

St Richard Gwyn Catholic School

Preliminary Ecological Appraisal Report

Vale of Glamorgan Council

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Quality Information

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Executive Summary

Site Details	The Site of St Richard Gwyn Catholic High School is approximately 5.16 ha and is located on Argae Lane, Barry, CF63 2FD at Ordnance Survey, National Grid Reference ST 13698 69949. The Site consists of a secondary school complex including a series of 18 buildings, and associated hardstanding, grassland, dense scrub, scattered trees and tall ruderal vegetation.
Proposed Development Details	The Vale of Glamorgan Council are planning to construct a new-build secondary school approximately 10,000m ² (hereafter referred to as 'the Proposed Development') at the Site. It is understood that the Proposed Development will require the demolition of the existing buildings.
Ecological Features that may be affected by the Proposed Development	<ul style="list-style-type: none"> • Badger (<i>Meles meles</i>); • Bats; • Dormouse (<i>Muscardinus avellanarius</i>); • Reptiles; • Breeding birds; • Hedgehog (<i>Erinaceus europaeus</i>); and • Common toad (<i>Bufo bufo</i>).
Recommendations for further survey and assessment	<ul style="list-style-type: none"> • A pre-works check for the continued absence of Invasive Non-Native Plant Species (INNPS) within the optimal survey season (April to October) as well as the continued absence of badger setts. • B11 requires three additional emergence/re-entry surveys due to the confirmed presence of a bat during the Preliminary Roost Appraisal survey, in order to establish the status of the roost, to be carried out between May and August. • One bat emergence/re-entry survey is required for each building assessed as having a Low suitability for roosting bats, undertaken between May and August. • If habitat around the Site boundary is to be removed, then bat activity surveys should be undertaken at least once per season (Spring/Summer/August) with up to two static bat detectors deployed. • If habitat along the southern Site boundary is to be removed, then presence/absence dormouse surveys are required.
Recommendations for Mitigation	<p>A Precautionary Method of Working (PMW) should be followed and should include:</p> <ul style="list-style-type: none"> • The delivery of a Toolbox Talk detailing the ecological constraints, method of works and legislative drivers undertaken by a suitably qualified ecologist. • Pollution and siltation control measures to prevent the contamination of Cold Brook which is located 25 m from the Site. • A sensitive lighting scheme during construction to avoid impacts on nocturnal animals including bats, badger, otter and hedgehog. • The avoidance of excavations left open overnight, where this is not possible a plank or other means of escape should be provided to prevent animals being trapped. • A 'soft-fell' methodology must be employed if any tree assessed as having a Low bat roost suitability must be removed to facilitate the Proposed Development. • Clearance of the scrub habitats on Site which offer suitability as hibernation features for common reptiles and breeding birds, ideally should be undertaken during the reptile active season (March – September, inclusive) and outside of the breeding bird season (September to February inclusive), ideally undertaken in October. Clashes between these two periods will need to be managed. • A pre-works check for hedgehog and common toad presence should clearance works be required in scrub, woodland and grassland.
Opportunities for Biodiversity Enhancements	<p>A structured management regime and/or re-sowing with a species-diverse mix is recommended for areas of the amenity grassland that will be retained.</p> <p>It is recommended that at least six bird boxes should be incorporated into the building design.</p> <p>It is recommended that bat boxes are included in the development design, to replace features lost due to the demolition of buildings and removal of natural PRFs.</p> <p>Habitats could be enhanced, and new provisions provided for hedgehogs to shelter. This would include provision of at least one log pile, leaf pile and/or purpose-built or ready-made purchased hedgehog house.</p>

1. Introduction

1.1 Background

This Preliminary Ecological Appraisal (PEA) has been prepared by AECOM on behalf of the Vale of Glamorgan Council to assess the ecological constraints in connection with the proposed design, development and construction of a new-build secondary school to replace the existing buildings at St Richard Gwyn Catholic High School, Barry (hereafter referred to as 'the Proposed Development'). The area is shown by the red line boundary in Plate 1, below, and Figure 1 in [Appendix A](#). All land situated within this red line is hereafter referred to as the Site.

This PEA was commissioned to identify whether there are known or potential ecological features (nature conservation designations and protected and notable habitats and species) that may constrain or influence the design and implementation of the Proposed Development. The assessment of ecological constraints has been undertaken with reference to current good practice¹ and forms part of the technical information commissioned by the Vale of Glamorgan Council in connection with the Proposed Development. The PEA addresses relevant wildlife legislation and planning policy as summarised in [Appendix B](#) and is consistent with the requirements of *British Standard 42020:2013 Biodiversity – Code of Practice for Planning and Development*.



Plate 1: Site Boundary © 2021 Google Maps²

1.2 The Site

The Site is located at St Richard Gwyn Catholic High School situated on Argae Lane, Barry, CF63 2FD at Ordnance Survey, National Grid Reference ST 13698 69949 and is approximately 5.16 ha. The Site consists of a secondary school complex including a series of 18 buildings and associated hardstanding and grassland; see Figure 1, [Appendix A](#). The land within the south of the Site comprises amenity grassland which is utilised as a playing field and is bounded by dense scrub and trees to the south and west. Dense scrub is also present in the east of the Site alongside ruderal habitat. In the north of the Site there are scattered trees and amenity grassland habitats.

The north of the Site is bounded by Argae Lane, beyond which there are farm fields, associated hedgerows and farm buildings. To the east of the Site there is a golf club with Cold Brook running northwest to southeast. To the south of the Site is a solar panel farm within fields extending southeast next to Biglis Farm. The A4321 runs northwest to southeast to the southwest of the Site beyond which there is residential housing associated with the town of Barry. A large area of woodland is situated approximately 800 m to the northwest of the Site.

1.3 Purpose of the Preliminary Ecological Appraisal

This PEA presents ecological information obtained during the following:

¹ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

² Google Maps (2021) Available online: <https://www.google.com/maps> [Accessed August 2022]

- A desk-study undertaken in November 2022 to obtain records of designated sites, notable habitats³ and protected and notable species⁴ within 2 km of the Site. This area was extended to 10 km for sites designated for bats (the area covered by the desk study is hereafter referred to as 'the Study Area', see [Appendix C](#) for further detail); and,
- A walkover survey of accessible land within the Site, (the area covered by the field survey is hereafter referred to as the Survey Area) on 10th and 11th November 2022.

The purpose of the PEA is to provide a high-level ecological appraisal of the Site, specifically to:

- Establish baseline conditions and determine the presence of Important Ecological Features (IEF)⁵ (or those that could be present), as far as is possible;
- To identify potential ecological constraints to the Proposed Development and make initial recommendations to avoid impacts on IEFs, where possible;
- To identify requirements for mitigation, where possible, including mitigation measures that will be required and those that may be required (depending on results of further surveys or the final design of the Proposed Development);
- To establish any requirements for more detailed surveys; and,
- To identify any opportunities offered by the Proposed Development to deliver biodiversity enhancements.

The methodology followed for undertaking the desk study and field surveys is detailed in [Appendix C](#), including any limitations to the assessment.

1.4 Quality Assurance

This report and the associated ecological surveys have been undertaken in line with AECOM's Integrated Management System (IMS). Our IMS places great emphasis on professionalism, technical excellence, quality and environmental and Health and Safety Management. All staff members are committed to establishing and maintaining our certification to the international standards BS EN ISO 9001:2015 and 14001:2015 and ISO 45001:2018. In addition, our IMS requires careful selection and monitoring of the performance of all sub consultants and contractors.

All AECOM ecologists who worked on this project are members of (at the appropriate level) the Chartered Institute of Ecology and Environmental Management (CIEEM) and follow their code of professional conduct (CIEEM, 2022)⁶ when undertaking ecological work.

³Notable habitats are taken as principal habitats for the conservation of biodiversity listed under Section 41 of the *Natural Environment and Rural Communities Act 2006*; habitats listed under the Dorset Biodiversity Strategy; hedgerows identified as being 'important' under the wildlife criteria of the *Hedgerow Regulations 1997*, ancient woodlands and veteran trees.

⁴Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the *Natural Environment and Rural Communities Act 2006*; any species listed in an IUCN Red Data Book; and any other species listed under the Dorset Biodiversity Strategy.

⁵ Important Ecological Features are habitats, species, ecosystems and their functions and processes that are of conservation importance and could potentially be affected by the Proposed Development.

⁶ CIEEM (2022) Code of Professional Conduct. Chartered Institute of Ecology and Environmental Management, Hampshire.

2. Ecological Baseline, Constraints and Recommendations

The following sections detail the results of the desk and field-based studies undertaken to inform this PEA. Where necessary, recommendations for mitigation measures to protect known IEFs, or further surveys to determine the presence or likely absence of potential IEFs, are provided.

With regard to background data, 'recent' records are considered to be those no older than 10 years from the date of the desk study. Records outside of this period are historical and have only been reported where more recent records for a feature do not exist. Exceptions to this are detailed in the appropriate sections below.

2.1 Designated Sites

2.1.1 Desk Study

Table 2-1 summarises the designated sites situated within the Study Area. There are two statutory and 18 non-statutory designated sites within the Study Area.

Table 2-1: Statutory Designated Sites within Study Area

Designated Site	Reason for Designation	Location of Designated Site ⁷
Coedydd y Barri / Barry Woodland Site of Special Scientific Interest (SSSI)	Designated for its semi-natural broadleaved woodland. Site comprises a series of fourteen separate woodland blocks, some of which are connected by hedgerows. The best example of this long-established ash (<i>Fraxinus excelsior</i>) dominated woodland which supports a rich ground flora on this particular soil-type in Wales. The majority of woods that make up Coedydd y Barri / Barry Woodlands SSSI are included in the provisional Inventory of Ancient Woodland for Glamorgan.	Approximately 0.8 km northwest of the Site at the closest point, with connectivity across grassland. The A4231 fragments the woodland and may form a barrier for movement between the woodlands.
Cog Moors SSSI	Designated for its flora, the site is of special interest for its large continuous area of damp mesotrophic (neutral) semi-natural grassland, which is associated with several stands of tall sedges, and for populations of two species of special interest; the nationally scarce bulbous foxtail (<i>Alopecurus bulbosus</i>), and large population of pepper saxifrage (<i>Silaum silaus</i>).	Approximately 1.7 km southeast of the Site with connectivity across grassland. Railway line may form a barrier for movement to the Site.
North of North Road Site of Interest for Nature Conservation (SINC)	Site with large pond supporting large stands of reedbed, scrub and scattered tree. This SINC contains reedbeds priority habitat.	0.8 km south
Dinas Powys Moors SINC	Series of species-rich semi-improved neutral grasslands with pond. This SINC contains Lowland meadows priority habitat.	0.9 km east
Pond 11 Biglis Moors SINC	Pond which supports good population of great crested newts (<i>Triturus cristatus</i>).	0.9 km east
Cadoxton Wetlands SINC	Site supports a mosaic of ponds, reedbeds, tall herb swamp, grassland, scrub, and scattered trees and supports a range of Section 42 species including wintering bittern (<i>Botaurus stellaris</i>).	1 km south
Pwll Erw-naw SINC	Pond which supports good population of great crested newt (<i>Triturus cristatus</i>).	1.2 km east
Coed Twyncyn SINC	Semi-natural broadleaved woodland with some mixed plantation on an ancient woodland site. This SINC contains lowland mixed deciduous woodland priority habitat.	1.3 km northeast
West of Pencoetre Wood SINC	Small pond supporting tall herb vegetation. This SINC contains reedbeds and ponds and has mosaic habitats.	1.4 km northwest
Northwest of Pencoetre Wood SINC	Semi-natural broadleaved woodland, part of an ancient woodland site. This SINC contains lowland mixed deciduous woodland priority habitat.	1.4 km northwest

⁷Where designated sites are situated outside of the Site boundary, the distance and direction is given at the closest point of the designated site from the Site

Designated Site	Reason for Designation	Location of Designated Site ⁷
Land West of Windrush SINC	Species-rich fen meadow. This SINC contains purple moor grass (<i>Molinia caerulea</i>) and rush pastures.	1.5 km northwest
North of Pop Hill SINC	Series of species-rich unimproved neutral grasslands with large anthills. This SINC contains lowland meadows priority habitat.	1.7 km east
Land North of Port News SINC	Semi-natural broadleaved woodland on an ancient woodland site. This SINC contains lowland mixed deciduous woodland priority habitat.	1.7 km northwest
Bears Wood SINC	Ancient semi-natural broadleaved woodland. This SINC contains lowland mixed deciduous woodland priority habitat.	1.7 km northwest
Cog Moors SINC	Series of species-rich rush pastures with neutral grassland and associated wet ditches. This SINC contains purple moor grass and rush pastures.	1.7 km southeast
Shortlands Wood SINC	Semi-natural broadleaved woodland, part of an ancient woodland site. This SINC contains lowland mixed deciduous woodland priority habitat.	1.7 km east
Coed Ysgubor-Goch SINC	Series of semi-natural broadleaved woodlands, predominantly on ancient woodland sites. This SINC contains lowland mixed deciduous woodland priority habitat.	1.7 km north
Cross Common SINC	Semi-natural broadleaved woodland, part of an ancient woodland site. This SINC contains lowland mixed deciduous woodland priority habitat.	1.9 km east
North of Cog Moors SINC	Ancient semi-natural woodland. This SINC contains lowland mixed deciduous woodland priority habitat.	2 km southeast
Cadoxton River SINC	Small section of tidal canalised river supporting large stands of reedbed.	2 km south

2.1.2 Constraints and Recommendations

Statutory Designated Sites

Due to the nature of the Proposed Development, spatial separation, and the lack of ecological connecting pathways; no impacts to Coedydd y Barri / Barry Woodland and Cog Moors SSSI are anticipated in relation to the Proposed Development.

Non-Statutory Designated Sites

Due to the nature of the Proposed Development, spatial separation, and the lack of ecological connecting pathways; there are anticipated to be no impacts on the SINC's in relation to the Proposed Development.

All works should be carried out following the CIRIA C762 Environmental Good Practice on Site handbook⁸ to prevent indirect impacts during construction on these SINC's.

2.2 Habitats

2.2.1 Desk study

There are no priority habitats within or adjacent to the Site.

2.2.2 Field Survey

No evidence of priority habitats were identified within the Site during the field survey.

Summary descriptions of the habitats within the Survey Area are provided below, and in Table 2-2 and shown on Figure 1 in Appendix A, with photographs provided in [Appendix D](#).

2.2.2.1 Cultivated/disturbed land - Amenity Grassland

All grassland within the Site is intensely managed and regularly mown and includes a large playing field, verges and social areas outside classrooms mown to a sward height of <5 cm (Photographs 1 and 2, [Appendix D](#)). All grassland is dominated by perennial rye (*Lolium perenne*), other species present include creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum* sp.), white clover (*Trifolium repens*) and common daisy (*Bellis*

⁸ Law and D'Aleo. (2016) PUB C762 Environmental good practice on site pocket book. 4th edition. Ciria, London

perennis). The playing field also contains red fescue (*Festuca rubra*), yarrow (*Achillea millefolium*), self-heal (*Prunella vulgaris*), bristly ox-tongue (*Helminthotheca echioides*) and moss species, indicating wet conditions.

2.2.2.2 Other tall herb and fern - Ruderal

An area of ruderal habitat is present on the eastern boundary of the Site (Photograph 3, [Appendix D](#)) and is dominated by rosebay willowherb (*Chamaenerion angustifolium*). Other species present include common nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*), thistle (*Cirsium* sp.), and hard rush (*Juncus inflexus*) which is an indication of wet ground in the area.

2.2.2.3 Scrub – Dense/continuous

Dense scrub borders the west and south of the Site and a small patch is present in the east of the Site (Photograph 4, [Appendix D](#)). The dense scrub is dominated by bramble (*Rubus fruticosus*). The dense scrub in the west and south of the Site also contains common nettle, cleavers (*Galium aparine*), and immature species of tree including ash, sycamore (*Acer pseudoplatanus*), willow (*Salix* sp.), elder (*Sambucus nigra*), cherry (*Prunus* sp.), and hawthorn (*Crataegus monogyna*). The small area of dense scrub to the east of the Site also contains blackthorn (*Prunus spinosa*).

2.2.2.4 Scattered Scrub

Planted varieties of the following species were recorded within an area of amenity grassland in the north of the Site; dogwood (*Cornus sanguinea*), and an ornamental scrub species.

2.2.2.5 Other Habitats – AstroTurf Pitch

An AstroTurf sports pitch of approximately 0.24 ha is present in the east of the Site (Photograph 5, [Appendix D](#)).

2.2.2.6 Broadleaved and coniferous parkland/scattered trees

Scattered trees are present along the northern and southern boundary fence line. Species present in the south of the Site include hazel (*Corylus avellana*), hawthorn and blackthorn. Species present in the north of the Site include sycamore, ash, horse chestnut (*Aesculus hippocastanum*), common lime (*Tilia × europaea*), common beech (*Fagus sylvatica*), Norway maple (*Acer platanoides*), silver birch (*Betula pendula*), spruce (*Picea* sp.) and rowan (*Sorbus aucuparia*).

2.2.2.7 Earth Bank

Man-made earth banks are present on Site within the amenity grassland used as a playing field (Photograph 6, [Appendix D](#)). Anecdotal evidence of seasonal flooding of the Site particularly within the playing field in which the earth banks form flood defences.

2.2.2.8 Hardstanding

Hardstanding in the form of roads and pavements are present around the buildings within the north of the Survey Area with limited to negligible ecological value.

2.2.2.9 Buildings

There are a total of 18 buildings that constitute the high school complex within the Survey Area with low to negligible ecological value.

Table 2-2 Habitats present within the Survey Area, in descending order based on spatial area occupied

Habitat	Area (ha)	% of Site Area
Cultivated/disturbed land – amenity grassland	3.41	62.28
Hardstanding	0.95	17.43
Buildings	0.48	8.85
Scrub – dense/continuous	0.36	6.61
Other habitats – AstroTurf pitch	0.23	4.31
Other tall herb and fern – ruderal	0.02	0.52
Habitat	Length (m)	
Broadleaved and coniferous parkland/scattered trees	228.79	
Earth bank	403.50	

2.3 Constraints and Recommendations

There is a risk of habitat loss or habitat degradation/fragmentation across the Site as a result of the Proposed Development.

The majority of habitats present within the Site are considered to be common and of no more than local importance, i.e., amenity grassland, ruderal, scrub, AstroTurf, hardstanding and earth bank. The loss of these habitats does not require any mitigation.

It is recommended that the habitats around the boundary of the Site as well as mature trees in the northern portion of the Site are retained where the Proposed Development allows, to maintain connectivity with the surrounding landscape. If this is not possible then appropriate mitigation would be required.

Any mitigation measures should adhere to the Mitigation Hierarchy⁹ which outlines the sequential steps to reduce the impact on and enhance the biodiversity within a Site: Avoidance; Minimisation; Rehabilitation/Restoration; and Offset. Areas of rare or good quality habitat should be retained where possible, and measures should be undertaken to minimise impacts where they are unavoidable. Restoration and rehabilitation works seek to return the area to its pre-impact state, or to restore basic ecological functions, respectively, and the final stage of the hierarchy, offsetting, compensates for any persistent negative impacts of the development. This may include the restoration or rehabilitation of off-site land that is degraded or is likely to experience biodiversity loss. Habitat enhancement on Site may include the creation of brush/rubble piles for herptiles or high-quality ponds for amphibians and aquatic species, or the sympathetic management of grassland habitats to increase forb density.

An Ecological Mitigation and Enhancement Strategy (EMES) would be beneficial to consider the potential habitat loss and appropriate mitigation, as well as outlining how the surrounding areas can be enhanced to account for unavoidable losses. In addition, it is recommended that a Construction Environmental Management Plan (CEMP) be prepared and implemented during construction to prevent adverse impacts to the ponds and rhines within the wider landscape.

2.4 Badger

2.4.1 Desk Study

There are no recent records of badger (*Meles meles*) within the Study Area.

2.4.2 Field Survey

No evidence of badger was recorded on Site. The scrub and amenity grassland present within the Site provides suitable foraging and commuting habitat, although no evidence of activity was recorded during the field survey. The constructed earth banks on Site may provide suitable habitat for sett creation however the Site as a whole provides sub-optimal habitat for sett creation was identified within the Site and no setts were observed during the field survey.

2.4.3 Constraints and Recommendations

No signs of active badger presence e.g., setts, snuffle holes, hairs, or latrine, were identified during the survey. Foraging and commuting badger has the potential to utilise the scrub and amenity grassland on the Site. As such, badger has the potential to be impacted by temporary loss of foraging habitat and by falling into any excavations left open overnight.

No setts, or habitats suitable for sett building, were found on Site or are likely to be within 30 m of the proposed development. As such, it is considered unlikely a badger sett will be disturbed, damaged or destroyed by the proposed development.

As badgers are mobile species and there is suitable habitat on site, a pre-construction check for badger should be undertaken prior to the commencement of any ground-breaking works to confirm continued absence.

A sensitive lighting scheme should be implemented on Site, to limit disturbance to badger. During construction, excavations should be covered over night or ramps installed to prevent animals becoming trapped or to allow trapped animals to escape.

⁹ CSBI (2015). A cross-sector guide for implementing the mitigation hierarchy. Prepared by the Biodiversity Consultancy on behalf of IPIECA, ICMM and the Equator Principles Association: Cambridge UK.

2.5 Bats

2.5.1 Desk Study

There are 26 recent records of foraging bats within the Study Area, and two records of common pipistrelle roosts within 2 km of the Site. Recent bat foraging and roosting records within the Study Area are summarised below in Table 2-2.

Table 2-2: Bat Foraging and Roosting Records within the Study Area

Species	Foraging/Commuting Records and Location ¹⁰	Roosting Records and Location ¹¹	Species Core Sustenance Zone (CSZ) ¹² radius
Brandt's bat (<i>Myotis brandtii</i>)	1.4 km southwest from Site	N/A	1 km
Brown long-eared bat (<i>Plecotus auritus</i>)	1.4 km southwest from Site	N/A	3 km
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	0.2 km southwest from Site	Two records, closest is approximately 1.4 km northeast of the Site, connected via hedgerows and grassland, including golf course complex.	2 km
Daubenton's bat (<i>Myotis daubentonii</i>)	1.4 km southwest from Site	N/A	2 km
Leisler's bat (<i>Nyctalus leisleri</i>)	1.4 km southwest from Site	N/A	3 km
Lesser horseshoe bat (<i>Rhinolophus hipposideros</i>)	1.4 km southwest from Site.	N/A	2 km
Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>)	1.4 km southwest from Site.	N/A	3 km
Natterer's bat (<i>Myotis nattereri</i>)	1.4 km southwest from Site	N/A	4 km
Noctule (<i>Nyctalus noctula</i>)	1.2 km southwest from Site	N/A	4 km
Serotine (<i>Eptesicus serotinus</i>)	1.4 km southwest from Site	N/A	4 km
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	1.3 km southwest from Site	N/A	3 km
Whiskered bat (<i>Myotis mystacinus</i>)	1.9 km east from Site	N/A	1 km
Myotis species (<i>Myotis</i> sp.)	1.4 km southwest from Site	N/A	1-4 km

Source: South-East Wales Biodiversity Records Centre (SEWBRc)

The Site is within the Core Sustenance Zone (CSZ) of known roosts for common pipistrelle. The CSZ refers to the area around bat roosts in which the availability of habitat of suitable quality is likely to have a significant influence on the status of the roost. Developments within this area may impact bats commuting and foraging from the roost. Land within the Survey Area was surveyed as being unsuitable for foraging and commuting bats therefore, no impacts to the CSZ of any bats recorded is anticipated due the development of the Proposed Development.

2.5.2 Field Survey

There are 18 buildings within the Site boundary which were assessed for suitability to support roosting bats (Appendix A, Figure 2). Of these, 11 buildings were assessed as having **Negligible** suitability to support roosting bats due to the modern and well-sealed nature of the buildings. Six buildings were assessed as having **Low** bat roost suitability due to multiple roost features present, providing roosting opportunities for either single, opportunistic bats, or multiple bats depending on the size of the feature. A single unidentified bat was observed under lead flashing on one building (**B11**), this is a confirmed bat roost.

¹⁰ Where records are situated outside of the Site boundary, the distance and direction are given at the closest point of the feature from the Site

¹¹ Where records are situated outside of the Site boundary, the distance and direction are given at the closest point of the feature from the Site

¹² Bat Conservation Trust (2016). Core Sustenance Zones. Available at: <https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones> (Accessed: 30/09/21)

A total of 43 trees were assessed for their suitability to support roosting bats within the Site. Of these, three trees were identified as having **Low** suitability for roosting bats and the remaining 35 trees were assessed as having **Negligible** suitability due to their size, maturity and lack of bat roost features.

Further details are provided in Section 2.5.2.1 below.

2.5.2.1 Preliminary Roost Assessment

Any features suitable for supporting roosting bats within buildings were assessed during the field survey and are listed in Table 2-3. The location of the buildings are shown on Figure 2, [Appendix A](#).

Table 2-3 Building PRA Suitability Scores

PRA Building Reference	Building Description and Features	PRA Suitability
B1	A well-sealed wooden container with plastic cladding used as an office space. No Potential Roost Features (PRFs).	Negligible
B2	Complex of single-storey structures occupied as classrooms. Well-sealed structure with no PRFs observed during the PRA survey.	Negligible
B3	A single storey classroom structure. Well-sealed offering no PRFs.	Negligible
B4	A well-sealed wooden container with plastic cladding used as classroom. No PRFs.	Negligible
B5	A single-storey structure with pitched corrugated metal roof. PRFs recorded are a hole on the northwest corner under the bargeboard, a gap at the northern gable end between the cladding and the structure itself, and a hole feature present in the soffit box on the south-eastern corner of southern gable end. Due to number of PRFs and suitability for roosting bats the building was assessed as having a Low suitability.	Low
B6	Two-storey metal-built building with steel enforced beams. Central portion of the building is newer than the single-storey buildings on the east and west. Ridged metal barge boarding is present around the top perimeter of the building offering gaps for bats (Photograph 7 and 8, Appendix D). On the southern aspect wooden board is present above a door frame with a small gap behind and gaps in concrete lintel above a window provides suitable PRFs for roosting bats.	Low
B7	Two storey, flat roofed, curved, newly built brick building, clad with clay tiles (Photograph 9 and 10, Appendix D). Suitable PRFs include a loose tile at the northwest corner 3.5 m high, a broken tile on the east facade 4.5 m high, a small gap under the flashing at the western side of glass entrance structure, two gaps in top row of breeze blocks on southern facade that could lead into cavity and a broken clay tile 50 cm off the ground which leads into a cavity within the wall on the southern facade.	Low
B8	Flat roofed metal shipping container, well-sealed with no PRFs observed.	Negligible
B9	Single storey reception building. Flat roofed, with concrete breeze block base and brick construction with concrete render. Ridged metal barge board around top perimeter of building, with space for bats (Photograph 7 and 8, Appendix D). Gaps behind metal sheeting atop of the ridged barge board.	Low
B10	Large brick building with concrete cladding. Flat roofed, with wooden MDF barge board cladding on south side. Eastern face has same wooden boarding which is well sealed with no PRFs.	Negligible
B11	Large single storey sports facility. Multiple PRFs observed including: <ul style="list-style-type: none"> • South side, east face, gap underneath lead flashing. • South side, gap where gutter meets roof and plastic flashing. • Wood panel - behind metal corrugated sheet flashing that's pulled away. • Lead flashing on western side of building behind caretaker's toilet which has come away from the wall. A single unidentified bat was observed in this feature on two consecutive days. A single bat dropping was identified on the wall beneath the feature. The feature only provides space for individual/small numbers of bats and is unlikely to support maternity or hibernation roosts. 	Confirmed Roost (likely a transitional roost)
B12	Single story flat roofed brick-built building with concrete render (Photograph 11, Appendix D). The northeast corner of the building is covered in ivy providing shelter for bats. Ridged metal barge board is present around the top of the entire building offering space for bats and gaps are present between ridged roof board providing space for single opportunistic bats (Photograph 7 and 8, Appendix D).	Low
B13	Single storey kitchen block, brick built with concrete render. Ridged metal barge board around top perimeter of building, with space under ridges for bats (Photograph 7 and 8, Appendix D).	Low
B14	Flat roofed metal shipping container, well-sealed with no PRFs observed.	Negligible
B15	Flat roofed metal shipping container, well-sealed with no PRFs observed.	Negligible

B16	Flat roofed metal shipping container, well-sealed with no PRFs observed.	Negligible
B17	Flat roofed metal shipping container, well-sealed with no PRFs observed.	Negligible
B18	Flat roofed brick building, well-sealed with no PRFs observed.	Negligible

Any features suitable for supporting roosting bats within trees were assessed during the Site visit and are listed in Table 2-4. The locations of the trees are shown on Figure 2, [Appendix A](#).

Table 2-4 Tree PRA Suitability Scores

Tree/ Structure ID	Description	Feature	Suitability
T1	Mature lime tree, 1.5 m DBH, height: 11 m	No PRFs observed from ground level, but tree is of age and size class to support features, precautionary low suitability.	Low
T2	Mature lime tree, 1.5 m DBH, height: 10 m	No PRFs observed from ground level, but tree is of age and size class to support features, precautionary low suitability.	Low
T3	Sycamore, Unknown DBH as obscured by ivy, height: 10 m	No PRFs observed from ground level. Dense ivy cover protruding from canopy and trunk. Ivy is thick but also acts as clutter. Precautionary low suitability.	Low

2.5.2.2 Commuting and Foraging Habitat Assessment

LERC returned records of bat activity and roost records within 2 km of the Site. A common pipistrelle roost of an unknown roost type is located approximately 1.4 km northeast with foraging activity recorded approximately 300 m northeast. The Site is within the Core Sustenance Zone (CSZ)¹³ of this species; however, habitats on the Site are unlikely to provide a significant resource for these roosts. There are no nationally or locally designated sites for bats within 2 km of the Site, and no internationally designated sites for bats within 10 km of the Site.

The habitats within the Site provide Negligible/Low suitability for foraging and commuting bats. The majority of habitats, i.e., amenity grassland within the Site offers limited habitat for foraging and commuting bats however linear features present around the boundary of the Site provide habitat of potential value and habitat connectivity to surrounding areas.

2.5.3 Constraints and Recommendations

There are six buildings within the Site with **Low** suitability for roosting bats and one building (B11) is a **Confirmed** roost supporting a single unidentified bat. Three trees within the Site have Low suitability for roosting bats. The habitats within the Site provide an overall Low suitability for roosting bats and Negligible/Low suitability for foraging and commuting bats.

It is anticipated that all buildings will be demolished to facilitate the Proposed Development. At the time of writing, it is not known what vegetation clearance will be required to facilitate the Proposed Development.

Dependent on the final land take of the Proposed Development and without further investigation or mitigation, the following impacts on commuting foraging and/or roosting bats are anticipated:

- Habitat loss, severance and fragmentation;
- Loss and/or disturbance of breeding and resting sites of bats;
- Disturbance, injury or killing of bats during site clearance and construction works;
- Disturbance from noise and vibration (if piling is required); and,
- External lighting disturbance.

Further surveys should be undertaken to confirm the presence or likely absence of bats.

In accordance with Bat Survey Guidelines¹⁴ one summer roost survey is required for buildings with Low suitability for roosting bats, with a dusk emergence survey to be undertaken between May and August in suitable weather conditions. If a roost is confirmed within the structures and impacts cannot be avoided, further surveys are likely to

¹³ Bat Conservation Trust (2020) - *Core Sustenance Zones and habitats of importance for designing Biodiversity Net Gain for bats*. Accessed online at: [https://cdn.bats.org.uk/uploads/pdf/Bat-Species-Core-Sustenance-Zones-and-Habitats-for-Biodiversity-Net-Gain.pdf?v=1596874016#:~:text=A%20core%20sustenance%20zone%20\(CSZ,the%20colony%20using%20the%20roost.](https://cdn.bats.org.uk/uploads/pdf/Bat-Species-Core-Sustenance-Zones-and-Habitats-for-Biodiversity-Net-Gain.pdf?v=1596874016#:~:text=A%20core%20sustenance%20zone%20(CSZ,the%20colony%20using%20the%20roost.)

¹⁴ Collins, J.(ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conversation Trust. London.

be required to establish the nature of the bat roost, number and species of bats using the roost, provision of mitigation will be required along with a Natural England European Protected Species Mitigation Licence (EPSML).

B11 was confirmed to support a single bat which was observed under lead flashing on the side of the building on both survey days. Multiple additional roost characterisation surveys are required in accordance with the guidelines¹⁵, to establish the status of the roost and to inform the EPSML and mitigation requirements. Three additional emergence/re-entry surveys will be required in order to assess the roost' status. These surveys should be carried out between May and September, with at least two being undertaken between May and August, although it is recommended that all three be carried out during the period May – August.

If the three trees with Low suitability for roosting bats are to be removed to facilitate the Proposed Development a 'soft fell' methodology must be employed. The methodology includes felling the tree in section, with the following precautions:

- Cutting above or below (rather than directly through) a potential roosting feature;
- Lowering the cut sections gently to ground level by rope; and,
- Cut sections should be left on-Site, with any potential roost feature entrances left unobstructed, for 48 hours prior to chipping or removal from Site.

If substantial habitat around the Site boundary is anticipated to be lost activity surveys (including walked transects and automated/static activity surveys) are recommended. to ascertain the presence and/or level of bat activity on Site in line with the Bat Survey Guidelines¹⁶. Given the size of the Site and the habitats present one activity survey per season (spring (April/May), summer (June/July/August) and winter (September/October)) from April – October is recommended and should incorporate all areas of suitable habitat for foraging and commuting bats. The transect surveys will be supported by up to two remote detector locations per transect with data to be collected on five consecutive nights per season from April and October inclusive in appropriate weather for bats.

If any lighting is required to facilitate the Proposed Development, a sensitive lighting scheme should be implemented to limit any light spill upon retained habitats, including any watercourses, to avoid the severance of potential commuting features and foraging habitat. This should follow the guidance provided by Guidance Note 08/18 Bats and Artificial Lighting in the UK¹⁷.

2.6 Hazel Dormouse

2.6.1 Desk Study

There are no records of hazel dormouse (*Muscardinus avellanarius*) within the Study Area. The closest record of hazel dormouse is located approximately 2.4 km southeast of the Site with limited connectivity.

2.6.2 Field Survey

There is habitat within the Site that is suitable for hazel dormouse. The scrub and line of trees along the southern boundary fence provides suitable habitat for foraging and sheltering dormouse, due to the presence of broadleaved tree species including hazel. There is connectivity to the surrounding area via a series of hedgerows, however limited connectivity to nearby woodland and the area of the closest known record of dormice.

2.6.3 Constraints and Recommendations

There is suitable habitat for dormouse within the Site and as such it is recommended that the scrub and trees present along the southern boundary fence line are retained during the construction of the Proposed Development.

If impacts to the scrub and line of trees along the southern boundary are anticipated, surveys to confirm the presence/likely absence of hazel dormouse will be required. Ideal survey timings would involve an entire season of surveying (March - November) prior to removal of suitable habitat, paying regard to the Dormouse Conservation Handbook¹⁸.

¹⁵ Collins, J.(ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust. London.

¹⁶ Collins, J.(ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edition). The Bat Conservation Trust. London.

¹⁷ Institute of Lighting Professionals (ILP) and Bat Conservation Trust (BCT) (2018). *Guidance Note 08/18: Bats and artificial lighting in the UK: Bats and the Built Environment Series*. Institute of Lighting Professionals and Bat Conservation Trust, Rugby.

¹⁸ Paul Bright, Pat Morris and Tony Mitchell-Jones (English Nature, 2006). *The Dormouse Conservation Handbook* Second Edition.

2.7 Riparian Mammals - Otter and Water Vole

2.7.1 Desk study

Otter

There are two recent record of otter (*Lutra lutra*) within the Study Area, the closest located approximately 1.3 km southwest of the Site in a pond with no connectivity to the Site. There are no recent records of water vole (*Arvicola amphibius*) within the Study Area.

Cold Brook is located approximately 25 m from the northern boundary of the Site separated by the Argae Lane road and appears to offer suitable habitat for commuting otter. The road does not provide a major barrier to movement and the brook extends throughout the wider landscape. There are no waterbodies within the Site.

2.7.2 Field Survey

No signs of active otter presence e.g., spraints, mammal paths, holts, or latrine, or water vole presence e.g., feeding remains, latrines were identified during the survey. No suitable habitat is present within the Site and therefore otter and water vole are considered absent from the Site.

2.7.3 Constraints and Recommendations – Otter and Water Vole

Recent records of otter have been recorded within the Study Area however none of the records have ecological connectivity to the Site. The Site offers no suitable habitat for otter or water vole and no evidence of otter and water vole was recorded during the field survey. Neither otter nor water vole are considered present on Site and therefore no further surveys are required. Cold Brook lies approximately 25 m from the northern boundary of the Site on the opposite side Argae Lane and offers connectivity to the surrounding landscape and interconnected series of rhines.

Where works are required in proximity to any waterbody, pollution prevention measures should be adhered to, to prevent environmental run-off into habitat suitable for otter or water vole.

If any lighting is required to facilitate the Proposed Development, a sensitive lighting scheme should be implemented to limit any light spill upon retained habitats, including any watercourses, to avoid the severance of potential commuting features and foraging habitat. This should follow the guidance provided by Guidance Note 08/18 Bats and Artificial Lighting in the UK¹⁹.

2.8 Amphibians including Great Crested Newt

2.8.1 Desk Study

There are no recent records of great crested newt within the Study Area.

There are seven records of common toad within the Study Area, with the closest record located approximately 1.2 km southwest of the Site.

There are also 20 records of common frog (*Rana temporaria*), three records of palmate newt (*Lissotriton helveticus*) and three smooth newt (*Lissotriton vulgaris*).

A total of five waterbodies (including ponds and streams) were identified within 500 m of the Site using OS mapping:

- Waterbody 1- Pond approximately 0.3 ha in area and less than 0.2 km northeast of the Site with no connectivity to the Site.
- Waterbody 2- Pond approximately 0.2 ha in area and 0.5 km northeast of the Site with no connectivity to the Site.
- Waterbody 3- Pond approximately 0.1 ha in area and 0.4 km northeast of the Site with no connectivity to the Site.
- Watercourse 4- Cold Brook runs approximately 10 m from the Site along the north of Argae Lane road and extends into St Andrews Major Golf Club grounds to the east and northeast of the Site. This is unlikely to be utilised by breeding great crested newt.

¹⁹ Institute of Lighting Professionals (ILP) and Bat Conservation Trust (BCT) (2018). Guidance Note 08/18: *Bats and artificial lighting in the UK: Bats and the Built Environment Series*. Institute of Lighting Professionals and Bat Conservation Trust, Rugby.

- Watercourse 5- Cold Brook tributary runs approximately 0.3 km to the west of the Site through the housing estate area. This is unlikely to be utilised by breeding great crested newt.

2.8.2 Field Survey

No waterbodies are present within the Site boundary and as such there is no suitable aquatic habitat for breeding amphibians including great crested newt.

The terrestrial habitat on Site is sub-optimal for great crested newt and other amphibians, however the area of dense scrub which is located at the eastern boundary of the Site may provide a suitable hibernation feature for amphibians.

2.8.3 Constraints and Recommendations

There are no local recent records of great crested newt within the Study Area. Three suitable waterbodies are present within 500 m of the Site, however, due to the lack of direct connectivity to the Site there is limited potential for great crested newt to be present on Site. There are no waterbodies within the Site and the terrestrial habitat is considered sub-optimal for amphibians including great crested newts. Great crested newt are considered likely absent from the Site, however common toad could be present on Site. A pre-works check for common toad presence should be undertaken if clearance works be required in scrub, woodland and grassland.

No further surveys for great crested newt are recommended for this Site.

2.9 Common Species of Reptile

Common species of reptile refers to common lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix helvetica*).

2.9.1 Desk Study

There are 15 recent records of slow worm within the Study Area. The closest record is approximately 57 m west of the Site connected via hedgerow and grassland.

There are two recent records of common lizard within the Study Area. The closest record approximately 1.2 km southwest of the Site with no connectivity due to housing and roads situated between the Site.

There is one recent record of grass snake within the Study Area located approximately 1.5 km north of the Site connected via farmland, woodland and hedgerow.

2.9.2 Field Survey

The Site is considered to have low suitability for reptile species due to the lack of shaded areas limiting the opportunities for cover and protection for reptile species. The amenity grassland on Site provides sub-optimal habitat for reptiles to forage and bask as the grass is short and regularly mown. The dense scrub on Site is well shaded and lacks marginal habitat which provides suitability for reptile species. The scrub however may provide suitable sheltered hibernation features for reptile species. Due to the current use of the Site as an active high school, footfall from the population of the school may also reduce the suitability for reptiles due to disturbance. The Site is well connected to the wider area including a golf course complex which contains a mosaic of habitats with varying sward height which offers good suitability for reptiles.

2.9.3 Constraints and Recommendations

No reptile surveys are recommended for this Site.

Vegetation removal of the scrub and boundary habitat should be undertaken using a precautionary, directional method (i.e., clearance undertaken directionally towards retained habitat and ensuring that no habitat suitable for reptiles becomes isolated) with an ecological watching brief during the reptile active season (May – September), so any reptiles present can be actively displaced into adjacent, retained habitats. It is recommended that vegetation clearance be undertaken in October to avoid the breeding bird season (March – August, inclusive).

2.10 Birds

2.10.1 Desk Study

There are recent records for notable bird species within the Study Area. These include 10 species listed on Annex I of the EC Birds Directive, 17 species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended),

26 species listed on Section 7 of the Environment (Wales) Act 2016 and 75 species listed on the Local Biodiversity Action Plan (LBAP).

2.10.2 Field Survey

The dense scrub in the east of the Site and around the boundary fence line to the south and west was identified as suitable for breeding birds. The scattered trees along the northern Site boundary also offer suitability for breeding birds with a disused bird's nest being identified within the canopy of one tree and the presence of bird boxes attached to trees.

The habitats on Site are unlikely to support breeding Schedule 1 bird species.

2.10.3 Constraints and Recommendations

The dense scrub, scattered trees and buildings within the Site are suitable to support breeding birds. All birds and their nests are protected by the Wildlife and Countryside Act 1981 (as amended) during the breeding season.

Without mitigation, during construction and operation the following indicative potential impacts are anticipated:

- Habitat loss, severance and fragmentation;
- Loss and/or disturbance of breeding and resting sites of birds;
- Disturbance, injury or killing of birds during site clearance and construction works; and,
- Disturbance from noise and vibration (if piling is required).

Mitigation will be required to prevent injury or disturbance to birds and damage or destruction of nests during the demolition of buildings on Site and if vegetation removal is required to facilitate the Proposed Development, however dedicated breeding bird's surveys are not required. Habitat removal should take place outside of the breeding bird season (*i.e.*, clearance should take place September to early February). It is recommended that vegetation clearance be undertaken in October to avoid the hibernation season for reptiles and amphibians. If this is not possible, vegetation must first be checked by an ecologist no more than 48 hours prior to removal. If an active nest is encountered, a species-appropriate protective buffer (typically 5 m) will be erected around the nest and will remain in place until all young have fully fledged, this can take up to eight weeks.

2.11 Invertebrates

2.11.1 Desk study

There are recent records of notable²⁰ terrestrial invertebrates within the Study Area, consisting of 45 unique species; including one beetle species, two butterfly species, five dragonfly species, 29 moth species, two bee species, two snail species, four cricket species.

2.11.2 Field Survey

The scrub and ruderal habitats within the Site provide suitable habitat for common invertebrate species only. The dominant habitat within the Site is amenity grassland which has limited floristic diversity. No protected or priority invertebrates were observed during the field survey and are considered to be likely absent from the Site.

2.11.3 Constraints and Recommendations

The desk study returned 24 species of protected invertebrate within 2 km of the Site. There is no suitable habitat within the Site for these species. The habitats within the Site provide suitable habitat for common invertebrate species only. Protected and priority invertebrates are considered to be likely absent from the Site.

Due to the lack of considerable diversity within the grassland flora, the limited scope for any permanent habitat loss within the Proposed Development, and the extensive availability of equal or better habitat and food plants for protected invertebrates within the wider landscape, no further surveys or constraints are anticipated in association with terrestrial invertebrates.

²⁰ Notable terrestrial invertebrates are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any invertebrate listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); any invertebrate listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended); any invertebrate listed in the IUCN Invertebrate Red Data Book (1991);

2.12 Invasive Non-Native Plant Species

Invasive Non-Native Plant Species (INNPS) are listed under Schedule 9 Part 2 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and, more recently, species of special concern and Schedule 2 species, as per the Invasive Alien Species (Enforcement and Permitting) Order 2019.

2.12.1 Desk Study

There are 18 recent records of INNPS listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) within the Study Area. No records are within 10 m of the Survey Area.

2.12.2 Field Survey

No INNPS were recorded within the Survey Area during the field survey.

2.12.3 Constraints and Recommendations

No INNPS as listed in Schedule 9 of the Wildlife and Countryside Act (as amended) were confirmed within the Site.

As the survey was undertaken outside of the main growing season (April - October, optimal) when INNS may not be visible and as INNPS can spread quickly, it is recommended that a Site walkover should be undertaken prior to any vegetation clearance to confirm no change in status of INNPS species.

If INNPS are subsequently confirmed, the plant must not be disturbed or allowed to spread within or beyond the Site boundary. If areas with INNPS cannot be avoided within the Proposed Development, a Precautionary Method of Work must be put in place to prevent the spread of invasive species. Any cleared vegetation must be disposed of under a registered waste exemption or environmental permit or sent to authorised landfill sites via a registered waste carrier.

2.13 Other Notable Species

2.13.1 Desk Study

There are records of other notable species²¹ within the Study Area. Notable amphibians recorded within the Study Area including 1 record of harvest mouse (*Micromys minutus*) recorded 1.3 km southwest of the Site, one record of polecat (*Mustela putorius*) 1.3 km west of the Site and 33 records of hedgehog (*Erinaceus europaeus*), the closest record is approximately 0.5 km southwest of the Site with limited connectivity.

2.13.2 Field Survey

There is no suitable habitat within the Site to harvest mouse and polecat. The amenity grassland within the Site provides suitable habitat for foraging and commuting hedgehog. The dense scrub along the boundary of the Site provides suitable habitat for sheltering and commuting hedgehog.

No evidence of hedgehog was identified within the Site during the field survey.

2.13.3 Constraints and Recommendations

The scrub and grassland habitats within the Site provide suitable habitat for foraging, commuting and sheltering hedgehog.

Hedgehog are listed as a priority species in the NERC Act (2006). It is recommended that habitat with suitability for hedgehog should be retained. No further surveys for these species are required; however, if they are found during clearance works all works must stop and an ecologist contacted so that they can be moved to safety. During construction, excavations should be covered over night or ramps installed to prevent hedgehog becoming trapped or to allow trapped animals to escape.

If any lighting is required to facilitate the Proposed Development, a sensitive lighting scheme should be implemented to limit any light spill upon retained habitats.

²¹Notable species are taken as principal species for the conservation of biodiversity listed under Section 41 of the Natural Environment and Rural Communities Act 2006; any species listed in an IUCN Red Data Book.

3. Opportunities for Enhancements

The National Planning Policy Framework for Wales (February 2021) and the Environment (Wales) Act 2016, requires that developments enhance biodiversity, as well as just mitigating impacts.

The Vale of Glamorgan Local Development Plan 2011-2026²² SP10 - Built and Natural Environment' also promotes 'opportunities for the creation of new habitats or the sensitive enhancement of existing habitats' wherever possible.

Recommendations have been made to make the most of proposed landscape planting on Site to benefit biodiversity.

3.1 Species-Rich Grassland

Currently, grassland habitat on the Site is species poor and homogenous in composition. Therefore, a more structured management regime and/or re-sowing with a species-diverse mix is recommended for areas of the amenity grassland that will be retained.

Retained areas of grassland could be planted and managed to enhance species diversity. These areas should be mown three times a year (April, August and once during winter). <http://wildseed.co.uk/page/management-of-meadows-and-grassland> has more details on how to manage species-rich grasslands. Arisings should be removed following cutting.

It has been assumed that the topsoil will be derived from on the Site. The seed mixes used should be appropriate for the subsoil type used and need to be approved by a suitably qualified ecologist prior to use. Areas should be sown with a diverse lawn mix such as:

- Emorsgate General Purpose Meadow Mixture EM2 (18 species) (www.wildseed.co.uk); or,
- Germinal (formally British Seed Houses) WFG20 Eco Species Rich Lawn (34 species) (<https://www.germinal.com>).

For more information including flower colour, benefits to wildlife and soil type for various species see How to create a wildflower meadow, Natural England (2017)²³.

3.2 Insect Habitats

An insect wall, insect boxes or bee bank could be included in the landscape design to provide shelter and hibernating habitat for a range of insects. These should be installed in areas adjacent to species rich habitats, like new species-rich grassland or the hedge.

The insect wall must be carefully designed and maintained, since poorly designed and maintained insect houses or walls can kill off the insects designed to inhabit them through parasites and mould²⁴. It is recommended that properly designed insect houses are used, such as those available from Nurturing Nature (<http://nurturing-nature.co.uk/wild-bee-nest-boxes/>) rather than those available from garden centres which often are not suitable for insect species found in the UK.

Alternatively, a bee bank could be built using excess spoil created during the works. The bee bank provides warm, sheltered patches of bare ground where solitary bees can nest. The bee bank should be in a sunny location sheltered from the weather and be orientated to face south or southeast. A crescent shape allows bees to make use of varying microclimates. The surrounding areas of habitat should provide a rich nectar and pollen source so should be planted with wildflowers or native shrub planting. Advice on creating and maintaining a bee bank is provided here: <https://www.buglife.org.uk/creating-a-bee-bank>

Dead wood piles are of benefit to beetles, spiders, woodlice, centipedes, ants and earthworms. Logs could be stacked in associated with the swale. Burying some logs will create a range of suitable habitats. Advice on creating a dead wood pile is provided here:

https://www.buglife.org.uk/sites/default/files/Deadwood%20for%20beetles_0.pdf

²²Vale of Glamorgan Local Development Plan 2011- 2026. Accessed online: https://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Policy/LDP/Vale_of_Glamorgan_Deposit_LDP_Written_State_ment_Feb_2012.pdf

²³Natural England (2017). How to create a wildflower meadow. Accessed online: <https://naturalengland.blog.gov.uk/2017/08/15/how-to-create-a-wildflower-meadow/>

²⁴MacIvor, J S and Packer, L. (2015). 'Bee Hotels' as Tools for Native Pollinator Conservation: A Premature Verdict?. PloS one. 10. e0122126. 10.1371/journal.pone.0122126.

Full instructions for the management of the insect walls or boxes will be provided by the manufacturer.

The planting scheme of new features should be of locally sourced native species of benefit to wildlife. Gunnell et al.²⁵ 'Landscape and Urban Design' (free to download) has suggested planting lists which are of benefit to invertebrates.

3.3 Bird Boxes

It is recommended that at least six bird boxes should be incorporated into the building design.

Boxes suitable for swift and house sparrow would be suitable as habitat suitable for these species is often lost in modern building design.

Swift Conservation provides advice on design and location of swift boxes, available at <http://www.swift-conservation.org/Nestboxes%26Attraction.htm>. The RSPB provides advice on sparrow nest box design and fitting available from <https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/createasparrowstreet/>. Sparrows are communal nesters so benefit from having several boxes in close proximity or adjoining boxes.

A range of boxes for passerine species would be suitable to use on trees including small boxes, large boxes, boxes with holes entrances or open fronted boxes. Advice on box design and locating boxes is provided by the British Trust of Ornithology <https://www.bto.org/about-birds/nbw/make-a-nest-box>

Bird boxes should be appropriately located at least four metres above ground level, and out of reach of predators. Bird boxes should not be positioned to face south in order to avoid hot sun.

3.4 Bat Boxes

It is recommended that bat boxes are included in the development design, to replace features lost due to the demolition of buildings and removal of natural PRFs. The addition of bat boxes will increase roosting opportunities in the local area and have a positive impact on biodiversity at the Site and local level. Bat boxes could be installed or integrated into the new buildings on the Site.

Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Builds²⁶ suggests various ways of including a roost void compliant with Building Regulations within a variety of modern structures.

Products such as cavity bat boxes, bat bricks and bat tiles could also be utilised to match external fabrics. Alternatively, roost space could be provided by fitting pre-made bat boxes to the external face of the new building. The choice of bat box should be suitable for crevice dwelling species.

All new roost provision should be situated away from light spill, with clear flight paths towards corridors and foraging suitable to be used by bats, especially the hedge on the southern boundary. Advice from a suitable qualified ecologist should be sought when drawing up the specifications for bat roosts and locations. Bat boxes should be positioned at least 4 m above ground level to protect any resident bats from disturbance or predation by domestic pets. Each box can be positioned with a different orientation between southeast and southwest to provide a range of microclimate options.

3.5 Hedgehog House

Habitats could be enhanced, and new provisions provided for hedgehogs to shelter. This would include provision of at least one log pile, leaf pile and/or purpose-built or ready-made purchased hedgehog house. Guidance on building hedgehog houses is provided by the Wildlife Trust, which could be incorporated into a design technology project <https://www.wildlifetrusts.org/sites/default/files/2018-05/Hedgehogsm1.jpg>.

Log piles, leaf piles and hedgehog houses should be placed adjacent to suitable hedgehog habitats, including hedgerows, which can be advised by an ecologist.

Habitats for hedgehogs could be enhanced by leaving strips of grassland unmown around the edges and adjacent to suitable areas of habitat including hedgerows.

²⁵Gunnell, K., Grant, G., & Williams, C. (2012). Landscape and urban design for bats and biodiversity. London: Bat Conservation Trust. <https://www.bats.org.uk/our-work/landscapes-for-bats/landscape-and-urban-design>

²⁶Williams, C. (2010) Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Builds. ISBN 9781859463536

4. Conclusion

This PEA is based on a desk study and ecological surveys undertaken November 2022, to assess the ecological constraints to the Proposed Development and to provide advice in respect of Proposed Development design.

No final development plans have been seen at the time of writing this report. Once the Proposed Development is finalised, the proposals should be reviewed alongside this PEA.

The following further surveys, summarised in Table 4-1, may be required to support detailed design of the Proposed Development depending on the final land take.

Table 4-1. Summary of Recommendations

Feature	Recommendation	Timing
Designated Sites	Pollution prevention measures should be adhered to, to prevent impacts on designated sites.	Throughout construction period.
Construction Environmental Management Plan (CEMP)	A CEMP, or similar, to be prepared and implemented during construction to prevent adverse impact to priority habitats and adjacent designated sites.	Following planning application normally written by the contractor.
Ecological Mitigation and Enhancement Strategy (EMES)	An EMES, or similar, to be prepared detailing measures to protect and enhance ecological features within the Site. This is a report outlining how habitats will be created and maintained, it will also include details of mitigation. It is normally produced following planning but can be produced beforehand. It can be called a number of things including "Landscape and Ecology Management Plan (LEMP)", "Ecology Strategy", "Habitat Management Plan", "Landscape and Ecology Mitigation Plan".	Usually following planning application as a condition of approval.
Badgers	A pre-commencement check for continued absence of badger setts should be undertaken by a suitably experienced ecologist.	No more than 48 hours prior to commencement of works.
Bats	B11 requires further roost characterisation surveys. It is recommended three emergence/re-entry surveys are undertaken to assess the status of the bat roost.	Three visits between May and September with at least two of the surveys between May and August.
	Bat dusk emergence surveys are recommended to assess the current use of buildings assessed as having Low suitability for roosting bats and identify the requirement for mitigation and a European Protected Species Mitigation License (EPSML).	One survey visit per building required between May and August.
	Trees assessed as having Low suitability for roosting bats are to be 'felled under a precautionary method of soft-felling (felling in sections) under the ecological watching brief of a suitably experienced ecologist.	Throughout construction period.
	If significant boundary habitat should be removed, then bat activity surveys and deployment of static bat detectors should be carried out on the Site to assess how bats may be using the Site for foraging and commuting.	At least once per season (Spring (April/May), summer (June/July/August) and winter (September/October)).
Hazel Dormouse	If considerable habitat along the southern Site boundary is to be removed, then dormouse surveys are recommended to assess their presence/likely absence.	Prior to vegetation clearance. For an entire season (March – November).
Otter and Water Vole	Pollution prevention measures should be in place to prevent environmental run off into habitat suitable for otter and water vole.	Throughout construction period.
Reptiles	Any vegetation removal of the dense scrub habitat present on Site is undertaken during the reptile active season (May-September inclusive).	During reptile active season May - September. Ideally undertaken in October.
Birds	Any vegetation removal of the dense scrub habitat present on Site is undertaken outside the breeding bird season (March-August inclusive).	Outside the breeding bird season (March-August inclusive). Ideally undertaken in October.
INNPS	A pre-commencement check for continued absence of INNPS should be undertaken by a suitably experienced ecologist.	During optimal growing season (April-October).

A CEMP, or similar, will need to be produced which covers current best practice measures including safeguarding retained trees and root protection zones, implementation of practices to avoid pollution and protection of retained habitats. Liaison with local planning authority recommended to agree scope of CEMP.

4.1 Re-Survey of the Site

Due to the mobility of animals and the potential for colonisation of the Site, it is recommended that an updated ecological survey be undertaken prior to the redevelopment of this Site should this not occur within 24 months of the date of the field survey.

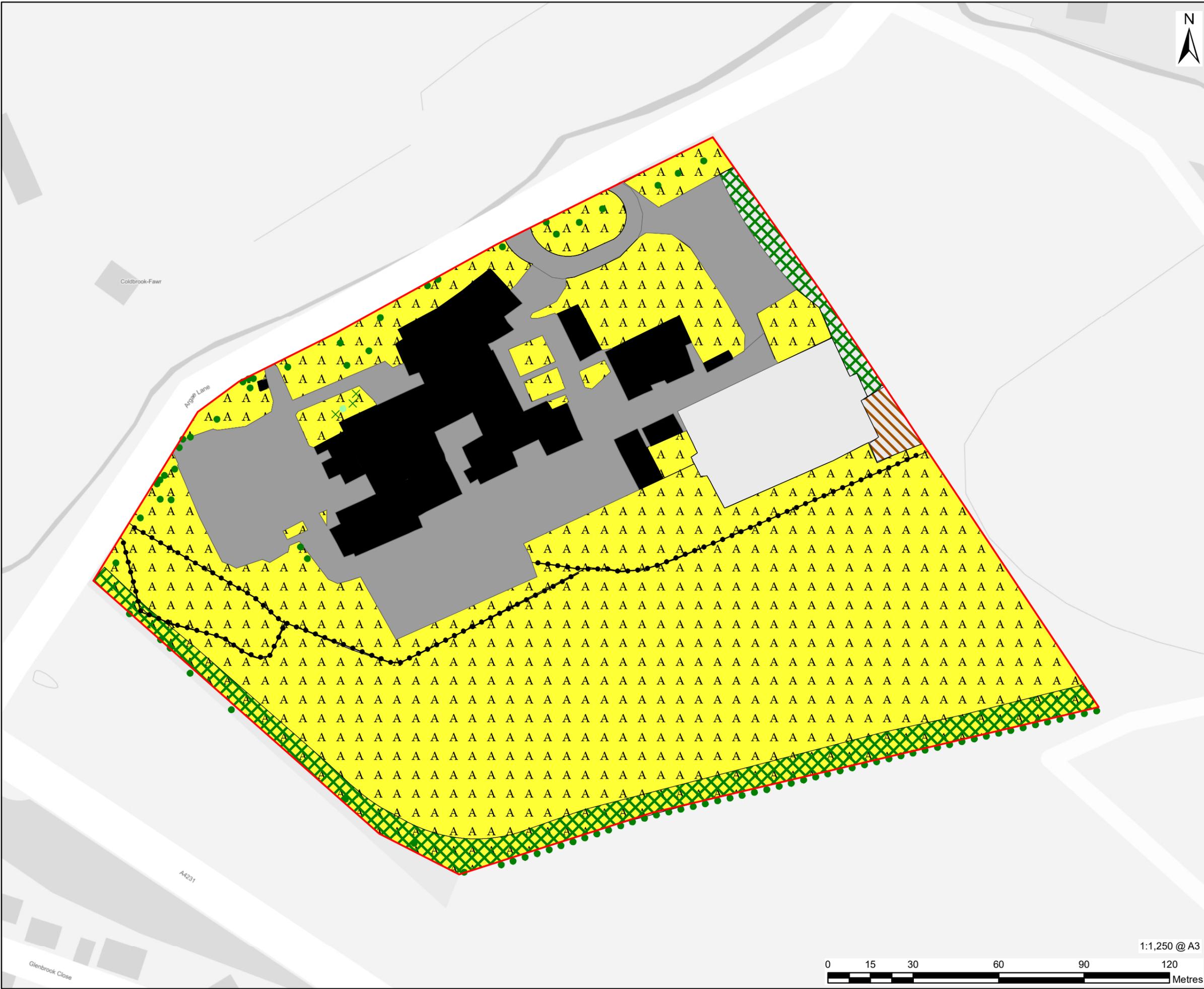
Appendix A Figures

Figure 1: Phase 1 Habitat Plan



LEGEND

- Site Boundary
- Phase 1 Habitat**
- X Scattered scrub
- Broad-leaved parkland/
scattered trees
- Coniferous parkland/ scattered
trees
- Broadleaved/scattered line of
trees
- Earth bank
- Hardstanding
- Scrub - dense/continuous
- Other tall herb and fern - ruderal
- A Cultivated/disturbed land -
amenity grassland
- Buildings
- Other habitat



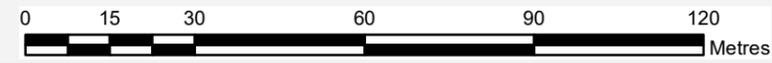
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ISSUE PURPOSE
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PROJECT NUMBER
60697670

FIGURE TITLE
Phase 1 Habitat Plan

FIGURE NUMBER
Figure 1

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Figure 2: Preliminary Bat Roost Assessment



LEGEND

- Site Boundary
- Bat Roost Suitability - Trees**
- ▲ Low
- ▲ Negligible
- Bat Roost Suitability - Built structures**
- Low
- Negligible
- Confirmed

NOTES
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ISSUE PURPOSE

DRAFT

PROJECT NUMBER
60697670

FIGURE TITLE
Preliminary Bat Roost Assessment

FIGURE NUMBER
Figure 2

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Appendix B Relevant Legislation and Planning Policy

B.1 Legislation

The UK is no longer a member of the European Union (EU). EU legislation as it applied to the UK on 31 December 2020 is now a part of UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00 p.m. on 31 December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'.

The Secretary of State for the Environment, Food and Rural Affairs and Welsh Ministers have made changes to parts of the *Conservation of Habitats and Species Regulations 2017* (referred to as the 2017 Regulations) so that they operate effectively. Most of these changes involve transferring functions from the European Commission to the appropriate authorities in England. All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

Designated Sites

Sites of Special Scientific Interest

Under the *Wildlife and Countryside Act 1981* (as amended), it is an offence to carry out or permit to be carried out any operations likely to damage the Site of Special Scientific Interest (SSSI). These operations are listed in the SSSI notification.

Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 of the *Wildlife and Countryside Act 1981* (as amended), before undertaking operations likely to damage a SSSI.

Locally Designated Sites

Local Wildlife Sites are sites with 'substantive nature conservation value'. They are defined areas, identified and selected for their nature conservation value, based on important, distinctive and threatened habitats and species within a region.

They are usually selected by the relevant Wildlife Trust, along with representatives of the local authority and other local wildlife conservation groups.

The LWS selection panel, select all sites that meet the assigned criteria, unlike SSSIs, which for some habitats are a representative sample of sites that meet the national standard. Consequently, many sites of SSSI quality are not designated and instead are selected as LWSs. Consequently, LWSs can be amongst the best sites for biodiversity.

Protected Species

Bats / Hazel Dormouse / Otter / Great Crested Newt

These species, known as European Protected Species, are protected under Regulation 43 of the 2017 Regulations as amended by the 2019 Regulations. This makes it an offence to deliberately capture, injure or kill an animal; deliberately disturb an animal; or damage or destroy a breeding site or resting place used by an animal.

Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing. 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.

Where development works are at risk of causing one or more of the offences listed above, a mitigation licence from Natural England can be obtained to facilitate the works that would otherwise be illegal.

These species are also protected under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended). This makes it an offence to intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb an animal in such a place.

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

Water Vole

Water voles are protected under the *Wildlife and Countryside Act 1981* (as amended). There are no licensing purposes that explicitly cover development or other construction activities which could have an impact on water voles.

When development work is proposed in or near an area which is either known to or likely to contain water voles, then the developer will need to implement suitable mitigation to prevent impacts to water voles. The preferred mitigation option is to leave water voles *in situ*, with the development works adopting avoidance measures through redesign of the proposals.

Where impacts cannot be avoided, operations aimed at displacing water voles from a development site are now no longer covered by the “*incidental result of an otherwise lawful action*” defence in the *Wildlife and Countryside Act 1981* (as amended). Displacement of water voles now needs to be undertaken under a licence.

In England, small scale (limited to continuous lengths of bank not exceeding 50 m) displacement of water voles can be carried out at certain times of the year (February to April) for the purposes of conservation under a Class Licence by a registered person. For larger scale displacements or displacements outside of this period, displacement can be undertaken under a site-specific conservation licence.

Where it is considered that the best outcome for water voles is capture and translocation to a different location then this action is considered by Natural England to be outside the scope of the defence as the intentional capture of water voles is unlikely to be considered ‘incidental’. In these circumstances there may be genuine grounds for issuing a conservation licence for the purpose of translocating the water vole population to suitable alternative habitat.

Nesting Birds

All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended), with some species afforded greater protection under Schedule 1 of the *Wildlife and Countryside Act 1981* (as amended). In addition to the protection from killing or taking that all birds receive, Schedule 1 birds and their young must not be disturbed at the nest.

There are no licensing purposes that explicitly cover development activities affecting wild birds.

Common Species of Reptile (common lizard, slow worm, grass snake and adder)

Common species of reptile are protected against intentional killing and injury under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended). There is no requirement for a licence where development works affect common species of reptiles. Instead, Natural England advise²⁷ that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

Badger

Badgers and their setts are protected under the *Protection of Badgers Act 1992* (as amended). This makes it an offence to 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 near setts that are not occupied, i.e. those that do not show signs of current use.

Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural England. Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process.

When assessing the requirement for a licence in respect of development, Natural England²⁸ state that badgers are relatively tolerant of moderate levels of noise and activity around their setts, and that a low or moderate level of apparent disturbing activity at or near to badger setts does not necessarily disturb the badgers occupying those setts.

Licences are normally not granted from December to June inclusive (the badger breeding season) because dependent cubs may be present within setts.

²⁷Reptiles: guidelines for developers, English Nature 2004

²⁸ Interpretation of ‘Disturbance’ in relation to badgers occupying a sett, Natural England (2009)

Species and Habitats of Principal Importance for the Conservation of Biodiversity

Section 40 of the Natural Environment & Rural Communities Act (NERC) 2006 sets out the duty for public authorities to conserve biodiversity in England.

Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State for England, in consultation with Natural England, are referred to in Section 41 of the NERC Act for England. The list, known as the 'England Biodiversity List', of habitats and species can be found on the Natural England web site.

The 'England Biodiversity List' is used as a guide for decision makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006 to have regard to the conservation of biodiversity in England when carrying out their normal functions.

B.2 Planning Policy

National Planning Policy Framework

Planning Policy Wales (11th Ed. February 2021)

Planning Policy Wales (PPW)²⁹ sets out the land use planning policies of Welsh Government.

It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales.

Chapter 6. Distinctive and Natural Places outlines Welsh Government's objectives for the environmental and cultural components of placemaking. These components are complementary to those of the Active and Social and Productive and Enterprising themes and collectively the three themes come together to contribute towards the national sustainable placemaking outcomes.

Section 6.4 addresses Biodiversity and Ecological Networks. The policy includes the duties and requirements set out in Section 6 the Environment Wales Act (2016) and pays due regard to the State of Natural Resources Report (NRW, 2016) by taking all reasonable steps to maintain and enhance biodiversity. There is a focus on ecosystem services and the benefits of protecting and enhancing biodiversity.

The relevant measures in place to conserve landscape and biodiversity include:

- Statutory designations;
- Non-statutory designations;
- Maintaining and enhancing biodiversity;
- Ecosystem resilience and connectivity of ecological networks;
- Trees, hedgerows and woodlands; and,
- Protected and Priority species.

Sections relevant to this PEAR are detailed in below. Table B-1 provides a summary of relevant paragraphs planning policies. For the precise wording of each specific policy please refer back to the source document.

Table B- 1 Summary of National Planning Policy

Document	Paragraph Reference	Summary
Planning Policy Wales (11th Ed. February 2021) ³⁰	6.4.5	States that Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity.
	6.4.15	States that Statutorily Designated Sites must be protected from damage and deterioration, with their important features conserved and enhanced by appropriate management.

²⁹Welsh Government (2021) National Planning Policy Wales Edition 11. February 2021. Retrieved from https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

³⁰Welsh Government (2021) National Planning Policy Wales Edition 11. February 2021. Retrieved from https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

6.4.19	States that sites which have been formally proposed as Special Protection Areas (SPAs), Special Areas of Conservation (SACs) but which are not yet subject to legal protection under the Habitats Regulations, should be treated within the planning system in the same way as if they were legally designated. The same considerations should, as a matter of policy, be applied to proposed Ramsar sites.
6.4.20	States that Non-statutory Designated Sites should be given adequate protection. Before authorising development likely to damage a local wildlife designation, planning authorities should give notice of the proposed operation to the County Ecologist and third sector environmental organisations.
6.4.21	States that Planning Authorities must follow a stepwise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, then minimized, mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.
6.4.22	States that the presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.
6.4.25	States that Planning authorities should protect trees, hedgerows, groups of trees and areas of woodland where they have ecological value, contribute to the character or amenity of a particular locality, or perform a beneficial and identified green infrastructure function.
6.4.26	States that Ancient woodland and semi-natural woodlands and individual ancient, veteran and heritage trees should be afforded protection from development which would result in their loss or deterioration unless there are significant and clearly defined public benefits.
6.4.27	States that the protection and planting of trees and hedgerows should be delivered, where appropriate, through locally specific strategies and policies, through imposing conditions when granting planning permission, and/or by making Tree Preservation Orders (TPOs).

Technical Advice Note 5 (TAN5) Nature Conservation and Planning (September 2009)

The Planning Policy Wales (PPW) is supplemented by a series of Technical Advice Notes. TAN 5 provides guidance on how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. It provides advice on areas including the key principles of positive planning for nature conservation, nature conservation in Local Development Plans and development management procedures. It also provides advice on development affecting designated sites and habitats, in addition to protected or priority habitats and species.

Key Principles include that the town and country planning system in Wales should integrate nature conservation into all planning decisions; that the town and country planning system should look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally and that they should ensure that the UK's international and national obligations for site, species and habitat protection are fully met in all planning decisions.

Local Planning Policy

The Vale of Glamorgan Local Development Plan (LDP) 2011-2026³¹ provides the local planning policy framework for the Vale of Glamorgan and was adopted by the Council on 28th June 2017.

The Plan sets out the vision, objectives, strategy and policies for managing development in the Vale of Glamorgan and contains a number of local planning policies and makes provision for the use of land for the purposes of housing, employment, retailing, recreation, transport, tourism, minerals, waste, and community uses. It also seeks to identify the infrastructure that will be required to meet the growth anticipated in the Vale of Glamorgan up to 2026 and provides a monitoring framework for assessing the effectiveness of the Plan.

Policies referring to nature conservation are outlined below. Full details can be found in Vale of Glamorgan Local Development Plan 2011-2026, Local Development Plan-Written Statement June 2017.

Table B-2**Error! Reference source not found.** provides a summary of relevant local planning policies.

³¹Vale of Galmorgan Local Development Plan 2011- 2026. Accessed online:
https://www.valeofglamorgan.gov.uk/Documents/Living/Planning/Policy/LDP/vale_of_Glamorgan_Deposit_LDP_Written_Statement_Feb_2012.pdf

Table B- 2 Summary of Local Planning Policy

Policy	Details
Policy SP10 – Built and Natural Environment	<p>Development proposals must preserve and where appropriate enhance the rich and diverse built and natural environment and heritage of the Vale of Glamorgan including:</p> <p>The architectural and / or historic qualities of buildings or Forest Schools nature areas, including locally listed buildings;</p> <p>Historic landscapes, parks and gardens;</p> <p>Special landscape areas;</p> <p>The Glamorgan Heritage Coast;</p> <p>Sites designated for their local, national and European nature conservation importance; and</p> <p>Important archaeological and geological features.</p> <p>The Vale of Glamorgan's natural and built environmental qualities significantly contribute to its identity and also provide valuable local recreation and tourism opportunities. These assets include areas recognised as being of European, national and local importance, including the Vale of Glamorgan's coastline which includes the Glamorgan Heritage Coast designation and the Severn Estuary Special Protection Area.</p> <p>Policy SP10 emphasises the need to protect the Vale of Glamorgan's natural and built environmental assets and reinforces that sensitive design and choice of location of new development can have a positive effect on the Vale of Glamorgan's built and natural heritage. Similarly, new development will be required to minimise its impact on natural systems, landscapes, species and habitats and, where appropriate, provide opportunities for the creation of new habitats or the sensitive enhancement of existing habitats.</p> <p>The LDP provides a policy framework that seeks to preserve and enhance the Vale of Glamorgan's important historic built environment particularly in relation to the numerous listed buildings (both statutory and local), Forest Schools nature areas, scheduled monuments and historic landscapes, parks and gardens that exist. It should be noted that statutory listed buildings are also covered under Policy MD8 and are subject to separate legislation. In addition, it recognises the importance of preserving and enhancing the natural environment, principally the countryside and the coast, which have significant landscape and nature conservation value.</p>
Policy – MG18 Green Wedges	<p>Green wedges have been identified to prevent the coalescence of settlements and to retain the openness of land at the following locations:</p> <ul style="list-style-type: none"> • Between Dinas Powys, Penarth and Llandough; • North West of Sully; • North of Wenvoe; • South of Bridgend; • Between Barry and Rhoose; • South Penarth to Sully; and • Between Rhoose and Aberthaw. <p>Within these areas development which prejudices the open nature of the land will not be permitted.</p> <p>Land on the urban fringe particularly around the key, service and primary settlements within the South East Zone is vulnerable to speculative development that can blur the boundaries between settlement edges and the open countryside. Unchecked this development would result in the incremental loss of open land and ultimately lead to the coalescence of settlements with a resultant detrimental impact upon agriculture, the landscape and the amenity value of land.</p> <p>While other policies of the LDP seek to prevent inappropriate development within the open countryside it is considered that the areas defined by the green wedges are more vulnerable and susceptible to change and require additional protection. Therefore, within the areas defined by the green wedges there will be a presumption against inappropriate development which would contribute to urban coalescence, prejudice the open nature of the land, or have an adverse impact upon the setting of an urban area. In applying this protection, however, it is recognised that individual or small groups of dwellings exist within the designations and that activities such as agriculture, forestry and recreation, occur. Consequently, development associated with existing uses will be limited to minor structures which are strictly ancillary to existing uses. Details of each of the designations are contained within the Green Wedge Background Paper (2013).</p>
Policy – MG19 Site of European Importance	<p>Development proposals likely to have a significant effect on a European site, when considered alone or in combination with other projects or plans will only be permitted where:</p> <ul style="list-style-type: none"> • The proposal is directly connected with or necessary for the protection, enhancement and positive management of the site for conservation purpose; or • The proposal will not adversely affect the integrity of the site; • There is no alternative solution; • There are reasons of overriding public interest; and • Appropriate compensatory measures are secured.

Policy **Details**

Development proposals likely to have an adverse effect on a European protected species will only be permitted where:

- There are reasons of overriding public interest;
- There is no satisfactory alternative; and
- The action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Internationally designated sites comprise Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites. The Vale of Glamorgan has 2 international sites: - Dunraven Bay (SAC) and Severn Estuary (SAC, SPA, Ramsar) and is directly adjacent to the Kenfig SAC in the County Borough of Bridgend. The locations of the European sites are shown on the Constraints Map.

Any development proposals that are likely to affect European designated sites or European Protected Species (EPS) will be determined in accordance with national planning policy set out in Planning Policy Wales and Technical Advice Note 5: Nature Conservation and Planning (2009) and relevant case law.

In accordance with the Conservation of Habitats and Species Regulations 2010 (as amended), any development proposals that has the potential for adverse impact on the integrity of a European site will be subject to a Habitats Regulations Assessment.

Prior to implementing any consent that may be granted which may affect species of European importance, developers will need to secure a derogation from Natural Resources Wales under the Conservation of Habitats and Species Regulations 2010 (as amended), the 'Habitats Regulations.

MG20 – Development likely to have an adverse effect either directly or indirectly on the conservation value of a site of special scientific interest will only be permitted where it is demonstrated that:

Nationally Protected Sites and Species

- There is no suitable alternative to the proposed development; and
- It can be demonstrated that the benefits from the development clearly outweigh the special interest of the site; and
- Appropriate compensatory measures are secured; or
- The proposal contributes to the protection, enhancement or positive management of the site.

Development proposals likely to affect protected species will only be permitted where it is demonstrated that:

- The population range and distribution of the species will not be adversely impacted;
- There is no suitable alternative to the proposed development;
- The benefits of the development clearly outweigh the adverse impacts on the protected species; and
- Appropriate avoidance, mitigation and compensation measures are provided.

For the purposes of the policy, nationally designated sites include Sites of Special Scientific Interest (SSSI). Within the Vale of Glamorgan there are 28 SSSI and these are detailed in Appendix 2 and their locations are shown on the Constraints Map. Protected species are those detailed within the Wildlife and Countryside Act 1981 (as amended) and species specific legislation e.g. the Protection of Badgers Act 1992.

The presence of a protected species is a material consideration in the determination of planning applications. When assessing any development proposal which if carried out would be likely to result in harm to a protected species or its habitat, the Council will be guided by advice received from Natural Resources Wales.

There will always be a presumption against development which is likely to harm a protected site or species. However, there may also be instances when the importance of a development proposal will outweigh the conservation value, either temporarily or permanently to a SSSI / protected species and in such instances, the objective will always be to ensure that the nature conservation value of the site or protected species is preserved and where possible enhanced.

Where development is permitted, appropriate conditions or agreed planning obligations will be used to secure adequate compensation or mitigation measures

Policy MG21 – Sites of Importance for Nature Conservation, Regionally Important Geological and Geomorphological Sites and Priority

Development proposals likely to have an adverse impact on sites of importance for nature conservation or priority habitats and species will only be permitted where it can be demonstrated that:

1. The need for the development clearly outweighs the nature conservation value of the site;
2. Adverse impacts on nature conservation and geological features can be avoided;
3. Appropriate and proportionate mitigation and compensation measures can be provided; and
4. The development conserves and where possible enhances biodiversity interests.

Sites of Importance for Nature Conservation (SINC) are identified to protect areas of high wildlife value at a local level. Regionally Important Geological and Geomorphological Sites are locally designated sites of local, national and regional importance for geodiversity (geology and geomorphology).

Policy	Details
Habitats and Species	<p>Priority Habitats and Species for Conservation are identified in the Environment (Wales) Act 2016 Section 7. Species or habitats are important wildlife features, are rare or declining and are not protected by primary legislation.</p> <p>Development which is likely to have an adverse impact on SINC, RIGS or Priority Habitats and Species will be required to demonstrate that every effort has been made to avoid and mitigate any adverse impacts and that the need for the development outweighs the nature conservation or geological value. Where on site mitigation is not possible or sufficient to prevent any adverse impact then off-site compensation will be required. Off-site compensation will be secured through planning conditions or Section 106 agreements as appropriate.</p> <p>The Council will produce Supplementary Planning Guidance on 'Biodiversity and Development' to support these policies and provide advice for developers on the Council's approach to biodiversity issues.</p>

Local Biodiversity Action Plan

The Vale of Glamorgan Biodiversity Action Plan (2002) (as amended)³² is a material consideration in this report. It provides the framework for habitat and species conservation in the Vale of Glamorgan aimed at conservation, public, private and local community sectors.

³² Vale of Glamorgan Council (2002). *Vale of Glamorgan Biodiversity Action Plan*. Accessed online: [Biodiversity Action Plan \(valeofglamorgan.gov.uk\)](http://valeofglamorgan.gov.uk)

Appendix C Methodology

C.1 Desk Study

Background Records Search

The preliminary ecological assessment includes a desk study to obtain background records relevant to a Site and the Proposed Development. The data obtained provides contextual information for the scope of field surveys, to aid the evaluation of field survey results, and to provide supplementary information where complete field survey coverage is not possible.

The Study Area is dependent upon the nature, timing and scale of the Proposed Development, as well as the location of the Site and the surrounding landscape. These variables all contribute to what is referred to as the Zone of Influence (Zoi) of the Proposed Development, which is the area over which ecological features may be affected by biophysical changes because of the works and associated activities.

In November 2022 the South-East Wales Biodiversity Records Centre (SEWBRc) was contacted to obtain the following ecological data:

A desk study will be completed to identify existing areas of importance for nature conservation, protected species and habitats in proximity to the Site, using publicly available sources. The desk study will include the following:

- Internationally, nationally and locally designated sites, up to 2 km from the Site using the Multi Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk);
- Locally designated sites, up to 2 km from the Site using the SEWBRc;
- Protected and Priority species records and records of locally designated sites up to 2 km from the Site, using the SEWBRc;
- Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI) designated for bats within a 10 km radius of the Site in accordance with Bat Conservation Trust (Collins, 2016) recommendations;
- Section 7 list of Species and Habitats of Principal Importance for Conservation in Wales;
- Ancient Semi-Natural Woodland (ASNW), Plantation on Ancient Woodland Site (PAWS), Restored Ancient Woodland Site (RAWS) or Ancient Woodland Site of Unknown category (AWSU) within or adjacent to the Site boundary using Forestry Commission Wales 2021 Ancient Woodland Inventory data set downloaded from the Lle website (NRW, 2021);
- Trees with a Tree Protection Orders (TPO) within or adjacent to the Site, from Bridgend County Borough Council;
- The local council was contacted for local records or knowledge about the project area; and,
- Aerial photographs and Ordnance Survey (OS) maps were reviewed to identify features of ecological interest surrounding the Site including ponds within 500 m, nearby areas of ecological interest and features connecting these habitats (hedgerows, watercourses, railway lines).

We propose not to include lists of Local Biodiversity Action Plan (LBAP) habitats and species. These are being phased out by many Welsh Councils, who are instead placing emphasis of the Environment Act (Wales) 2016 Section 7 Biodiversity Lists.

Great Crested Newt Pond Search

Ordnance Survey maps have been used to identify the presence of water bodies within 500 m of the Site boundary, in order to help establish if the land within and immediately surrounding the Site could be used by great crested newts. This species can use suitable terrestrial habitat up to 500 m from a breeding pond³³, though there is a notable decrease in great crested newt abundance beyond 250 m from a breeding pond³⁴.

³³ Great Crested Newt Mitigation Guidelines (English Nature, 2001).

³⁴ Natural England. An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt (ENRR576) <http://publications.naturalengland.org.uk/publication/134002>.

C.2 Field Survey

The preliminary ecological assessment includes a walkover survey of the Survey Area (all land within the Site), broadly following the Phase 1 habitat survey methodology as set out in Joint Nature Conservation Committee guidance (JNCC, 2010)³⁵. This survey method records information on habitat types and is 'extended' to record any evidence of and potential for protected or notable species to be present. Plant names recorded during the survey follow Stace (2010)³⁶.

During the walkover survey, the following protected or notable species are considered:

- **Badger:** the survey involves searching for signs of badger activity including setts, tracks, snuffle holes and latrines, following the methodology detailed in *Scottish Badgers (2018)*³⁷ and Harris et al (1989)³⁸;
- **Bats:** the survey involves searching for potential roosting sites for bats within trees and structures (such as buildings, bridges or underground features such as mines) and categorising the potential of those trees or structures to support roosting bats (negligible to high, or confirmed roost), in accordance with Bat Conservation Trust (BCT) guidance (2016)³⁹;
- **Hazel dormouse:** the survey involves assessing the potential of habitats within the Survey Area to support hazel dormouse, following English Nature guidance (2006)⁴⁰;
- **Otter:** the survey involves assessing the potential of watercourses and water bodies, and adjacent terrestrial habitat within the Survey Area to support otter, following RSPB (1994)⁴¹ and Chanin, P. (2003)⁴² guidance;
- **Water vole:** the survey involves assessing the potential of watercourses and water bodies within the Survey Area to support water vole, following The Mammal Society (2016)⁴³ guidance;
- **Birds:** the survey involves assessing the potential of habitats within the Survey Area to support breeding, wintering or migrating birds, either individually notable species or assemblages of both common and rarer species;
- **Great crested newt:** the survey involves assessing the potential of habitats within the Survey Area to support great crested newt, following English Nature (2001)⁴⁴ and Froglife (2001)⁴⁵ guidance;
- **Reptiles:** the survey involves assessing the potential of habitats within the Survey Area to support reptiles (typically adder, grass snake, common lizard and slow worm only, though in some locations and habitat types (most notably heathland) may also include smooth snake and sand lizard), following Froglife (1999)⁴⁶ and JNCC (2003)⁴⁷ guidance;
- **Notable species of invertebrate:** the survey involves assessing the potential of habitats within the Survey Area to support notable species of invertebrates, both terrestrial and aquatic (including white-clawed crayfish);
- **Protected or notable species of plants:** the survey involves recording protected or notable plant species;
- **Other notable species:** the survey involves assessing the potential of habitat within the Survey Area to support other Notable Species, such as hedgehog, brown hare, polecat or common toad;
- **Non-native invasive plant species:** the survey involves recording evidence of the presence of invasive plants listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) and subject to strict legal control.

³⁵ Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey - a technique for environmental audit*.

³⁶ Stace, C E (2010) *New Flora of the British Isles, 3rd edition*. Cambridge University Press.

³⁷ Scottish Badgers (2018). *Surveying for Badgers: Good Practice Guidelines*. Version 1.

³⁸ Harris, S. Cresswell, P. and Jefferies, D. (1989). *Surveying Badgers*.

³⁹ Collins, J.(ed) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust. London.

⁴⁰ English Nature (2006). *The Dormouse Conservation Handbook, 2nd edition*.

⁴¹ Ward, D. Holmes, N. Jose, P. (1994). *The New Rivers and Wildlife Handbook*. Royal Society for the Protection of Birds. Bedfordshire.

⁴² Chanin, P (2003b). *Monitoring the Otter Lutra lutra*. Conserving Natura 2000 Rivers Monitoring Series No 10. English Nature, Peterborough.

⁴³ Dean, M. Strachan, R. Gow, D. Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society. London.

⁴⁴ English Nature (2001). *The Great Crested Newt Mitigation Guidelines*.

⁴⁵ Froglife (2001). *The Great Crested Newt Conservation Handbook*.

⁴⁶ Froglife (1999). *Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.

⁴⁷ Joint Nature Conservation Committee (2003). *Herpetofauna Workers Manual*.

Extended Phase 1 Habitat Survey

A Phase 1 Habitat Survey (JNCC, 2010) of the Site was undertaken by experienced AECOM ecologists on 10th and 11th November 2022.

The survey involved a site walkover and preliminary assessment of habitats, land use and ecological features. The main habitats present were recorded using standard Phase 1 Habitat Survey methodology as described in the Handbook for Phase 1 Habitat Survey: A technique for Environmental Audit (JNCC, 2010). The plant species defining the habitat types on the Site were recorded. Evidence of any Invasive Non-Native Species (INNS) of plant subject to legal controls was recorded.

The Phase 1 Habitat Survey was 'Extended' by including a desk study, as described above, and an assessment of the potential for the Site to support Protected or Priority Species in order to identify potential ecological constraints and to guide recommendations for further surveys.

Habitat outside of but adjacent to the Site boundary was noted to aid in the determination of the Zone of Influence.

Bat Roost Survey

Preliminary Roost Assessment (PRA)

A PRA survey was undertaken on 11 November 2022 of buildings and trees within the Site via an external appraisal from the ground using binoculars and a high-powered torch where necessary. Buildings and trees were classified into categories dependent on the presence of features suitable to support roosting bats. Table C-1 **Error! Reference source not found.** provides descriptions of the bat roost suitability categories for buildings and trees.

Table C- 1 Building and Trees - Bat Roost Suitability Categories

Roost Suitability	Descriptions for Buildings	Descriptions for Trees
Known or Confirmed	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) and actual bat presence.
High	<p>A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.</p> <p>Can include structures with points of access to the interior of the building and poorly maintained fabric providing ready access points for bats into structures, but at the same time not draughty. Structures of traditional stone, brick or timber construction. Structures with large (>20cm) roof timbers with mortice joints, cracks and holes. Structures of pre or early 20th century construction. Structures with large complicated and/or uncluttered roof spaces providing unobstructed flying spaces. Structures with weather boarding and/or hanging tiles with gaps. Structures with accessible south facing roofs. Structures with proximity to good foraging habitat such as woodland, wetland, water and /or good hedgerows.</p>	<p>A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat.</p>
Moderate	<p>A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (e.g. temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat but unlikely to support a roost of high conservation status.</p> <p>Can include structures with some potential to support roosting bats, but fewer features than a high risk building. Features may include areas suitable for crevice dwelling and/or access points into structures. Some proximity to foraging habitat.</p>	<p>A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.</p>
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>However, these potential roost sites do not provide enough space, shelter protection, appropriate conditions and/or suitable habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p>	<p>Tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen have only very limited roosting potential.</p>

Roost Suitability	Descriptions for Buildings	Descriptions for Trees
Negligible	<p>No features suitable for roosting bats.</p> <p>Can include structures constructed from unsuitable materials e.g. prefabricated with steel and sheet material. Structure is draughty, light and cool buildings with no roosting opportunities. High levels of regular disturbance including external and/or internal lighting. Building is isolated from areas of foraging habitat.</p>	Trees with no potential to support bats.

Source: Category descriptions drawn from Collins, 2016⁴⁸ and Mitchell-Jones, 2004⁴⁹ to be applied using professional judgement

Commuting and Foraging Habitat Suitability

Habitats within the Site and the zone of influence were classified into categories dependent on the presence of features suitable to support commuting and foraging bats. Table C- **Error! Reference source not found.**2 provides descriptions for habitat suitability categories for commuting and foraging bats.

Table C- 2 Commuting and Foraging Habitat Suitability Categories

Commuting and Foraging Suitability	Descriptions
High	<p>Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>
Moderate	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
Low	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small number of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.

Source: Category descriptions drawn from Collins, 2016⁵⁰ to be applied using professional judgement

C.3 Limitations and Assumptions

Biological records can be received from a wide variety of sources and may or may not be comprehensive and accurate. However, if assessed in conjunction with an extended Phase 1 Habitat survey, they can contribute to a robust ecological assessment of a site.

Where any conclusions and recommendations contained in this Report are based upon information provided by others, it has been assumed that all relevant information provided by those parties is accurate. Any such information obtained by AECOM has not been independently verified by AECOM, unless otherwise stated in the Report. AECOM accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to AECOM from others.

The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was conducted between November 2022 and January 2023 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

The Phase 1 Habitat survey was undertaken in November which is considered a sub-optimal time of year to perform this type of survey. The optimal time of year is between April and October. Consequently, it is possible that the

⁴⁸ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).

⁴⁹ Mitchell-Jones A.J. (2004) Bat Workers Manual (3rd edition). JNCC.

⁵⁰ Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).

assessment and categorisation of habitats may be inaccurate and evidence of Protected Species could have been missed (for example bird nests). Given the limited ecological diversity and value of the habitats at the Site, this limitation will not have a significant impact on the overall assessment of the Site.

As the survey was conducted in the daytime, the level of light spill onto suitable roost features from the street lighting surrounding the main building could not be determined. This is not a significant limitation to the overall assessment as the level of light spill can be estimated by the style, position and location of security and street lighting.

There are deemed to be no significant limitations to this PEA.

As the Proposed Development is still in early design stage, the potential impacts, mitigation and enhancement recommendations may be subject to change upon review of the final design.

Appendix D Site Photographs



Photograph 1: Amenity grassland with trees present in the north of the Site.



Photograph 2: Typical view of the amenity grassland used as a playing field in the south of the Site.



Photograph 3: Ruderal habitat in the east of the Site.



Photograph 4: Typical view of the dense scrub with immature trees present along the western and southern Site boundary.



Photograph 5: Other habitat: AstroTurf pitch.



Photograph 6: Earth bank within the amenity grassland in the west of the Site.



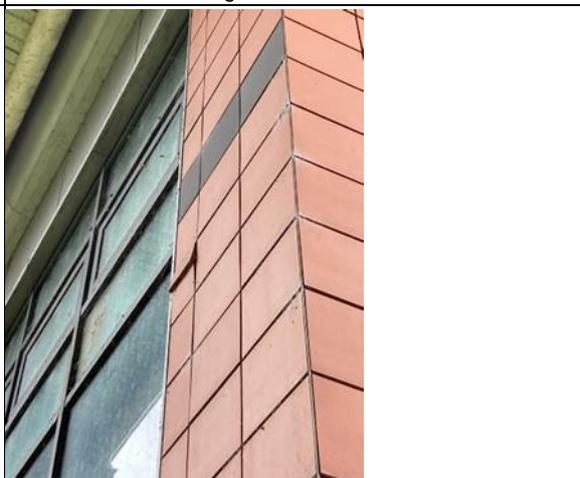
Photograph 7: Corrugated metal sheeting covering top section of some building within the Site.



Photograph 8: Corrugated metal sheeting covering top section of some building within the Site.



Photograph 9: View of the large school building complex B7.



Photograph 10: Loose tile on B7 providing a PRF.



Photograph 11: Dense ivy covering B12 providing a potential bat roost feature and potentially obscuring features present.

