



Preliminary Ecological Appraisal

Dower House, Hitchin Road, Preston, Hitchin, Hertfordshire SG4 7TZ

Sat Lally

Status	Issue	Name	Date
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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.

This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England.

The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.

(BS 42020, 2013)

Summary of Recommendations

The following is a summary of baseline ecological conditions identified at the time of survey and work you will need to commission to obtain planning permission and/or comply with legislation and other policy.

The site, which was woodland around 2016 and has been developing into grassland since then, interspersed with periods of ground disturbance contains an area of Arrhenatherum neutral grassland, with some areas grading into wet grassland subtypes. The site exhibits evidence of developing towards higher distinctiveness s.41 subtypes but at present does not qualify and as such is assessed as being of LOCAL importance. No important species were present in terms of their being red listed or nationally/locally scarce but pyramidal orchids amongst other species of interest such as great mullein were present on site, which whilst bearing no specific protections are nevertheless of intrinsic value and local importance and it is recommended that opportunities for their colonisation should be provided for either on or off site.

A BNG assessment and p2 botanical survey has been completed and the results are included within. The development as it stands will incur a biodiversity net loss and arrangements will need to be made for achieving the required 10%.

The site contains abundant invertebrates and habitat creation must focus on retaining their populations within the site. The site may also host reptiles and amphibians, including low numbers of GCN. It is determined that these can be managed via precautionary measures.

Protective measures are recommended for retained habitats and precautionary methods of vegetation clearance/building demolition/tree felling and construction site management are detailed for reptiles, amphibians and terrestrial mammals. A Construction Ecological Management Plan (CEMP) may be requested as a condition of planning consent and the development will need to ensure it achieves Biodiversity Net Gain.

. A Habitat Management and Monitoring Plan may be required to support the final outcomes of the BNG if compensation is achieved onsite or off, in surrounding habitats. and Ecological Management and Enhancement Plan (EMEP) or Landscape Ecological Management Plan (LEMP) may be requested by condition.

Further information including conclusions, justifications, precautionary measures and opportunities for biodiversity enhancement, is provided within the body of the report.

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1.0 Introduction and Context

1.1 Background & Project Description

Arbtech Consulting Limited was instructed by Sat Lally to undertake a Preliminary Ecological Appraisal (PEA) at Dower House, Hitchin Road, Preston, Hitchin, Hertfordshire SG4 7TZ (hereafter referred to as “the site”). The survey was required to inform a planning application to North Hertfordshire District Council for a modern dwelling over two stories clad in charred timber, chalk coloured brickwork to reflect the context in which the site is surrounded. This also includes elements of glazing to metal framed sliding doors and external balustrades. In terms of accommodation the house includes six bedrooms, a study, a cloakroom and a garage at ground floor level. At the lower level there are kitchen, living, dining spaces as well as leisure spaces that include a cinema, pool, gym and yoga studio as well as a garaging with space for up to six cars. Associated landscaping will involve conversion of the remaining land to residential garden space.

The PEA aims to conduct a preliminary assessment of the sites baseline ecological conditions and any ecological receptors likely to be impacted by the proposed development. It takes into account the habitat value of the site for protected species and evaluates the site in terms of the proposed developments predicted impacts upon identified ecological receptors. The PRA element of the report aims to evaluate the building in terms of the habitat value it provides to roosting bats and to understand this in context with bats likely use of the site and local landscape for roosting, foraging or commuting. This has been undertaken with due consideration to methodologies outlined in the “Bat Surveys for Professional Ecologists —Good Practice Guidelines” publication (Collins, 2016) alongside Standing Government Advice on bat surveys. Deviations from these methodologies are permitted by the author’s and where this is the case deviations are justified within the limitations section.

The site was initially surveyed by Arbtech Consulting Ltd in September 2022 and was revisited in July 2024 in conjunction with a P2 botanical assessment and Condition Assessment for BNG. In addition a BNG assessment has been carried out. The results of the botanical survey/condition assessment are incorporated where relevant.

1.2 Site Context & Landscape Description

Landscape Analysis

The site is located at National Grid Reference TL 1823 2518 and has an area of approximately 0.4ha comprising a derelict walled garden, out of use for many years but suspected to have provisioned fruit and vegetables to the adjacent Dower House, adjacent, and the Grade I listed Temple Dinsley manor house. Across the road to the north west lies the ancient Wain Wood SSSI and the site itself forms part of a large area of parkland. There is a small area of wooded pasture adjacent to the gardens south eastern boundary, beyond which, ~90m south east is a further larger block of woodland fragmented from it by a substantial acreage of semi improved grassland spread across the surrounding Princess Helena College grounds undulating topography. The site is located in a rural context on the outskirts of the village of Preston, Hitchin, on the dipslope of the Chilterns, ~300m north-east of the main residential area within the village. The surrounding landscape is one of mixed agriculture (predominantly pasture) with

hedgerows and treelines providing habitat connectivity between woodlands. The site itself is designated as Wood Pasture and Parkland, forming part of the former rural estate of Temple Dinsley, which is mapped as such in its entirety. Several areas of scattered broadleaved and mixed woodland are present within the wider landscape, most of which are small and fragmented, however there is a large tract of ancient woodland, part of which is a SSSI (Wain Wood) immediately across the road ~10m to the east. Around 1.1km to the north west is a block of Open Mosaic on Previously Developed Land. Further south, ~1300m from the site is a larger area of woodland which forms Hitch wood (designated as a Country Park and hosting a regionally important barbastelle maternity roost). Within the wider landscape, London Luton Airport is situated ~6km south-west and the A1 is situated ~3.8km east. Placed in wider landscape context, the local woodlands and wood pasture here and elsewhere in this part of Hertfordshire form remnant fragments of the once more extensive “chase” landscape of the former Great Hitch Wood, reported in the Saxon period to have encompassed much of the landscape between the River Mimram at Welwyn and Hitchin to the North. As such it can be expected that ecological contexts are likely related.

Site History and Management

In the 1800's the walled garden was marked on historic maps as extant but of smaller extent, comprising a triangular shape which was extended to a square in later years. It has been managed as a garden but in recent years has fallen into disuse. In 2000 it was indicated by Google Earth to contain woodland; possibly a derelict orchard succeeding into woodland. This was cleared around 2016 at which point it was photographed as grass and/or ruderal vegetation. From 2020 works began taking place on the site, causing disturbance, in particular to the west of the site. Sufficient time has elapsed without disturbance for a mid-successional ruderal/grassland community to develop. The present community appears to be subject to no management.

Geology and Soils

The underlying geology comprises chalk, close to a transitional point descending from the clay with flints formation seated atop the chalk interfluvies of the Chiltern dip slope which characterises west Hertfordshire. Locally, minor pockets of glacial deposits occur which may influence geological conditions. This is overlain by freely draining lime-rich loamy soils.

Aspect and Topography

The grassland is sited upon flat terrain within the more widely slope of the eastern aspect of an interfluvium. It receives full sun but parts are likely to be shaded by the adjacent woodland in late evening.

A site location plan is provided in Appendix 2.

1.3 Scope of the Report

The PEA element of this report describes the baseline ecological conditions at the site, evaluates habitats within the survey area in the context of the wider environment and describes the suitability of those habitats for protected or otherwise important species. It identifies possible ecological constraints as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken to record baseline information on the site and surrounding area including habitat types and their suitability for notable or protected species, including roosting bats.
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Potential impacts on features of value, as a result of the proposed development, have been identified.
- Recommendations for further surveys and mitigation have been made.
- Opportunities for the enhancement of the site for biodiversity have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a 2km radius review of statutory designated sites and notable habitats as well as a 2km radius review of granted European Protected Species Licence (EPSL) and notable species records held on magic.gov.uk database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

2.2 Field Survey

The survey was undertaken by Fay Brotherhood (Habitat specialist, Accredited Agent on Natural England Bat Licence Number: 2018-33540-CLS-CLS).

Preliminary Ecological Appraisal

An extended habitat survey was undertaken, giving due consideration to the methodology set out in the UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018). All land parcels are described and mapped with supplementary information provided on habitat conditions, features too small to map to scale, species composition, structure and management. The site was assessed as to its likelihood of hosting important habitats (Important meaning; Local Biodiversity Action Plan/list habitats-Habitats of Principal Importance (e.g. those under S.41 NERC Act) -Annex 1 Habitats Directive habitats (International importance) -Irreplaceable habitats, which once lost cannot be recreated. They were also assessed for their likelihood of hosting protected/important plants

During the survey, habitats were assessed for their suitability to support protected and important species. These include Schedule 8 Protected Species and Schedule 5 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019), Species of Principal Importance s.41 NERC Act (England), endemic, red listed, nationally rare/scarce species, species at edge of range, species on local biodiversity list and common species present on sites containing a large proportion of the species local or regional population). Any field signs indicating the presence of protected or important flora and fauna was recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected or important species. It also includes the results of the P2 surveys thus far.

The survey also examined any trees or buildings which would be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat. In this case, there were no affected buildings or trees.

2.3 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

Both PEA surveys as well as the P2 botanical survey were carried out in late summer and as such there is a risk that early appearing species may have been missed. In the context of the habitats present and the sites history, it is not considered that there is a risk that important early emerging species may have been missed but the risk is not particularly significant.

Whilst planning policy and desk study protocol usually calls for the inclusion of biological records data (BRD), they may not be necessary for this report as their inclusion is unlikely to add significant value to the report's findings due to the small scale and low overall impact of the development and the reports invocation of the precautionary principle. It can be added at a later date if requested.

Please note that BRD will be required if at any time in the future impacts upon protected species are identified as they will be needed to inform any licence required from Natural England to enable to project to legally proceed.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below.

3.2 Designated Sites

Details of any statutory and non-statutory designated sites within a 2km radius of the site, including their reasons for notification, are provided in Table 3 below.

Table 3: Statutory and non-statutory designated sites within 2km radius of the site

Designated site name	Distance from site (approx.)	Reasons for notification from Natural England Herts Environmental Records Centre (HERC)
Wain Wood SSSI	~85m	Wain Wood lies on a north-east facing slope of the decalcified boulder clay which exhibits a gradation of soil types from acidic gravels at the top to base-rich loams at the bottom. It comprises broadleaved, mixed and yew woodland (lowland) in unfavourable but recovering condition. An ancient seat natural oak/hornbeam <i>Quercus species/Carpinus betulus</i> woodland, approaching the northern limit of its natural range, it represents an example of a habitat now much reduced in extent nationally through woodland clearance or felling and restocking with conifers. The wood supports an interesting butterfly community, of which purple hairstreak <i>Thecla quercus</i> is a notable example.
Statutory sites unknown without BRD		

3.3 Historical Records

A search of the magic.gov.uk database for granted EPSLs within a 2km radius of the site has been completed. Displaced bats from licensed sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licensed site. EPSL records for bats are summarised in Table 4.

Table 4: Granted EPSLs for bats within 2km of the site

EPSL reference	Bat species affected	Impacts allowed by licence
2019-38736-EPS-MIT	Common pipistrelle and soprano pipistrelle	Damage of a resting place
EPSM2012-4641	Common pipistrelle, Brown long-eared and Natterer's	Destruction of a resting place and breeding site
2021-50960-EPS-MIT	Common pipistrelle	Destruction of a resting place
2017-32120-EPS-MIT	Common pipistrelle	Destruction of a resting place and breeding site

3.4 Field Survey Results

The results of the field survey are described in Table 6 and illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 5.

Table 5: Weather conditions during the survey

Date: 28/09/2022	
Temperature	17°C
Humidity	57%
Cloud Cover	90%
Wind	0mph
Rain	None

Habitats and Flora

The following habitats are present within and adjacent to the site:

A description and photograph of each habitat is provided in Table 5.

g2 **Calcareous grassland**

g3 **Neutral grassland**

w1g **Other woodland; broadleaved**

u1e **Built linear features**

Table 6: Description and photographs of habitats within and adjacent to the site

Habitat Type	Habitat description	Photograph
g3c5, 123, 134, 160, 350 Arrhenatherum neutral grassland with calcicoles on base rich substrate with a mosaic of sward types/abandoned ruderal derelict area	The site comprises an area of grassland which has formed within the abandoned wall garden on freely draining lime-rich loamy soils overlying chalk. As of September 2022 (when photographed) there were some calcareous grassland indicators present including musk thistle and (weaker indicator) great mullein however the community visible at the time of survey was dominated by ruderals and widespread neutral indicators. The site comprises an area of woodland cleared since 2016 in a site subject to relatively frequent disturbance since then and whilst the site as a whole is designated as wood pasture and parkland on Magic, the habitat does not contain any particularly high value wood pasture/parkland components such as veteran trees, dead wood and high distinctiveness grassland subtypes The photographs here are from Sept 2022. Updated photographic material from July 2024 is available within the accompanying botanical walkover survey. Under the NVC, the community is classified as MG1a Arrhenatherum grassland <i>Festuca rubra</i> subtype. This is in active transition via gradual species acquisition to the calcareous leaning lowland meadow subtype MG1d	

g3, 508, 519 81 Neutral grassland on base rich substrate abandoned, ruderal ephemeral	To the west of the site, a substrate of gravels and hardcore comes close to the surface, forming a mosaic of bare ground interspersed with patches of long and short vegetation amongst which is scattered various items of detritus which could be used as refugia by herpetofauna. To the east of the site ruderals such as dock, ragwort musk/creeping thistle become more dominant. To the far northeast, a stand of canary reed grass and occasional common reed becomes dominant alongside creeping buttercup indicating damper conditions. Some species such as mints and feverfew may have been relics of herb gardens and other cultivations. The site is at present unmanaged. A deceased fallow fawn was found during the July 2024 visit. Species included; Canadian fleabane, self heal, creeping thistle, cats ear, pineappleweed, mayweed, common knapweed, weld, yarrow, musk thistle, spear thistle, white clover, white campion, spotted redshank, ground ivy broad leaved dock, black horehound, creeping buttercup, forget me not, greater mullein, figwort, round leaved cranesbill, fat hen, common ragwort, smooth hawksbeard. Willowherbs, marsh ragwort, dock, nettle, aster, greater plantain, common vetch, feverfew, mints. A fuller species list is available within the botanical walkover report.	
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g35a 26 neutral grassland (woodpasture and parkland)	To the south of the site, beyond the boundary of the old wall an orchard is visible set within longer established grassland into which ruderal species do not extend far from the site. Considering the local geology and soils, some or all of the surrounding grassland could support calcareous communities, but at present lack of management appears to be facilitating transition towards an Arrhenatherum dominated neutral communitie.	
w1g Other woodland; broadleaved	A block of woodland dominated by ash is present to the immediate east of the site. The understory is of grass.	

u1e Built linear features	A brick wall encircles the boundaries (other than to the south). This is in variable condition, but no crevice is deep enough to host roosting bats. There is evidence of insect activity in older parts.	
191 ditch	A minor dry ditch has formed where the southern wall has been removed. This will have some value for burrowing insects.	

Scattered trees	There is a group of small trees beyond the north western boundary, none of which host potential bat roosting features by virtue of age, size and condition.	 A photograph showing a field of tall, dry, yellowish-brown grass in the foreground. In the background, there is a low brick wall. Behind the wall, there is a line of trees, including some taller, thinner trees and some denser green foliage. The sky is overcast.
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4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Likelihood of the Presence of Protected Species

Where physical evidence of the presence of protected species is indeterminate during the survey, the habitats on site are evaluated as to their likelihood to provide sheltering, roosting, foraging, basking or nesting habitat.

Where this report supports a planning application, the ecological interest of the study area (i.e. the area covered by the desk study and field survey) and the proposed development has also been evaluated in terms of the planning policies relating to biodiversity.

4.2 Evaluation

Taking the desk study and field survey results into account, Table 7 presents an evaluation of the ecological value of the site and its potential to host protected species. It details any ecological constraints identified in relation to the proposed development and advises on follow up work that will be required to achieve planning consent or comply with legislation.

Table 7: Evaluation of the site and any ecological constraints

Ref	Summary of Survey Findings	Foreseen Impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>	Biodiversity Enhancements <i>The Local Planning Authority has a duty to ask for enhancements under the NPPF (2023), biodiversity policies outlined within any local or regional plan and the Biodiversity Net Gain Regulations 2024.</i>
Designated sites	The site is not subject to any statutory designation. There is one statutory site within 2km of the site, the closest being Wains Wood SSSI which is adjacent to the site across the road.	No direct impacts to any designated sites are anticipated to occur as a result of the proposed development as the woodland is sufficiently buffered from the woodland by the road. However, it is within the 50m zone of influence of dust emission, which represents a pathway of impact to the woodland functionally connected to Wains	A Construction Environmental Management Plan (CEMP) will be required, outlining best practice measures to minimise the possibility of pollution and habitat damage during construction, with a particular focus on dust suppression.	None.

	The presence of non-statutory designated sites within 2km of the site cannot be established without data from Hertfordshire and Middlesex Environmental Records Centre but it is possible that surrounding habitats, possess designations.	Wood SSSI and any non-statutory designations in the wood beyond the SSSI. These impacts will be temporary and reversible and are unlikely to lead to significant adverse effects on any unknown non-statutory site or lead to a significant loss of important functionally linked habitat.		
Habitats and flora	Onsite The site contains a form of relatively early successional form of Arrhenatherum neutral grassland with some weak calcareous indicator species, occurring over a chalky substrate, as determined by a Phase 2 Botanical Survey carried out by Arbtech (2024). It is developing towards but does not yet qualify as one of the species rich, lowland meadow forms of MG1 and by itself does not qualify as a Habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). It is however of Local value for biodiversity as a habitat with enhancement value that provides a resource for local wildlife.	The proposed development will result in the loss of an area of grassland of local importance, which will result in a net loss in biodiversity (see BNG report, Arbtech 2024). and may contribute to local population declines amongst component species. If losses are compensated by the creation/enhancement of grassland and wood pasture this may result in a net gain in biodiversity. The proposed development will result in the loss of species from the site with impacts upon dependant invertebrates and higher fauna. The surrounding retained habitats could be damaged during construction activities, namely dust generation. This is addressed in Designated Sites.	A Construction Ecological Management Plan (CEMP) will be required as detailed in designated sites. This will likely be requested via condition. The Biodiversity Net Gain assessment will need to be recalculated with onsite or offsite compensation/enhancements/credits accounted for to ensure the site achieves 10% BNG. A Habitat Management and Monitoring Plan will likely be requested via condition detailing habitat creation and enhancement measures at the site over 30 years to compensate for any habitat losses incurred as a result of the proposed development	Habitat creation and enhancement opportunities will be detailed within the EMP and landscape plan but will include: • Native trees and hedgerows. • Creation/enhancement of surrounding grassland Species-specific enhancement opportunities are detailed later in this table.

	There are no important species, although the presence of pyramidal orchid is of interest as a pioneering calcicole, which could be encouraged to colonise newly created habitat within the development. The site is mapped on Magic as being part of a large area of wood pasture and parkland on Magic, which is a mosaicbased Section 41 habitat. The habitat present on site does not comprise any of the important component habitats of WPAP, e.g. dead wood, veteran trees and grassland/heathland with long habitat continuity. Offsite Ancient woodland is located just beyond the northwestern boundary and woodland is present to the immediate southeast. The site is surrounded in semi improved Arrhenatherum grassland.			
Non-native invasive species	No Schedule 9 non-native invasive species recorded at this site. Buddleia is present in small amounts	The buddleia present is at low enough numbers to not pose a significant threat to surrounding habitats at present, however site clearance may result in its spread.	Remove buddleia early in the year before it sets seed.	Do not plant any schedule 9 invasive species.

	which can be of concern in calcareous habitats			
Invertebrates	The site is set within parkland with a considerable acreage of grassland and adjacent ancient woodland. There are also structural elements of value to invertebrates such as stony bare ground interspersed with areas of long and short grass, which provide shelter and basking sites to a range of ground dwelling and flying invertebrate taxa. The grassland plant and ruderal species assemblage will provide both nectar resources for pollinators and food plants for herbivorous adults and larvae. The walls and embanked areas provide resources for burrowing insects such as solitary bees. During the botanical walkover (2024), abundant flying invertebrates were observed including high numbers of marbled white.	The loss of habitats of value to invertebrates is likely to be inconsequential to local populations owing to the presence of more extensive habitat locally. However, site clearance could lead to the loss from the site of protected or important species. The loss of invertebrate populations will undermine attempts to preserve or enhance the site for higher taxa which depend upon them such as birds and bats.	Retaining existing green infrastructure and enhancing the site for biodiversity to ensure the project achieves BNG will ensure the site can retain a thriving invertebrate population which can support insectivorous higher taxa such as birds and bats. An Ecological Management Plan is likely to be requested via condition and this, with the CEMP will outline measures to protect invertebrates on site and ensure the site and its environs can continue to support a high and diverse population. Retain original walls. Avoid repointing unless structurally essential to preserve any features created by invertebrates.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for invertebrates: • Native tree, hedgerow and shrub planting. • Bee bricks on south facing walls • Creation of wildflower grassland. • Use of larval food plants • The creation of a wildlife pond. • Chalk bunds, banks and heaps • Bare ground mosaics • Creation of invertebrate refugia and hibernacula using debris and brash from site clearance. • A green/brown roof on new buildings containing native plants (including larval food plants), vegetated and bare areas for basking, rock and wood piles

				and sandy bank features. Retention of deadwood on the site.
Amphibians	There is suitable terrestrial habitat for common amphibians and great crested newt (GCN) onsite in the form of grassland, ruderals and plentiful refugia in a wider landscape of excellent terrestrial habitat. There are two ponds (known from Magic or aerial photographs) within 500m of the site (one ~310m south and one just over 500m to the west). Travelling between the two ponds via the site would involve a commute of approximately 930m and given that core breeding populations tend to occur within 250m of a breeding pond, it is considered unlikely that GCN would use the site to commute between those ponds, given that there is an obvious tree line they could commute along ~63m to the southeast beyond the adjacent housing complex,	Grassland with ruderals will be removed during construction, as will a range of items of refugia value. The loss of such habitats is likely to be inconsequential to local amphibian populations owing to the presence of more extensive habitat locally. No ponds will be impacted. However, site clearance could result in the death or injury of amphibians, if present.	Further survey of the nearby ponds is considered disproportionate in light of the fact only low numbers of GCN are anticipated. A precautionary working method via a Non-Licensed GCN Method Statement will be implemented during construction, including the following measures: - Site clearance will be undertaken outside of the key amphibian hibernation season (October to February) and the key migration period of February to March. Works are best timed during the aquatic phase when they are likely to be in breeding ponds (April – June). - A toolbox talk will be given to contractors by an ecologist supervising vegetation clearance regarding the possible presence of amphibians, including great crested newt, at the site. - Fencing will be erected around the working area to prevent encroachment into areas of retained habitats where amphibians could be present. - A pre-commencement inspection of the site will be undertaken for amphibians by an ecologist who will supervise the clearance works. - A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any amphibians to disperse. The vegetation	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for amphibians: - Creation of pond for wildlife. - Creation of amphibian refugia and hibernacula using debris and brash from site clearance or any tree felling - Creation of commuting routes around the site - Grassland enhancement

	However, the vegetation on site suggests that the site is seasonally damp and as such there is a risk GCN may be present on site. This is likely to be in the form of low numbers of sporadic individuals,		can then be cleared to ground level and must be maintained at this level for the duration of construction to deter amphibians from the working area. - Any rubble piles will be dismantled by hand and debris and brash will be stored on pallets or removed from the site to prevent amphibians from utilising these areas. - Best practice pollution prevention measures will be implemented to minimise impacts to retained habitats that amphibians could use. - Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. - If any common amphibians are found in the working area these should be moved by hand to a vegetated area along the site boundaries or in retained habitats away from disturbance. - In the event that a great crested newt is identified, works must cease and advice must be sought from a suitably qualified ecologist.	
Reptiles	The site contains structural elements of habitat value to reptiles including a mosaic of short and long vegetation and bare ground with refugia present in a landscape containing plentiful semi natural habitats, including an extensive acreage of unmanaged grassland and there is a risk that reptile populations could be	A small area of grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local reptile populations owing to the presence of more extensive habitat locally. However, site clearance could result in the death or injury of reptiles, if present.	Given the size of the proposed development, and extensive surrounding habitat, further surveys may disproportionate as the development is unlikely to extirpate a population of reptiles from the site. As such, a precautionary working method will be implemented during construction, including the following measures: - Site clearance will be undertaken outside of the reptile hibernation season (November to February) insofar as is possible. - A toolbox talk will be given to contractors by an ecologist regarding	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for reptiles: - Creation of reptile refugia and hibernacula using debris and brash from site clearance. - The creation of basking areas such

	present within the wider area. Species likely to be present in this locale are slow worm and common lizard.		the possible presence of reptiles at the site. - Fencing will be erected around the working area to prevent encroachment into areas where reptiles could be present. - A pre-commencement inspection of the site will be undertaken for reptiles by an ecologist who will supervise the clearance works. - Any reptiles found will be removed to the surrounding grassland. They will be encouraged to move by their own volition or if unable to do so, via bucket having been captured in gloved hand. - A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any reptiles to disperse. The vegetation can then be cleared to ground level and must be maintained at this level for the duration of construction to deter reptiles from the working area. - Any rubble piles will be dismantled by hand and debris and brash will be stored on pallets or removed from the site to prevent reptiles from utilising these areas. - 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 advice must be sought from a suitably qualified ecologist.	as rock piles or areas of cleared ground with shelter nearby.
Roosting bats	No features on site of value to roosting bats. None of the nearby trees appeared	There are not anticipated to be any impacts on roosting bats in this location as a result of the proposed development.	None	Integrated bat boxes, bricks or tubes will be

	of an age or condition suitable for the hosting of potential roost features.	.		incorporated into new buildings on the site External and integrated boxes will be positioned 3-5m above ground level facing south or south-westerly. Positioning must allow for a clear flight path to and from the entrance and they must face landscapes areas, away from artificial light.
Foraging and commuting bats	The grassland on and around the site and the woodland edge could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will result in the loss of a small areas of grassland, but given the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats particularly in light of the fact they are likely to continue travelling along woodland edges. Use of lighting could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for foraging bats: • Enhancements for flying invertebrates such as increasing moth food and nectar plants. • Planting of native trees and hedgerows.

			Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimmable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	
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Birds	No evidence of nesting birds was found during the survey, however ground nesting birds could use the vegetation on site for nesting. The site provides foraging opportunities for raptors such as barn owls and insectivorous/granivorous passerines.	Active nests could be destroyed during the development. Suitable habitat, will be removed from the site, reducing breeding resources in the local area although this is likely to be inconsequential in light of more extensive habitats nearby.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation will be undertaken immediately prior to the commencement of works. All active nests will need to be retained until the young have fledged. Enhancements for invertebrates will benefit bird populations.	Install three woodcrete swift boxes or bricks on the building. The latter can be incorporated into the fabric of the new construction building. These should be sited high ideally above 5 metres. If possible, avoid locations which receive long periods of direct sunlight throughout the day. An ideal place is below the overhang of the verge and barge board.
Hedgehog	There is suitable habitat onsite for hedgehogs in the form of the grassland habitat on site.	A small area of grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to the presence of more extensive habitat locally, however construction activities could result in the death or injury of hedgehogs, if present.	A precautionary working method will be implemented during construction, including the following measures: • A toolbox talk will be given to contractors regarding the possible presence of hedgehogs at the site. • A pre-commencement inspection of the site will be undertaken for hedgehog by an ecologist. • Fencing will be erected around the working area to prevent encroachment into areas where hedgehogs could be present. • If any hedgehogs are found in the working area these should be moved by hand to a vegetated area along the site boundaries or in retained habitats away from disturbance.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: • Planting fruit bearing trees and species-rich grassland to increase foraging opportunities. • Creation of brash piles or installation of hedgehog houses in shady areas.

			- Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. - The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.	Installation of 13 x 13cm (square) gaps under new boundary fencing/walls to enable hedgehogs to move freely through the site.
Hazel dormouse/otter/water vole	Whilst the surrounding landscape is of value to hazel dormice, the site contains no suitable habitat for these species and the likelihood of their presence on site is considered negligible.	No impacts are anticipated on these species as a result of the proposed development.	None.	None.
Badgers	Badgers could forage on the site and are likely to be present within the locale but no sett or foraging activity was found on site or within 30m..	No impacts are anticipated on badger setts as a result of the proposed development. However, construction activities could result in the death or injury of badgers, if present.	A precautionary working method will be implemented during construction, including the following measures: - A toolbox talk will be given to contractors regarding the possible presence of badgers at the site. - A pre-commencement inspection of the site will be undertaken for any new badger activity by an ecologist. - Fencing will be erected around the working area to prevent encroachment into areas where badger setts could be present. - Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. - The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for badgers: Planting fruit bearing trees and enhancing grassland to increase foraging opportunities.

			on to retained habitats which badgers could use. • 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 badger sett is identified, works must cease and advice must be sought from a suitably qualified ecologist.	
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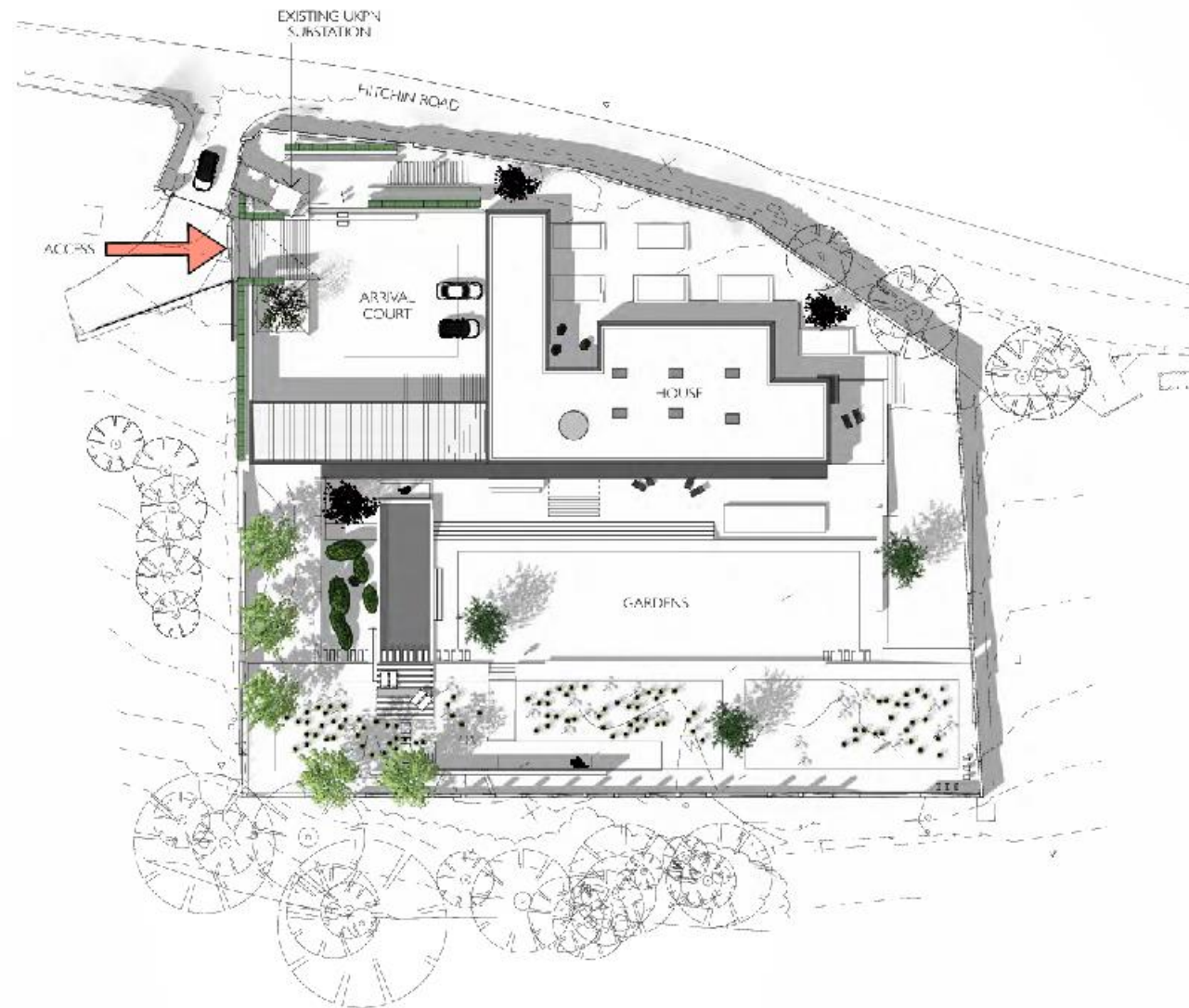
5.0 Bibliography

- Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Dejean, T., Griffiths, R., Foster, J., Wilkinson, J., Arnell, A., Brotherton, P., Williams, P. and Dunn, F. (2014). Using eDNA to Develop a National Citizen Science-based Monitoring Programme for the Great Crested Newt (*Triturus cristatus*). Biological Conservation. 183. 10.1016/j.biocon.2014.11.029.
- Bright, P., Morris, P., Mitchell-Jones, T. and Wroot, S. (2006). The Dormouse Conservation Handbook Second Edition.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chanin, P. (2003). Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10. Natural England, Peterborough.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Defra (2007). Hedgerow Survey Handbook. A Standard Procedure for Local Surveys in the UK. Defra, London.
- Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746
- Edgar, P., Foster, J. and Baker, J (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth
<http://downloads.gigil.org.uk/website/Reptile%20Habitat%20Management%20Handbook.pdf>
- Garland, L. & Markham, S. (2008) Is Important Bat Foraging and Commuting Habitat Legally Protected?
<http://biodiversitybydesign.co.uk/cmsAdmin/uploads/protection-for-bat-habitat-sep-2007.pdf>
- Gent, T. and Gibson, S. (2003). Herpetofauna Workers' Manual. JNCC, Peterborough.

- Gilbert, G., Gibbons, D.W., and Evans, J. (1998) Bird Monitoring Methods: A Manual of Techniques for UK Key Species. The Royal Society for the protection of Birds, Sandy, Bedfordshire, England.
- Google Earth (2024) accessed on 30/7/2024
- Harris, S., Cresswell, P. and Jefferies, D.J. (1989). Surveying badgers. Mammal Society, London.
- HMSO: Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 <https://www.legislation.gov.uk/ukxi/2019/579/contents/made>
- HMSO: Countryside & Rights of Way Act (2000) <http://jncc.defra.gov.uk/page-1378>
- HMSO: Natural Environmental and Rural Communities Act (2006) <http://www.legislation.gov.uk/ukpga/2006/16/contents>
- HMSO: The Protection of Badgers Act 1992 (as amended) <http://www.legislation.gov.uk/ukpga/1992/51/contents>
- HMSO: Wildlife and Countryside Act 1981 (as amended 01.04.1996) <http://jncc.defra.gov.uk/page-1377>
- Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the Built Environment Series Publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting.
- JNCC (2004). Bat Workers Manual, 3rd Edition. <http://jncc.defra.gov.uk/page-2861>
- Joint Nature Conservation Committee (2010). Handbook for Phase 1 habitat survey a technique for environmental audit. http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- Langton, T., Beckett, C. and Foster, J (2001). Great Crested Newt Conservation Handbook. Froglife. Suffolk. http://www.froglife.org/wp-content/uploads/2013/06/GCN-Conservation-Handbook_compressed.pdf
- Magic database (2023). <http://www.magic.gov.uk/MagicMap.aspx> accessed on 29/07/2024
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- National Planning Policy Framework (2021). <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Natural England (2005). Organising Surveys to Determine Site Quality for Invertebrates: A Framework Guide for Ecologists. Natural England, Peterborough.
- Natural England (2007). Badgers and Development a Guide to Best Practice and Licensing. Natural England. Bristol. <http://www.wildlifeco.co.uk/wp-content/uploads/2014/03/badgers-and-development.pdf>
- Oldham R.S., Keeble J., Swan M.J.S. and Jeffcote M. (2000). Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10(4), 143-155. <https://www.thebhs.org/publications/the-herpetological-journal/volume-10-number-4-october-2000/1617-03-evaluating-the-suitability-of-habitat-for-the-great-crested-newt-triturus-cristatus/file>
- Panks, S., White., N., Newsome, A., Potter, J., Heydon, M., Mayhew, E., Alvarez, M., Russell, T., Scott, S.J., Heaver, M., Scott, S.H., Treweek, J., Butcher, B. and Stone, D. (2021). Biodiversity Metric 3.0: Auditing and Accounting for Biodiversity – Technical Supplement. Natural England.

- Strachan, R., Moorhouse, T. and Gelling, M. (2011). Water Vole Conservation Handbook. Third Edition. Wildlife Conservation Research Unit, Oxford.
- UK Habitat Classification Working Group (2018). UK Habitat Classification User Manual at <http://ecountability.co.uk/ukhabworkinggroup-ukhab>
- Wray, S., Wells, D., Long, E. and Mitchell-Jones, T (2010). Valuing Bats in Ecological Impact Assessment. IEEM In-Practice. Number 70 (December 2010). Pp. 23-25.

Appendix 1: Proposed Development Plan



Appendix 2: Site Location Plan



Appendix 3: Habitat Survey Plan



Appendix 4: Legislation and Planning Policy

LEGAL PROTECTION

The ***Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*** came into force when Britain left the European Union on 31st January 2020. It covered amendments relevant to this survey to:

Wildlife and Countryside Act 1981: England and Wales (x1 amendment)

Conservation of Habitats and Species Regulations 2017 (x29 amendments)

National and European Legislation Afforded to Habitats

International Statutory Designations

Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are sites of European importance and are designated under the EC Habitats Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora (the Habitats Directive) and the EC Birds Directive 2009/147/EC on the conservation of wild birds respectively. Both form part of the wider Natura 2000 network across Europe.

Under the Habitats Directive Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe. Over 1,000 animal and plant species, as well as 200 habitat types, listed in the directive's annexes are protected in various ways:

Annex II species (about 900): core areas of their habitat are designated as sites of Community importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

Annex IV species (over 400, including many annex II species): a strict protection regime must be applied across their entire natural range within the EU, both within and outside Natura 2000 sites.

Annex V species (over 90): Member States must ensure that their exploitation and taking in the wild is compatible with maintaining them in a favourable conservation status. SPAs are classified under Article 2 of the Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles from the coast (i.e. 'territorial waters') are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2017 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994.

The Conservation of Offshore Marine Habitats and Species Regulations 2017 consolidate and update the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007. The 2017 Regulations introduce amendments which transfer responsibility for European nature conservation in the Welsh offshore region to Welsh Ministers. This gives Welsh Ministers similar powers in Welsh offshore waters to those currently exercised by Scottish Ministers in Scottish offshore waters. These regulations transpose

into national law Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), and elements of Council Directive 2009/147/EC on the conservation of wild birds (Wild Birds Directive) in the UK offshore area. They came into force on 30th November 2017. These regulations apply to the UK's offshore marine area which covers waters beyond 12 nautical miles, within British Fishery Limits and the seabed within the UK Continental Shelf Designated Area. The Conservation of Habitats and Species Regulations 2017 form the legal basis for the implementation of the Habitats and Birds Directives in terrestrial areas and territorial waters out to 12nm in England and Wales (including the inshore marine area) and to a limited extent in Scotland and Northern Ireland.

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and recognises the importance of wetland ecosystems in relation to global biodiversity conservation. The Convention refers to wetlands as “*areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres*”. However, they may also include riparian and coastal zones. Ramsar sites are statutorily protected under the Wildlife & Countryside Act 1981 (as amended 01.04.1996) with further protection provided by the Countryside and Rights of Way (CROW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. The Government in England and Wales has issued policy statements which ensure that Ramsar sites are afforded the same protection as areas designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs). Further provisions for the protection and management of SSSIs have been introduced by the Nature Conservation (Scotland) Act 2004.

National Statutory Designations

Sites of Special Scientific Interest (SSSI) are designated by nature conservation agencies in order to conserve key flora, fauna, geological or physio-geographical features within the UK. The original designations were under the National Parks and Access to the Countryside Act 1949 but SSSIs were then re-designated under the Wildlife & Countryside Act 1981 (as amended). As well as reinforcing other national designations (including National Nature Reserves), the system also provides statutory protection for terrestrial and coastal sites which are important within the European Natura 2000 network and globally.

Local Statutory Designations

Local authorities in consultation with the relevant nature conservation agency can declare Local Nature Reserves (LNRs) under the National Parks and Access to the Countryside Act 1949. LNRs are designated for flora, fauna or geological interest and are managed locally to retain these features and provide research, education and recreational opportunities.

Non- Statutory Designations

All non-statutorily designated sites are referred to as Local Wildlife Sites (LWS) and can be designated by the local authority for supporting local conservation interest. Combined with statutory designation, these sites are considered within Local Development Frameworks under the Town and Country Planning system and are a material consideration during the determination of planning applications. The protection afforded to these sites varies depending on the local authority involved.

Regionally Important Geological Sites (RIGs) are the most important geological and geomorphological areas outside of statutory designations. These sites are also a material consideration during the determination of planning applications.

The Hedgerow Regulations 1997

The Hedgerow Regulations 1997 are designed to protect 'important' countryside hedgerows. Importance is defined by whether the hedgerow (a) has existed for 30 years or more; or (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys without the permission of the local authority. Hedgerows 'within or marking the boundary of the curtilage of a dwelling-house' are excluded.

National and European Legislation Afforded to Species

The Habitats Directive

The EC Habitats Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore wild species listed on the Annexes to the Directive at a favourable conservation status, introducing robust protection for those species of European importance. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2017 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). This has been amended by the ***Conservation of Habitats and Species Regulations (amendment) (EU Exit) Regulations (2019)*** which continue the same provision for European protected species, licensing requirements and protected sites after the UK leaves the EU.

The following notes are relevant for all species protected under the EC Habitats Directive:

In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.

The Habitats Regulations do not define the act of 'migration' and, therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.

In order to obtain a European Protected Species Licence (EPSL), the application must demonstrate that it meets all of the following three 'tests':

- The action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment;

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

The Wildlife and Countryside Act (WCA) 1981 (as amended)

The Wildlife and Countryside Act (WCA) 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979, implemented 1982) and implements the species protection requirements of EC Birds Directive 2009/147/EC on the conservation of wild birds in Great Britain (the birds Directive). The WCA 1981 has been subject to a number of amendments, the most important of which are through the Countryside and Rights of Way (CROW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991
- Natural Environment & Rural Communities (NERC) Act 2006
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

Badgers

Badgers *Meles meles* are protected under The Protection of Badgers Act 1992 which makes it an offence to:

- Wilfully kill, injure, take, or attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett or any part thereof
- Intentionally or recklessly disturb a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

Effects on development works:

A development licence will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for any development works likely to affect an active badger sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agencies to define what would constitute a licensable activity. It is not possible to obtain a licence to translocate badgers.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the WCA. Among other things, this makes it an offence to:

- Intentionally (or recklessly in Scotland) kill, injure or take any wild bird
- Intentionally (or recklessly in Scotland) take, damage or destroy (or, in Scotland, otherwise interfere with) the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.
- Intentionally or recklessly obstruct or prevent any wild bird from using its nest (Scotland only)

Certain species of bird, for example the barn owl, bittern and kingfisher receive additional protection under Schedule 1 of the WCA and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC) and are commonly referred to as “Schedule 1” birds.

This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young
- Intentional or reckless disturbance of dependent young of such a bird
- In Scotland only, intentional or reckless disturbance whilst lekking
- In Scotland only, intentional or reckless harassment

Effects on development works:

Works should be planned to avoid the possibility of killing or injuring any wild bird or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Schedule 1 birds are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Amphibians and Reptiles

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae* and great crested newt *Triturus cristatus* receive full protection under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
 - To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
 - To impair their ability to hibernate or migrate
 - To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

With the exception of the pool frog, these species are also listed on Schedule 5 of the WCA and they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of reptiles are protected solely under Schedule 5, Section 9(1) & (5) of the WCA, i.e. the adder *Vipera berus*, grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis*. It is prohibited to:

- Intentionally or recklessly kill or injure these species.

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect the breeding sites or resting places amphibian and reptile species protected under Habitats Regulations. A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation, but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the WCA.

Water Voles

The water vole *Arvicola terrestris* is fully protected under Schedule 5 of the WCA. This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

Effects on development works:

If development works are likely to affect habitats known to support water voles, the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles may be issued by the relevant countryside agency for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted

to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

Otters

Otters *Lutra lutra* are fully protected under the Conservation Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Otters are also currently protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works likely to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored

Bats

All species are fully protected by Habitats Regulations 2010 as they are listed on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. All bats)
- Deliberate disturbance of bat species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are afforded the following additional protection through the WCA as they are included on Schedule 5:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

A European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will be required for works are likely to affect a bat roost or an operation which are likely to result in an illegal level of disturbance to the species will require an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Hazel Dormice

Hazel dormice *Muscardinus avellanarius* are fully protected under Habitats Regulations through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species
- Deliberate disturbance of species in such a way as:
- To impair their ability to survive, breed, or reproduce, or to rear or nurture young;
- To impair their ability to hibernate or migrate
- To affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Dormice are also protected under the WCA through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection

Effects on development works:

Works which are liable to affect a dormice habitat or an operation which are likely to result in an illegal level of disturbance to the species will require a European Protected Species Licence (EPSL) issued by the relevant countryside agency (i.e. Natural England, Natural Resources Wales (NB: Hazel Dormouse are entirely absent from Scotland)). The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

White Clawed Crayfish

There is a considerable amount of legislation in place in an attempt to protect the White-clawed crayfish *Austropotamobius pallipes*. This species is listed under the European Union's (EU) Habitat and Species Directive and is listed under Schedule 5 of the Wildlife and Countryside Act (1981). This makes it an offence to:

- Protected against intentional or reckless taking
- Protected against selling, offering or advertising for sale, possessing or transporting for the purpose of sale

It is also classified as Endangered in the IUCN Red List of Endangered Species. As a result of this and other relevant crayfish legislation such as the Prohibition of Keeping of Live Fish (Crayfish) Order 1996, a series of licences are needed for working with White-clawed and non-native crayfish. These are:

- A licence to handle crayfish (therefore survey work) in England
- A licence for the keeping of crayfish in England and Wales with an exemption for Signal crayfish (England).
- People in the post-code areas listed with crayfish present prior to 1996 do not need to apply for consent for crayfish already established. It does not, however, allow any new stocking of non-native crayfish into waterbodies. Consent for trapping of non-native crayfish for control or consumption is most likely to be granted in Thames and Anglian regions in the areas with "go area" postcodes.
- Harvesting of crayfish is prohibited in much of England and in any part of Scotland and Wales.

Effects on development works:

The relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) will need to be consulted about development which could impact on a watercourse or wetland known to support white clawed crayfish. Conservation licences for the capture and translocation of crayfish can be issued if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of the works.

Wild Mammals (Protection Act) 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Legislation Afforded to Plants

With certain exceptions, all wild plants are protected under the WCA. This makes it an offence for an 'unauthorised' person to intentionally (or recklessly in Scotland) uproot wild plants. An authorised person can be the owner of the land on which the action is taken, or anybody authorised by them.

Certain rare species of plant, for example some species of orchid, are also fully protected under Schedule 8 of the Wildlife and Countryside Act 1981 (as amended). This prohibits any person from:

- Intentionally (or recklessly in Scotland) picking, uprooting or destruction of any wild Schedule 8 species (or seed or spore attached to any such wild plant in Scotland only)
- Selling, offering or exposing for sale, or possessing or transporting for the purpose of sale, any wild live or dead Schedule 8 plant species or part thereof

- In addition to the UK legislation outlined above, several plant species are fully protected under Schedule 5 of The Conservation of Habitats and Species Regulations 2010. These are species of European importance. Regulation 45 makes it an offence to:
- Deliberately pick, collect, cut, uproot or destroy a wild Schedule 5 species
- Be in possession of, or control, transport, sell or exchange, or offer for sale or exchange any wild live or dead Schedule 5 species or anything derived from such a plant.

Effects on development works:

A European Protected Species Licence (EPSL) will be required from the relevant countryside agency (i.e. Natural England, Natural Resources Wales, Scottish Natural Heritage) for works which are likely to affect species of plants listed on Schedule 5 of the Conservation of Habitats and Species Regulations 2010. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

Invasive Species

Part II of Schedule 9 of the WCA lists non-native invasive plant species for which it is a criminal offence in England and Wales to plant or cause to grow in the wild due to their impact on native wildlife. Species included (but not limited to):

- Japanese knotweed *Fallopia japonica*
- Giant hogweed *Heracleum mantegazzianum*
- Himalayan balsam *Impatiens glandulifera*

Effects on development works:

It is not an offence for plants listed in Part II of Schedule 9 of the WCA 1981 to be present on the development site, however, it is an offence to cause them to spread. Therefore, if any of the species are present on site and construction activities may result in further spread (e.g. earthworks, vehicle movements) then it will be necessary to design and implement appropriate mitigation prior to construction commencing.

Injurious weeds

Under the Weeds Act 1959 any landowner or occupier may be required prevent the spread of certain 'injurious weeds' including (but not limited to):

- Spear thistle *Cirsium vulgare*
- Creeping thistle *Cirsium arvense*
- Curled dock *Rumex crispus*
- Broad-leaved dock *Rumex obtusifolius*
- Common ragwort *Senecio jacobaea*

Effects on development works:

It is a criminal offence to fail to comply with a notice requiring such action to be taken. The Ragwort Control Act 2003 establishes a ragwort control code of practice as common ragwort is poisonous to horses and other livestock. This code provides best practice guidelines and is not legally binding.

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.