



Cardiff County Council (CCC)

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# FITZALAN HIGH SCHOOL DEVELOPMENT

## PRELIMINARY ECOLOGICAL APPRAISAL





Cardiff County Council (CCC)

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# **FITZALAN HIGH SCHOOL DEVELOPMENT**

## **PRELIMINARY ECOLOGICAL APPRAISAL**

**TYPE OF DOCUMENT (VERSION) PUBLIC**

**PROJECT NO. 70050404**

**OUR REF. NO. PEA**

**DATE: NOVEMBER 2022**

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# QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	First Issue			
Date	November 2022			
Prepared by	Sian Davies			
Signature	 Digitally signed by Davies, Sian (UKSKD002) DN: cn=Davies, Sian (UKSKD002), ou=Active, email=sian.davies@wsp.com Date: 2022.11.03 16:26:20			
Checked by	Aaron Davies			
Signature	Digitally signed by Horup, Gabrielle (UKGKH001) DN: cn=Horup, Gabrielle (UKGKH001), ou=Active, email=Gabrielle.Horup@wsp.com Reason: I have reviewed this document pp. on behalf of A Davies Date: 2022.11.17 09:34:07			
Authorised by	Gabi Horup			
Signature	Digitally signed by Horup, Gabrielle (UKGKH001) DN: cn=Horup, Gabrielle (UKGKH001), ou=Active, email=Gabrielle.Horup@wsp.com Reason: I am approving this document Date: 2022.11.17 09:34:27			
Project number	70050404			
Report number	V1			
File reference	\\uk.wspgroup.com\central data\Projects\700504xx\70050404 - NPS CCC Band B Schools Advice\03 WIP\EC Ecology\PEA			

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# EXECUTIVE SUMMARY

Fitzalan High School is a school located at Lawrenny Avenue, Cardiff (central National Grid Reference: ST 15958 76034); hereafter referred to as the 'Site'. Cardiff County Council (CCC) is seeking to redevelop / dispose of the Site. This consists of demolishing the existing school, a proposed school replacement development and establishing a new grass rugby / sports pitch with two Multi Use Games Areas (with adjacent cycle parking area) (hereafter referred to as the 'Proposed Development').

CCC commissioned WSP UK Limited (WSP) to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Bat Roost Assessment (PBRA) of the Site. The appraisal comprised a desk study and a Site visit.

The aim of the PEA was to identify the habitat types within the Site and assess their potential to support protected and / or notable species.

The desk study returned one statutory designated site of national importance, the Cwm Cydfin, Leckwith Site of Special Scientific Interest (SSSI) with 2 km of the Site.

12 non-statutory designated sites of local importance were returned from the desk study. These included nine Sites of Importance for Nature Conservation (SINCs) within 2 km of the Site, the closest of which was Canton Common Ditch SINC located 466 m south-east of the Site. Two Regionally Important Geodiversity Sites (RIGS) were within 2 km of the Site and B-Lines were located 328 m east of the Site.

A total of 24 Ancient Woodland Inventory (AWI) woodland parcels were present within 2 km of the Site. These included 18 parcels of Ancient Semi Natural Woodland (ASNW), the nearest of which was 549 m south-west from the Site, and six parcels of Restored Ancient Woodland Site (RAWS). The closest RAWS was 1.34 km north from the Site.

The Phase 1 habitat survey results showed the Site to be dominated by buildings, hardstanding and amenity grassland habitat. Other habitats found on the Site were broadleaved semi-natural woodland, scattered scrub, semi-improved neutral grassland and improved grassland. One invasive non-native plant species (INNS) was present on the Site, which was Japanese knotweed *Reynoutria japonica*.

The PEA identified habitats that are suitable for bats, birds, hedgehog *Erinaceus europaeus*, reptiles, amphibians, invertebrates and INNS. 17 buildings were assessed as having confirmed use or being suitable to support roosting bats (assessed as low, moderate or high): Low: 5; Moderate: 7; High: 2; and Confirmed: 3.

Buildings B1, B4 and B19 were classified as having confirmed current or historic use based on evidence found during the PBRA (bat droppings) and due to records provided by a bat care organisation / anecdotal record reported by grounds staff at Fitzalan High School. DNA analysis of collected bat droppings confirmed soprano pipistrelle *Pipistrellus pygmaeus* use within B1.

For the Proposed Development to comply with relevant legislation and planning policy, the following further surveys, assessments, avoidance and mitigation measures are proposed:

Y Further bat surveys of the buildings with confirmed use or bat roost suitability on Site;



- Υ Vegetation clearance / construction works should be undertaken following a pre-works check by an Ecological Clerk of Works (ECoW) and under a Precautionary Method of Working (PMoW);
- Υ INNS found on the Site should be treated and removed by suitably certified contractors; and
- Υ Sensitive lighting should be incorporated in the Proposed Development design to avoid light spill into commuting and foraging habitats.

Enhancement recommendations are detailed at the end of this report and include the incorporation of wildflower planting within the Proposed Development and the provision of bird and bat boxes to suitable retained trees and integral within new buildings to increase the nesting / roosting opportunities on Site.

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# 1 INTRODUCTION

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## 1.1 PROJECT BACKGROUND

- 1.1.1. WSP UK Limited (hereafter referred to as 'WSP') was commissioned by Cardiff County Council (CCC) to undertake a Preliminary Ecological Appraisal (PEA) of Fitzalan High School Site at Lawrenny Avenue, Cardiff, CF11 8XB (central National Grid Reference: ST 15958 76034); hereafter referred to as the 'Site'.
- 1.1.2. It is understood that CCC is seeking to redevelop / dispose of the Site. This consists of demolishing the existing school, a proposed school replacement development, and establishing a new grass rugby / sports pitch with two Multi Use Games Areas (with adjacent cycle parking area). This will hereafter be referred to as the 'Proposed Development'.

## 1.2 ECOLOGICAL BACKGROUND

- 1.2.1. The Site comprised areas of hardstanding, amenity grassland and school buildings. There are also areas of neutral grassland, broadleaved woodland and scattered trees across the Site, mostly located on the edges of the Site. The northern, eastern and western boundaries of the Site are adjacent to residential housing and streets, and the southern boundary of the Site runs along Lawrenny Avenue.
- 1.2.2. In total, the Site is approximately 6 ha. The Site is located approximately 230 m south of a railway line and approximately 500 m north-east of the A4232 road and River Ely. South of the river and A4232 is Leckwith Woods, an extensive area of woodland which is designated as a Site of Importance for Nature Conservation (SINC).

## 1.3 SCOPE OF REPORT

- 1.3.1. CCC commissioned WSP to complete a Preliminary Ecological Appraisal (PEA) of the Site and a Preliminary Bat Roost Assessment (PBRA) of all buildings and trees on Site in June 2022. The brief was:
- Y To provide baseline ecological information about the Site and a surrounding study area with particular reference to whether legally protected and / or notable sites, species or habitats are present or likely to be present;
  - Y To provide recommendations to enable compliance with relevant nature conservation legislation and planning policy; and
  - Y If necessary, to identify the need for avoidance, mitigation, compensation or enhancement measures and / or further ecological surveys.

## 1.4 RELEVANT LEGISLATION AND POLICY

- 1.4.1. The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in Wales. The context and applicability of each item is explained as appropriate in the relevant sections of the report and additional details are presented in Appendix A.

## Legislation

- Υ The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (Habitat Regulations);
- Υ The Wildlife and Countryside Act 1981 (as amended) (WCA);
- Υ Countryside Rights of Way Act 2000;
- Υ The Town and Countryside (Environmental Impact Assessment) (Wales) Regulations 2017;
- Υ The Protection of Badgers Act 1992 (PBA);
- Υ The Wild Mammals (Protection) Act 1996;
- Υ Environment (Wales) Act 2016; and
- Υ The Wellbeing of Future Generations (Wales) Act 2015.

## Policy

- Υ The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012);
- Υ UK Biodiversity Action Plan (UKBAP)<sup>1</sup>;
- Υ Planning Policy Wales (PPW) (Edition 11) 2021;
- Υ Technical Advice Note 5; Nature Conservation and Planning 2009; and
- Υ Cardiff Local Biodiversity Action Plan (LBAP).

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<sup>1</sup> The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

## 2 METHODS

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### 2.1 OVERVIEW

- 2.1.1. This appraisal has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017a, 2017b and 2018), and Joint Nature Conservation Committee (JNCC, 2016); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute, 2013).
- 2.1.2. This PEA is based on the following data sources:
- Υ An ecological desk study;
  - Υ A habitat survey; and
  - Υ A protected / notable species assessment.
- 2.1.3. A PBRA of all trees and buildings on the Site was undertaken during the PEA to inform any further survey requirements for bats.

### 2.2 DESK STUDY

- 2.2.1. The desk study was undertaken in June 2022 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. For the purpose of the desk study exercise, records were collated within various radii around the Site. This approach is consistent with current good practice guidance published by the CIEEM (CIEEM, 2017a and 2017b). To provide the baseline data for the ecological desk study, the following information was requested from South East Wales Biodiversity Records Centre:
- Υ Records of legally protected and notable species, including bat records within 2 km of the Site;
  - Υ Records of statutory sites designated for conservation value within 2 km of the Site; and
  - Υ Records of non-statutory sites designated for nature conservation value, Priority Habitats and Natural Resources Wales (NRW) Priority Areas (including Ancient Woodlands) within 2 km of the Site.
- 2.2.2. Open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 500m of the Site.
- 2.2.3. The findings of the desk study have been incorporated within Section 3 and Appendix B of this report and are shown on Figure 2 and Figure 3.
- 2.2.4. The desk study was carried out by an ecologist who is a student member of CIEEM, with support from a suitably experienced ecologist who has completed numerous desk studies.

### 2.3 HABITAT SURVEY

- 2.3.1. A Phase 1 habitat survey of the Site was carried out on the 15th September 2022. The survey covered the entire Site including boundary features.
- 2.3.2. The Phase 1 habitat survey was carried out by two ecologists with experience of carrying out habitat surveys of sites containing similar habitat types.

- 2.3.3. Habitats were described and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2016). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The dominant plant species are recorded and habitats are classified according to their vegetation types. Where appropriate consideration was given to whether habitats qualify, or could qualify, as Priority Habitats following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2016).
- 2.3.4. A list of plant species was compiled (Appendix C), with relative plant species abundance estimated using the DAFOR scale<sup>2</sup>. The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019) and are also listed in Appendix C.
- 2.3.5. Habitats were marked on a mobile mapping computer and were subsequently digitised using a Geographical Information System (GIS).
- 2.3.6. Target notes were made to provide information on specific features of ecological interest (e.g. a badger *Meles meles* sett) or habitat features too small to be mapped. These are included in Appendix D.
- 2.3.7. Any invasive non-native plant species (INNS) listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the Phase 1 habitat survey were also target noted. Detailed mapping of such species; or a full survey of the Site for all invasive plant species is beyond the scope of this commission.
- 2.3.8. Data collected as part of this Phase 1 Habitat survey is suitable for use in retrospective biodiversity unit calculations, if required.

## **2.4 PRELIMINARY GROUND LEVEL ROOST ASSESSMENT OF TREES AND BUILDINGS FOR BATS**

- 2.4.1. As part of the PEA, all trees and buildings within the Site were inspected from the ground to enable an assessment of their suitability for supporting bat roosts.
- 2.4.2. A visual inspection of trees and buildings was completed to search for features which may provide potential roosting opportunities for bats. Where suitable features were noted, their location and a brief description of the character was recorded. Additionally, where possible, features were visually inspected for evidence indicating use by roosting bats such as droppings, urine staining, noises and odours from bats and staining around a hole that may be caused by the natural oils in bat fur.
- 2.4.3. Trees and buildings were categorised in line with the descriptions in Table 2-1 (adapted from Collins, 2016). Assessments were recommended if it was determined that the trees and structures which may support roosting bats may be impacted upon by the Proposed Development. Trees and buildings were considered as requiring assessment / further surveys if they were considered to have suitability to support roosting bats, and within the construction footprint or a distance where they may suffer disturbance from lighting, vibration or noise, or likely to support a roost of high conservation status that may be impacted by the severing of commuting routes from the roost, and lighting, noise, vibration impacts (Zone of Influence of the Proposed Development).

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<sup>2</sup> The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

**Table 2-1 - Bat Roosting Suitability Categorisation**

Category	Description
High	A building or tree with one or more potential roost sites that are suitable for supporting large roosts on a regular basis/for longer periods of time because of their size, shelter, protection, conditions and suitable surrounding habitat.
Moderate	A building or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
Low	A building with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable habitat to be used on a regular basis or by larger numbers of bats.  A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features that only offer limited roosting opportunities.
Negligible	Building or tree with no potential opportunities for roosting bats, or very few or minor features in an isolated/unsuitable location such that the presence of a roost is considered highly improbable. e.g. isolated from suitable foraging or commuting habitats.

## 2.5 PROTECTED SPECIES ASSESSMENT

- 2.5.1. The potential for the Site to support legally protected and notable species was assessed using the desk study results and combined with field observations during the habitat survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: birds (Gilbert et al, 1998 and Bibby et al, 2000); reptiles (Froglife, 1999 and Gent and Gibson, 2003); bats (Collins, 2016 and Mitchell-Jones, 2004); badger (Harris et al, 1991 and Roper, 2010); otter *Lutra lutra* (Chanin, 2003) and invertebrates (Drake et al, 2007 and Kirby, P, 2001).

## 2.6 NOTES AND LIMITATIONS

- 2.6.1. Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:
- Y Ecological survey data is typically valid for two years unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes or anticipated changes in management.
  - Y Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
  - Y The Phase 1 Habitat survey was carried out over the period of a single day, as such only a selection of all species that occur within the Site will have been recorded. However, through use of desk study information to supplement the Site survey data, it is considered that an accurate assessment of the potential for the Site to support protected species or those of conservation concern was possible.



Y The extended Phase 1 habitat map (Figure 4) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.

### 3 RESULTS

#### 3.1 DESIGNATED SITES

##### STATUTORY SITES

3.1.1. The desk study identified one statutory nature conservation site within 2 km of the centre of the Site. A description of the national statutory site is detailed in Table 3-1 below and shown in Figure 2.

**Table 3-1 - Statutory Designated Site of National Importance**

Site Name	Designation	Size (ha)	Approximate Distance and orientation from Site	Description
Cwm Cydfin, Leckwith	Sites of Special Scientific Interest (SSSI)	5.5	1.98 km south	Mixed deciduous woodland adjacent to the 'saltings' of the River Ely in a valley overlying Triassic and Rhaetic rocks which are locally exposed in cliffs beside a tidal creek. Tree species include pedunculate oak <i>Quercus robur</i> , ash <i>Fraxinus excelsior</i> , elm <i>Ulmus</i> sp., field maple <i>Acer campestre</i> and hazel <i>Corylus avellana</i> . The mixed woodland has varied and rich ground flora, especially along streams.  This SSSI is set within a larger complex of woodlands in the area which adds value to this site.

##### NON-STATUTORY SITES

3.1.2. The desk study identified 12 non-statutory nature conservation sites within 2 km of the centre of the Site. A description of these sites is detailed in Table 3-2 below and shown in Figure 3.

**Table 3-2 - Non-statutory Designated Sites**

Site Name	Designation	Size (ha)	Distance and Orientation from Site	Description
Leckwith Woods Viaduct	Adopted Sites of Importance for Nature Conservation (SINC)	0.25	491 m south-west	Leckwith Woods Viaduct provides undisturbed and stable environmental conditions ideal for roosting lesser horseshoe bat <i>Rhinolophus hipposideros</i> . The viaduct is adjacent to Leckwith Woods which provides potential foraging opportunities for bats.

Site Name	Designation	Size (ha)	Distance and Orientation from Site	Description
Canton Common Ditch	Adopted SINC	0.76	466 m south-east	Canton Common Ditch is a remnant of the Canton Common Marshlands. The SINC supports varied emergent and bankside vegetation including flowering rush <i>Butomus umbellatus</i> and purple loosestrife <i>Lythrum salicaria</i> . The site also supports amphibian species and water shrew <i>Neomys fodiens</i> .
West Hill Wood	Adopted SINC	Exact SINC size not available	1.37 km south-west	West Hill Wood is semi-natural broadleaved woodland. The site is dominated by mostly mature (and some veteran) ash trees <i>Fraxinus excelsior</i> and hazel <i>Corylus avellana</i> coppice.
Factory Wood	Adopted SINC	Exact SINC size not available	900 m south	Factory Wood is dry calcareous woodland occupying steep slopes and stream valleys below Leckwith.
Leckwith Pond & Marsh	Adopted SINC	2.06	1.70 km south	Leckwith Pond & Marsh is a former saline pond for storm water facility. The Leckwith Pond & Marsh is now dominated by reeds.
River Taff	Adopted SINC	90.44	1.77 km north-east	The River Taff is important for migratory fish species, otter <i>Lutra lutra</i> , wildfowl and bankside vegetation and acts as a major wildlife corridor.
Blackweir & Dock Feeder	Adopted SINC	17.73	1.89 km north-east	The Blackweir & Dock Feeder SINC supports Schedule 1 (WCA 1981 (as amended)) species like kingfisher <i>Alcedo atthis</i> . The SINC also supports waterfowl and invertebrate species like banded demoiselle damselflies <i>Calopteryx splendens</i> .
River Ely	Adopted SINC	34.99	520 m south-west	The River Ely is a prime wildlife corridor and supports key species including otter, kingfisher, dipper <i>Cinclus cinclus</i> and grey wagtail <i>Motacilla cinerea</i> .



Site Name	Designation	Size (ha)	Distance and Orientation from Site	Description
Leckwith Woods	Adopted SINC	Exact SINC size not available	450 m south-west	Leckwith Woods is an extensive area of woodland. The SINC contains areas of Ancient Semi Natural Woodland (ASNW) and semi natural woodland / plantation on ancient woodland site.
Western Avenue	Regionally Important Geodiversity Site (RIGS)	N/A	1.80 km north	Road cutting about 2.5m high exposing coarse red Triassic conglomerates containing many Pembroke Limestone Group limestone pebbles. These are exposed on both sides of the road but are most extensive on the north side.
Ely Brick Works	RIGS	N/A	1.54 km south-west	This site is the best inland site in the district where the Blue Anchor Formation of the Mercia Mudstone Group can be studied. The base and top contacts of the formation are present in the cliff sections
B-Lines <sup>3</sup>	B-Lines	494 (intersection area)	328 m east	B-Lines are locally important insect pollinator dispersal pathways between areas of existing wildflower-rich habitat.

## OTHER HABITATS OF CONSERVATION IMPORTANCE

- 3.1.3. The desk study identified 24 parcels of Ancient Woodland Inventory (AWI) within 2 km of the Site. These included 18 parcels of Ancient Semi Natural Woodland (ASNW) and six parcels of Restored Ancient Woodland Site (RAWS). The nearest ASNW is 549 m south-west of the Site and the nearest RAWS is 1.34 km north of the Site (Figure 3).

<sup>3</sup> B-Lines have been mapped by Buglife to address the problem of the loss of flowers and pollinators. The B-Lines are a series of 'insect pathways' running through our countryside and towns, along which Buglife are restoring and creating a series of wildflower-rich habitat stepping-stones <https://www.buglife.org.uk/our-work/b-lines/b-lines-wales/> [Accessed 29/09/22].

## 3.2 HABITAT SURVEY

### OVERVIEW

- 3.2.1. The following account summarises the findings of the Phase 1 habitat survey. Seven Phase 1 habitat types were identified in the Site. They are mapped on Figure 4 and are listed in Table 3-3 along with areas in hectares. A description of the dominant and notable species, the composition and management of each habitat is provided below and an indicative species list is provided in Appendix C. Target notes are mapped on Figure 4 and are provided in Appendix D with photographs in Appendix E. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2016). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

**Table 3-3 - Site Phase 1 habitat Areas**

Phase 1 Habitat	Area (ha)	% of Site Area
A1.1.1 Broadleaved woodland – semi-natural	0.05	0.87
A2.2 Scrub - scattered	0.03	0.52
A3.1 Broadleaved Parkland/scattered trees	N/A	N/A
B2.2 Neutral grassland – semi-improved	0.18	3.11
B4 Improved grassland	0.03	0.52
Hardstanding	2.01	34.78
J1.2 Amenity grassland	2.06	35.64
J3.6 Buildings	1.42	24.57
TOTAL	5.78	100

- 3.2.2. The Site was dominated by hardstanding habitat and school buildings. There were scattered broadleaved trees across the Site with denser line of trees present along the eastern and southern boundaries of the Site. Areas of neutral and amenity grassland were found across the Site and a small area of scattered scrub was located in the north of the Site.

#### A1.1.1 BROADLEAVED WOODLAND – SEMI-NATURAL

- 3.2.3. Adjacent to amenity grassland in the south-west part of the Site there was a small area of broadleaved semi-natural woodland. This area of woodland contained a dense mixture of broadleaved trees including ash *Fraxinus excelsior*, pedunculate oak *Quercus robur*, sycamore *Acer pseudoplatanus* and birch *Betula* sp. The broadleaved woodland understory vegetation included frequent ivy *Hedera helix* and occasional bramble *Rubus fruticosus* agg.

## A2.2 SCRUB – SCATTERED

- 3.2.4. In the north-west of the Site there was a small parcel of scattered scrub. This parcel contained abundant butterfly-bush *Buddleja davidii* and bramble. Frequent hawthorn *Crataegus monogyna* was also present.

## A3.1 BROADLEAVED PARKLAND / SCATTERED TREES

- 3.2.5. Broadleaved trees were found across the Site, these were similar species to those found in the broadleaved semi-natural woodland located in the south-west part of the Site including ash, pedunculate oak and sycamore. The scattered trees were found in denser patches towards the boundaries of the Site, especially along the east and south boundaries.

## B2.2 NEUTRAL GRASSLAND – SEMI-IMPROVED

- 3.2.6. In the western part of the Site there was a section of semi-improved neutral grassland. The grassland was not extensively mown, and the sward height was taller than that of the amenity grassland found throughout the rest of the Site. This habitat also contained dominant perennial ryegrass *Lolium perenne*, abundant white clover *Trifolium repens* and abundant ribwort plantain *Plantago lanceolata* with frequent dandelion *Taraxacum officinale* agg. and rough hawkbit *Leontodon hispidus*. Japanese knotweed *Reynoutria japonica*, an INNS listed on Schedule 9 of the WCA 1981 (as amended) was found on the boundary of this habitat.

## B4 IMPROVED GRASSLAND

- 3.2.7. In the western part of the Site there was a small section of improved grassland found between areas of semi-improved neutral grassland and amenity grassland. This was dominated by perennial ryegrass of tall sward height.

## HARDSTANDING

- 3.2.8. The Site was dominated by large areas of hardstanding. There were several car parks located in the north and south of the Site. There were also multiple footpaths, pavements and school yards. There was no vegetation associated with the hardstanding habitat found across the Site and the habitat is considered to be of low ecological value. Therefore, the hardstanding is considered unsuitable to support protected and / or notable species.

## J1.2 AMENITY GRASSLAND

- 3.2.9. Areas of amenity grassland were found throughout the Site. The amenity grassland was dominated by perennial ryegrass and Yorkshire-fog *Holcus lanatus*. Other abundant species observed included creeping buttercup *Ranunculus repens*, daisy *Bellis perennis*, dandelion, rough hawkbit, selfheal *Prunella vulgaris* and white clover. Frequent greater plantain *Plantago major*, red clover *Trifolium pratense* and ribwort plantain were also observed. There was a small patch of planted willow *Salix* sp. in the amenity grassland in the south-west of the Site. The amenity grassland across the Site was managed, with signs of regular mowing and short sward height across the Site.

## BUILDINGS

- 3.2.10. There were 26 buildings identified across the Site, most of which were found in the western and southern areas of the Site. The exact locations of buildings are mapped in Figure 5.

### 3.3 PRELIMINARY GROUND LEVEL ROOST ASSESSMENT OF TREES AND BUILDINGS FOR BATS

- 3.3.1. During the PBRA, no trees on the Site were assessed as providing suitable roosting habitat for bats.
- 3.3.2. In total, there were 26 buildings identified across the Site. Of which 17 buildings were assessed as having confirmed use or being suitable to support roosting bats (assessed as low, moderate or high):
  - Y Negligible: 9
  - Y Low: 5
  - Y Moderate: 7
  - Y High: 2
  - Y Confirmed: 3
- 3.3.3. Buildings were classified as having confirmed use based on evidence found during the PBRA (e.g. bat droppings) and due to records provided by a bat care organisation / anecdotal record reported by grounds staff at Fitzalan High School.
- 3.3.4. Bat droppings were found on the north and south walls of B1. DNA analysis of the collected bat droppings confirmed soprano pipistrelle *Pipistrellus pygmaeus* use within B1 (WSP, 2022).
- 3.3.5. Buildings B4 and B19 were also classified as having confirmed current or historic use. There was a historic bat roost on the north-west aspect of B4 and unidentified bats were collected from the inside of the building in the stairwell. In addition, in September 2021, an unidentified bat was found within B19, the swimming pool building at the Site.
- 3.3.6. A variety of Potential Roosting Features (PRFs) and access / egress points were recorded during the assessment of the buildings.
- 3.3.7. Full details of the PBRA are included in Table 3-4 below and photographs of the buildings and PRFs are included in Appendix E (Table E-2). The location and suitability of buildings is mapped on Figure 5.

**Table 3-4 - Building Inspection Results**

Building Number	Description	Features with Potential to Support Roosting Bats	Evidence of Roosting Bats	Overall Bat Roost Suitability
B1	New, pitched, brick outbuilding with concrete flat tile with uncluttered drop zone and little disturbance.	Two PRFs – fascia cover was lifted on north and south walls.	Droppings were present on both north and south walls below lifted fascia cover (see photograph 2 in Table E-2, Appendix E).	Confirmed
B2	L shaped building (only the west and north aspects were accessible).	Six PRFs – there were holes in cladding and beneath the batons holding cladding. There was	None recorded	High

Building Number	Description	Features with Potential to Support Roosting Bats	Evidence of Roosting Bats	Overall Bat Roost Suitability
		corrugated roof with possible ingress.		
B3	Flat roofed building (could only see limited aspects).	PRF – there was a gap between roof and wall.	None recorded	Moderate
B4	Large building with a pitched, corrugated roof.	PRFs – there was lifted flashing in several places on western aspect (this was not fully visible during the PBRA).	Historic bat roost on north-west aspect and bats collected from inside building (stairwell).	Confirmed
B5	Building with flat and sloped roof.	Three PRFs – there were several small areas of lifted flashing.	None recorded	Moderate
B6	Large building with a pitched roof.	Three PRFs – there were several areas of lifted flashing along the roofline of B6.	None recorded	High
B7	Square, four storey building with a flat roof.	PRF1 – lifted flashing. PRF2 – lifted flashing.	None recorded	Moderate
B8	Square brick and pebbledash building.	PRF1 – lifted flashing / barge board. PRF2 – lifted flashing / barge board.	None recorded	Moderate
B9	Modern outbuilding with wood panelling.	None recorded.	None recorded	Negligible
B10	Garage building with a flat roof.	PRF1 – There was a possible entrance to the garage building via a gap at the top of the door.	None recorded	Low
B11	Prefabricated building.	None recorded.	None recorded	Negligible
B12	Prefabricated building.	None recorded.	None recorded	Negligible
B13	Prefabricated building.	None recorded.	None recorded	Negligible
B14	Prefabricated building.	None recorded.	None recorded	Negligible
B15	Building with a flat roof. however relatively open	Two PRFs – there were areas of missing cladding on the underside of a porch on B15 (relatively open).	None recorded	Low

Building Number	Description	Features with Potential to Support Roosting Bats	Evidence of Roosting Bats	Overall Bat Roost Suitability
B16	Long, three storey building with a flat roof and an extension on the eastern end of the building.	<p>PRF1 – there was lifted metal flashing on both gable ends of B16.</p> <p>PRF2 – there was a small area of lifted flashing by one of the doorways to B16. The doorway was located on the south side of B16.</p> <p>PRF3 – the cladding that surrounded the B16 extension was lifted in several places.</p>	None recorded	Moderate
B17	Prefabricated building.	None recorded.	None recorded	Negligible
B18	Large, corrugated sports hall with flat roof building to the north.	Three PRFs – there were gaps (approximately 2 cm wide) in the metal cladding on the corners of the B18. The gaps were located on the NE and NW corners of B18.	None recorded	Low
B19	Swimming pool - Large complex structure with numerous pitched and flat roofs.	PRFs – lifted roof felt and cladding on all aspects.	Historic record of bat flying in swimming pool area likely accessed through roof and then down to building internals via lifted tile.	Confirmed
B20	Large L-shaped building with metal cladding.	Two PRFs – metal cladding was lifted in several areas.	None recorded	Moderate
B21	Old, large building with corrugated roof	PRF1 – access areas around the metal end cap.	None recorded	Low
B22	Building with sections of flat and sloped roof.	None recorded	None recorded	Negligible
B23	Building with a mixed roof and tower with scaffolding.	PRF1 – brick missing on north-west aspect of the building (unable to see the tower during the PBRA as it was obstructed by scaffolding).	None recorded	Low
B24	Detached brick building with a flat roof garage. gap above garage door	<p>PRF1 – gap above the garage door</p> <p>PRF2 – lifted tile on the south-west corner of the building</p>	None recorded	Moderate

Building Number	Description	Features with Potential to Support Roosting Bats	Evidence of Roosting Bats	Overall Bat Roost Suitability
B25	Modern outbuilding.	None recorded	None recorded	Negligible
B26	Square brick building with a flat roof.	None recorded	None recorded	Negligible

### 3.4 PROTECTED AND NOTABLE SPECIES ASSESSMENT

3.4.1. The potential for the Site to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the Site. A summary of desk study information is included within Appendix B. Desk study records have only been considered below if they are recent (from the last 10 years) and / or if they relate to species that may be supported by habitats at the Site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the Site:

- Y Bats;
- Y Badger;
- Y Birds;
- Y Hedgehog *Erinaceus europaeus*;
- Y Otter;
- Y Reptiles;
- Y Amphibians;
- Y Invertebrates; and
- Y INNS

3.4.2. The Site does not provide suitable habitat for other protected or notable species and other species, beyond those listed above, will not be considered further in this PEA.

#### BATS

3.4.3. 17 records of bat roosts were provided within 2 km of the Site from within the last 10 years. The closest record was of an adult common pipistrelle bat *Pipistrellus pipistrellus*, recorded in March 2019, which was found within one of the buildings (unspecified) at the Site. In addition, in September 2021, an unidentified bat was found within the swimming pool building at the Site (B19). There was also a historic record of a bat roost on the north-west aspect of B4 and bats collected from inside the B4 stairwell.

3.4.4. The next nearest roost record was of a soprano pipistrelle bat roost, 250 m east of the Site. Other roost records were for lesser horseshoe bats *Rhinolophus hipposideros* (closest roost – 615 m from the Site), common pipistrelle (closest roost – 654 m from the Site), and brown long-eared bat *Plecotus auritus* roost (closest roost – 1319 m from the Site).

3.4.5. A further 182 activity records of foraging or commuting bats were also returned, comprising nine species of bat: common pipistrelle, soprano pipistrelle, noctule *Nyctalus noctula*, serotine *Eptesicus*



*serotinus*, Leisler's bat *Nyctalus leisleri*, lesser horseshoe, Daubenton's bat *Myotis daubentonii*, brown long-eared bat, and Nathusius' pipistrelle *Pipistrellus nathusii*.

- 3.4.6. The Site provides suitable habitat for foraging and commuting bats in the form of scrub and scattered broadleaved trees particularly along the boundaries of the Site where there are more scattered trees.
- 3.4.7. None of the trees on Site were assessed as providing suitable roosting habitat for bats, but school buildings on the Site were assessed as providing suitable roosting habitat for bats. A total of 26 buildings were identified on the Site during the PEA, of which 17 buildings were assessed as having confirmed use or being suitable to support roosting bats (assessed as low, moderate or high).

### **BADGER**

- 3.4.8. Two records of badger were returned during the desk study, the closest of which was 1.03 km west of the Site.
- 3.4.9. No signs or evidence of badger were identified during the PEA. The scrub and grassland habitats present within the Site could provide suitable commuting habitat for badger. However, badger sett building, and foraging opportunities would likely be limited due to the Site being dominated by hardstanding habitat.
- 3.4.10. Therefore, badger is not considered further in this report.

### **BIRDS**

- 3.4.11. In total the desk study identified 1773 records of 72 species of birds within 2 km of the Site.
- 3.4.12. The desk study returned records of 15 species of bird listed on Schedule 1 of the WCA 1981 (as amended). A full list of the Schedule 1 birds returned from the desk study is in Appendix B. It was considered that the Site is unlikely to support nesting suitability for Schedule 1 birds found within the local area (based on bird data in The Birds of Wales (Pritchard et al, 2021).
- 3.4.13. Of the 72 bird species, 16 species of bird are listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016. These include black-headed gull *Chroicocephalus ridibundus*, dunnock *Prunella modularis*, European herring gull *Larus argentatus*, song thrush *Turdus philomelos* and starling *Sturnus vulgaris*. This is not exhaustive, a full list of the Section 7 birds returned from the desk study is in Appendix B (Table B-3).
- 3.4.14. The habitats and buildings on Site were considered suitable for common and widespread breeding birds. During the Phase 1 habitat survey, evidence of nesting house sparrows *Passer domesticus* was noted within one of the school buildings. There was lifted flashing on building 5 (B5) and nesting material was found inside (TN2).

### **HEDGEHOG**

- 3.4.15. 73 records of hedgehog were returned during the desk study. One of these records was within the Site (126 m from the desk study centroid) and there were two other hedgehog records within 200 m east of the Site in the adjacent residential area.
- 3.4.16. The Site provides suitable habitat for foraging and commuting hedgehog, in addition to suitable habitat for resting locations and nesting sites.



## OTTER

- 3.4.17. 27 records of otter were returned during the desk study, the closest of which was 527 m from the Site. This record was located on the River Ely.
- 3.4.18. The Site does not contain suitable habitat for otter and there is no connectivity of suitable habitats for otter between the record locations and the Site. Therefore, otter is not considered further in this report.

## REPTILES

- 3.4.19. The desk study identified 74 records of reptiles within 2 km of the Site. These records comprised three species which were slow worm *Anguis fragilis*, common lizard *Zootoca vivipara* and grass snake *Natrix Helvetica*.
- 3.4.20. The closest reptile record was of a common lizard which was 196 m south of the Site.
- 3.4.21. Areas of scrub, grassland and woodland on the Site may provide habitat for supporting reptiles. However, it is considered that suitable habitat for reptiles is very limited as the majority of the Site is hardstanding and short sward amenity grassland.

## AMPHIBIANS

- 3.4.22. The desk study identified one record of common toad *Bufo bufo* and three records of palmate newt *Lissotriton helveticus* within 2 km of the Site.
- 3.4.23. The closest records were of palmate newts which were 1.2 km north-east of the Site.
- 3.4.24. Suitable terrestrial habitat for supporting amphibians is present within the Site, but it is considered very limited.
- 3.4.25. A search for waterbodies within 500 m of the Site returned the Canton Common Ditch SINC, which is located 466 m south-east of the Site. The Canton Common Ditch waterbody is considered suitable to support amphibians. However, there is very limited connectivity between Canton Common Ditch and the Site, as there are residential properties and roads that separate them.

## INVERTEBRATES

- 3.4.26. In total the desk study identified 629 records of 67 species of invertebrates within 2 km of the Site.
- 3.4.27. The desk study identified 35 invertebrate species within 2 km of the Site that are listed on Section 7 of the Environment (Wales) Act 2016. These included August thorn moth *Ennomos quercinaria* brindled beauty moth *Lycia hirtaria*, buff ermine moth *Spilosoma lutea* and knot grass moth *Acrionicta rumicis*. This is not exhaustive, a full list of the Section 7 invertebrates returned from the desk study is in Appendix B (Table B-6).
- 3.4.28. No invertebrate species listed on Section 7 of the Environment (Wales) Act 2016 were recorded within 500 m of the Site. The closest record of a Section 7 species was for a grey dagger *Acrionicta psi* recorded 627 m north-east of the Site (within B-Lines).
- 3.4.29. Three species of invertebrate returned from the desk study were also listed of Schedule 5 of the WCA 1981 (as amended) which protects these animals from killing and taking, possession, disturbance and sale. These invertebrate species were the marsh fritillary *Euphydryas aurinia*, the stag beetle *Lucanus cervus* and the white-letter hairstreak *Satyrrium w-album*. However, these were all over 1.8 km from the Site.

- 3.4.30. Areas of scrub, grassland and woodland present on the Site were considered suitable to support mainly common invertebrate species due to the common and widespread habitats present.

### **INVASIVE NON-NATIVE PLANT SPECIES**

- 3.4.31. Certain plant species are listed on Schedule 9 of the WCA 1981 (as amended). It is an offence to plant or otherwise cause these species to grow in the wild.
- 3.4.32. 18 INNS were returned from the desk study. These included eight species listed on Schedule 9 of the WCA 1981 (as amended): cotoneaster species *Cotoneaster* sp., Indian balsam *Impatiens glandulifera*, Japanese knotweed, Japanese rose *Rosa rugosa*, montbretia *Crocasmia x crocosmiiflora* (*C. aurea x pottsii*), rhododendron *Rhododendron ponticum*, three-cornered garlic *Allium triquetrum* and a yellow archangel *Lamiastrum galeobdolon* ssp. *Montanum*.
- 3.4.33. During the Phase 1 habitat survey one INNS was recorded which was Japanese knotweed. The stand of Japanese knotweed (TN1) was found on the western boundary of the Site on the edges of an area of semi-improved neutral grassland.
- 3.4.34. It should be noted that an exhaustive INNS survey was beyond the scope of this assessment, and therefore INNS may be more widespread across the Site and additional species present, but undetected.

## 4 DISCUSSION AND RECOMMENDATIONS

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- 4.1.1. This section considers the potential for effects on designated sites, legally protected species, notable species and notable habitats as a consequence of the Proposed Development. Where further surveys or detailed assessment of potential effects are required in order to design suitable mitigation this is identified.

### 4.2 STATUTORY DESIGNATED SITES

- 4.2.1. SSSIs are subject to strict protection under the WCA 1981 (as amended). This requires landowners to maintain these sites in favourable condition and works within these sites are managed by the appropriate national statutory body via the consent process. Certain operations within SSSIs require consent; these are specific to each SSSI. Cwm Cydfin, Leckwith SSSI is 1.98 km south of the Site and designated as a mixed deciduous woodland, with additional value as it is part of a larger complex of woodlands in the area.
- 4.2.2. The Proposed Development does not lie within the Cwm Cydfin, Leckwith SSSI and is unlikely to affect the SSSI via other pathways (e.g. water or air pollution).
- 4.2.3. The Cwm Cydfin, Leckwith SSSI is therefore not considered further in this report.

### 4.3 NON-STATUTORY DESIGNATED SITES

- 4.3.1. There were 12 non-statutory designated sites within 2 km of the Site: nine SINC sites, two RIGS and B-Lines.
- 4.3.2. B-Lines are present 328 m east of the Site, as such the Proposed Development should aim to deliver features which would contribute to the aims of B-Lines.
- 4.3.3. As both RIGS are over 1 km from the Site and the Proposed Development is localised in nature, it is not considered that these will be impacted by the Proposed Development either directly or through other pathways. Therefore, RIGS are not considered further in this report.
- 4.3.4. There were nine SINC sites with 2 km of the Site, several of these including Leckwith Woods Viaduct SINC, Canton Common Ditch SINC and Leckwith Woods SINC are within 500 m of the Site.
- 4.3.5. Since the Proposed Development does not lie within any of the SINC sites and is unlikely to affect the sites via other pathways (e.g. water or air pollution), no negative impacts are envisaged for any of the SINC sites. SINC sites are therefore not considered further in this report.

### 4.4 OTHER HABITATS OF CONSERVATION IMPORTANCE

- 4.4.1. The desk study identified 24 AWI woodland parcels, these include 18 ASNW parcels and six RAWs. The nearest woodland parcel to the Site was located 549 m south-west of the Site. Due to the localised nature of the Proposed Development and the lack of pathway for impacts, it is considered that the Proposed Development would not impact upon any of the AWI woodland parcels.

### 4.5 HABITATS

- 4.5.1. All habitats identified during the Phase 1 habitat survey are considered to be of low ecological value but when considered together could offer greater value for biodiversity.

- 4.5.2. Impacts upon these habitats arising from the Proposed Development are unlikely to lead to significant detrimental effects on biodiversity.

## 4.6 PROTECTED AND NOTABLE SPECIES

- 4.6.1. The results of the desk study, Phase 1 habitat Survey and protected species assessment highlighted the potential presence of several protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include bats, birds, hedgehog and INNS. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey and/ or mitigation measures is identified.

### BATS

- 4.6.2. All species of bats recorded within the UK are protected from killing, injury and disturbance<sup>4</sup> and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by NRW for certain purposes.
- 4.6.3. Certain species of bats, including the Bechstein's bat *Myotis bechsteini*, greater horseshoe bat *Rhinolophus ferrumequinum*, lesser horseshoe bat, noctule bat, brown long-eared bat and soprano pipistrelle bat are also listed as Priority Species within Section 7 of the Environment (Wales) Act 2016. Section 7 obliges public bodies (including Local Planning Authorities LPAs) to have regard for the conservation of biodiversity (including Priority Species) when discharging their duties (including determining planning applications).
- 4.6.4. The Proposed Development could result in the disturbance or destruction of bat roosts if affecting buildings with suitable roosting features. Therefore, further surveys are recommended to assess presence or likely absence of bats within the buildings on Site. These bat surveys will be completed during the 2022 season and details of these surveys, results and subsequent recommendations will be included within a separate bat report (WSP, 2022). Details of survey requirements are included in Table 4-1.
- 4.6.5. It is recommended that if lighting is required as part of the Proposed Development, then it should be directed away from any of the structures and retained habitats, and night-time works should not be carried out where possible. Sensitive lighting should be incorporated into the Proposed Development design.
- 4.6.6. It is likely that replacement roosts would be required to be included as part of the mitigation proposals if confirmed roosts in the buildings surveyed are to be lost. Specific mitigation with regards to replacement roosts should be designed upon completion of the further bat surveys.
- 4.6.7. Further avoidance and mitigation measures and further survey requirements are provided in Table 4-1.

### BIRDS

- 4.6.8. The Habitat Regulations 2017 Part 1 Regulation 10(2) & (3) state that local authorities '*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the*

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<sup>4</sup> Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

*preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such habitat...'. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.*

- 4.6.9. Under the WCA 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.6.10. Various bird species are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016.
- 4.6.11. The Site contained a range of habitats with suitability to support common and widespread breeding birds.
- 4.6.12. Works on the Site should be avoided during the breeding bird season in the first instance. If the breeding bird season cannot be avoided, then all vegetation and suitable nesting habitats, including buildings with nesting suitability for birds, must be checked by a suitably qualified ecologist immediately prior to works.
- 4.6.13. Mitigation measures to avoid effects on birds are described in Table 4-1 below, these include an experience ecologist being present to check suitable nesting habitats to suggest suitable exclusion zones to leave around active bird nests, if found, to avoid disturbance.

#### **HEDGEHOG**

- 4.6.14. The hedgehog is listed on Schedule 6 of the WCA 1981 (as amended) which makes it illegal to kill or capture wild hedgehogs and is listed under the Wild Mammals Protection Act (1996), which prohibits cruel treatment of hedgehogs. The species is also listed as a Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016. Public bodies have an obligation under Section 7 to have regard for these species when carrying out their functions.
- 4.6.15. The Site provides suitable habitat for foraging and commuting hedgehog, in addition to suitable habitat for resting locations and nesting sites. However, no evidence of hedgehog was identified during the Site visit. Clearance of suitable terrestrial habitat should be checked in advance by a suitably qualified ecologist to minimise the risk of disturbance and injury or killing. Specific mitigation measures will require safeguarding by the implementation of a Precautionary Method of Working (PMoW) and Ecological Clerk of Works (ECoW).
- 4.6.16. Further avoidance and mitigation measures are provided in Table 4-1.

#### **REPTILES**

- 4.6.17. Native widespread reptile species (common or viviparous lizard, adder *Vipera berus*, grass snake and slow worm) are partially protected under Schedule 5 of the WCA 1981 (as amended). This includes protection from killing and injury.
- 4.6.18. All reptile species are also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016. Public bodies have an obligation under Section 7 to have regard for these species when carrying out their functions.

- 4.6.19. Records of slow worm, common lizard and grass snake within 2 km of the Site were returned during the desk study.
- 4.6.20. The Site provides a limited amount of habitat for supporting reptiles. Although the habitat of widespread reptile species is not directly protected by law, habitat removal or alteration has potential to cause death or injury to individual reptiles. Mitigation measures to avoid impacts on reptiles are included in Table 4-1.

### **AMPHIBIANS**

- 4.6.21. Common toad and palmate newts are partially protected under Schedule 5 of the WCA 1981 (as amended). This includes protection from sale and possession / transportation for the purpose sale.
- 4.6.22. The common toad is also listed as Priority Species in accordance with Section 7 of the Environment (Wales) Act 2016. Public bodies have an obligation to have regard for this species when carrying out their functions.
- 4.6.23. The Site may provide suitable terrestrial habitat for amphibians and there is a waterbody, Canton Common Ditch SINC, located within 466 m of the Site. Although, connectivity between the waterbody and the Site is considered limited.
- 4.6.24. Therefore, clearance of suitable terrestrial habitat should be checked in advance by a suitably qualified ecologist to minimise the risk of disturbance and injury or killing. Specific mitigation measures will require safeguarding by implementation of a PMoW and EcoW.
- 4.6.25. Further avoidance and mitigation measure are provided in Table 4-1.

### **INVERTEBRATES**

- 4.6.26. Common and widespread habitats within the Site were considered suitable to support mainly common invertebrate species.
- 4.6.27. The presence of B-Lines 328 m west form the centre of the Site also highlights the suitability of the Site to support invertebrate species. Targeted invertebrate presence / likely absence surveys are not considered necessary, however enhancement measures to ensure the Site remains suitable for invertebrates are included in Table 4-1.

### **INVASIVE NON-NATIVE PLANT SPECIES**

- 4.6.28. Certain plant species are listed on Schedule 9 of the WCA 1981 (as amended). It is an offence to plant or otherwise cause these species to grow in the wild.
- 4.6.29. One species of INNS was identified during the PEA. This plant species was Japanese knotweed and is shown in Appendix E (Table E-1) as TN1.
- 4.6.30. Specific measures for the control and management of INNS should be designed by a specialist invasive species contractor prior to construction. An INNS management plan should be written and implemented as part of the Proposed Development's construction stage; this should include biosecurity measures to control the spread of INNS during works.
- 4.6.31. Mitigation measures to prevent the spread of INNS are proposed in Table 4-1.



## 4.7 FURTHER SURVEY REQUIREMENTS

- 4.7.1. Potential ecological constraints for which further surveys are required to ensure legal and planning policy compliance are listed in Table 4-1.