

Technical Report

Extended Phase 1 Habitat Survey Report

Ysgol y Hafod (Junior Site) Johnstown, Wrexham

Wynne Construction Ltd

September 2021



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1 Introduction

1.1 Terms of Reference

In July 2021, Atmos Consulting Ltd. (Atmos) were commissioned by Wynne Construction Ltd to undertake an Extended Phase 1 Ecology Survey of land within Ysgol yr Hafod Junior site (including an external survey of the land around the adjacent Old School House), Bangor Road, Johnstown, Wrexham, hereafter referred to as the 'Site'.

The works involve an extension to the southern end of the existing Junior school building, internal remodelling of the ceilings in the northern end of the school and a single storey extension to the Old School House to accommodate Early Years education and an associated outdoor play area.

A separate report detailing the results of bat surveys undertaken in the 2021 season is in preparation under separate cover (Atmos report 26613 R5 Rev1).

This report should also be read in conjunction with the BREEAM Ecology Report (Atmos ref. 26613 R2 Rev1) which contains details on the habitat enhancements proposed as part of the scheme.

1.2 Site Location and Description

The Site is located on Bangor Road, Johnstown, Wrexham, LL14 2SW to the west of the A483 road. The Site comprises the existing school building, the Old School House in the west of the Site, hard-standing and a large amenity grassland to the east of the school building. The school is bordered by fences and there are scattered shrubs and smaller trees along the school boundary. There is a line of large mature trees, mostly oak *Quercus robur* and ash *Fraxinus excelsior* along the southern edge of the large amenity field.

The surrounding area consists mainly of housing estate and residential gardens.

1.3 Objectives

The objectives of this study are to:

- undertake an extended Phase I habitat survey to describe the baseline ecological status of the site, including an appropriate buffer;
- to determine the potential of the site and the buffer area to support protected species;
- to make an assessment of the likely effects that development of the site could have on protected species; and
- to put forward recommendations for further ecological survey work/mitigation that may be required.

2 Relevant Legislation

2.1 Conservation of Habitats and Species Regulations, 2017

The Conservation of Habitats and Species Regulations 2017, (the Habitats Regulations) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites ('Natura 2000 Sites termed Special Areas of Conservation SACs or Special Protection Areas (SPAs). The Regulations designate these sites as being important for either habitats or species (listed in Annexes I and II of the Habitats Directive respectively).

2.2 Wildlife and Countryside Act, 1981

National legislation for the special protection of selected species is provided in the Wildlife and Countryside Act 1981, as amended (WCA) and the Habitats Regulations.

Under Section 1(1) and 1(2) of the WCA, all British bird species, their nests and eggs (excluding some pest and game species) are protected from intentional killing, injury or damage. Under Sections 1(4) and 1(5), special penalties are applied to bird species included in Schedule 1 of the WCA and protection is extended for these species to disturbance to birds whilst building, in or near a nest and disturbance to dependant young. Schedule 5 provides special protection to selected animal species other than birds, through Section 9(4) of the WCA, against damage to "any structure or place which any [wild animal included in the schedule] uses for shelter and protection" and against disturbance whilst in such places.

Non-native invasive plants are listed in Schedule 9 of the WCA which makes it an offence to spread or enable them to be spread in the wild. The list includes species such as Japanese knotweed *Fallopia japonica* and Himalayan balsam *Impatiens glandulifera*.

A number of animals, known as European protected species (EPS), are provided full protection through inclusion in Schedule 2 of The Habitats Regulations. The Habitats Regulations provide protection against deliberate disturbance to those animals wherever they are present and provides tests against which the permission for a development (that may have an effect on a Schedule 2 protected species) must be assessed before permission can be given.

In addition to species protection, the WCA and Habitats Regulations also set out requirements/procedures for the notification, designation and protection of a range of statutory site designations in order to preserve important nature conservation resources.

All public authorities have a requirement to pay due regard to the conservation and enhancement of habitats and species through the Environment Wales Act (2016).

Section 7 provides a list of habitat and species that are considered to be of principal importance for the conservation of biological diversity in Wales.

3 Methodology

3.1 Desk Study

A review of online data was undertaken in September 2021 to gather details of statutory nature conservation designations within 2 km of the Site, e.g. Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Ramsar Sites, Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs).

The North Wales Environmental Information Centre (Cofnod) was contacted in August 2021 to obtain the following ecological data:

- Details of non-statutory designated sites of nature conservation importance within 2 km of the Site, e.g. areas included on the Ancient Woodland Inventory (AWI), Sites of Nature Conservation Interest (SNCIs) and Local Wildlife Sites (LWSs); and
- Details of legally protected species or otherwise notable species within 2 km of the Site. An upper data limit of 25 years was applied to the search. It must be noted that the distances of records from the site are measured from the centre of the site rather than the site boundary.

A review of Ordnance Survey maps and aerial images was also undertaken to identify the presence of waterbodies within 500 m of the Site. Great crested newts *Triturus cristatus*, which are protected together with their habitats, can travel relatively large distances between breeding ponds and terrestrial habitat. Following guidance issued by Natural England (English Nature, 2001), land within 500 m of a great crested newt breeding pond should be treated as potential great crested newt terrestrial habitat and evaluated accordingly.

3.2 Existing Data

A previous survey was carried out of the school site in August 2019 by Marches Ecology¹. Where relevant, the findings of this survey are included in Section 4 below for context.

3.3 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey was undertaken by an experienced ecologist on the 3rd September 2021. It included land within the site boundary and a 100 m buffer, where access permitted. A Phase I habitat survey is a standardised method of recording habitat types and characteristic vegetation, as set out in the Handbook for Phase 1 Habitat Survey – a technique for Environmental Audit (JNCC, 2010).

The Phase I survey method is 'extended' through the additional recording of specific features indicating the presence, or likely presence, of protected species or other species of nature conservation significance.

¹ Proposed Extension of Ysgol y Hafod, Bangor Road, Johnstown, Wrexham – Preliminary Ecological Appraisal. 27th August 2019 on behalf of Wrexham County Borough Council.

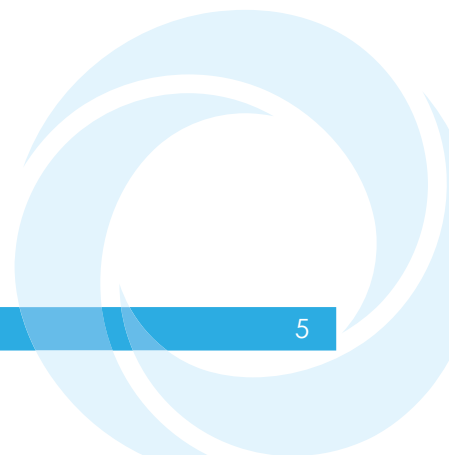
In addition to mapping out habitats, a series of target notes were produced to highlight features of ecological interest, or any other features that may present a potential constraint to the proposed development. Whilst not a full protected species or botanical survey, the extended Phase I method enables a suitably experienced ecologist to undertake a baseline ecological appraisal of the site that:

- Provides a preliminary evaluation of the nature conservation significance of the site and assesses the potential for impacts on habitats/species likely to represent a material consideration in planning terms; and
- Determines the scope of further specialized surveys that may be required to inform an ecological assessment.

3.4 Limitations

The extended Phase I habitat survey was undertaken during what is considered to be the optimal time for undertaking such surveys (typically April to September, inclusive) and so timing was not considered to be a limitation.

The entirety of the Site was fully accessible and walked over by a suitably competent ecologist, no other access issues were perceived.



4 Results

4.1 Desk study

4.1.1 Statutory Designated Sites

Two statutory designated sites were found within 2 km of the Site, these were Johnstown Newt Sites Special Areas of Conservation (SAC) and Stryt Las A'r Hafod Site of Special Scientific Interest (SSSI).

Johnstown Newt Sites SAC

Johnstown Newt Sites is located 0.3km to the east and west of the Site, separated by residential development. The Annex II species that are a primary reason for selection of this site are great crested newt.

Stryt Las A'r Hafod SSSI

Stryt Las A'r Hafod SSSI is a 69.4ha site 0.3km to the east and west of the Site and is contiguous with the Johnstown Newt Sites above. Stryt Las A'r Hafod SSSI is of special interest for its amphibians, particularly its population of the great crested newt. The majority of water bodies at the site originated following the cessation of coal mining and quarrying for clay at the site, however others, particularly at Hafod, were specifically created for amphibian conservation purposes.

4.1.2 Non-statutory Designated Sites

The Site does not lie directly within any non-statutory designated sites. There are 18 Ancient Woodland Sites (AWS) within 2km of the Site. The closest ancient woodland site is located 0.5 km south west of the Site. There are also 4 Local Wildlife Sites (LWS) within 2km of the Site, details of which can be found below.

Table 1: Non-statutory sites within 2 km of the Proposed Site

LWS name	Distance and direction from the Site	Description
Gardden Fort Wood	0.8 km SW	A steep sided semi natural broad-leaved woodland dominated by beech with an understory of holly <i>Ilex aquifolium</i> and a ground flora of bluebell <i>Hyacinthoides non-scripta</i> and ferns throughout. There are also some areas of semi-improved neutral grassland.
Gardden Wood/Rocky Wood	1.5 km SW	Semi natural broad-leaved woodland dominated by sessile oak <i>Quercus petraea</i> .
Crematorium	1.8 km N	Behind the crematorium is semi natural broad-leaved woodland with patches of parkland containing scattered trees. There are two hay meadows in front of the crematorium that are herb-rich semi-improved neutral grassland.
Erd dig Estate	1.8 km NE	A National Trust Estate with woodlands, semi-improved neutral grasslands and marshes. Most of the grasslands are improved but several areas are managed for wildlife.

4.1.3 Species of Conservation Interest

Amphibians

There are over 1000 records of amphibian within 2km of the Site, predominantly due to the internationally and nationally designated nature conservation sites within this buffer. Amphibian records include smooth newt *Lissotriton vulgaris*, palmate newt *L. helveticus*, great crested newt, common frog *Rana temporaria* and common toad *Bufo bufo*. The most recent record of great crested newt was made on the 19/05/2021 at Hafod which is part of the Stryt Las A'r Hafod SSSI designated for the presence of great crested newts. The closest record was logged 0.3km from the site at Aberderfyn in 2019.

Plants

There are 28 species of vascular plant recorded within 2km of the Site, of these bluebell is the only species that is protected under Schedule 8 (Wildlife and Countryside Act, 1981).

Invertebrates

There are 28 invertebrate records predominantly made up of beetle (Coleoptera) and butterfly records. However, there are also some records of caddis fly, dragonfly, moths, stone flies and true flies.

Although not recorded on Site, small heath *Coenonympha pamphilus*, dingy skipper *Erynnis tages*, grayling *Hipparchia semele* and wall *Lasiommata megera* have been recorded within the 2km Site buffer. Dingy skipper and grayling are listed in the UK Biodiversity Action Plan as priority species. The closest record of dingy skipper was 0.4km from the Site, recorded in 2003. Whereas the closest record of grayling was made 1km from the Site in 2005.

Small heath, dingy skipper, grayling and wall butterflies and the cinnabar moth *Tyria jacobaeae* are also listed under Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006. The closest record of small heath was made 1km from the Site at Bonc-yr-Hafod Picnic Mountain in 2005. There are seven records of the wall butterfly made at Bonc-yr-Hafod, with the closest record 1km from the Site in 2005. There are two records of cinnabar moth, the closest record is also the most recent and was made in 2018 at Brandie Brook, which is 0.4km from the Site.

None of the species records are of species protected under Schedule 5 (Wildlife and Countryside Act, 1981).

Fish

There are five fish records of eel *Anguilla anguilla* and one record of brown sea trout *Salmo trutta*. The closest record to the site was of an eel recorded at Bonc y Hafod Country Park 0.6km from the Site in 2016; this was also the most recent record.

Reptiles

There are 11 records of reptiles within 2km of the site, these are all of grass snake *Natrix natrix*. Those closest record is 0.3 km from the site whereas the most recent record was made in 2016 at Tatham Farm which is 1.6 km from the Site.

Birds

299 bird records were returned by the data search. Of these records, those protected under Schedule 1 of the Wildlife and Countryside Act, 1981 are barn owl *Tyto alba*, hobby *Falco subbuteo*, kingfisher *Alcedo atthis* and peregrine *Falco peregrinus*.

Further species are listed to be of conservation concern through inclusion in UK BAP/S. 42 NERC/S7 Env't Wales as follows skylark *Alauda arvensis*, bittern *Botaurus stellaris*, hawfinch *Coccothraustes coccothraustes*, cuckoo *Cuculus canorus*, yellow hammer *Emberiza citrinella*, reed bunting *Emberiza schoeniclus*, herring gull *Larus argentatus*, yellow wagtail *Motacilla flava*, spotted flycatcher *Muscicapa striata*, curlew *Numenius arquata*, house sparrow *Passer domesticus*, wood warbler *Phylloscopus sibilatrix*, dunnock *Prunella modularis*, bullfinch *Pyrrhula pyrrhula*, turtle dove *Streptopelia turtur*, starling *Sturnus vulgaris*, song thrush *Turdus philomelos* and lapwing *Vanellus vanellus*.

Willow tit *Poecile montana* and marsh tit *Poecile palustris* are included only under the UK Biodiversity Action Plan as priority species and black-headed gull *Chroicocephalus ridibundus*, lesser spotted woodpecker *Dendrocopos minor*, kestrel *Falco tinnunculus*, spotted flycatcher *Muscicapa striata* and tree sparrow *Passer montanus* are included only under Section 42 of the Natural Environment and Rural Communities (NERC) Act 2006.

None of the aforementioned species were recorded on Site, but within the 2km data search buffer.

Bats

There were no bat records from within the Site boundary, but seven bat species were recorded within 2km of the Site, along with further records of unknown bats and records of bats that were not identified down to species level. An overview of the bat records within 2km of the Site can be seen below in Table 2.

Table 2: Bat records within 2 km of the Site

Species	No. of records	Most recent record	Distance of most recent record from site centre (km)	Roost records within 2km of site centre
<i>Chiroptera</i> Unknown bat	2	2018	0.4 km	1
<i>Myotis</i> Spp Myotis Bat Species	3	2008	0.4 km	0
<i>Myotis daubentonii</i> Daubenton's Bat	2	2008	0.4 km	0
<i>Myotis mystacinus</i> Whiskered Bat	2	2008	0.4 km	0
<i>Myotis nattereri</i> Natterer's Bat	1	2008	0.4 km	0
<i>Nyctalus noctula</i> Noctule Bat	3	2019	1.3 km	0
<i>Pipistrellus</i> Spp Pipistrellus Bat Species	5	2015	1.7 km	2
<i>Pipistrellus pipistrellus</i> Common Pipistrelle	7	2019	0.2 km	1

Species	No. of records	Most recent record	Distance of most recent record from site centre (km)	Roost records within 2km of site centre
<i>Pipistrellus pygmaeus</i> Soprano Pipistrelle	4	2016	1.3 km	0
<i>Plecotus auritus</i> Brown Long-eared Bat	4	2016	1.2 km	1

Badgers

The data search returned 13 records of badger *Meles meles*. The closest record to the site was of badger snuffle holes recorded at Brandie Brook 0.4km from the Site, this record was made in March 2018. This was also the most recent record.

Otter

The data search returned four records of otter *Lutra lutra* within 2km of the Site. The closest record was of roadkill 1.7km from the site. The most recent record was made in 2019 1.9km from the Site near Afon Eitha Bridge in Penycae.

Water Vole

The data search returned three records of water vole *Arvicola amphibius* within 2km of the site. However, as all three of these records were made in 1999, these records would be considered as historic.

Other Mammals

The data search returned one record of hare *Lepus europaeus* 1.9km from the Site in 2006. There are also 21 records of hedgehog *Erinaceus europaeus* within 2km of the Site with the closest record being of two hedgehogs sighted in a residential garden 0.5km from the Site in 2012. There are also two records of polecat *Mustela putorius* within 2km of the Site, both made in 2014.

Non-native Invasive Species

The data search returned no records of non-native invasive species on Site, however there were ten records of non-native invasive plant species within the 2km buffer. These were; giant hogweed *Heracleum mantegazzianum*, Himalayan balsam *Impatiens glandulifera*, Himalayan cotoneaster *Cotoneaster simonsii*, Japanese knotweed *Fallopia japonica*, Montbretia *Crocasmia pottsii* x *aurea* = *C. x crocosmiiflora*, New Zealand pigmyweed *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, rhododendron *Rhododendron ponticum*, spiked water-milfoil *Myriophyllum spicatum* and wall cotoneaster *Cotoneaster horizontalis*. The data research also returned four records of an invasive insect, harlequin ladybird *Harmonia axyridis* with the closest record made 0.2km from the Site in 2015. There were also four records of the invasive mammal, the American Mink *Neovison vison* with the closest record made 0.7km from the Site in 2007.

4.2 Field Survey

4.2.1 On-site Habitats

The habitats recorded on Site are described below.

Semi-improved Grassland with Amenity Use

The amenity grassland in the east of the Site is dominated by perennial ryegrass *Lolium perenne* with other scattered forbs that included white clover *Trifolium repens*, ribwort plantain *Plantago lanceolata*, creeping buttercup *Ranunculus repens* and dandelion *Taraxacum officinale*. This grassland appears to be well managed as the sward at time of visit was cut very short.

There is a narrow band (approximately 0.5m wide) of uncut vegetation on the northern side of the field adjacent to the fence boundary which is composed mainly of tall grasses including false oat-grass *Arrhenatherum elatius*, Yorkshire-fog *Holcus lanatus* and Common Bent *Agrostis capillaris* and some yarrow *Achillea millefolium*.

There is a further area of grassland along the south-western Site boundary between the hardstanding playground and boundary fence. The species growing here are similar to the main amenity grassland and include ribwort plantain, white clover, dandelion and herb robert *Geranium robertianum* growing along the boundaries of the grassland area. This area also contains a vegetable growing area with raised beds.

Hardstanding

There is a hardstanding play area behind and to the front of the school. Additionally, to this there is an area designated for parking on the eastern side of the school which is also tarmacked.

Buildings

There is an old shipping container that appears to be in use for storage on the grassland area at Target Note 2.

The northern end of the school is a double-height single storey structure built of red brick and with a pitched slate roof. On the western side of the building, there is a boarded-up louvre window with one of the planks missing. The roof on the northern side of the building has several gaps at the roof verge, lifted ridge tiles and gaps under slates.

The southern school building appears to be a newer extension also constructed of red brick and with a more gently sloping pitched tiled roof. The new extension is connected to the older building by a short section of building with a flat roof.

The Old School House appears to be a two-storey building built of red brick and with a pitched slate roof. The roof of the Old School House has several gaps in the roof, missing and lifted tiles.

Trees and Shrubs

The Site contains a number of scattered trees and shrubs. Small trees were located in the smaller grassland area behind the school. These were sycamore *Acer pseudoplatanus*, Japanese rose *Rosa rugosa*, silver birch *Betula pendula* and a willow *Salix* spp.

There is a line of planted larger more mature trees along the southern edge of the playing field. These trees consisted primarily of ash *Fraxinus excelsior*, oak *Quercus robur* and sycamore.

Smaller unmanaged shrubs and trees line the borders of the playing field including species such as rowan *Sorbus aucuparia*, silver birch, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, garden privet *Ligustrum ovalifolium*, hazel *Corylus avellana* and clematis *Clematis vitalba*.

The school entrance from Bangor Road is bounded to the east by a line of ornamental shrubs. These include cotoneaster, Rhododendron *Rhododendron ponticum*, buddleia *Buddleja davidii* and Escallonia spp. There is also semi-mature silver birch *Betula pendula* and Swedish whitebeam *Sorbus intermedia* agg trees within the shrubs.

Scrub

The eastern end of the playing field has previously been left as a 'Nature Area'. This appeared to be less wild in nature than the previous survey (2019), with grassland dominant and scrub only present around the edges. The previous survey also noted a dry depression which may once have been a pond. This was not particularly evident during the survey.

Garden

The garden surrounding the Old School House supported hardstanding and scattered small areas of managed grassland.

4.2.2 Off-site Habitats

Habitats recorded in the wider survey area are detailed below.

Buildings and hardstanding

The surrounded area is composed primarily of residential properties, pavements and minor roads.

4.2.3 Protected Species

Amphibians

There is no aquatic habitat suitable habitat for great crested newt within the Site itself. Both the large amenity field and the other smaller grassland areas to the rear of the school are closely cut and offer sub-optimal terrestrial habitat.

There are several ponds within the wider area, with the closest pond 200m to the east of the Site. However, these ponds have limited connectivity to the Site as they are separated by a railway track and residential development. Ponds within 500m to the southwest of the site have even more limited connectivity as they are separated by residential development, several minor roads and a main road.

The previous 2019 survey recorded a dry grassy depression in the far eastern corner of the Site that may once have been a pond. This was not found to be a pond or to support any aquatic habitat during the more recent survey.

Bats

There were a number of medium/large trees within the survey Site located on the playing field, however these were mostly smooth stemmed with limited bat roosting potential.

The habitat on Site is open grassland with lines of trees which would offer suitable foraging habitat and flight lines for bats. However, being located within a built-up area, nocturnal lighting levels may affect the usage of the habitats by bats.

The wider landscape provides good foraging habitat for bats. Within a kilometre radius of the Site is the Bonc yr Hafod woodlands to the east and Stryt Las park to the southwest, both of which are wooded areas with a number of ponds and rivers running through them.

A separate bat report is in preparation which will contain the results of bat surveys and recommendations for appropriate mitigation during the works and thereafter.

Badgers

There were no badger setts or badger signs identified on Site during the survey. The Site is largely unsuitable for sett construction, however the amenity grassland within the survey site would potentially provide suitable foraging habitat of high quality. It is likely that badgers are present within the wider area.

Birds

There were a number of common bird species incidentally recorded on Site during the survey. These were robin *Erithacus rubecula*, house sparrow *Passer domesticus*, pied wagtail *Motacilla alba* and goldfinch *Carduelis carduelis*. The scrub, shrubs and trees at Target Notes 1 & 2 could provide suitable nesting habitat for birds. The gaps and crevices in the current school building as well as the Old School House would provide suitable nesting space for the house sparrows that were recorded on Site during the survey. However due to the timing of the survey, no nesting activity was confirmed.

Invertebrates

Due to the fact the survey was carried out late in the summer season, there were no incidental records of butterflies during the survey. The grassland habitats on the Site would be suitable for a range of invertebrate species, including those which rely on the grassland species as foodplants. The small heath butterfly relies on bent grasses (*Agrostis* spp) and meadow-grasses (*Poa* spp) and the wall butterfly relies on bent grasses as their caterpillar foodplant. Common bent and Yorkshire fog (a meadow grass) were recorded in the narrow unmanaged strip alongside the large amenity grassland.

However, the fact that the sward is well managed and kept short means there are fewer flowering plant species which makes it sub-optimal as a nectar source with the exception of creeping buttercup and daisy.

There are some features that could be used as refugia by insects in the small grassland behind the school (Target Note 2). This includes scattered logs and a 'bug hotel'.

Otter and Water Vole

There was no suitable habitat on Site or within the wider survey area for otter or water vole, thus they are not considered further.

Reptiles

No reptiles or signs of reptiles were recorded during the survey. Much of the Site is hardstanding or closely mown grassland which offers no shelter or cover for reptiles. The small areas of unmanaged grassland at Target Notes 1 & 2 could provide some limited opportunities for reptiles. There are a few logs and pieces of timber at Target Note 2 that could provide refugia for reptiles. However, the Site is relatively isolated within the urban landscape. The wider off-site rough, wet grassland and woodlands of Bonc yr Hafod are suitable habitats, but are unconnected to the Site. Reptiles are therefore not considered to be present on Site.

4.2.4 Invasive Species

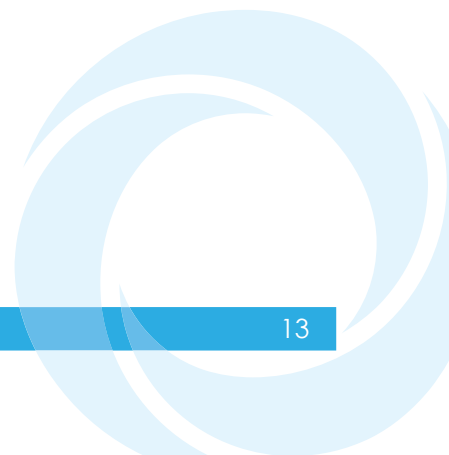
The following Schedule 9 (Wildlife and Countryside Act 1981) non-native invasive species were recorded on the Site or the immediate vicinity during the survey.

Rhododendron and cotoneaster within the ornamental shrub planting along the east of the school access road.

Japanese rose in the raised bed area in the west of the Site.

Montbretia *Crocasmia x crocosmiflora* was noted on the previous 2019 survey in the north-western part of the site boundary towards the Old School House.

These plants must not be permitted to spread and any removed from the Site must be treated as waste.



5 Evaluation and Impact Assessment

5.1 Proposed Works

The proposed works involves an extension to the southern end of the existing Junior school, internal remodelling of the ceilings in the northern end of the school and a single storey extension to the Old School House for Early Years education.

The extension to the school and associated car parking will be located on hardstanding and part of the existing playing field.

The existing school building and the adjacent Old School House are accessible via the school car park and access roads. The main access from Bangor Road is proposed to be remodelled and widened to create two-way traffic. An access link from the existing hardstanding at the front of the school is also proposed to link with the Early Years Centre.

The following plans have been reviewed to inform the impact assessment:

- Proposed School House Plans²
- Proposed Site Plan³
- Landscaping Plans⁴

5.2 Statutory Designated Sites

The closest designated sites are Johnstown Newt Sites SAC and Stryt Las A'r Hafod SSSI which are 0.3km to the east and west of the Site. Both these sites are designated for their great crested newt populations.

The Site itself is separated from these designated sites by a railway line and residential area and offer no suitable great crested newt habitat. The extension to the southern end of school building will be located on the hardstanding and all other proposed works are internal and small-scale, and the working areas can be accessed via the carpark and local access roads. Therefore, there are anticipated to be no effects on the great created newt populations as part of the SAC and SSSI and thus their favourable conservation status can be maintained.

The closest non-statutory site is 0.8km north and is designated for woodland and is sufficiently distant to not be affected by the small-scale proposals. Consequently, there will not be a direct or indirect impact on any designated sites.

As a good practice measure, biosecurity measures should be incorporated into the works, as set out in Section 6.

2 Drawing number HAF-KMA-04-ZZ-DR-A-2005 dated 04/08/21 Studio KMA on behalf of Wynne Construction

3 Project ref. PD2018/006 dated September 2018 Wrexham County Borough Council

4 Landscape General Arrangement Drawing number HAF-STO-00-00-DR-L-0002 P02 Dated 08/07/21 Stiwdio Owens; Soft Landscape Design HAF-STO-00-00-DR-L-0009 P00 dated 28/07/21

5.3 Habitats

The extension to the southern end of the school building will be located on the tarmac playing ground and is accessible via the car park and already existing local access roads. Some remodelling of the access will be undertaken and result in the loss of ornamental planting along the road verge of limited ecological value.

The proposed new playground to replace that lost to the footprint of the school extension, will be located on the amenity grassland at Target Note 1. The proposed access ramp in the west of the Site will result in the loss of grassland and scattered scrub. This will result in the loss of managed grassland of low intrinsic ecological interest and scrub which is of comparatively greater interest.

The extension to the School House will result in the loss of hardstanding and a garden habitat.

All broadleaved trees on the playing field are to be retained with their root protection areas appropriately buffered.

Two young trees and ornamental shrubs along the school access road (a silver birch and Swedish whitebeam *Sorbus intermedia*) are proposed for removal due to the remodelling of the access. One tree that is growing through the palisade fence along the southern boundary and has poor form will be removed, along with a tree along the western boundary.

These trees are of some ecological value, and will be replanted at a ratio of 2:1 with native locally provident species to increase the biodiversity value over time.

Overall, the habitats on the Site are well-managed and subject to regular disturbance. The mature trees along the southern boundary are being retained, and the extension and car parking have been located on habitats of the least ecological value. Given the wider landscape planting proposed, the scheme will result in an overall biodiversity net gain and no significant effects are anticipated.

5.4 Species

Amphibians

Although there were great crested newt records obtained from the data search within 1 km of the site, it is considered very unlikely that they will be present within the Site. There is no breeding habitat for great crested newts on Site.

The closest pond is located approximately 200m east of the Site, separated by residential development and roads. These barriers to movement, together with the optimal habitats provided for great crested newts in the area surrounding the pond as part of the designated sites, mean that it is unlikely any great crested newt would be able to reach the Site.

Despite the number of records in the surrounding area, the risk that individual great crested newts may access the works area is considered to be low. Currently, the habitats on Site are of low suitability for great crested newt, but building work can create suitable habitats such as piles of material, excavations and rutted ground. It is recommended that Reasonable Avoidance Measures (RAMs) are implemented during the works to minimise the risk of individual great crested newt ranging into the working area. These are included in Section 6 below.

Bats

Effects on bats are considered separately in the Bat Mitigation Report (Atmos ref. 26613 R5 Rev1), in preparation.

Badgers

There were no signs of badgers or badger setts identified during the survey and no evidence of the Site being used by foraging badgers. However, good practice construction measures are recommended, and contractors should be aware of the potential presence of badger. These are included in Section 6 below.

Birds

It is considered likely that nesting birds would be present within the Site during the breeding season (typically March to August, inclusive) and could utilise trees, scrub, shrubs and hedgerows on Site as a nesting habitat.

Four trees are proposed for removal as part of the works. This, along with any other vegetation clearance should be undertaken outside of the bird breeding season to ensure that no active birds' nests are damaged or destroyed during the works. If this is not possible, then a nesting bird check will have to be carried out by a suitably experienced ecologist prior to such works. If an active nest is found, then these works would have to be delayed until the young have fledged and are no longer dependent on the nest.

Invertebrates

The Site offers some invertebrate habitat, but the affected habitats are of low diversity and widespread in the area. The existing wildlife areas e.g. bug hotel are not affected. Effects are therefore anticipated to be not significant. Recommendations to enhance the surrounding school site for invertebrates are provided in Section 6 below.

Other Mammals

There is potential for hedgehog to be present and to range across the school site. Recommendations are included below to ensure they can continue to move freely across the Site and that fencing does not present a barrier.

5.5 Invasive Species

A number of Schedule 9 (Wildlife and Countryside Act 1981) non-native invasive species were recorded on the Site or the immediate vicinity during the survey. Good biosecurity measures should be followed, as set out in Section 6.

6 Mitigation and Enhancement Measures

The following measures are to be incorporated into the scheme to mitigate for potential effects and enhance the overall biodiversity of the Site.

6.1 Habitats

The following proposed habitats are to be created on the Site, as set out in the Soft Landscaping Plan (Drawing ref. HAF-STO-00-00-DR-L-0009 dated 25/08/21):

- Broadleaved tree planting;
- Native hedgerow;
- Flowering shrubs;
- Wildflower grassland (Emorsgate seed mix EL1); and
- Grassland for recreational use.

The above habitats will increase the tree and hedgerow cover on the Site and create shrub areas and native grasslands which are rich in flowers. This will result in an enhancement of the biodiversity of the Site compared to that present prior to development.

In addition, the 'habitat area' in the east of the Site will be enhanced with log piles to provide invertebrate and hedgehog habitat.

The variety of habitats offer ideal learning opportunities for the school children.

6.2 Amphibians

Reasonable Avoidance Measures (RAMS) are recommended to be employed during site clearance and construction to minimise the risk of attracting a great crested newt into the working area.

6.2.1 Reasonable Avoidance Measures

Materials Storage Area

The construction compound is to be located on existing hardstanding. All materials and vehicle storage will be within the construction compound where possible, which will be securely fenced.

If materials are necessary to store within the grassland areas for short periods of time, these are to be raised on pallets to avoid creating habitat for great crested newt.

Construction Methods

During construction, any piles of soil will either be returned to the ground before the end of the working day, or will be compacted with the back of a digger bucket to minimise the likelihood that there is loose material which could provide shelter for great crested newt.

Any excavations to be open overnight will either be covered over or backfilled.

Reinstatement

Following the completion of works, the materials and vehicles will be removed. No materials will be left on Site which could create a habitat for great crested newt in areas where it may then be subject to disturbance.

The planting and landscaping works will be undertaken in the appropriate season following the completion of works.

Procedure if a GCN is found

Should a newt be discovered on Site, all works will stop until the Site Ecologist has attended Site and confirmed identification. If it is confirmed as a great crested newt, works will stop until a suitable way forward has been agreed with the Planning Authority and Natural Resources Wales (NRW). This may result in a delay to the works if a development licence is required.

6.3 Bats

Measures for bats are included in a separate report.

6.4 Badger

During construction works, it is recommended that any excavations created are covered overnight or have a mammal ladder placed within them to ensure that if a badger ranges onto the Site it does not become trapped.

6.5 Breeding Birds

The habitats on Site are considered to offer potential nesting space for a range of bird species during the breeding season (typically March to August, inclusive). The school has retained the majority of features suitable for nesting birds, such as hedgerows, trees, and scrub.

Where small sections of scrub and ornamental shrubs require removal, this should be undertaken outside of the breeding season. However, if this is not practical then a nesting bird check must be carried out prior to vegetation clearance within the area. If an active nest is found, then any works to the area would have to be delayed until the young have fledged and are no longer dependant on the nest.

Checks will be required at least on a weekly basis during the breeding season to check whether birds have established a nest within any building materials.

It is recommended that the Site is enhanced for nesting birds through a bird box scheme that would incorporate a variety of nest box types into the development, as follows. The final numbers, proportion of box types and their locations will be agreed with the Site Ecologist:

- Placement of woodcrete or similar durable material bird boxes with several hole sizes as well as open fronted boxes on trees along the southern Site boundary. Recommended c. 2 x 28mm boxes, 2 x 32mm boxes, 2 x open fronted boxes. Placement of boxes should be agreed on Site with the Site Ecologist.
- Incorporation of integrated nest boxes for colonial nesting species (such as house sparrow) to be built into the east and west facing walls of the school building, or

attached to the walls if not integrated. Location of boxes to be agreed and marked on site plans with the Site Ecologist.

- Recommended c. 4 house sparrow boxes each with at least 2 nest sites to be located at least 2m height.
- If any sections of walls are at least 5m in height, swift boxes should be incorporated.
- There is potential for some of the bird boxes to be installed with a remote camera to enable nesting behaviour and chicks to be observed by the children on a screen within the school.

6.6 Invertebrates

Cut branches and trees are to be piled in the 'habitat area' to create dead wood habitat for invertebrates. The proposed wildflower and shrub planting around the new building and car park will provide additional nectar sources for a range of invertebrates.

6.7 Hedgehog

The movement of hedgehogs and other small mammals through the Site should be maintained by creating 'Hedgehog Highways'. These provide safe spaces away from roads for the species to move between semi-natural habitats.

The fencing around the new car park should contain small gaps (minimum 13cm high) along the base to allow hedgehog free movement.

Enhancement of the green open space is also recommended, particularly with the creation of designated 'wild areas' in the 'habitat area' with the log piles providing cover and food sources.

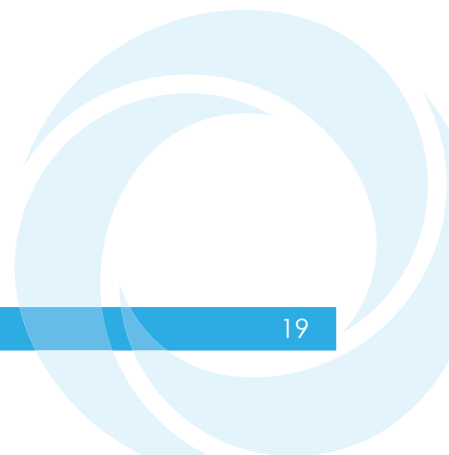
6.8 Invasive Species and Biosecurity

Due to the proximity of the SAC/ SSSI and presence of large amphibian populations in the area, a precautionary approach should be adopted with regards biosecurity measures.

Biosecurity measures should be implemented throughout the construction phase. Machinery accessing the site and leaving the site should be kept free from mud, in particular tyres/ wheel arches / tracks/ buckets. Cleaning, using brushes and a pressure-washer, should be undertaken on an area of hard-standing.

Pollution prevention measures should be in place to ensure any water is disposed of in the on-site drains appropriately.

Contractors should practice good biosecurity by cleaning boots and wheels with a suitable disinfectant when leaving site and removing excess soil and any seeds/vegetation from boots or equipment.



7 References

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

JNCC (2010). Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit. Revised re-print. Joint Nature Conservation Committee.

8 Figure

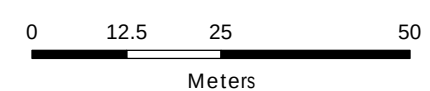


Ysgol yr Hafod



Phase 1 habitat survey results Juniors site

- Key**
- Site boundary
 - Survey boundary
 - Cultivated/disturbed land - amenity grassland
 - Poor semi-improved grassland (Garden)
 - Scrub - dense/continuous
 - Neutral grassland - unimproved
 - Buildings
 - Hardstanding
 - Broadleaf tree
 - Target Note



Scale @ A3:
1:1,000



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Appendices

Appendix A. Images and Notes

Table 3: Images and Notes

Image	Notes
	Target Note 1 Amenity grassland to the east of the site used as a playing field. The grassland is dominated by perennial ryegrass with other scattered forbs that included white clover, ribwort plantain, creeping buttercup and dandelion. This grassland appears to be well managed as the sward at time of visit was cut very short. There is a narrow band (approximately 0.5m wide) of uncut vegetation on the northern side of the field (see image two) adjacent to the fence boundary which is composed mainly of tall grasses including Yorkshire-fog and Common Bent and some yarrow.
	

Image	Notes
	Target Note 2 Semi-improved (amenity) grassland area behind the school at the southwestern end of the Site. The species growing in the grassland here are similar to the playing field and includes ribwort plantain, white clover and dandelion with herb robert growing along the boundaries of the grassland area. This area is in use for growing shrubs and plants (such as lavender) in small, raised beds. Scattered young shrubs and trees are present including sycamore, Japanese rose, silver birch and willows. There are also patches of unmanaged grassland along the western border of this amenity grassland area that are dominated by bramble <i>Rubus fruticosus</i> and stands of tall ruderals such as greater willowherb <i>Epilobium hirsutum</i> and ragwort <i>Senecio jacobaea</i> (image three). There are features in this amenity grassland that could be used as refugia, particularly for invertebrates. This includes scattered logs and a 'bug hotel' in amongst the tall ruderal vegetation (image three).

Image	Notes
	
	Target Note 3 A line of large mature trees along the southern edge of the large amenity grassland. These were primarily oak, ash and sycamore. These trees were mostly smooth stemmed with no obvious cracks or crevices that could be used as roosting features by bats.

Image	Notes
	Target Note 4 Hardstanding on Site. The playground behind the school (pictured) and in front of the old school as well as the car park to the east of the current school building is tarmacked and consequently is of no ecological value.
	Target Note 5 is the current school building and the Old School House.

Image	Notes
	
	