

Ysgol Gyfun Gymraeg Glantaf

Ecological Impact Assessment

Cardiff Council

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Quality information

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1. Introduction

AECOM was instructed by Cardiff Council to carry out an Ecological Impact Assessment (EclA) of the land at Ysgol Gyfun Gymraeg Glantaf, Bridge Road, Llandaff North, Cardiff, CF14 2JL (hereafter known as 'the Site', shown in Appendix A, Figure 1).

This EclA was commissioned to identify, quantify, and evaluate potential effects of the construction of a Specialist Resource Base (SRB) at the existing school (hereafter referred to as 'the Proposed Development') on potential ecological receptors (nature conservation designations and protected species¹ and notable habitats and species²).

In order to deliver this EclA, an extended Phase 1 habitat survey was undertaken on 21 June 2023, updating the initial survey undertaken by Wardell Armstrong on 25 March 2022³. The extended Phase 1 habitat survey was complemented by further surveys carried out by AECOM during the 2022 and 2023 survey seasons, including:

- bat emergence and activity surveys^{4,5}; and,
- an otter survey⁶.

The bat and otter reports can be found in Appendix B, C, and D.

1.1 Site Location and Description

The central grid reference for the Site is ST 14961 78684 and the boundary of the Site is shown in Appendix A, Figure 1.

The Site is approximately 1.33 ha and is part of a school. The Site comprises amenity grassland, semi-improved neutral grassland, broadleaved semi-natural woodland, dense/continuous scrub, scattered trees, scattered scrub, hardstanding (footpaths and car parking), fences, and a wall. The Site is bounded by metal fencing near its southwestern boundary and includes the broadleaved semi-natural woodland and dense/continuous scrub adjacent to the River Taff footpath. The River Taff is located approximately 10 m southwest of the Site. The A4054 borders the north of the Site, while the east and south are bordered by school buildings, a 3G synthetic pitch and amenity grassland. The wider landscape consists of urban housing estates, commercial buildings and parkland.

1.2 Proposed Development

The Proposed Development involves the construction of a new SRB for 60 pupils within the grounds of the Ysgol Gyfun Gymraeg Glantaf Secondary School. The SRB will be located between the existing gym, sports hall, and the Taff Trail outside of the Site boundary.

This report is based on the Landscape General Arrangement (GA) Plan – Drawing Number GSRB-STL-XX-XX-DR-L-09001⁷ as shown in Appendix I.

Four new, permanent access routes are proposed which will lead to the SRB. Three access route will start from the Taff Trail, a public footpath on the eastern bank of the River Taff, and will require removal of part of the understorey of the broadleaved semi-natural woodland and dense/continuous scrub. All trees will be retained. This will include two stepped entrances and an at-grade path that will cut through the boundary and connect to the River Taff trail cycleway and footpath. The footpath once within the Site boundary will run parallel to the southwestern fence line to the SRB. At present, non-native Ornamental shrub and herbaceous planting is proposed between the ramp and the Taff trail. At present, all three access points through the broadleaved semi-natural woodland are proposed to be illuminated. Sheffield cycle stands on hard standing will be built adjacent to one of the steps, this will be illuminated.

¹ Protected species include those listed under Schedule 1, 5 and 8 of the Wildlife and Countryside Act 1981, Schedules 2 and 5 of the Conservation of Habitats and Species Regulations 2017 (as amended).

² Notable habitats include habitats of principal importance for nature conservation in Wales listed under Section 7 of the Environment (Wales) Act 2016, ancient woodland, and habitats listed with the Cardiff Local Development Plan.

Notable species include species of principal importance for nature conservation in Wales listed under Section 7 of the Environment (Wales) Act 2016, and other species that are Nationally Rare, Nationally Scarce or listed in national or local Red Data Lists and the Cardiff Local Development Plan.

³ Wardell Armstrong (2022). Preliminary Ecological Appraisal. April 2022.

⁴ AECOM (2023a) Ysgol Gyfun Gymraeg Glantaf Secondary School Bat Survey Report. January 2023.

⁵ AECOM (2023b) Ysgol Gyfun Gymraeg Glantaf Secondary School Bat Activity Report. September 2023. IN DRAFT.

⁶ AECOM (2022) Ysgol Gyfun Gymraeg Glantaf Secondary School Otter Survey Report. October 2023.

⁷ Stride Treglown (2023) Ysgol Glantaf SRB, Bridge Road, Cardiff CF14 2JL. Landscape GA Plan- Drawing Number GSRB-STL-XX-XX-DR-L-09001 01 November 2023

The fourth access route is to be located between two existing buildings, adjacent to the north of the SRB, which will connect the northern car parking area to the SRB. Furthermore, to support the new SRB, the following elements are also proposed:

- Hardstanding around the proposed SRB, extending north towards the existing car park and south along existing school buildings;
- Wet pour area adjacent to grass amphitheatre steps to the west of the Site. A second wet pour area will be built between the SRB and the existing gym, and just south of the existing gym;
- External mechanical and electrical requirements including a sprinkler pump room and fire hydrant tank on the western boundary of the Site;
- Café on the southwestern corner of the SRB;
- Courtyard between the SRB and the existing gym will be planted with four new trees, a hedgerow, sensory planting, and ornamental shrub and herbaceous planting;
- External canopy to be attached to an existing school building in the north of the Site which the second access route will run under;
- Planting of fourteen new trees alongside the footpath and continuing along the southern boundary of the SRB;
- Sustainable Drainage System is proposed along the southern boundary of the SRB as well as within the courtyard between the SRB and the existing school building;
- Proposed reinforced grass for maintenance vehicles to the southeast of the Site;
- A 2G synthetic pitch measuring 35 by 20 m may be installed to the south of the Site (to be confirmed); and,
- Planting of new habitat including ornamental shrub and herbaceous, and wildflower and species-rich grassland strips. For further details of ecological enhancements to be incorporated into the design, see Sections 8 and 9.

The Proposed Development will require the loss of amenity grassland, semi-improved neutral grassland, broadleaved semi-natural woodland, dense/continuous scrub, and scattered scrub. No piling works are required for the Proposed Development. At the time of writing, it is presumed works will take place during the school summer 2024 holiday period, during daytime hours.

1.3 Objectives

The purpose of this EclA in accordance with CIEEM guidance⁸ is to:

- Identify and categorise all habitats present within the Site and any areas immediately outside of the Site where there may be potential for direct or indirect effects.
- Carry out an appraisal of the potential of the habitats recorded to support protected or notable species of fauna and flora, including a preliminary bat roost assessment of any buildings and trees within the Site, to determine the scope of further surveys required.
- Undertake any required detailed species surveys to allow a robust ecological baseline to be established.
- Evaluate the importance of the identified ecological features.
- Assess the impact of the Proposed Development on the ecological features and identify any significant effects.
- Provide advice on the ecological constraints and opportunities for the Site, including any requirements for ecological mitigation and opportunities for biodiversity enhancements.

⁸ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

2. Wildlife Legislation and Planning Policy

2.1 Wildlife Legislation

The following wildlife legislation has been considered when planning and conducting this EclA:

- Wildlife and Countryside Act (WCA) 1981 (as amended);
- Countryside and Rights of Way (CRoW) Act 2000;
- Environment (Wales) Act 2016;
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Protection of Badgers Act 1992;
- Salmon and Freshwater Fisheries Act 1975 (as amended)
- The Hedgerow Regulations 1997; and,
- Environment Act 2021.

Details of how this legislation, and the below summarised national and local planning policies, relates specifically to species/species groups that are relevant to the Proposed Development are also provided in Appendix F.

2.2 National Planning Policy

Planning Policy Wales (PPW) 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.

Further information on the relevant parts of the PPW is provided in Appendix F.

2.3 Local Planning Policy

Relevant local planning policies for Cardiff Council are detailed in the following document:

- Cardiff Local Development Plan (LDP) 2006-2026 (Adopted 28 January 2016)⁹
- Cardiff Local Biodiversity Action Plan 2008¹⁰

A summary of these relevant local planning policies is provided in Appendix F. For the precise wording of each specific policy please refer back to the source document. This planning policy has been considered when assessing potential ecological constraints and opportunities identified by the desk study and field surveys; and, when assessing requirements for design options and ecological mitigation, as described in Section 1.

⁹ Cardiff Council (2016). Cardiff Local Development Plan 2006 – 2026, Adopted Plan. January 2016.

¹⁰ Cardiff Council (2008) Cardiff Local Biodiversity Action Plan 2008.

3. Methodology

3.1 Establishing the Baseline

A combination of desk study and field survey has been undertaken to establish the current ecological baseline at the Site.

3.1.1 Desk Study

A desk study was carried out in June 2023 to identify nature conservation designations and protected and notable habitats and species potentially relevant to the Proposed Development.

The desk study was carried out using the data sources detailed in Table 3.1.

Table 3.1 Desk Study Data Sources

Data Source	Accessed	Data Obtained
Multi-Agency Geographic Information for the Countryside (MAGIC) website	June 2023	<ul style="list-style-type: none"> International designations within 5 km, extended to 10 km downstream of the River Taff. National and local designations within 2 km; Sites of Special Scientific Interest (SSSI) and Special Areas of Conservation (SAC) within 10 km that include bats as a reason for designation; Ancient woodlands and notable habitats within and adjacent to the Site boundary, and; Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints.
South East Wales Biodiversity Record Centre (SEWBRc)	June 2023	<ul style="list-style-type: none"> Non-statutory designations within 2 km, and; Protected and notable species records within 2 km (records for the last 10 years only).
Aerial photography (Google Maps) and OS Mapping	June 2023	Information on habitats and habitat connections (based on aerial photography) relevant to interpretation of planning policy and assessment of potential protected and notable species constraints.

3.1.2 Field Surveys

The field survey comprised an extended Phase 1 habitat survey, which was extended to include an appraisal of the potential suitability of the habitats present to support protected and notable species.

3.1.2.1 Extended Phase 1 Survey

A Phase 1 habitat survey was undertaken in accordance with the standard survey method¹¹. Phase 1 habitat survey is a standard method of environmental audit. It involves categorising different habitat types and habitat features within the Site boundary for the SRB (Figure 1). On this survey, surveyors also made ad hoc observations of Invasive Non-Native Plant Species (INNPS) outside the Site boundary, but within the amenity grassland on the school grounds. The INNPS observations have been included due to their propensity to spread which may impact biodiversity on Site in the future. The information gained from the survey can be used to determine the likely ecological value of a site, and to direct any more specific survey work which may need to be carried out prior to the submission of a planning application. The standard Phase 1 habitat survey method was “extended” to record target notes on protected and notable species and INNPS.

The initial survey was undertaken on 25 March 2022³ by Wardell Armstrong and updated to include a greater survey area on 21 June 2023 by suitably qualified AECOM ecologists who recorded and mapped all habitat types present within the Site, along with any associated relevant ecological receptors observed.

Where relevant ecological receptors were present, target notes were recorded and the position of these are shown on the Phase 1 habitat map (see Appendix A, Figure 1). Photographs are provided in Appendix G. Typical and notable plant species were recorded for different habitat types and reflect the conditions at the time of survey. The abundance of the plant species was recorded using the DAFOR scale (D=Dominant; A=Abundant; F=Frequent; O=Occasional; R=Rare). This is a subjective system open to different interpretations and quantifiable using basic principles, however it is a simple and effective way of collecting useful data. This was not intended to be a detailed inventory of the plant species present in the survey area, as this is not required for the purposes of a Phase 1 habitat survey.

¹¹ Joint Nature Conservation Committee (JNCC). (2010). Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit. JNCC. Peterborough

Prior to undertaking the extended Phase 1 habitat survey, aerial photography and 1:2,500 (OS) mapping were examined to identify ponds within 500 m of the Site. This process cannot guarantee to identify all ponds present but is the best that can be achieved within the limits of available data.

3.1.2.2 Further Surveys

Further surveys on the Site included bat emergence and activity surveys and an otter survey. The methodology for these surveys is detailed Appendix B, C, and D respectively.

3.2 Evaluating the Importance of Ecological Features

The importance of ecological features (designated sites, habitats, species assemblages and populations of species) is evaluated in Section 3. Importance is assessed with reference to their nature conservation status (*i.e.*, rarity, threat status); their conservation value (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations); and legal status. A review of the legislation, policy and the sensitivity of the ecological features has been undertaken and the importance of the ecological features was determined in a geographical context on the following basis:

- a. International and European;
- b. National (Wales);
- c. Regional (South East Wales);
- d. County (Cardiff);
- e. Local (within the Site boundary plus approximately 2 km); and,
- f. Site (within the Site boundary)
- g. Less than Site.

A number of characteristics are considered to contribute to the importance of ecological features including, for example (but not exclusively):

- naturalness;
- animal or plant species, sub-species or varieties that are rare or uncommon, either internationally, nationally or more locally, including those that may be seasonally transient;
- ecosystems and their component parts, which provide the habitats required by important species, populations and/or assemblages;
- endemic species or locally distinct sub-populations of a species;
- habitats that are rare or uncommon;
- habitats that are effectively irreplaceable;
- habitat diversity;
- size of habitat or species population;
- habitat connectivity and/or synergistic associations;
- habitats and species in decline;
- rich assemblages of plants and animals;
- large populations of species or concentrations of species considered uncommon or threatened in a wider context;
- plant communities (and their associated animals) that are considered to be typical of valued natural/ semi-natural vegetation types, including examples of naturally species-poor communities; and,
- species on the edge of their range, particularly where their distribution is changing as a result of global trends and climate change.

The identification and assessment of impacts on ecological features takes into account embedded mitigation or compensation measures. Where detailed assessment of specific receptors is considered appropriate, the potential impacts on these receptors are described and characterised in accordance with CIEEM guidance¹².

¹² CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

3.3 Impact Assessment and Identification of Significant Effects

Characterisation of the impacts takes into consideration the following aspects (where appropriate):

- h. Positive (beneficial) or negative (adverse) impact.
- i. Probability of occurring and confidence in predictions (levels of certainty that an impact would occur as predicted), based on the following four-point scale:
 - i. certain/ near certain ($\geq 95\%$ probability);
 - ii. probable (50 - 95% probability);
 - iii. unlikely (5 - 49% probability); or,
 - iv. extremely unlikely ($\leq 5\%$ probability).
- j. Complexity: direct and indirect
- k. Impacts: both direct and indirect impacts are considered within the assessment. A direct impact is directly attributable to a defined action such as the physical loss of a habitat or the immediate mortality of an individual of a particular species. Indirect impacts are attributable to an action, but which affect ecological resources through effects on an intermediary ecosystem, process or receptor. An example of an indirect effect would be the loss of an important prey species for a predator.
- l. Cumulative impacts: effects on the environment caused by the combined results of past, current and future activities.
- m. Extent: spatial/ geographical area over which the impact or effect may occur.
- n. Size: description of level of severity of influence (e.g., amount, intensity, percentage, complete loss, number of animals affected). Also, referred to as magnitude, determined on a quantitative basis if possible. When the receptor being considered is a habitat itself, size (magnitude) and extent may be synonymous.
- o. Reversibility: reversible (temporary) or non-reversible (permanent) impact (can the impact/ effect be reversed, whether or not this is planned).
- p. Duration: the time for which an impact is expected to last prior to recovery or replacement of the resource or feature. This is in ecological terms (e.g., in relation to the life cycle of the receptor) not human timeframes.
- q. Timing and frequency: important seasonal and/ or life cycle constraints and any relationship with frequency considered e.g., bird nesting season.

The significance of effects has been assessed according to the CIEEM guidance¹³:

"For the purpose of ecological impact assessment, 'significant effect' is an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features'...or for biodiversity in general. Conservation objectives may be specific (e.g., for a designated site) or broad (e.g., national/local nature conservation policy) or more wide-ranging (enhancement of biodiversity)".

Effects have been described with respect to the geographic scale at which they may be regarded as significant from international to site level.

For the purposes of this EclA an effect is considered to be significant if it has a County level effect or greater. In terms of protected species, it should be noted that irrespective of the significance of the ecological effect, mitigation would be required to ensure the law is not contravened.

3.4 Limitations

3.4.1 Desk Study and Extended Phase 1 Survey

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular habitat or species does not necessarily mean that

¹³ CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.

the habitats or species do not occur in the study area. Likewise, the presence of records for particular habitats and species does not automatically mean that these still occur within the area of interest or are relevant in the context of the proposed development.

Habitat mapping is as estimated in the field and/or recorded by hand-held GPS. Where areas of habitat are given, they are approximate and should be verified by measurement on the Site where required for design or construction. While indicative locations of trees are recorded this does not replace requirements for detailed specialist arboricultural survey to *British Standard 5837:2012 Trees in Relation to Design, Demolition and Construction*.

Details of the limitations for the bat surveys and the otter survey are provided in Appendices B, C, and D, respectively. In summary, the significant limitations of the bat roost surveys⁴ were that: the emergence surveys of Buildings B2a, B2b, and B2d were undertaken outside of the optimum period (mid-May to early-August) for recording maternity roosts, which the PRFs of these buildings may support. This significant limitation will be overcome by conducting a pre-works check of the buildings for roosting bats immediately prior to works commencing.

There are deemed no significant limitations to the otter⁶ survey and report.

The bat activity⁵ report was in draft at the time of writing and therefore the limitations may be different in its final version. They include sub-optimal weather conditions on some surveys and reduced remote detector survey effort due to failed static detectors.

4. Baseline Ecological Conditions

This section describes the results of the surveys undertaken at the Site, which informs the baseline ecological conditions for the Proposed Development and surrounding areas.

4.1 Nature Conservation Designations

4.1.1 Statutory Designated Sites

Table 4.1 details the statutory nature conservation designations identified by the desk study, based on the method given in Section 3.1.1 of this report.

There are no statutory designations within 10 km of the Site boundary that cite bats as a reason for their designation.

Table 4.1 Sites with Statutory Designations for Nature Conservation

Designation	Reason(s) for Designation	Relationship to the Site	Importance
Cardiff Beech Woods Special Area of Conservation (SAC)	The annex 1 habitat that is the primary reason for site selection is Asperulo-Fagetum beech forests. The additional habitat present as a qualifying feature, but not as a primary reason for selection is Tilio-Acerion forests of slopes, screes and ravines ¹⁴ .	Located 3.9 km northwest of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas as the SAC is upstream of the Site.	International
Severn Estuary SAC	Annex 1 habitats that are a primary reason for the site selection are estuaries, mudflats and sandflats not covered by seawater at low tide, and Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>). Additional habitats present as a qualifying feature, but not as a primary reason for selection are sandbanks which are slightly covered by sea water all the time, and reefs. Annex II species that are a primary reason for site selection are sea lamprey (<i>Petromyzon marinus</i>), river lamprey (<i>Lampetra fluviatilis</i>), and twaite shad (<i>Alosa fallax</i>) ¹⁵ .	Located 7.9 km southeast of the Site. The SAC is connected to the Site by the River Taff which flows into the SAC. The Site is approximately 10 m west of the River Taff and is upstream of the SAC,	International
Severn Estuary Special Protection Area (SPA)	The Severn Estuary SPA supports overwintering Bewick's swan (<i>Cygnus columbianus bewickii</i>); on passage ringed plover (<i>Charadrius hiaticula</i>) and overwintering curlew (<i>Numenius arquata</i>), dunlin (<i>Calidris alpina alpina</i>), pintail (<i>Anas acuta</i>), redshank (<i>Tringa tetanus</i>), and shelduck (<i>Tadorna tadorna</i>). It also regularly supports at least 20,000 waterfowl ¹⁶ .	Located 7.9 km southeast of the Site. The SPA is connected to the Site by the River Taff which flows into the SPA. The Site is approximately 10 m west of the River Taff and is upstream of the SAC,	International
Severn Estuary Ramsar	The site is particularly important for the run of migratory fish between the sea and rivers via the estuary. Species using the estuary include Atlantic salmon (<i>Salmo salar</i>), brown trout (<i>Salmo trutta</i>), sea lamprey, river lamprey, Allis shad (<i>Alosa alosa</i>), twaite shad, and European eel (<i>Anguilla Anguilla</i>). The estuary is also important for migratory birds during spring and autumn migrations ¹⁷ .	Located 7.9 km southeast of the Site. The Ramsar is connected to the Site by the River Taff which flows into the Ramsar. The Site is approximately 10 m west of the River Taff and is upstream of the SAC,	International
Glamorgan Canal Site of Special Scientific Interest (SSSI)	Semi-natural broadleaved woodland with a diverse range of woodland plants and standing water. The SSSI supports two native newt species (not specified in designation), 14 species of dragonfly and kingfishers (<i>Alcedo atthis</i>).	Located 1.6 km northwest of the Site. There is very limited natural connectivity to the Site due to the presence of Llandaff North (residential area) and as the SSSI is upstream of the Site.	National
Hermit Wood Local Nature Reserve (LNR)	No description available.	Located 1.2 km northwest of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County

¹⁴ JNCC (2023) Cardiff Beech SAC [online] Available at: <https://sac.jncc.gov.uk/site/UK0030109>

¹⁵ JNCC (2023) Severn Estuary SAC [online] Available at: <https://sac.jncc.gov.uk/site/UK0030109>

¹⁶ UK Government (unknown) Severn Estuary SAC and SPA [online] Available at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/844575/Severn_Estuary_SAC_and_SPA_Fact_sheet.pdf

¹⁷ RSIS (1995) Severn Estuary Ramsar [online] Available at: <https://rsis.ramsar.org/RISapp/files/RISrep/GB67RIS.pdf>

Glamorganshire Canal LNR	Recognised as the place for best birding in Cardiff, ancient beech and oak trees, wildlife including otters (<i>Lutra lutra</i>) and canal heritage ¹⁸ .	Located 1.6 km north of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
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Source: All descriptions for statutory designated sites are drawn from data provided by Natural Resources Wales and the JNCC.

4.1.2 Non-Statutory Designated Sites

Table 4.2 details the non-statutory nature conservation designations identified by the desk study, based on the method given in Section 3.1.1 of this report. The designations are listed in descending order, with those closest to the Site listed first.

There are no Ancient Woodland designations within or adjacent to the Site boundary.

Table 4.2 Sites with Non-Statutory Designations for Nature Conservation

Designation	Reason(s) for Designation	Relationship to the Site	Importance
River Taff Site of Importance for Nature Conservation (SINC)	The SINC is designated for watercourses. The river is important for migratory fish, otter, wildfowl and bankside vegetation acts as a major wildlife corridor.	Located 0.01 km west of the Site. Connectivity to the Site is provided by a woodland strip and a public footpath.	County
Former Llantrisant No. 1 Branch Line SINC	Calcareous grassland and secondary ash (<i>Fraxinus excelsior</i>) woodland with some marshy areas.	Located 0.6 km west of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Hailey Park SINC	Urban wildflower meadow supporting the long-winged conehead grasshopper (<i>Conocephalus discolor</i>).	Located 0.75 km north of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Fairwater Park SINC	Secondary streamside alder (<i>Alnus glutinosa</i>) woodland with a small hilltop pond with the rare plant species ivy-leaved duckweed (<i>Lemna trisulca</i>), Lenormand's water crowfoot (<i>Ranunculus lenormandi</i>) and spiked water-milfoil (<i>Myriophyllum spicatum</i>) together with great crested newt (<i>Triturus cristatus</i>).	Located 0.9 km southwest of Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Gabalfa Woods SINC	Secondary broadleaved woodland.	Located 0.9 km west of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Radyr Community Woodlands SINC	Semi-natural oak (<i>Quercus</i> sp.) /ash/alder and beech woodland with diverse ground flora together with rough grassland and ponds.	Located 1 km northwest of the Site. There is very limited ecological connectivity to the Site due to the presence of the large residential areas and how the SINC is upstream of the Site.	County
Radyr Cricket Ground and Fields SINC	An important site for waxcaps (Hygrophoraceae).	Located 1.3 km northwest of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas and how the SINC is upstream of the Site.	County
Waterhall Plantation and Pond SINC	Secondary beech (<i>Fagus sylvatica</i>) and oak/alder woodland and larch (<i>Larix decidua</i>) plantation with wood goldilocks (<i>Ranunculus auricomus</i>).	Located 1.5 km west of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
River Ely SINC	The river is important for migratory fish, otter, wildfowl and bankside vegetation and acts as a major wildlife corridor.	Located 1.6 km southwest of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County

¹⁸ Birding Places (2022) Forest Farm & Glamorganshire Canal Nature Reserve. Description [online] Available at: <https://www.birdingplaces.eu/en/birdingplaces/united-kingdom/forest-farm-glamorganshire-canal-nature-reserve>

Designation	Reason(s) for Designation	Relationship to the Site	Importance
Blackweir and Dock Feeder SINC	Secondary ornamental woodland bisected by the abandoned dock feeder canal with a variety of natural and introduced ground flora. The River Taff gives the site importance for waterfowl.	Located 1.9 km east of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Whitchurch Green Fields SINC	Semi-improved neutral grassland.	Located 1.9 km north of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County
Riverside Wood SINC	Semi-natural woodland with a semi-calcareous ground flora.	Located 1.9 km southwest of the Site. There is very limited ecological connectivity to the Site due to the presence of large residential areas.	County

Source: All descriptions for SINC are drawn from data provided by SEWBRcC.

4.2 Habitats

4.2.1 Phase 1 Habitat Types

The habitats recorded, including a general description of the habitat type, extent and distribution, and an assessment of their importance are shown in Table 4.3 and in Appendix A, Figure 1. Illustrative photographs are provided in Appendix G. The areas are approximate only. Areas are not given for habitats that form linear features or habitats that have been target noted due to difficulties in accurately determining the area they occupy.

Table 4.3 Habitats Present, in Descending Order Based on Spatial Area Occupied

Habitat	Brief Description	Area (ha)	% of Site Area	Justification of Importance	Importance
Amenity grassland	<p>Amenity grassland is the dominant habitat in the west and south of the Site (Appendix G: Photograph 1). Two smaller patches of amenity grassland sit within the car park to the north of the Site. All areas are regularly mown.</p> <p>The amenity grassland comprises frequent to abundant perennial rye (<i>Lolium perenne</i>) and white clover (<i>Trifolium repens</i>) with rare annual meadow grass (<i>Poa annua</i>), cock's foot (<i>Dactylis glomerata</i>), greater plantain (<i>Plantago major</i>) and dandelion species (<i>Taraxacum</i> spp.). Creeping buttercup (<i>Ranunculus repens</i>) and Yorkshire fog (<i>Holcus lanatus</i>) were rare to occasional.</p> <p>On the southwestern fence line of the dominant area of amenity grassland is one individual of Japanese knotweed (<i>Reynoutria japonica</i>) growing from the river side of the boundary fence (Appendix A, Figure 1: Target Notes (TN) 1; Appendix G: Photograph 2). Within 40 m of the Site boundary, two more individuals of Japanese knotweed and a line of Himalayan balsam (<i>Impatiens glandulifera</i>) saplings are also present along the southwestern fence line within the continuation of the amenity grassland (Appendix A, Figure 1: TN 4; Appendix G: Photograph 3). The INNPS were noted as ad hoc observations due to their propensity to spread further onto Site which may impact the biodiversity on the Site in the future.</p>	0.70	52	The amenity grassland is a very common habitat and is species poor.	Site
Hardstanding	Hardstanding, in the form of asphalt and concrete, is the dominant habitat in north of the Site and is used as a car park, footpaths, and an outdoor space (Appendix G: Photograph 4). A small area of concrete forms a ramp to a building outside the Site boundary.	0.31	23	Hardstanding provides negligible ecological suitability.	Less than Site
Semi-improved neutral grassland	<p>Two areas of semi-improved neutral grassland are present on the Site: the first is on an east facing moderate slope on the western Site boundary; and the second is in the north of the Site made up of smaller areas scattered within and bordering the car park (Appendix G: Photograph 4). Both were subject to regular mowing.</p> <p>The first area supports frequent creeping bent (<i>Agrostis stolonifera</i>) and perennial rye with occasional red fescue (<i>Festuca rubra</i>), Yorkshire fog and rough meadow grass (<i>Poa trivialis</i>). Rare species comprised dandelions, ribwort plantain</p>	0.13	10	Semi-improved grassland is likely a common habitat in the area and has higher species richness.	Site

Habitat	Brief Description	Area (ha)	% of Site Area	Justification of Importance	Importance
	<p>(<i>Plantago lanceolata</i>), creeping buttercup, couch grass (<i>Elymus repens</i>), and cock's foot. Very rare species comprised common cat's ear (<i>Hypochaeris radicata</i>), self-heal (<i>Prunella vulgaris</i>), false oat-grass (<i>Arrhenatherum elatius</i>), common mouse ear (<i>Cerastium fontanum</i>), clustered dock (<i>Rumex conglomeratus</i>), ragwort (<i>Jacobaea vulgaris</i>), and yarrow (<i>Achillea millefolium</i>).</p> <p>The second area supports frequent perennial rye, red fescue and creeping bent. Occasional to rare species comprised self-heal, common cat's ear, ribwort plantain, creeping buttercup, white clover and a <i>Rhytidiadelphus</i> moss. Sticky mouse-ear (<i>Cerastium glomeratum</i>) is locally abundant to rare. Rare species comprise yarrow, dandelion species, cut-leaved geranium (<i>Geranium dissectum</i>), rough meadow grass, common mouse ear, and common knapweed (<i>Centaurea nigra</i>). Very rare species comprise lesser trefoil (<i>Trifolium dubium</i>), black medick (<i>Medicago lupulina</i>), ragwort, and daisy (<i>Bellis perennis</i>). Despite being connected to the dominant amenity grassland, the semi-improved neutral grassland along the southwest boundary has a different species composition (Appendix A, Figure 1: TN 5).</p>				
Buildings	<p>Four buildings are located in the west (Building 1) and centre (Buildings 2a, 2b, and 4) of the Site.</p> <p>The entirety of Building 1 (Appendix G: Photograph 5) is in the Site boundary. Building 1 is a brick building, approximately 10 m tall, with a 3 m tall section of cladding towards the top. The roof has a pyramid hip structure. A single storey brick extension, approximately 5 m tall with a metal pitched roof, exists at the northeast of the building¹⁵.</p> <p>Only the southwest end of Building 2a (Appendix G: Photograph 6). is located within the Site. Building 2a is approximately 10 m tall and is constructed of brick. A section of metal cladding exists on the southwest elevation. Building 2a has a shed roof structure. Two rows of windows with concrete cladding in between/ above forms the southeast elevation¹⁹.</p> <p>Only a small part of the western end of Building 2b is located within the Site. Building 2b is a two-storey structure, approximately 10 m tall, constructed from brick and has a flat roof³.</p> <p>Building 4 is a flat roof portacabin, approximately 3 m tall, located to the east of the Site³.</p>	0.13	10	Buildings provide roosting opportunities for bats and nesting opportunities for birds (see Table 4.4)	Local
Broadleaved woodland – semi-natural	<p>One area of broadleaved semi-natural woodland is present along the southwestern boundary on the river side of the fence (Appendix G: Photographs 7 and 8). The woodland supports a relatively diverse canopy and shrub layer comprised of 16 woody species. Ash, grey willow (<i>Salix cinerea</i>) and goat willow (<i>Salix caprea</i>) are frequent components; silver birch (<i>Betula pendula</i>), pedunculate oak (<i>Quercus robur</i>), alder and hawthorn (<i>Crateagus monogyna</i>) are occasional features. The field and ground layers are fairly species poor; dominated by Atlantic ivy (<i>Hedera hibernica</i>) with occasional cleavers (<i>Galium aparine</i>), common nettle (<i>Urtica dioica</i>), ground-elder (<i>Aegopodium podagraria</i>); and rare cover of hart's-tongue fern (<i>Asplenium scolopendrium</i>), male-fern (<i>Dropteris filix-mas</i>) and wood avens (<i>Geum urbanum</i>).</p>	0.05	4	The woodland meets criteria to be classed as lowland mixed deciduous woodland habitat of principal importance and is also a habitat listed under the Cardiff Local Development Plan and the Local Biodiversity Action Plan.	County
Scrub – dense/ continuous	<p>Two areas of dense/ continuous scrub are present on the Site, one area along the south-western Site boundary on the river side of the fence (Appendix G: Photograph 9) and one area along the northern Site boundary (Appendix G: Photograph 10).</p> <p>The area along the south-western Site boundary is dominated by bramble (<i>Rubus fruticosus</i> agg.) with occasional false oat-grass and rare cover of young/ sapling trees. Japanese knotweed (Appendix A, Figure 1: TN 1-3; Appendix G: Photographs 2 and 3) and Himalayan balsam (Appendix A, Figure 1: TN 4; Appendix G: Photograph 4) are locally abundant and locally occasional, respectively, within the</p>	0.01	1	The habitat has some ecological suitability but is limited due to its small size and presence of INNPS.	Site

¹⁹ Wardell Armstrong (2022). Preliminary Ecological Appraisal. April 2022.

Habitat	Brief Description	Area (ha)	% of Site Area	Justification of Importance	Importance
	<p>scrub. The scrub is bounded by hardstanding and amenity grassland which creates a harsh boundary with no well-developed edge habitat or ecotones.</p> <p>The area of dense/ continuous scrub along the northern site boundary is dominated by butterfly-bush (<i>Buddleia davidi</i>) with minor contributions from goat willow, sycamore (<i>Acer pseudoplatanus</i>) and bramble.</p>				
Scattered trees	<p>Five scattered trees are present on the Site.</p> <p>Three are located to the west of the Site, close to the first area of semi-improved neutral grassland, with the tree species comprising a <i>Prunus</i> species and two field maples (<i>Acer campestre</i>) (Appendix G: Photograph 11). The fourth and fifth tree lie in the second area of semi-improved neutral grassland, a whitebeam (<i>Sorbus aria</i>) (Appendix G: Photograph 12) and an alder (Appendix G: Photograph 4).</p>	-	-	The trees are protected under the Cardiff Local Development Plan. The whitebeam has a Tree Preservation Order (TPO) (Ref: G14 ²⁰).	Local
Scattered scrub	<p>Three single plants of scattered scrub are located within the second area of semi-improved neutral grassland (Appendix G: Photograph 13). The plants are two alders, less than 2 m tall, and a 1 m-tall hawthorn.</p>	-	-	The scrub covers a very small area and has limited ecological suitability	Site
Fence	<p>A metal fence (Appendix G: Photograph 14), comprised of linear bars approximately 2 m tall and 8 cm apart, which separates the amenity grassland from the broadleaved semi-natural woodland and the dense/continuous scrub on the southwestern boundary.</p>	-	-	The fence provides negligible ecological suitability.	Less than Site
Wall	<p>A red brick wall (Appendix G: Photograph 15), approximately 2 m tall, forms the west and north boundary of the Site between the semi-improved neutral grassland and the A4054.</p>	-	-	The wall provides negligible ecological suitability.	Less than Site

²⁰ Cardiff Council (2017) Interactive Planning Map [online] Available at: <http://ishare.cardiff.gov.uk/> [Accessed 17 August 2023]

4.3 Protected and Notable Species

The suitability of the Site to support protected and notable species and the results from the bat surveys and otter survey undertaken at the Site are summarised in Table 4.4 below.

Table 4.4 Protected and Notable Species

Species or Species Group	Summary	Justification of Importance	Importance
Plants	<p>The desk study returned no records of protected plants or notable plant species within 100 m with connectivity to the Site and no evidence was recorded on the Site.</p> <p>Protected and notable plant species are considered likely absent from the Site.</p>	Protected and notable plant species are considered likely absent from the Site and adjacent habitats.	N/A
Invertebrates	<p>The desk study returned 257 records of protected and notable invertebrate species within 2 km of the Site. Two of these species were recorded within 100 m of the Site: brown-banded carder bee (<i>Bombus humilis</i>) approximately 40 m north on the opposite side of the A4054 to the Site, and brindled beauty (<i>Lycia hirtaria</i>) approximately 40 m east on Gabalfa avenue. Both records are connected to the Site by hardstanding.</p> <p>The brown-banded carder bee prefers flower-rich grasslands especially ones that include clover (<i>Trifolium sp.</i>), common knapweed, and red bartsia (<i>Odontites vernus</i>), amongst others. White clover is frequent within the amenity grassland, while common knapweed is rare within the semi-improved neutral grassland. Regular mowing reduces the suitability of the grasslands for brown-banded carder bee, but the record lies within habitat that also appeared to be mowed. Due to the low flower diversity and the mowing, the grassland habitats on the Site provide sub-optimal habitat for brown-banded carder bee. However, due to the records proximity to the Site, there is a possibility this species may enter the Site.</p> <p>Brindled beauty prefers habitat with a variety of broadleaved trees and shrubs, which includes broadleaved woodland, scrub, and parks. As such, and due to the records proximity to the Site, there is potential for brindled beauty to be within the semi-natural broadleaved woodland and dense/continuous scrub on the Site.</p> <p>Invertebrates beyond 0.1 km were not considered because of the limited connectivity to the Site within the surrounding urban area. No evidence of protected or notable invertebrates was recorded on Site.</p> <p>Brown-banded carder bee and brindled beauty have potential to be on the Site occasionally.</p>	The grassland, woodland, and scrub habitats have potential to support brown-banded carder bee and brindled beauty which are species of principal importance under Section 7 of the Environment (Wales) Act 2016.	Local
Fish	<p>The desk study returned one record of Atlantic salmon (<i>Salmo salar</i>) approximately 1.1 km south of the Site within the River Taff. The record is connected to the Site by the River Taff which lies approximately 15 m west of the Site through the broadleaved semi-natural woodland strip and a public footpath (Taff Trail). The Site is upstream of the Severn Estuary SAC and Ramsar which are designated for their importance to migratory fish, in particular: sea lamprey, river lamprey, twaite shad, Atlantic salmon, brown trout, allis shad, and European eel^{21,22}.</p> <p>There are no watercourses on Site to support protected and notable fish, so they are absent from the Site. However Atlantic salmon is likely present in the nearby River Taff.</p>	The Site has good connectivity to the River Taff where Atlantic salmon is recorded. Atlantic salmon is a species of principal importance under Section 7 of the Environment (Wales) Act 2016 and is a Schedule 4 species under the Conservation of Habitats and Species Regulations 2017 which makes it illegal to kill via poisons (which for the purpose of this Proposed Development could include pollutants).	Regional
Amphibians	<p>The desk study returned 34 amphibian records within 2 km of the Site. All records within 500 m of the site were for common toad (<i>Bufo bufo</i>), with the closest record located approximately 5 m west of the Site. Other amphibian records returned between 500 m and 2 km of the Site included palmate newt (<i>Lissotriton helveticus</i>), common frog (<i>Rana temporaria</i>) and smooth newt (<i>Lissotriton vulgaris</i>) but have very limited connectivity to the Site. There were no records of great crested newt (<i>Triturus cristatus</i>) within 2 km of the Site.</p> <p>There are no ponds within 500 m of the Site.</p>	Broadleaved semi-natural woodland and dense/continuous scrub within the Site provide suitable terrestrial habitat for amphibians, excluding great crested newt. Common toad is species of principal importance under Section 7 of the Environment (Wales) Act 2016.	Site

²¹ JNCC (2023) Severn Estuary SAC [online] Available at: <https://sac.jncc.gov.uk/site/UK0030109>

²² RSIS (1995) Severn Estuary Ramsar [online] Available at: <https://rsis.ramsar.org/RISapp/files/RISrep/GB67RIS.pdf>

Species or Species Group	Summary	Justification of Importance	Importance
	<p>No suitable breeding habitat is present on the Site for amphibians. The broadleaved semi-natural woodland and dense/continuous scrub within the Site provide suitable terrestrial habitat for foraging, commuting and hibernating amphibians.</p> <p>Given the lack of records with suitable connectivity to the Site and absence of great crested newt in waterbodies within 500 m of the Site, great crested newt is considered likely absent from the Site.</p> <p>No evidence of amphibians was recorded on the Site.</p> <p>The Site may support other common species of amphibian, including common toad and common frog.</p>		
Reptiles	<p>The desk study returned 17 reptile records within 2 km of the Site. The closest record was for grass snake (<i>Natrix helvetica</i>), located approximately 0.1 km east of the Site in an urban garden, on the opposite side of Gabalfa avenue. Other records solely comprised of slow-worm (<i>Anguis fragilis</i>).</p> <p>The habitats on the Site are generally unsuitable for reptiles due to their small size, regular disturbance by people, and the regular mowing of the grasslands. The semi-improved neutral grassland, which experiences less frequent mowing may provide suitable habitat for species such as slow-worm, but it is highly unlikely to support a large population due to its small size.</p> <p>No evidence of reptiles was recorded on the Site.</p> <p>Connected edge habitats within the Site may support low number of reptiles due to its connectivity to suitable habitats along the River Taff and the presence of records nearby.</p>	<p>Connected edge habitats within the Site may support low number of reptiles due to its connectivity to suitable habitats along the River Taff and the presence of records nearby.</p> <p>Reptiles are protected under the WCA and are species of principal importance under Section 7 of the Environment (Wales) Act 2016.</p>	Site
Breeding Birds	<p>The desk study returned records of 62 bird species within 2 km of the Site. Eleven of these were Schedule 1 bird species: kingfisher and Cetti's Warbler (<i>Cettia cetti</i>) (both recorded within approximately 15 m west of the Site), red kite (<i>Milvus milvus</i>), peregrine (<i>Falco peregrinus</i>), crossbill (<i>Loxia curvirostra</i>), brambling (<i>Fringilla montifringilla</i>), Mediterranean gull (<i>Ichthyaeetus melanocephalus</i>), hobby (<i>Falco subbuteo</i>), osprey (<i>Pandion haliaetus</i>), wryneck (<i>Jynx torquilla</i>), and honey buzzard (<i>Pernis apivorus</i>).</p> <p>The remaining 51 species were Section 7 species which included, for example, bullfinch (<i>Pyrrhula pyrrhula</i>), dunnoek (<i>Prunella modularis</i>), house sparrow (<i>Passer domesticus</i>), starling (<i>Sturnus vulgaris</i>) and song thrush (<i>Turdus philomelos</i>).</p> <p>The broadleaved woodland, dense/continuous scrub, scattered trees, and the buildings within the Site provide suitable habitat for nesting birds.</p> <p>There is potential for common breeding birds to be within and adjacent to the Site.</p>	<p>Broadleaved woodland, dense/continuous scrub, scattered trees, and the buildings within the Site are suitable for common breeding bird assemblages. The dense/continuous scrub close to the River Taff may provide breeding habitat for Cetti's warbler. Schedule 1 species are protected under the WCA, while the remaining species are species of principal importance under Section of the Environment (Wales) Act 2016.</p> <p>The River embankments next to the school are not considered to be of a suitable topography for breeding kingfisher.</p>	Local
Bats	<p>The desk study returned 594 records of bat species within 2 km of the Site. No records of bat were returned within the Site. Commuting records included the following species: common pipistrelle (<i>Pipistrellus pipistrellus</i>), soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>), Noctule (<i>Nyctalus noctula</i>), <i>Myotis</i> sp., and brown long-eared bat (<i>Plecotus auritus</i>). The closest field record was approximately 0.1 km south from the Site by a common pipistrelle. Roost records included the following species: common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared bat, and lesser horseshoe bat (<i>Rhinolophus hipposideros</i>). The closest roost record is 0.2 km northeast of the Site of an unknown pipistrelle species. The Site is in the Core Sustainance Zone (CSZ)²³ of all species that are roosting within 2 km and as such could be used for foraging and commuting, especially along the southwestern boundary with the adjacent River Taff.</p> <p>Trees and buildings were assessed for their bat roost suitability as detailed below. Please note, that the assessments were conducted using the bat survey guidance available at the time of survey²⁴. Recommendations for mitigation and further survey</p>	<p>At least three bat roosts were identified within buildings adjacent to the Site and up to nine species of bats, including lesser horseshoe bat, were recorded commuting and foraging on and/or adjacent to the Site. Bat species recorded during the field survey were also returned within 2 km of the Site during the desk study. The Site is therefore considered to be a roosting, commuting and foraging resource to bats in the local area. All bats are European Protected Species and are protected under the WCA. Multiple species are species of principal importance under Section of the Environment</p>	Local

²³ BCT (2020) Core Sustainance Zones and habitats of importance for designing Biodiversity Net Gain for bats. Bat Conservation Trust, London.

²⁴ Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed).

Species or Species Group	Summary	Justification of Importance	Importance
	<p>within this EclA Report are based on these assessments are based on the most up-to-date bat survey guidance²⁵.</p> <p>The five scattered trees on the Site were assessed for bat roost suitability and were all Negligible. The trees in the semi-natural broadleaved woodland were assessed for their suitability to support roosting bats by Wardell Armstrong; all trees were deemed Negligible for roosting bats³.</p> <p>Buildings 1, 2a, 2b, and 4 were assessed for bat roost suitability in the initial PEA³. Buildings 1 and 4 had Negligible suitability for roosting bats. Building 2a and 2b had Moderate suitability for roosting bats with three and two external potential roost features, respectively (N.B. Building 2a was downgraded to Low suitability following an updated assessment for bat roost suitability (see below and Appendix H). Although not within the Site boundary, Buildings B2c, B2d, B2e, and B3 are adjacent to the east of the Site and may be impacted the Proposed Development: Building B2d had Moderate suitability for roosting bats; Buildings B2c and B3 had Low suitability; and B2e had Negligible suitability. See the initial PEA³ for a detailed summary of the external potential roost features on each building adjacent to the Site.</p> <p>Emergence surveys were conducted on the buildings with suitability for roosting bats by AECOM between August to September 2022. Building 2c had two common pipistrelles emerge and one re-enter; Building 2d had a suspected soprano pipistrelle emergence. No other emergences were recorded. See the bat survey report (Appendix B) for a detailed summary of the emergence surveys.</p> <p>An updated assessment for bat roost suitability was conducted on Buildings B1 and B2a, as well as an initial assessment of Buildings B8 to 11, on 21 June 2023 (full results in Appendix H and building locations shown on Figure 1). This was done because these are buildings that will be impacted by the installation of an external canopy. The assessment determined that Buildings 2a, 9, and 10 have features with Low suitability for roosting bats, and that Building 11 has a feature with precautionary Low suitability for roosting bats. As these features are adjacent or within the Site boundary, it is recommended that a single emergence survey is conducted on each feature between May and August in accordance with the Bat Conservation Trust guidelines²⁵.</p> <p>During the bat emergence surveys, Ad-hoc Noctule, soprano pipistrelle, and common pipistrelle activity was recorded.</p> <p>The bat activity surveys confirmed activity by at least 10 species of bat within the Site boundary. Including one Annex II species. Bat passes from the following species were identified: common pipistrelle; soprano pipistrelle; Nathusius' pipistrelle; noctule; Leisler's bat (<i>Nyctalus leisleri</i>), Serotine (<i>Eptesicus serotinus</i>), <i>Nyctalus</i> sp.; <i>Myotis</i> sp.; Long-eared bat; and, lesser horseshoe (Annex II species) (one pass). Common pipistrelle and soprano pipistrelle comprised at least 83% of the calls recorded on the transects and the static detectors.</p> <p>One pass by lesser horseshoe bat was detected in October. No passes were detected during summer. This suggests that is not of significant value to lesser horseshoe during the summer. The habitat types on Site are unlikely to be of significant foraging suitability for horseshoe. The pass may reflect individuals from the local lesser horseshoe population moving between summer and winter roost sites, and passing along the wider River Taff Corridor, incorporating the school. The buildings on Site are unlikely to support roosting lesser horseshoe due to their structure.</p> <p>Using the scoring system recommended in the Bat Mitigation Guidelines Reason, P.F. and Wray, S. (2023)²⁶, the bat species assemblage at the Site was valued at a County* Level.</p> <p>This is likely due to the school's location within the landscape, with the habitats on the western and southern Site boundary forming part of and being in close proximity to the River Taff</p>	(Wales) Act 2016. There are targets in the Cardiff Local Biodiversity Action ²⁷ plan to maintain and increase the population of soprano pipistrelles.	

²⁵ Collins, J. (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th ed).

²⁶ Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Amplefield.

²⁷ Cardiff Council (2008) Cardiff Local Biodiversity Action Plan 2008.

Species or Species Group	Summary	Justification of Importance	Importance
	<p>corridor which is an important landscape corridor within the County of Cardiff. It is its context within the landscape that elevates the value, rather than habitat types and features within the school boundary being intrinsically of significant value.</p> <p>Detailed results of the bat surveys undertaken at the Site can be found in Appendix B and Appendix C.</p>		
Badger	<p>The desk study returned five records of badger (<i>Meles meles</i>) within 2 km of the Site. The closest record is 0.3 km north connected by roads.</p> <p>No evidence of badger was found on the Site.</p> <p>The broadleaved semi-natural woodland may provide suitable commuting habitat; however, the remainder of the Site is inaccessible to badger due to the presence of a fence with gaps too small for this species to pass through or under. Badger are unlikely to dig onto the Site as there is regular disturbance by students.</p> <p>Badger are considered likely absent from the Site, with the exception of the broadleaved semi-natural woodland which they may use for commuting or foraging.</p>	No evidence of badger was found within the Site; however, the broadleaved woodland is suitable commuting and foraging habitat for badger. Badger is a protected species under the Protection of Badgers Act 1992	Site
Hedgehog	<p>The desk study returned 222 records of hedgehog (<i>Erinaceus europaeus</i>) within 2 km of the Site. The closest record is approximately 5 m east on Gabalfa avenue, with connectivity to the Site via hardstanding and gaps in the fence.</p> <p>The grasslands on the Site provide suitable foraging and commuting habitat for hedgehogs, while the broadleaved semi-natural woodland and dense/ continuous scrub have potential to support foraging, commuting and nesting hedgehog.</p> <p>Hedgehog have potential to forage, commute, and nest on the Site.</p>	Hedgehog is a species of principal importance under Section 7 of the Environment (Wales) Act 2016.	Local
Dormouse	<p>The desk study returned no records of dormouse (<i>Muscardinus avellanarius</i>) within 2km of the Site.</p> <p>The habitat on the Site is generally unsuitable for dormouse with the exception of the dense/ continuous scrub and broadleaved woodland. Due to the lack of records and distance away from more suitable habitat, dormouse are considered likely absent from the Site.</p>	Dormouse is a European Protected Species and a species of principal importance under Section 7 of the Environment (Wales) Act 2016, but is unlikely to be on Site.	N/A
Otter	<p>The desk study returned three records of otter (<i>Lutra lutra</i>) within 2 km of the Site, the closest being approximately 0.15 km south on the River Taff.</p> <p>No evidence of otter was found during the Wardell Armstrong PEA survey. The otter survey on 26 September 2022 found four spraints on the southwest and northeast banks of the adjacent section of the River Taff and under Llandaff bridge⁵. There is suitable habitat for otter holts on the northeast bank of the River Taff, and for commuting otter in the broadleaved semi-natural woodland and dense/continuous scrub⁶along the Taff Trail.</p> <p>Otter has been confirmed on the adjacent section of the River Taff, but they are unlikely to be on the Site due to the lack of suitable habitat, frequent disturbance by the public, including dogwalkers, students, and staff, and fences preventing access to the school grounds.</p> <p>Detailed results of the otter survey can be found in Appendix D.</p>	Otter is a European Protected Species and is a species of principal importance under Section 7 of the Environment (Wales) Act 2016, and is present in the adjacent River Taff. There are targets in the Cardiff Local Biodiversity Action ²⁸ plan to maintain and increase the current distribution of otter.	Local
Water vole	<p>No records of water vole (<i>Arvicola amphibius</i>) were returned within 2 km of the Site. The desk study also returned a record of American mink (<i>Neovison vison</i>) adjacent to the Site in the River Taff, which predated on water vole decreasing the likelihood they are present in the local area.</p> <p>No evidence of water vole was found during the field survey.</p> <p>Water vole are considered likely absent from the Site.</p>	Water vole not considered present on the Site or adjacent habitats.	N/A
Invasive Non-Native Species (INNS)	<p>The desk study returned 290 records of INNS within 2 km of the Site with Japanese knotweed, a Schedule 9 INNS, being recorded adjacent to the west of the Site. The desk study also returned 57 records of Invasive Non-Native Animal Species (INNAS) with a record of American mink adjacent to the Site in</p>	As INNS have no nature conservation value they cannot be valued using the same approach as the other ecological features. Although, as it is an offence to cause	N/A

²⁸ Cardiff Council (2008) Cardiff Local Biodiversity Action Plan 2008.

Species or Species Group	Summary	Justification of Importance	Importance
	<p>the River Taff. It is unlikely American mink would enter the Site due to the lack of suitable habitat and the surrounding fence.</p> <p>Two Schedule 9 INNPS species were recorded during the field survey, namely: Japanese knotweed, and Himalayan balsam. The INNPS are on the fence line and within the broadleaved woodland and dense/ continuous scrub on the southwest boundary of the Site. The INNPS of plant on the Site have potential to be spread during pre-construction works, during the construction of the Proposed Development and post-development during the operational stage.</p> <ul style="list-style-type: none"> • Himalayan balsam individuals stretched across 4 m of the southwest fence line (outside of the Site boundary. Appendix A, Figure 1: TN 4) • One mature and two immature individuals of Japanese knotweed are present along the southwest fence line of the Site (two outside the Site boundary. Appendix A, Figure 1: TNs 2 and 3). <p>Non-listed butterfly-bush was also recorded within the Site.</p>	<p>their spread in the wild, impacts from the Proposed Development are considered within the Assessment of Effects Section and mitigation is detailed in the Environmental Design and Mitigation and Enhancement Sections.</p>	

5. Potential Impacts

The Proposed Development has the potential for a range of impacts on ecological features.

Impacts can be either direct or indirect:

- a. A direct impact is considered to be a direct/ immediate consequence of the Proposed Development, or particular activity, without any intervening steps. In this instance this is a physical loss or gain of a habitat, or direct mortality/ damage of an individual, or species population.
- b. An indirect impact is considered to be an impact of one individual, population, or habitat arising from an impact on an intermediary or as a result of an impact pathway.

The characteristics of these impacts are discussed in relation to important ecological features (identified in Section 3) in Section 7.

5.1 Construction Phase

The majority of potential impacts would arise during construction phase, which includes vegetation clearance and the construction of the Proposed Development. The potential impacts of the Proposed Development that are likely to relate to important ecological features are:

- a. Habitat loss, severance or fragmentation or habitat gain: these are direct impacts related to the change in land use resulting from the Proposed Development.
- b. Disturbance: an indirect impact resulting from a change in normal conditions (light, noise, vibration, human activity) that would result in the important ecological feature changing its typical behaviour.
- c. Habitat degradation: a direct or indirect impact resulting in the reduction in the suitability of the habitat for the identified important receptor.
- d. Species mortality: a direct impact on a population of a species associated with mortalities due to vegetation removal, building demolition and construction activities.

5.2 Operational Phase

The operational phase of the Proposed Development is considered to be when the Proposed Development is in use following construction. As such, potential impacts are associated with the activity of the staff and students within the Proposed Development itself. The potential impacts during the operational phase that are likely to relate to important biodiversity features are:

- a. Habitat degradation: a direct or indirect impact resulting in the reduction in the suitability of the habitat for the identified important receptor.
- b. Disturbance: an indirect impact resulting from a change in normal conditions (light, noise, domestic animal activity and human activity) that would result in the important ecological feature changing its typical behaviour.
- c. Species mortality: a direct impact on a population of a species associated with mortalities including from collisions with vehicles, possible pollution incidents and management practices.

6. Environmental Design and Mitigation

A summary of the proposed design and mitigation measures are provided in this section. The design and mitigation presented in this EclA is based on the Landscape GA Plan – Drawing Number GSRB-STL-XX-XX-DR-L-09001⁷ (see 0). It is assumed that the mitigations presented within this finalised design will be carried through to the Proposed Development. The assessment also assumes that standard practices to ensure legal compliance will be implemented.

6.1 Proposed Development Design

The Proposed Development involves the construction of a new SRB for 60 pupils within the western grounds of the Ysgol Gyfun Gymraeg Glantaf Secondary School as shown in the Landscape GA Plan – Drawing Number GSRB-STL-XX-XX-DR-L-09001 in 0⁷. For a summary of the associated elements of the new SRB, see Section 1.2.

The Proposed Development will result in partial loss of the amenity grassland and scattered trees in the central most area of the Site for the SRB and surrounding hardstanding, the semi-improved neutral grassland for mechanical, electrical, and water requirements. Three areas of understorey of the broadleaved semi-natural woodland and dense/continuous scrub further south will be removed for the access routes on the southwestern boundary. External lighting is proposed on buildings, footpaths and access points. At present, part of the dense/continuous scrub will be replaced with non-native ornamental shrub and herbaceous planting between the ramp for the access route and the Taff Trail.

To achieve net benefits for biodiversity within the Site, the loss in habitats must be compensated for. Some compensation is currently shown in the Landscape GA Plan – Drawing Number GSRB-STL-XX-XX-DR-L-09001⁷ with fifteen new trees being planted in the centre and southwest of the Site, a wildflower strip against part of the southwestern fence line, a hedgerow (proposed species unknown) within the courtyard between the SRB and the existing school building, and mention of rain gardens associated with the SRB²⁹. The species to be used for these features was unknown at the time of writing.

6.2 Construction Phase – Mitigation by Design and Standard Practice

The majority of potential impacts would arise during the construction phase, including during the pre-construction vegetation removal. Construction impacts would be mitigated through standard avoidance/mitigation measures outlined in a Construction Environmental Management Plan (CEMP), or similar and Precautionary Methods of Working (PMW), which can both be secured by planning condition.

These standard measures would include the following:

- a. Details regarding pollution control measures to avoid impacts to the adjacent River Taff and retained habitats within the Site. This will follow best practice guidance outlined in the Environment good practice handbook¹ and Guidance for Pollution Prevention (GPP)² to prevent potential impacts to the watercourse and surrounding habitat areas via pollution incidents such as fuel and oil spills, and contaminated surface water run-off.
- b. Retained trees (scattered trees and those in the broadleaved semi-natural woodland) to be protected to prevent damage, including root compaction and knocking off or damaging over hanging limbs. This would involve changing the access route location to cut through dense scrub instead.
- c. Exclusion areas and other protection will be used around all vegetation to be retained, such as grassland, trees and woodland.
- d. Details of the PMW regarding sensitive clearance methodologies in relation to breeding birds. This entails all vegetation suitable for nesting birds that is proposed for removal, including dense/continuous scrub, to be removed outside of the bird nesting season (*i.e.*, clearance will be undertaken between September and February inclusive). If this is not possible, a suitably experienced ecologist will undertake a search for active nests immediately before the clearance. If an active nest is encountered, a protective buffer of at least 5 m will be erected around it until all young have fully fledged (this can take up to eight weeks). The

¹ Law, C., and D'aleo, S. (2016) Environmental Good Practice on Site Pocket Book. Ciria. ISBN-13: 9780860177777

² NetRegs (undated) Guidance for Pollution Prevention (GPP) documents. [Online] Available at: <https://www.netregs.org.uk/environmental-topics/guidance-for-pollution-prevention-gpp-documents/>

PMW will also include a tool-box talk and details surrounding technical oversight by an Ecological Clerk of Works (ECoW).

- e. Details of an INNPS Management Plan. This will detail the measures to help control the spread of any INNPS present at the Site during vegetation clearance and construction. It will include appropriate control measures for INNPS present within the Site, biosecurity measures (such as controlled access and defined access routes) during any works, details on the removal and disposal of the plants and any contaminated soil and a tool-box talk and details surrounding the supervision by an ECoW.
- f. All excavations larger than 150 mm in diameter shall be blanked off and excavations will be covered at the end of each working day to help prevent wildlife, particularly hedgehogs, becoming trapped inside. If excavations cannot be covered then ramps (for example, a scaffolding board) should be placed inside at each end to allow any trapped wildlife to escape.
- g. Requirement of an ECoW to be on the Site during the works, when required, including to do a pre-vegetation clearance check for protected and notable species including brown-banded carder bee, brindled beauty, and common toad.

It is considered that accounting for the implementation of measures set out within the CEMP and PMW, significant construction impacts to important ecological features associated with construction activities will be avoided.

Recommendations for additional Mitigation Measures are outlined in Section 8.

6.3 Operational Phase – Mitigation by Design and Standard Practice

The proposed lighting scheme for the development is undergoing review with an ecologist to, as far as is reasonably practical, avoid and reduce lighting impacts during operation by design. The mitigation recommendations that will be paid due regard during this process are outlined below in Section 8.

Recommendations for additional Mitigation Measures are outlined in Section 8.

7. Assessment of Effects

This section presents the assessment of likely effects on ecological receptors during the construction phase and the operational phase of the Proposed Development. It identifies any likely significant effects that are predicted to occur and take into account the mitigation by design and best practice discussed in Section 6 above. Section 8 includes the recommendations for additional mitigation and monitoring measures that are proposed to reduce or eliminate the identified potentially significant effect.

7.1 Construction Phase

As the Proposed Development will occur during daylight hours, there are no anticipated impacts from light on habitats or species during the construction phase.

7.1.1 Designated Sites

7.1.1.1 Internationally Designated Nature Conservation Sites

The Cardiff Beech Woods SAC is located 3.9 km northwest of the Site. Due to this distance away, topography, and the lack of connectivity, the SSSI will not be impacted during the construction phase.

The Severn Estuary SAC, SPA and Ramsar are located 7.9 km southeast of the Site and is connected by the River Taff which flows within 10 m of the Site. The Site has no watercourses, and no direct hydrological links to the River. Without mitigation, any major pollution event from the construction phase has a risk of entering the River Taff which may risk killing/ injuring migratory fish species and effect water quality. However, as there will be CEMP in place to prevent a major pollution event from escaping the Site, and the protection of the River Taff from pollution is also a requirement under the Cardiff Local Development Plan³ (Appendix F) an impact is unlikely to occur. In addition, given the distance between the Site and the Severn Estuary significant dilution of any pollution is likely to occur before reaching the Severn Estuary SAC, SPA and Ramsar and unlikely to cause any significant effect. It is considered unlikely that any significant effects would occur on the Severn Estuary SAC, SPA and Ramsar or its designated features.

7.1.1.2 Nationally Designated Nature Conservation Sites

The Glamorgan Canal SSSI is located 1.6 km southeast of the Site and is separated by urban areas. Due to this distance, lack of connectivity, and that it's designated for habitats and relative short ranging species, no impacts are anticipated on the SSSI's designating features during the construction phase.

7.1.1.3 Locally Designated Nature Conservation Sites

There are two LNRs and 12 SINC's within 2 km of the Site that are designated for their nature conservation value.

River Taff SINC is located approximately 10 m west of the Site and is connected via a broadleaved semi-natural woodland and dense/ continuous scrub strip, and the Taff Trail public footpath. The Site has no watercourses, and no direct hydrological links to the River. The River Taff SINC is at risk of indirect impacts through pollution should a major pollution incident occur during construction.

During construction, industry standard mitigation measures will be implemented through a CEMP to prevent a major pollution event that could degrade the River Taff SINC. Protection of the River Taff from pollution is also a requirement under the Cardiff Local Development Plan⁴ under, EN6, EN11, and EN13 (Appendix F). Providing the aforementioned mitigation measures are adhered to, the significance of adverse effects arising from a pollution event is considered to be negligible.

Due to the distance from Site (0.6 km of greater) and lack of suitable ecological impact pathways, the remaining LNRs and SINC's outlined in Table 4.1 are not anticipated to be impacted by any adverse effects during the construction phase.

7.1.2 Habitats

Habitat Loss

No irreplaceable habitats, such as ancient woodland or veteran trees, would be affected by the Proposed Development.

Three access points on the southwest boundary through the broadleaved semi-natural woodland are proposed. At these locations the understorey of the broadleaved semi-natural woodland will be lost to facilitate the construction

³ Cardiff Council (2016). Cardiff Local Development Plan 2006 – 2026, Adopted Plan. January 2016.

⁴ Cardiff Council (2016). Cardiff Local Development Plan 2006 – 2026, Adopted Plan. January 2016.

of the access route. Current plans show that the trees will be retained. The broadleaved semi-natural woodland is a Section 7 habitat of principal importance and is protected under the Cardiff Local Development Plan²⁶. Furthermore, the Cardiff Local Biodiversity Action Plan has the target of maintaining 'the current extent and distribution of nature woodland in Cardiff.'⁵

The potential impacts associated with the construction phase would be:

- a. habitat loss; and,
- b. habitat degradation.

The Proposed Development will result in the loss of semi-natural habitat associated with the centre and northwest areas of the Site, predominantly amenity grassland and semi-improved neutral grassland with scattered trees. A small area of the understorey of the broadleaved semi-natural woodland will also be lost on the southwest boundary to facilitate the construction of the access route. All other habitats will be retained.

Without replacement of the lost habitat with habitat of similar or greater value over a similar area, there will be a net loss of semi-natural habitats on the Site.

Habitat Disturbance and Degradation

The Proposed Development may result in the degradation of retained habitats through indirect impacts associated with construction related activities including the potential for pollution from run-off and dust, lighting and increased trampling and tracking from personnel and machinery/vehicles.

During construction, industry standard mitigation measures will be implemented through a CEMP to protect retained habitats from construction-related activities, including pollution events and enhanced trampling and tracking. This will avoid and reduce impacts from disturbance and degradation. Therefore, the significance of adverse effects arising from the construction phase is considered to be detrimental at Site level, due to the loss of semi-natural habitat with plans at the time of writing to replace only a proportion of the lost habitat.

⁵ Cardiff Council (2008) Cardiff Local Biodiversity Action Plan 2008.

7.1.3 Protected and Notable Species

7.1.3.1 Invertebrates

The potential impacts associated with the construction phase would be:

- a. habitat loss;
- b. habitat degradation; and,
- c. species mortality.

The removal of habitat with potential to support invertebrates (amenity grassland, semi-improved neutral grassland, and broadleaved semi-natural woodland) will reduce the availability of suitable terrestrial habitat for foraging and commuting brown-banded carder bee and brindled beauty (both Section 7 Priority Species), amongst other invertebrates, within the Site. The removal of habitat may also kill these species if they are using the habitats at the time of removal; however, due to the sub-optimal nature of the grassland habitats within the Site for breeding, it is likely that the invertebrate species only forage occasionally within this habitat on the Site, having commuted in from nearby off-site habitats. A small area of broadleaved semi-natural woodland will also be removed.

Without mitigation, any uncontrolled pollution from the construction phase could contaminate retained habitats impacting invertebrates. Without mitigation, any major pollution event from the Site could enter the adjacent River Taff where aquatic invertebrates may also be impacted, for example by being poisoned by the pollution.

While a CEMP will be in place to prevent a pollution event on Site and in the adjacent habitats, there are no designs to replace the habitat lost at the time of writing; however, as notable invertebrates likely only use the Site occasionally, the significance of adverse effects to invertebrates arising from habitat loss and degradation, and any resulting mortality, is therefore considered to be detrimental at a Less than Site level.

7.1.3.2 Fish

The potential impacts associated with the construction phase would be:

- a. habitat degradation;
- b. species mortality.

Without mitigation, any major pollution event from the construction phase has a risk of entering the River Taff which may risk killing/ injuring migratory fish species within it. Species include sea lamprey, river lamprey, twaite shad, Atlantic salmon, brown/sea trout, allis shad, and European eel^{6,7}.

As a CEMP will be in place to prevent a major pollution event from escaping the Site, and the protection of the River Taff from pollution is also a requirement under the Cardiff Local Development Plan⁸ (Appendix F), the significance of such adverse impacts to migratory fish is considered to be negligible.

7.1.3.3 Amphibians (Common Toad)

The potential impacts associated with the construction phase would be:

- a. habitat loss;
- b. habitat degradation; and,
- c. species mortality.

The removal of terrestrial habitat (broadleaved semi-natural woodland and dense/continuous scrub) with the potential to support common toad (Section 7 Priority Species), will reduce the availability of suitable terrestrial habitat for foraging and commuting amphibians within the Site. There is potential to harm amphibians from direct killing from equipment during the habitat clearance during the construction phase.

Given only a small area of suitable habitat able to support a small number of amphibians will be lost to the Proposed Development, as well as the proposed 'mitigation by design' including a check for amphibians by an ECoW and pollution prevention control outlined with the CEMP, the significance of such adverse impacts on amphibians, is considered to be negligible.

⁶ JNCC (2023) Severn Estuary SAC [online] Available at: <https://sac.jncc.gov.uk/site/UK0030109>

⁷ RSIS (1995) Severn Estuary Ramsar [online] Available at: <https://rsis.ramsar.org/RISapp/files/RISrep/GB67RIS.pdf>

⁸ Cardiff Council (2016). Cardiff Local Development Plan 2006 – 2026, Adopted Plan. January 2016.

7.1.3.4 Breeding Birds

The potential impacts associated with the construction phase would be:

- a. habitat loss;
- b. habitat degradation;
- c. disturbance; and,
- d. species mortality.

Habitat Loss

The removal of sections through the broadleaved semi-natural woodland habitat and dense/ continuous scrub during the construction phase will reduce available nest sites. Though alternative sites would still be available within and adjacent to the Site.

Species mortality

The removal of sections through the broadleaved semi-natural woodland habitat and dense/ continuous scrub during the construction phase, if completed during the breeding bird season, has the potential to injure and/or kill birds whilst nesting, eggs and/or chicks. Mitigation with regards to the methods of vegetation removal, including timing of works to avoid breeding bird season, a pre-works check for birds, will avoid direct effects upon nests, eggs, chicks and nesting birds.

Cetti's warbler, a Schedule 1 bird species, which has potential to be utilising the dense/ continuous scrub on the southwestern boundary of the Site. A breeding bird survey for Cetti's warbler must be carried out immediately before the works begin. If Cetti's warbler nest is found, a 25 m buffer to prevent killing or injury must be set up around the nest. This buffer must remain in place until it is confirmed that the Cetti's Warbler nest is no longer in use.

Habitat Degradation and Disturbance

Indirect effects upon breeding birds within or immediately adjacent to the Site may occur during the construction phase due to the increased noise, personnel/ large vehicle movement and general visual disturbance from the construction activities.

Such activities may disturb Cetti's warbler. If Cetti's warbler nest is found, a 25 m buffer to prevent disturbance must be set up around the nest. This buffer must remain in place until it is confirmed that the Cetti's Warbler nest is no longer in use.

A CEMP will be in place to minimise disturbance to wildlife and prevent pollution events, and the bird species present within the Site are likely common and widespread and tolerant of disturbance. The new building may also provide new nesting opportunities for birds to compensate for the loss of dense/ continuous scrub. The risk of adverse impacts on breeding birds is therefore considered to be negligible.

7.1.3.5 Bats

The potential impacts associated with the construction phase would be:

- a. Indirect loss of roosts;
- b. disturbance;
- c. Severance of habitat;
- d. Habitat loss for community and foraging;
- e. habitat loss;
- f. habitat degradation; and,
- g. disturbance.

Roosting Bats

No buildings with known confirmed roost will be demolished or modified.

No buildings or trees within the Site have suitability to support roosting bats. Emergence surveys of Buildings 2a and 2b recorded no active roosts⁴. Adjacent to the east of the proposed SRB, Buildings 2c and 2d have confirmed roosts⁴ and without mitigation will likely be subject to indirect lighting, noise and vibration disturbance from the construction phase. Buildings 3⁴, 9, 10, and 11 (Appendix H) have PRFs which may be used for roosting. These have not been surveyed. If the PRFs of these Buildings, within and adjacent to Site boundary are used by roosting

bats during the Proposed Development, there is potential for bats to be subjected to disturbance lighting noise and vibration from the construction phase.

The trees in the broadleaved semi-natural woodland were assessed as having Negligible suitability for roosting bats³, though, as they were last assessed more than 12 months ago, a pre-works check is required to ensure their suitability has not changed.

The construction phase may lead to disturbance of bats within and around the confirmed and potential roosts during, in particular, the installation of hardstanding and an external canopy adjacent to them. This is because the Proposed Development is planned for summer 2024 when bats may be in residence.

Foraging and Commuting

In the absence of re-design or mitigation, the proposed development will result in permanent loss and fragmentation of the green corridor along the River Taff (woodland and scrub) habitat due to the creation of three illuminated footway and cycle way access points on the west boundary. This has the potential to impact on local landscape connectivity.

7.1.3.6 Badger

The potential impacts associated with the construction phase would be:

- a. habitat loss; and
- b. species mortality.

The removal of broadleaved semi-natural woodland will reduce the potential foraging and commuting habitat available to badger, but unlikely significantly so due to the small area to be removed. Fences around the school prevent badger from accessing the Site, so injury or killing due to entrapment in excavations is unlikely. Given the implementation of a CEMP to prevent pollution entering the broadleaved semi-natural woodland, and reduce vibration and lighting, such adverse impacts to badger from the construction phase is considered to be negligible.

7.1.3.7 Hedgehog

The potential impacts associated with the construction phase would be:

- a. habitat loss;
- b. habitat degradation;
- c. obstruction of movement; and,
- d. species mortality

There will be a loss of available foraging and commuting habitat from the clearance within the grassland and woodland habitats. At the time of writing there are no plans to replace the habitat lost that is suitable for hedgehog.

The implementation of a CEMP will prevent pollution contaminating retained habitats used by hedgehog, and reduce light spill.

As there is other suitable habitat in the wider landscape, such adverse impacts from habitat loss and degradation to hedgehog from the construction phase is considered to be at Site level only.

At two of the access points cut through the broadleaved woodland, steps are proposed. If these steps have solid balustrades, such as brick/concrete, these would impede movement of hedgehog along the woodland corridor and push them out onto the hardstanding of the Taff trail where they may encounter cycle traffic. This could obstruct and deter their movement through the local landscape. If the steps have no balustrades or balustrades with railings or other suitable gaps then movement would not be impeded.

Without mitigation, there is risk of direct injury to and killing of hedgehogs during the habitat clearance, particularly the broadleaved semi-natural woodland. Risks include injury/ killing from machinery and entrapment in open excavations. Adverse impacts during the construction phase can be mitigated by a pre-works check for hedgehog and covering open excavations overnight or providing a means for escape, such as a plank.

7.1.3.8 Otter

The potential impacts associated with the construction phase would be:

- a. habitat loss;
- b. habitat degradation;

- c. disturbance; and,
- d. species mortality.

Habitat Loss

There will be no loss of habitat suitable for the creation of breeding or resting site, or for foraging. There is suitable habitat for commuting otter within the broadleaved semi-natural woodland and dense/continuous scrub on the southwestern boundary, which will be impacted by vegetation clearance. Though otter are more likely to regularly commute along the River bank side scrub and woodland, than along the woodland directly adjacent to the Site because this is at a higher elevation above the river and subject to disturbance by pedestrians and cyclists.

A small area of the understorey of the broadleaved semi-natural woodland and dense/continuous scrub will be lost for construction of steps and a cycleway/footway, but alternative commuting habitat of better quality is available in the immediate locale, along the River bank.

Habitat Degradation, Disturbance and Mortality

Without mitigation, any major uncontrolled pollution event (e.g. silt/runoff/fuel/oil/chemicals) from the construction phase has a risk of entering the River Taff which may risk poisoning and/or killing otter within it. There is suitable habitat for otter holts on the northeast bank of the River Taff adjacent to the Site (though no holts were noted during surveys), which, without mitigation, may be impacted by disturbance, from lighting, pollution from chemicals/oil/fuel and noise/vibration (see Otter Report in Appendix D).

There is suitable habitat for occasional commuting otter within the broadleaved semi-natural woodland and dense/continuous scrub on the southwestern boundary, which may be impacted by disturbance, from lighting, pollution from chemicals/oil/fuel and noise/vibration. Construction activity are likely to occur during the day, when otters are less active, which will reduce the likelihood of disturbance impacts.

As a CEMP will be in place to prevent a major pollution event from escaping the Site, and the protection of the River Taff from pollution is also a requirement under the Cardiff Local Development Plan⁹ (Appendix F), and alternative high quality commuting routes are available, the significance of such adverse impacts to otter is considered to be negligible.

7.1.3.9 INNPS

Without mitigation, there is risk of spreading INNPS within the Site and off-Site during construction. These comprise Japanese knotweed and Himalayan balsam due to their presence within the dense/continuous scrub which will be partially cleared to allow the creation of the access route.

⁹ Cardiff Council (2016). Cardiff Local Development Plan 2006 – 2026, Adopted Plan. January 2016.

7.2 Operational Phase

7.2.1 Designated Sites

No operation phase impacts on national or internationally designated sites are anticipated.

River Taff SINC is located approximately 10 m west of the Site. In the absence of mitigation and without a considerate lighting scheme, light spill could disturb the River Taff SINC during operation, though woodland along the Taff Trail would provide some shading of the watercourse. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill and therefore avoids and reduces adverse impacts onto the River Taff SINC. Therefore, impacts on the SINC are considered negligible, assuming light spill is mitigated.

7.2.2 Habitats

During the operational phase of the Proposed Development, potential impacts on retained habitats include habitat degradation through increased use by staff and students; however, as affected habitats (amenity grassland) on Site are of low ecological value, the potential effects of the Proposed Development on the amenity grassland are considered to be negligible.

The retained broadleaved semi-natural woodland, dense/continuous scrub, semi-improved neutral grassland, and scattered trees are unlikely to be subject to increased trampling due to their locations on the Site. Therefore, the potential effects of the Proposed Development on these retained habitats are considered to be negligible.

7.2.3 Protected and Notable Species

7.2.3.1 Invertebrates

Terrestrial and aquatic invertebrates will not be impacted during operation.

7.2.3.2 Fish

Without mitigation, in the absence of a sensitive lighting design, fish species in the adjacent River Taff will be at risk of increased disturbance from light spill upon their migratory habitats during the operational phase of the Proposed Development. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill and therefore avoids and reduces adverse impacts onto the River Taff. Therefore, impacts on the fish and migratory habitats are considered negligible, assuming light spill is mitigated.

7.2.3.3 Amphibians (Common Toad)

Without mitigation, there is potential for retained habitats (broadleaved semi-natural woodland and dense/continuous scrub) which could provide shelter and foraging for common toad to be degraded by additional lighting. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill onto this woodland corridor to avoid impacts on the River Taff and bats, this will also benefit common toad. Assuming light spill is mitigated, impacts are considered to be of negligible significance.

7.2.3.4 Breeding Birds

Without mitigation, there is potential for retained nesting habitats (broadleaved semi-natural woodland and dense/continuous scrub) to be degraded by additional lighting. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill onto this woodland corridor to avoid impacts on the River Taff and bats, this will also benefit breeding birds. Assuming light spill is mitigated, impacts are considered to be of negligible significance.

7.2.3.5 Bats

Roosting

Without mitigation, bat roosts on Site may be disturbed by lighting during operation.

Foraging and Commuting

In the absence of re-design or mitigation, the proposed development will result in permanent loss and fragmentation of the green corridor along the River Taff (woodland and scrub) habitat due to the creation of three illuminated footway and cycle way access points on the west boundary. This has the potential to impact on local landscape connectivity. Sensitive lighting is particularly important along the southwestern boundary of the Site adjacent to the River Taff.

7.2.3.6 Badger

Without mitigation, there is potential for retained habitats (broadleaved semi-natural woodland and dense/continuous scrub) suitable for foraging and commuting to be degraded by additional lighting. It is the aim of

the design team to design a lighting scheme which avoids and reduces light spill onto this woodland corridor to avoid impacts on the River Taff and bats, this will also benefit badger. Assuming light spill is mitigated, impacts are considered to be of negligible significance.

It is considered unlikely that the new access points from the Taff trail will increase human activity along the Taff Trail, as any pupils, staff or visitors using the Taff Trail to access the school would likely be doing so already and accessing via the existing steps/footways north of Llandaff bridge. Most human activity is likely to occur during the day when badger are less active, which will again reduce the likelihood of disturbance impacts. No impacts from increased human disturbance are anticipated.

7.2.3.7 Hedgehog

Without mitigation, there is potential for retained habitats (broadleaved semi-natural woodland and dense/continuous scrub) suitable for foraging and commuting to be degraded by additional lighting. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill onto this woodland corridor to avoid impacts on the River Taff and bats, this will also benefit hedgehog. Assuming light spill is mitigated, impacts are considered to be of negligible significance.

It is considered unlikely that the new access points from the Taff trail will increase human activity along the Taff Trail, as any pupils, staff or visitors using the Taff Trail to access the school would likely be doing so already and accessing via the existing steps/footways north of Llandaff bridge. Most human activity is likely to occur during the day when hedgehog are less active, which will again reduce the likelihood of disturbance impacts. No impacts from increased human disturbance are anticipated.

7.2.3.8 Otter

Without mitigation, in the absence of a sensitive lighting design, otter within adjacent River Taff will be at risk of increased disturbance from light spill during the operational phase of the Proposed Development. It is the aim of the design team to design a lighting scheme which avoids and reduces light spill and therefore avoids and reduces adverse impacts onto the River Taff. Therefore, impacts on otter are considered negligible, assuming light spill is mitigated.

It is considered unlikely that the new access points from the Taff trail will increase human activity along the Taff Trail, as any pupils, staff or visitors using the Taff Trail to access the school would likely be doing so already and accessing via the existing steps/footways north of Llandaff bridge. Most human activity is likely to occur during the day when otter are less active, which will again reduce the likelihood of disturbance impacts. No impacts from increased human disturbance are anticipated.

7.2.3.9 INNPS

If all INNPS within the Site are treated and/or removed during construction phase then there will be no risk of spread within the Site or Off-Site during the operation.

The client may choose to treat or remove only those INNPS which will be directly impacted and at risk of spread during construction, leaving some plants on Site during operation. The spread of any retained INNPS within and off Site would likely be controlled and impacts negligible if a INNPS management plan is in place and followed, and incorporated into the management plan for the building during operation. In the absence of an INNPS management plan, retained INNPS on Site could be spread within and off-Site

8. Recommendations for Mitigation Measures

Mitigation by design and best practice discussed in Section 6 above. This Section includes the recommendations for additional mitigation and monitoring measures that are proposed to reduce or eliminate the identified potentially significant effect.

The following mitigation and monitoring measures are required:

8.1 Habitats

The access route through the broadleaved semi-natural woodland that will lead out to the Taff Trail must avoid felling any trees and minimise the removal of the understorey as it is a habitat of principal importance and included in the Cardiff LBAP¹⁰.

As per Section 8, Pollution control measures must be followed to avoid and control pollution incidents. This will also mitigate impacts on species using these habitats.

Retained habitat must be fenced off from the construction zone to avoid excessive trampling and tracking.

8.2 Pre-Construction Checks

A pre-construction check for ecological constraints, including roosting bats (in Buildings 2a, 2b, 2c, 2d, 3, 9, 10, and 11), breeding birds, amphibians, otters (in particular signs of any newly created holts), and hedgehogs, must be carried out prior to works commencing. As more than 12 months have elapsed since the assessment of the trees in the broadleaved semi-natural woodland³, the pre-works check must also include a bat roost suitability appraisal of the trees to determine if they still have Negligible suitability for roosting bats.

8.3 Breeding Birds

All vegetation suitable for nesting birds that is proposed for removal, including dense/continuous scrub, to be removed outside of the bird nesting season (*i.e.*, clearance will be undertaken between September and February inclusive). If this is not possible, a suitably experienced ecologist will undertake a search for active nests immediately before the clearance. If an active nest is encountered, a protective buffer of at least 5 m will be erected around it until all young have fully fledged (this can take up to eight weeks).

A breeding bird survey (a single walkover during the breeding season) prior to works commencing. The survey will identify if Cetti's warbler is utilising the dense/continuous scrub on the southwestern boundary of the Site. If Cetti's warbler is found nesting, an exclusion buffer of at least 25 m, where no works can take place, will be erected around the nest until the nest is no longer in use.

8.4 Otter

The northeast bank of the River Taff adjacent to the Site must be checked for breeding or resting sites immediately prior to the works to ensure there are no recently created sites that will be impacted by the Proposed Development.

Construction of the access points (including vegetation clearance and construction of the steps and footways) must avoid working 1 hour before dusk and 1 hour after dawn to reduce disturbance during construction on otter using the River Taff.

8.5 Bats and Severance

It is recommended that the number of access points cut through the woodland be reduced, perhaps with one set of steps at the north, and just the at grade cycleway/footpath to the south. This would reduce the impacts of lighting and habitat loss, and reduce severance compared to the three access points proposed.

Retention of tree canopy along the broadleaved woodland, by avoiding felling of trees at the access points and additional tree planting (of a suitable size, not whips) to encourage future canopy connections over the access points.

Avoiding and reduce night-time lighting of gaps within linear features will help bat to continue using the feature and to cross the gaps in vegetation.

8.6 External Lighting

There is no legislation requiring an area or road to be lit (ILP, 2018). There are British Standards that relate to various components of lighting and there are also guidelines that relate to crime prevention, prevention of vehicular accidents and amenity use (ILP, 2018). There is legislation requiring that bats and otter are protected against disturbance, which includes light disturbance.

To avoid impacting the roosting, foraging and commuting habitats of bats within the vicinity any new lighting should aim to avoid Site boundary features, including the broadleaved woodland and dense/scattered scrub, and known roost sites.

The following recommendations in line with best practice guidance should be incorporated into any new lighting scheme at the Site:

- Light spill onto any new known bat roost features must be avoided;
- Light spill onto any new bat roost boxes must be avoided;
- In the first instance, external lighting must be designed to avoid light spill onto boundary features including broadleaved woodland and dense/scattered scrub; This will in turn avoid light spill onto the River Taff and,
- Where light spill onto sensitive areas such as the retained woodland cannot be avoided, it is recommended this is limited to levels of 0.4 Lux or less, and not above current lighting levels.
- Light spill onto any newly proposed tree lines or hedgerow must be avoided or minimised;

Suggestions for mitigating external lighting and achieving the lighting recommendations above are outlined in the Institution of Lighting Professionals Bats and Artificial Lighting at Night Guidance Note (ILP, 2023) and best practice guidance (BCT, 2009, BCT 2014 and Gunnell et. al., 2012). This should follow the Bat Conservation Trust & Institution of Lighting Professionals (2023) Guidance Note¹¹ This will require use of a lighting designer in consultation with a bat ecologist.

These include:

- Only light areas which need to be lit, and use the minimal level of lighting required to comply with guidance such as Institute of Lighting Engineers Guidance Notes for the Reduction of Obtrusive Light (2005);
- Avoid aesthetic lighting which has no other function, and up lighting of trees and buildings;
- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)
- Internal luminaires can be recessed (as opposed to using a pendant fitting where installed in proximity to windows to reduce glare and light spill
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (if needed)
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt

¹¹ ILP (2023) Bats and Artificial Lighting at Night. Guidance Note 8 Bats and Artificial Lighting [online] Available at: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

- Where appropriate, external security lighting should be set on motion-sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate
- Limit the times that the lights are on, to provide dark periods. As this is a school lighting should not be required throughout the evening and night and the proposed new lighting could perhaps be turned off from 19:00 until 06:00 daily for example;
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.
- Consider use of physical screening (e.g. landscaping and the installation of walls and fences, or even banks and bunds, to reduce light spill onto key habitats
- All light fittings should face away from habitat used by bats to reduce potential light spill and should be mounted horizontally, with no light output above 90° and/or no upward tilt;
- A scaled CAD plan should be provided with isoline contours shown for horizontal illuminance at ground level; and,
- Horizontal and vertical calculation planes should be undertaken during calculations and modelling and be included on the key plan to show references, locations and lengths (for horseshoe bat species it is recommended that lux levels should fall below 0.2 lux on the horizontal pane and below 0.4 lux on the vertical plane);
- The lighting design consultant should undertake baseline surveys for existing lighting on the Site.

These actions will increase the value of the Site for a number of other nocturnal species (hedgehog, badger and otter), as well as for bats.

8.7 Roosting Bats

- Further surveys on potential bat roosting features on Buildings 9, 10 and 11 (Appendix H) are required prior to the Proposed Development to determine the presence or absence of roosting bats. In accordance with Bat Conservation Trust guidelines²⁵, it is recommended a single emergence survey is carried out between May and August covering each feature. These surveys would confirm the presence/absence of roosting bats and, if required, will inform the necessary mitigation.
- If a bat is found, the work may proceed under Precautionary working or a European Protected Species Mitigation Licence (EPSML) may be required, depending on the roost type and likelihood of an impact.

8.8 INNPS

A management plan and method statement should be produced prior to works detailing measures that will be implanted to avoid and control the spread of INNPS present at the Site during vegetation clearance, construction, and for enhancement of any retained habitats. The management plan and method statement should include details of the following elements:

- Appropriate control measures for INNPS present on the Site (such as spraying, excavation, hand-pulling - methods will depend on the seasonal timing or works, type of works and duration of works).
- Biosecurity measures (such as controlled access, exclusion zones, wash-down facilities for boots, toll and machinery, and defined access routes) during any work near the INNPS.
- Details on the removal and disposal of the plants and any contaminated soil, within and off-Site. It is recommended that removal is done under watching brief of an experienced ecologist.

- A tool-box talk should be given to all site personal by the ECoW to inform them of the INNPS present, the risk associated with the INNPS on Site and the controls/working methods that must be used.

9. Recommendations for Achieving Net Benefits for Biodiversity

Planning Policy for Wales requires that developments must maintain and enhance biodiversity. Stating that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity. General opportunities for ecological enhancements within the Proposed Development must be sought where possible. The following ecological enhancements have already been confirmed within the Landscape GA Plan – Drawing Number GSRB-STL-XX-XX-DR-L-090017:

- Four bird boxes on trees within the broadleaved semi-natural woodland on the southwestern boundary of the Site;
- Three bat boxes on trees within the broadleaved semi-natural woodland on the southwestern boundary of the Site;
- Invertebrate refugia in the form of a bee bank (bare earth) between the proposed ramp and southernmost set of steps along the southwestern boundary of the Site. It is recommended this area is fenced off to prevent being trampled by members of the public;
- Two log piles and one hibernaculum for the benefit of, for example, invertebrates, amphibians, and hedgehogs, are to be placed in the broadleaved semi-natural woodland on the southwestern boundary of the Site;
- Rain gardens to be planted as part of the SUDs;
- Wildflower and species-rich grassland strip along the southwestern fence line to be provisionally planted with Emorsgate EM3F Special General Purpose Wild Flowers mix¹² which contains 100% native flowers. The seed mix to be planted will be confirmed after a soil survey to ensure the mix is right for the soil type. The EM3F seed mix contains greater knapweed (*Centaurea scabiosa*), common knapweed, and kidney vetch (*Anthyllis vulneraria*), alongside other flowering species like viper's-bugloss (*Echium vulgare*), which will benefit brown-banded carder bee. Grassland species, to provide year-round vegetated cover, and clover and knapweed species, alongside red bartsia, will be added to the mix to benefit brown-banded carder bee. Landscape architects has commented that the extension of the wildflower area is very possible;
- Hedge planting in courtyard between the SRB and existing gym (species mix unconfirmed); and,
- Tree planting to replace the two scattered trees that will be felled. At least fifteen new trees are already planned to be planted on the Site. The species to be planted were not known at the time of writing, but must include native flowering and fruiting species of local provenance suitable for the Site location;

To avoid net loss of biodiversity on Site, following the net benefits for biodiversity approach by the Welsh Government¹³ (see Section 9), the area of habitats lost during the Proposed Development must be replaced by habitats of similar or greater value. Any habitats degraded during the Proposed Development must be enhanced back to a condition that is favourable for wildlife. To achieve net benefits for biodiversity, an area greater than the habitats lost must be established. Suggestions on how to achieve this are:

- Provision of green infrastructure including hedgerows and rain gardens. Green infrastructure should be planted with native species. A green roof or wall has been scoped out of the design as confirmed by the landscape architects.
- Enhancement of grassland on the Site to species-rich grassland. As the species-rich grassland will be limited on the Site due to continued use by students and staff, this could be done, for example, by extending the proposed wildflower and species-rich grass strips and planting wildflowers within the grassland islands and borders of the northern car park. Plant species should include those beneficial to brown-banded carder bee and brindled beauty, for example, clovers, knapweeds and red bartsia *Odontites vernus*. Enhanced habitats should be managed sympathetically with no pesticides/herbicides/fertilisers. Once established the grassland should be cut annually in July/August after flowers have set seed. All arising from this cut should be collected and ideally stored on the Site in a compost heap.

¹² <https://wildseed.co.uk/product/mixtures/wild-flower-only-mixtures/special-general-purpose-wild-flowers/>

¹³ Welsh Government (2021) Planning Policy Wales Edition 11, Paragraph 6.4.4. Available at: https://gov.wales/sites/default/files/publications/2021-02/planning-policy-wales-edition-11_0.pdf

In addition to the Mitigation Measures outlined in Section 8 and the confirmed ecological enhancements, further recommendations to achieve an increase in biodiversity of the habitats and species within the Site are provided below:

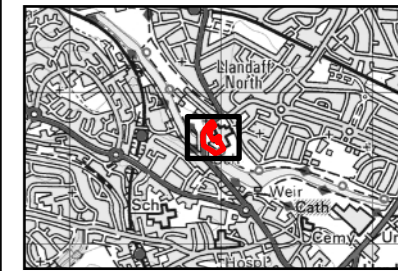
- Ensuring the stepped access from the Taff Trail has railings or gaps suitable for small mammals such as hedgehog to pass through, so that the steps don't create a barrier to movement. The steps should avoid having solid brick or concrete balustrades. are left in the
- Ensuring gaps of approx. 13 cmx13cm are left at ground level in the fences to create suitable commuting routes for hedgehogs.
- Brash and log piles can be created from material arising from vegetation clearance and routine vegetation management.
- Planting tall, native shrubs instead of the proposed ornamental shrub and herbaceous planting to the southwest of the Site between the proposed ramp and the Taff Trail. This will help compensate for the loss of the dense/continuous scrub by providing alternative habitat for, for example, nesting birds.

Appendix A Figure 1. Phase 1 Habitat Plan

LEGEND

- Site Boundary
- Phase 1 Habitats**
- X Scrub - scattered
- Broadleaved parkland/scattered trees
- Target Note
- Fence
- Wall
- Broadleaved woodland - semi-natural
- Scrub - dense/continuous
- Neutral grassland - semi-improved
- Cultivated/disturbed land - amenity grassland
- Buildings
- Hardstanding
- Bat Roost Suitability**
- Moderate
- Low
- Negligible

NOTES



NOTES

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ISSUE PURPOSE

FINAL

PROJECT NUMBER

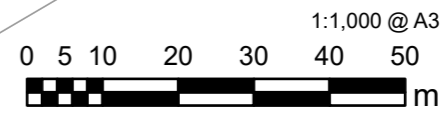
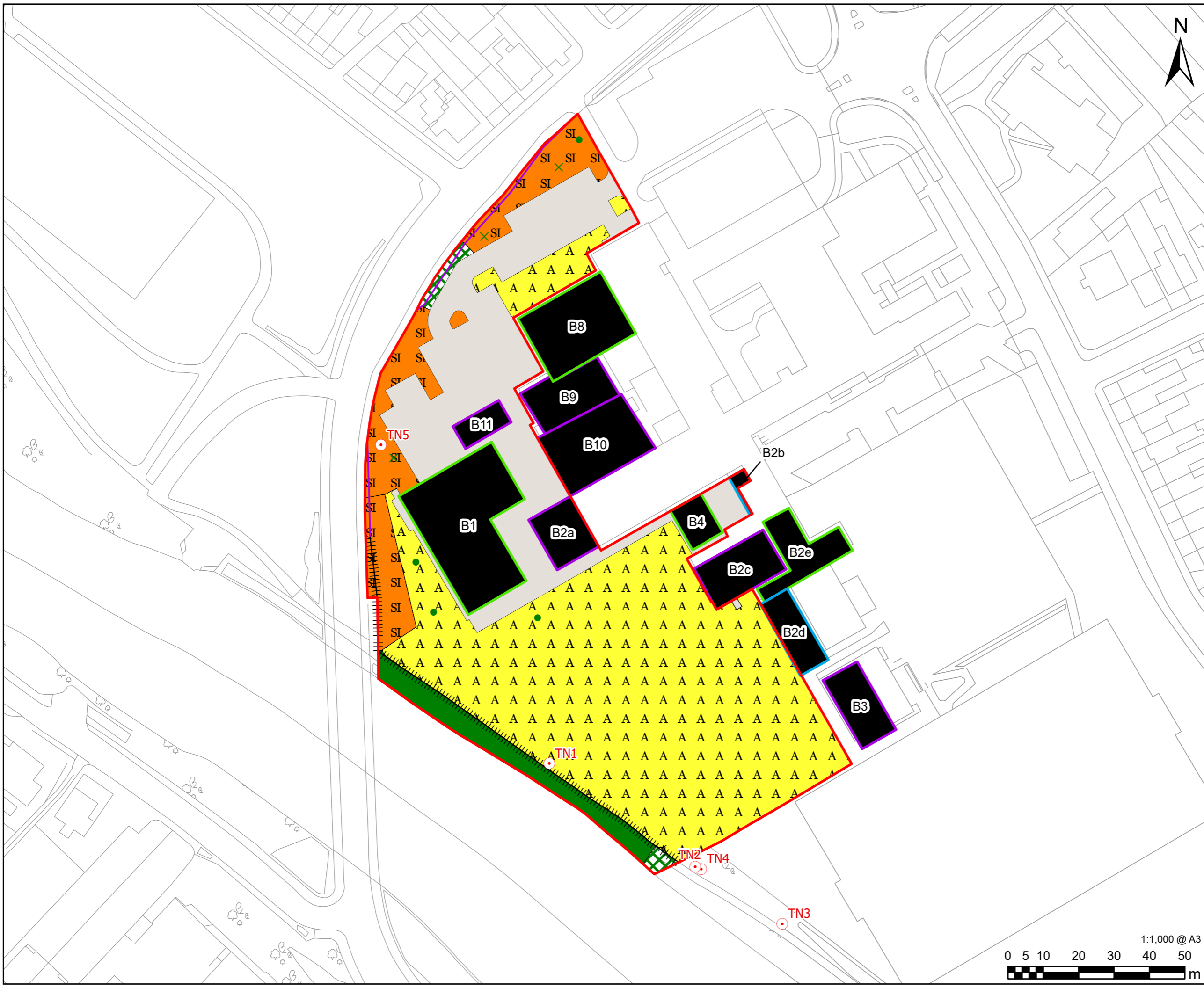
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FIGURE TITLE

Ysgol Gyfun Gymraeg Glantaf SRB:
Phase 1 Habitat Plan

FIGURE NUMBER

Figure 1



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Appendix B Bat Survey Report

Appendix C Bat Activity Survey Report

Appendix F Legislation and Planning Policy

9.1 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 the UK domestic legislation. EU legislation which applied directly or indirectly to the UK before 11.00pm 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.

9.1.1 Designated Sites

9.1.1.1 Special Protection Areas (SPA)/Special Areas of Conservation (SAC)

These sites in the UK no longer form part of the EU's Nature 2000 ecological network. The *Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019* (referred to as the 2019 Regulations) have created a national site network on land and at sea, including both the inshore and offshore marine areas in the UK. The national site network includes:

- existing SACs and SPAs; and,
- new SACs and SPAs designated under these Regulations.

Any references to Nature 2000 in the 2017 Regulations and in guidance now refers to the new national site network.

Formal Appropriate Assessment is required to be undertaken by the competent authority before undertaking, or giving consent, permission or other authorisation for any work which are likely to have a significant effect on such a site.

9.1.1.2 Wetland of International Importance (Ramsar site)

Designated under the *Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971* (the Ramsar Convention), in the UK, these sites are treated as having the same level of protection as SPAs and SACs.

9.1.1.3 Sites of Special Scientific Interest (SSSI)

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 a 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.

9.1.1.4 National Nature Reserve (NNR)

NNRs are established under the National Parks and Access to the Countryside Act 1949. Most NNRs are also underpinned by SSSIs and are therefore protected by the measures detailed above. For NNRs not underpinned by SSSIs it is still an offence to carry out or permit to be carried out any potentially damaging operation.

9.1.1.5 Local Nature Reserve (LNR)

A LNR is a statutory designation made under National Parks and Access to the Countryside Act 1949, by principal local authorities (district, borough or unitary councils).

The local authority must control the LNR land – either through ownership, a lease or an agreement with the owner.

LNRs are given protection through policies in a local development plan.

9.1.1.6 Locally Designated Sites

Local Wildlife Sites (LWSs) 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. LWSs can therefore be amongst the best sites for biodiversity.

9.1.2 Protected Species

9.1.2.1 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. 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 to:

- impair their ability to survive, breed, reproduce or rear or nurture young;
- in the case of animals of hibernating or migratory species, to hibernate or migrate; or,
- significantly affect 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 Resources Wales 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* (as amended) remain an offence under the *Wildlife and Countryside Act 1981* although a defence is available where such actions are the incidental result of lawful activity that could not reasonably be avoided.

9.1.2.2 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 vole.

When development work is proposed in or near an area which is either known to or likely to contain water vole, the developer will need to implement suitable mitigation to prevent impacts to water vole. 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 vole 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 vole now needs to be undertaken under a licence.

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

9.1.2.3 Nesting Birds

All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended), with some species afforded great 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, or in the vicinity of the nest.

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

9.1.2.4 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 Resources Wales advise¹ that where reptiles are present, they should be protected from any harm that might arise during the development works through appropriate mitigation.

9.1.2.5 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;
- 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 Resources Wales. 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 Resources Wales 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 these setts².

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

9.1.3 Species and Habitats of Principal Importance for the Conservation of Biodiversity

Section 7 of the *Environment (Wales) Act 2016* sets out the duty for public authorities to conserve biodiversity in Wales. Habitats and species of principal importance for the conservation of biodiversity are referred to in Section 7 of the *Environment (Wales) Act 2016*. The list can be found on the Natural Resources Wales website³.

The list is used as a guide for decision makers such as public bodies, including local and regional authorities, in implementing their duty under Section 7 of the *Environment (Wales) Act 2016* to have regard to the conservation of biodiversity in Wales when carrying out their normal functions.

9.1.4 Hedgerows

Under the Hedgerow Regulations 1997, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. In general, permission will be required before removing hedges that are at least 20 m in length, over 30 years old and contain certain species of plant. The local planning authority will assess the importance of the hedgerow using criteria set out in the regulations.

9.1.5 Invasive Non-Native Plant Species

Under the *Wildlife and Countryside Act 1981* (as amended), it is an offence to plant or otherwise cause species listed under Schedule 9 Part II to grow in the wild.

Species listed on Invasive Alien Species of Union concern under the *Invasive Alien Species (Enforcement and Permitting) Order 2019* are subject to restrictions and measures set out in the Regulation. These include restrictions on keeping, importing, selling, breeding, growing and releasing into the environment.

Any contaminated soil or plant material is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the *Environmental Protection Act 1990*.

¹ Reptiles: guidelines for developers, English Nature 2004

² Interpretation of 'Disturbance' in relation to badgers occupying a sett, Natural England (2009)

³ <https://www.biodiversitywales.org.uk/Section-7>

9.1.6 Environment Act 2021

Two years after it was first introduced in October 2019, the UK Government's Environment Bill received Royal Assent on 9 November 2021. The Bill was introduced to support the Government's overarching vision for leaving the environment in a better state for the next generation, including transposing elements of the UK Government's 25 Year Environment Plan into statute and confirming the UK's approach to environmental governance post-Brexit. Key provisions of what is now the Environment Act 2021 include:

- The creation of a new post-Brexit environmental watchdog (the Office for Environmental Protection).
- Establishing an over-arching scrutiny framework for the environment.
- A new "comply or explain" mandate on deforestation for UK businesses.
- A new direction for resources and waste management.
- The setting of air quality targets including for fine particulate matter.
- A requirement to reduce sewage discharges and forthcoming prohibitions of selected single-use plastic items.

This Act has now been given Royal Assent but is not yet in force at the time of writing this report.

9.2 Planning Policy

9.2.1 Planning Policy Wales, 2021

Planning Policy Wales (PPW) 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 (Natural Resources Wales (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; and,
- Protection and consideration of protected and notable species and habitats.

Sections relevant to this EclA are detailed below.

Paragraph 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. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the following aspects:

- diversity between and within ecosystems;
- the connections between and within ecosystems;
- the scale of ecosystems;
- the condition of ecosystems including their structure and functioning; and
- the adaptability of ecosystems.

Paragraph 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.

Paragraph 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.

Paragraph 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.

Paragraph 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.

Paragraph 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.

Paragraph 6.4.25 states that Planning authorities should protect trees, hedges, 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.

Paragraph 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.

Paragraph 6.4.27 states that the protection and planting of trees and hedges 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).

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

The PPW is supplemented by a series of Technical Advice Notes (TAN). 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 habitats and species of principal importance.

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.

9.2.3 Local Planning Policy

A summary of relevant local planning policies is provided in Table 9.1 below.

Table 9.1 Summary of Local Planning Policy

Document	Planning Policy	Summary of Policy Text
Cardiff Local Development Plan ⁹	KP16: Green Infrastructure	Cardiff's distinctive natural heritage provides a network of green infrastructure which will be protected, enhanced and managed to ensure the integrity and connectivity of this multi-functional green resource is maintained. Protection and conservation of natural heritage network needs to be reconciled with the benefits of development. Proposed development should therefore demonstrate how green infrastructure has been considered and integrated into the proposals. If development results in overall loss of green infrastructure, appropriate compensation will be required. Where development is permitted, planning conditions and/or obligations will be used to protect or enhance the natural heritage network. New developments should incorporate new and / or enhanced green infrastructure of an appropriate size, type and standard to ensure no fragmentation or loss of connectivity.

Where the benefits of development outweigh the conservation interest, mitigation and/or compensation measures will be required to offset adverse effects and appropriate planning obligations sought. The implementation of policies designed to provide and protect public open space throughout Cardiff would also serve to offset any increase in recreational pressure on the Cardiff Beech Woods SAC, thereby helping to avoid likely significant effect upon that site.

Management of Cardiff's green infrastructure network should be in place prior to development, and appropriate planning obligations sought.

EN6: Ecological Networks and Features of Importance for Biodiversity	Development will only be permitted if it does not cause unacceptable harm to: i. Landscape features of importance for wild flora and fauna, including wildlife corridors and 'stepping stones' which enable the dispersal and functioning of protected and notable species; ii. Networks of importance for landscape or nature conservation.
EN8: Trees, Woodlands and Hedgerows	Development will not be permitted that would cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value, or that contribute significantly to mitigating the effects of climate change. When considering developments that may affect them, regard will be given to potential short and long-term impacts. Where trees are lost, new planting will be sought that is provided with sufficient usable soil volume, aeration and irrigation to ensure healthy long-term growth.
EN11: Protection of Water Resources	Development will not be permitted that would cause unacceptable harm to the quality or quantity of underground, surface or coastal waters. Development will only be allowed where provision is made for the necessary infrastructure to protect water quality and quantity. Future development will be limited to areas where adequate water resources exist or they can be reasonably provided without adversely affecting existing abstractions, river flows, water quality, agriculture, fisheries, amenity or nature conservation and where provision coincides with the timing of development. Existing groundwater and river levels must be maintained, and water pollution must be avoided. 5.166 Natural Resources Wales is responsible for protecting
EN13: Air, noise, light pollution, and land contamination	Development will not be permitted where it would cause or result in unacceptable harm to health, local amenity, the character and quality of the countryside, or interests of nature conservation, landscape or built heritage importance because of air, noise, light pollution or the presence of unacceptable levels of land contamination.
Cardiff Biodiversity Action Plan 2008 ¹⁰	The Cardiff Local Biodiversity Action Plan (LBAP) is a material consideration in this application or planning permission. It provides the framework for habitat and species conservation in Cardiff. It is aimed at organisations, businesses, groups and individuals, which are either working to protect and enhance biodiversity in the city, or who may impact on it in some way.

Appendix G Illustrative Site Photographs and Target Notes

Photographs



Photograph 1: Amenity grassland in the south and west of the Site.



Photograph 2: Example of Japanese knotweed (red circle; Appendix A, Figure 1: TN 1) growing through southwest fence line onto the Site.



Photograph 3: Himalayan balsam growing on edge of southwest fence line (red circle; Appendix A, Figure 1: TN 4) as well as a small individual of Japanese knotweed (red arrow; Appendix A, Figure 1: TN 2).



Photograph 4: Car park and example of semi-improved neutral grassland to the north of the Site. An alder is in the foreground.



Photograph 5: Building 1 in the centre of the Site. Photo from Wardell Armstrong (2022)³.



Photograph 6: Building 2a towards the east of the Site. Photo from Wardell Armstrong (2022)³.



Photograph 7: Broadleaved woodland on river side of fence on the southwest boundary of the Site.



Photograph 8: Understorey of broadleaved woodland on river side of fence on the southwest boundary of the Site.



Photograph 9: Dense scrub on river side of fence on the southwest boundary of the Site.






Photograph 10: Dense scrub on the north boundary of the Site.



Photograph 11: Field maple in centre of Site. Example of a scattered tree.



Photograph 12: White beam in north of the Site.





			
<p>Photograph 13: Hawthorn scrub in the north of Site. Example of scattered scrub.</p>		<p>Photograph 14: Fence on southwest boundary of the Site.</p>	
			
<p>Photograph 15: Wall on north and northwest boundary of the Site.</p>			




Target Notes

Target Note Number	Description
1	One immature Japanese knotweed plant within scrub.
2	Small Japanese knotweed plant growing through fence but not within Site boundary.
3	One mature Japanese knotweed plant growing through fence but within the Site boundary.
4	Himalayan balsam saplings along fence line for approximately 4 m.
5	Semi-improved neutral grassland continuous to adjacent amenity grassland but with a different composition of species.

Appendix H Bat Roost Suitability Assessment undertaken 21 June 2023




Table I 1: Descriptions of buildings assessed for bat roost




Building*	Description	Photographs	Features identified
1	Contemporary building comprised of two sections. Main section is two storeys with the first floor constructed with red brick, and the second constructed with structural insulated panels. It has a pitched roof with a symmetrical gable end comprised of corrugated steel.	 <p>East Aspect of Building 1</p>  <p>North Aspect of Building 1</p>	No. Negligible suitability for all roost types.
2a	Two storey school building of red brick construction. The southwest elevation has metal cladding at its top. The building has a shed roof structure, and two rows of windows with concrete cladding in between/above forms the southeast elevation ³	 <p>North Aspect of Building 2a</p>	Yes. Low suitability for summer roosting. Negligible hibernation and maternity roosting.
8	Two storey school building of red brick construction. Mono pitched roof of corrugated steel construction. Glazing on all facades.	 <p>West Aspect of Building 8</p>	No. Negligible suitability for all roost types.

<p>9</p>	<p>Two storey school building of red brick construction. Mono pitched roof of corrugated steel construction. Contemporary building in good state of repair.</p>	 <p>North (left) and West (right) Aspect of Building 9</p>	<p>Yes. Low suitability for summer roosting. Negligible hibernation and maternity roosting.</p>
<p>10</p>	<p>Two storey school building of red brick construction. Mono pitched roof of corrugated steel construction.</p>	 <p>West Aspect of Building 10</p>	<p>Yes. Low suitability for summer roosting. Negligible hibernation and maternity roosting.</p>
<p>11</p>	<p>Single storey portacabin, with a flat roof.</p>	 <p>West (left) and South (right) Aspect of Building 11</p>	<p>Yes. Precautionary Low for summer roosting. Negligible hibernation and maternity roosting.</p>

* Locations on the buildings are shown in Appendix A: Figure 1.

Table H2: Descriptions of features suitable for roosting bats.

Building	Feature	Suitability	Photograph
2a	<p>Gaps approximately 30 cm long by 5 cm wide underneath the top of metal cladding. Potential void to support a few opportunistic bats in the summer.</p> <p>Metal cladding is a poor insulator, and as such would cause temperatures to fluctuate too much in the winter and breeding season. This makes the PRF unsuitable for hibernating and breeding bats. In addition, the void is unlikely to be large enough to support a maternity colony.</p>	<p>Low for summer roosting bats only.</p>	
9	<p>Gaps around piping and behind metal cladding. Potential to extend to a void behind. Space for multiple summer roosting bats, reduced to low due lighting in the area.</p> <p>Metal cladding is a poor insulator, and as such would cause temperatures to fluctuate too much in the winter and breeding season. This makes the PRF unsuitable for hibernating and breeding bats. In addition, the void is unlikely to be large enough to support a maternity colony.</p>	<p>Low for summer roosting bats only.</p>	 <p>Context shot of feature.</p>  <p>Close up of feature</p>

<p>10</p>	<p>Gap approximately 5 cm wide by 20 cm long on underside of metal soffit box adjacent to protruding brickwork. There is a void beyond gap, but depth is unknown. Likely to support a few opportunistic summer roosting bats.</p> <p>Metal is a poor insulator, and as such would cause temperatures inside the soffit box to fluctuate too much in the winter and breeding season. This makes the PRF unsuitable for hibernating and breeding bats. In addition, the void is unlikely to be large enough to support a maternity colony.</p>	<p>Low for summer roosting bats only.</p>	 <p>Context shot of feature.</p>  <p>Close up of feature</p>
<p>11</p>	<p>Flaps under roof edge/soffit lead into roof space though not possible to inspect. Due to construction type (single metal wall) and wide gap, summer roosting bats unlikely but cannot be ruled out.</p> <p>Building is unlikely to maintain a constant temperature throughout winter and the breeding season due to its thin, metal walls. This makes it unlikely to support hibernating and breeding bats.</p>	<p>Precautionary Low for summer roosting bats only.</p>	

Appendix I Proposed Landscape General Arrangement (GA) Plan

