# Construction and Ecological Mitigation Plan

Former New Bridge Inn Site, Slipe Drove, West Pinchbeck, Spalding, Lincolnshire, PE11 3NF

G&L Developments Ltd

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**Guidelines**

This assessment has been designed to meet:

- British Standard 42020 (2013) 'Biodiversity – Code of Practice for Planning and Development'.

**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 193 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)

In consequence of the scale and intensity of the proposed development, this plan-led report is considered adequate and proportionate. It communicates all relevant information necessary to determine a planning application or support the recommendations for further surveys.

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# 1.0 Introduction and Context

## *1.1 Background*

Arbtech Consulting Ltd was commissioned by G&L Developments Ltd to produce a construction and ecological management plan (CEMP) for the Former New Bridge Inn Site, Slipe Drove, West Pinchbeck, Spalding, Lincolnshire, PE11 3NF. The reason for this is detailed in section 1.5, the scope of the report.

To establish the current habitat value for ecological receptors, an ecological survey has been carried out on site prior to this assessment:

- A Preliminary Ecological Appraisal (PEA) was carried out by Arbtech Consulting Limited on 1st December 2020.

This report is informed by evidence gathered by this survey on site. This report should be read in conjunction with this.

A further Biodiversity Net Gain Calculation was carried out for the site buy Arbtech in December 2020.

The primary aim of this CEMP is to minimise the construction impacts of the development on the surrounding environment and maximise the ecological value of the site in the long term.

The measures covered in this management plan will also ensure that there is a net-gain in biodiversity interest on site, in accordance with the National Planning Policy Framework (NPPF). The enhancements will include a range of site-specific, suitable, and achievable gains.

## *1.2 Site location*

The site is centred on National Grid Reference TF 2007 2442 and has an area of approximately 0.1ha. Briefly and according to the previous habitat survey:

'*The site consists of a vacant plot of land on which a pub was formerly sited. It is bounded by an embanked river, typical of Lincolnshire, a housing estate and a fen nature reserve.*'

## *1.3 Previous ecological survey results*

The site's features are summarised below from the phase 1 habitat survey (Arbtech, Dec 2020). For the desk study, please refer to this report for full details. The habitat map can be seen in figure 1 below, with a landscape map as figure 2.

As identified during the PEA including PRA survey (Arbtech, Dec 2020) the following habitats are present on site:

- J1.3 ephemeral/short perennial/ C3.1 tall ruderal/ J2.3.6 dry ditch
- *The site of the proposed development (to the right of the photo) is separated from the adjacent habitats by a shallow, dry ditch (marked in yellow). The central part comprises an open mosaic habitat vegetated by early successional community of typical arable ruderals including cleavers Galium aparine bristly oxtongue Helminthotheca echioides, speedwells Veronica spp. white dead nettle Lamium album, and a range of dandelions Taraxacum, Erythrosperma, Hamata agg and hawkweeds Hieracium agg. Butterbur Petasites hybridus was also present. Amongst these and in particular around the edges of the site and in the ditch is a community*

*of tall ruderals including creeping thistle Cirsium arvense, spear thistle Cirsium vulgare, stinging nettle Urtica dioica, small nettle Urtica urens, cleavers Galium aparine, hogweed Heraclum sphondulium, sow thistles Sonchus spp. and charlock Sinapsis arvensis Some non-ruderal species were also present including common mallow Mallow sylvestris.*

- J3.6 buildings

  *A low concrete pill box type structure stands immediately west of the ditch separating the two fields. There are no external features of use to bats but it can be accessed via unglazed windows and open access routes.*

The following off-site habitats were also recorded:

- B5 marshy grassland

  *Offsite, part of the adjacent field comprises marshy grassland interspersed with patches of ruderals, in particular nettles. This is usually indicative of nutrient enrichment (improvement) but in this scenario is more likely to be a result of a naturally high nutrient status caused be periodic flooding.*

- A3.1 broadleaved scattered trees.

  *Offsite, 5 willow trees Salix sp. are scattered through the northern part of the adjacent field. The pictured tree (T1) contains no features with habitat value for bats.*

- E3 fen

  *The above-described marshy grassland grades into fen at the north western corner of the site, dominated by common reed Phragmites australis. Other fen species may be visible amongst this during the optimal time of year.*

- G2 drain

  *Offsite, a drain (viewed facing east) runs between the adjacent field and the road, with common reed comprising the marginal vegetation on the northern bank and nutrient rich semi-improved grassland on the southern bank. The water is clear and is not visibly impacted by pollution or eutrophication (nutrient enrichment), although the impacts of the latter are often absent at this time of year.*

- B6 poor semi improved neutral grassland

  *The southern bank of the drain and the grass verge, which extends east around the site comprises semi-improved grassland. The species composition could not be accurately assessed due to the time of year and the fact it had been recently mown. It is dominated at the time of writing by low winter growth umbellifers (possibly water dropwort Oenanthe sp.) and whilst it appears improved in nature, this may be a result of the naturally high nutrient status of the local fenland soils.*

- G1 running water

  *North of the flood defence embankment bordering the northern boundary of the site is the River Glen. The river is channelized and slow flowing,*

- F2 marginal vegetation

  *A range of riparian species grow along the banks of the river. Further up the embankments more nutrient rich semi-improved grassland is present.*

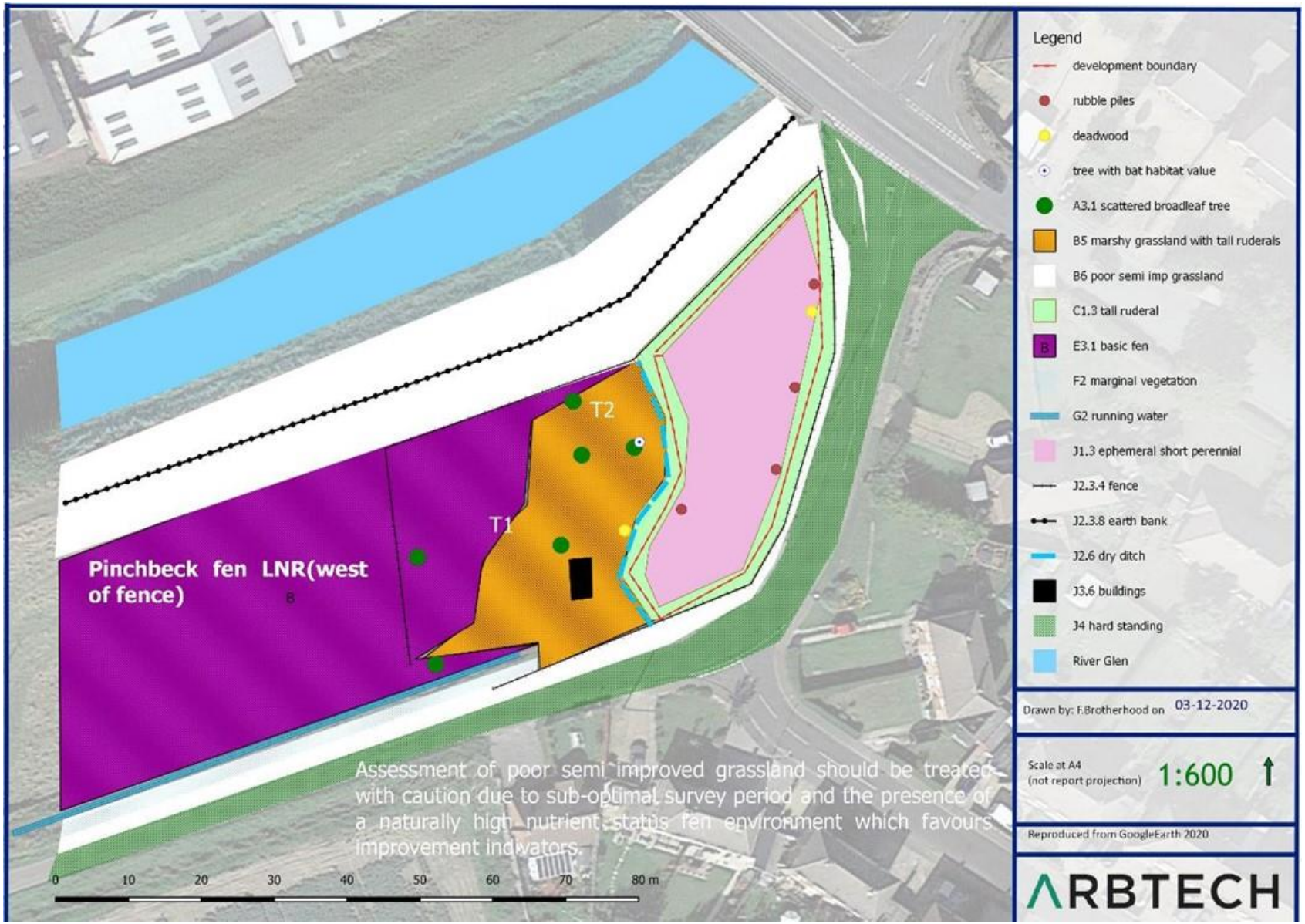



Figure 1: Phase 1 habitat survey of the site from Dec 2020.




Figure 2: Local landscape map

The main conclusions from the previous surveys regarding present ecological receptors are summarised below:

- Local designated sites

  *The site is not subject to any designation but is next to a designated Local Wildlife Site. A pre and post construction environmental management plan should be prepared to assess all likely environmental impacts upon the adjacent LWS and detail how these will be avoided or mitigated. This will require input from the contractor and Environment Agency so that full technical detail can be provided.*

- Notable habitats and plants

  *The site is adjacent to basic fen and on the river embankment semi-improved grassland. There are trees in close proximity to the site.*

  *The site itself appeared to contain ruderal vegetation however as the survey was completed in the sub optimal period, when many species are dormant, an accurate assessment of the site's community could not be made. A watercourse (dyke) lies close to the eastern site boundary which is known to have botanical interest including yellow loosestrife. The environmental management plan must contain a section detailing how any environmental factors that may adversely impact the functioning and species composition of the adjacent habitats will be avoided or mitigated.*

- Invertebrates

  *Invertebrate fauna appears to be under-recorded in the BRD, but the waterlogged nature of the neighbouring site indicates it is likely to host significant invertebrate assemblages. The habitat onsite contains a mixture of bare ground, vegetation and topographical variation of value to invertebrate assemblages. Retaining a mosaic of bare ground and wildflower meadow within the future development will aid in retaining a diverse and healthy invertebrate community on the site. Brash and rock piles will provide additional invertebrate habitat.*

- Bats

  *The pill box in the adjacent field has negligible habitat value for roosting bats. There are no suitable roosting features on the building. The willow tree in the adjacent field (T1) has negligible habitat value for roosting bats. There are no suitable roosting features on the tree. The willow tree in the adjacent field (T2) has high habitat value for tree dwelling roosting bats as part as a wider network of tree roosts likely to be present along the slipe. There are excellent foraging and commuting resources in close proximity.*

- Breeding birds

  *No evidence of nesting birds was found during the survey and the site itself is not suitable for ground nesting birds, however birds could use the vegetation in the adjacent field and Pinchbeck fen slipe LNR for nesting, in particular ground nesting species. Birds may also nest in the willows in the adjacent field, particularly in the crevice created by loose bark on T2. Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately prior to the commencement of works. All active nests will need to be retained, or if off site protected with a buffer zone until the young have fledged.*

- Reptiles

  *The site provides a small area of reptile habitat at the terminus of a long linear feature of suitable habitat stretching westward across 3km. Eastward a bridge, a housing estate and road form a barrier to dispersal. The BRD includes records of grass snakes located in the adjacent Pinchbeck slipe, increasing the likelihood of them and possibly other common reptiles being present on the site. As reptiles are known to be using the adjacent site, further survey is considered disproportionate as it would be unlikely to yield any useful additional insights. Instead, a reptile mitigation plan should be commissioned in which a precautionary approach to minimise the risk of killing or injuring reptiles will be detailed.*

- Amphibians

  *Amphibians and great crested newts (GCN) are recorded in the area including within the adjacent Pinchbeck fen slipe LNR, where 11 waterbodies stretch over 3km are. However, these appear mostly to comprise seasonal flushes rather than permanent waterbodies. There are no waterbodies within 250m, however the*

  *A complex network of drainage ditches dissects the wider landscape in which amphibians and GCN could commute and breed, one of which runs alongside Pinchbeck slipe.*

  *The site itself contains suitable terrestrial habitat around the boundaries in the form of rubble piles and dead wood amongst tall ruderal vegetation that could be used as refugia and hibernacula. There is also a ditch which was dry at the time of survey and lacks emergent vegetation but may hold water on a temporary basis in times of high groundwater levels or flooding. The ditch may be used as a commuting route across the site. During the active growing season, the combination of vegetation and bare ground comprising the centre of the site appears to comprise a low growing community that may be too open to represent suitable habitat. As the site is small, and the risks of GCN being present in the immediate construction area is low, terrestrial survey would be unlikely to yield any useful additional insights proportional to the welfare impacts of disturbing newts. Additionally, whilst GCN may be present in the adjacent ditches, ditches cannot be surveyed as effectively as ponds. Instead a non-licenced amphibian mitigation plan should be commissioned (this can be combined with the reptile mitigation plan).*

- Other terrestrial mammals

  *Suitable foraging habitat for badgers found on site. BRD shows that badgers are present in the local area.*

  *The River Glen and the Glen Soke dyke running along the southern boundary of Pinchbeck Slipe LWS provides suitable habitat for water voles. The BRD includes records of water voles within close proximity of the site. No further surveys. The construction environmental management plan will be sufficient to manage the low risk to water vole habitat.*

  *The river Glen provides suitable habitat for otters although this stretch of the river is subject to heavy public disturbance, meaning otters are likely to be seen only in passing. The dyke is unlikely to host otters as it is unlikely to support sufficient prey and its close location to a road and lack of cover makes it unsuitable for a holt. The BRD includes records of otters within close proximity of the site increasing the likelihood that otters may pass through the site.*

  *No suitable habitat and the site is outside of the known distribution for dormice.*

### *1.4 Project Description*

This report is prepared specifically to discharge a condition planning of a planning application with South Holland District Council:

Planning application [H14-0951-20]

*"Erection of seven dwellings"*

The condition of planning is as follows:

*"The development hereby permitted shall be carried out in accordance with the measures set out in the Preliminary Ecological Appraisal Survey. Issue 3. 10/12/2020 forming part of this planning application, unless otherwise agreed in writing by the Local Planning Authority, in particular the following measures shall be fully implemented within the first planting season after the occupation of the first dwelling: Specifically -- A pre and post construction environmental management plan shall be prepared to assess in detail and mitigate for any adverse environmental impacts caused by the sites construction and its post development residential use. The environmental management plan shall contain a section detailing how any environmental factors that may adversely impact the functioning and species composition of the adjacent habitats will be avoided or mitigated. a mosaic of bare ground and wildflower meadow within the future development shall be retained that will aid in retaining a diverse and healthy invertebrate community on the site. Brash and rock piles will provide additional invertebrate habitat. Species for garden areas should be selected with care, excluding any Schedule 9invasive species or other species of concern such as buddleia that may spread into the surrounding habitats. The lighting on the developed site shall be limited to the new buildings only. No lighting shall be installed within the garden areas/along the site boundaries, thereby maintaining the existing dark areas adjacent the developed site for bats and other light sensitive species. A reptile mitigation plan shall be commissioned in which a precautionary approach to minimise the risk of killing or injuring reptiles will be detailed. Works shall be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately prior to the commencement of works. All active bird nests will need to be retained, or if off site protected with a buffer zone until the young have fledged*

*Reason: To ensure that the Local Planning Authority retains control over the development in the interests of the ecological importance of the site and area in which it is set. This Condition is imposed in accordance with Policy 28 of the South East Lincolnshire Local Plan, 2019.*

The current and proposed site plans are included below as figure 3.

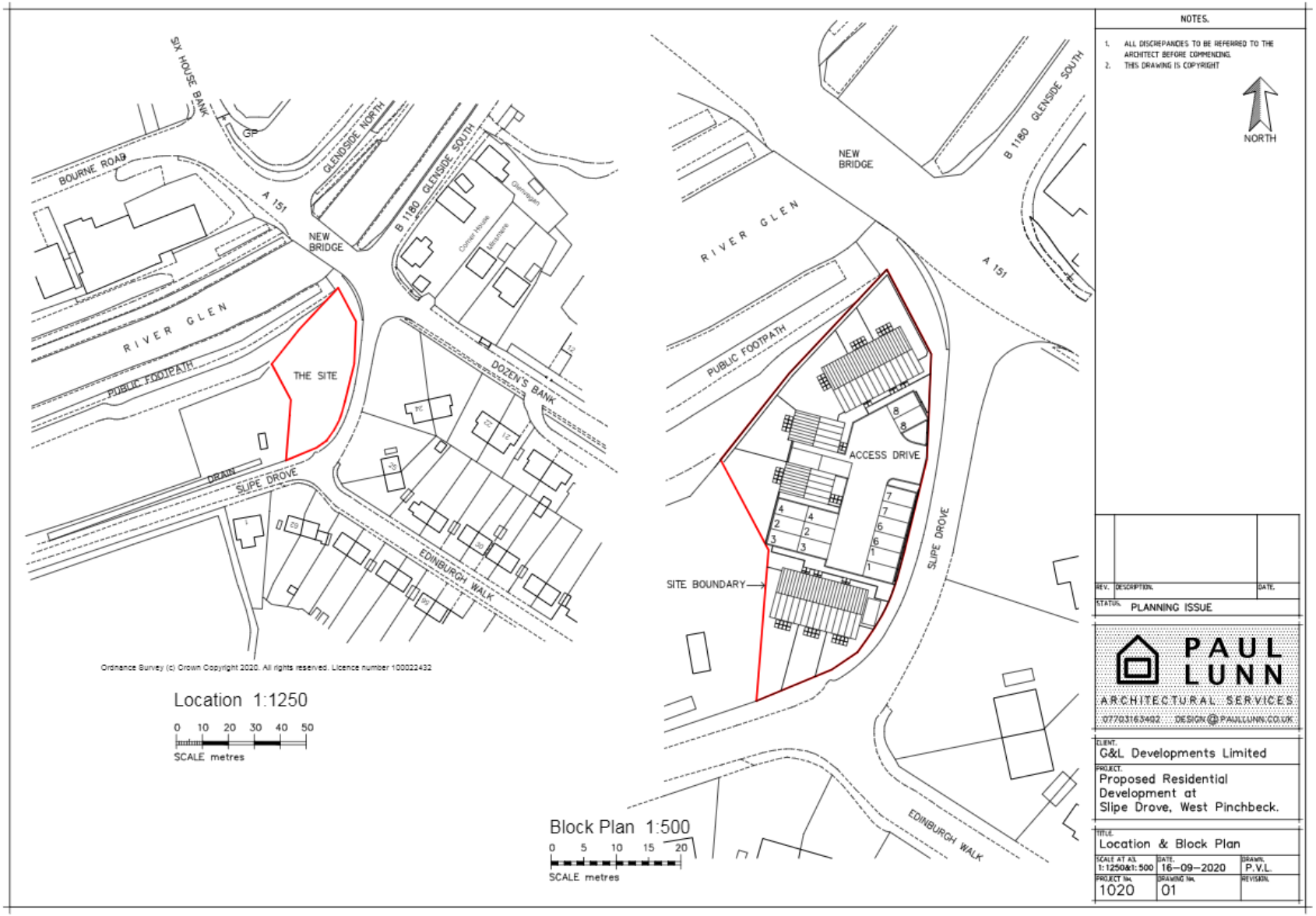



Figure 3: Existing and proposed site plan

### *1.5 Scope of this report*

The scope of this report is to provide a construction and ecological mitigation plan for the development itself, and ecology in general and also to outline the measures that would be used to comply with legislation. This strategy provides ecological mitigation and enhancements for the site to assist with the progression of the planning application, prior to the development itself. This is an iterative document and may be superseded by any further findings on site, especially in relation to any taxa that require a European Protected Species License (ESPL) due to disturbance (if bats or great crested newts are later found in or around the site during the development for example).

The report will also provide provisions to be incorporated during the proposed development to produce a net gain in biodiversity, in accordance with the NPPF. This will include increasing opportunities on-site for wildlife.

## 2.0 Ecological management and enhancement details

### *2.1 Informative and EPSL statement*

The following Tables 1 and 2 detail the mitigation and enhancements of the site for ecology interest, as well as management measures.

The enhancements will include a range of site-specific, suitable, and achievable gains. Best practice management regimes will be implemented to further increase the ecological interest of the site as detailed below.

**Table 1: Mitigation, Capital Works and Possible Enhancements in Year 1.**

| **Work** | **Specification** |
|---|---|
| Mitigation to protect the adjacent priority habitats | Dust, lighting and noise during construction poses risks to the adjacent local wildlife site and priority habitats and their species (specifically reptiles and great crested newts).<br>The adjacent local wildlife site and priority habitats will be protected during construction using the following measures:<br><br>**Dust**<br>Typical fall-out zone for aerially mobilised construction dust is 50m. To limit the creation of dust the site will:<br>• Site speed limit will be set at 5mph for all vehicles on site<br>• Ensure loading and unloading of materials is at the lowest drop height<br>• Ensure vehicles carrying dusty materials e.g. muck away, skips etc are securely and properly sheeted before leaving site<br>• Avoid dust creating activities during hot, dry periods<br>• Activities creating dust will be damped down, especially during dry weather<br>• Ensure there is a supply of water to the site to enable damping down, if not arrange an alternative source of water or dust suppressant and have it on standby should it be required.<br>• Locate stockpiles out of the wind, or provide wind breaks to minimise dust creation<br>• Plant and equipment fitted shall be fitted with dust suppression equipment or water suppressant systems where required.<br><br>**Noise**<br>Best practice as defined in the Control of Pollution Act 1974 will be used on site to avoid unacceptable levels of noise and vibrations. Further guidance can be found in British Standard 5228-1:2009. Noise pollution during construction work could disturb species present within the nearby designated sites. All work that will produce high levels of noise and vibration must be carried out outside of the winter season which runs from September to March inclusive. |

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| | The site manager must consider:<br>• Alternative working methods to utilise quiet or low noise equipment.<br>• The site will work to set working hours to restrict noisy activities to the period between 9am and 5pm. This may be controlled by planning permission.<br>• Minimise drop heights into hoppers, lorries or other plant.<br>• Consider screening off sources of noise.<br>• Ensure plant is shut down when not in use.<br><br>**Water pollution**<br>Surface water pollution can occur from substances used on site including diesel and oil, paint, solvents, cleaners and other harmful chemicals, as well as construction debris. To prevent water pollution from site the following measure should be considered during the development:<br>• Use non-toxic paints, solvents and other hazardous materials wherever possible<br>• Segregate, tightly cover and monitor toxic substances to prevent spills and possible site contamination<br>• Collect any wastewater generated from site activities in settlement tanks, screen, discharge the clean water, and dispose of remaining sludge according to environmental regulations<br>• No burning of materials on site<br>• Cover piles of building materials like cement, sand and other powders, regularly inspect for spillages, and locate them where they will not be washed into waterways or drainage areas<br><br>**Pollution prevention**<br>Common pollutants from a construction site include silt, oil, cement, concrete, sewage and other waste materials. The following measures will ensure that waste materials from site do not affect nearby designated sites:<br>• Store waste safely and securely e.g. covered skips and bins<br>• Prevent liquid waste from leaching through containers<br>• Engage a waste contractor to remove waste from site<br>• Only use authorised persons to take away waste<br>Cement and concrete can cause serious pollution and therefore during the making, mixing and usage of these substances, measures should be taken to ensure that wastes do not enter any drains or onto the ground. Similarly, the washing out of concrete equipment and tools should also ensure the same. The following measures will ensure that concrete waste will not affect nearby sites: |

| | |
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| | • Mixing should take place on an impermeable area<br>• Surplus dry mixes should be disposed of off site<br>• Equipment and tools should be washed out in a designated area<br>• Excess concrete should be sent back to the batching plant<br>• Store the used washing water to let them settle out and have a re-circulation system to reuse the water<br>• Discharge wash waters that cannot be reused to the foul sewer<br>• Ensure cement bags are sealed after use and stored appropriately<br><br>**Fencing**<br>The development zone will be fenced off to minimise dust entering the adjacent habitat and also provide some acoustic protection. A timber framed hoarding would provide such mitigation and security. The building will be fitted with full protective scaffolding with sheeting to prevent dust entering the adjacent designated sites and to dampen any noise pollution. |
| Reptile mitigation and enhancement | **Reptile mitigation**<br>The PEA report (Arbtech, Dec 2020) concluded that the site provides a small area of suitable reptile habitat. Reptile are known to be using the adjacent local wildlife site and as such a reptile mitigation plan has been recommended to minimise the risk of killing or injuring reptiles. The following precautionary approach will be adhered to during construction works:<br>• The development area should be kept largely clear of vegetation in order to make it unattractive to reptiles.<br>• This clearance should be to ground level and be carried out in two stages, the latest stage undertaken at least 2 days prior to topsoil removal or other works to allow any reptiles present to move away. The first cut should be at about 15cm from the ground (the current state of the site) and the second (between 1 and 3 days later) close to the ground, thereby preventing injury to reptiles during clearance.<br>• The vegetation should then be maintained at a very short level (less than 5 cm) even if there are delays in development.<br>• Compost heaps or vegetation, log or rubble piles should be moved by hand prior to commencement of any work.<br>• Material piles across the site must be dismantled by hand<br>• A buffer around the north-western and western site boundaries along with herpetofauna fencing to ensure any herpetofauna are restricted from accessing the site during development is recommended. |

**Reptile enhancement**

Waste materials created during the development e.g. log piles, brash, rocks etc. Can be used to create hibernacula and refugia for common reptiles. These should be positioned on the site boundaries below the existing hedgerow which will be retained. The planting of wildflower meadow areas and native scrub will provide suitable habitat for reptiles.

To add further habitat value for herptiles, one hibernacula of earth, logs and stones will be created on site (See schematic in figure 4 below and map in Appendix 1). This will provide refuge and hibernation sites for amphibians and reptiles.

Points to consider when creating a hibernaculum include:

• a sunny position

• a well-drained site, not prone to flooding,

• orientation so that one of the long banks faces south,

• access to reptiles through openings of some sort,

• location in a patch of habitat favourable for dispersal, such as tussocky grassland,

• minimal public disturbance,

• size at least 4 m long, by 2 m wide, by 1 m high and ideally much larger.

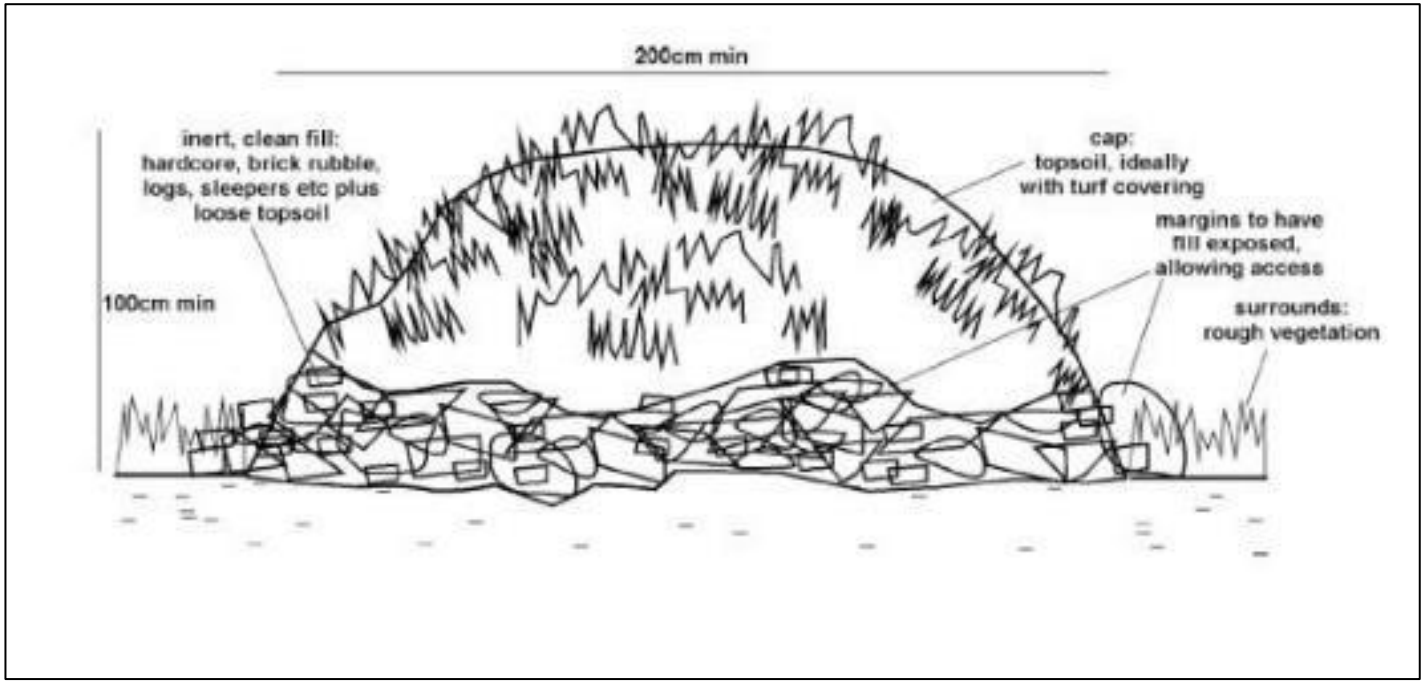
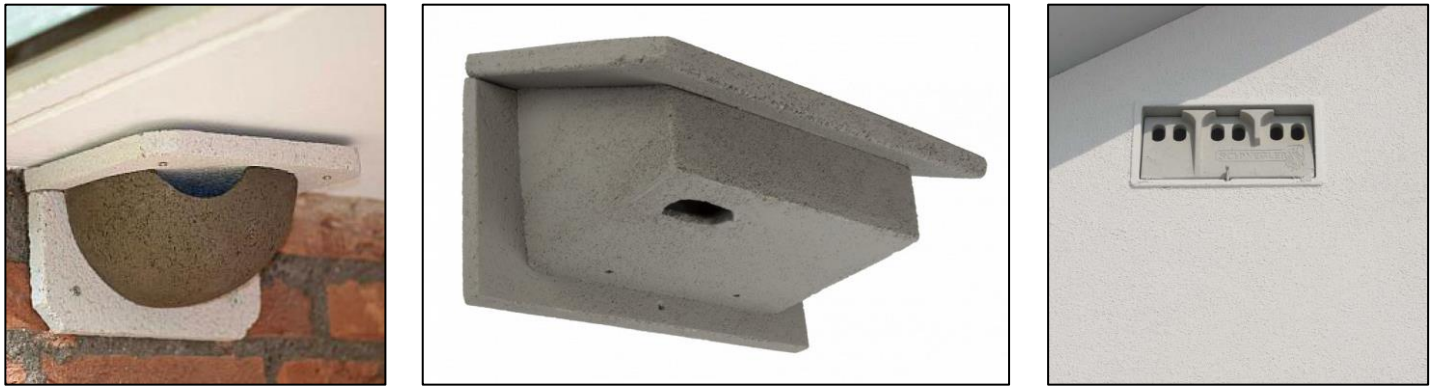
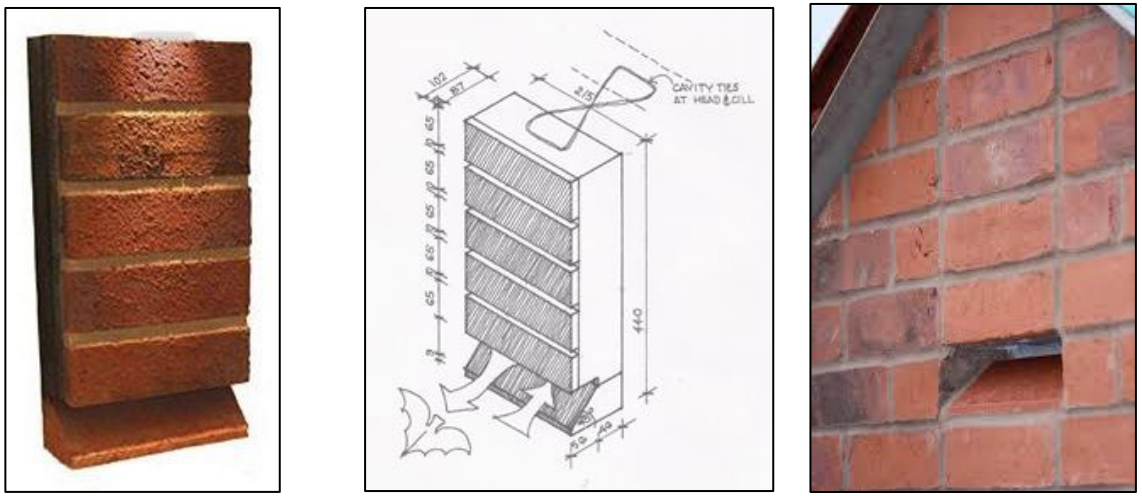



Figure 4**:** Hibernacula specification

| | |
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| Amphibian Mitigation and Enhancement | **Amphibian mitigation**<br>The previous PEA report (Arbtech, Dec 2020) identified suitable terrestrial habitat for foraging and commuting amphibians. As such reasonable avoidance measures have been outlined below to ensure that risk of harm to amphibians during and post construction is minimised.<br>The development area will be systematically cleared using hand tools under ecological supervision by a licenced ecologist. The site will be cleared starting at the north-eastern side of the site working south-west. The vegetation clearance will be in stages with the ecologist completing a fingertip search of each section for the presence of common amphibians and great crested newts (GCN) prior to clearance. Any common amphibians will be carefully captured by hand and relocated to a nearby pond. If GCN is found, all works will stop, and a licence will be required from Natural England.<br>Once each section is checked and declared free from common amphibians and GCN the habitat will be cleared using hand-held strimmer's to a length of <50mm to reduce the favourable habitat within the development area.<br>Contractors will adopt the following practices to safeguard common amphibians and GCN during the works:<br>• Any materials will be stored on pallets on areas away from the pond.<br>• No materials to be stored nearby to the pond.<br>• Rubble created during the development will be safely disposed of in a skip. If no skip is available the rubble will be stored on pallets off the ground until it can be removed from site, to prevent common amphibians and GCN from using the rubble piles for hibernation.<br><br>**Amphibian enhancements**<br>The habitat enhancements outlined above in the reptile mitigation plan will also provide suitable amphibian enhancements on site. |
| Bird Enhancement | **General bird nesting season**<br>As per the PEA report (Arbtech, Dec 2020), any vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.<br><br>**Provision of new bird nesting habitats on site**<br>Three bird boxes will be installed on the new dwellings on site. These will provide excellent permanent nesting provision for birds, and link to woodland, hedges, fields and other habitats in the wider landscape. The following recommendations for bird boxes are in line with the recommendations made within the PEA report (Arbtech, Dec 2022).<br>Any of the following bird boxes can be erected on new buildings on the site:<br>• Vivara Pro WoodStone House Martin Nest |

| | |
|---|---|
| | • WoodStone Swift Nest Box<br>• Schwegler 1SP Sparrow Terrace<br><br>House martin nest boxes and swift nest boxes should be positioned at the eaves upon completion of the buildings. Sparrow terraces should also be positioned at the eaves and can be incorporated into the fabric of the building during construction (See Figure 5 for examples of nest boxes and Appendix 1 for recommended placement).<br><br>Figure 5: House Martin Nest, Swift Nest Box and Sparrow Terrace in situ<br> |
| Bat mitigation and enhancement | No bat habitat features for roosting were found during the 2020 PEA, making roosting on site very unlikely. However a tree located off-site was found to possess high habitat value for supporting roosting bats. If a bat is found at any point during the works, all operations should cease, and advice sought from a licensed bat ecologist. If a bat roost is found on site, it will require an EPSL licence to be disturbed, damaged or destroyed e.g. felling a tree. Replacement measures for the roost would be included in the EPSL.<br><br>**Provision of new bat roosting habitats on site**<br>Three bat boxes will be installed within the new dwellings on site. These will provide excellent permanent roosting provision for local bats, and link to woodland, hedges, fields and other habitats in the wider landscape.<br>The following bat boxes will be erected in the new buildings on site:<br>• Custom brick-faced integrated Habibat Bat Boxes |

| | |
|---|---|
| | These will be inserted into the fabric of the buildings during construction to enhance the developed site for bats by providing permanent roosting provision (See Appendix 1 for suggested placements). The Habibat Bat Boxes are available in a variety of brick finishes to match the surrounding finish of the building. Once installed only the entrance to the bat box is visible providing a discreet aesthetically pleasing solution (see Figure 6 below).<br>The Habibat Bat Boxes will be inserted into the southern or western elevations of the subject buildings. They will be positioned high on the elevation close to the eaves (between 3 and 5m), well above windows and security lights so that the entrances are not illuminated by artificial lighting (such as security lights and light spill from windows) which will impact upon bat emergence times.<br>Habibat Bat Boxes are suitable roosts for crevice dwelling bat species, particularly common pipistrelles *Pipistrellus pipistrellus*, soprano pipistrelles *Pipistrellus pygmaeus* and *Myotis* bat species.<br>Figure 6: Habibat Bat Box, dimensions and Habibat Bat Box in situ<br><br>The bat-friendly lighting strategy outlined below will ensure that the new bat roosting provisions will be used by bats. |
| Bat lighting plan | **<u>Lighting strategy</u>**<br>Lighting will be controlled across the developed site. Research into the effects of artificial lighting on bats has shown that it can impact upon bat emergence times and lead to a reduced foraging time. As bats are faithful to their roost sites and commuting routes, often returning to the same site for many years so the impact of lighting on emergence times and in turn reduced foraging times can ultimately result in the roosts and foraging habitat being abandoned with impacts on survival and fecundity. |

Key areas of the site which are sensitive to artificial lighting are the site boundaries along the north-western and western sides of the site which are adjacent to the local wildlife site. Research has shown that if lighting is increased by more than 1 lux (equivalent to full moonlight) this could have an adverse impact upon bat commuting routes (Stone, E.L. (ed.) [2013] Bats and Lighting: Overview of Current Evidence and Mitigation. Bats and Lighting Research Project, University of Bristol). Therefore, the new lighting will be strictly confined to the new buildings and existing hard standing areas, thereby leaving dark corridors of not more than +1 lux, and preventing light spilling onto the north-western and western site boundaries where the hedgerows are present and border the adjacent local wildlife site (see lighting plan in Appendix 1 below). The following recommendations have also been made to prevent light spilling onto this area of the site, hence protecting the bat foraging areas and commuting routes:

- No lighting will be installed within or shining into the hedgerow boundaries (or bat boxes), thereby maintaining the existing dark areas within the developed site for bat commuting and roosting.
- Low impact lighting strategies will be adopted from the guidance outlined in the Bat Conservation Trust "Bats and Lighting" publications: https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

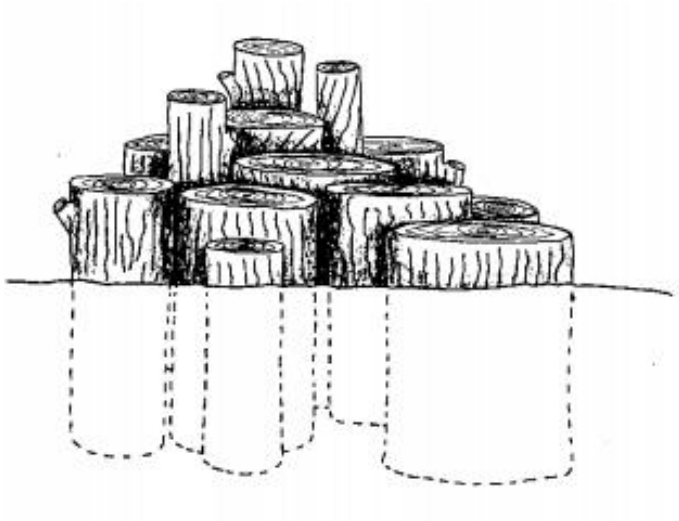
The lighting on the site will:

- 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.
- 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 positioned below the eaves, 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.

These measures will ensure that existing bat foraging areas and commuting routes are protected from light from the developed site. It will also ensure the recurrent usage of the bat boxes that are to be placed around the site.

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| General terrestrial mammal mitigation and enhancement | **Mammal mitigation**<br>No significant terrestrial mammal habitat was identified on site during the PEA survey (Arbtech, Dec 2020). However, badgers (and other mammals such as hedgehogs) may forage within or commute across the site. The following mitigation is however recommended to avoid harm to transient mammals that may enter the site during the works:<br>• Check work areas daily to ensure no animals are trapped<br>• Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations.<br>• Minimise night-working to avoid disturbance to badgers, and cease works in proximity to the sett at least two hours before sunset.<br>• Cap any pipes over-night on site to avoid animals becoming trapped<br>• Cover any trenches, holes or deep pits overnight, or use secured planks to allow any animals that fall in to escape during construction<br><br>**Mammal enhancement**<br>One hedgehog box will be added to the garden area to provide refuge for this species (See Appendix 1 for suggested placements). This can be bought or made (See Figure 7 for examples). The following is some advice from hedgehogstreet.org, a collaboration of the People's Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS):<br>• When siting the box choose a shady, quiet area of your garden.<br>• If the box lacks a tunnel entrance, try to include an interior tunnel or dividing wall to prevent predators such as badgers or foxes from getting to the hedgehog with their paws.<br>• We recommend using untreated wood for hedgehog homes. Wood from certain softwood tree species grown in the UK, such as larch, Douglas-fir and red cedar have excellent durability as exterior timbers. Pre-treated wood can contain chromated copper arsenate (CCA) compounds that are hazardous to many species. PTES promote the use of locally grown timber which encourages good woodland management practices. (hedgehogstreet.org)<br><br>Gaps will also be left in all new fencing to allow hedgehogs to move through garden habitats (See Figure 7 for example of a fence gap). |

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| | Figure 7: Ecoplate Hedgehog House, 1N Schwegler Deep Nest Box and Schwegler 2H Robin Boxes<br>  |
| Invertebrate enhancement | **Invertebrate enhancement**<br>Insect houses can be installed in garden areas of the new residential dwellings on site to improve the insect diversity on site, which will in turn improve the wider biodiversity on site as insects are beneficial to bats and birds. These can be bought (e.g. WoodStone Insect Block) or made (See Figure 8 for examples and Appendix 1 for suggested placements). Insect houses should face south to maximise solar radiation if possible.<br>Figure 8: WoodStone Insect Block and homemade insect hotel<br>  |

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| | **Stag beetles**<br>One stag beetle "loggery" will be installed in a corner of the site. Designs of these vary but all consist of several logs of varying sizes, semi-buried vertically into the ground to provide sustenance for growing beetle grubs (see figure 9 below for example and Appendix 1 suggested placement).<br><br>***Loggery***<br>Large logs (10-50cm diameter) of hardwood (e.g. oak, beech, sycamore, ash) with bark still attached sunk c60cm into the ground, in partially shaded areas.<br>Figure 9: A stag beetle loggery |
| Ecological enhancements (habitats) | As recommended within the 2020 PEA report the lawn areas should be planted as floral turf to provide the desired mix of bare ground and wildflower meadow suitable for invertebrates. This can be planted using a pre-planted meadow mat. The following meadow mat is recommended:<br>• Species Rich Lawn available from TurfOnline https://www.turfonline.co.uk/meadowmat/species-rich/ |

This will create in informal lawn with 12 species of slow growing grasses and 23 pollinator-friendly native perennial plant species. The lawn is designed for low maintenance and only requires mowing every other week making it ideal for a garden lawn. The meadow may is laid down similar to normal turn, onto prepared soil and kept watered until the roots are well established. The following species are present within the turf:

| **80% slow growing grasses** | | **20% Native wildflowers** | |
|---|---|---|---|
| Slender Creeping Red Fescue | Common Knapweed | | White Clover |
| Hard Fescue | Meadow Buttercup | | Creeping Buttercup |
| Sheeps Fescue | Rough Hawkbit | | Selfheal |
| Small Leaved Timothy | Cat's Ear | | Yarrow |
| Crested Dogs Tail | Cowslip | | Autumn Hawkbit |
| Brown Top Bent | Common mouse-ear | | Yellow Rattle |
| Chewings Fescue | Flax | | Small Scabious |
| Creeping Bent | Birdsfoot Trefoil | | Wood Sage |
| Strong Creeping Red Fescue | Black Medick | | Wild Carrot |
| Smooth Meadow Grass | Ribwort Plantain | | Red Clover |
| Rough Stalked Meadow Grass | Common Sorrel | | Common Dandelion |
| Perennial Ryegrass | Lady's Bedstraw | | White Clover |

Alternatively, wildflower seed mixes can be used on regular turf to create species-rich such as the Emorsgate Wild Flowers For Lawns seed mix (EL1F). this can be sown in existing grass or combined with a suitable grass see mix. Species within the mix include Lady's Bedstraw *Galium verum,* Birdsfoot Trefoil *Lotus corniculatus,* Selfheal *Prunella vulgaris* and Meadow Buttercup *Ranunculus acris.* A rate of 1.5g/$m^2$ should be used.

The following is advised by Emorsgate Seeds:

- *Sowing: Sow in the autumn using a 100% wildflower mixture. Bulk up the seed with an inert carrier such as sand to make distribution easier. The seed must be surface sown and can be applied by machine or broadcast by hand.*
- *Management: After sowing continue mowing or grazing as needed, aiming to keep the grass short (25-40mm). The sown flower species are perennial and will be slow to germinate, grow and flower, particularly against the competition from established grasses. Continue with regular mowing/grazing in the second and subsequent years to keep the sward short. Mowing may be suspended or relaxed for periods of 4-6 weeks in May - July to allow the flowers to bloom. Resume mowing/grazing once the flowering has gone over or when the grass growth gets too lush.*

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| | If required a wildflower lawn mixture can be used directly onto bare ground, as this contains a mix of grass and wildflower species and therefore does not require existing grass to be present. The Emorsgate Flowering Lawn Mixture (EL1) would be suitable for sowing into bare ground. Wildflower species present are similar to those mentioned above in the EL1F seed mix, with the addition of grass species such as Common bent *Agrostis capillaris,* crested dogstail *Cynosurus cristatus* and slender-creeping red-fescue *Festuca rubra.*<br>The following is advised by Emorsgate Seeds:<br>• *Sowing: Seed is best sown in the autumn or spring but can be sown at other times of the year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine or broadcast by hand.*<br>• *Management: The wildflower and grass species in this mix are perennial; they will be slow to germinate and grow and will not usually flower in their first growing season. There will often be a flush of annual weeds from the soil in the first growing season. This annual weed growth is easily controlled by repeated mowing. Mow newly sown flowering lawns regularly (every 7 -10 days during growing season) throughout the first year of establishment. Cut to a height of 40-60mm, removing cuttings if dense. This will gradually develop a good sward structure, help maintain balance between faster growing grasses and slower developing wildflowers, and control annual weeds. Mow regularly as a lawn but not too short (25-40mm). To permit flowering, mowing can be relaxed from late June. Cut again when the sward gets untidy (after 4-8 weeks).*<br><br>**Native trees**<br>Any new trees planted during the proposed developments should be native species from the following list to encourage invertebrates, birds and other wildlife: |

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| | Alder ***Alnus glutinosa*** — Burnet rose ***Rosa pimpinelifolia***<br>Hazel ***Corylus avellana*** — Spindle ***Euonymus europaeus***<br>Almond willow ***Salix triandra*** — Dog rose ***Rosa canina***<br>Holly Ilex ***aquifolium*** — Wayfare tree ***Viburnum lantana***<br>Amelanchier ***Amelamchier ovalis*** — Field maple ***Acer campestre***<br>Juniper ***Juniperus communis*** — Rowan ***Sorbus aucuparia***<br>Aspen ***Populus tremula*** — Wild cherry ***Prunus avium***<br>Osier ***Salix viminalis*** — Pear ***Pyrus sp***.<br>Bay willow ***Salix pentandra*** — Field rose ***Rosa arvensis***<br>Pedunculate oak ***Quercus robur*** — Wild pear ***Pyrus pyraster***<br>Bird cherry ***Prunus padus*** — Guelder rose ***Viburnum opulus***<br>Silver birch ***Betula pendula*** — Yew ***Taxus baccata***<br>Honeysuckle ***Lonicera periclymenum*** — Hawthorn ***Crataegus monogyna***<br>These should be purchased as 'whips', young bare root saplings a year old. They should be kept in their protective bags during transportation and planted within 4 days, after being kept in a frost-free environment and watered regularly. Planting should be completed between November and March. The soil preparation should include the removal any weeds or stones in the hedge path and to rotovate the soil and incorporate organic matter. The ground should not be frozen or waterlogged. In heavy clay or other difficult soils, a trench may need to be dug for planting. After planting, water the trees and add a layer of mulch to reduce weed competition to the growing saplings.<br><br>**Native shrub species**<br>A mixture of trees/shrubs should be chosen for ornamental planting areas including apple, rowan, elder and guelder rose. |
| Development inspection | A site visit will be undertaken at the start of the development to check the mitigation measures and other provisions are in accordance to this report. If satisfactory, a report will be written confirming the adherence to the plan. |
| On site management and responsibility during construction | The Contractor shall provide a dedicated environmental specialist team and any other relevant specialist whom the contractor deems to be necessary. The Contractor's Project Manager will be responsible for:<br>• Environmental Management and for the preparation review and implementation of this CMS and any additional measures required<br>• Monthly review of EMP implementation<br>• Allocation of sufficient resource to implement all Environmental Management requirements including the CEMP during site works |

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| | • Review of environmental management reports prepared by the Environmental Manager/Co-ordinator<br>• Signing off all permits, authorisations and consents; and will be the main point of contact with the Client (or the Client's Representative) regarding Environmental Management on site.<br>The Contractor's Environmental Manager/Co-ordinator shall have experience as an Environmental Manager/Co-ordinator, preferably on similar development schemes together with good communication skills and shall be responsible for:<br>• Developing and on-going review of the CEMP and relevant procedures<br>• Ensuring that all environmental standards and commitments are adhered to<br>• Carrying out environmental induction and training<br>• Monitoring compliance of construction activities with the CEMP<br>• Conducting inspections and reporting non-compliances to the Contractor's Project Manager<br>• Liaising with the Contractor's management and operatives on all matters regarding environment<br>• Undertaking environmental inspections and audits throughout the works<br>• Recording and reporting all environmental works<br>• Maintenance of related records<br>• As far as reasonably possible, attendance at any environmental incidents on site; |

**Table 2 – Schedule of operations for post-development monitoring, management and maintenance**

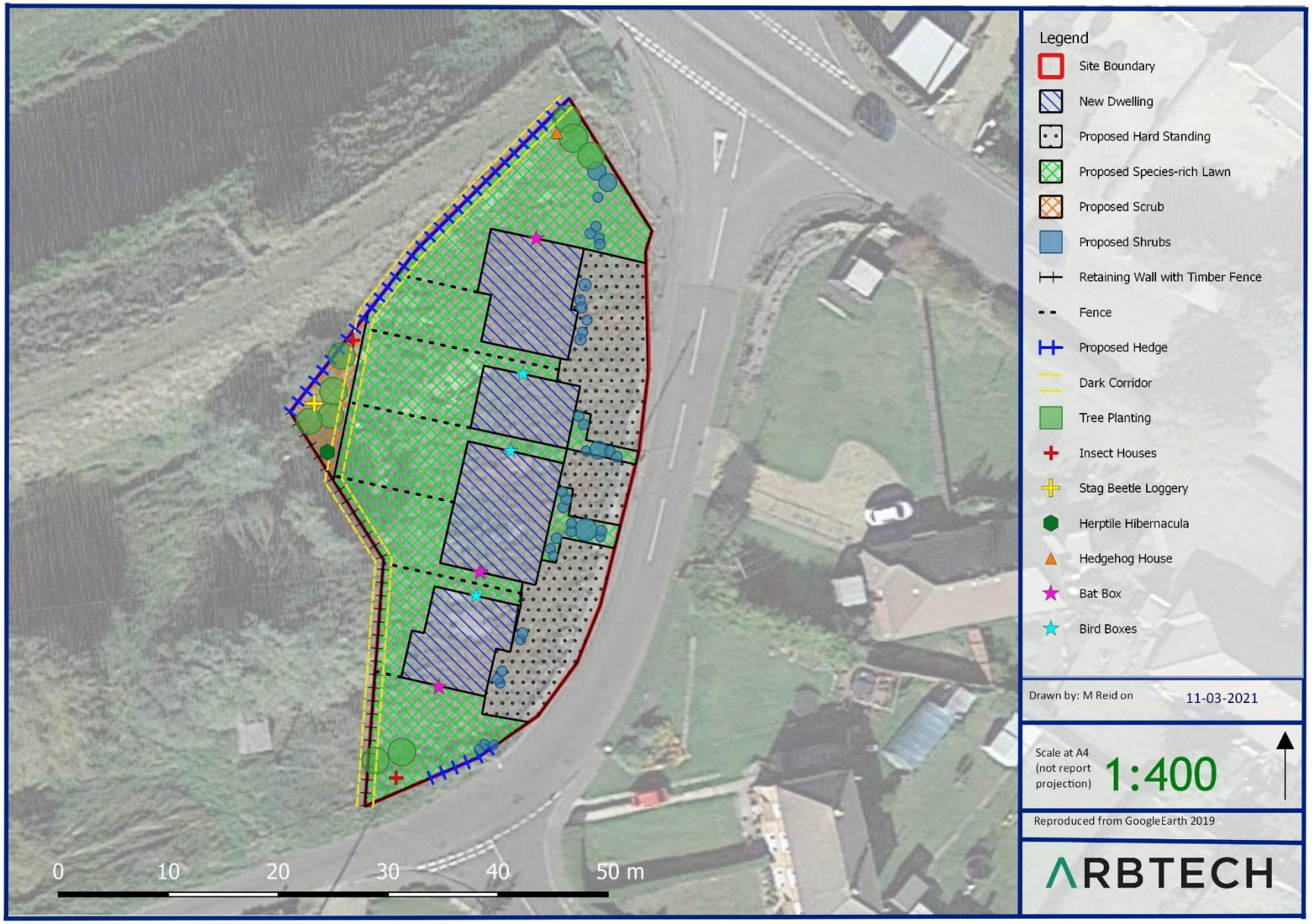
| **Activity** | **Year 1** | **Every year for 5 years** |
|---|---|---|
| Post development check | On completion of the development and prior to occupation, an ecologist will visit the site to ensure the implementation of the above mitigation, compensation and enhancement. A letter report can then be submitted to the planning department to discharge any related conditions. | N/A |
| Habitat boxes | Install the site's provision of habitat boxes for bats, birds, hedgehogs and invertebrates (outlined above). | Check annually and replace any boxes that are broken or fall down e.g. during storms. |

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| New habitat (trees) | Asses new plants immediately after the development is completed and replace any tree failures with planting of the same species to prevent gaps from developing.<br><br>Top up the mulch where necessary and water monthly or when dry. | Any plants that die in the first 5 years will need to be replaced to prevent gaps developing<br><br>Light, regular trimming of the hedgerow in its early years will encourage busy growth and is recommended. **Pruning should be undertaken outside the period 1st March to 31st August to avoid disturbing nesting birds** |
| Lighting | The location and suitability of the external lighting will be checked by a bat licenced ecologist upon completion of the development. Recommendations for improvements will be made where applicable. | Check lighting annually to maintain approved lighting levels across the developed site. No changes will be made until advice has been sought from a bat licenced ecologist. |

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Appendix 1: Combined ecological management plan



# Appendix 2: Legislation and Planning Policy

**LEGAL PROTECTION**

**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 the, Article 3 requires the establishment of a network of important conservation sites (SACs) across Europe in order to conserve the 189 habitats and 788 species (non- bird) identified in Annexes I and II of the Directive (as amended).

SPAs are classified under Article 2 of the EC Birds Directive both for rare bird species (as listed on Annex I) and for important migratory species.

SACs and SPAs up to 12 nautical miles (nm) from the coast are afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010 which consolidate all amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994. In Scotland, the requirements of Habitats Directive are implemented through a combination of the 1994 and the 2010 (reserved matters) Regulations. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a means for designating and protecting SACs in UK offshore waters (from 12‑200 nm).

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) 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).

***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. Further provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

***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 2010 (the Conservation Regulations) and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended). 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 Mitigation (EPSM) licence, 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) 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) and Nature Conservation (Scotland) Act 2004.

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 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 for any development works liable to affect an active badge sett, or to disturb badgers whilst they occupy a sett. Guidance has been issued by the countryside agency's to define what would constitute a licensable activity. It is no 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.

***Herpetofauna (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 herpetofauna 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.

<u>Effects on development works:</u>

A European protected species mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable 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 liable to affect habitats known to support water voles, the relevant countryside agency 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 (e.g. Natural England) 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:

An EPSM Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable 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:

Works which are liable 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.

***Dormice***

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 an EPSM licence. The licence is to allow derogation from the legislation through the application of appropriate mitigation measures and monitoring.

***White clawed crayfish***

The white clawed crayfish *Austropotamobius pallipes* receives partial protection under Schedule 5 of the WCA in respect of Sections 9(1) and 9(5). This makes it an offence to:

- Intentionally take (capture) white-clawed crayfish.

Effects on development works:

The relevant countryside agency 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:

An EPSM licence will be required from the relevant countryside agency for works which are liable to affect species of planted listed on Schedule 5 of the Conservation or 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 land owner 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*

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

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 UK Biodiversity Action Plan priority species) 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; opportunities to incorporate biodiversity in and around developments are encouraged; 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 (Section 42 in Wales) 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.