surveys were undertaken searching for signs of badger activity such as sett holes, footprints, latrines, hairs, and paths, in accordance with the standard methodology ⁶² . Further details on the survey methodology undertaken by AtkinsRéalis is provided in Appendix D.	Large areas of the Study Area were inaccessible due to dense scrub which prevented more detailed inspection of the central area. Therefore, badger setts may have been present within the dense scrub but have been masked by this dense cover. Despite this, there were no observable pathways into scrub, or latrines seen in open areas. The absence of badger signs should not be taken as conclusive proof that the species is not present or that it will not be present in the future, since they are a mobile species that could move into the site over a short period of time. To mitigate this risk the Study Area was resurveyed by AtkinsRéalis in 2024.	Arup
		January 2024			AtkinsRéalis
Breeding birds	250 m (Breeding Bird Survey Area)	April to June 2023	A breeding bird survey was undertaken in accordance with methods detailed in the Bird Survey Guidelines for assessing ecological impacts (Bird Survey & Assessment Steering	Dense vegetation limited access to some areas of the Study Area, however this is not considered to be a significant limitation, as they could be surveyed from a distance	Ecus

⁶² Harris, S. Cresswell, P and Jefferies, D. (1989) Surveying Badgers. The Mammal Society Publication No. 9. Mammal Society.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
			Group, 2023⁶³). A total of six surveys were undertaken in the morning , with one undertaken in the evening, as recommended. A survey transect was walked at a slow, ambling pace around the entirety of the Survey Area. .The standard BTO activity codes were used to note species, sex and age where possible, and to record activity such as singing, nest-building or carrying food. During the survey the surveyor scanned the surrounding area with binoculars and listened for bird song or repeated territorial calls, paying particular attention to behaviours including territorial aggression, displaying, adults carrying food or nesting material, juvenile birds and/or family groups.	using binoculars and listening to bird songs and calls.	
Wintering birds	500 m (Wintering Bird Survey Area)	November 2021 to January 2022	The survey methods were derived from current best practice as described in Bird Census Techniques ⁶⁴ and Bird Monitoring Methods ⁶⁵ . A single survey visit was undertaken monthly walking a predefined transect across the Study Area. The transect route was devised to encompass a range of representative habitats within the Study Area which had the potential to support wintering birds.	An absence of survey information from late autumn/early winter and spring will omit the movement of passage birds, however an appraisal of the site's habitats concluded that the study area was unlikely to support larger assemblages of wintering and passage birds, particularly those associated with the Severn Estuary SPA and Ramsar site.	Arup

⁶³ Bird Survey & Assessment Steering Group. (2023). Bird Survey Guidelines for assessing ecological impacts, v.1.1.0. Available at: <https://birdsurveyguidelines.org> [Accessed July 2023].

⁶⁴ Bibby, B.B., 2000. Bird Census Techniques. London: Academic Press.

⁶⁵ Gilbert, G.G., Gibbons, D.W. and Evans, J.,1998. Bird Monitoring Methods: A manual of techniques. Bedfordshire, RSPB.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
Great crested newt	250 m (Great Crested Newt Survey Area)	April to June 2023	Presence/ likely absence surveys were undertaken of four waterbodies within the 250 m of the Development Site in accordance with the Great Crested Newt Mitigation Guidelines ⁶⁶ . Two waterbodies were subject to bottle trap, torch, and egg search surveys, whilst two waterbodies were subject to environmental DNA (eDNA) and torch surveys.	Visibility for torching surveys was at times limited by factors such as floating vegetation, algal growth, and leaf litter. This was generally mitigated through bottle trapping and egg searching surveys. Waterbodies 7 and 8 had limited vegetation to be able to undertake egg searching surveys, but this limitation was mitigated through the deployment of artificial egg strips. Waterbodies 6 and 9 could not be surveyed (bottle trapping or egg searching) due to lack of accessibility and issues with health and safety. These waterbodies were subject to eDNA) survey and torching. Waterbody 9 had high vegetation which shielded the ability for torching surveys. Surveyor height also reduced light penetration which was a limitation in survey efforts 3 and 4 where vegetation had grown and limited visibility to <50%. eDNA was subsequently used to gain necessary data. Accessibility to 100% of waterbodies was sometimes limited, and only a percentage of some could be surveyed.	Ecus

⁶⁶ English Nature. (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
				Waterbodies 9 and 10 are part of an extensive network of drainage ditches (known locally as reens) which are characteristic of the Gwent Levels. Waterbody 9 was considered to be the most suitable for great crested newts and was the only reen surveyed. Other reens may be present within 500 m of the Development Site, however given the distance, no evidence was found in waterbody 9, other reens were less suitable, and fish are known to be present within the Gwent Levels reens, this is not considered to be a significant limitation.	
	500 m	April 2023	Presence/ likely absence surveys were undertaken of five waterbodies within the 500 m of the Development Site in accordance with the Great Crested Newt Mitigation Guidelines ⁶⁶ . All waterbodies were subject to eDNA surveys and HSI assessments ⁶⁷ .	No report has been produced to date, instead the results were shared with AtkinsRéalis by email. Therefore, it is assumed that the surveys have been undertaken following the standard methodologies detailed in Appendix D in accordance with good practice guidance and CIEEM competencies for undertaking great crested newt surveys ⁶⁸ .	Ramboll
Reptiles	250 m	March to June 2023	Presence/ likely absence surveys were undertaken of the eastern half of the Welsh Government Celtic Springs site plus land to the	Vegetation clearance was undertaken adjacent to some of the mats, making the habitat less suitable for reptiles, whilst	Ecus

⁶⁷ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000) *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)* Herpetological Journal 10 (4), 143-155 (2000).

⁶⁸ CIEEM (2013) Competencies for Species Survey: Great Crested Newt. Chartered Institute of Ecology and Environmental Management, Winchester.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
	(Reptile Survey Area)		south in accordance with Froglife survey guidelines⁶⁹. Eight surveys were undertaken and involved the placement of a total of 168 refugia of roofing felt (mats) or corrugated metal (tins) within the Study Area. The surveys involved manual searching of the created and existing refugia, as well as searches for reptile signs such as egg laying areas and burrows.	some mats in the land to the south of the Welsh Government Celtic Springs site were stolen or vandalised. A further 30 mats were deployed in May 2023 and left to bed in for two weeks to replace tins that had been removed by members of the public or destroyed. Artificial refugia tins were replaced with felt mats to prevent further thefts.	
Invertebrates	500 m (Invertebrate Survey Area)	July to August 2021	Bumblebee surveys using a standardised methodology was undertaken, timed. The to coincide with the peak flight period for shrill carder (<i>Bombus sylvarum</i>) and brown-banded carder (<i>B. humilis</i>) bumblebee workers. The site was divided into 16 survey units. These boundaries largely corresponded to the fields and/or main habitat types. Only those survey units with a significant resource of flower-rich grassland were surveyed. Survey units dominated by rank species poor grassland, scrub and woodland were not surveyed, as these were very unlikely to have significant populations of the two important carder bumblebees. The survey focused on recording foraging workers at favoured nectar and pollen sources. A 'W-walk' was carried out	It is impractical to survey all of the invertebrates of any given site due to the huge numbers of species which might potentially occur, and the taxonomic and identification difficulties presented by many groups. Sampling and identification effort is therefore more realistically and profitably directed towards groups which are taxonomically tractable and sufficiently well-known to allow meaningful comparisons between sites, and/or where important indicators of site value have been identified (Brooks 1993). In this case material was sampled from a wide range of insect and other invertebrate Orders but representation from certain large and common yet taxonomically challenging	Arup (contracted to DC Boyce)

⁶⁹ Froglife. (1999). Froglife Advice Sheet 10.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
			across each survey unit with significant areas of flower-rich grassland. The aim was to come within approximately 10 metres of all stands of flower-rich grassland and hedge and ditch margin where there were stands of potential nectar/pollen sources.	groups was ignored for reasons of time and resources. The latter included groups such as <i>Phoridae</i> and <i>Chironomidae</i> (<i>Diptera</i>), parasitic <i>Hymenoptera</i> , aphid <i>Homoptera</i> , <i>Staphylinoid Coleoptera</i> and <i>Collembola</i> , for example.	
		July to September 2023	Aquatic and terrestrial invertebrates were sampled as far as possible in accordance with the guidelines provided by Drake et al (2007)⁷⁰ and also took into account the specific guidance provided in respect of the Gwent Levels SSSIs (CCW 1996⁷¹; 2004⁷²). Terrestrial invertebrates were sampled primarily by means of sweep-netting ('sweeping'), using lightweight short-handled sweep-nets of 45 cm diameter, 1 mm mesh, in sessions of about 25-30 mins each in representative examples of all accessible habitats. In areas of thorny or woody vegetation a heavy canvas 'beetling' sweep-net was used. In addition, one session of mothtrapping¹ was carried out in the ESA using a battery operated 16W fluorescent tube in a portable Heath pattern trap. Aquatic invertebrates were sampled by means of 'pond-dipping' from the bank. Dipping was	The surveys were hampered by long periods of wet weather and unseasonably cold (3-5°C) overnight conditions during much of July and August. Physical access into many parts of the Site, including several of the identified ponds and reens, was not possible due to the dense surrounding growth of bramble and other thorny shrubs. Moth-trapping opportunities were limited by the poor night-time security of the site, with consequent risk of theft or damage to equipment.	Ecus (contracted to David Clements)

⁷⁰ Drake, C M, Lott, D A, Alexander, K N A & Webb, J (2007) Surveying terrestrial and freshwater invertebrates for conservation evaluation. Natural England Research Report No. BERR005. Natural England, Sheffield.

⁷¹ Countryside Council for Wales (CCW 1996) General guidance: Monitoring of Physical Developments within the Gwent Levels Site of Special Scientific Interest (SSSI). Interim Guidance Note 1.

⁷² Countryside Council for Wales (CCW 2004) Invertebrate Monitoring on the Gwent Levels Sites of Special Scientific Interest. Interim Guidance Note 3, Updated June 2004.

Survey type	Study Area - distance from the Proposed Scheme	Dates of survey	Summary of method	Summary of constraints/ limitations relevant to the Proposed Scheme	Surveyors
			undertaken using a long-handled 25 cm square profile pond-net (NHBS Pro pattern) fitted with a 1mm mesh bag and comprised about 30 secs of dipping at approximately 10 m intervals along the accessible banks of waterbodies (on one side only of reens).		

2.4.17. Further surveys have not been undertaken for any other species based on the results of the ecological walkover survey and scope of works.



Survey Limitations

- 2.4.18. This section identifies any limitations to the surveys or assessment and provides an explanation as to the effect of these on the assessment.
- 2.4.19. Species survey specific limitation are outlined in Table 2-2 above, with more detailed provided within each of the separate survey reports produced by Arup and ECUS (attached as C.1 through to C.13.).
- 2.4.20. During the ecological walkover survey in 2023 some areas of the Development Site were inaccessible due to the mixed scrub being very dense. This is not considered to be a significant limitation as the habitat could still be classified as mixed scrub, the trees present are less than 20 years old so are unlikely to support potential roost features (PRFs), and no mammal pathways were observed entering the scrub. Moreover, 0.12 ha of the Development Site Survey Area was not surveyed due to no access, however this is not considered to be a significant limitation as it is not within the Development Site, is located with the cable section of Development Site and from aerial imagery appears to be of urban land use.
- 2.4.21. During the ecological walkover of the Compensation Site in 2024 some areas were inaccessible within the 50 m buffer due to being third party land. This is not considered to be a significant limitation as habitats within the Compensation Site will not be subject to development, only ecological enhancement measures such as planting and land management.
- 2.4.22. The hazel dormouse and bat activity surveys were undertaken three years ago in 2021. The ecological walkover survey in June 2023 and survey in January 2024 confirmed that the habitats within the Development Site Survey Area had not changed since the hazel dormouse and bat activity surveys were undertaken in 2021. This is in line with CIEEM guidance⁷³, and therefore the date of these surveys is not considered to be a significant limitation.
- 2.4.23. The search for waterbodies within 500 m of the Development Site was undertaken by using Ordnance Survey plans and aerial photographs only. These sources may not show all waterbodies within 500 m of the Development Site boundary and, therefore, some waterbodies may not have been identified.
- 2.4.24. The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The UKHab extended walkover survey checked for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, Himalayan balsam, rhododendron, New Zealand pigmy weed, Virginia creeper, variegated yellow archangel, cotoneaster, yellow azalea, few-flowered leak, montbretia, giant rhubarb, Japanese rose, and three-cornered garlic. Other invasive species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) may not have been recorded.
- 2.4.25. The desk study reviewed the Woodland Trust's Ancient Trees Inventory. This provides records of ancient/veteran trees, but is not an exhaustive list, and other ancient/veteran trees may be present in the area. The preliminary ecological walkover survey aimed to identify such features and as such this is not considered a constraint.
- 2.4.26. A separate desk study with the Compensation Site as the centre point was not undertaken. However, given the search area for the desk study included the Compensation Site and the scope of works within the Compensation Site, this is not considered to be a significant limitation.

⁷³ CIEEM, (2019). Advice Note on the Lifespan of Ecological Reports and Surveys

- 2.4.27. During the ecological walkover survey of the Compensation Site species abundance was not recorded for the habitats. This is not considered to be a significant limitation, as dominant species were noted.
- 2.4.28. SEWBREC records are not exhaustive, and the absence of records does not necessarily demonstrate the absence of a species.
- 2.4.29. Many cryptic taxa particularly including apomictic species of plant, invertebrates, and fungi, could not be adequately surveyed at the time of the survey. These groups require specialist survey and survey windows are generally highly restrictive, particularly for plants across the genera *Taraxacum*, *Rubus* and *Hieracium*. However, given the value of the habitats present within the Application Site and surrounding landscape, this is not considered to be a significant limitation.
- 2.4.30. Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the ecological surveys undertaken to support this EcIA have not produced a complete list of plants and animals, and the absence of evidence of any particular species should not be taken as conclusive proof that the species is not present or that it will not be present in the future. The above limitation(s) has/have been addressed through taking the precautionary approach within the appraisal.

2.5 Identifying Important Ecological Features

- 2.5.1. A number of criteria have become accepted as a means of assessing the nature conservation importance of a feature which are set out in A Nature Conservation Review⁷⁴ and the CIEEM Guidelines for EcIA⁴ and include diversity, rarity, and naturalness.
- 2.5.2. The nature conservation importance or potential importance of an ecological feature is determined within the following geographic context:
- International;
 - National;
 - Regional;
 - County;
 - Local;
 - The Application Site and its immediate environs; and
 - Negligible.
- 2.5.3. A number of resources have been used to determine importance and these are referenced, where relevant, within the baseline results.
- 2.5.4. This EcIA has undertaken a detailed assessment of ecological features considered to be 'important' (Important Ecological Features (IEF)). The baseline information and nature conservation evaluation have been used to identify IEFs. IEFs are sites, habitats, species, ecosystems and/or their functions/processes considered to be important and potentially affected by the project.

⁷⁴ Frazer J.F.D. (1977). A Nature Conservation Review, Edited by D. A. Ratcliffe. Cambridge University Press, Cambridge, England (on behalf of the Nature Conservancy Council and the Natural Environment Research Council): Vol. 1 s.

- 2.5.5. Features that have been identified to be of less than Local importance or features outside the Project ZOI are not considered to be IEF and have not been considered within the impact assessment. Where mitigation is required for these features for legal reasons, this is detailed in Section 5.

2.6 Impact Assessment

- 2.6.1. The assessment of the potential effects of the Proposed Scheme takes into account both on-site impacts and impacts that may occur to adjacent and/or more distant ecological features.
- 2.6.2. Where impacts have been identified, details are provided within the assessment to characterise these in terms of their extent and magnitude, duration, frequency and timing, and reversibility. Both positive and negative impacts are discussed. Impacts were also characterised in terms of how they occur, i.e. direct, indirect secondary or cumulative. Impacts can be permanent or temporary and can include:
- Direct loss and degradation of wildlife habitats;
 - Fragmentation and isolation of habitats;
 - Mortality and injury to species;
 - Disturbance to species from noise, light or other visual stimuli;
 - Changes to key habitat features; and
 - Changes to the local hydrology, water quality and/or air quality.
- 2.6.3. For designated sites for nature conservation, effects are considered significant when a Proposed Scheme and associated activities is likely to either undermine or support the conservation objectives or condition of the site(s) and its features of interest.
- 2.6.4. For habitats, effects are considered significant when a Proposed Scheme and associated activities is likely to result in a change in habitat structure and function.
- 2.6.5. Consideration is given to whether:
- Any processes or key characteristics will be removed or changed;
 - There will be an effect on the nature, extent, structure and function of component habitats;
 - There is an effect on the average population size and viability of component species; and
 - Functions and processes acting outside the formal boundary of a designated site have also been considered, particularly where a site falls within a wider ecosystem e.g. wetland sites.
- 2.6.6. Some habitats can tolerate a degree of minor changes, such as localised or temporary disturbance or changes in physical conditions, without such changes harming their function or importance. For this EcIA, ecological effects have been considered in the light of any information available about the capacity of habitat to accommodate change. Significant effects have been determined as being either negative or positive.
- 2.6.7. The conservation importance of undesignated habitats and species within a defined geographical area (International to Local) has been used in this assessment to determine whether the effects of the proposals are likely to be significant:
- For habitats, conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and its typical species within a given geographical area; and,

- For species, conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area.

- 2.6.8. When assessing potential effects on nature conservation importance, the known or likely background trends and variations in status have been taken into account. The level of ecological resilience or likely level of ecological conditions, that would allow the population of a species or area of habitat to continue to exist at a given level or continue to increase along an existing trend or reduce a decreasing trend, has been estimated where appropriate to do so.
- 2.6.9. The avoidance, mitigation, compensation and/or enhancement measures described within the EcIA have been incorporated into the design and operational phasing programme and taken into account in the assessment of the significance of effects. These mitigation measures include those required to achieve the minimum standard of established good practice together with additional measures to further reduce any negative impacts of the Proposed Scheme. The mitigation measures include those required to reduce or avoid the risk of committing legal offences.
- 2.6.10. If the design changes or the agreed mitigation cannot be implemented, the effects will need to be reassessed and further surveys may be required. In this event, the conclusion of this EcIA may no longer be valid.
- 2.6.11. In addition to measures required to ameliorate negative effects on IEFs, further biodiversity enhancement measures have been identified and will be incorporated into the Proposed Scheme as it is progressed.
- 2.6.12. The impact assessment has taken account of cumulative effects. In order to identify potential projects which could have a cumulative effect a review was undertaken of Newport City Council planning portal⁷⁵ for projects up to 500 m from the substation section of the Development Site. The cables section and Compensation Site were not included in the search area due to cables being located entirely underneath the existing road network and the nature of the proposed works within the Compensation Site.. This review identified the projects listed in Table 2-3.

Table 2-3 - Projects considered for cumulative effects

Project name	Summary of project	Distance from Proposed Scheme	Current status	Planning reference number	Suitable for cumulative assessment?
Welsh Government NGED Substation	Electricity substation compound (132/33/11kv), with associated infrastructure including access, landscaping, drainage and earthworks	Adjacent to the south of the Development Site	Granted with conditions	23/0878	Yes
CWL11 Extension Buried Cable	Provision of an underground electricity	Adjacent to the west of Development Site	Granted with conditions	23/0858	Yes

⁷⁵ Available here: <https://publicaccess.newport.gov.uk/online-applications/spatialDisplay.do?action=display&searchType=Application> Accessed: February 2024

Project name	Summary of project	Distance from Proposed Scheme	Current status	Planning reference number	Suitable for cumulative assessment?
	transmission circuit				
CWL01 & 02 Microsoft Ltd	Demolition of remainder of existing principal building and remaining structures and construction of new datacentre	Approximately 75 m west of the Development Site	Awaiting decision	24/0006	Yes
SPTS	Construction of a three-storey manufacturing and research and development facility	Approximately 25 m north of the Development Site	Under construction	21/0988	Yes
CWL13 Buried Cables	Provision of an underground electricity transmission circuit	Adjacent to the east of the Development Site	Construction completed	22/0368	No
Imperial Park IP5 Solar Array	Proposed installation of solar array on amenity grassland.	Approximately 330 m north-west of the Development Site	Granted with conditions	23/1083	Yes

2.7 Mitigation Hierarchy

- 2.7.1. The principles of the mitigation hierarchy⁴ have been adopted and used when considering impacts and subsequent effects on IEF within the ZoI.
- 2.7.2. The mitigation hierarchy consists of the following sequential steps:
- Avoidance: Seek options that avoid harm to ecological features (for example, by locating on an alternative site);
 - Mitigation: Negative effects should be avoided or minimised through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation; and
 - Compensation: Where there are significant residual negative ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.
- 2.7.3. Additionally, projects should seek to provide enhancements which are net benefits for biodiversity over and above the requirements for avoidance, mitigation or compensation.

2.8 Biodiversity and Ecosystem Resilience - Net Benefit for Biodiversity

- 2.8.1. A criterion has been developed by AtkinsRéalis to demonstrate how a scheme delivers a net benefit for diversity and resilience of ecosystems through use of the DECCA Framework
- 2.8.2. A Net Benefit for Biodiversity (NBB) is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long-term, measurable, and demonstrable benefit, primarily on or immediately adjacent to the site.
- 2.8.3. NBB whilst similar in concept to Biodiversity Net Gain (BNG), includes a distinct reference to ecosystem resilience and how the site relates to surrounding ecosystems and biodiversity. As such it encourages development proposals to proactively maintain and enhance biodiversity and ecosystems with a focus on avoidance, minimisation, and mitigation of impacts within the context of the site with offsite mitigation seen as a last resort.
- 2.8.4. The DECCA framework is a method for implementing net benefits, which is required through the Section 6 Duty⁷⁶, securing a net benefit for biodiversity, and building resilience through the planning system, including addressing all of the attributes of the DECCA framework set out within Planning Policy Wales edition 12, Chapter 6⁷⁷.
- 2.8.5. When assessing planning applications, Planning Policy Wales instructs planning authorities to take account of and promote the resilience of ecosystems, in particular the five attributes of ecosystem resilience: Diversity, Extent, Condition, Connectivity and Adaptation (DECCA). The attributes provide a framework for considering the state of ecosystem resilience in Wales and can be applied across different habitats and land uses and for a range of different scales.
- 2.8.6. All development must deliver a net benefit for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed). Even if the biodiversity value has been maintained, there must still be a proactive process to look for and secure enhancement through the design and implementation of the development. The DECCA Framework is a tool to ensure that this is delivered.
- 2.8.7. The proposed net benefit for biodiversity must be proportionate to the extent and impact of development, to contribute to a bigger, better, more joined up approach to a resilient and biodiverse ecological network in Wales.

⁷⁶ [Environment \(Wales\) Act 2016 Part 1 \(gov.wales\)](#)

⁷⁷ [Planning Policy Wales - Edition 12 \(gov.wales\)](#)

3. Baseline Conditions and Importance

3.1.1. This section provides a summary of the ecological baseline relevant to the Proposed Scheme recorded during the desk study and field surveys undertaken to inform this EcIA. Full details are provided in the survey reports in Appendix C. A summary of relevant ecological legislation in Wales is provided in Appendix E

3.1 Statutory and Non-statutory Designated Sites

3.1.1. Table 3-1 details the statutory and non-statutory designated sites for nature conservation identified through the desk study. These are shown on Figure F-1 and Figure F-2 on Appendix F.

Table 3-1 - Designated sites within 2 km of the Development Site

Site name	Designation	Location of designated site ⁷⁸	Features of interest ⁷⁹	Importance level
LG Duffryn Site 2	SINC	Within Development Site	Large area of neutral grassland adjacent to Gwent Levels.	County
LG Duffryn Site 1 (South Lake Drive)	SINC	Adjacent to the east of the Development Site	This site comprises a pond and Phragmites reedbed habitats which support Cetti's warbler which are listed on Schedule 1 of the Wildlife and Countryside Act 1981.	
Gwent Levels – St Brides	SSSI	Approximately 210 m south of the Development Site	The site supports many nationally rare or notable aquatic invertebrate species. The large number of hedgerows present within the Site add to the diversity of the Site together with the main reed banks, providing habitat for nationally important assemblages of invertebrates. The reeds in the St Brides area support a number of interesting plant species most notably thread-leaved water-crowfoot and small pondweed. Reed bank and green lane habitats in this area are also important for relict meadow plant species such as the regionally notable grass vetchling and common meadow-rue.	National
Celtic Springs	SINC	Approximately 220 m north of the Development Site	This Site comprises post-industrial mosaic habitat, neutral grassland and calcareous grassland.	County
Duffryn Pond	SINC	Approximately 640 m east of the Development Site	This site comprises a pond with emergent swamp vegetation, which supports a range of important invertebrates, plant, reptile, amphibian and mammal species.	
Afon Ebbw River	SINC	Approximately 1400 m north of	Species associated with this site include, bulbous foxtail, kingfisher, sand martin, grass snake.	

⁷⁸ Where designated sites are situated outside of the Application Site boundary, the distance and direction is given to the closest point that the designated site is from the Application Site.

⁷⁹ Including qualifying features of internationally designated sites and reasons for designation for SSSIs.

Site name	Designation	Location of designated site ⁷⁸	Features of interest ⁷⁹	Importance level
		the Development Site		
Gaer Fort	SINC	Approximately 1510 m north of the Development Site	A large mosaic area of unimproved neutral and semi-improved acid grassland with areas of lowland heath, bracken and scrub. Large population of anthills.	
Cwm Pensidan	SINC	Approximately 1530 m north-west of the Development Site	Ancient semi-natural woodland.	
Coed Ffynon-Oer	SINC	Approximately 1850 m north-west of the Development Site	Ancient semi-natural woodland.	
Court Wood	SINC	Approximately 1870 m north of the Development Site	Ancient semi-natural woodland.	

3.1.2. Due to distance and presence of physical barriers, such as the M4 motorway and built-up urban areas, and as the Proposed Scheme is small in extent and lack of hydrological connection, the following designated sites have been scoped out of further assessment: Celtic Springs SINC, Duffryn Pond SINC, Cwm Pensidan SINC, Gaer Fort SINC, Afon Ebbw River SINC, Coed Ffynon-Oer SINC, and Court Wood SINC.

3.2 Irreplaceable Habitats

- 3.2.1. The desk study identified five parcels of ancient woodland within 1 km of the Application, comprising one parcel of ancient semi-natural woodland and four parcels of restored ancient woodland. The closest parcel was of restored ancient woodland approximately 810 m north-east of the Development Site. Due to the relatively small-scale of the Proposed Scheme, distance, and physical barriers, such as roads and buildings between the Development Site and all of the parcels of ancient woodland listed above, ancient woodlands have been scoped out from further assessment.
- 3.2.2. The desk study identified 13 veteran trees and one ancient tree within 1 km of the Development Site, 13 of which were located within the Tredegar House grounds. The closest record was of a pedunculate oak veteran tree approximately 460 m east of the Development Site.
- 3.2.3. Due to the relatively small-scale of the Proposed Scheme, distance, and physical barriers, such as roads and buildings between the Development Site and all of the veteran and ancient trees listed above, veteran and ancient trees have been scoped out from further assessment.

3.3 Habitats

- 3.3.1. The Development Site is comprised of two sections; the substation section and buried cables section. The habitat of the buried cables section is developed land; sealed surface and other neutral grassland road

verges. From the substation one cable will be buried under South Lake Drive for approximately 170 m to connect with a joint bay, whilst another cable will be buried under North Lake Drive for approximately 820 m to connect with the CWL12 data centre substation. The surrounding habitats of the buried cables section of the Development Site are mixed scrub either side of the South Lake Drive arm, and the developed land of the Imperial Park industrial/ business park either side of the North Lake Drive arm.

- 3.3.2. The substation section is comprised of mixed scrub and other neutral grassland habitats. The scrub has developed and encroached onto the grassland over the past 25 years, with bramble dominating and a variety of woody shrubs and young trees present. The community was concluded as closest to NVC W24 *Rubus fruticosus* – *Holcus lanatus* underscrub community in 2021 and 2023. The grassland is dominated by Yorkshire fog, with field forget-me-not, nettle, and rough meadow grass all recorded as abundant during the ecological walkover survey. The community was concluded as closest to NVC MG9 *Holcus lanatus* – *Deschampsia cespitosa* grassland. The full results on the NVC surveys are available in C.1 National Vegetation Classification Survey Report 2021 and C.2 National Vegetation Classification Survey Report 2023, whilst a more detailed summary is provided H.4 Botanical results section in Appendix H.
- 3.3.3. The substation section of the Development Site is within the LG Duffryn Site 2 SINC, designated for its neutral grassland. When the results of the NVC surveys in 2021 and 2022 are combined, thresholds set out in SINC selection guidelines continue to be met, as there are eight species present indicative of unimproved neutral grasslands (common centaury, common sedge, grass vetchling, lesser bird's-foot trefoil, hoary ragwort, red clover, common knapweed, and common cats ear) and eight species present indicative of calcareous grassland (bee orchid, common centaury, grass vetchling, lesser bird's-foot trefoil, hoary ragwort, common knapweed, black medick, and yellow-wort). However, it should be noted that during the ecological walkover survey many of these indicator species were only recorded in the southern half of the SINC, outside the Development Site. The SINC grassland within the Development Site was less species-rich than the SINC grassland to the south.
- 3.3.4. The substation section of the Development Site is bounded by developed land; sealed surface to the north, east, and west, whilst the mixed scrub and other neutral grassland described above continues to the south. To the north of the substation section of the Development Site is the Imperial Park industrial/ business park, whilst to the south is a scrub/ grassland mosaic and the agricultural fields of the Gwent Levels – St Brides SSSI.
- 3.3.5. The habitats within the Compensation Site predominantly comprises a field of *Lolium-Cynosurus* neutral grassland. Bracken bounds the field along the northern, eastern, and southern boundaries and plantation ancient lowland mixed deciduous woodland also bounds the southern boundary. A plantation ancient wet woodland with a stream running through is located along the eastern boundary. Within the bracken along the northern boundary of the field there is a species-rich native hedgerow associated with a ditch, which has many gaps in it. Two stone walls and a species-rich native hedgerow are located on the western boundary of the field. The Compensation Site includes an access route over a modified grassland field, *Lolium-Cynosurus* neutral grassland field, and on an existing track running through the wet woodland.
- 3.3.6. Table 3-2 and Table 3-3 below list all of the UKHab habitats present within the Development Site Survey Area and Compensation Site Survey Area, respectively. The table also provides details of the area/ length⁸⁰ of each habitat within the Development Site and Compensation Site and the proportion of the Development Site and Compensation Site this makes up. Habitats are mapped on the UKHab survey plan (see Figure G-1 and Figure G-2 in Appendix G) with specific features highlighted by TNs on the figures. TN descriptions and photographs are provided in Table G-1 - in Appendix G and a species list and abundance for each habitat type within the Development Site Survey Area and Compensation Site Survey Area are provided in Table G-3 - and Table G-4 -, respectively, both in Appendix G.

⁸⁰ Measured using QGIS.

Table 3-2 - Habitat types within the Development Site Survey Area

UKHab habitat category	Location of habitat ⁸¹	Area of habitat/ length of linear feature ⁸²		Secondary codes ⁸³	Importance level	Rationale for valuation
		Ha/M	% of Site			
h3h Mixed scrub	Within Development Site, and immediately adjacent to the south-east	1.055	33	202 – Young trees – self-set	Local	This habitat is common and widespread in the wider landscape. Suitable for hazel dormouse, breeding birds, foraging and commuting bats, common species of reptile, priority invertebrates, and badgers.
g3c Other neutral grassland	Within Development Site, and immediately adjacent to the south	0.348 (0.219 ha of grassland within the SINC and 0.129 ha on road verges)	12	104 – Other grazed (rabbits)	County (SINC grassland) Application Site (road verge grassland)	The grassland within the substation section is a designating feature of the LG Duffryn Site 2 SINC. When the results of the NVC surveys in 2021 and 2022 are combined, thresholds set out in SINC selection guidelines continue to be met, as there are eight species present indicative of unimproved neutral grasslands and eight species present indicative of calcareous grassland. Many of these indicator species were only recorded in the southern half of the SINC, outside the Development Site, with the SINC grassland within the Development Site was less species-rich than the SINC grassland to the south. However, as a precautionary approach,

⁸¹ Where habitats are situated outside of the Application Site boundary, the distance and direction is given to the closest point that the habitat from is the Application Site.

⁸² The area/ length of habitat is only provided for those habitats within the Application Site

⁸³ Secondary codes allow the recording of additional information, linked to the Primary Habitats (for example, scattered scrub can be linked with primary habitats such as grassland and heathland).

UKHab habitat category	Location of habitat ⁸¹	Area of habitat/ length of linear feature ⁸²		Secondary codes ⁸³	Importance level	Rationale for valuation
		Ha/M	% of Site			
						the grassland within the Development Site is considered important at a County level. The grassland within the buried cables section is on road verges and a roundabout, this is considered to be of Application Site importance due to the habitat being common and widespread in the wider landscape. And it's small extent within the Development Site. Suitable for breeding birds, foraging and commuting bats, common species of reptile, priority invertebrates, and badgers.
h3d Bramble scrub	Within Development Site, immediately adjacent to the west	0.086	9		Local	This habitat is common and widespread in the wider landscape. Suitable for hazel dormouse, breeding birds, foraging and commuting bats, common species of reptile, priority invertebrates, and badgers.
u1b Developed land; sealed surface	Within and adjacent to the Development Site	1.218	46	800 – Road 805 – Development site 815 – Commercial building	Negligible	This habitat is common in the area and has negligible conservation significance.

UKHab habitat category	Location of habitat ⁸¹	Area of habitat/ length of linear feature ⁸²		Secondary codes ⁸³	Importance level	Rationale for valuation
		Ha/M	% of Site			
w1g Other broadleaved woodland	Adjacent to the east and south-east of the Development Site	0.014	0	33 – Line of trees	Local	This habitat is common and widespread in the wider landscape. Native tree species present. Suitable for foraging and commuting bats, breeding birds, and hazel dormouse. This habitat type is not within the Development Site but adjacent to it but due to GIS mapping has been included within the red line boundary.
w1h Other woodland; mixed	Adjacent to the east and south-east of the Development Site	n/a	0	33 – Line of trees	Application Site	This habitat is common and widespread in the wider landscape. Native and non-native tree species present. Is located within urban area. Suitable for foraging and commuting bats, and breeding birds.
r1a6 Eutrophic standing water	Waterbody 14 is approximately 10 m east of the Development Site whilst waterbody 6 is approximately 20 m east of the Development Site	n/a	0	40 – Ponds (priority habitat) 49 – Freshwater – artificial	County (Waterbody 6) Application Site (Waterbody 14)	There are two waterbodies within the Development Site Survey Area. Waterbody 6 is a manmade pond with common reed present and surrounded by dense scrub and is a designating feature of the LG Duffryn Site 1 SINC. To the south and west of the pond is South Lake Drive. There are many similar ponds in the wider landscape. Suitable for breeding birds, otter, water vole, and grass snake, and is therefore considered to be pond priority habitat. Waterbody 14 is recently manmade attenuation basin holding very little water and surrounded

UKHab habitat category	Location of habitat ⁸¹	Area of habitat/ length of linear feature ⁸²		Secondary codes ⁸³	Importance level	Rationale for valuation
		Ha/M	% of Site			
						by developed land. Therefore this pond is not considered to priority habitat.
u1c artificial unvegetated, unsealed surface	Adjacent to the west of the Development Site	n/a	0	n/a	Negligible	This habitat is common in the area and has negligible conservation significance.
u1d suburban mosaic of developed and natural surface	Approximately 20 m north-east of the Development Site	n/a	0	n/a	Negligible	This habitat is common in the area and has negligible conservation significance.
w1g Other broadleaved woodland	Adjacent to the south of the Development Site	n/a	0	29 – Plantation	Local	This habitat is common and widespread in the wider landscape. Much of this woodland is plantation with some secondary woodland. No distinguishable NVC community. Suitable for hazel dormouse, breeding birds, foraging and commuting bats, common species of reptile, priority invertebrates, and badgers.

Table 3-3 - Habitat types within the Compensation Site Survey Area

UKHab habitat category	Location of habitat ⁸⁴	Area of habitat/ length of linear feature ⁸⁵		Secondary codes ⁸⁶	Importance level	Rationale for valuation
		Ha/M	% of Site			
g3c6 <i>Lolium-Cynosurus</i> neutral grassland	Within the Compensation Site and adjacent to the north of the Compensation Site	2.49	68	n/a	Local	This habitat is common and widespread in the wider landscape. Suitable for breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates, and badgers.
g3c Other neutral grassland	Within the Compensation Site	0.06	2	n/a	Local	This habitat is common and widespread in the wider landscape. Suitable for breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
g1c Bracken	Within the Compensation Site, adjacent to the north of the Compensation Site and approximately 40 m east of the Compensation Site	0.56	15	n/a	Application Site	This habitat is common and widespread in the wider landscape. Suitable for breeding birds, foraging and commuting bats, common species of reptile, amphibians, and badgers.

⁸⁴ Where habitats are situated outside of the Application Site boundary, the distance and direction is given to the closest point that the habitat from is the Application Site.

⁸⁵ The area/ length of habitat is only provided for those habitats within the Application Site

⁸⁶ Secondary codes allow the recording of additional information, linked to the Primary Habitats (for example, scattered scrub can be linked with primary habitats such as grassland and heathland).

UKHab habitat category	Location of habitat ⁸⁴	Area of habitat/ length of linear feature ⁸⁵		Secondary codes ⁸⁶	Importance level	Rationale for valuation
		Ha/M	% of Site			
g4 Modified grassland	Within the access route section of the Compensation Site	0.15	4	14 – Scattered rushes 100 - Grazed 102 – Sheep grazed	Application Site	
w1f Lowland mixed deciduous woodland	Within the Compensation Site and adjacent to the south of the Compensation Site	0.13	4	28 – Ancient woodland site 29 – Plantation	National	Ancient woodlands are an irreplaceable habitat of national importance as defined in the Planning Policy Wales ⁸⁷ . Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
w1d Wet woodland	Within the Compensation Site and adjacent to the east and northeast of the Compensation Site	0.27	7	28 – Ancient woodland site 29 – Plantation	National	Ancient woodlands are an irreplaceable habitat of national importance as defined in the Planning Policy Wales ⁸⁷ . Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates, otters and badgers.
u1e Built linear features	Within the Compensation Site	<0.00 & 60 m	0	114 – Dry stone wall	Application Site	Suitable for common species of reptile, amphibians, and invertebrates.

⁸⁷ Planning Policy Wales (2024): Habitats, including the natural resources which underpin them, which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. Examples include, ancient woodland and veteran trees, ancient hedgerows, wet woodlands, sand dunes, peatland, species rich grassland, long undisturbed soils, blanket bog, salt marsh and lowland fen.

UKHab habitat category	Location of habitat ⁸⁴	Area of habitat/ length of linear feature ⁸⁵		Secondary codes ⁸⁶	Importance level	Rationale for valuation
		Ha/M	% of Site			
						Not due to be impacted by compensation measures.
h2a Native species-rich hedgerow with trees – associated with bank or ditch	Along the northern boundary of the Compensation Site	155 m	n/a	50 - Ditch	Local	A priority habitat that is common and widespread in the local area. This habitat is targeted for enhancement. Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
h2a Native species-rich hedgerow with trees	Along the western boundary of the Compensation Site	120 m	n/a	n/a	Local	A priority habitat that is common and widespread in the local area. Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
r2a Rivers (priority habitat)	Along the eastern boundary of the Compensation Site	100 m	n/a	n/a	Local	This habitat is a priority habitat but poor connectivity to other water features. Suitable for otters but the M4 is a significant barrier to dispersal. Not due to be impacted by compensation measures.
h3d bramble scrub	Adjacent to the north of the Compensation Site and south of the access route	n/a	n/a	n/a	Application Site	This habitat is common and widespread in the wider landscape. Suitable for hazel dormouse, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates, and badgers.

UKHab habitat category	Location of habitat ⁸⁴	Area of habitat/ length of linear feature ⁸⁵		Secondary codes ⁸⁶	Importance level	Rationale for valuation
		Ha/M	% of Site			
w1g Other broadleaved woodland	South of the Compensation Site	n/a	n/a	30 – Semi-natural woodland 60 – Long continuity habitat	County	Semi-natural woodland providing connectivity in landscape at a county level. Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
w1h Other woodland; mixed	Adjacent to the north and south of access route of the Compensation Site	n/a	n/a	28 – Ancient woodland site 29 - Plantation 30 – Semi-natural woodland 211 – Coppice with standards	National	Ancient woodlands are an irreplaceable habitat of national importance as defined in the Planning Policy Wales ⁸⁸ . Suitable for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates and badgers.
h3d Mixed scrub	Adjacent to the north of the access route of the Compensation Site	n/a	n/a	n/a	Local	This habitat is common and widespread in the wider landscape. Suitable for hazel dormouse, breeding birds, foraging and commuting bats, common

⁸⁸ Planning Policy Wales (2024): Habitats, including the natural resources which underpin them, which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. Examples include, ancient woodland and veteran trees, ancient hedgerows, wet woodlands, sand dunes, peatland, species rich grassland, long undisturbed soils, blanket bog, salt marsh and lowland fen.

UKHab habitat category	Location of habitat ⁸⁴	Area of habitat/ length of linear feature ⁸⁵		Secondary codes ⁸⁶	Importance level	Rationale for valuation
		Ha/M	% of Site			
						species of reptile, amphibians, priority invertebrates, and badgers.
r1a Eutrophic standing water	South of the Compensation Site	n/a	n/a	40 – Ponds (priority habitat) 47 – Freshwater – natural	Local	Pond with limited value to wildlife. Likely stocked with fish.

Features that have been identified to be of less than local importance are not considered to be important ecological features.

Given the results of the UKHab extended walkover survey and proposed scope of works within the Compensation Site, i.e. tree planting on g1c bracken, g3c6 *Lolium-Cynosurus* neutral grassland, and g3c other neutral grassland, all habitat types apart from g3c6 *Lolium-Cynosurus* neutral grassland, and g3c other neutral grassland within the Compensation Site Survey Area are scoped out of further assessment.



3.4 Protected and Priority Species

- 3.4.1. This section provides a summary of the results of the desk study, UKHab extended walkover survey, and the further surveys, along with the nature conservation importance for each species or species group within the Development Site Survey Area. The full results of these are provided in appended survey reports in Appendix C, whilst a concise summary of the results is provided in Appendix H.
- 3.4.2. Given the proposed scope of works within the Compensation Site, i.e. tree planting on g1c bracken, g3c6 *Lolium-Cynosurus* neutral grassland, and g3c other neutral grassland, and results of the UKHab extended walkover survey, all protected species are scoped out of further assessment within the Compensation Site. However, a summary of the extended walkover survey results and of the suitability for each species or species group within the Compensation Site is provided below.

Amphibians

- 3.4.3. SEWBRc returned 13 recent records of amphibians within 2 km of the Development Site; common toad (seven records), smooth newt (three records), common frog (one record), palmate newt (one record), and newt sp. (one record). The closest record was of a smooth newt approximately 180 m north of the Development Site.

Development Site

- 3.4.4. The mixed scrub and other neutral grassland habitat within the Development Site is considered to be 'good' terrestrial habitat for great crested newts⁸⁹. The habitats provide shelter, foraging opportunities, have minimal human disturbance, and is well connected to other suitable habitat in the wider landscape.
- 3.4.5. Fourteen waterbodies were identified within 500 m of the Development Site, as shown in Figure G-3 in Appendix G. The closest waterbody is waterbody 14 which is approximately 10 m east of the Development Site. Five waterbodies within 250 m of the Development Site (4, 6, 7, 8, and 9), plus waterbodies 1, 2, 3, and 5 were subject to surveys to determine great crested newt presence or likely absence. Waterbody 10 was not surveyed, however this is not considered to be a significant limitation, as discussed in the limitations. Waterbody 11 was scoped out due to dense vegetation. Waterbodies 12 and 13 were scoped out due to very low water levels, whereas waterbody 14 also held very little water and was a recently created attenuation basin surrounded by an active construction site. Of the nine waterbodies surveyed, two (7 and 8) were subject to bottle trap, torch, and egg search surveys, two (6 and 9) were subject to environmental DNA (eDNA) and torch surveys, and five were subject to just eDNA surveys (1, 2, 3, 4, and 5).
- 3.4.6. No great crested newts were recorded during the bottle trap, torch, and egg search surveys, and the eDNA surveys returned a negative result (full results are available in C.10 GCN Survey Report 2023). Therefore, great crested newts are considered to be likely absent from the Site and have been scoped out of further assessment.
- 3.4.7. The results of the great crested newt bottle trap, torch, and egg search, and eDNA surveys (shown in Table H-3 in Appendix H) confirmed the likely absence of great crested newts from the waterbodies sampled. Therefore, great crested newts are considered to be likely absent from the Development Site and have been scoped out of further assessment.

⁸⁹ Amphibian and Reptiles Groups of the United Kingdom, (2010). ARG UK Advice Note 5 – Great Crested Newt Habitat Suitability Index

- 3.4.8. Given the suitable habitat present within the Development Site, it is possible that other amphibians species; common frog, common toad, smooth newt, and palmate newt could be present. Although the population is not known, it is assumed that it is important at the Development Site level only and is scoped out of further assessment.

Compensation Site

- 3.4.9. The woodland, scrub, hedgerows, grassland, bracken and dry-stone wall habitats within the Compensation Site are considered to be 'good' terrestrial habitat for great crested newts⁸⁹. The habitats provide opportunities for sheltering, commuting and foraging, have minimal human disturbance, and are well connected to other suitable habitat in the wider landscape.

Badgers

- 3.4.10. SEWBrEC returned no recent records of badgers within 2 km of the Development Site.

Development Site

- 3.4.11. No setts or evidence of badger activity were recorded within the Development Site Survey Area during the ecological walkover survey or during the badger surveys (see C.7 Badger Survey Report 2023). The scrub and grassland habitats within the Development Site Survey Area provide suitable sett building, foraging, and commuting habitat.
- 3.4.12. No evidence of badger was recorded within the Development Site Survey Area, however given badgers are mobile species and the habitats are within the Development Site Survey Area are suitable for sett building, foraging, and commuting, badgers are considered to be important at the Application Site level.

Compensation Site

- 3.4.13. No setts or evidence of badger activity were recorded within the Compensation Site Survey Area. However, the woodland, hedgerow, bracken, grassland and scrub habitats within the Compensation Site do provide suitable sett building, foraging, and commuting habitat.

Bats

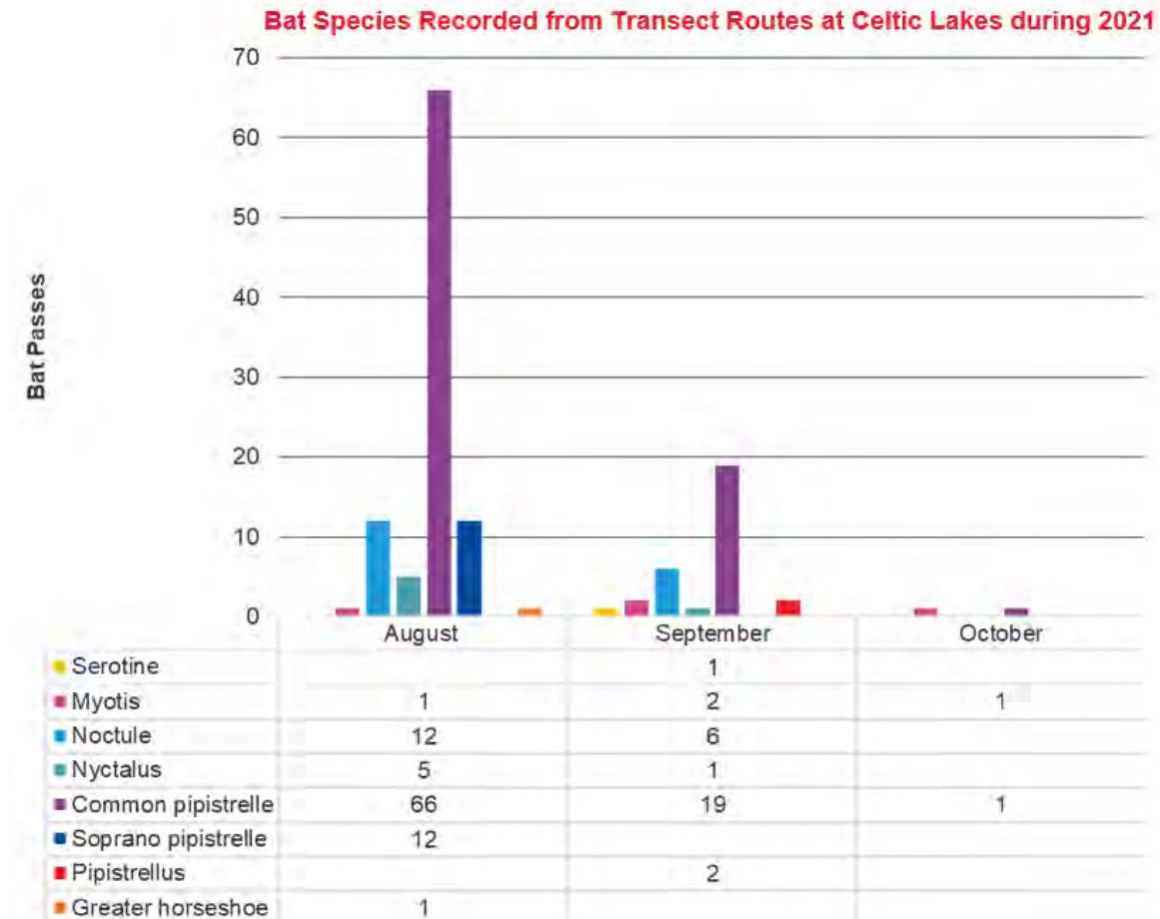
- 3.4.14. SEWBrEC returned 22 recent records of eight species of bats within 2 km of the Development Site; common pipistrelle (six records), soprano pipistrelle (five records), noctule (three records), Daubenton's (three records), Nathusius' pipistrelle (two records), whiskered bat (one record), *Pipistrellus* sp. (one record), and bat sp. (one record). No records were for roosts. The closest record was of a *Pipistrellus* sp. approximately 280 m east of the Development Site.

Development Site

- 3.4.15. The preliminary ground level roost assessment classified one tree as having moderate suitability for roosting bats (one moderate PRF for individual bats on tree limb) within 50 m of the Development Site (see TN2 in Table G-1 - in Appendix G). The tree is located within the CWL13 data centre site (20/0039) which is currently under construction. Root protection fencing has been erected around the tree for the

CWL13 data centre scheme⁹⁰ and either this or permanent landscape fencing will present for the duration of the construction of this Proposed Scheme. Given this, and that the PRF is located over 15 m from buried cables section of the Development Site, the moderate suitability tree and roosting bats in general, have been scoped out of further assessment.

- 3.4.16. The habitats within the Bat Survey Area were considered to be of high suitability for foraging and commuting bats. The 2021 transect surveys across the Welsh Government Celtic Springs site recorded a total of 130 bat passes across all transects from August to October as shown in



- 3.4.17. Figure H-1 in Appendix H. The most frequently recorded species was common pipistrelle, with a peak of activity in August (66 bat passes). Noctule was the second most frequently recorded species, with 18 bat passes recorded in August and September combined. Serotine and greater horseshoe were the least frequently recorded species during the transect surveys, with only one record in one month of the survey period each. A trend of decreasing bat activity occurred as the season progressed with August having the highest recording of bat records with 97 records across species, September with 31 records and October with the lowest records of only two bat passes. The heatmap in C.3 Bat Survey Report 2021 shows bat activity within and adjacent to the Development Site was relatively low compared to other locations within the Bat Survey Area.

- 3.4.18. The 2021 static detector surveys across the Welsh Government Celtic Springs site recorded a total of 3616 bat passes across the three monitoring locations combined. Static 1 was located approximately 220 m south of the Development Site, Static 2 was located approximately 410 m south of the Development Site, and Static 3 was located approximately 260 m south-east of the Development Site. The statics are

⁹⁰ Atkins, (2019). Next Generation Data, Newport – Ecological impact Assessment

considered have been located in habitats of higher suitability for foraging and commuting bats than the habitats within the Development Site. This is because they were all located 200 m south of the Development Site, meaning they were surrounded by similar habitat of high suitability and further away from the disturbance of Imperial Park. Whereas to the immediate north of the Development Site were habitats of lower suitability to foraging and commuting bats, plus noise and light disturbance from Imperial Park. Static 1 was located within habitats most similar to the Development Site, as there is neutral grassland and scrub and is the closest to Imperial Park, whereas Static 2 and Static 3 were located over 480 m away from Imperial Park and were located next to reed habitats and large expanses of neutral grassland and scrub habitat.

3.4.19. The species with the most bat passes was common pipistrelle, whilst greater horseshoe, was only recorded twice over the survey period. The other species recorded over the survey period were soprano pipistrelle, Nathusius' pipistrelle, Pipistrelle sp. usually common pipistrelle or soprano pipistrelle, but could include Nathusius' pipistrelle), *Myotis* sp., brown long-eared bat, noctule, and *Nyctalus* sp. Figure H-2 in Appendix H shows the mean bat passes per night for each static location over the survey period. Overall Static 3 had the greatest bat passes per night in each month. Nathusius' pipistrelle was recorded at Static 2 in September and October, and Static 3 in August, whilst greater horseshoe was recorded at Static 3 in August. Only the following common and widespread species had >1 mean bat pass per night:

- Noctule – Static 2 in August and September, and Static 3 in September;
- Brown long-eared bat – Static 2 in August, and Static 3 in October;
- *Myotis* – Static 1 in October, Static 2 in August, September, and October, and Static 3 in August, September, and October;
- Soprano pipistrelle – Static 1 in October, Static 2 in August, September, and October, and Static 3 in August, September, and October;
- Common pipistrelle – Static 1 in October, Static 2 in August, September, and October, and Static 3 in August, September, and October; and
- Pipistrelle sp. – Static 2 in September, and Static 3 in August, September, and October.

3.4.20. The majority of species recorded foraging and commuting within the Bat Survey Area are common and widespread⁹¹. Two relatively rare species greater horseshoe and Nathusius' pipistrelle were recorded, however the level of activity for these two species was relatively low. Given this, and that the Development Site is located in less suitable habitat than where the static detectors were located, the Development Site is considered to be of Local importance to foraging and commuting bats.

Compensation Site

3.4.21. The habitats within the Compensation Site considered to be of high suitability for foraging and commuting bats. There is continuous woodland, bracken, grassland, scrub and hedgerow habitats Compensation Site Survey Area and wider landscape with a number of linear features for commuting, such as woodland edges and hedgerows. Whilst no potential roosting habitat was identified within the Compensation Site, there is good connectivity to ancient woodlands, likely to have suitable habitat for roosting bats of Local importance.

⁹¹ Mathews F, and Harrower C. (2020). IUCN – compliant Red List for Britain's Terrestrial Mammals. Assessment by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough ISBN 978-1-78354-485-1

Breeding and Non-Breeding (Wintering and Passage) Birds

- 3.4.22. SEWBRc returned 792 recent records of birds within 2 km of the Development Site, including 21 species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended): Cetti's warbler, hobby, peregrine, kingfisher, black-tailed godwit, avocet, little ringed plover, marsh harrier, redwing, fieldfare, Mediterranean gull, brambling, purple heron, garganey, barn owl, goshawk, common scoter, greenshank, ruff and little gull. The closest record was of green woodpecker approximately 80 m east of the Development Site.

Development Site

- 3.4.23. During the ecological walkover survey the mixed scrub and other neutral grassland habitats within and adjacent to the Development Site were considered to be suitable for breeding birds. Given the proximity of the Gwent Levels – St Brides SSSI and Severn Estuary Special Protection Area (SPA) and Ramsar site, the other neutral grassland habitat within and adjacent to the south of the Application was considered to be suitable for wintering and passage birds.
- 3.4.24. Breeding bird surveys were undertaken from April to June 2023 across the eastern half of the Welsh Government Celtic Springs site (see C.8 Breeding Bird Survey Report 2023). Within the Breeding Bird Survey Area 41 bird species were recorded, including two Schedule 1 species (Cetti's warbler and peregrine falcon), five red list species, and 14 amber list species (see Table H-1 in Appendix H). Barn owl and kingfisher (both Schedule 1 species) were recorded within the Breeding Bird Survey Area by staff undertaking other surveys. No Schedule 1 species were recorded within the Development Site; however Cetti's warbler was recorded six times and considered to be nesting within 250 m of the Development Site, and peregrine falcon was recorded once, and is considered to have been foraging or commuting. Of the four Schedule 1 species recorded within the Breeding Bird Survey Area, the habitats within and adjacent to the Site are only suitable for nesting Cetti's warbler, however there are more suitable habitats in the surrounding area. The nesting bird population within the Development Site Survey Area is considered to be of Local importance due to the results of the surveys and that better-quality habitat is located to the south on the Gwent Levels – St Brides SSSI.
- 3.4.25. Wintering bird surveys were undertaken from November 2021 to January 2022 across the Welsh Government Celtic Lakes site (see C.9 Wintering Bird Survey Report 2021/22). The surveys recorded 16 species including one species (mallard) associated with the assemblage features of the Severn Estuary SPA (mallard in small numbers), and one species (Cetti's warbler) associated with the LG Duffryn Site 1 SINC (Cetti's warbler). Within the Breeding Bird Survey Area four Section 7 species, three Birds of Conservation Concern 4 (BoCC4)⁹² Red Listed species and five BoCC4 Amber Listed species were recorded (see Table H-2 in Appendix H). The only noteworthy aggregations of birds were limited to flocks of starling (200 in December) and fieldfare (35 in January). During the surveys the only species recorded within 50 m of the Development Site was song thrush. Given the results of the surveys and that the suitable wintering and passage bird habitat within the Development Site Survey Area is small compared to large area of better-quality habitat to the south on the Gwent Levels – St Brides SSSI, the wintering and passage bird population within the Development Site Survey Area is considered to be important at the Development Site level only and is scoped out of further assessment.

⁹² RSPB (2022) Birds of Conservation Concern 4. Available at: <https://www.rspb.org.uk/globalassets/downloads/documents/conservation--sustainability/safeguarding/birds-of-conservation-concern-4.pdf>. [Accessed May 2023].

Compensation Site

- 3.4.26. The grassland, bracken, scrub, hedgerows and woodland habitats within Compensation Site are considered to be suitable for breeding birds, and of low suitability for wintering and passage birds.

Hazel Dormice

- 3.4.27. SEWBRc returned two recent records of hazel dormice within 2 km of the Development Site. The closest record was approximately 20 m east of the Development Site. SEWBRc also returned six hazel dormouse records on the M4 eastbound soft estate which is connected to the Compensation Site via optimal dormouse habitat, including a record from 2011 approximately 590 m from the Compensation Site and two records from 2019 approximately 1.5 km from the Compensation Site.

Development Site

- 3.4.28. No evidence of hazel dormouse was recorded within the Development Site Survey Area during the ecological walkover survey. However, the scrub within the Development Site Survey Area provided optimal habitat for hazel dormouse, with bramble dominating and young tree species such as elder, rowan, dogwood, hazel, pedunculate oak, common hawthorn, and goat willow present, and with good connectivity to suitable habitat such as scrub, woodland, and hedgerows in the wider landscape.
- 3.4.29. The hazel dormouse nest tube and nest box surveys undertaken by Arup in habitats within and adjacent to the Development Site confirmed hazel dormouse presence within the Development Site (see C.4 Dormouse Survey Report 2021). The results of the hazel dormouse nest tube and nest box surveys are summarised in Table H-4 and Table H-5 in Appendix H. The location of hazel dormouse evidence in relation to the Development Site is shown in Figure H-3 in Appendix H.
- 3.4.30. Hazel dormice are confirmed to be present within the Development Site and are considered to be important at the Local level. Hazel dormice are considered to be present within the suitable habitat within and immediately adjacent to the Compensation Site and important at the Local level.

Compensation Site

- 3.4.31. No evidence of hazel dormouse was recorded within the Compensation Site Survey Area during the ecological walkover survey. However, the woodland, hedgerow and scrub habitat within the Compensation Site Survey Area provided optimal habitat for hazel dormouse, with a variety of food plant species present, and diverse structure, and good connectivity to optimal habitat such as scrub, woodland, and hedgerows in the wider landscape.
- 3.4.32. The ongoing hazel dormouse footprint tunnel surveys undertaken in suitable habitats within and adjacent to the Compensation Site have confirmed hazel dormouse presence. The results of the footprint tunnels surveys to date are summarised in Table H-6 and locations of evidence recorded shown in Figure H-4, both in Appendix H.

Widespread Reptile Species

- 3.4.33. SEWBRc returned nine recent records of reptiles within 2 km of the Development Site; grass snake (seven records) and slow-worm (two records). The closest record was of a slow-worm approximately 200 m east of the Development Site.



Development Site

- 3.4.34. The mixed scrub habitat within the Development Sites provides suitable refuge and foraging habitat for widespread reptile species, whilst the other neutral grassland habitat within the Development Site, particularly the ecotone between the grassland and scrub, provides suitable basking and foraging habitat for widespread species of reptiles.
- 3.4.35. Reptile surveys were undertaken in two areas; within the Development Site and extending approximately 150 m to the south, referred to as the 'Main Site', and an area approximately 250 m south-east of the Site referred to as the 'Mitigation offset area' (see C.11 Reptile Survey Report 2023). The results of the reptile surveys are summarised in Table H-7 in Appendix H. Within the Main Site a low population of grass snake was recorded, however as a precaution due to limitations the population should be considered 'good'. Within the Mitigation offset area a 'good' population of grass snakes was recorded, and a low population of slow-worm was recorded, however as a precaution due to limitations the grass snake population should be considered 'exceptional' and the slow-worm population 'good'. Although slow-worm was not recorded within the Main Site, they have been previously recorded on the South Lake Drive verge and are present in the Mitigation offset area, therefore within the Development Site grass snake and slow-worm are considered present. Common lizard and adder were not recorded during the surveys and are considered likely absent. The reptile population within the Reptile Survey Area is considered to be important at the Local level.

Compensation Site

- 3.4.36. The grassland, hedgerows, bracken, and drystone walls present within the Compensation Site, provides suitable basking, foraging and refuge habitat for widespread species of reptiles.

Otters

- 3.4.37. SEWBRc returned four recent records of otter within 2 km of the Development Site. The closest record was approximately 520 m north of the Development Site.

Development Site

- 3.4.38. No evidence of otter was recorded within 250 m of the Development Site during the ecological walkover survey or any of the otter survey visits (see C.5 Riparian Mammals Survey Report 2021 and C.6 Otter and Water Vole Survey Report 2023). There are no watercourses within 250 m of the Development Site, however there are eight waterbodies within 250 m of the Development Site, of which four (6, 7, 8, and 9) are suitable for otter foraging and resting places. Waterbody 6 which is approximately 15 m east of the Development Site was not surveyed during the Arup surveys, however it was surveyed by AtkinsRéalis in January 2024 and no evidence was recorded.

Compensation Site

- 3.4.39. There are two small watercourses in woodland flowing through the Compensation Site, which is considered to provide suitable habitat for commuting, foraging, and resting otters, however the M4 motorway is a major barrier to otters dispersing to these habitats from more suitable habitats on the Gwent Levels.
- 3.4.40. Given no evidence of otter has been recorded in the Development Site Survey Area or Compensation Site Survey Area, otters are considered to be likely absent and have been scoped out of further assessment.

Water Voles

- 3.4.41. SEWBRc returned four recent records of water vole within 2 km of the Development Site. The closest record was approximately 930 m south of the Development Site.

Development Site

- 3.4.42. No evidence of water vole was recorded within 250 m of the Development Site during the ecological walkover survey or any of the water vole survey visits (see C.5 Riparian Mammals Survey Report 2021 and C.6 Otter and Water Vole Survey Report 2023). The nearest suitable habitat is Waterbody 6, which is approximately 15 m east of the Development Site, however the Development Site at this location is developed land; sealed surface and is located on South Lake Drive.

Compensation Site

- 3.4.43. The two small watercourses in woodland flowing through the Compensation Site are not considered to provide suitable habitat for water voles due to the shallowness of the water and lack of connectivity to suitable habitat on the Gwent Levels.
- 3.4.44. Given no evidence of water vole has been recorded within the Development Site Survey Area, the nearest waterbody is located approximately 15 m east of the Development Site, and the Development Site at this location is located on South Lake Drive, water voles are considered to be likely absent from the Survey Area and Compensation Site Survey Area and have been scoped out of further assessment.

Priority Invertebrates

- 3.4.45. SEWBRc returned 73 records of 38 priority invertebrate species within 2 km of the Development Site, including brown-banded carder bee, shrill carder bee, small heath, buff ermine, and white ermine. The closest record of cinnabar moth within the Development Site.

Development Site

- 3.4.46. The mixed scrub and other neutral grassland habitat within the Development Site is considered to be suitable for priority invertebrate species. Invertebrate surveys were undertaken in 2021 and 2023 across the Welsh Government Celtic Lakes site (see C.12 Invertebrate Survey Results 2021 and C.13 Invertebrates Survey Report 2023). Across the Invertebrate Survey Area no species protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were recorded, however at least four 'Nationally Scarce' species and nine 'Section 7' listed species were (see Table H-8 and Table H-9 in Appendix H). Of these, two 'Section 7' priority invertebrate species (brown-banded carder bee and cinnabar moth) and two 'Nationally Scarce' species (weevil *Polydrusus formosus* and crawling water-beetle *Peltodytes brevipalpis*) were recorded adjacent to the south of the Development Site. The shrill carder bee, a 'Section 7' priority invertebrate species and designating feature of the Gwent Levels SSSI, was recorded approximately 250 m south of the Development Site.
- 3.4.47. The mixed scrub and other neutral grassland habitats within the Development Site are suitable for brown carder bee, cinnabar moth, and weevil, which were all recorded adjacent to the Development Site. As a precaution, it is also considered that the habitats within the Site are suitable for shrill carder bee, which was recorded approximately 250 m south of the Development Site.
- 3.4.48. Given the results of the invertebrate surveys and suitable habitat within the Development Site Survey Area, the Development Site is considered to be of County importance to invertebrates.



Compensation Site

- 3.4.49. The *Lolium-Cynosurus* neutral grassland, other neutral grassland, species-rich native hedgerow, wet woodland, lowland mixed deciduous woodland, and watercourse habitats within the Compensation Site are suitable for priority invertebrates due to their availability of food and refuge areas.

Priority Plants

- 3.4.50. SEWBRc returned six recent records of plant species listed on Schedule 8 of the Wildlife and Countryside Act 1981 (as amended); bluebell (five records) and sand crocus (one record). The closest record was of bluebell approximately 290 m east of the Development Site.

Development Site

- 3.4.51. The NVC surveys in 2021 and 2023 did not identify any priority or protected plants within the Development Site or 50 m buffer (see C.1 National Vegetation Classification Survey Report 2021 and C.2 National Vegetation Classification Survey Report 2023). As described in section 3.3 above, during the NVC surveys the habitats within the Development Site were concluded as closest to NVC W24 *Rubus fruticosus* – *Holcus lanatus* underscrub community and NVC MG9 *Holcus lanatus* – *Deschampsia cespitosa* grassland. Which are common and widespread communities with low suitability for priority or protected plants.

Compensation Site

- 3.4.52. During the ecological walkover survey no priority plants were recorded within the Compensation Site Survey Area. The habitats within the Compensation Site are common, widespread, and of local ecological value, and therefore are considered unlikely to support priority plants.
- 3.4.53. Given no priority plants were recorded during the NVC surveys and ecological walkover surveys, plus the habitats within the Development Site and Compensation Site have low suitability, priority plants are not considered to be an important ecological feature and have been scoped out of further assessment.

3.5 Summary of Important Ecological Features

- 3.5.1. The following features have been valued at less than local importance for nature conservation and are not considered to be important ecological features within the context of this assessment. These features have been scoped out of detail impact assessment. Where mitigation is required for legal reasons, this is detailed in Section 5.
- g3c other neutral grassland (road verge);
 - u1b developed land; sealed surface;
 - u1c artificial unvegetated, unsealed surface;
 - u1d suburban mosaic developed and natural surface;
 - w1h Other woodland; mixed – 33 line of trees;
 - g1c bracken (Compensation Site);
 - g4 modified grassland (Compensation Site);
 - u1e built linear features (Compensation Site);
 - h3d bramble scrub (Compensation Site Survey Area)

- Amphibians;
- Badger;
- Priority plants;
- Otter; and
- Water voles.

3.5.2. In addition, the following features have also been scoped out of the impact assessment, the rational for which is discussed in the Baseline section above:

- w1f lowland mixed deciduous woodland (Compensation Site);
- w1d wet woodland (Compensation Site);
- h2a native species-rich hedgerow with trees/ associated with bank or ditch (Compensation Site);
- r2a river (Compensation Site);
- w1g other broadleaved woodland (Compensation Site Survey Area);
- w1h other woodland; mixed (Compensation Site Survey Area);
- h3d mixed scrub (Compensation Site Survey Area);
- ra1 eutrophic standing water (Compensation Site Survey Area);
- Celtic Springs SINC;
- Duffryn Pond SINC;
- Cwm Pensidan SINC;
- Gaer Fort SINC;
- Afon Ebbw River SINC;
- Coed Ffynon-Oer SINC;
- Court Wood SINC;
- Ancient woodland within 1 km of the Development Site identified during the desk study; and
- Veteran trees within 1 km of the Development Site identified during the desk study.

3.5.3. Table 3-4 below provides a summary of the IEFs which are considered to fall within the Proposed Scheme's Zol and scoped into the impact assessment. Full details in relation to the determination of importance are provided within the Baseline section above.

Table 3-4 - Summary of Important Ecological Features within or near Application Site

Ecological Feature	Summary of baseline	Importance level
LG Duffryn Site 2 SINC	Large area of neutral grassland adjacent to Gwent Levels. The grassland within the Development Site was less species-rich than the SINC grassland to the south.	County
LG Duffryn Site 1 SINC	This site comprises a pond and Phragmites reedbed habitats which support Cetti's warbler which are listed on Schedule 1 of the Wildlife and Countryside Act 1981.	County
Gwent Levels – St Brides SSSI	Designated for its drainage ditch habitats which support a varied assemblage of aquatic flora and fauna.	National
h3h Mixed scrub	Scrub which has developed within the past 25 years and is encroaching onto the neutral grassland. Is directly connected to similar mixed scrub habitat which is	Local

Ecological Feature	Summary of baseline	Importance level
	connected to scrub, woodland, and hedgerows in the wider landscape. The scrub comprises of bramble, with scattered woody species such as hazel, pedunculate oak, goat willow, ash, rowan, Scot's pine, elder, common dogwood, wild cherry, and common hawthorn. Provides suitable habitat for foraging and commuting bats, breeding birds, hazel dormice, reptiles, and priority invertebrates.	
g3c Other neutral grassland (SINC grassland)	The neutral grassland within the substation section of the Development Site is a designating feature of the LG Duffryn Site 2 SINC. The thresholds set out in SINC selection guidelines continue to be met, as there are eight species present indicative of unimproved neutral grasslands and eight species present indicative of calcareous grassland. The grassland within the Development Site was less species-rich than the SINC grassland to the south. Provides suitable habitat for foraging and commuting bats, breeding birds, hazel dormice, reptiles, and priority invertebrates.	County
h3d Bramble scrub	Scrub which has developed within the past 25 years and is encroaching onto the neutral grassland. Dominated by bramble. Is directly connected to similar mixed scrub habitat which is connected to scrub, woodland, and hedgerows in the wider landscape. Provides suitable habitat for foraging and commuting bats, breeding birds, hazel dormice, reptiles, and priority invertebrates.	Local
r1a6 Eutrophic standing water – 40 ponds priority habitat (Waterbody 6)	The pond is a priority habitat and a designating feature of the LG Duffryn Site 1 SINC. Provides suitable habitat for foraging and commuting bats, breeding birds, reptiles, and priority invertebrates.	County
w1g Other broadleaved woodland	Much of the woodland is plantation with some secondary woodland. Most abundant tree and shrub species are common lime, box honeysuckle, aspen, large-leaved lime, <i>Acer</i> sp., goat willow, bramble, common hawthorn, dogwood, and pedunculate oak. Provides suitable habitat for hazel dormice, breeding birds, foraging and commuting bats, common species of reptile, and priority invertebrates.	Local
w1g Other broadleaved woodland – 33 line of trees	Line of trees comprised of common lime. Provides suitable habitat for foraging and commuting bats, breeding birds, and hazel dormice.	Local
g3c6 <i>Lolium-Cynosurus</i> neutral grassland, and g3c other neutral grassland (within	The neutral grassland field within the Compensation Site is common and widespread in the local landscape. Some of the most abundant species within the sward are sweet vernal grass, rough meadow grass, perennial ryegrass, meadow buttercup, and crested dog's tail.	Local

Ecological Feature	Summary of baseline	Importance level
Compensation Site)	Suitable for breeding birds, foraging and commuting bats, common species of reptile, amphibians, priority invertebrates, and badgers.	
Bats (foraging and commuting)	The scrub and grassland habitat within and adjacent to the Development Site are of moderate suitability for foraging and commuting bats. The majority of species recorded foraging and commuting within the Bat Survey Area were common and widespread. Two relatively rare species greater horseshoe and Nathusius' pipistrelle were recorded, however the level of activity for these two species was relatively low.	Local
Breeding birds	Common and widespread bird species recorded breeding within the Development Site Survey Area. One Schedule 1 species, Cetti's warbler, considered to be breeding within 250 m of the Development Site.	Local
Hazel dormouse	Present within the scrub habitat within and adjacent to the Development Site.	Local
Reptiles	Grass snake and slow-worm present within the Development Site Survey Area	Local
Priority invertebrates	The mixed scrub and other neutral grassland habitats within the Development Site are suitable for brown carder bee, cinnabar moth, and weevil, which were all recorded adjacent to the Development Site. As a precaution, it is also considered that the habitats within the Development Site are suitable for shrill carder bee, which was recorded approximately 250 m south of the Development Site.	County

3.6 Invasive Non-native Plant Species

- 3.6.1. SEWBrEC returned 192 recent records of INNPS within 2 km of the Site; giant hogweed, giant rhubarb, Himalayan balsam, Japanese knotweed, Japanese rose, Montbretia, New Zealand pygmyweed, Rhododendron sp., Virginia creeper, wall cotoneaster, and waterweed. The closest record was of giant rhubarb and Japanese rose approximately 75 m north of the Site.
- 3.6.2. During the ecological walkover survey cotoneaster sp. was recorded in multiple places adjacent to the Development Site along the road verges and variegated yellow archangel was recorded within a plantation broadleaved woodland (see TN1, TN3, TN4, and TN5 in Table G-1 and Figure G-1 in Appendix G). No INNPS were recorded within the Development Site or Compensation Site.

4. Potential Impacts

4.1.1. The Proposed Scheme has potential to result in a number of impacts which are broadly summarised below.

4.1 Construction Impacts

Development Site

- Permanent habitat loss of 0.627 ha of mixed scrub and 0.086 ha bramble scrub;
- Temporary habitat loss of 0.229 ha of other neutral grassland (of which 0.219 ha is within the SINC) and 0.026 ha of mixed scrub;
- Habitat degradation (e.g. through sediment release, pollution events, and dust);
- Potential Injury or mortality of protected and priority species such as hazel dormouse, breeding birds, reptiles, and priority invertebrates; and
- Disturbance including noise, light, visual, and vibration to protected and priority species such as breeding birds, foraging and commuting bats, reptiles, and priority invertebrates.

Compensation Site

- Conversion of 0.03 ha of g3c other neutral grassland and 1.17 ha of g3c6 *Lolium-Cynosurus* neutral grassland into mixed scrub.

4.2 Operational Impacts

Development Site

- Disturbance including noise and vibration to protected and priority species. The Noise Impact Assessment⁹³ recommended that the maximum plant sound power levels (excluding any applicable acoustic character corrections) are 83 dB L_{WA} . This is considered to be the worst-case scenario in terms of noise disturbance from the Proposed Scheme;
- Increased light disturbance from lights likely installed within substation section of the Development Site.

⁹³ AtkinsRéalis, (2023). Vantage Substation and Buried Cables – Noise Impact Assessment. Vantage Data Centers

5. Design Features and Mitigation Measures

- 5.1.1. This section details the features that have been incorporated into the design which are of benefit to biodiversity and the mitigation measures which will be implemented during the construction and operational phases to reduce ecological impacts. In developing the mitigation, the mitigation hierarchy has been followed, looking to avoid in the first instance followed by mitigation and compensation.
- 5.1.2. Features that have been valued at less than Local importance for nature conservation are not considered to be IEFs and as such, have not been considered within the impact assessment. However, if mitigation is required for these features for legal reasons it is detailed within this section.
- 5.1.3. A Long-Term Management Plan (LTMP)⁹⁴ has been produced detailing the management of the landscape and ecological mitigation, compensation, and enhancements detailed below within the Development Site and Compensation Site.

5.1 Design Features

Development Site

- 5.1.1. The following measures have been incorporated into the Proposed Scheme design within the Development Site:
- The buried cables section of the Development Site will be located on developed land; sealed surface, with small areas on other neutral grassland road verges;
 - Creation of 0.478 ha of species-rich grassland using a NVC M23a *Juncus acutiflorus* – *Galium palustre* rush-pasture and MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland seed mix from a marshy meadow on a local nature reserve within the Gwent Levels SSSI. The grassland can be divided into two different grassland habitats due to the different management regimes:
 - Approximately 0.144 ha of tussocky grassland between the swales and retained mixed scrub will be cut bi-annually on rotation, with half cut one year in late September and the other half cut the following year in late September. This will result in approximately 0.072 ha of uncut overwintering grassland each year for overwintering shrill carder bees and brown-banded carder bees; and
 - Approximately 0.334 ha of the marshy grassland within and around the attenuation basin, swales, and western vehicle entrance will be subject two cut and collects a year, one in early March and another in late September.
 - Approximately 0.336 ha of mixed scrub within the substation section of Development Site will be retained;
 - Restoration of 0.026 ha of mixed scrub within the substation section of the Development Site following the completion of the buried cables. The replacement planting will include the following species which are of value to hazel dormice: hazel, pedunculate oak, common hawthorn, blackthorn, wild cherry, goat willow, wayfaring tree, and honeysuckle, all of which, apart from blackthorn, wayfaring tree, and honeysuckle, are currently present within the Development Site. The mixed scrub will be replanted in the two areas temporarily cleared to allow the installation of the buried electricity cables. This temporary clearance is not considered to result in the temporary fragmentation or isolation of hazel

⁹⁴ AtkinsRéalis, (2024). Landscape and Ecological Management Plan – Vantage Substation and Buried Cables. 5222535-ATK-XX-XX-RP-E-0004

dormice as the cleared width will be a maximum of 7 m and 13 m where temporary daytime works will take, which is not considered a barrier to dispersal.

- Installation of seven hazel dormouse nest boxes within retained mixed scrub vegetation within the Development Site;
- Installation of a 2 m x 2 m reptile and amphibian hibernacula using arisings from the cleared young trees within the mixed scrub;
- Installation of a 2 m x 2m grass snake egg-laying heap using arisings from cleared scrub, grass cuttings, and fresh horse manure. To be topped up with grass cuttings twice a year each time the grassland is cut;
- Installation of eight 50 cm x 50 cm corrugated reptile refugia to be located at suitable locations within the Development Site, i.e. south-facing on the ecotones between retained scrub and created grassland and near the hibernacula and grass snake egg-laying heap;
- Creation of a 134 m native species-rich hedgerow along the southern boundary of the Development Site comprising of the following species; hazel, common hawthorn, blackthorn, pedunculate oak, rowan, elder, and honeysuckle. The eastern extent of the hedgerow will be connected to retained mixed scrub within the Development Site, whilst the Welsh Government NGED Substation scheme (23/0878) includes the creation of a native species-rich hedgerow immediately adjacent to the south, running parallel. Therefore in-combination a double native species-rich hedgerow will be created; and
- Creation of a wildlife pond (61 m²) within the Development Site with native marginal and aquatic planting including water mint, purple loosestrife, and marsh marigold.

Compensation Site

5.1.2. The following measures have been incorporated into the Proposed Scheme design within the Compensation Site:

- Creation of 1.437 ha of mixed scrub habitat which will include the following species: hazel, pedunculate oak, common hawthorn, blackthorn, holly, goat willow, silver birch, elder, and honeysuckle, all of which, apart from pedunculate oak and honeysuckle, are currently present within the Compensation Site.
- Creation of a 220 m and 50 m native species-rich hedgerow, and gap planting along 90 m of the existing species-rich hedgerow, which will include the following species: hazel, common hawthorn, blackthorn, holly, elder, and honeysuckle;
- Installation of 20 hazel dormouse nest boxes within existing woodland and hedgerows within the Compensation Site;
- Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management, involving an early spring and late summer cut and collect; and
- Existing woodland habitats within the Compensation Site will be adaptively managed in the long-term for benefit of hazel dormice.

5.2 Mitigation Measures

5.2.1. The following general measures will be implemented during the construction phase of the Proposed Scheme:

- Prior to construction a suitably qualified Ecological Clerk of Works (ECoW) will be employed for the duration of construction of the Scheme and for pre-construction clearance works. They will be

responsible for implementation of the Precautionary Method of Working (PMW)⁹⁵ and NRW Development Licence for hazel dormouse;

- As hazel dormice are present within the Development Site, a NRW Development Licence for hazel dormouse will be applied for and issued for the Proposed Scheme prior to any vegetation clearance works being undertaken. Further details are provided within the Dormouse Conservation Strategy⁹⁶, however, to summarise vegetation clearance will be undertaken using hand-held tools, such as brush cutters and pole saws, and will either be carried out in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October, depending on which is most appropriate for the programme.;
- A PMW for badgers, bats, reptiles, nesting birds, priority invertebrates, and INNPS will be produced and implemented by the ECoW which will detail precautionary measures to avoid negative impacts to these species/ species groups;
- Works will adhere to the Guidance for Pollution Prevention (GPPs)⁹⁷ and Construction Industry Research and Information Association (CIRIA) C811D Environmental good practice on site guide⁹⁸;
- During construction trees will be protected in line with guidelines provided in BS 5837 Trees in relation to Construction⁹⁹;
- When not in use, all machines, such as excavators will be turned off to keep noise and vibration to a minimum;
- During construction Heras fencing will be installed to protect retained scrub vegetation from heavy plant;
- Initial groundworks to areas suitable to reptiles, such as potential refugia and hibernacula, will be undertaken outside the reptile hibernation period (start of November to mid-March) on warm (>10°C), dry days when reptiles are likely to be active and can disperse on their own accord when they are disturbed from heavy plant working within the Application Site;
- Subject to testing of the soils for suitability of reuse on site, the stripped topsoil and subsoil from the SINC grassland will be stored for future use following the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites¹⁰⁰. The soil will be used for landscape and habitat creation for the proposed grassland within the development enabling the retention of the structure and seedbank of the soil from the SINC.
- The contractor will describe within their Construction Environmental Management Plan (CEMP) and/ or relevant Method Statements the biosecurity strategy to be implemented for the appropriate treatment of INNPS (e.g. cotoneaster) and will set out measures to prevent the spread of INNPS in the wild;
- Night-time working (taken to be 30 minutes prior to sunset to 30 minutes after sunrise) will be avoided. If this is not possible, lighting will be kept to a minimum and directed away from known or PRFs and terrestrial habitats that may be utilised by bats. In accordance with guidance provided in the Bat Conservation Trust (BCT) and Institution of Lighting Professionals (Guidance Note 08/23 Bats and Artificial Lighting at Night)¹⁰¹, lighting associated with the works should be the minimum required for the task;

⁹⁵ AtkinsRéalis, (2024). Precautionary Method of Working - Vantage Substation and Buried Cables. 5222535-ATK-XX-XX-RP-E-0003

⁹⁶ AtkinsRéalis, (2024). Hazel Dormouse Conservation Strategy - Vantage Substation and Buried Cables. 5222535-ATK-XX-XX-RP-E-0001

⁹⁷ The GPPs provide environmental good practice guidance for the whole UK, and environmental regulatory guidance directly to Northern Ireland, Scotland and Wales only. For businesses in England, regulatory guidance is available from GOV.UK instead.

⁹⁸ CIRIA C811D Environmental good practice on site guide provides advice on the management of a range of environmental issues that may be encountered on site and presents good practice to reduce the environmental impacts due to construction.

⁹⁹ British Standards Institute (2012) BS 5837:2012 Trees in relation to design, demolition, construction.

¹⁰⁰ Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf [Accessed: 19/06/2024].

¹⁰¹ Bat Conservation Trust & Institution of Lighting Professionals, (2023). Bat and Artificial Lighting at Night. Guidance Note 08/2

- Any excavations will be filled or covered overnight. If this is not possible, one side of the excavation will be graded or partially graded or alternatively a plank of wood (or similar) will be placed within the excavation at an angle so that it provides an escape ramp to prevent any animals becoming trapped;
- The other neutral grassland on the road verge within the buried cables section of the Development Site will be reinstated once works in these locations are completed; and
- During construction, if a protected species is found, then works will cease immediately and advice will be provided by the ECoW.



6. Impact Assessment

- 6.1.1. This section characterises the impacts and the subsequent effects (both positive and negative) of the Proposed Scheme on the IEFs within the project ZOI and assesses the significance of the residual effects (both positive and negative) based on the mitigation measures detailed in Section 5.
- 6.1.2. Based on the mitigation detailed above, the project ZOI remains unchanged.

6.1 Residual Effects

- 6.1.1. A summary of the impact assessment, the proposed mitigation, and the residual effects during construction and operation are provided in Table 6-1 and Table 6-2 as well as details of proposed ecological enhancements and compensation.
- 6.1.2. If the design changes or the agreed mitigation cannot be implemented the effects will need to be reassessed and further surveys may be required. In this event, the conclusion of this EclA may no longer be valid.

Table 6-1 - Summary of construction impacts, , mitigation and residual effects on Important Ecological Features

Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
LG Duffryn Site 2 SINC and g3c other neutral grassland	County	Permanent loss of 0.627 ha of mixed scrub and 0.086 ha of bramble scrub. Temporary loss of 0.219 ha of other neutral grassland and 0.026 ha of mixed scrub The SINC habitats within and adjacent to the south of the Development Site could be degraded through pollution events, dust, and sediment release.	Approximately 0.336 ha of mixed scrub within the Development Site to be retained. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Restoration of 0.026 ha of mixed scrub within the Development Site. Creation of 0.334 ha of marshy grassland and 0.144 ha of tussocky grassland within the Development Site. GPPs and CIRIA guidance on the control of water pollution from construction sites will be followed.	No	Creation of a 61 m² wildlife pond within the Development Site. Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.
LG Duffryn Site 1 SINC and Waterbody 6 pond priority habitat	County	The SINC habitats adjacent to the west of the Development Site could be degraded through pollution events, dust, and sediment release. Increased noise, light, visual, and vibration disturbance could lead to displacement of breeding Cetti's warbler to similar habitats in the local area.	GPPs and CIRIA guidance on the control of water pollution from construction sites will be followed. If vegetation clearance is undertaken in one stage, this will be undertaken in September to October, avoiding the bird breeding season. If vegetation is undertaken in two stages, prior to second stage of vegetation clearance ECoW to undertake an inspection of working area plus 40 m buffer. Second stage of	No	None



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
			vegetation clearance will commence in April; Cetti's warbler typically start nesting in May. Therefore, if Cetti's warbler begin nesting within 40 m of working area whilst construction has begun, this will not be considered to be an offence as the construction disturbance would have been in place before the start of nest construction.		
Gwent Levels – St Brides SSSI	National	The SSSI habitats present approximately 210 m south of the Development Site could be degraded through pollution events, dust, and sediment release.	GPPs and CIRIA guidance on the control of water pollution from construction sites will be followed.	No	None
h3h Mixed scrub	Local	Permanent loss of 0.627 ha of mixed scrub habitat. Temporary loss of 0.026 ha of mixed scrub habitat. Retained mixed scrub adjacent to the Development Site could be degraded through pollution events, dust, and sediment release.	Approximately 0.336 ha of mixed scrub within the Development Site to be retained. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Restoration of 0.026 ha of mixed scrub within the Development Site. GPPs and CIRIA guidance on the control of water pollution from construction sites will be followed. Retained trees will be protected in line with guidelines provided in BS	No	Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.

Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
			5837 Trees in relation to Construction. Heras fencing to protect retained scrub during construction.		
h3d Bramble scrub	Local	Permanent loss of 0.086 ha of bramble scrub habitat.	Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Restoration of 0.026 ha of mixed scrub within the Development Site.	No	Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.
w1g Other broadleaved woodland and line of trees	Local	Retained broadleaved woodland and line of trees adjacent to the Development Site could be degraded through pollution events, dust, and sediment release.	GPPs and CIRIA guidance on the control of water pollution from construction sites will be followed. Retained trees will be protected in line with guidelines provided in BS 5837 Trees in relation to Construction.	No	None
g3c other neutral grassland and g3c6 <i>Lolium-Cynosurus</i> neutral grassland (Compensation Site)		Conversion of 0.03 ha of g3c other neutral grassland and 1.17 ha of g3c6 <i>Lolium-Cynosurus</i> neutral grassland into mixed scrub within the Compensation Site	Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management within the Compensation Site.	No	None



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
Bats (foraging and commuting)	Local	Permanent loss of 0.713 ha of moderate foraging and commuting habitat. Temporary loss of 0.245 ha of moderate foraging and commuting habitat. Conversion of 1.084 ha of neutral grassland foraging habitat into mixed scrub foraging and commuting habitat. Potential injury or mortality of foraging and commuting bats from night-time work using heavy plant and lighting.. Increased noise, light, visual, and vibration disturbance could lead to displacement of bats to similar retained habitats adjacent to the Development Site.	Approximately 0.336 ha of mixed scrub within the Development Site to be retained. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Restoration of 0.026 ha of mixed scrub within the Development Site. Creation of 0.334 ha of marshy grassland and 0.144 ha of tussocky grassland within the Development Site. Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management within the Compensation Site. PMW to be adhered to under direction of ECoW with vegetation either carried out in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October. Night-time working to be avoided.	No	Creation of a 61 m² wildlife pond within the Development Site. Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.
Breeding birds	Local	Permanent loss of 0.713 ha of foraging and nesting habitat. Temporary loss of 0.245 ha of foraging and nesting habitat.	Approximately 0.336 ha of mixed scrub within the Development Site to be retained.	No	Creation of a 61 m² wildlife pond within the Development Site.



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
		Conversion of 1.084 ha of neutral grassland foraging and breeding habitat into mixed scrub foraging and breeding habitat.	Creation of 0.334 ha of marshy grassland and 0.144 ha of tussocky grassland within the Development Site.		Creation of 134 m of native species-rich hedgerow within the Development Site.
		Potential injury or mortality of breeding birds.	Creation of 1.437 ha of mixed scrub habitat within the Compensation Site.		Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.
		Increased noise, light, visual, and vibration disturbance could lead to displacement of birds to similar retained habitats adjacent to the Development Site.	Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management within the Compensation Site.		
			Restoration of 0.025 ha of mixed scrub within the Development Site.		
			Installation of seven hazel dormouse nest boxes within the Development Site and 20 hazel dormouse nest boxes within the Compensation Site which have potential to be used by breeding birds.		
			PMW to be adhered to under direction of ECoW with vegetation either carried out in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October.		



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
Hazel dormouse	Local	Permanent loss of 0.713 ha of suitable hazel dormouse habitat. Temporary loss of 0.026 ha of suitable hazel dormouse habitat. Potential injury or mortality of hazel dormice. Increased noise, light, visual, and vibration disturbance could lead to displacement of hazel dormice to similar retained habitats adjacent to the Development Site.	A NRW Development Licence for hazel dormouse will be prepared for the Proposed Scheme¹⁰². The licence will be adhered to and ECoW will conduct a hand search of vegetation prior to clearance. Vegetation clearance will be undertaken using hand-held tools and will be carried out either in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October. Restoration of 0.026 ha of mixed scrub within the Development Site. Installation of seven hazel dormouse nest boxes within the Development Site. Creation of 0.144 ha of tussocky grassland within the Development Site. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site.	Local within Development Site only, due to permanent loss of 0.713 ha of suitable hazel dormouse habitat. As the Compensation Site is unconnected to the Development Site, the compensation measures within the Compensation Site will benefit a different local hazel dormouse population by increasing the carrying capacity of the habitat and improving connectivity. The hazel dormice impacted by the permanent habitat loss within the Development Site are expected to disperse to retained suitable	Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site.

¹⁰² Further details available within the Dormouse Conservation Strategy (Atkins, (2024). Hazel Dormouse Conservation Strategy. Vantage Substation and Buried Cables. 5222535-ATK-XX-XX-RP-E-0001)



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
			Installation of 20 hazel dormouse nest boxes within the Compensation Site. Existing woodland within Compensation Site to be adaptively managed in the long-term for the benefit of hazel dormice. Retained trees will be protected in line with guidelines provided in BS 5837 Trees in relation to Construction. Heras fencing to protect retained scrub during construction. Night-time working to be avoided. All machines to be turned off when not in use.	habitat within and adjacent to the Development Site, which is part of large area of connected suitable habitat of scrub, woodland and extensive hedgerows on the Wentloog Levels.	
Reptiles	Local	Permanent loss of 0.713 ha of suitable reptile habitat. Temporary loss of 0.245 ha of suitable reptile habitat. Conversion of 1.084 ha of suitable neutral grassland reptile habitat into suitable mixed scrub reptile habitat. Potential Injury or mortality of reptiles. Increased noise, light, visual, and vibration disturbance could lead to displacement of reptiles to similar	Creation of 0.334 ha of marshy grassland and 0.144 ha of tussocky grassland within the Development Site. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management within the Compensation Site.	No	Creation of a 61 m² wildlife pond within the Development Site. Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
		retained habitats adjacent to the Development Site.	Restoration of 0.026 ha of mixed scrub within the Development Site. PMW to be adhered to under direction of ECoW with vegetation either carried out in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October. Initial groundworks to areas suitable to reptiles such as potential refugia and hibernacula will be undertaken outside the reptile hibernation period (start of November to mid-March) on warm(>10°C), dry days. All machines to be turned off when not in use.		hedgerow within the Compensation Site. Creation of a 2 m x 2 m reptile hibernacula using arisings from cleared vegetation within the Development Site. Creation of a 2 m x 2 m grass snake egg-laying heap within the Development Site. Installation of eight 50 cm x 50 cm corrugated reptile refugia in optimal locations within the Development Site.
Priority invertebrates	County	Permanent loss of 0.713 ha of suitable priority invertebrate habitat. Temporary loss of 0.245 ha of suitable priority invertebrate habitat. Conversion of 1.084 ha of suitable neutral grassland habitat into suitable mixed scrub habitat. Potential injury or mortality of priority invertebrates. Increased noise, light, visual, and vibration disturbance could lead to	Creation of 0.334 ha of marshy grassland and 0.144 ha of tussocky grassland within the Development Site. Marshy grassland will cut and collected twice a year, once in early March and again in late September. The tussocky grassland located between the swales and retained scrub will be cut bi-annually on rotation, with half cut one year in late September and the other half	No	Creation of a 61 m² wildlife pond within the Development Site. Creation of 134 m of native species-rich hedgerow within the Development Site. Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich



Important Ecological Feature	Importance level	Impact description	Mitigation/ compensation	Residual effects (Importance level affected)	Proposed enhancement/s
		displacement of priority invertebrates to similar retained habitats adjacent to the Development Site.	cut the following year in late September. Creation of 1.437 ha of mixed scrub habitat within the Compensation Site. Enhancement of 1.317 ha of neutral grassland through the sowing of yellow rattle seeds and meadow management within the Compensation Site. Restoration of 0.026 ha of mixed scrub within the Development Site. PMW to be adhered to under direction of ECoW with vegetation either carried out in a two-stage clearance operation between December and May, or a single stage clearance operation in September to October. All machines to be turned off when not in use.		hedgerow within the Compensation Site.



Table 6-2 - Summary of operational impacts, mitigation and residual effects on Important Ecological Features in the Development Site

Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
Bats (foraging and commuting)	Local	Increased noise disturbance (maximum operating noise level of 83 dB L _{WA}). Increased light disturbance from lights installed within substation.	The common and widespread foraging and commuting bat assemblage present within the Development Site Survey Area (which is already subject to noise from the local road and construction sites at Imperial Park) are likely to become habituated to the constant noise levels from the substation. The substation lighting will be designed in accordance with guidance provided by the Bat Conservation Trust and Institute of Lighting Professionals¹⁰³. The lighting will be directional and will only be turned on when operatives are on site undertaking emergency repairs in the dark, as regular maintenance activities will be undertaken in the day. The mosaic of scrub, hedgerow, grassland, and pond habitats within the Development Site post-construction will be of	No significant residual effects predicted.	None

¹⁰³ Bat Conservation Trust & Institution of Lighting Professionals, (2023). Bat and Artificial Lighting at Night. Guidance Note 08/2



Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
			higher value to foraging and commuting bats than the mixed scrub and other neutral grassland currently present within the Development Site. Therefore, mitigating for the any increase in noise and light disturbance.		
Breeding birds	Local	Increased noise disturbance (maximum operating noise level of 83 dB L _{WA}). Increased light disturbance from lights installed within substation.	The common and widespread breeding bird assemblage present within the Development Site Survey Area (which is already subject to noise from the local road and construction sites at Imperial Park) are likely to become habituated to the constant noise levels from the substation. The substation lighting will be designed in accordance with guidance provided by the Bat Conservation Trust and Institute of Lighting Professionals. The lighting will be directional and will only be turned on when operatives are on site undertaking emergency repairs in the dark, as regular maintenance activities will be undertaken in the day.	No significant residual effects predicted.	None

Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
			The mosaic of scrub, hedgerow, grassland, and pond habitats within the Development Site post-construction will be of higher value to foraging and breeding birds than the mixed scrub and other neutral grassland currently present within the Development Site. Therefore, mitigating for the any increase in noise and light disturbance.		
Hazel dormouse	Local	Increased noise disturbance (maximum operating noise level of 83 dB L _{WA}). Increased light disturbance from lights installed within substation.	Hazel dormice have a high noise disturbance threshold and are present along busy motorways which have a similar noise disturbance level as the maximum operating noise level of the substation. Therefore, hazel dormice are likely to become habituated to the constant noise levels from the substation. The substation lighting will be designed in accordance with guidance provided by the Bat Conservation Trust and Institute of Lighting Professionals. The lighting will be directional and will only be turned on when operatives are on site	No significant residual effects predicted.	None



Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
			undertaking emergency repairs in the dark, as regular maintenance activities will be undertaken in the day.		
Reptiles	Local	Increased noise disturbance (maximum operating noise level of 83 dB L _{WA}). Increased light disturbance from lights installed within substation.	Grass snake and slow worm have a high noise disturbance threshold and are present along busy motorways which have a similar noise disturbance level as the maximum operating noise level of the substation. Therefore, reptiles are likely to become habituated to the constant noise levels from the substation. The substation lighting will be designed in accordance with guidance provided by the Bat Conservation Trust and Institute of Lighting Professionals. The lighting will be directional and will only be turned on when operatives are on site undertaking emergency repairs in the dark, as regular maintenance activities will be undertaken in the day. The mosaic of scrub, hedgerow, grassland, and pond habitats, plus artificial refugia, log pile,	No significant residual effects predicted.	None

Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
			and grass-snake egg laying heap within the Development Site post-construction will be of higher value to reptiles than the mixed scrub and other neutral grassland currently present within the Development Site. Therefore, mitigating for the any increase in noise and light disturbance.		
Priority invertebrates	Local	Increased noise disturbance (maximum operating noise level of 83 dB L _{WA}). Increased light disturbance from lights installed within substation.	Priority invertebrate species within the Development Site Survey Area (which is already subject to noise from the local road and construction sites at Imperial Park) are likely to become habituated to the constant noise levels from the substation. The substation lighting will be designed in accordance with guidance provided by the Bat Conservation Trust and Institute of Lighting Professionals. The lighting will be directional and will only be turned on when operatives are on site undertaking emergency repairs in the dark, as regular	No significant residual effects predicted.	None

Important Ecological Feature	Importance level	Impact description	Mitigation	Residual effects (Importance level affected)	Proposed enhancement/s
			maintenance activities will be undertaken in the day. The mosaic of scrub, hedgerow, grassland, and pond habitats within the Development Site post-construction will be of higher value to priority invertebrates than the mixed scrub and other neutral grassland currently present within the Development Site. Therefore, mitigating for the any increase in noise and light disturbance.		



6.2 Cumulative Impacts

6.2.1. Table 6-3 provides a summary of the cumulative impact assessment, the proposed mitigation and the residual impacts.

Table 6-3 - Summary of cumulative impacts, mitigation and residual effects

Scheme	Location and distance from Proposed Scheme	Impacts of relevance	Likely In-combination impacts	Proposed mitigation	Residual Effects (Importance level affected)
Welsh Government NGED Substation	Adjacent to the south of the Development Site	Loss of 1.84 ha of SINC grassland. Loss of 0.58 ha of scrub.	Loss of 2.06 ha of SINC grassland, resulting in fragmentation and habitat degradation of the SINC grassland. Loss of 1.32 ha of scrub with confirmed hazel dormouse present.	Increase of SINC grassland within the Development Site from 0.219 ha to 0.478 ha. Species richness of grassland to increase due to using marshy meadow seed-mix from local nature reserve and management regime. Increase of suitable hazel dormouse habitat within entire Application Site from 1.437 ha to 2.205 ha post-development plus a total of 501 m of native species-rich hedgerow planting. Installation of 27 hazel dormouse nest boxes within the entire Application Site to increase nesting habitat availability in the short-term.	Short-term negative effect at the local level. No significant residual effect predicted in the long-term once grassland and scrub compensation establish.
CWL11 Extension Buried Cable	Adjacent to the west of Development Site	None	None. Habitats impacted are not considered to be IEF	n/a	No significant residual effect predicted.



Scheme	Location and distance from Proposed Scheme	Impacts of relevance	Likely In-combination impacts	Proposed mitigation	Residual Effects (Importance level affected)
CWL01 & 02 Microsoft Ltd	Approximately 75 m west of the Development Site	None	None. Habitats impacted are not considered to be IEF	n/a	No significant residual effect predicted.
SPTS	Approximately 25 m north of the Development Site	Permanent loss of 0.56 ha of open mosaic habitat on previously developed land priority habitat	Combined loss of 1.528 ha of ecologically valuable habitat within close proximity during construction.	Increase of SINC grassland within the Development Site from 0.219 ha to 0.478 ha. Species richness of grassland to increase due to using marshy meadow seed-mix from local nature reserve and management regime. Increase of scrub and woodland habitat within entire Application Site from 1.437 ha to 2.205 ha post-development plus a total of 501 m of native species-rich hedgerow planting.	Short-term negative effect at the local level. No significant residual effect predicted in the long-term once grassland and scrub compensation establish.
Imperial Park IP5 Solar Array	Approximately 330 m north-west of the Development Site	Temporary displacement and disturbance of 0.34 ha of amenity grassland. Creation of 0.44 ha of wildflower meadow beneath the solar arrays and on the verges around the warehouse.	Increase of species-rich grassland by 0.736 ha in the local area	n/a	Local (positive)



7. Biodiversity and Resilience of Ecosystems – Net Benefit for Biodiversity

- 7.1.1. A criterion has been developed by AtkinsRéalis to demonstrate how a scheme delivers a Net Benefit for Biodiversity and resilience of ecosystems through use of the DECCA Framework. Table 7-1 below shows how the Proposed Scheme meets this criterion and the evidence provided.

Table 7-1 - Summary of how the Proposed Scheme delivers a net benefit for diversity and resilience of ecosystems through use of the DECCA Framework

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
Diversity	Development proposals should avoid negative impacts on biodiversity, and the overall diversity value present, by considering how biodiversity assets can be avoided, but ultimately maintained and enhanced.	Criteria 1) Demonstrate that avoidance measures have been implemented to the highest value diversity ¹⁰⁵ within the site (habitats and species present) this should include appropriate buffer zones.	- Both the Development Site and Compensation have avoided being located within 200 m of the Gwent Levels – St Brides SSSI, which part of the Welsh Government Celtic Springs Site is within. - The Development Site has avoided being located within 10 m of priority habitats such as ponds and coastal and floodplain grazing marsh (including reens) have also been avoided.

¹⁰⁴ Welsh Government, (2024). Planning Policy Wales, Edition 12

¹⁰⁵ Rare, threatened, or endangered species and habitats, significant populations/extent of endemic or range-restricted species or ecosystems and or important species aggregations, such as key breeding or foraging areas. Diversity value should be assessed using best practice guidance: [Guidelines for Ecological Impact Assessment \(EclA\) | CIEEM](#)



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 2) Demonstrate that appropriate mitigation and compensation has been applied, and that enhancement measures have been implemented to improve the favourable status of the overall diversity present within the site ¹⁰⁶ .	- As detailed above, the Gwent Levels – St Brides SSSI and priority habitats have been avoided. - Mixed scrub loss has been minimised, with approximately 0.336 ha of retained within the Development Site. - The mitigation measures as detailed in Section 5.2 will be followed. - The 0.219 ha of SINC grassland lost during construction will be fully compensated within the Development Site by the creation of 0.478 ha of species-rich grassland, which is greater than the compensation ratio of 1.5:1 advised by Newport City Council. - 0.026 ha of mixed scrub habitat will be compensated within the Development Site, plus the installation of seven hazel dormouse nest boxes within retained mixed scrub. - 1.437 ha of mixed scrub habitat will be compensated for within the Compensation Site, which is greater than the compensation ratio of 2:1 advised by NRW. 20 hazel dormouse nest boxes will also be installed in existing woodland and hedgerows within the Compensation Site. - Within the Development Site the following enhancement measures will be created/ installed: 61 m² wildlife pond, 2 m x 2 m hibernacula, a 2 m x 2 m grass snake egg-laying heap, eight 50 cm x 50 cm artificial

¹⁰⁶ The criteria must demonstrate compliance with the StepWise Process provided within Planning Policy Wales: [Planning Policy Wales - Edition 12 \(gov.wales\)](https://gov.wales/planning-policy-wales-edition-12)



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
			refugia, a 134 m native species-rich hedgerow. - The expected increase in species-richness and improved structure of the grassland within the Development Site is also considered to be an enhancement. - As an enhancement measure within the Compensation Site a 220 m and 50 m native species-rich hedgerow will be created, and gap planting along 90 m of an existing species-rich hedgerow will be undertaken. - A long-term management plan covering both for Development Site and Compensation Site for at least 30 years will be produced.
		Criteria 3) Demonstrate that an increase in plant diversity has been implemented across each specific habitat proposed within landscape proposals ¹⁰⁷ .	- Proposed grassland within Development Site is expected to have greater species richness than the current 10 species per m². This is because it will be sown with NVC M32a with MG5 seed mix from a local nature reserve on the Gwent Levels and 0.334 ha subject to meadow management with cut and collects in early March and late September. The donor site of the seed mix comprise species such as rushes, sedges, meadow vetchling, yellow-rattle, southern marsh orchid, and grass vetchling. - 1.317 ha of neutral grassland within the Compensation Site will be enhanced through

¹⁰⁷ Reference to existing ecological reports can be included, however a summary must be provided.

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
			the sowing of yellow-rattle seed and meadow management, involving an early spring and late summer cut and collect. All of which should increase the grassland plant diversity. - Creation of a wildlife pond within the Development Site will introduce aquatic plants and therefore increase plant diversity. - Creation of native species-rich hedgerows within Development Site and Compensation Site will increase plant diversity. - Mixed scrub and bramble scrub lost within the Development Site will be compensated with mixed scrub with at least seven native woody species plus honeysuckle within the Development Site and Compensation Site.
Extent ,	The development must avoid loss in the extent of biodiversity and incorporate measures to appropriately maintain and enlarge existing habitats, especially where extent is small or declining, through habitat restoration and creation with adjoining and nearby areas, green infrastructure features and networks, and promote the restoration of damaged, modified or potential habitat and the creation of new additional habitat.	Criteria 1) The following must be demonstrated: • Direct loss of habitats predicted within and adjacent to the site as result of the development in an appropriate format (hectares/metres) with geospatial mapping tools (GIS).	The following habitat losses have been predicted using QGIS: - Permanent loss of 0.627 ha of mixed scrub; - Permanent loss of 0.086 ha of bramble scrub; - Temporary loss of 0.026 ha of mixed scrub; - Temporary loss of 0.219 ha of other neutral grassland; - Conversion of 0.03 ha of g3c other neutral grassland and 1.17 ha of g3c6 <i>Lolium-Cynosurus</i> neutral grassland into mixed scrub within the Compensation Site. Resulting in a total permanent loss of 0.713 ha of habitat and total temporary loss 0.206 ha of habitat. The Proposed Scheme will comprise: - Creation of 0.334 ha of marshy grassland within the Development Site; - Creation of 0.144 ha of tussocky grassland within the Development Site;

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Creation and/or restoration of proposed habitat¹⁰⁸ within or adjacent to the site in an appropriate format (hectares/metres) with geospatial mapping tools (GIS), and that a 20% increase¹⁰⁹ in extent has been achieved through partnership with the landscape and planning team.	- Restoration of the 0.026 ha of mixed scrub within the Development Site; - Creation of 134 m of species-rich hedgerow within the Development Site; - Creation of 1.437 ha of mixed scrub within the Compensation Site; - Creation of a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site; - Creation of 61 m² wildlife pond. Resulting in the total creation of 1.941 ha of habitat. The Proposed Scheme will result in the following: - Increase in mixed scrub (and bramble scrub) extent within the Application Site from 1.115 ha to 1.865 ha, an increase of 0.743 ha (67%) within the Application Site; - Increase in grassland extent within the substation section of the Development Site from 0.219 ha to 0.478 ha (118%) within the Development Site; - Increase in species-rich hedgerow of 501 m within the Application Site; - Increase in pond priority habitat by 61 m².

¹⁰⁸ Habitats proposed for recreation must be those that can be re-created, and there is conservation evidence available to support this. Those that are assessed as irreplaceable habitats or those within designated sites are not to be included.

¹⁰⁹ 20% increase in extent, should demonstrate compliance with all criteria within this document, this is to ensure that diversity, condition, connectivity and adaptation are applied to this increase.

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 2) Demonstrate the increase in extent will provide suitable habitat for the given protected or notable species present on site, and its capacity to support populations of species adjacent to the site, and that their ability to breed, forage and complete the species life cycle is enhanced.	- Mixed scrub will be species-rich with at least seven native woody species plus honeysuckle and connected to retained/ existing scrub/ woodland where hazel dormice are known to be present. Therefore, it will be suitable for foraging and commuting bats, hazel dormouse, breeding birds, reptiles, and priority invertebrates, and increase the carry capacity of the mixed scrub for these species in the local area. - Marshy grassland and tussocky grassland will be species-rich and managed in a way which benefits biodiversity such as shrill carder bee and brown-banded carder bee; cut and collect in early March and late September and a cut on rotation bi-annually, respectively. This will increase the carrying capacity of the grassland for these species in the local area. - Species-rich hedgerows will be planted with native species and connected to existing scrub/ woodland where hazel dormice are known to be present. Will be sensitively managed and therefore suitable for foraging and commuting bats, hazel dormouse, breeding birds, reptiles, and priority invertebrates, and increase the carry capacity of hedgerow for these in the local area. - The wildlife pond will be planted with native marginal and aquatic species which will increase the carrying capacity of pond habitats for pond associated species in the local area.



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 3) Provide evidence that the NRW Habitat Network mapping tool ¹¹⁰ OR local green infrastructure strategy was used to consider the above, and (if applicable) demonstrate that restoration of core areas will be implemented. This should be evidenced through the provision of mapping of habitat networks, through use of geospatial mapping (GIS).	- NRW Habitat Network mapping tool identified a “Lowland woodland core network” adjacent to the Compensation Site, where mixed scrub will be planted, therefore the location of the this compensation measures is considered appropriate at a landscape scale. - Newport Green Infrastructure Assessment¹¹¹ identified the woodland adjacent to the Compensation Site, where mixed scrub will be planted, as having “<i>Opportunities to improve quality and connectivity of the woodland habitat network, through improving management of existing woodlands</i>”. - Newport Green Infrastructure Assessment identified the Gwent Levels near the Development Site, where species-rich grassland will be created, as having “<i>Opportunities to improve connectivity of the grassland habitat network, through encouraging land managers to create connecting stepping-stones of habitat, including verges, and setting aside parcels/field edges on existing farmland, increasing habitats for pollinators</i>”.

¹¹⁰ [Habitat Networks | DataMapWales \(gov.wales\)](#)

¹¹¹ Newport City Council, (2022) Newport Green Infrastructure Assessment. Available here: <https://www.newport.gov.uk/documents/Planning-Documents/Replacement-Local-Development-Plan-2021/Preferred-Strategy-documents/8.-Green-Infrastructure-Assessment-May-2022.pdf> Accessed: February 2024

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 4) Provide evidence that the LPA Biodiversity Action Plan has been taken account in satisfying this criterion, and during the design of the overall net benefit approach.	- The Proposed Scheme will include the creation of a wildlife pond and of a marshy grassland, which both align with priority habitats identified in the Newport LBAP. - Mitigation, compensation, and enhancement measures will benefit hazel dormouse, bats, and shrill carder bee, which are all identified as priority species in the Newport LBAP.
		Criteria 5) (If applicable) Demonstrate the increase in priority habitats present will promote ecosystem dynamism, supporting and developing mosaics and encourages succession within these habitats within and adjacent to the site.	- There are currently no priority habitats present within the Development Site or Compensation Site. - The Proposed Scheme will create and therefore increase in extent: - 134 m of native species-rich hedgerow priority habitat within the Development Site; - 270 m of native species-rich hedgerow priority habitat within the Compensation Site; - A 61 m² pond priority habitat within the Development Site; and - 0.334 ha of marshy grassland which in the long-term could meet lowland meadow priority habitat criteria.
Condition	Development should ensure ecosystems and biodiversity assets are in a healthy condition to function effectively, to deliver a range of important ecosystem services and be more resilient to external influences and	Criteria 1) Demonstrate current known presence of direct physical damage to that habitat (e.g., grazing pressure or lack of management) and steps taken to remove that pressure and provide favourable future management.	- The grassland within the LG Duffryn Site 2 SINC, which is the designating feature, is being encroached year on year by the bramble and mixed scrub within the Development Site due to lack of management (such as appropriate grazing and cutting), as

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
	ensure the functioning of natural processes or appropriate management can occur.		demonstrated on historical aerial imagery on Google Earth Pro¹¹². - The grassland within the Development Site will be subject to meadow management with the marshy grassland cut and collected every year in early March and late September, and the tussocky grassland cut bi-annually on rotation. The grassland management will ensure it retains its size within the Development Site, with the cutting back any encroaching scrub. Further grassland management details will be provided within the Long-Term Management Plan.
		Criteria 2) Demonstrate if current known indirect damage is to occur (e.g. water, air or nutrient pollution) and what steps will be taken to remove that pressure and provide favourable future management.	- No known current indirect damage occurring, such as water, air pollution, or nutrient pollution.
		Criteria 3) Demonstrate current habitat mosaic formations present and steps taken to ensure these are retained and/or supported.	- The substation section of the Development Site comprises of the following habitats; 0.989 ha mixed scrub, 0.086 of bramble scrub, and 0.219 ha of other neutral grassland, with the mixed and bramble scrub encroaching onto the grassland year-on-year from the north and east . - Approximately 0.336 ha of mixed scrub habitat along the northern, eastern, and western edge of the substation section of the Development Site will be retained.

¹¹² Available to download here: <https://www.google.com/earth/about/> Accessed: February 2024



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
			- 0.334 ha marshy grassland within the attenuation basin, swales and by the vehicle entrance to the Development Site will be created and subjected to cut and collects every year in early March and late September. - 0.144 ha of tussocky grassland between the swales and retained mixed scrub will be cut bi-annually on rotation. - 61 m² wildlife pond. - All of the above, will create a mosaic of habitats within the Development Site, with a variety of species, height, and structure to these habitats, and transition of tussocky grassland between scrub and marshy grassland.
		Criteria 4) (If applicable) Demonstrate the presence of invasive species and steps taken to reduce or remove spread, this should include mapping of the location and extent of invasive species, and methods of removal required.	- No invasive non-native plant or animal species were recorded within the Application Site during site surveys. However, cotoneaster sp. and variegated yellow archangel, both INNPS, were recorded and mapped within the Development Site Survey Area as shown in Figure G-1 and Table G-1 - in Appendix G. - The PMW will cover INNPS and the ECoW will deliver a toolbox talk to contractors which cover how to identify the INNPS most likely to be present within the Development Site and the relevant legislation. - If an INNPS is identified within the Application Site and its disturbance or clearance cannot be avoided the Contractor will be responsible for its removal, as AtkinsRéalis does not provide advice on INNPS.



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 5) (<i>If applicable</i>) Demonstrate, if current evidence of habitat deterioration as a result of herbicide or pesticide use and steps take to reduce this, in order to promote soil health and resilience.	- No evidence of herbicide or pesticide use within the Application Site. - No herbicide or pesticide will be used in the long-term management of the Application Site.
Connectivity	Development should ensure that retained habitats continue to be well connected to adjacent habitats and is vital to provide connectivity (steppingstones) for key species and ensuring that the favourable conservation status of local species populations is maintained. Development proposals should identify and incorporate appropriate links to be made between the site and its surroundings to improve connectivity.	Criteria 1) Demonstrate an increase in connectivity to broad ecosystems and habitats ¹¹³ , including Priority habitats (Section 7 ¹¹⁴) and other notable habitats (e.g., Local BAP habitats ¹¹⁵), through appropriate geospatial mapping (GIS) ^{116, 117} .	- NRW Habitat Network mapping tool identified a “Lowland woodland core network” adjacent to the Compensation Site, where mixed scrub will be planted. - The creation of mixed scrub and a species-rich rich hedgerow within the Compensation Site increase connectivity to hedgerow and woodland priority habitats in the local area as shown on Figure A-4 in Appendix A. - The creation of a wildlife pond within the Development Site will increase connectivity for wetlands species which utilise priority habitats such as ponds and coastal and floodplain grazing marsh reens, which are both prevalent in the local area. - The creation of a marshy grassland within the Development Site will increase connectivity of grassland priority habitats in the local area.

¹¹³ UK Habitat Classification. 2018 - 2022. [online] Available at: <https://ukhab.org>

¹¹⁴ [Wales Biodiversity Partnership - Environment \(Wales\) Act \(biodiversitywales.org.uk\)](https://biodiversitywales.org.uk/)

¹¹⁵ [UK BAP Priority Habitats | JNCC - Adviser to Government on Nature Conservation](#)

¹¹⁶ Provide mapping to demonstrate connectivity, this should be done through using desk-based mapping and provision of habitat mapping through field survey. Additionally, this could include appropriate guidance, and use of Ecological Zone of Influence (EZol) were appropriate.

¹¹⁷ Should consider the Resilient Ecological Networks (REN) core areas (available here: [resilient-ecological-networks-practitioner-guide.pdf \(cyfoethnaturiol.cymru\)](#)), to ensure connectivity is demonstrated, with buffer zones around notable or priority habitats established.

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 2) Demonstrate an increase in connectivity to species assemblages, with links between habitats, allows species within development to forage, breed and migrate and respond to climate change beyond the Site, through appropriate geospatial mapping (GIS) of connectivity and species dispersal corridors.	- Creation of mixed scrub and a species-rich hedgerow within the Compensation Site will increase connectivity between the hazel dormouse population on the M4 J28-32 eastbound soft estate and hazel dormouse populations in the large areas of woodland between Newport, Cardiff, and Caerphilly, such as Park Wood, Coed Craig Ruperra, and Llwyn Hir. It will also increase connectivity for foraging and commuting bats in the local area. - Creation of marshy grassland, tussocky grassland, wildlife pond, hibernacula, grass-snake egg laying heap, and installation of artificial refugia will increase connectivity for reptiles within the Development Site which is currently being encroached by dense scrub and therefore becoming less suitable for reptiles. - Creation of marshy grassland and tussocky grassland will increase connectivity for priority invertebrate species such as shrill carder bee and brown-banded carder bee with other species-rich grassland on the Gwent Levels. As the Development Site is currently being encroached by dense scrub it is becoming less suitable for shrill carder bee and brown-banded carder bee.

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
		Criteria 3) (<i>if applicable</i>) Demonstrate an increase in connectivity to designated sites (statutory and non-statutory) and evidence of this if applicable (direct or indirect linkage).	- Creation of marshy grassland and tussocky grassland within the Development Site will increase connectivity to Gwent Levels – St Brides SSSI by acting as a “steppingstone” for priority invertebrate species such as shrill carder bee and brown-banded carder bee. - Creation of mixed scrub and a species-rich hedgerow within the Compensation Site will increase connectivity to Cwm Pensidan SINC, Coed Ffynon-Oer SINC, and Court Wood SINC, which are all ancient semi-natural woodland, for hazel dormice present within the M4 eastbound soft estate.
Adaptation	Development proposals should identify impacts to the ecosystem resilience attributes of biodiversity, using the pressures identified in SoNaRR. The incorporated measures within development should ensure that biodiversity’s ability to adapt to, resist and recover from pressures is enhanced.	Criteria 1) Demonstrate how the incorporated measures (i.e. ecological mitigation) will ensure that biodiversity’s ability to adapt to, resist and recover from pressures, is enhanced, and adaptable to climate change.	- The grassland created within the Development Site will be sown with a seed mix of local prominence; a local nature reserve on the Gwent Levels SSSI. The source habitat is a marshy grassland with wetter and drier areas of ground, similar to the proposed Development Site. Therefore, as the meadow will be local sourced, native, and have different microhabitats it is expected to adapt to, resist and recover from climate change pressures. - The majority of the woody species planted in the species-rich hedgerows and mixed scrub within the Development Site and Compensation Site are present in existing scrub and woodland habitats adjacent to Development and Compensation Site. Therefore, it is known that these species can grow in these areas and are best placed to

DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
			adapt to, resist, and recover from climate change pressures. - At least seven native woody species will be planted in the scrub and five in the hedgerows, meaning the habitats will be diverse and therefore best placed to adapt to, resist, and recover from climate change pressures.
		Criteria 2) Demonstrate how the incorporated measures within the site, provide enhancement of ecological networks and green infrastructure provisions.	- Creation of a wildlife pond within Development Site provides an additional area of wetland habitat within the local area which has existing ponds and reens. - Installation of hibernacula, grass snake egg-laying heap, and eight artificial refugia will enhance hibernating, breeding, and basking opportunities for reptiles within the Development Site which are currently limited. - Installation of hazel dormouse nest boxes within Development Site will enhance the retained mixed scrub by providing additional nesting opportunities for hazel dormouse and breeding birds, as cavities in trees are not currently present within the Development Site due to the young age of the trees. Similarly, installation of nest boxes within Compensation Site will enhance existing scrub, trees, woodland, by providing additional nesting opportunities for hazel dormouse and breeding birds. - Creation of mixed scrub and hedgerows within the Compensation Site will enhance the woodland network in the local area. - Creation of marshy grassland and tussocky grassland within the Development Site will enhance the grassland network within the local area.



DECCA Framework	Summary of Attribute ¹⁰⁴	Criteria	Evidence
Long Term Management Plan (LTMP)	A management plan should set out the immediate and on-going management of the site in line with the DECCA criteria above, alongside future monitoring arrangements for all secured measures. This should include the funding mechanisms in place to meet the management plan objectives and ensure a Net Benefit for Biodiversity is secured over a minimum period of 30 years.		- A LTMP for the Development Site and Compensation Site has been produced, providing further details on how the habitats and ecological features are managed and monitored. The LTMP will ensure a net benefit for biodiversity over a minimum period of 30 years, the initial management measure will cover the first five years after habitat creation or ecological features installation, measures for years five to 30 will be adaptive. The LTMP covers proposed and existing retained habitat, such as woodland within the Compensation Site, which will be adaptively managed for the benefit of hazel dormice in the long-term.

8. Conclusion

- 8.1.1. This EcIA is based on desk study data, an ecological walkover survey, and the following phase 2 surveys: NVC, bat (activity and preliminary roost assessment of buildings and trees), hazel dormouse, otter and water vole, badger, breeding birds, wintering birds, great crested newt, reptile, and invertebrate, undertaken between 2021 and 2024.
- 8.1.2. The Proposed Scheme entails the construction of an electricity substation compound, installation of direct buried electricity circuits beneath the existing road network, and landscaping and ecological measures as habitat compensation. The Proposed Scheme will result in the permanent loss of 0.627 ha of mixed scrub and 0.086 ha bramble scrub, and temporary loss of 0.229 ha of other neutral grassland of which 0.219 ha is within the SINC and 0.026 ha of mixed scrub, within the Development Site. Whilst in the Compensation Site it will result in the conversion of 0.03 ha of g3c other neutral grassland and 1.17 ha of g3c6 *Lolium-Cynosurus* neutral grassland into mixed scrub.
- 8.1.3. Following an assessment of the baseline conditions of the Application Site and the Proposed Scheme, the following IEFs were considered within the impact assessment;
- LG Duffryn Site 2 SINC;
 - LG Duffryn Site 1 SINC;
 - Gwent Levels – St Brides SSSI;
 - h3h mixed scrub;
 - g3c other neutral grassland (SINC grassland);
 - h3d bramble scrub;
 - r1a6 eutrophic standing water – 40 ponds priority habitat (Waterbody 6);
 - w1g other broadleaved woodland;
 - w1g other broadleaved woodland – 33 line of trees;
 - g3c6 *Lolium-Cynosurus* neutral grassland and g3c other neutral grassland (Compensation Site);
 - Bat (foraging and commuting);
 - Breeding birds;
 - Hazel dormouse;
 - Reptiles; and
 - Priority invertebrates.
- 8.1.4. Mitigation measures include acquiring a NRW Development Licence for hazel dormouse and vegetation clearance being undertaken using hand-held tools and in a two-stage or one-stage clearance operation. The Proposed Scheme will be undertaken followed a PMW for all other IEFs. Further mitigation measures are detailed in Section 5.
- 8.1.5. To compensate for the habitat losses the landscaping proposals have allowed for the following:
- Creation of 0.478 ha of species-rich grassland within the Development Site, of which 0.144 ha will be tussocky grassland cut bi-annually on rotation and 0.334 ha will be marshy grassland cut and collected twice a year;
 - Creation of 1.437 ha of mixed scrub within the Compensation Site and the restoration of 0.026 ha within the Development Site;
 - Installation of seven hazel dormouse nest boxes within the Development Site and 20 within the Compensation Site; and

- Enhancement of 1.317 ha of neutral grassland within the Compensation Site.

8.1.6. The landscape proposals have allowed for the following enhancement measures:

- Creation of a 61 m² wildlife pond within the Development Site;
- Creation of 134 m of native species-rich hedgerow within the Development Site, a 220 m and a 50 m native species-rich hedgerow, and gap planting along 90 m of an existing species-rich hedgerow within the Compensation Site;
- Creation of a 2 m x 2 m reptile hibernacula using arisings from cleared vegetation and 2 m x 2 m grass snake egg-laying heap within the Development Site;
- Installation of eight 50 cm x 50 cm corrugated reptile refugia in optimal locations within the Development Site; and
- Increased species richness of the proposed grassland within the Development Site and proposed scrub within the Development Site compared to the existing grassland and scrub within the Development Site.

8.1.7. Section 7 evidences how the Proposed Scheme will deliver a net benefit for biodiversity demonstrated through use of Atkins Realis DECCA criteria, in line with Planning Policy Wales 12 and existing current policy and legislation to provide enhance biodiversity and increase ecosystem resilience within development proposals

8.1.8. Taking into account the avoidance, mitigation, compensation and enhancement measures, the Proposed Scheme conforms to Planning Policy Wales and the Newport Local Development Plan. It is concluded that in isolation the Proposed Scheme will only result in a Local significant residual effect on hazel dormice within the Development Site during construction, due to the it not being connected to the Compensation Site. In-combination with the adjacent Welsh Government NGED Substation scheme and nearby SPTS scheme, there is anticipated to be a short-term significant residual effect at the Local level due to scrub loss, and grassland loss and fragmentation. In the long-term, once the compensation scrub and grassland establishes there is predicted to be no significant residual effect. A Long-Term Management Plan (LTMP) has been produced detailing the management of the proposed and retained habitats within the Application Site.

APPENDICES

Appendix A. Site Location Plan and Proposed Scheme Figures

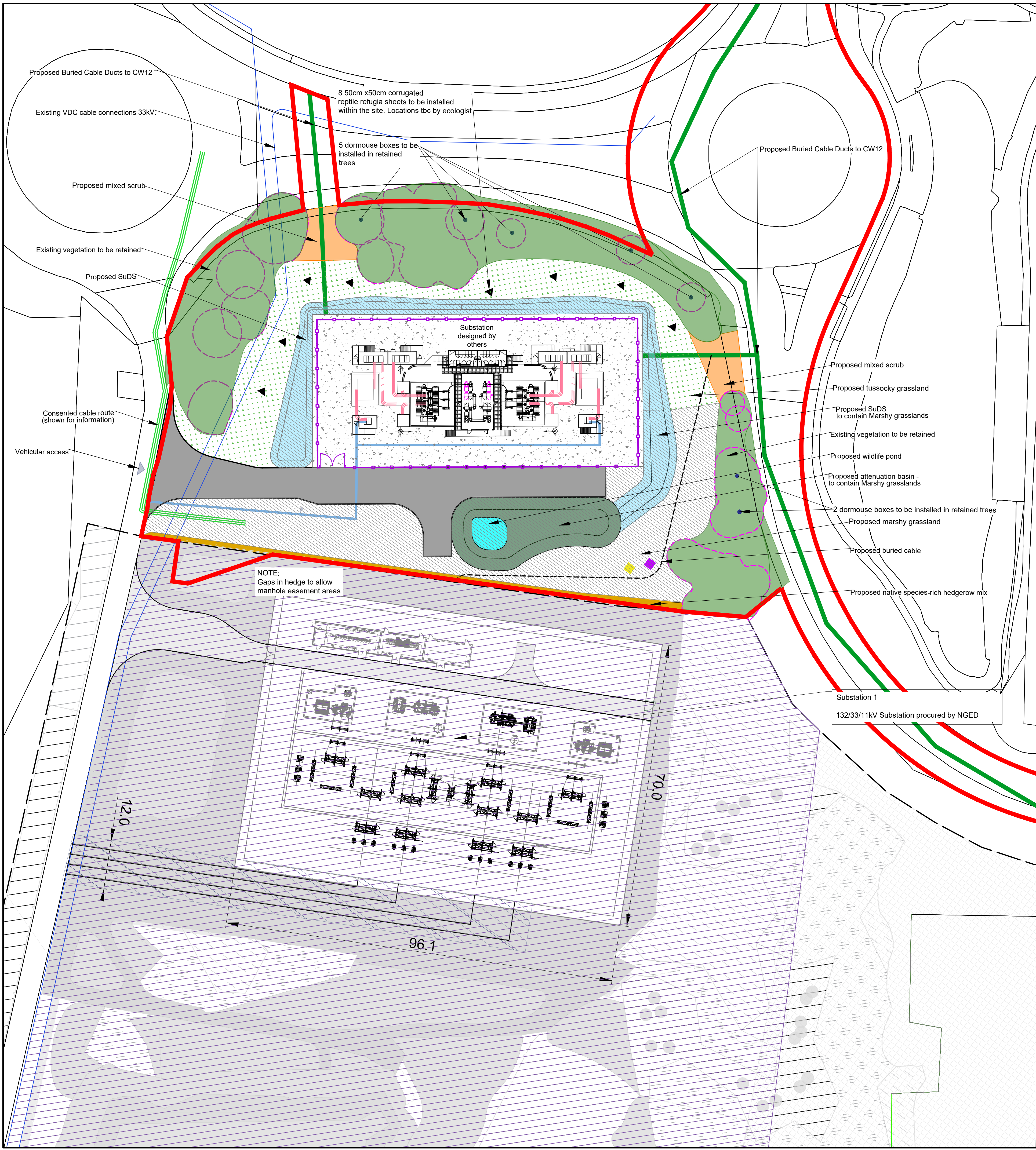
Figure A-1 Application Site Location Plan



Figure A-2 Development Site General Arrangement



0 10 100
Millimetres



Planting Schedule

Dense Scrub Planting				
No.	Species	Specification	Height	Density (To be planted in species groups of 2 to 3)
26	Prunus avium	1+1 .8	60-80cm	1/m ²
13	Lonicera periclymenum	1+1 .8	60-80cm	1/m ²
13	Salix caprea	1+1 .8	60-80cm	1/m ²
26	Quercus robur	1+1 .8	60-80cm	1/m ²
53	Crataegus monogyna	1+1 .8	60-80cm	1/m ²
26	Prunus spinosa	1+1 .8	60-80cm	1/m ²
79	Corylus avellana	1+1 .8	60-80cm	1/m ²
26	Viburnum lantana	1+1 .8	60-80cm	1/m ²
Total :262				

Hedgerow				
No.	Species	Specification	Height	Density
58	Lonicera periclymenum	1+2 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
58	Corylus avellana	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
120	Crataegus monogyna	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
58	Sambucus nigra	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
121	Sorbus aucuparia	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
121	Quercus robur	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
58	Prunus spinosa	1+1 .8	60-80cm	0.3Ctr Double Staggered at 0.45m offset
Total :594				

Grass Areas	Seed Mix	Density	Weight	Supplier
Area	Marshy grassland and tussocky grassland Cynosurus cristatus – Centaurea nigra grassland Juncus acutiflorus – Galium palustre rush-pasture			
4779.1m2		4g/m2	19.35kg	To be sourced from local nature reserve on Gwent Levels SSSI

Pond Planting				
No.	Species	Specification	Density	%
31	Mentha aquatica	Full pot	2/m ²	25%
31	Caltha palustris	Full pot	2/m ²	25%
38	Lythrum salicaria	Full pot	2/m ²	30%
12	Carex acutiformis	Full pot	2/m ²	10%
12	Sagittaria sagittifolia	Full pot	2/m ²	10%

Habitat Areas:

Existing habitat (mixed scrub and road verge grassland) to be retained	3485 Sqm
Proposed mixed scrub	262 Sqm
Proposed attenuation area	523 Sqm
Proposed SuDS	915 Sqm
Proposed tussocky grassland	1440 Sqm
Proposed marshy grassland	3339 Sqm
Proposed wildlife pond	61 Sqm
Proposed native species-rich hedge	134 m

DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

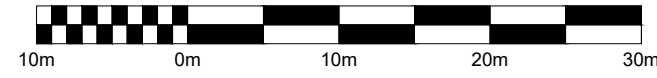
MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

GENERAL KEY

- Proposed Red line boundary
- Proposed VDC CW12 Cable routes
- Welsh Government development shown for information only
- Proposed concrete base for substation compound
- Proposed tarmac surface
- Proposed gates 3m double leaf gates to vehicular access
- Proposed security fence 4m height
- Existing vegetation to be retained
- Tree and scrub Root Protection Areas
- Proposed mixed scrub
- Propose attenuation basin
- Proposed Swales
- Proposed tussocky grassland
- Proposed marshy grassland
- Proposed native species-rich hedge
- Proposed 2m x 2m hibernacula for reptiles, location tbc by ecologist on site
- Proposed 2m x 2m hibernacula for amphibians, location tbc by ecologist on site
- Dormouse boxes
- Proposed corrugated reptile refugia sheets



Scale 1:500

Rev.	Date	Description	By	Chk'd
P08	04/09/2024	UPDATED AS PER COMMENTS	DS	SN
P07	30/08/2024	ISSUED FOR PLANNING. DRAWING NO. UPDATED.	DS	PT
P06	03/07/2024	ISSUED FOR PLANNING	SN	PT
P05	21/05/2024	ISSUED FOR COORDINATION	AM	PT
P04	18/04/2024	ISSUED FOR INTERNAL COORDINATION	AM	PT
P03	27/07/2023	ISSUED FOR INTERNAL COORDINATION	AM	PT
P02	12/07/2023	ISSUED FOR COORDINATION	AM	PT
P01	09/06/2023	ISSUED FOR INFORMATION	AM	PT

Drawing Status	Suitability
ISSUED FOR PLANNING	S1

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Client

Vantage Data Centres

VANTAGE
DATA CENTRES

Project Title

VANTAGE DATA CENTRES SUBSTATION
150MVA SUBSTATION

Drawing Title

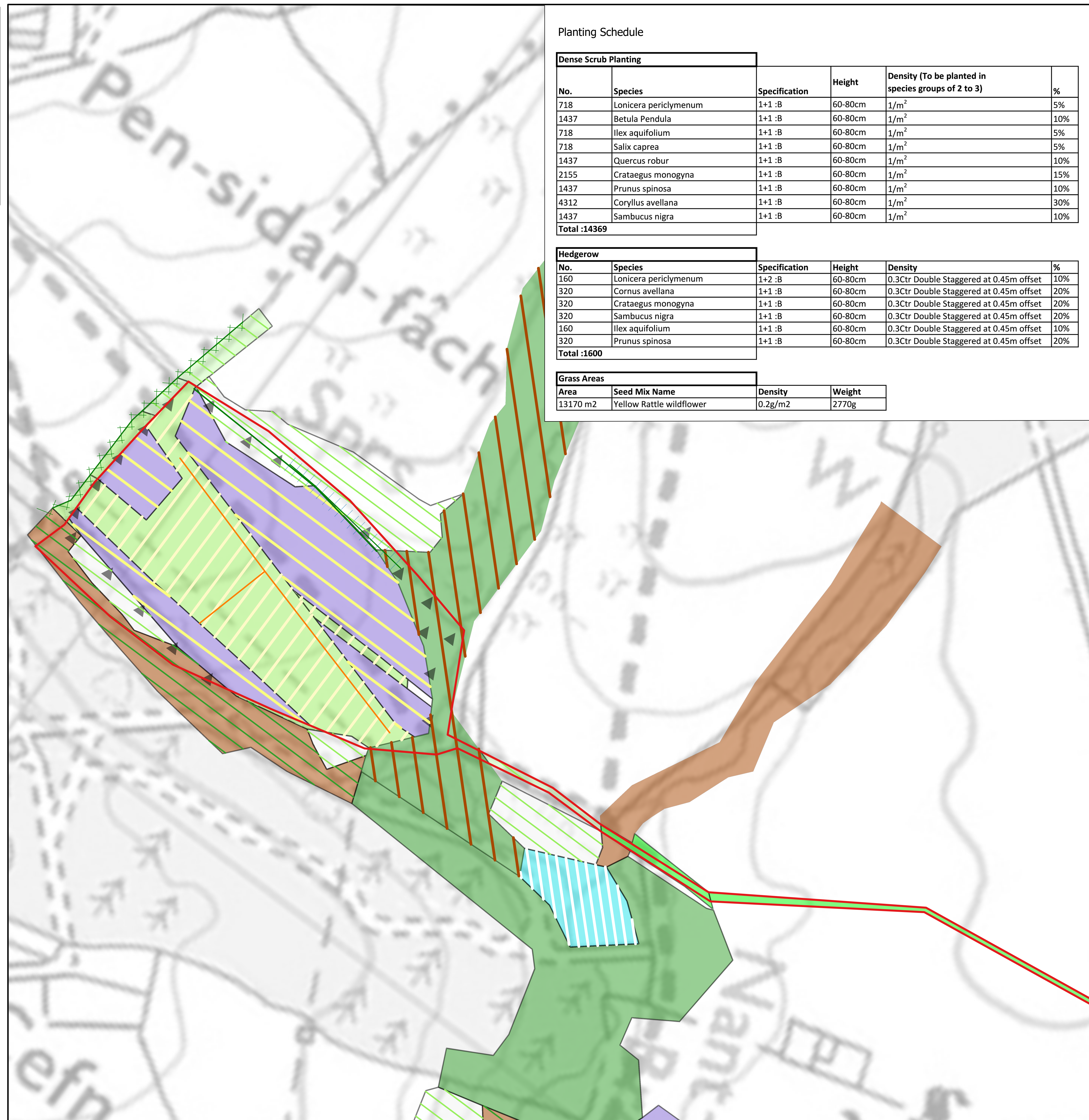
LANDSCAPE
GENERAL ARRANGEMENT

Scale	Designed	Drawn	Checked	Authorised
1:500	AM	AM	PT	DB
Original Size	Date	Date	Date	Date
A1	05/03/24	05/03/24	13/03/24	26/03/24
Drawing Number				Revision
5222535-ATK-XX-XX-DR-L-401001				P08

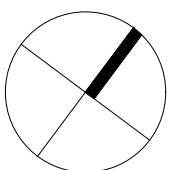
Internal Project Number: 5222535

Figure A-3 Compensation Site General Arrangement





DO NOT SCALE



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

N/A

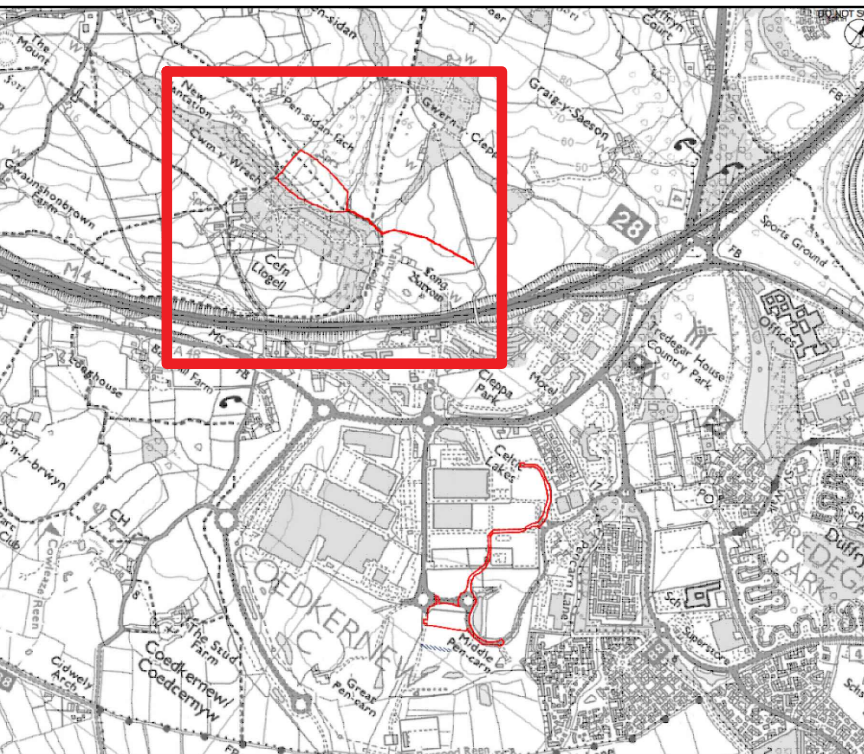
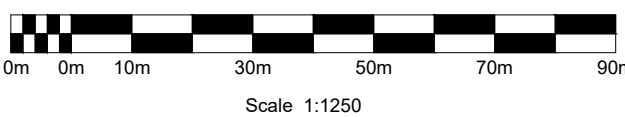
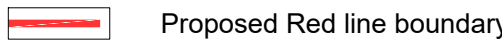
MAINTENANCE/CLEANING

N/A

DECOMMISSIONING/DEMOLITION

N/A

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

LOCATION PLANS
NTS

P04	18/12/2024	UPDATED AS PER COMMENTS	SN	PT	DB	
P03	04/09/2024	UPDATED AS PER COMMENTS	DS	PT	DB	
P02	19/08/2024	UPDATED AS PER COMMENTS	JS	PT	DB	
P01	03/07/2024	ISSUED FOR PLANNING	SN	PT	DB	
Rev.	Date	Description	By	Chk'd	Rev'd	

Drawing Status

ISSUED FOR PLANNING

Suitability
\$1



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Client

Vantage Data Centres



Project Title

VANTAGE DATA CENTRES SUBSTATION 150MVA SUBSTATION

Drawing Title

PROPOSED DORMOUSE COMPENSATION SITE PLAN

Scale 1:1250	Designed SN	Drawn SN	Checked PT	Authorised DB
Original Size A1	Date 05/03/24	Date 05/03/24	Date 13/03/24	Date 26/03/24

Drawing Number

5222535-ATK-XX-XX-DR-L-401011

Revision

Internal Project Number: 5185749

Figure A-4 Compensation Site Post-Development





Legend

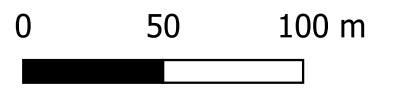
- Compensation Site boundary
- Proposed hazel dormouse nest boxes

Proposed habitats

- Proposed h2a – native species rich hedgerow
- Proposed h2a – native species rich hedgerow gap planting
- g3c6 - proposed enhanced Lolium-Cynosurus neutral grassland
- h3h – proposed mixed scrub

Existing habitats

- Existing h2a_st - Native species rich hedgerow with trees
- Existing h2a_stb - Native species rich hedgerow with trees-bank or ditch
- g1c - bracken
- g3c - other neutral grassland
- g4 - modified grassland
- w1d - wet woodland
- w1f - lowland mixed deciduous woodland
- w1g - other woodland - broadleaved
- w1h - other woodland mixed
- h3d - bramble scrub
- u1e - built linear features
- r1a - eutrophic standing waters



Original scale: 1:2,700 | Version: 1.0

Base Mapping: © OpenStreetMaps and its contributors

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Client: Vantage Data Centers

Project: Vantage Substation and Buried Cables

Job No: 5222535.202

Title: Compensation Site Post-Development

Drawing number: 5222535-ATK-XX-DR-E-0001

Drawn by: MA Date: 26/06/2024	Checked by: MD Date: 28/06/2024	Reviewed by: PL Date: 10/07/2024
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Appendix B. Planning Policy and Consultation Response

B.1 Planning Policy Wales, 2024

Planning Policy Wales (PPW) Edition 12 was released on 7th February 2024 and sets out the Welsh Governments planning policies for Wales Chapter 6: Distinctive and Natural Places, has a focus on biodiversity (habitats and species), designated sites, green infrastructure, and peatlands, and those policy obligations relevant to ecological consultants.

Green Infrastructure Assessments and Statements

Green infrastructure assessments are up to date inventories and maps of existing green infrastructure and ecological assets and networks that must be kept by planning authorities. Development proposals should be informed by the priorities identified in green infrastructure assessments and locally based planning guidance.

A green infrastructure statement should be submitted with all planning applications. This will be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. The green infrastructure statement will demonstrate compliance with enhancing biodiversity and ecosystem resilience, and how the step-wise approach has been applied (the step-wise approach is illustrated in Figure 1 on page 2 of this document).

Biodiversity and Ecological Networks

The planning system should ensure that, overall, there is a net benefit for biodiversity and ecosystem resilience, resulting in enhanced wellbeing. Addressing the consequences of climate change should be a central part of any measures to protect, maintain and enhance biodiversity and the resilience of ecosystems.

Biodiversity and Resilience of Ecosystems (Section 6 Duty) – Net Benefit for Biodiversity

The Environment (Wales) Act 2016 Section 6 Duty means public authorities must seek to maintain and enhance biodiversity and resilience of ecosystems in the exercise of their functions in Wales. This means development should not cause any significant loss of habitats or populations of species (not including non-native invasive species), locally or nationally, must work alongside nature, and it must provide a **net benefit for biodiversity** and improve, or enable the improvement, of the resilience of ecosystems. A net benefit for biodiversity is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before.

The step-wise approach will help guide decision makers in securing a net benefit for biodiversity and the onus is on developers to bring forward proposals in a way which will achieve a net benefit for biodiversity demonstrating how they have used the step-wise approach. The broad framework for implementing the Section 6 Duty, securing a net benefit for biodiversity, and building resilience through the planning system includes addressing all of the following attributes, known as the DECCA Framework:

- **diversity** between and within ecosystems;
- the **extent** or scale of ecosystems;
- the **condition** of ecosystems including their structure and functioning;
- the **connections** between and within ecosystems; and



- **adaptability** of ecosystems including their ability to adapt to, resist and recover from a range of pressures likely to be placed on them through climate change for example.

Maintaining and Enhancing Biodiversity

Planning authorities must follow a step-wise approach to maintain and enhance biodiversity, build resilient ecological networks, and deliver net benefits for biodiversity by ensuring that any adverse environmental effects are firstly avoided, then minimised, mitigated, and as a last resort compensated for. Enhancement must be secured by delivering a biodiversity benefit primarily on site or immediately adjacent to the site, over and above that required to mitigate or compensate for any negative impact.

Having worked iteratively, through the stages of the step-wise approach below and providing evidence in the Green Infrastructure Statement that the step-wise approach has been followed, a scheme of enhancements must be provided to ensure a net benefit for biodiversity, and unless other significant material considerations indicate otherwise, it will be necessary to refuse permission.

Improving ecosystem resilience, particularly improving connectivity to the immediate surroundings, would be a key contribution to on-site avoidance, minimisation, and mitigation strategies and enhancement. How a development would improve the attributes of resilience should be demonstrated as far as this is reasonably practical.

The Step-Wise Approach

The six-step process is provided below:

Step 1

- a) The priority is to **avoid** damage to biodiversity. Any reasonable alternative sites (including alternative siting and design options) that would result in less harm, no harm, or benefit, need to have been fully considered.
- b) Proposals in statutory designated sites are, as a matter of principle unacceptable, and therefore must be excluded from site searches undertaken by developers. This principle also extends to those sites containing protected species and habitats which are irreplaceable. It will be wholly exceptional for development to be justifiable in such instances.

Step 2

Developers, in discussion with planning authorities must seek to **minimise** the initial impact on biodiversity and ecosystems by maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems. Retained habitats and features must continue to be well connected to adjacent habitats to provide connectivity.

Step 3

Where, after measures to minimise impact, biodiversity and ecosystems could still be damaged, or lost through residual impacts, the proposed development should **mitigate** that damage. Mitigation measures must be put in place to limit the negative effects of a development.

Effective mitigation or restoration measures should be incorporated into the design proposal following the consideration of steps one and two above. Mitigation or restoration measures must be designed to address the specific negative effects by repairing damaged habitats and disturbed species.

Step 4

When all the steps above have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes further onsite/ immediately proximate, and as a last resort off-site **compensation** for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.



The onus is on applicants to address the following:

- a) Off-site compensation should be informed by a full ecological assessment to establish a formal baseline before habitat creation or restoration starts and secured far enough in advance before the loss of biodiversity on site.
- b) The green infrastructure assessment should be used to identify suitable locations for securing off-site compensation.
- 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.
- d) Any proposed compensation should be place based, take account of the Section 6 Duty (Biodiversity and Resilience of Ecosystems Duty), the DECCA framework and appropriate ecological advice.

Step 5

Each stage of the step-wise approach must be accompanied by a **long term management plan** of agreed and appropriate avoidance, minimisation, mitigation/restoration and compensation measures alongside the agreed enhancement measure. The management plan must set out how a net benefit for biodiversity will be achieved within as short a time as possible and be locally responsive and relevant to local circumstances.

Step 6

Finally, where the adverse effect on biodiversity and ecosystem resilience clearly outweighs other material considerations, the development should be **refused**.

Key factors which will affect the implementation of the above step-wise approach:

- a) Pre-application surveys, research and data searches by developers will be necessary to establish the baseline state of biodiversity and ecosystem resilience on site;
- b) A net benefit for biodiversity must be achieved for sites cleared prior to development. Habitat status prior to clearance can be established through evidence remaining on site and desk-based assessments. Sites will be presumed to have had good habitat status in the absence of any evidence to the contrary.
- c) **All** development must deliver a net benefit for biodiversity and ecosystem resilience from the baseline state.

Designated Sites

PPW is clear that development within statutory designated sites for nature conservation, or those not within but likely to damage, which is not necessary for the management of the site, must be avoided. However, development may be acceptable in wholly exceptional circumstances (see Section 6.4.27 in PPW). Development within non-statutory sites for nature conservation must secure the written opinion from the local authority ecologist.

Protected and Priority Habitats and Species

'Section 7' of the Environment (Wales) Act 2016 requires Welsh Ministers to publish and maintain lists of species and types of habitats that are regarded as of 'principal importance'. In fulfilling their duty to maintain and enhance biodiversity, planning authorities and developers must have regard to Section 7 habitats and species when following the step-wise approach.

The presence of a species protected under European or UK legislation, or a Section 7 species is a material consideration when a planning authority is considering a development proposal which would be likely to result in disturbance or harm to a species or its habitat and to ensure that the range and population of the species is sustained.

Trees, Woodlands and Hedgerows

Retention



Where trees, woodland, and hedgerows are present within a development site, their retention, protection, and integration should be identified within planning applications, and where capable of making a significant contribution to the area, these trees should be retained and protected.

Replacement Planting

Permanent removal of trees, woodland, and hedgerows will only be permitted where it would achieve significant and clearly defined public benefits. Where individual or groups of trees and hedgerows are removed as part of a proposed scheme, planning authorities must first follow the step-wise approach. Replacement planting shall be at a ratio equivalent to the quality, environmental, and ecological importance of the tree(s) lost, and this should be preferably onsite, or immediately adjacent to the site, and at a minimum ratio of at least three trees of a similar type and compensatory size planted for every one lost. Where a woodland or a shelterbelt area is lost as part of a proposed scheme, the compensation planting must be at a scale, design and species mix reflective of that area lost. In such circumstances, the planting rate must be at a minimum of 1,600 trees per hectare for broadleaved trees, and 2,500 trees per hectare for conifer trees.

Protection

Ancient woodland, semi-natural woodlands, individual ancient, veteran and heritage trees and ancient hedgerows are to be afforded protection from development which would result in their loss or deterioration unless very exceptionally there are significant and clearly defined public benefits; this protection must prevent potentially damaging operations and their unnecessary loss.



B.2 Newport Local Development Plan 2011-26

The Newport Local Development Plan 2011 – 2026 (adopted January 2015)¹¹⁸, highlights the necessity for the re-development of brownfield Sites with a consideration towards increasing ecological biodiversity within the planning proposal.

Strategy & Objectives

Objective 6 – Conservation of the Natural Environment

To protect and enhance the quality of the natural environment, including landscape, protected habitats and species of principal importance for biodiversity in Wales (regardless of greenfield or brownfield status) and the protection of controlled waters.

Strategic Policies

SP9 Conservation of the Natural, Historic and Built Environment

The conservation, enhancement, and management of Recognised sites within the natural, historic and built Environment will be sought in all proposals.

General Policies

GP5 General Development Principles – Natural Environment

Development will be permitted where:

- 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;
- 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 42¹¹⁹ and local protected habitats and species, and protecting features of importance for ecology;
- The proposal will not result in an unacceptable impact on water quality;
- The proposal should not result in the loss or reduction in quality of high-quality agricultural land (grades 1, 2 and 3a);
- There would be no unacceptable impact on landscape quality; and
- The proposal includes an appropriate landscape scheme, which enhances the site and the wider context including green infrastructure and biodiversity networks.

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.

The Natural Environment

¹¹⁸ <http://www.newport.gov.uk/en/Planning-Housing/Planning/Planning-policy/Local-Development-Plan/Local-Development-Plan.aspx>

¹¹⁹ Defined under the Natural Environment and Rural Communities Act, available at <http://www.legislation.gov.uk/ukpga/2006/16/contents>



Proposals affecting locally designated sites will only be permitted where:

- There would be no overall loss of the nature conservation resource for which the site has been designated;
- There would be no significant adverse effect on the geological interest of the site; and
- Appropriate mitigation or compensatory measures can be achieved.

B.3 Newport's Local Biodiversity Action Plan

Priority habitats

The most relevant Priority Habitats included within Newport's Local Biodiversity Action Plan (LBAP)¹²⁰ are ponds, open mosaic habitats on previously developed land, lowland meadows, and lowland mixed deciduous woodland.

Regarding ponds, the LBAP states:

"Newport has a number of ponds, creating a rich network across the county... Some of these are suitable habitat for the European protected great crested newt, as well as other amphibians such as smooth and palmate newts, frogs and toads."

Regarding open mosaic habitats on previously developed land, the LBAP described this as:

"Brownfield sites can often remain unused for many years and recolonisation by plants and animals on these undisturbed areas can lead to the development of a diverse flora and fauna with a complex succession of habitats forming a mosaic (patchwork), from bare ground to grassland, scrub and woodland. These areas often provide alternative habitats for many species that have declined due to loss of their native habitats in the wider countryside. Often the biodiversity value of these areas is underestimated and can be important for many species..."

Regarding lowland meadows, the LBAP describe this as:

"Lowland meadows generally refer to unimproved and semi-improved grasslands on neutral soils. These are grasslands that are subject to low intensity management and have not been significantly altered by recent intensive agricultural activities such as ploughing and reseeded or the use of high nutrient fertilisers or herbicides. Unimproved neutral grasslands are often very species-rich, supporting a wide diversity of plant species as well as a rich associated fauna. Such unimproved grasslands often have a long history of management as hay meadows or pastures with little modification for agricultural purposes. In addition, this plan also covers semi-improved grasslands – those which have undergone some agricultural improvement, but which retain good species-diversity. Such semi-improved grasslands assume greater importance in areas where unimproved meadows are rare as well as offering the potential for management to enhance biodiversity. There are relatively few unimproved neutral grasslands still existing in Newport and therefore this is an extremely rare, vulnerable and important habitat type..."

Regarding lowland mixed deciduous woodland, the LBAP describe this as:

¹²⁰ Newport's Local Biodiversity Action Plan- <http://www.newport.gov.uk/en/Leisure-Tourism/Countryside--Parks/Biodiversity/Biodiversity-action-plan.aspx>

“Lowland mixed deciduous woodland can be found on all soil conditions and many are ancient woodlands. There is a great variety in the species composition of the canopy layer, but it is usually dominated by pedunculate oak but sessile oak can be locally abundant. In these woods you may come across a wide range of trees – wild cherry, ash, sweet chestnut, small-leaved lime and field maple to name a few. The more acid soils often have a less varied ground flora – bluebell, wood anemone, honeysuckle, bramble and bracken are the commonest species. Dog’s mercury is a characteristic plant on lime-rich soils, along with enchanter’s nightshade, wood avens and Lord’s and ladies...”

Priority Species

Priority species included within Newport’s LBAP are:

- Hazel dormouse;
- Bats;
- Otter;
- Water vole;
- Fungi;
- Small ranunculus moth; and
- Shril carder bee.

B.4 Consultation Responses

Vantage Data Centers had no suitable land available to be used for compensatory hazel dormouse habitat creation. Therefore they instructed the land agent, Savills, to conduct a search to identify third-party landowners willing to sell land for habitat compensation. The land had to be connected to the Proposed Scheme via suitable hazel dormouse habitat such as hedgerows, scrub, and woodland, so it would benefit the same hazel dormouse population impacted by the Proposed Scheme. Therefore, the search area was north of the South Wales railway line, west of the Duffryn urban area, south of the A48 and M4, and east of Castleton and Marshfield. Efforts have been made to contact each of the landowners (29 in total) (see Technical Note¹²¹), however, the majority have not responded and most of those that have engaged have declined. Consequently, the search area was widened to include land north of the M4 as, although not connected via suitable habitat to the Proposed Scheme, hazel dormice are known to be present along the M4 eastbound soft estate.

On 30th January 2024, Vantage Data Centers and AtkinsRéalis held a meeting with Matthew Harris, Ecology Officer for Newport City Council (NCC), to discuss ecology compensation options for the Proposed Scheme. The meeting minutes are detailed below:

- NCC would expect the compensation site to be in a similar landscape to Development Site;
- NRW and NCC have a preference to remove scrub from Gwent Levels SSSI in favour of species-rich grassland. Likely to resist proposals for scrub creation within SSSI, hedgerows along north of reens may have limited scope, but elsewhere wouldn’t be supported;
- NCC land surrounding the site is either in SSSI, already managed for nature conservation, or already woodland;
- Matthew Harris is aware of the pressure on Imperial Park employment allocations and limited opportunities to compensate loss of important habitats. It has been raised in Local Plan consultations;
- NCC happy with SINC habitat compensation being wholly within the Development Site as part of landscape planting proposals due to low quality;

¹²¹ AtkinsRéalis, (April 2024). Technical Note – Hazel Dormouse Compensation Site Options. Vantage Substation and Buried Cables

- NCC has accepted Section 106 contributions in lieu of offsite compensation sites in the past but this is not preferred by NCC; and
- NRW may not accept Section 106 contributions as compensation for loss of hazel dormouse habitat due to lack of clear compensation plan, delayed delivery, etc.

On 31st January 2024, AtkinsRéalis Ecologist Max Dupé contacted the NRW Newport, Blaenau Gwent & Caerphilly Environment Team regarding scrub planting within the Gwent Levels SSSI, to which Senior Conservation Officer Kerry Murton replied on the same day with the following:

“Planting of fields within the SSSI with small blocks wouldn’t be acceptable. There are areas of grassland in the SSSI which support shrill carder bee in the Gwent Levels and we hope these areas will increase with ongoing SSSI management across the Gwent Levels. Planting of linear habitats such as the north banks of ditches (but not the larger reens) may be acceptable but due to the SSSI designation there would need to be long term commitment and funding from the applicant to the hedge and ditch management and liaison with landowners. NRW would not have staff resources for such liaison. Often the width of habitat needed to support dormice is hard to achieve on linear habitats like ditches. If ditches had planting on northern banks then a commitment to ongoing maintenance of the hedge long-term would be needed to ensure the SSSI ditch doesn’t get overgrown by a new hedge.”

Therefore, the NRW environment team have indicated they would not accept large areas of scrub planting within the Gwent Levels SSSI.

On 8th February 2024, AtkinsRéalis Associate Town Planner Benjamin Noutch met with Newport City Council Senior Planning Officer Jacob Cooke to discuss habitat compensation at Imperial Park, particularly highlighting the lack of available land in the area to develop connected off-site habitat compensation. The content of the site meeting is summarised in the email below:

From: Noutch, Benjamin
Sent: Thursday, February 8, 2024 5:13 PM
To: Cooke, Jacob (Senior Planning Officer)
Cc: Williams, Stephen (West Area Development Manager)
Subject: Habitat Compensation at Imperial Park

Hi Jacob,

Thanks again for your time on site today. We discussed the separate issue of the lack of land available to develop connected offsite habitat compensation for development proposals on vacant allocated sites at Imperial Park. Please could you raise this with the relevant Officers as I believe this is a matter of strategic importance to the Council. The Replacement Local Development Plan Preferred Strategy document relies on 38.5ha of land south of Imperial Park to provide 50% of the 77ha of employment land identified in the Employment Land Review as being required over the RLDP plan period.

In recent discussions with NRW, NCC Ecology Officer, the Welsh Government and several potential developers it is clear that, the lack of available land to provide off-site habitat compensation in the vicinity of Imperial Park will be a major issue for future developers and may undermine the RLDP Preferred Strategy.

- *Local policy guidance and national policies require habitat compensation at replacement ratios of at least 1.5:1 and for some habitats 2:1 and 3:1 to be included as part of development proposals in planning applications, or to be secured via s106 agreement.*
- *NCC Ecology Officer expects offsite habitat compensation sites to be reasonably connected to the application site, or at least within the same landscape.*
- *NCC Ecology Officer does not generally accept s106 contributions in lieu of habitat compensation proposals.*



- *NRW do not support section 106 contributions in lieu of a clear compensation proposal for habitats supporting protected species (i.e. dormouse)*
- *Land owned by Welsh Government and Newport Council within and to the south of Imperial Park is either under existing conservation regimes/commitments or not commercially available for use as habitat compensation.*
- *NRW will not support proposals which create scrub habitat within The Gwent Levels Site of Special Scientific Interest (all of the land south of the allocated land at Imperial Park).*
- *The A48 and M4 are major barriers to connectivity so land to the north is not suitable for offsite compensation.*
- *The area of agricultural land between the M4 and A48 (to the north), Imperial Park (to the east), the SSSI (to the south) and Marshfield and Castleton (to the west) is the only semi-connected area within the same landscape where habitat compensation could theoretically be provided for all future development proposals on land at Imperial Park.*
- *A conservative estimate of 50% of the employment allocation is vegetated by scrub, woodland, mosaic grassland and would need compensating if lost.*
- *This could mean less efficient use of allocated employment land or significant challenges for commercial developers in trying to identify, secure and design off-site compensation schemes.*

In the immediate short-term Vantage is preparing a planning application for an electricity substation to provide operational power to its sites and to several third-party vacant allocated sites at Imperial Park. Vantage is already facing this challenge head on. An application for planning permission will be submitted in June 2024, and prior to this Vantage is continuing to exhaust the few available compensation options it has. Jacob, you indicated that the proposal being situated on a site allocated for employment development could be a relevant factor when considering compensation for lost habitat in the planning balance. This is useful advice, in determining the application NCC may need to weigh up the benefits of a proposal supporting economic development on an allocated site against a shortfall in habitat compensation despite the developer's best efforts.

Longer term, overcoming this challenge and unlocking these employment sites will require stakeholders to come together and agree a strategic solution.

Kind regards,

Benjamin Noutch

NRW South East Planning team were contacted on the following dates to request pre-application advice via NRW's Discretionary Advice Service (DAS) in relation to the proposals and the approach to avoiding, mitigating and compensating the loss of habitats supporting hazel dormice:

- 12th December 2023;
- 4th January 2024;
- 1st March 2024; and
- 4th April 2024.

On all occasions NRW responded that they did not currently have availability. Requests for advice have, therefore, been unsuccessful and the project team has not been able to discuss the proposals with NRW prior to identifying and developing off-site habitat compensation proposals.



Appendix C. Survey reports

The following survey reports are appended to this EcIA but have been submitted as individual reports:

- C.1 National Vegetation Classification Survey Report 2021**
- C.2 National Vegetation Classification Survey Report 2023**
- C.3 Bat Survey Report 2021**
- C.4 Dormouse Survey Report 2021**
- C.5 Riparian Mammals Survey Report 2021**
- C.6 Otter and Water Vole Survey Report 2023**
- C.7 Badger Survey Report 2023**
- C.8 Breeding Bird Survey Report 2023**
- C.9 Wintering Bird Survey Report 2021/2022**
- C.10 GCN Survey Report 2023**
- C.11 Reptile Survey Report 2023**
- C.12 Invertebrate Survey Results 2021**
- C.13 Invertebrate Survey Report 2023**



Appendix D. Phase 2 Survey Methods

D.1 Badgers

A badger survey was carried out by a suitably experienced AtkinsRéalis ecologist in January 2024 in accordance with good practice guidance²³ and CIEEM competencies for undertaking badger surveys¹²².

The extent of the badger survey was based on the zone of sensitivity for this species and included all land within the Development Site and a 50 m buffer extending out in all directions from the Development Site boundary (hereafter referred to as the Badger Survey Area).

The Badger Survey Area was inspected for evidence of badger activity including setts¹²³, latrines, dung pits, prints, snuffle holes (created when foraging), pathways, hairs (e.g. caught on fencing) and scratching posts and evidence of other burrowing mammals such as rabbit or fox.

No evidence of badger was recorded.

D.2 Great Crested Newts

The great crested newt surveys listed below were undertaken by Ramboll ecologists working on a different scheme for Vantage Data Centers. It is assumed that they have been undertaken following the standard methodologies detailed below in accordance with good practice guidance¹²⁴ and CIEEM competencies for undertaking great crested newt surveys¹²⁵.

Habitat Suitability Index Assessment

HSI¹²⁶ assessments of five waterbodies were undertaken on 20/04/2023 in accordance with good practice guidance¹²⁷.

The extent of the HSI assessments was based on the zone of influence for this species and included all water bodies within the Development Site and a 500 m buffer extending out in all directions from the Development Site boundary, where access allowed (the Great Crested Newt Survey Area). Where major barriers to great crested newt dispersal (such as a dual-carriageway or large area of hardstanding on an industrial estate) were present between a given water body and the Development Site, the water body was omitted from HSI assessment and further survey for great crested newts.

¹²² CIEEM (2013) Competencies for Species Survey: Badger. The Chartered Institute of Ecology and Environmental Management, Winchester.

¹²³ A sett is defined as a hole or series of holes, dug by badger, that are likely to be connected via an underground tunnel system, but setts can also occur in man-made structures such as buildings, tunnels, culverts, mines or cairns, or in natural structures such as caves or hollow trees. Professional judgment of the surveyors will be used to determine the limits of a sett, but as a rough guide, two discrete series of holes separated by at least 15 m, or closer if separated by a major obstacle, are treated as two separate setts.

¹²⁴ English Nature (2001) Great Crested Newt Mitigation Guidelines.

¹²⁵ CIEEM (2013) Competencies for Species Survey: Great Crested Newt. Chartered Institute of Ecology and Environmental Management, Winchester.

¹²⁶ Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*) Herpetological Journal 10 (4), 143-155 (2000). Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. The great crested newt Habitat Suitability Index (HSI) is a quantitative measure of aquatic habitat quality for great crested newt. The HSI is a number between 0 and 1, derived from an assessment of ten habitat variables known to influence the presence of newts.

¹²⁷ Amphibian and Reptile Groups of the United Kingdom (2010) ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. ARGUK



The survey has been assumed as undertaken by suitably experienced ecologist(s) with at least one great crested newt survey licenced surveyor present.

The HSI is a quantitative predictor of habitat suitability for great crested newts. The HSI is a numerical index between 0 and 1, derived from an assessment of ten habitat variables known to influence the presence of great crested newts. These variables include (amongst others): geographic location, water body size and permanence, the presence of predatory fish and wildfowl, availability of suitable terrestrial habitat and the pond count within 1km of the survey pond, and each variable is scored based on its level of suitability. A HSI of 1 indicates optimal habitat (high probability of great crested newt occurrence), whilst a HSI of 0 indicates very poor habitat (minimal probability of great crested newt occurrence). The HSI is calculated on a single water body basis but takes into account surrounding terrestrial habitat and local water body density. If a water body has a very low HSI score (<0.5) then there would typically be a minimal chance of great crested newt presence.

As stated in good practice guidance¹²⁷, the HSI for great crested newts is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to conclude that any particular pond with a high score will support great crested newts, or that any pond with a low score will not do so. There is a positive correlation between HSI scores and the numbers of great crested newts observed. In general, high HSI scores are likely to be associated with greater numbers of great crested newts. The relationship is not sufficiently strong, however, to allow estimations of the numbers of newts in any particular pond.

Environmental DNA (eDNA)

The eDNA survey involved the collection of water samples from suitable water bodies within the Great Crested Newt Survey Area to be tested for the presence of great crested newt DNA, which would indicate the species is present in a particular water body.

The eDNA water sampling was undertaken on a single visit to all suitable water bodies on 20th April 2023

by suitably experienced ecologist(s) with at least one great crested newt survey licenced surveyor present.

Sampling followed an approved methodology¹²⁸, recognised by Natural England, which minimises cross-contamination. Field sampling equipment was supplied as sterile kits by the laboratory that was to carry out the DNA analysis (SureScreen Scientifics). In total, 20 water samples were collected from each water body sampled. Areas that may be used by great crested newts for displaying or egg-laying were selected for sampling and the sampling was carried out in daylight hours and in dry weather. Following completion of the sampling, the collected water samples were stored under suitable conditions before being sent to the laboratory for testing.

D.3 Otters

The extent of the survey was based on the zone of sensitivity for this species and included suitable watercourses and waterbodies within 250 m of the substation section of the Development Site, where access allowed (hereafter referred to as the Otter Survey Area).

The surveys were undertaken following good practice methodologies and CIEEM competencies for undertaking otter surveys¹²⁹.

¹²⁸ Biggs, et al (2014) Technical Advice Note for Field and Laboratory Sampling of Great Crested Newt eDNA in Analytical and methodological development for improved surveillance of the Great Crested Newt. Defra Project WC1067. Appendix 5. Freshwater Habitats Trust, Oxford

¹²⁹ CIEEM (April, 2013) Competencies for Species Survey: Eurasian Otter.



Field Sign Survey

A detailed search for field signs was undertaken by an AtkinsRéalis suitably experienced ecologist in January 2024. This involved walking along the bank of suitable habitat within 250 m of the substation section of the Development Site, focusing on Waterbodies 6, 7, 8, and 9.

Ecologists searched for evidence of otter and recorded the location and detail of all signs and resting sites.

Resting sites are referred to using the following terms:

- **Holt:** a cavity or hole in a river bank, in the ground, under tree roots, within rocks, or caves, where the back cannot be readily seen. If active this will usually contain field evidence such as spraints;
- **Hover:** a bolt hole or ledge that will afford an otter temporary cover or a place to feed on captured prey. The back of a hover can usually be seen. If active there may be field evidence present, such as footprints, spraints, or feeding remains;
- **Couch:** above ground location where an otter can lie up or groom. These may take the form of a simple swirl or depression in tall grasses where the otter has laid, or may be covered in a vegetated grass or reed 'roof'; and
- **Natal holt:** a cavity or hole (holt) in which otter cubs are born. These are very difficult to find and may be situated in areas some distance from the water. There may be very little evidence of usage.

The following evidence of otter activity was searched for and recorded during the surveys:

- Spraints (droppings);
- Tar spots;
- Anal jelly;
- Feeding remains;
- Potential resting site locations (including holts, hovers and couches);
- Paths and slides (defined otter paths on watercourse banks and mud slides evident of where the animal regularly enters the watercourse); and
- Footprints.

D.4 Hazel dormouse

Footprint Tunnel Survey

Hazel dormouse footprint tunnel surveys were undertaken within suitable habitat within the Compensation Site to provide evidence that hazel dormice were present. This is a relatively new survey technique which allows the presence/ likely absence of hazel dormice to be confirmed over a shorter period than traditional nest tube surveys.

A total of 50 footprint tunnels were deployed in July 2024 in suitable habitat (hedgerows, scrub and woodland) within and connected to the Compensation Site following best practice guidance¹³⁰. Following a two-week bedding in period the wooden plates, paper, and ink was applied and inserted in the tunnels in late July 2024. The footprint tunnels were then inspected and re-inked every two weeks by a suitably qualified ecologist. Any small mammal footprints were checked by a second qualified ecologist off-site to determine whether they were from a hazel dormouse or another mouse species. At the time of writing only two survey checks have been undertaken, with surveys continuing until October 2024.

¹³⁰ Bullion, S. & Looser, A. (2019). Guidance for using Hazel Dormouse Footprint Tunnels. Suffolk Wildlife Trust and People's Trust for Endangered Species.



Appendix E. Summary of Relevant Ecological Legislation in Wales

Table E-1- Summary of relevant species legislation in Wales

Species	Legislation	Offences	Licensing procedures and guidance
Bats <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 (as amended) Reg 43	Deliberately ¹³¹ capture, injure or kill a bat; deliberate disturbance ¹³² of bats; or damage or destroy a breeding site or resting place used by a bat. [The protection of bat roosts is considered to apply regardless of whether bats are present.]	A licence in respect of development is required from Natural Resources Wales (NRW). https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/bat-licensing/?lang=en Guidance documents: <i>Bat Mitigation Guidelines</i> (English Nature 2004) <i>Bat Workers Manual</i> (JNCC 2004) <i>Good Practice Guide: Approach to Bats and Planning</i> (NRW 2015) <i>Bat Surveys: Good Practice Guidelines</i> (BCT 2016)
	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take a bat; intentionally or recklessly damage, destroy or obstruct access to any structure or place	A licence from NRW is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.

¹³¹ Deliberate capture or killing is taken to include “accepting the possibility” of such capture or killing

¹³² Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

Species	Legislation	Offences	Licensing procedures and guidance
		used for shelter or protection or disturb ¹³³ a bat in such a place.	
Badgers	Protection of Badgers Act 1992	Wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett. [It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.]	Where required, licences for development activities involving disturbance or sett interference or closure are issued by the NRW. Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/badger-licensing/?lang=en Licences are normally not granted from December to June inclusive because cubs may be present within setts. Guidance documents: <i>Badgers- A Guide for Developers</i> (NRW 2018) <i>Guidance on undertaking work close to badger setts that cannot be licensed under the Protection of Badgers Act 1992</i> (NRW, Date Unknown)
Otters <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 (as amended) Reg 43	Deliberately ¹³¹ capture, injure or kill an otter; deliberate disturbance ¹³² of otters; or damage or destroy a breeding site or resting place used by an otter.	Licences issued for development by NRW. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/otter-licensing/?lang=en
	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take an otter; intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or	No licence is required for survey in Wales. However, a licence would be required if the survey methodology involved disturbance.

¹³³ Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 (as amended) remain an offence under the Wildlife and Countryside Act 1981 (as amended) although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

Species	Legislation	Offences	Licensing procedures and guidance
		disturb ¹³³ an otter in such a place.	
Hazel dormice <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 (as amended) Reg 43	Deliberately ¹³¹ capture, injure or kill a hazel dormouse; deliberate disturbance ¹³² of a hazel dormouse; or damage or destroy a breeding site or resting place used by a hazel dormouse.	A licence in respect of development is required from NRW. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/dormouse-licensing/?lang=en Guidance documents: <i>Dormouse Conservation Handbook</i> (English Nature 2006)
	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take a hazel dormouse; intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or disturb ¹³³ a hazel dormouse in such a place.	Licence issued for survey and conservation by NRW.
Water voles	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take water voles; intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or disturb a water vole in such a place.	Conservation licences issued for trapping and translocation operations by NRW. Certain displacement operations can be carried out under a class licence. Guidance documents: The Water Vole Conservation Handbook (R. Strachan & T. Moorhouse, Wildlife Conservation Research Unit, 3 rd Edition 2011) https://naturalresources.wales/conservation-biodiversity-and-wildlife/uk-protected-species/water-voles/?lang=en The Water Vole Mitigation Handbook (M. Dean, R. Strachan, D. Gow & R. Andrews 2016)

Species	Legislation	Offences	Licensing procedures and guidance
Birds	Wildlife and Countryside Act 1981 (as amended) Schedule 1 (some species only).	Intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; intentionally take or destroy the nest or eggs of any wild bird or intentionally obstructs or prevents any wild bird from using its nest. Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species [e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover].	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. https://naturalresources.wales/permits-and-permissions/species-licensing/bird-licensing/bird-specific-licences/?lang=en
Great crested newts <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 (as amended) Reg 43	Deliberately ¹³¹ capture, injure or kill a great crested newt; deliberate disturbance ¹³² of a great crested newt; deliberately take or destroy its eggs; or damage or destroy a breeding site or resting place used by a great crested newt.	Licences issued for development by NRW. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/great-crested-newt-licensing/?lang=en https://cyfoethnaturiolcymru.gov.uk/permits-and-permissions/species-licensing/list-of-protected-species/great-crested-newt-licences-for-development-infrastructure-or-maintenance-work/?lang=en Guidance documents: <i>Great Crested Newt Mitigation Guidelines (English Nature 2001)</i> <i>The use of environmental DNA test for Great crested newt licensing purposes (NRW, 2014)</i>
	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take a great crested newt; intentionally or recklessly damage, destroy or	Licences issued for science (survey), education and conservation by NRW.

Species	Legislation	Offences	Licensing procedures and guidance
		obstruct access to any structure or place used for shelter or protection or disturb ¹³³ a great crested newt in such a place.	
Adders Common lizards Grass snakes Slow worms	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill or injure any common reptile species.	No licence is required in Wales. However, an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals.
Invertebrates ¹³⁴ Butterflies ¹³⁵ Moths ¹³⁶ Beetles ¹³⁷ Bugs ¹³⁸ Crickets ¹³⁹ Dragonflies ¹⁴⁰ Spiders ¹⁴¹	Wildlife and Countryside Act 1981 (as amended) Schedule 5, Section 9.	Intentionally kill, injure or take; intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ¹³³ it in such a place.	NRW issues licences under the Wildlife and Countryside Act 1981 (as amended) for specific purposes. The requirement for a licence is dependant on the species of invertebrate and the protection that is provided. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/invertebrate-licensing/?lang=en

¹³⁵ High brown fritillary, Large blue, Heath fritillary, Swallowtail.

¹³⁶ Reddish buff, Fiery clearwing, Fisher's estuarine moth, Barberry carpet, Black-veined, Sussex emerald, Essex emerald, New Forest burnet.

¹³⁷ Rainbow leaf beetle, Water beetle *Graphoderus zonatus*, Water beetle *Paracymus aeneus*, Lesser silver water beetle *Hypebaeus flavipes*, Violet click beetle.

¹³⁸ New Forest cicada.

¹³⁹ Wart biter, Mole cricket *Gryllotalpa Gryllotalpa*, Field cricket *Gryllus campestris*.

¹⁴⁰ Norfolk aeshna, Southern damselfly.

¹⁴¹ Fern raft spider, Ladybird spider.

Species	Legislation	Offences	Licensing procedures and guidance
Rabbits, foxes and other wild mammals	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Lawful and humane pest control of these species is permitted.
Plants <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 (as amended) Reg 47	Deliberately pick, collect, cut, uproot or destroy a wild plant of a European protected species (Schedule 5). Those applicable to Wales are: • Fen Orchid • Floating Water-plantain • Killarney Fern • Shore Dock	NRW issues licences under Regulation 55 of the Habitats Regulations to allow activities involving EPS to proceed, which would otherwise be offences. https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/european-protected-species-of-plant-licensing/?lang=en
Plants <i>Nationally protected species</i>	Wildlife and Countryside Act 1981 (as amended) Schedule 8, Section 13.	Intentionally pick, uproot or destroy any wild plant on Schedule 8	No licence is required for survey. Licences can be issued by NRW for specific purposes only, such as science and education or conservation purposes. There is no provision for licensing the above actions for development operations under the Wildlife & Countryside Act 1981 (as amended). https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/uk-protected-plant-licensing/?lang=en
Plants <i>Invasive species, e.g. Japanese knotweed, giant hogweed, rhododendron, Himalayan balsam.</i>	Wildlife and Countryside Act 1981 (as amended) Schedule 9, Section 14.	It is illegal to plant or otherwise cause these species to grow in the wild.	Any contaminated soil or plant material is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. https://naturalresources.wales/permits-and-permissions/species-licensing/invasive-alien-species/invasive-alien-species-regulations/?lang=en Guidance documents: <i>Public information on invasive species in Wales: Japanese knotweed</i> (Welsh Government 2022) <i>How to stop invasive non-native plants from spreading</i> (Defra and Environment Agency 2022) <i>Guidance on Section 14 of the Wildlife and Countryside Act</i> (Defra 2011)



Table E-2 Summary of relevant designated site legislation in Wales

Site Designation	Legislation	Protection	Guidance
Special Area of Conservation (SAC) Special Protection Area (SPA) Wetland of International Importance (Ramsar site)	Conservation of Habitats and Species Regulations 2017 (as amended) Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (the Ramsar Convention).	Assessment of the implications of plans and projects is effected through Part 6 of the Conservation of Habitats and Species Regulations 2017 (in particular Regs 61 – 69). The legislation for the Site of Special Scientific Interest which will underpin each designation also applies. These sites are given protection through policies in the Local Development Plan.	Formal Appropriate Assessment is required to be undertaken by the competent authority before undertaking, or giving consent, permission or other authorisation for a plan or project which is likely to have a significant effect on such a site. Guidance documents: Technical Advice Note 5, Nature Conservation and Planning (WAG 2009). NRW provides advice in relation to the requirements for Habitats Regulations Assessment: https://naturalresources.wales/permits-and-permissions/marine-licensing/marine-licence-habitats-regulations-assessment/?lang=en
Site of Special Scientific Interest (SSSI)	Wildlife and Countryside Act 1981 (as amended)	It is an offence to carry out or permit to be carried out any potentially damaging operation. SSSIs are given protection through policies in the Local Development Plan.	Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 before undertaking operations likely to damage a SSSI. S.28G places a duty on all public bodies to further the conservation and enhancement of SSSIs. Guidance documents: Technical Advice Note 5, Nature Conservation and Planning (WAG 2009). NRW provides advice in relation to SSSI are the impact from development: https://naturalresources.wales/guidance-and-advice/business-sectors/planning-and-development/advice-for-developers/development-works-within-sites-of-special-scientific-interest/?lang=en
Local Sites (e.g. County Wildlife Sites, Sites of Importance for Nature Conservation)	There is no statutory designation for local sites.	Local sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a local site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Guidance documents: Technical Advice Note 5, Nature Conservation and Planning (WAG 2009).

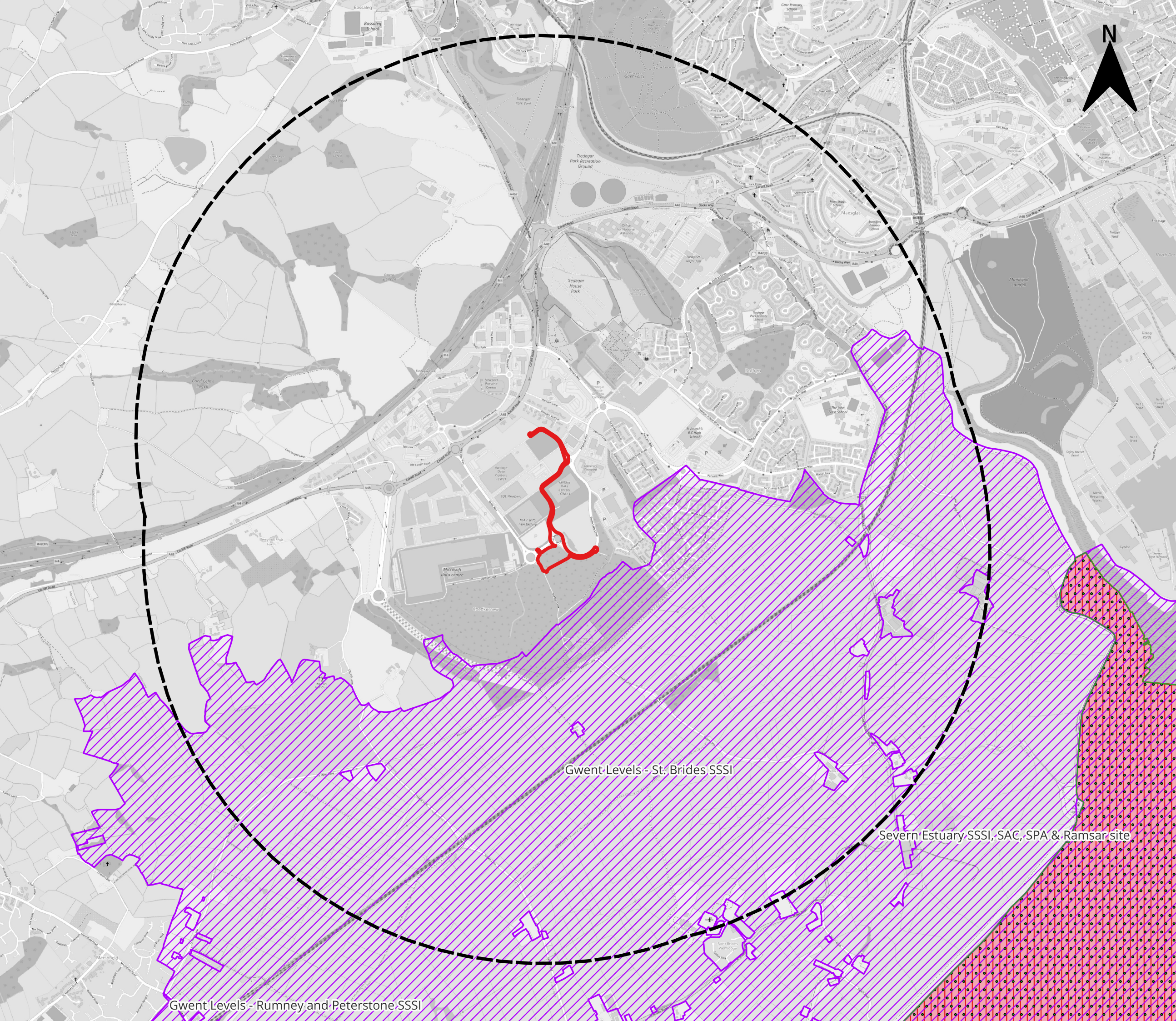
Table E-3 Summary of relevant habitats and species legislation in Wales

Habitats & Species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Environment (Wales) Act 2016 Natural Environment & Rural Communities Act 2006 S.42	S.6 places a duty on public authorities to ' <i>seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales</i> '. In so doing, public authorities must have regard to habitats and species listed in accordance with S.7 of the Act, which requires Welsh Ministers to publish and maintain lists of species and habitats in Wales that are regarded as being of 'principal importance' for the purpose of maintaining and enhancing its biodiversity. Until the Welsh Ministers have published this list, defer to the list published in accordance with S.42 of the NERC Act 2006. This list can be found on the Wales Biodiversity Partnership website. Ecological impact assessments should include an assessment of the likely impacts to these S.7/S.42 habitats and species.
Ecosystems	Environment (Wales) Act 2016	In meeting their obligation to seek to maintain and enhance biodiversity, S.6. also places a duty on public authorities to ' <i>promote the resilience of ecosystems</i> '. In complying with this duty, public authorities must consider ecosystem diversity, connectivity, scale, condition and adaptability. Public authorities must also have regard to the State of Natural Resources Report (published under S.8 of the Act) and any area statement published under S.11.
Hedgerows	The Hedgerows Regulations 1997	Under the regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority in Wales. In general, permission will be required before removing hedges that are at least 20 metres in length, over 30 years old and contain certain species of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations.

Appendix F. Designated Sites Location

Figure F-1 - Location of statutory designated sites within 2 km of the Development Site





AtkinsRéal

Legend

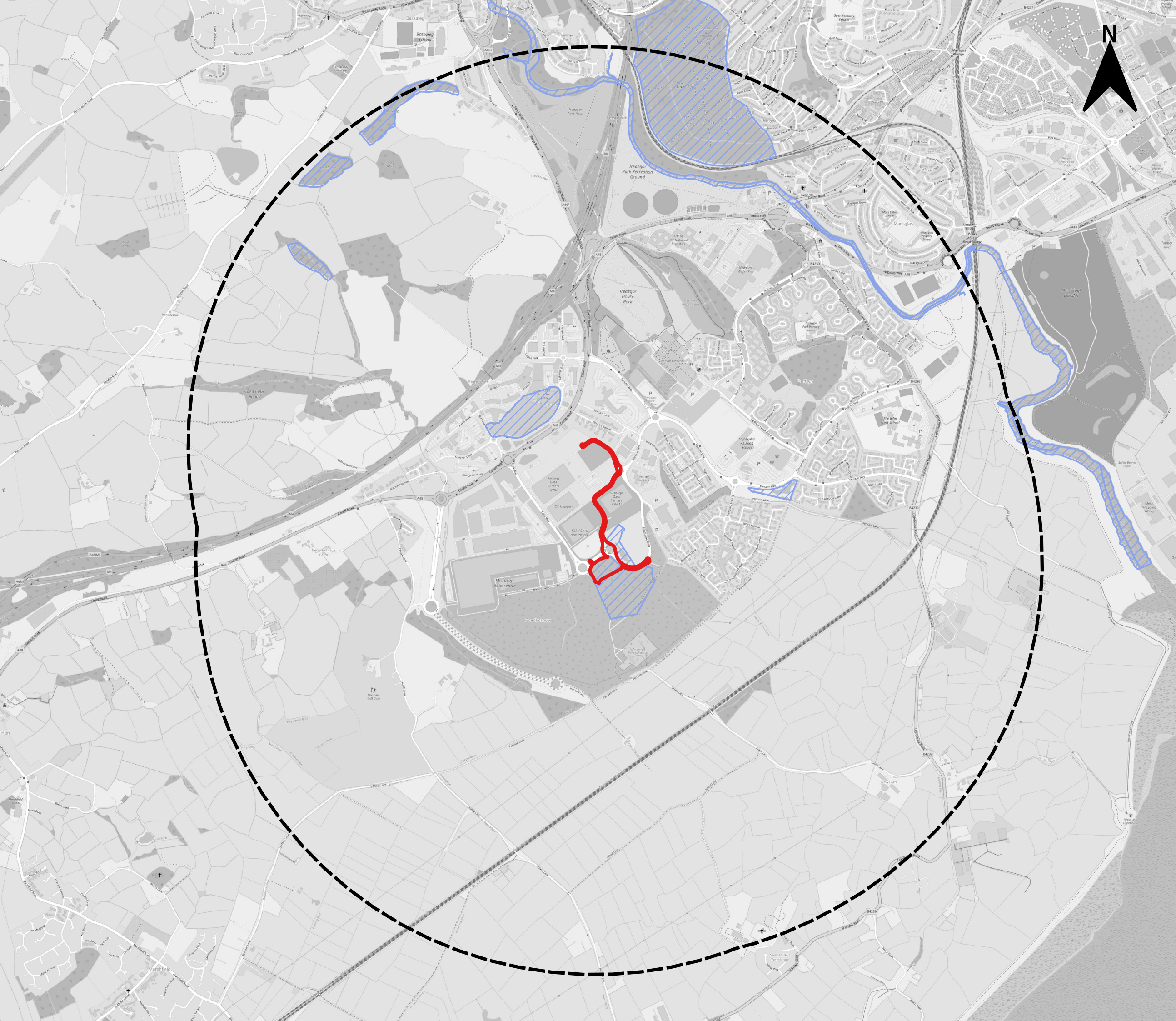
- Development Site boundary
- 2000 m buffer
- Ramsar site
- Site of Special Scientific Interest (SSSI)
- Special Protection Area (SPA)
- Special Area of Conservation (SAC)

0250500 m

Original scale: 1:17,500		Version: 1.0
Base Mapping: © OpenStreetMaps and its contributors		
Atkins Limited © The Hub 500 Park Avenue Aztec West Bristol BS32 4RZ		
Client: Vantage Data Centers		
Project: Vantage Substation and Buried Cables		
Job No: 5222535.202		
Location of statutory designated sites within 2 km of the Development Site		
Drawn by: MD Date: 18/04/24	Checked by: CL Date: 01/07/24	Reviewed by: PL Date: 10/07/24

Figure F-2 - Location of non-statutory designated sites within 2 km of the Development Site

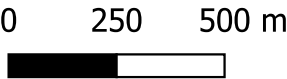




AtkinsRéal

Legend

- Development Site boundary
- 2000 m buffer
- Site of Importance for Nature Conservation (SINC)



Original scale: 1:17,500 Version: 1.0

Base Mapping: © OpenStreetMaps and its contributors

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500 Park Avenue
Aztec West
Bristol
BS32 4RZ

Client: Vantage Data Centers

Project: Vantage Substation and Buried Cables

Job No: 5222535.202

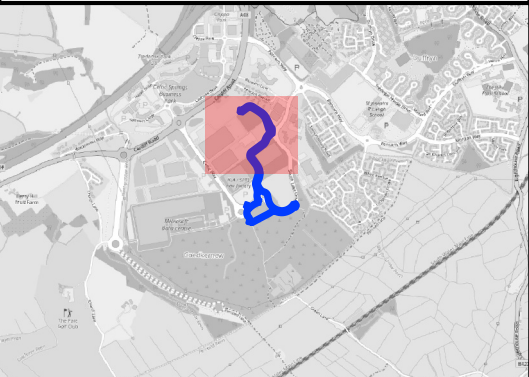
Location of non-statutory designated sites within 2 km of the Development Site

Drawn by: MD Date: 18/04/24	Checked by: CL Date: 01/07/24	Reviewed by: PL Date: 10/07/24
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Appendix G. UKHab Survey Plan, Target Notes, and Species List

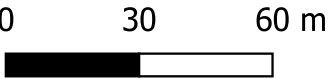
Figure G-1 - UKHab ecological walkover survey plan of the Development Site





Legend

- Development Site boundary
- Survey Area
- Target Notes
- UK Habitat (Lines)**
 - w1h – other woodland; mixed 33 line of trees
- UK Habitat (Polygon)**
 - g3c - other neutral grassland
 - h3d - bramble scrub
 - h3h - mixed scrub
 - u1b - developed land. sealed surface
 - u1c - artificial unvegetated unsealed surface
 - u1d - Suburban/ mosaic of developed/ natural surface
 - r1a - eutrophic standing waters
 - not surveyed – no access

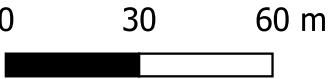


Original scale: 1:1,700		Version: 1.0
Base Mapping: © OpenStreetMaps and its contributors		
Atkins Limited © Woodcote Grove, Ashley Road, Epsom, Surrey, KT18 5BW		
Client: Vantage Data Centers		
Project: Vantage Substation and Buried Cable		
Job No: 5222535.202		
Title: UK Habitat Ecological Walkover Survey Plan (1 of 2)		
Drawn by: MA Date: 19/03/2024	Checked by: xx Date:	Reviewed by: xx Date:



Legend

- Development Site boundary
- Survey Area
- Target Notes
- UK Habitat (Lines)**
 - w1g - other broadleaved woodland, 33 line of trees
- UK Habitat (Polygons)**
 - g3c - other neutral grassland
 - w1g - other woodland - broadleaved
 - h3d - bramble scrub
 - h3h - mixed scrub
 - u1b - developed land. sealed surface
 - r1a - eutrophic standing waters

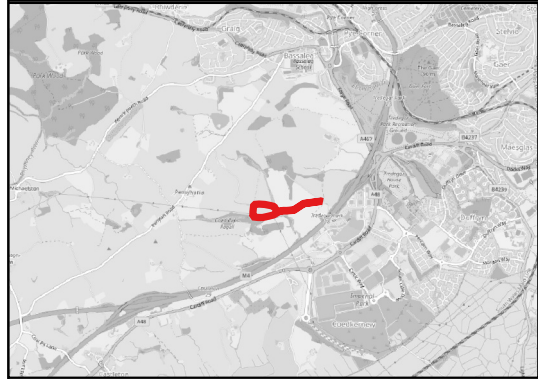


Original scale: 1:1,700 Version: 1.0

Base Mapping: © OpenStreetMaps and its contributors		
Atkins Limited © Woodcote Grove, Ashley Road, Epsom, Surrey, KT18 5BW		
Client: Vantage Data Centers		
Project: Vantage Substation and Buried Cable		
Job No: 5222535.202		
Title: UK Habitat Ecological Walkover Survey Plan (2 of 2)		
Drawn by: MA Date: 19/03/2024	Checked by: MD Date: 08/07/2024	Reviewed by: PL Date: 10/07/24

Figure G-2 - UKHab ecological walkover survey plan of the Compensation Site





Legend

- Compensation Site boundary
- Survey Area
- Target Note
- UK Habitat (lines)**
 - h2a_st - native species rich hedgerow with trees
 - h2a_stb - native species rich hedgerow with trees – associated with bank or ditch
 - r2a - rivers (priority habitat)
 - u1e - built linear features
 - r191 – ditch
- UK Habitat (polygons)**
 - g1c - bracken
 - g3c - other neutral grassland
 - g3c6 - lolium-cynosurus neutral grassland
 - g4 - modified grassland
 - w1d - wet woodland
 - w1f - lowland mixed deciduous woodland
 - w1g - other woodland - broadleaved
 - w1h - other woodland mixed
 - h3d - bramble scrub
 - h3h - mixed scrub
 - u1e - built linear features
 - r1a - eutrophic standing waters
 - not surveyed

0 50 100 m

Original scale: 1:2,700 Version: 1.0

Base Mapping: © OpenStreetMaps and its contributors

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Client: Vantage Data Centers

Project: Vantage Substation and Buried Cables

Job No: 5222535.202

Title: Compensation Site UKHab ecological walkover survey plan

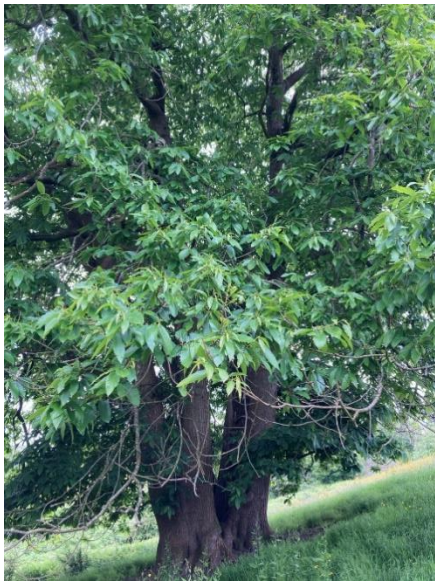
Drawn by: MA Date: 26/06/2024	Checked by: MD Date: 28/06/2024	Reviewed by: PL Date: 10/07/2024
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Table G-1 - Development Site Survey Area target notes and photographs

Target Note	Description	Photograph
1	Cotoneaster sp. present within scrub	
2	Mature pedunculate oak with moderate suitability for individual roosting bats due to cavity in small limb on north aspect of tree . Other features could also be present but was difficult to determine from the ground due to heavy foliage and dense scrub surrounding tree, preventing easy access.	 

Target Note	Description	Photograph
3	Cotoneaster sp. in scrub on road verge	
4	Cotoneaster sp. in scrub on road verge	
5	Variegated yellow archangel	No photograph.

Table G-2 Compensation Site Survey Area target notes and photographs

Target Note	Description	Photograph
1	Dead ash tree starting to rot within Compensation Site.	
2	Mature sweet chestnut tree located approximately 30 m north of the Compensation Site with negligible potential for roosting bats and no PRFs seen.	

Target Note	Description	Photograph
3	Badger fencing around field boundary	

Table G-3 - Species list and abundance for each habitat types within the Development Site Survey Area

UKHab habitat type	Plant species name (Stace¹⁴²)	Abundance (DAFOR scale¹⁴³)
h3h mixed scrub (within the Development Site)	Bramble	Dominant
	Common dogwood	Abundant
	Goat willow	Frequent
	Nettle	Frequent
	Large-leaved lime	Occasional
	Scot's pine	Occasional
	Box honeysuckle	Occasional
	Black mustard	Occasional
	Elder	Rare
	Rowan	Rare
	Creeping thistle	Rare
	Ivy	Rare
	Ash	Rare
	Wild cherry	Rare
	Hazel	Rare
	Pedunculate oak	Rare
	Common hawthorn	Rare
	Foxglove	Rare
g3c other neutral grassland (within the Development Site)	Yorkshire fog	Dominant
	Field forget-me-not	Abundant
	Common nettle	Abundant
	Rough meadow grass	Abundant
	Meadow buttercup	Frequent
	Creeping buttercup	Frequent
	Common sorrel	Frequent
	Creeping thistle	Frequent
	White clover	Frequent
	Smooth tare	Frequent
	Creeping cinquefoil	Frequent
	Cock's foot	Frequent
	Common ragwort	Occasional

¹⁴² Stace (2019) New Flora of the British Isles 4th edition

¹⁴³ Dominant = 51-100% cover, Abundant = 31-50% cover, Frequent = 16-30% cover, Occasional = 6-15% cover, and Rare = 1-5%

UKHab habitat type	Plant species name (Stace ¹⁴²)	Abundance (DAFOR scale ¹⁴³)
	Marsh thistle	Occasional
	Spear thistle	Occasional
	False-oat grass	Occasional
	Bristly ox tongue	Occasional
	Ribwort plantain	Occasional
	Red fescue	Occasional
	Greater bird's-foot-trefoil	Occasional
	Common spotted orchid	Rare
	Crested dog's-tail	Rare
	Bramble	Rare
	Common male fern	Rare
	Southern marsh orchid	Rare
	Common vetch	Rare
	Weld	Rare
	Chickweed	Rare
	Red clover	Rare
	Selfheal	Rare
h3d bramble scrub (within the Development Site)	Bramble	Dominant
	Common ragwort	Frequent
	Dogrose agg.	Frequent
	Yorkshire fog	Occasional
	False-oat grass	Occasional
r1a6 eutrophic standing water	Common reed	Frequent
	Alder	Rare
	Goat willow	Rare
	Yellow flag iris	Rare
w1g other woodland broadleaved	Common lime	Dominant
	Ivy	Dominant
	Box honeysuckle	Abundant
	Cleavers	Frequent
	Aspen	Frequent
	Large-leaved lime	Occasional
	Acer sp.	Occasional
	False brome	Occasional
	Goat willow	Occasional

UKHab habitat type	Plant species name (Stace ¹⁴²)	Abundance (DAFOR scale ¹⁴³)
	Bramble	Occasional
	Rough meadow grass	Occasional
	Bramble	Occasional
	Common hawthorn	Occasional
	Dogwood	Occasional
	Variegated yellow archangel	Occasional
	Pedunculate oak	Occasional
	Common male fern	Rare
	Cherry laurel	Rare
	Meadow buttercup	Rare
	Field maple	Rare
	Helleborine sp.	Rare
	Oxeye daisy	Rare
	Red valerian	Rare
	Ash	Rare
	Common vetch	Rare
	Cotoneaster sp.	Rare
	Cock's-foot	Rare
	Scot's pine	Rare
	Wild cherry	Rare
	Hart's tongue fern	Rare
w1g other broadleaved woodland 33 line of trees	Common lime	Dominant
w1h other woodland; mixed 33 line of trees	Scot's pine	Abundant
	Horse chestnut	Abundant
	Pedunculate oak	Rare
	Ash	Rare

Table G-4 - Species list and abundance for each habitat types within the Compensation Site Survey Area

UKHab habitat type	Plant species name (Stace ¹⁴²)	Abundance (DAFOR scale ¹⁴³)
g3c6 Lolium-Cynosurus neutral grassland (within the Compensation Site)	Sweet vernal grass	Dominant
	Rough meadow grass	Abundant
	Meadow buttercup	Abundant
	Yorkshire fog	Frequent
	Crested dog's tail	Frequent
	Soft brome	Frequent
	Red clover	Rare
	White clover	Rare
	Hounds tongue	Rare
	Prickly sow-thistle	Rare
	Bird's-foot-trefoil	Abundance not recorded
	Spear thistle	
	Curled dock	
	Ribwort plantain	
	Wetted thistle	
	Creeping buttercup	
	Common sorrel	
	Common ragwort	
	Common vetch	
	Common mouse-ear	
	Lesser stitchwort	
	Germander speedwell	
	Dandelion spp.	
	Cat's ear	
	Cock's foot	
	Field woodrush	
	Perennial ryegrass	
g3c Other neutral grassland (within the Compensation Site)	Rough meadow grass	Dominant
	Perennial ryegrass	Abundant
	Sweet vernal grass	Abundance not recorded
	Creeping buttercup	
	Red clover	
	White clover	
	Lesser stitchwort	

UKHab habitat type	Plant species name (Stace ¹⁴²)	Abundance (DAFOR scale ¹⁴³)
	Curled dock	
	Soft brome	
g1c bracken (within the Compensation Site and adjacent to the north of the Compensation Site)	Bracken	Dominant
w1f Lowland mixed deciduous woodland 28 ancient woodland site, 29 plantation (within the Compensation Site and adjacent to the south of the Compensation Site)	Ash	Abundance not recorded
	Sycamore	
	Alder	
	Scot's pine	
	Hazel	
	Holly	
	Elm sp.	
	Willow sp.	
	Common gorse	
	Common hawthorn	
	Elder	
	Silver birch	
	Leyland cypress	
	Bramble	
	Red campion	
	Cleavers	
	Ivy	
	Dog's mercury	
	Herb Robert	
	Foxglove	
w1d Wet woodland 28 ancient woodland site, 29 plantation (within the Compensation Site and adjacent to the east and northeast of the Compensation Site)	Ash	Abundance not recorded
	Elder	
	Willow sp.	
h2a5 Species-rich native hedgerow 50 ditch (within the Compensation Site and adjacent to the north of the Compensation Site)	Hazel	Abundance not recorded
	Bracken	
	Hawthorn	
	Blackthorn	
	Ash	
	Dog rose agg.	
	Holly	

UKHab habitat type	Plant species name (Stace ¹⁴²)	Abundance (DAFOR scale ¹⁴³)
	Alder	
	Elder	
r2a Rivers (priority habitat) (adjacent to the east of the Compensation Site)	Water parsnip	Abundance not recorded
h3d bramble scrub (adjacent to the north of the Compensation Site)	Bramble	Abundance not recorded
	Hawthorn	
	Willow sp.	



Figure G-3 - Location of waterbodies within 500 m of the Development Site





AtkinsRéalis

Legend

- Development Site boundary
- 250 m buffer
- 500 m buffer
- Waterbody

0 100 200 m

Original scale:	1:6,000	Version: 1.0
Base Mapping: © OpenStreetMaps and its contributors		
Atkins Limited © The Hub 500 Park Avenue Aztec West Bristol BS32 4RZ		
Client: Vantage Data Centers		
Project: Vantage Substation and Buried Cables		
Job No: 5222535.202		
Title: Location of waterbodies within 250 m and 500 m of the Development Site		
Drawn by: MD Date: 18/04/24	Checked by: CL Date: 01/07/24	Reviewed by: PL Date: 10/07/24

Appendix H. Survey Results

H.1 Bats

The transect survey results provided by ARUP is summarised in Figure H-1 below, whilst the static survey data is summarised in Figure H-2 below. For the full bat survey results including please refer to the bat survey report appended to this EcIA¹⁴⁴.

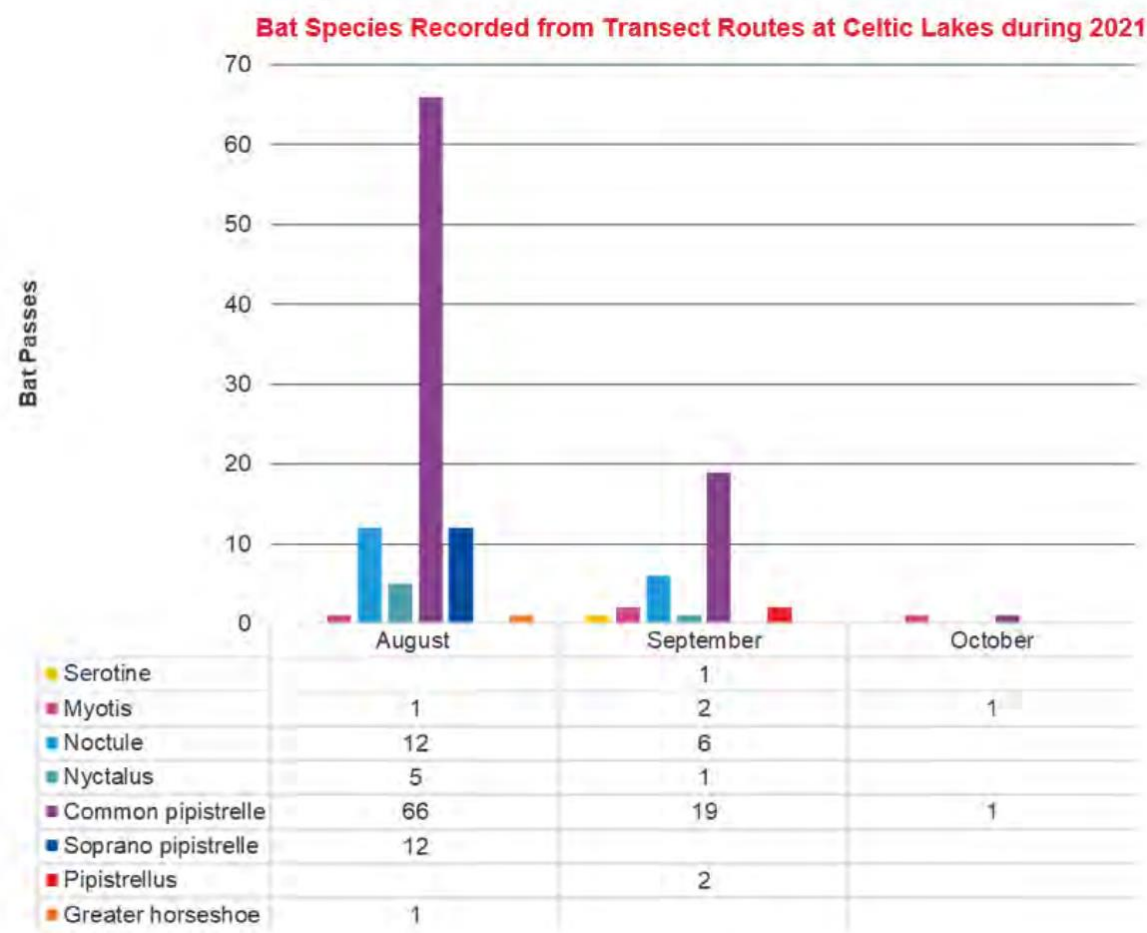


Figure H-1 - Number of bats recorded throughout 2021 transect surveys

¹⁴⁴ Arup, (2023). Celtic Lakes, Newport – Bat Survey Report. Prepared for Welsh Government

Bat Passes per Night from Static Recording at Celtic Lakes During 2021

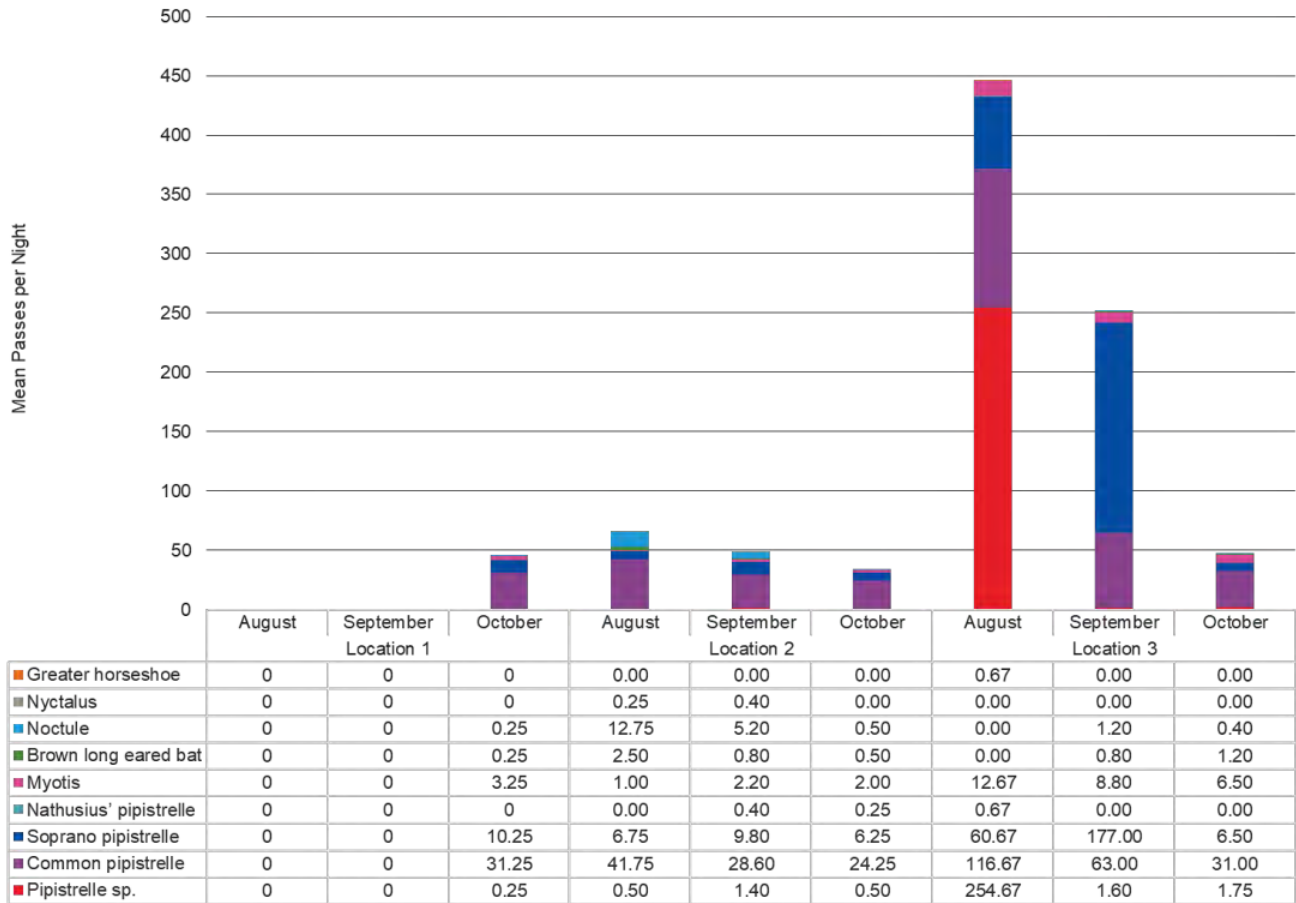


Figure H-2 - Mean bat passes per night by static location

H.2 Breeding Birds

The breeding bird survey results provided by ARUP are summarised in Table H-1 below.

Table H-1 - Breeding bird survey results

BTO code	Species	Notable status¹⁴⁵	Breeding status within the Bird Survey Area¹⁴⁶
HG	Herring gull	Red List BoCC, EWA Section 7	Not suitable breeding habitat
HS	House sparrow	Red List BoCC, EWA Section 7	Not suitable breeding habitat
LI	Linnet	Red List BoCC, EWA Section 7	Breeding
SG	Starling	Red List BoCC, EWA Section 7	Possible
GR	Greenfinch	Red List BoCC	Probable
BF	Bullfinch	Amber List BoCC, EWA Section 7	Probable
D.	Dunnock	Amber List BoCC, EWA Section 7	Probable
K.	Kestrel	Amber List BoCC, EWA Section 7	Unlikely
ST	Song thrush	Amber List BoCC, EWA Section 7	Probable
G.	Green woodpecker	Amber List BoCC	Possible
LB	Lesser black-backed gull	Amber List BoCC	Not suitable breeding habitat
MA	Mallard	Amber List BoCC	Confirmed
MH	Moorhen	Amber List BoCC	Possible
RO	Rook	Amber List BoCC	Unlikely
SH	Sparrowhawk	Amber List BoCC	Unlikely
SD	Stock dove	Amber List BoCC	Probable

¹⁴⁵ BoCC = Birds of Conservation Concern. EWA Section 7 = Environmental (Wales) Act Section 7 priority species. UK BAP = Biodiversity Action Plan. Schedule 1 = Species list on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Annex 1 = Species included on Annex 1 of the EU Birds Directive.

¹⁴⁶ Confirmed = Nest site located, chicks/fledglings/juveniles observed, or adult bird observed carrying food or faecal sac. Probable = A pair of birds observed in suitable habitat, agitated behaviour such as repeated alarm calls, or repeated territorial behaviour. Possible = Singing or birds observed in suitable nesting habitat (during the breeding season).

BTO code	Species	Notable status¹⁴⁵	Breeding status within the Bird Survey Area¹⁴⁶
WH	Whitethroat	Amber List BoCC	Probable
WP	Wood pigeon	Amber List BoCC	Confirmed
WR	Wren	Amber List BoCC	Possible
CW	Cetti's warbler	Schedule 1	Possible
PE	Peregrine falcon	Schedule 1	Not suitable breeding habitat
B.	Blackbird	n/a	Probable
BC	Blackcap	n/a	Possible
BT	Blue tit	n/a	Confirmed
BZ	Buzzard	n/a	Unlikely
C.	Carrion crow	n/a	Confirmed
CC	Chiffchaff	n/a	Possible
CT	Coal tit	n/a	Possible
CD	Collared dove	n/a	Possible
GO	Goldfinch	n/a	Probable
GS	Great spotted woodpecker	n/a	Possible
GT	Great tit	n/a	Probable
H.	Grey heron	n/a	Probable
JD	Jackdaw	n/a	Possible
J.	Jay	n/a	Probable
LW	Lesser whitethroat	n/a	Possible
LT	Long-tailed tit	n/a	Confirmed
MG	Magpie	n/a	Possible
R.	Robin	n/a	Probable



BTO code	Species	Notable status¹⁴⁵	Breeding status within the Bird Survey Area¹⁴⁶
RW	Reed warbler	n/a	Confirmed
SC	Stonechat	n/a	Probable
SL	Swallow	n/a	Not suitable breeding habitat

H.3 Wintering birds

The results of the wintering bird surveys provided by ARUP are summarised in Table H-2 below.

Table H-2 - Wintering bird survey results

BTO code	Species	Notable status¹⁴⁵	Total count over three surveys (November, December, and January)
BF	Bullfinch	Amber List BoCC, EWA Section 7	5
BZ	Buzzard	n/a	1
CM	Common gull	Amber List BoCC	15
CA	Cormorant	n/a	1
CW	Cetti's warbler	Schedule 1	6
FF	Fieldfare	Schedule 1, Red List BoCC	35
G.	Green woodpecker	Amber List BoCC	2
H.	Grey heron	Amber List BoCC	2
K.	Kestrel	Amber List BoCC, EWA Section 7	1
MA	Mallard	Amber List BoCC	8
PW	Pied wagtail	n/a	10
SG	Starling	Red List BoCC, EWA Section 7	250
SH	Sparrowhawk	n/a	2
ST	Song thrush	Red List BoCC, EWA Section 7	2
WA	Water rail	Amber List BoCC	2
WK	Woodcock	Red List BoCC	1

H.4 Botanical

National Vegetation Classification

Only the substation section of the Development Site was subject to NVC surveys in 2021 and 2023 undertaken by ARUP and Ecus, respectively, in which two communities were recorded; W24 *Rubus fruticosus* – *Holcus lanatus* and MG9 *Holcus lanatus* – *Deschampsia cespitosa*. Neither of these communities qualify as priority habitat or Annex I habitat.

W24 *Rubus fruticosus* – *Holcus lanatus* community

The scrub habitat within the Development Site was dominated by bramble with a greater botanical diversity at the margins. Scattered trees were present at low density including hawthorn, elder, willow sp., oak sp., and blackthorn. The scrub across the Site was varied in structure, height and species composition and was most representative of W24 *Rubus fruticosus* - *Holcus lanatus* underscrub with bramble being the most dominant and most constant species throughout.

This assessment was further supported by MAVIS analysis of floristic tables. The goodness-of-fit coefficient was very poor for all NVC community outputs, however for it relayed a confidence interval of 40% to W24.

W24 *Rubus fruticosus* - *Holcus lanatus* does not qualify as a priority habitat of Annex I habitat.

MG9 *Holcus lanatus* – *Deschampsia cespitosa* community

During the NVC surveys no quadrats were located within the Development Site itself, however in the 2023 surveys four quadrats were (Q1, Q3, Q4, and Q5) were all located within 50 m of the Development Site on grassland which was considered to be the same habitat parcel and community. In these quadrats the following species were constant; common bent, common ragwort, creeping buttercup, and Yorkshire fog, which are all typical neutral grassland species. Overall, the grassland resembled neutral grassland with some calcareous indicators present including, bee orchid, and common centaury. Pyramidal orchid and yellow-wort were also identified in the grassland area but were not present within the quadrats. There were wetter depressions with sedges, ruderal species, and abundant bryophytes. There was abundant bare ground, thought to have been caused by recent dry weather suppressing plant growth. The grassland has developed on previously disturbed land and is unmanaged with encroaching scrub and some depressions which may accumulate water during wetter periods.

It was not possible to clearly determine NVC type using the Rodwell books (volume 3), because of the successional habitat type due to lack of recent management, previous disturbance, and heavy grazing from rabbits. Therefore, MG9 was chosen as the NVC community because it was the NVC community with the highest goodness-of-fit coefficient from the MAVIS analysis (44.73%).

MG9 *Holcus lanatus* – *Deschampsia cespitosa* does not qualify as a priority habitat of Annex I habitat, however it does have potential to qualify as a lowland meadow priority habitat if appropriately managed long-term. When the results of the NVC surveys in 2021 and 2022 are combined, thresholds set out in SINC selection guidelines continue to be met, as there are eight species present indicative of unimproved neutral grasslands (common centaury, common sedge, grass vetchling, lesser bird's-foot trefoil, hoary ragwort, red clover, common knapweed, and common cats ear) and eight species present indicative of calcareous grassland (bee orchid, common centaury, grass vetchling, lesser bird's-foot trefoil, hoary ragwort, common knapweed, black medick, and yellow-wort).

H.5 Great Crested Newt

The great crested newt survey results provided by Ramboll and Ecus are summarised in Table H-3. The locations of the waterbodies within 500 m of the Development Site are shown on Figure G-3 in Appendix G.

Table H-3 - Presence/likely absence survey results for waterbodies within 500 m of the Development Site

Waterbody reference	Distance from the Development Site	HSI survey Date	HSI score	Presence absence survey dates ¹⁴⁷	Presence absence survey methodology ^{148/149}	Presence absence survey results ^{150/151}	Other amphibian species recorded
1	390 m north-west	20/04/2023	0.47 (Poor)	20/04/2023	eDNA	Negative	None
2	360 m west		0.72 (Good)				
3	290 m west		0.77 (Good)				
4	170 m west		0.55 (Below average)				
5	480 m north		0.67 (Average)				
6	20 m east	HSI not undertaken	N/A	18/04/2023, 16/05/2023, 22/05/2023, 30/05/2023	eDNA and torch	eDNA: negative Torch: no GCN	Smooth/ palmate newt
7	140 m south			18-19/04/2023, 10-11/04/2023, 16-	Bottle trap, torch, and egg search	No GCN	Smooth newt, smooth/ palmate newt

¹⁴⁷ Dates include population assessment surveys undertaken on waterbodies found to support great crested newts

¹⁴⁸ T = torching; BT = bottle trapping; ES = egg search; RS = refuge search; N = netting

¹⁴⁹ Methodology applies to population assessment surveys undertaken on waterbodies found to support great crested newts

¹⁵⁰ GCN = great crested newt; (m) – male great crested newt; (f) = female great crested newt; (j) = juvenile great crested newt

¹⁵¹ The peak count from the surveys is provided for each method used



Waterbody reference	Distance from the Development Site	HSI survey Date	HSI score	Presence absence survey dates ¹⁴⁷	Presence absence survey methodology ^{148/149}	Presence absence survey results ^{150/151}	Other amphibian species recorded
				17/04/2023, 22-23/05/2023			
8	150 m south			18-19/04/2023, 10-11/04/2023, 16-17/04/2023, 22-23/05/2023	Bottle trap, torch, and egg search	No GCN	Smooth newt
9	170 m south			16/05/2023, 22/05/2023, 30/05/2023, 07/06/23	eDNA and torch	eDNA: negative Torch: no GCN	Smooth/ palmate newt, unknown tadpoles
10	300 m south	Scoped out and not surveyed					
11	280 m south						
12	430 m south-west						
13	70 m south						
14	10 m east						



H.6 Hazel Dormouse

The hazel dormouse survey results provided by ARUP are summarised in Table H-4, Table H-5, and Figure F-1 below.

Table H-4 - Hazel dormouse nest tube survey results summary

Month	Evidence of dormouse activity	Nest tube number
August 2021	None	N/A
September 2021	Unoccupied dormouse nest	16
	Possible dormouse nest	34
	Unoccupied dormouse nest	45
	Unoccupied dormouse nest	131
October 2021	Unoccupied dormouse nest (small mammal escaped before it could be identified)	10
	One wood mouse in possible dormouse nest	32
	Unoccupied dormouse nest	34
	Unoccupied dormouse nest	35
	One juvenile dormouse	41
	Unoccupied dormouse nest	46
	Possible dormouse nest	60
	Potential dormouse nest	77
	Unoccupied dormouse nest	110
	Two juvenile dormice	115
	Two dormice	122
	One dormouse	136
November 2021	One adult dormouse	1
	One juvenile dormouse	8
	Unoccupied dormouse nest	10
	One adult dormouse	15
	Unoccupied dormouse nest	32
	Unoccupied dormouse nest	33
	One adult dormouse	37
	One wood mouse using possible dormouse nest	41
	Unoccupied dormouse nest	49
	One adult dormouse	60
	One adult dormouse	70
	Unoccupied dormouse nest	80
	Possible dormouse nest	82
	One adult dormouse	86
	Unoccupied dormouse nest	110
	One adult dormouse	111
	Unoccupied dormouse nest	115

Two dormice	121
Unoccupied dormouse nest	122
Unoccupied dormouse nest	124

Table H-5 - Hazel dormouse nest box survey results summary

Month	Evidence of dormouse activity	Nest box number
August 2021	None	N/A
September 2021	Two dormice; one juvenile male and the other escaped	6
	Possible dormouse nest	23
October 2021	One male dormouse	6
November 2021	One juvenile dormouse	3
	One juvenile dormouse	4

The Compensation Site hazel dormouse footprint tunnel survey results to-date are summarised in Table H-6 and Figure H-4 below.

Table H-6 - Compensation Site hazel dormouse footprint tunnel survey results

Tunnel number	Survey findings	
	6 th August	20 th August
1	No footprints	Wood mouse footprints
2	No footprints	Wood mouse footprints
3	No footprints	Insert on ground
4	No footprints	No footprints
5	No footprints	No footprints
6	No footprints	No footprints
7	Eaten by slugs	Eaten by slugs
8	Wood mouse footprints	Wood mouse footprints
9	Wood mouse footprints	Insert on ground
10	Wood mouse footprints	Wood mouse footprints
11	Wood mouse footprints	Insert on ground
12	No footprints	No footprints
13	Insert on ground	Insert on ground
14	Insert on ground	Insert on ground
15	Wood mouse footprints	Wood mouse footprints
16	Eaten by slugs	Eaten by slugs
17	Wood mouse footprints	Wood mouse footprints
18	Wood mouse footprints	Wood mouse footprints
19	Wood mouse footprints	Wood mouse footprints
20	Wood mouse footprints	Wood mouse footprints

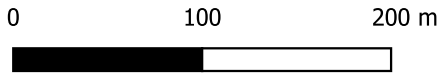
Tunnel number	Survey findings	
	6 th August	20 th August
21	Wood mouse footprints	Wood mouse footprints
22	Wood mouse footprints	Wood mouse footprints
23	Wood mouse footprints	Hazel dormouse footprints
24	Wood mouse footprints	Wood mouse footprints
25	Wood mouse footprints	Wood mouse footprints
26	Insert on ground	Wood mouse footprints
27	Wood mouse footprints	Wood mouse footprints
28	Wood mouse footprints	Wood mouse footprints
29	Insert on ground	Wood mouse footprints
30	Wood mouse footprints	Wood mouse footprints
31	Wood mouse footprints	Wood mouse footprints
32	Wood mouse footprints	Wood mouse footprints
33	Hazel dormouse footprints	Wood mouse footprints
34	Unoccupied hazel dormouse nest	Hazel dormouse nest still present
35	Hazel dormouse footprints	Hazel dormouse footprints
36	Wood mouse footprints	Wood mouse footprints
37	Wood mouse footprints	Wood mouse footprints
38	Wood mouse footprints	Insert on ground
39	Wood mouse footprints	Hazel dormouse footprints
40	Wood mouse footprints	Wood mouse footprints
41	Hazel dormouse footprints	Wood mouse footprints
42	Wood mouse footprints	Wood mouse footprints
43	Wood mouse footprints	Wood mouse footprints
44	Wood mouse footprints	Wood mouse footprints
45	Wood mouse footprints	Wood mouse footprints
46	Wood mouse footprints	Wood mouse footprints
47	Wood mouse footprints	Wood mouse footprints
48	Wood mouse footprints	Wood mouse footprints
49	Wood mouse footprints	Wood mouse footprints
50	Wood mouse footprints	Wood mouse footprints

Figure H-3 - Hazel dormouse survey results





- Legend**
- Development Site boundary
 - Nest tube with dormouse evidence
 - Nest tube without dormouse evidence
 - Nest box with dormouse evidence
 - Nest box without dormouse evidence



Original scale: 1:4,000	Version: 1.0
Base Mapping: Imagery ©2023 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data ©2023	
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Client: Vantage Data Centers	
Project: Vantage Substation and Buried Cables	
Job No: 5222535.202	
Title: Hazel dormouse survey results	
Drawn by: AK Date: 16/11/2023	Checked by: CL Date: 01/07/2024
Reviewed by: PL Date: 10/07/2024	

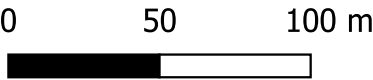
Figure H-4 – Hazel dormouse footprint tunnel survey results within the Compensation Site





Legend

- Compensation Site boundary
- Footprint tunnel with hazel dormouse evidence
- Footprint tunnel without hazel dormouse evidence



Original scale: 1:2,500 Version: 1.0

Base Mapping: Imagery ©2024 Airbus, Bluesky, Infoterra Ltd & Maxar Technologies, Map data ©2024

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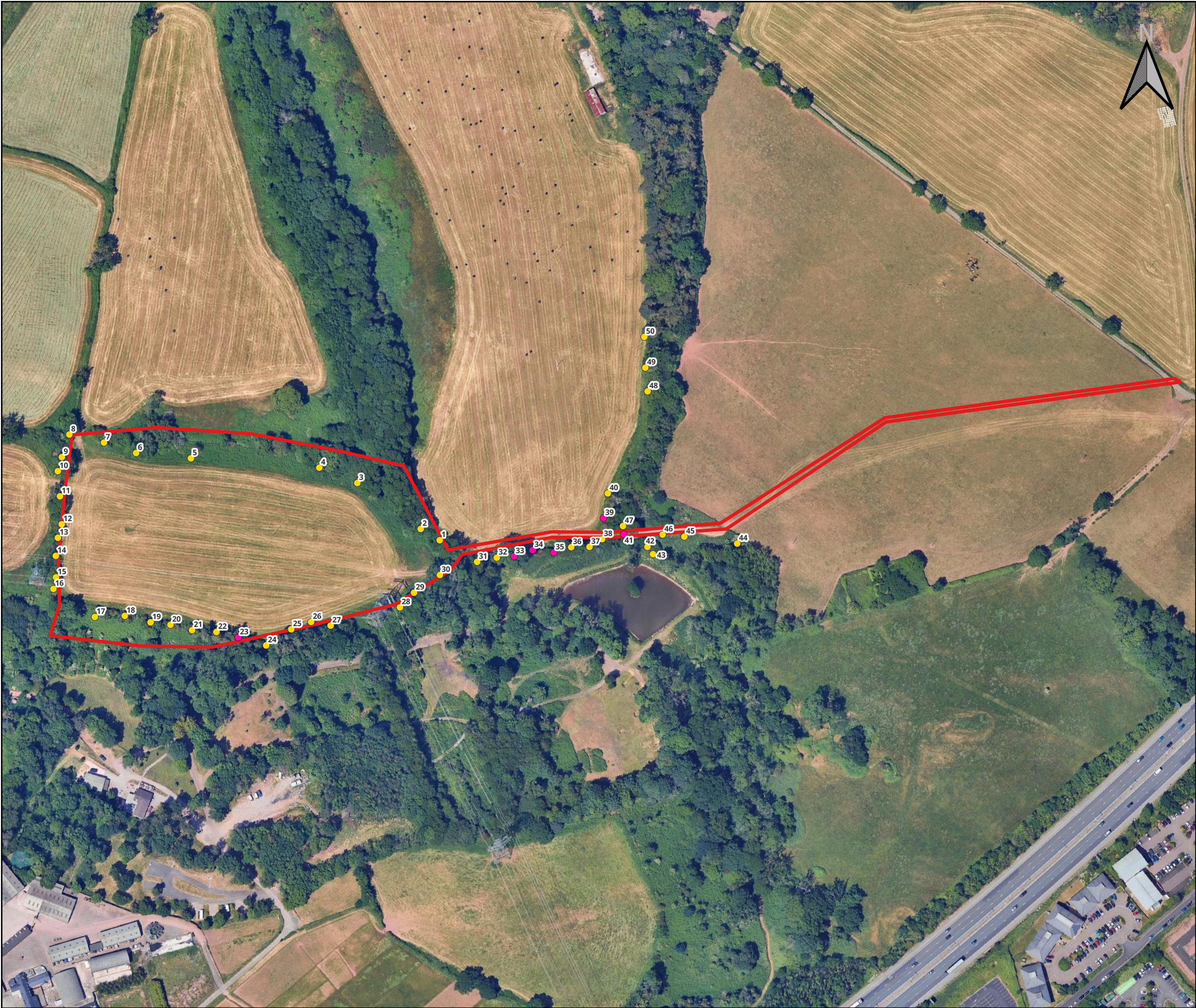
Client: Vantage Data Centers

Project: Vantage Substation and Buried Cables

Job No: 5222535.202

Title: Hazel dormouse footprint tunnel results within the Compensation Site

Drawn by: MA Date: 27/08/2024	Checked by: VH Date: 27/08/2024	Reviewed by: EH Date: 27/08/2024
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H.7 Widespread Species of Reptile

The reptile survey results provided by Ecus are summarised in Table H-7 below.

Table H-7 - Reptile survey results

Species	Peak count ¹⁵²	Locations	Population class within Development Site ¹⁵³
Grass snake	10	'Main Site' and 'Mitigation offset area'	Low but considered Good
Slow worm	2	'Mitigation offset area'	Not recorded but considered Low

H.8 Priority invertebrates

The invertebrates survey results provided by DC Boyce and Ecus from 2021 and 2023, respectively, are summarised in Table H-8 and Table H-9 below.

Table H-8 - Summary of notable invertebrate species recorded during survey in 2021

Species	Notable status ¹⁵⁴	Location of closest record to the Development Site
Six-belted clearwing moth (<i>Bembecia ichneumoniformis</i>)	NS	At least 550 m south-west
Cinnabar moth (<i>Tyria jacobaeae</i>)	EWA Section 7	Within or adjacent to the Development Site
Brown-banded carder bee (<i>Bombus humilis</i>)	EWA Section 7	Within or adjacent to the Development Site
Shrill carder bee (<i>Bombus sylvarum</i>)	EWA Section 7, NS	At least 200 m south

Table H-9 - Summary of notable invertebrate species recorded during survey in 2023

Species	Notable status ¹⁵⁴	Location of closest record to the Development Site
Oak hook-tip moth (<i>Watsonella binaria</i>)	EWA Section 7	Approximately 335 m south
Dusky thorn moth (<i>Ennomos fuscantaria</i>)	EWA Section 7	Approximately 335 m south
Centre-barred sallow moth (<i>atethmia centrago</i>)	EWA Section 7	Approximately 335 m south

¹⁵² The peak count from the presence absence and surveys is provided

¹⁵³ Classification according to Froglife Advice Sheet 10 (1999)

¹⁵⁴ EWA Section 7 = Environmental (Wales) Act Section 7 priority species, NS = Nationally Scarce species – recorded in <100 x 1 km square in the UK.



Species	Notable status ¹⁵⁴	Location of closest record to the Development Site
Small square-spot moth (<i>Diarsia rubi</i>)	EWA Section 7	Approximately 335 m south
Rosy rustic moth (<i>Hydraecia micacea</i>)	EWA Section 7	Approximately 335 m south
Cinnabar moth (<i>Tyria jacobaeae</i>)	EWA Section 7	Within or adjacent to the Development Site
Brown-banded carder bee (<i>Bombus humilis</i>)	EWA Section 7	Within or adjacent to the Development Site
Shrill carder bee (<i>Bombus sylvarum</i>)	EWA Section 7, NS	At least 200 m south
Six-belted clearwing moth (<i>Bembecia ichneumoniformis</i>)	NS	At least 550 m south-west
Adonis ladybird (<i>Hippodamia variegata</i>)	NS	At least 175 m south
Weevil (<i>Polydrusus formosus</i>)	NS	Within or adjacent to the Development Site
Furrow-bee (<i>Lasioglossum malachurum</i>)	NS	At least 250 m south
Crawling water-beetle (<i>Peltodytes caesius</i>)	NS	Approximately 160 m south

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