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Preliminary Ecological Appraisal

Survey site:

Coleg Sir Gar, Pibwrlwyd Lane, Carmarthen, Carmarthenshire, SA31 2NH

Client:

HSP Consulting Ltd

Survey date:

4th March 2024

Project:

The report has been produced in support of an upcoming planning application which details redevelopment at the site. Development plans are yet to be finalised but it is understood that two development options are being considered, comprising new development within the car park located centrally to the north or within the field to the east (hereafter referred to as development Option 1 and Option 2 respectively).

Survey methodology and legislation can be found in the Arbtech Supplement: **PEA Methodology and Legislation - 2024.**
Relevant local planning policy can be viewed here: **https://www.carmarthenshire.gov.wales/home/council-services/planning/planning-**

The field survey was undertaken by Jonathan Stuttard BSc (Hons) MSc (Principal Consultant) on 4th March 2024. Jonathan Stuttard holds Natural England Bat Licence **2022-10409-CL17-BAT** and Natural England great crested newt licence **2015-19037-CLS-CLS** and is accredited on Natural Resources Wales Bat Licence **SO92694/1.**

Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
04/03/2024	7.5	87	100	5	Light

Ecological Survey Factor **Conclusion, Impact or Recommendations**	**Detailed using desk study and site survey. Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the Project Ecologist for advice.**
Habitats and plants	
Survey Results	***The Site*** The site is located at National Grid Reference SN 41130 18287 and has an area of 4.57ha. The site is characterised by a college, associated infrastructure, and adjacent field. The site is located rurally, approximately 2km south of Carmarthen Town Centre. The site is enclosed by open agricultural land to the north and east, Pibwrlwyd Lane and additional college infrastructure to the south, and the A484 and open agricultural land to the west. A site location plan is provided in **Appendix 1**. Habitats recorded on site include: • **U1b5** – Buildings. • **U1b** – Developed land; sealed surface.

	• **G4 106 32 33 847**– Modified grassland. Frequently mown with scattered trees, lines of trees, and introduced shrubs. • **H3h** – Mixed scrub. • **W1h** – Other woodland; mixed. • **U1d 828 –** Suburban Mosaic of developed and natural surface. Vegetated garden. • **H2a 50 111** – Native hedgerows associated with banks and ditches. • **H2a 11 50 111**– Native hedgerows with trees associated with banks and ditches. • **H2b** – Non-native and ornamental hedgerows. A description of each habitat type present on site is provided below and illustrated on the plan in **Appendix 2**. *U1b5 – Buildings* Buildings are present throughout the site, broadly comprising the main teaching building which also contains the college reception and canteen (**B1**; **Figure 1**), a library (**B2**; **Figure 2**), an art department (**B3**; **Figure 3**), an administration building (**B4**; **Figure 4**), a printing building (**B5**; **Figure 5**), and a house that provides ancillary accommodation (**B6**; **Figure 6**). Other structures present on site include small brick-built plant rooms (**TN1**; **Figure 7**), electrical substation infrastructure (**TN2**; **Figure 8**), a temporary portacabin-style toilet block (**TN3**; **Figure 9**), and shipping containers (**TN4**; **Figure 10**). *U1b – Developed land; sealed surface* Developed land; sealed surface is present throughout the site, comprising macadam surfaces providing pedestrian and vehicular infrastructure (**Figure 11**).

	G4 106 32 33 847 – *Modified grassland. Frequently mown with scattered trees, lines of trees, and introduced shrubs.* Modified grassland is present throughout the site (**Figure 12**). The grassland appears to be frequently mown, whereby all grassland maintains a short and homogeneous sward of approximately 50mm. As a result, the species diversity is limited to species tolerant of intense management. Grassland species recorded include perennial rye grass *Lolium perenne* (A), cock's foot *Dactylus glomerata* (A), Yorkshire fog *Holcus lanatus* (F), creeping buttercup *Ranunculus repens* (F), ribwort plantain *Plantago lanceolata* (F), broadleaved dock *Rumex obtusifolius* (O), common dandelion *Taraxaxum officinale* (O), hogweed *Heracleum spondylium* (O), greater plantain *Plantago major* (O), lesser celandine *Ficaria verna* (O), yarrow *Achillea millefolium* (O), common nettle *Urtica dioicia* (O), and daffodils *Narcissus spp.* (O). Scattered trees (**Figure 13**) and lines of trees (**Figure 14**) are present throughout the grassland on site. Trees range from semi-mature to mature in age and are generally in a fair to good structural condition. Tree species recorded on site are mostly native alongside occasional ornamental specimens. Species recorded throughout the site include ash *Fraxinus excelsior,* beech *Fagus sylvatica,* silver birch *Betula pendula,* Cherry *Prunus spp.,* sycamore *Acer psuedoplatanus,* hornbeam *Carpinus betulus,* lawsons cypress *Chamaecyparis lawsonaine,* goat willow *Salix caprea,* field maple *Acer campestre,* turkey oak *Fraxinus ornus,* English oak *Quercus robur*, common alder *Alnus glutinosa,* whitebeam *Sorbus aria,* small-leaved lime *Tila cordata,* and western red cedar *Thuka plicata.* Present within ornamental planting beds distributed amongst grassland across the site are areas of introduced shrubs (**Figure 15**). The introduced shrubs have been planted as part of a formal landscaping scheme, and generally appear to be subject to frequent management and maintain a neat appearance. Species recorded include

	cotoneaster *Cotoneaster spp.,* fire thorn *Pyracantha spp.,* New Zealand flax *Phormium spp.,* snowberry *Symphoricarpos rivularis,* holly *Illex aquifolium,* and spindle *Eunonumus europpaeus.* *H3h – Mixed scrub.* Areas of mixed scrub have developed across the site (**Figure 16**), predominantly on steep banks where grassland management appears to have lapsed allowing natural succession to occur. All sections of scrub appear dense, with an absence of open glades or any notable age variation. Species recorded include bramble *Rubus fruiticosus* (D), hawthorn *Crataegus monogyna,* common broom *Cytisus scoparius,* buddleia *Buddleja davidii,* ash saplings, oak saplings and holly. W1h – Other woodland; mixed. A small section of mixed woodland is present in the north of the site (**Figure 17**). The woodland is located on a steep bank, which separates the site from the agricultural field adjacent to the north. The woodland does not appear to be subject to any management, whereby all trees are in mutual competition with a dense shrub layer. Trees recorded within the woodland include ash, hawthorn, spruce *Picea spp.,* cedar *cedrus spp.,* and sycamore *Acer pseudoplatanus.* The shrub layer is dominated by bramble, alongside ivy *Hedera spp.,* and hawthorn saplings. Due to the density of the shrub layer, the ground flora is sparsely distributed amongst areas of bare ground. Species recorded include common nettle, cleavers *Galium aparine,* lords and ladies *Arum maculatum,* ivy, and lesser celandine. The woodland is not representative of a Woodland Habitat of Principal Importance as listed on schedule 7 of the Environment (Wales) Act.

	U1d 828 – Suburban Mosaic of developed and natural surface. Vegetated garden A vegetated garden encloses B6, which provides ancillary accommodation associated with the main college (**Figure 18).** The garden is comprised of frequently mown modified grassland, introduced shrubs, hedgerows, and scattered trees. Species composition is consistent with habitats recorded across the college site and the garden appears to be subject to frequent management retaining a neat appearance and homogenous habitat structure. *H2a 50 111 – Native hedgerows associated with banks and ditches* Native hedgerows associated with banks and ditches enclose the south boundary of the field to the east and a section of the north boundary of the car park on site (**Figure 19**). The hedgerows appear to be subject to management as they retain a neat and homogenous structure. The hedgerows retain an average width and height over 1.5m. Species recorded include hawthorn, hazel, field maple, beech and holly. The ground flora at the base of the hedgerows is limited due to frequent management and comprises those species recorded within the modified grassland. The hedgerows are associated with an adjacent ditch with an average with of 1m and an average depth of 0.5m; the ditches were dry at the time of survey. Given the survey was undertaken during the winter months, the ditches are likely to be dry throughtout the year. The hedgerows are representative of the Hedgerow Habitat of Principal Importance as listed on schedule 7 of the Environment (Wales) Act. *H2a 11 50 111 – Native hedgerows with trees associated with banks and ditches* A native hedgerow with trees associated with a bank and ditch encloses the east boundary of the field to the east (**Figure 20**). The hedgerow appears unmanaged and retains a dense and heterogeneous structure. The hedgerow

	retains an average width of 3m and varies in height from 2m to 15m. Species recorded include gorse *Ulex europaeus,* bramble, hazel. Field maple, hawthorn, English oak, holly, and sycamore. The hedgerow is associated with an adjacent ditch with an average with of 1m and an average depth of 0.5m; the ditch was dry at the time of survey. Given the survey was undertaken during the winter months, the ditch is likely to be dry throughout the year. The hedgerow is representative of the Hedgerow Habitat of Principal Importance as listed on schedule 7 of the Environment (Wales) Act. *H2b – Non-native and ornamental hedgerows* Non-native ornamental hedgerows enclose sections of the west and south site boundaries (**Figure 21**). The hedgerows appear to be subject to management as they retain a neat and homogenous structure. The hedgerows retain an average width and height of 1.5m. The sections of non-native ornamental hedgerow are dominated by either laurel or lawsons cypress. The hedgerows are not representative of the Hedgerow Habitat of Principal Importance as listed on schedule 7 of the Environment (Wales) Act. ***The Wider Landscape*** There are notable habitats located in the wider landscape that represent Habitats of Principal Importance as listed on Schedule 7 of the Environment (Wales) Act. Habitat types and their distance from the site are detailed below: • **Lowland mixed deciduous woodland** – 0.05km west • **Intertidal mud/sand** – 0.21km west

	• **Rivers and Streams (River Tywi)** – 0.21km west • **Salt Marsh** – 1.75km southwest.
Foreseen Impacts	***The Site*** Most habitats on site are both common and widespread both locally and nationally and are of low ecological value. However, the native hedgerows and native hedgerow with trees are considered to represent the Hedgerow Habitat of Principal Importance as listed on schedule 7 of the Environment (Wales) Act. No development plans have been produced for the site and thus impacts to these habitats remain unclear. Hedgerows may require removal to facilitate the development; this is most relevant to Option 2. There is also potential for indirect impacts to hedgerows located in close proximity to works associated with both development options through increased pollution during the construction and operational phase. ***The Wider Landscape*** Whilst no development plans have been produced for the site and thus impacts remain unclear. No direct impacts to notable habitats in the wider landscape are anticipated as all works will be limited to within the redline boundary. Depending on the scale of the final development proposals, there is potential for indirect impacts through increased pollution during the construction phase.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys***

	None anticipated. ***Mitigation*** Best practice pollution prevention measures in accordance with guidance detailed within the Environmental Agency Pollution Prevent Guidance Note 6: Working on Construction and Demolition Sites must be adhered to in order to prevent indirect impacts to retained habitats. Definitive detail could be included within a Construction and Environmental Management Plan (CEMP). ***Suggested Enhancement*** Coverage of notable habitats at the site could be enhanced to help achieve a biodiversity net gain at the site through new landscaping, such as the provision of new native hedgerows, shrubs, and tree planting, wildflower grassland creation, or creation of a new wildlife pond. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Designated Sites	
Survey Results	Environmental data from the West Wales Biodiversity Information Centre indicates that the site is not subject to any statutory or non-statutory designations. Furthermore, there are no non-statutory designations within 2km. However, there are four statutory designations located within 2km comprising Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI). These designations and their distance from the site are detailed below: • **River Twyi SAC – 0.33km west** *Petromyzon marinus* for which the area is considered to support a significant presence. *Lampetra fluviatilis* for which the area is considered to support a significant presence. *Lampetra planeri* for which the area is

	considered to support a significant presence. *Alosa alosa* for which the area is considered to support a significant presence. *Alosa fallax* for which this is considered to be one of the best areas in the United Kingdom. *Cottus gobio* for which the area is considered to support a significant presence. *Lutra lutra* for which this is considered to be one of the best areas in the United Kingdom. • **River Twyi SAC – 0.33km west** Afon Tywi Site of Special Scientific Interest extends downstream from Llandovery to the confluence with the Afon Taf and Pembrey Coast SSSI in Carmarthen Bay. It is an actively eroding river meandering across a wide flood plain which is composed of alluvium, glacial sands and gravels. This has resulted in extensive shingle banks being formed. These are important for birds and invertebrates, and the river is also of special interest for its fish species and otters, and in its lower reaches for its saltmarsh vegetation. • **Glan Pibwr Stream Section – 0.56km southeast** An historic Arenig faunal locality; the type locality for the 'Ogygia marginata Beds' with their abundant trilobite faunas. These mudstone outcrops have recently been designated as the type locality for the Pibwr Member of the new Carmarthen Formation. The rich asaphid, raphiophorid and trinucleid trilobite faunas of the site occur together with species of Phyllograptus, a rare Welsh occurrence. A key Lower Ordovician faunal and stratigraphic locality. • **Carmarthen Bat and Estuaries SAC – 0.73km southwest** Sandbanks which are slightly covered by sea water all the time for which this is considered to be one of the best areas in the United Kingdom. Estuaries for which this is considered to be one of the best areas in the United Kingdom. Mudflats and sandflats not covered by seawater at low tide for which this is considered to be one of the best areas in the United Kingdom. Large shallow inlets and bays for which this is considered to be one of the best areas in the United Kingdom. Salicornia and other annuals colonising mud and sand for which

	this is considered to be one of the best areas in the United Kingdom. Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) for which this is considered to be one of the best areas in the United Kingdom. *Petromyzon marinus* for which the area is considered to support a significant presence. *Lampetra fluviatilis* for which the area is considered to support a significant presence. *Alosa alosa* for which the area is considered to support a significant presence. *Alosa fallax* for which this is considered to be one of the best areas in the United Kingdom. *Lutra lutra* for which the area is considered to support a significant presence.
Foreseen Impacts	Due to the distance and separation between the site and nearest designation and the nature of qualifying features, no functional links are anticipated. No direct or indirect impacts impacts to designated sites are anticipated as a result of the proposed development.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated. ***Mitigation*** None. ***Suggested Enhancement*** N/A

Invasive / Non-native species	
Summary of Survey Findings	No non-native invasive species listed on schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended) were recorded.
Foreseen Impacts	None.
Recommendations	None.
Invertebrates	
Summary of Survey Findings	***Desk Study*** Environmental data from the West Wales Biodiversity Information Centre returned no records indicating the presence of protected and/ or notable invertebrates within 2km of the site that are likely to rely on habitats within the site for their lifecycle. ***The Site*** Habitats recorded on site are suitable to support common invertebrates. Whilst mature trees, woodland, scrub, and hedgerows provide refuge, foraging, and commuting value for invertebrate species, the remainder of habitats including modified grassland, introduced shrubs, buildings, hardstanding provide no notable value for invertebrates due to their homogenous structure and poor species diversity. Given the type and extent of habitats present on site, the site is not assessed to provide a habitat mosaic suitable to support a protected and/ or notable assemblage of invertebrate species.
Foreseen Impacts	None.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However,

	the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated. ***Mitigation*** None. ***Suggested Enhancement*** The value of the site for invertebrates could be enhanced through the provision of native landscaping and the provision of hibernacula and log piles. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Bats	
Summary of Survey Findings	***Desk Study*** Environmental data from the West Wales Biodiversity Information Centre returned records indicating the presence of several bat species on and within 2km of the site including common pipistrelle *Pipistrellus pipistrellus,* soprano pipistrele *Pipistrellus pygmaeus,* brown long-eared *Plecotus arutis,* noctule *Nyctaus noctula,* Daubenton's *Myoris daubentonii,* and whiskered *Myotis mystacinus*. Most notably, the data search returned records indicating the presence of common popistrelle day roosts within B1, B2, B3, B4, & B6, and a brown long-eared day and feeding roost within B2. All roosts were recorded during survey work undertaken in 2016.

	The Site It is important to note that a Preliminary Roost Assessment was not undertaken for any buildings or trees on site as part of the Preliminary Ecological Appraisal. This is because development plans have not yet been finalised and no buildings or trees are anticipated to be impacted in accordance with details received to date. However, as a result of the desk study, Buildings B1, B2, B3, B4, & B6 are assessed to represent **confirmed roosts**. Furthermore, bat boxes were noted upon B1 and B6 (**TN5; Figure 22**), which provide optimal roost opportunities for bats and are likely to have been installed as part of previous bat survey work undertaken at the site. It is considered likely that many of the trees on site retain structural features suitable to support roosting bats. Habitats recorded on site are assessed to provide foraging and commuting opportunities at the site in the form of grassland, scrub, trees, woodland, hedgerows, and introduced shrubs. These habitats are likely to attract invertebrate prey species whilst the trees and hedgerows provide notable linear features that are likely to be utilised by commuting bats whilst travelling between resources. Given the known presence of bat roosts on site habitats present are likely to be utilised by roosting bats and the site may represent a signficant resource for local bat populations. The site is therefore assessed to be of **moderate** value to support roosting bats.
Foreseen Impacts	***Roosting bats*** No development plans have been produced for the site and thus impacts to roosting bats remain unclear. However, it is currently anticipated that no buildings or trees will be directly impacted by the proposed development. As such, no direct impacts to roosting bats are anticipated. However, there is potential for indirect impacts occur to roosting bats utilising adjacent roost locations through increased pollution during the construction and operational phase. This is particularly relevant to development Option 1, which would comprise development in close proximity to roost locations historically recorded within B1.

	Foraging and commuting bats No development plans have been produced for the site and thus impacts to foraging and commuting bats remain unclear. However, habitats of value to foraging and commuting bats are likely to occur as a result of the proposed development. Development option 1 is likely to be mostly located over hardstanding on negligible value to foraging and commuting bats and thus impacts may be insignificant. Development option 2 is located over an open field enclosed by native hedgerows likely to represent important landscape features for the local bat population. Furthermore, there is potential for indirect impacts to foraging and commuting for both development options through increased artificial light spill during the construction and operational phase.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** *Roosting bats* Should any buildings or trees on site be subject to direct or significant indirect impacts pending a review of the final development proposals, then they must be subject to a Preliminary Roost Assessment and any subsequent bat emergence surveys to determine the current presence or likely absence of roosting bats. Should any bat roosts be directly impacted by the works, a licence from Natural Resources Wales will be required to lawfully permit the development. Foraging and commuting bats

	Should the proposed development have potential to significantly impact foraging and commuting bats, then bat activity surveys will be required to determine the current usage of the site by foraging and commuting bats. In accordance with current guidance (Collins 2023; https://www.bats.org.uk/news/2023/09/bat-surveys-for--ecologists-good-practice-guidelines-4th-edition-launched), sites assessed to provide moderate value to foraging and commuting bats should be subject to the following bat activity survey effort: • **Automated/ static detector survey** Automated/ static bat detectors must be deployed on site for a minimum of 5 days during each month throughout the active bat season between April and October inclusive. The number of automated/ static detectors will be determined pending a review of final development proposals. • **Night-time bat walkover survey** One manual night-time bat walkover survey must be undertaken per season during the active bat survey season in Spring (April/ May), Summer (June/ July), and Autumn. The number of transect routes required will be determined pending a review of final development proposals. ***Mitigation*** A wildlife sensitive lighting strategy will be required for the site in compliance with current guidance pertaining to the impacts of artificial lighting on bats at night, as detailed within Guidance Note 08/23 (BCT & ILP 2023; https://www.bats.org.uk/news/2023/08/bats-and-artificial-lighting-at-night-ilp-guidance-note-update-released). Depending on the scale of the anticipated impacts pending a review of the final development proposals, demonstrating an appropriate sensitive lighting plan may require the production of appropriate contour lux drawings undertaken by a suitably qualified lighting professional.

	Suggested Enhancement <u>Roosting bats</u> Roosting opportunities at the site could be enhanced for bats through the provision of bat boxes. The number of bat boxes to be installed should be relative to the associated impacts pending a review of the final development proposals. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP). <u>Foraging and commuting bats</u> Foraging and commuting opportunities at the site for bats could be enhanced through the provision of new native landscaping. Habitats of particular value to foraging and commuting bats include native hedgerows, trees, and shrubs, wildflower grassland, and ponds. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Birds	
Summary of Survey Findings	***Desk Study*** Environmental data from the West Wales Biodiversity Information Centre returned numerous records indicating the presence of protected and/ or notable birds within 2km of the site. Most notably, the data search returned records indicating the presence of nesting house sparrows *Passer domesticus* within B2 & B4. Furthermore, bullfinch *Pyrrhula pyrrula* and kingfisher *Alcedo atthis* have been recorded passing over the site adjacent to the north site boundary. House sparrow and bullfinch represent species of principal importance as listed on schedule 7 of the Environment (Wales) Act. Kingfishers are afforded additional protection through there inclusion on schedule 1 of the WCA. However, house sparrows and Bulfinch could nest on site, whereas there are no habitats on site suitable to support nesting kingfisher.

	The Site Due to the type and extent of habitats recorded, the site is not considered suitable to support a protected and/ or notable assemblage of birds. However, habitats are assessed to provide nesting opportunities for birds in the form of buildings, trees, hedgerows, woodland, and scrub. This includes nesting opportunities for protected and/ or notable species including house sparrows and bullfinch. It is noted that all grassland on site is managed to a short and homogenous sward and is not considered to provide any notable nesting or over-wintering opportunities for protected and/ or notable birds associated with agricultural land uses such as field fare *Turdus pilaris* or lapwing *Vanellus vanellus.*
Foreseen Impacts	The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated. ***Mitigation*** Any removal of vegetation of value to nesting birds required to facilitate the development should be undertaken outside the nesting bird season, which is typically between March and September inclusive. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken by a suitably qualified ecologist immediately

	prior to the commencement of site clearance woks. All active nests will need to be retained until the young have fledged. Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged. ***Suggested Enhancement*** Nesting opportunities at the site could be enhanced for birds through the provision of bird boxes. The number of bird boxes to be installed should be relative to the associated impacts pending a review of the final development proposals. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Reptiles	
Summary of Survey Findings	***Desk Study*** Environmental data from the West Wales Biodiversity Information Centre returned five records indicating the presence of three reptile species on and within 2km of the site including slow worm *Aguis fragilis,* adder *Vipera berus,* and common lizard *Viviparous zoocota*. Most notably, the data search returned a record indicating the presence of a slow worm within scrub adjacent to the north of B1 from 2016. The next nearest record is of an adder located 0.73km north of the site. ***The Site*** Habitats recorded on site are assessed to provide foraging, commuting, basking and refuge opportunities for reptiles. The hedgerows, scrub, and woodland provide elevated value for reptiles as these habitats provide a suitable structure for refuge, whilst also providing foraging and commuting opportunities. However, it is important to note that the site is dominated by frequently managed grassland, buildings, and hardstanding of limited value to reptiles.

	These habitats are suboptimal due to an absence of notable habitat structure and diversity, which significantly limits refuge, foraging, and commuting opportunities, albeit they do provide some basking opportunities when located adjacent to potential refugia. Whilst slow worms have been confirmed to be present in 2016, it is considered likely that the site supports low numbers of common reptiles only.
Foreseen Impacts	No development plans have been produced for the site and thus impacts to these habitats reptiles remain unclear. However, it is likely that both development options will result in the removal of habitats of value to reptiles. Whilst it is anticipated that habitats of elevated value including scrub, hedgerows, and woodland will be retained, areas of modified grassland are likely to be impacted. Whilst the removal of suboptimal grassland is likely to be inconsequential for reptiles, individuals could be injured or killed during development works.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated. However, if a signficant extent of habitats of elevated value are to be impacted such as woodland, hedgerows or scrub, surveys may be required to determine the current use of the site by reptiles as to inform appropriate mitigation. ***Mitigation***

	Should only a small extent of suboptimal habitat be impacted, a precautionary working method is considered suitable to mitigate impacts to reptiles in favour of further survey work. Precautionary working methods are likely to broadly comprise: • Existing suboptimal grassland will be maintained at a short sward (5cm). • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby habitats. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. • In the unlikely event that a reptile is identified, works must cease and advise must be sought from a suitably qualified ecologist. ***Suggested Enhancement*** Opportunities at the site for reptiles could be enhanced through the provision of new native landscaping and provision of new hibernacula such as log and rubble piles. Habitats of particular value to reptiles include native hedgerows, trees, and shrubs, wildflower grassland managed to ensure tussock development, and ponds. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals and the results of any further surveys. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Amphibians	
Summary of Survey Findings	***Desk Study***

	Environmental data from the West Wales Biodiversity Information Centre returned five records indicating the presence of two amphibian species within 2km of the site including great crested newts *Triturus cristatus* and common frog *Rana temporaria.* The nearest record is of a great crested newt located 0.92km northeast. ***The Site*** There are no ponds located on site and all ditches are considered likely to be dry all year round. As such, there are no aquatic opportunities for great crested newts and other common amphibians on site. A review of aerial imagery and magic maps indicates the presence of two ponds within 500m of the site, located 340m west and 450m northwest. However, these ponds are not assessed to have suitable terrestrial connectivity to the site for amphibians due to separation by the River Twyi and urban infrastructure including tarmac roads and commercial development. Habitats recorded on site are assessed to provide foraging, commuting, and refuge opportunities for amphibians. The hedgerows, scrub, and woodland provide elevated value for amphibians as these habitats provide a suitable structure for refuge, whilst also providing foraging and commuting opportunities. However, it is important to note that the site is dominated by frequently managed grassland, buildings, and hardstanding of limited value to amphibians. These habitats are suboptimal due to an absence of notable habitat structure and diversity, which significantly limits refuge, foraging, and commuting opportunities. Given the absence of suitable aquatic breeding opportunities within 500m of the site, the presence of great crested newts during their terrestrial phase is considered highly unlikely. However, other common amphibians such as common toads *Bufo bufo,* which represent Species of Principal Importance as listed on schedule 7 of the

	Environment (Wales) Act, can travel further from breeding sites over suboptimal habitats. As such, the presence of common amphibian species cannot be discounted.
Foreseen Impacts	No development plans have been produced for the site and thus impacts to amphibians remain unclear. However, it is likely that both development options will result in the removal of habitats of value to reptiles. Whilst it is anticipated that habitats of elevated value including scrub, hedgerows, and woodland will be retained, areas of modified grassland are likely to be impacted. Whilst the removal of suboptimal grassland is likely to be inconsequential for amphibians, individuals could be injured or killed during development works.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated. ***Mitigation*** A precautionary working method is considered suitable to mitigate impacts to amphibians in favour of further survey work. Precautionary working methods are likely to broadly comprise: • Existing suboptimal grassland will be maintained at a short sward (5cm). • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby habitats.

	• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. • In the unlikely event that a great crested newt is identified, works must cease and advise must be sought from a suitably qualified ecologist on how to lawfully progress the development. ***Suggested Enhancement*** Opportunities at the site for amphibians could be enhanced through the provision of new native landscaping and provision of new hibernacula such as log and rubble piles. Habitats of particular value to amphibians include native hedgerows, trees, and shrubs, wildflower grassland managed to ensure tussock development, and ponds. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals and the results of any further surveys. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Badger	
Summary of Survey Findings	***Desk Study*** Environmental data from the West Wales Biodiversity Information Centre returned five records indicating the presence of badgers within 2km of the site, the nearest located 0.77km south. ***The Site*** Habitats recorded at the site are assessed to provide foraging, commuting, and sett building opportunities for badgers. Sett building opportunities are most prevalent amongst scrub, woodland, and at the base of hedgerows, whereas the modified grassland provides extensive foraging and commuting opportunities. However, no evidence indicating badger activity or any badger setts were recorded on or within 30m of the site. Whilst no evidence

	indicating the presence of badgers was recorded during the site survey, badgers are highly mobile and their future presence on site cannot be discounted.
Foreseen Impacts	No development plans have been produced for the site and thus impacts to badgers remain unclear. However, it is likely that both development options will result in the removal of habitats of value to badgers. There is potential for a badger sett to be constructed on site during the time elapsed since the site visit and the presence of foraging and commuting badgers for transient periods cannot be discounted. Whilst it is anticipated that habitats of elevated value for sett excavation including scrub, hedgerows, and woodland will be retained, future works could encroach within 30m of a newly constructed sett, which could cause direct impacts. Furthermore, there is potential for impacts to foraging and commuting badgers present transiently during construction activity.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** Should final development plans encroach within 30m of habitats of elevated value for sett excavation (i.e. scrub, hedgerows, or woodland), a pre-commencement walkover survey will be required to check for the excavation of new badger setts. Should any badger setts be recorded, the ecologist will need to advise on how to lawfully progress the development, which may require further surveys to classify the sett and sett closure under licence. ***Mitigation***

	A precautionary working method is considered suitable to mitigate impacts to foraging and commuting badgers. Precautionary working methods are likely to broadly comprise: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby habitats. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. ***Suggested Enhancement*** Opportunities at the site for badgers could be enhanced through the provision of new native landscaping. Habitats of particular value to badgers include native hedgerows, fruit bearing trees and shrubs, and wildflower grassland. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals and the results of any further surveys. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Riparian mammals	
Summary of Survey Findings	There are no watercourses on or connected to the site. The site is considered unsuitable to support riparian mammals.
Foreseen Impacts	None.
Recommendations	None.
Hazel dormouse	
Summary of Survey Findings	***Desk Study***

	Environmental data from the West Wales Biodiversity Information Centre returned two records indicating the presence of dormice within 2km of the site, the nearest located 0.52km and 0.57km northwest respectively. ***The Site*** Habitats recorded on site are assessed to provide foraging, commuting, and nest building opportunities for dormice in the form of the native hedgerows and woodland. Whilst the woodland is small in extent and is subsequently suboptimal, the native hedgerows provide an optimal habitat structure and species composition. Specifically, the hedgerows provide a dense structure suitable for refuge and nest building and contain hazel, which is a favoured by foraging dormice. The hedgerows are also well connected to further suitable dormouse habitat in the wider landscape including hedgerows, wooded riparian corridors, and woodland enclosing the A48 to the northwest, where the data search returned records indicating dormouse presence. As a result, the presence of dormice within hedgerows on site cannot be discounted.
Foreseen Impacts	No development plans have been produced for the site and thus the potential for impacts to dormice remains unclear. However, it is currently understood that that woodland and hedgerows will be retained and thus no direct impacts to dormice will be anticipated. There is potential for indirect impacts to occur through increased pollution during the construction and operations phase of the development, depending on the proximity of new development to woodland and hedgerows.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date.

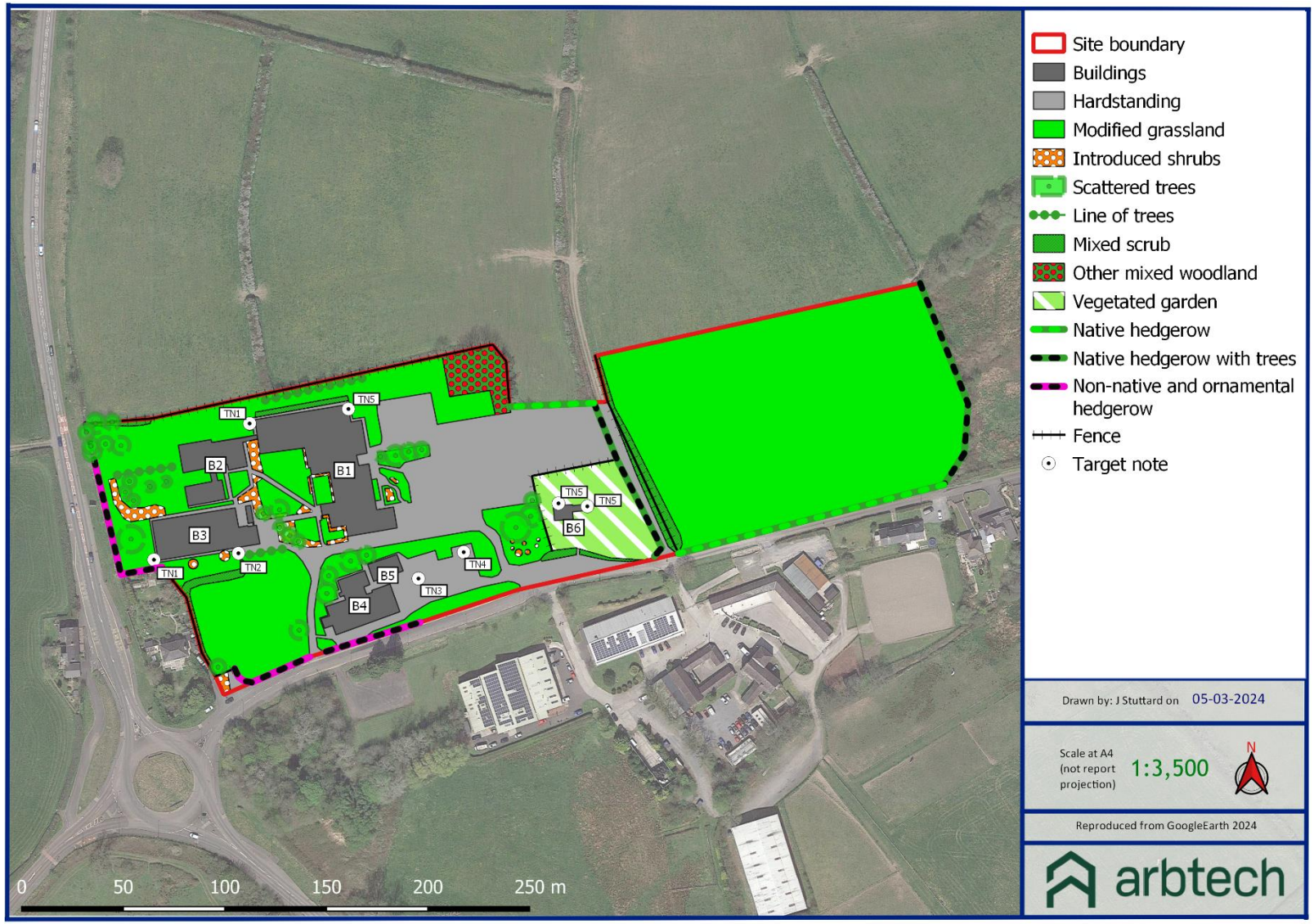
	Further Surveys None anticipated. However, should any hedgerow or woodland require removal to facilitate the development or should construction encroach within 5m of woodland or a hedgerow, then further surveys may be required to determine the presence/ likely absence of dormice on site to inform mitigation requirements. ***Mitigation*** Best practice pollution prevention measures in accordance with guidance detailed within the Environmental Agency Pollution Prevent Guidance Note 6: Working on Construction and Demolition Sites must be adhered to prevent indirect impacts to retained woodland and hedgerows and subsequently dormice. Definitive detail could be included within a Construction and Environmental Management Plan (CEMP). ***Suggested Enhancement*** Opportunities at the site for dormice could be enhanced through the provision of new native landscaping. Habitats of particular value to dormice include native hedgerows, trees, and shrubs. The existing woodland could be enhanced through the provision of native climbing species such as honey suckle *Lonicera perclymenum,* which would provide additional foraging opportunties and enhance habitat structure. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals and the results of any further surveys if required. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).
Hedgehog	
Summary of Survey Findings	***Desk Study***

	Environmental data from the West Wales Biodiversity Information Centre returned numerous records indicating the presence of hedgehogs within 2km of the site, the nearest located 0.16km west. ***The Site*** Habitats recorded at the site are assessed to provide foraging, commuting, and refuge opportunities for hedgehogs. Refuge opportunities are most prevalent amongst scrub, woodland, and at the base of hedgerows, whereas the modified grassland provides extensive foraging and commuting opportunities. However, no evidence indicating hedgehog activity was recorded on site. Whilst no evidence indicating the presence of hedgehogs was recorded during the site survey their future presence on site cannot be discounted.
Foreseen Impacts	No development plans have been produced for the site and thus the potential for impacts to hedgehogs remains unclear. However, it is likely that both development options will result in the removal of habitats of value to hedgehogs. Whilst it is anticipated that habitats of elevated value for refuge including scrub, hedgerows, and woodland will be retained there is potential for impacts to foraging and commuting hedgehogs present transiently during construction activity.
Recommendations	The below recommendations are provisional in the absence of final development plans. This report should be updated once development plans have been finalised and thus the impacts can be definitively assessed. However, the below recommendations outline the anticipated requirements to comply with legislation and planning policy based on outline information received to date. ***Further Surveys*** None anticipated.

	Mitigation A precautionary working method is considered suitable to mitigate impacts to hedgehog. Precautionary working methods are likely to broadly comprise: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby habitats. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. ***Suggested Enhancement*** Opportunities at the site for hedgehogs could be enhanced through the provision of new native landscaping and hedgehog houses. Habitats of particular value to hedgehogs include native hedgerows, trees, and shrubs, and wildflower grassland. The type and extent of habitat creation should be relative to the associated impacts pending a review of the final development proposals and the results of any further surveys. Definitive detail could be included within an Ecological Mitigation and Enhancement Plan (EMEP).

Appendix 1: Site Location Plan

Appendix 2: UKHabs Habitat Plan



Appendix 4: Site Photographs

Figures 1 & 2:

Left – Southwest aspect of B1.

Right – North aspect of B2.

Figures 3 & 4:

Left – East aspect of B3.

Right – Southwest aspect of B4.

Figures 5 & 6:

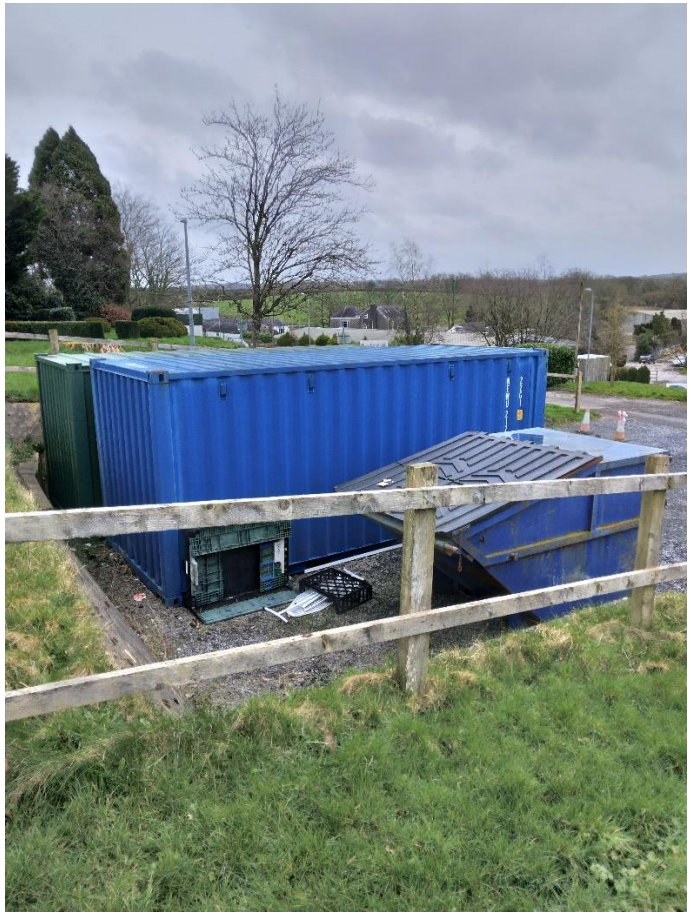
Left – Southeast aspect of B5.

Right – South aspect of B6.

Figures 7 & 8:

Left – A brick-built plant room located adjacent to the west of B2.

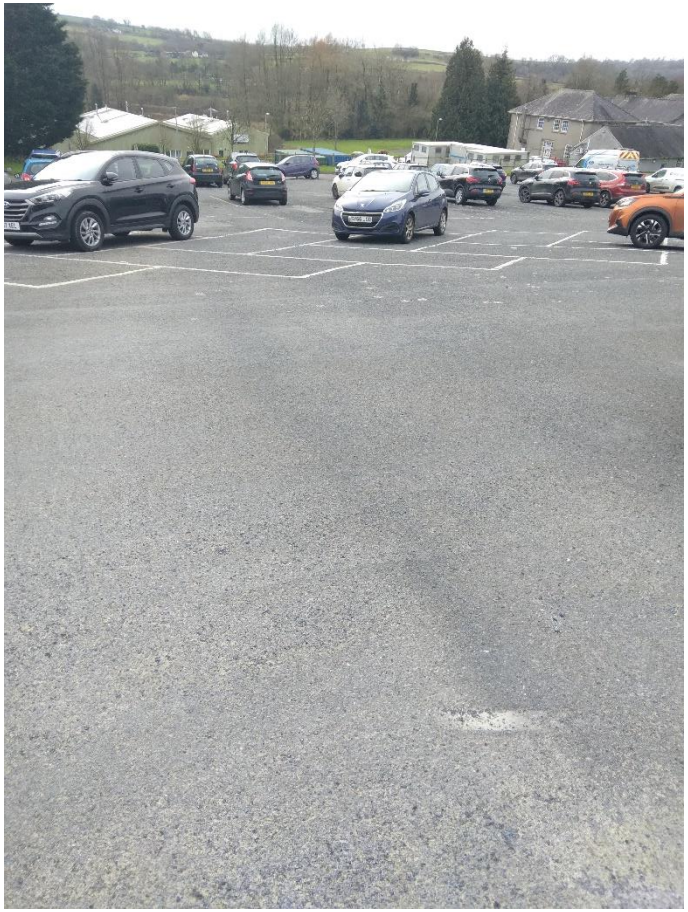
Right – An electrical substation located adjacent to the south of B3.



Figures 9 & 10:

Left – Porta-cabin style toilet block located to the east of B4 & B5.

Right – Shipping containers located to the east of B4 & B5.



Figures 11 & 12:

Left – A view south across the hardstanding car park within the east of the site.

Right – Modified grassland located centrally to the north.

Figures 13 & 14:

Left – Scattered trees located centrally on site.

Right – A line of trees location centrally on site.

Figures 15 & 16:

Left – Introduced shrubs lining a path to the southwest of B1.

Right – A linear section of scrub locate don a bank adjacent to the north of B1.

Figures 17 & 18:

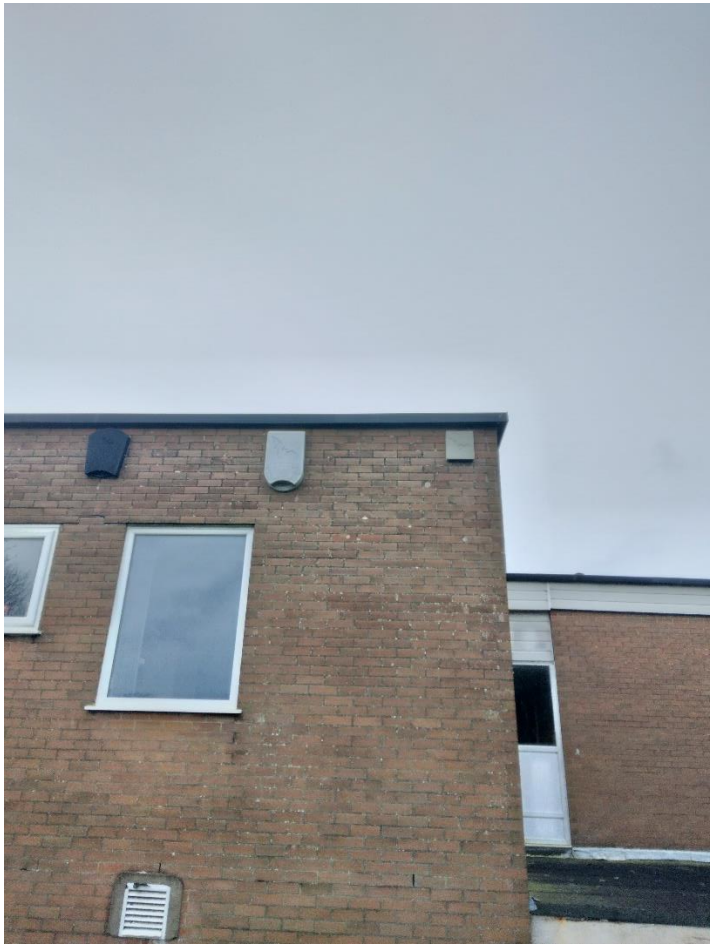
Left – Small section of woodland located centrally to the north.

Right – Grassland and shrubs within the vegetated garden on site.

Figures 19 & 20:

Left – A view west over the native hedgerow enclosing the southwest site boundary.

Right – A view north over the native hedgerow with trees.



Figures 21 & 22:

Left – A view west over the ornamental hedgerow enclosing the south site boundary.

Right – Bat boxes on the northeast aspect of B1.

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