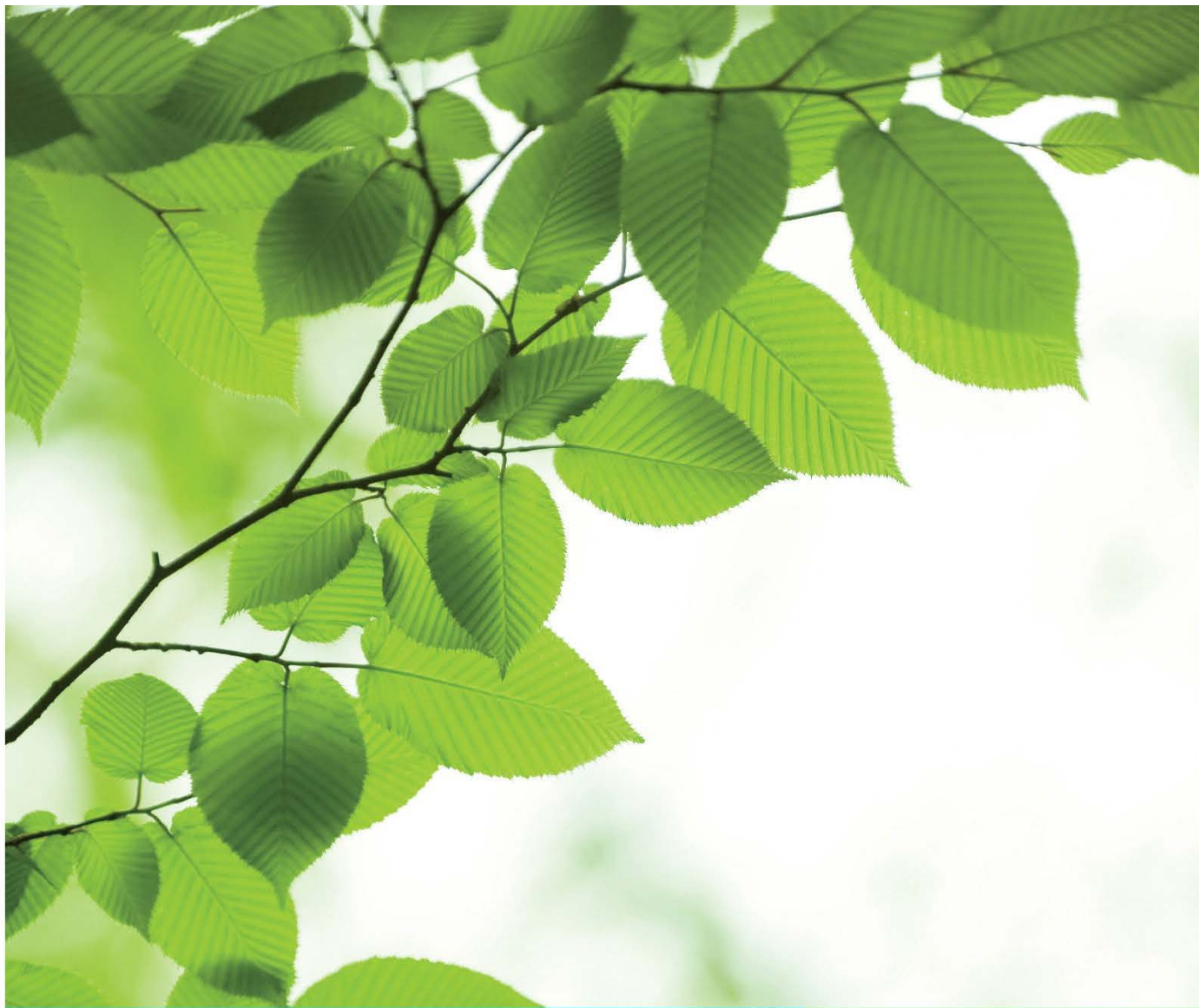




Ecological Mitigation and Enhancement Scheme (EMES)

Bridge Road, Wrexham

Presented to **Caelus Ltd**

Issued: December 2020

Delta-Simons Project No. 20-0948.03



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1.0 Background to the Project

1.1 Context and Purpose

Delta-Simons has been instructed by Caleus Ltd ('the Client') to prepare an Ecological Mitigation and Enhancement Scheme (EMES) for land at Bridge Road, Wrexham ('the Site'). The proposed development is for the construction of new Short-Term Operating Reserve (STOR) generators and associated works.

The EMES aims to ensure that impacts on any ecological receptors are adequately mitigated and compensated for. This Report describes measures to avoid, reduce, mitigate and compensate for likely adverse effects on ecological receptors resulting from the proposed development. Ecological receptors incorporate sites, habitats and floral and faunal species which are the subject of international or national protection or are recognised as being of local rarity and sensitivity.

For the purpose of this document, the working area is defined as any area where there will be a requirement for temporary or permanent works to facilitate construction of the residential development, including areas required for access, construction and temporary storage areas.

The EMES addresses the potential impacts of the proposed development on the existing ecology and nature conservation at the Site and within the immediate surrounding land, having due regard to recommended avoidance, mitigation and compensation measures in accordance with BS42020 (2013): Biodiversity – Code of practice for planning and development.

The measures proposed will ensure that the biodiversity protection and enhancements for the Site are incorporated into both the construction and operational phases of the development, and that overall there is a net gain in the biodiversity value of the Site in accordance with National Planning Policy Framework (NPPF) and the Planning Practice Guidance (PPG). Following the issue of the NPPF (2019), by the Ministry of Housing, Communities and Local Government, "*Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...*".

The aims of the EMES are to:

- ▲ Set out best practice working methodologies and mitigation measures in order to protect existing ecologically valuable habitats and any protected or notable species that may occur at the Site, or within immediate surrounding land;
- ▲ Provide enhancement measures to increase the biodiversity value of the Site; and
- ▲ Provide a management and monitoring plan in order to enhance and maintain the ecological value of the Site following the development.

1.2 Scheme Overview

It is understood that the proposed development will include the construction of new Short-Term Operating Reserve (STOR) generators and associated works.

2.0 Legislation & Policy Summary

Specific habitats and species of relevance to the Site receive legal protection in the United Kingdom under various pieces of legislation, including:

- ▲ National Planning Policy Framework (NPPF, 2019);
- ▲ The Conservation of Habitats and Species Regulations 2010 (as amended);
- ▲ The Wildlife and Countryside Act (WCA) 1981 (as amended); and
- ▲ The Natural Environment and Rural Communities Act (NERC) 2006.

Where relevant, this appraisal takes account of the legislative protection afforded to specific habitats and species. The legislation surrounding each faunal or floral species or group is provided in Appendix A and references are included in Appendix B.

3.0 Baseline Information

This Section provides the baseline conditions for the ecology of the Site and an assessment of the impacts resulting from the proposed development.

3.1 Baseline Information

Tables 1, 2, and 3, identify ecologically sensitive areas associated with the proposed development. Further details are provided within the Preliminary Ecological Appraisal, prepared by Ensaf Consultants in 2020 (EC109191).

Table 1: Designation Baseline

Designation Level	Description
International	There are two internationally designated sites within 6 km of the proposed development: The River Dee and Bala Lake Special Area of Conservation (SAC) The River Dee and Bala Lake SAC is located 3.4 km east of the Site, comprising tidal rivers, estuaries, mud flats, sand flats, lagoons (including saltwork basins) (4%), salt marshes, salt pastures, salt steppes (2%), inland water bodies (standing water, running water) (90%), improved grassland (2%), broad-leaved deciduous woodland (2%) and is designated for the following habitats and species; Annex I habitats that are a primary reason for selection of this site ▲ 3260 Water courses of plain to montane levels with the <i>Ranunculus fluitantis</i> and <i>Callitriche-Batrachion</i> vegetation Annex II species that are a primary reason for selection of this site ▲ 1106 Atlantic salmon <i>Salmo salar</i> ▲ 1831 Floating water-plantain <i>Luronium natans</i> Annex II species present as a qualifying feature, but not a primary reason for site selection ▲ 1095 Sea lamprey <i>Petromyzon marinus</i> ▲ 1096 Brook lamprey <i>Lampetra planeri</i> ▲ 1099 River lamprey <i>Lampetra fluviatilis</i> ▲ 1163 Bullhead <i>Cottus gobio</i> ▲ 1355 Otter <i>Lutra lutra</i> Midland Meres & Mosses Phase 2 Ramsar Midland Meres & Mosses Phase 2 Ramsar is located 4.6 km north of the Site, and is designated under Ramsar Criterion 1 for; ▲ The Site comprises a diverse range of habitats from open water to raised bog, Ramsar Criterion 2 for: ▲ The Site supports a number of rare species of plants associated with wetlands, including the nationally scarce cowbane <i>Cicuta virosa</i> and, elongated sedge <i>Carex elongata</i>. Also present are the nationally scarce bryophytes <i>Dicranum affine</i> and <i>Sphagnum pulchrum</i>. Also supports an assemblage of invertebrates including several rare species. There are 16 species of British Red Data Book insect listed for this site including the following endangered species: the moth

	<i>Glyptotendipes lathamella</i> , the caddisfly <i>Hagenella clathrata</i> and the sawfly <i>Trichiosoma vitellinae</i> .
National	There are no nationally designated statutory sites within 2 km of the Site centre.
Regional	A singular non-statutory designated site was identified within 1 km of the Site centre, Wrexham Industrial Estate Wildlife Site, which lies approximately 200 m south-east of the site boundary at its closest point. The Wildlife Site comprises a mosaic of habitats including species-rich grassland and ancient woodland.

Table 2: Habitats Present On-Site

Flora/ Habitats	Description
Scrub / Woodland	The northern part of the site is dominated by recently felled woody vegetation, which has been cut to near ground level with arisings deposited at the margins of the felled area. The stumps have been left in place, from which the vegetation is beginning to regenerate. alder <i>Alnus glutinosa</i> was identified as the dominant woody species.
Immature Woodland	The southern part of the site was recorded to comprise immature woodland, which presumably extended through the northern part of the site prior to felling. This habitat also extended along the eastern and western margins of the felled area. The woodland was recorded to be approximately 8 m in height, with a very dense structure. The canopy was dominated by alder, over abundant bramble <i>Rubus fruticosus</i> agg., with a range of other shrub species recorded such as hawthorn <i>Crataegus monogyna</i>, blackthorn <i>Prunus spinosa</i> and elder <i>Sambucus nigra</i>. Woodland ground flora species were very sparse, and largely comprised typical colonists of secondary woodland such as wood avens <i>Geum urbanum</i>, wood dock <i>Rumex sanguineus</i>, lords-and-ladies <i>Arum maculatum</i>, while ramsons <i>Allium ursinum</i> was recorded along the bank of the watercourse to the south.
Hedgerow	A hedgerow was recorded along the northern boundary of the site, following the fence line along Bridge Road North, and was recorded to be approximately 6 m high with no evidence of any regular or recent management. The hedgerow was dominated by blackthorn, with hawthorn, wild cherry <i>Prunus avium</i> , dog-rose <i>Rosa canina</i> agg., and a young pedunculate oak <i>Quercus robur</i> (approximately 8 m tall) towards the north-eastern end.
Neutral Grassland	A grassy strip was recorded along the eastern margin of the site, which appears to comprise a former trackway. There was no evidence of any recent management, such that the sward was uniformly tall and dominated by false oat-grass, but with a reasonably good diversity of other species including common knapweed <i>Centaurea nigra</i> , ribwort plantain <i>Plantago lanceolata</i> and tufted vetch <i>Vicia cracca</i> . Creeping thistle <i>Cirsium arvense</i> formed locally abundant stands.
Tall Ruderals	The southern end of the grassland described above meets a gate, beyond which the vegetation was recorded to abruptly change to a tall ruderal community. Grasses were much scarcer in this habitat, and creeping thistle was recorded to be dominant, with a range of other dicotyledon species recorded including broad-leaved dock <i>Rumex obtusifolius</i> , bramble and great willowherb <i>Epilobium hirsutum</i> .
Watercourse	Two watercourses were recorded within the site, at the eastern and southern margins, which converge in the south-east corner of the site and then pass into a culvert beneath Redwither Road to the south.

Table 3: Fauna Supported at the Site

Fauna	Opportunities
Nesting Birds	Habitats featured on the Site suitable for nesting birds included the immature woodland, hedgerow and scrub. A high number of bird species were recorded within proximity to the Site, however no rare or scarce species were recorded. The Site is considered to have a high potential for breeding birds and has moderate value and is of local importance.
Bats	No potential bat roost features were identified within the site as the trees recorded on-Site were immature. The habitats within the site, including immature woodland, and watercourses provide foraging and commuting opportunities for species of bats and the partial loss of habitats could have a minor impact. The Site is considered to have moderate potential for bats and is of local importance.
Great Crested Newt (GCN)	The woodland, hedgerow, grassland and watercourse offer commuting and resting opportunities for terrestrial GCN at the Site. A breeding GCN pond was identified 30 m north of the Site, which is one of three within 500 m of the Site, and the wider area of Wrexham Industrial Estate is known to contain a high number of GCN breeding ponds. The Site is considered to have high potential to support GCN and is of local importance.
Reptiles	The grassland in the east of the Site offers commuting, foraging and resting opportunities for species of reptiles. Grass snake <i>Natrix natrix</i> , slow-worm <i>Anguis fragilis</i> , and adder <i>Vipera berus</i> were all recorded within the data search and the Site is connected to suitable off-Site habitat. The Site is considered to have moderate potential to support reptiles and is of local importance.
Otter	Otter could commute onto Site via the watercourses and utilise the immature woodland for resting. Otter have been recorded within the off-Site pond 30 m north of the Site. The Site is considered to have high potential for otters as part of a wider range and is of local importance.
Hedgehog	The habitats within the site could form part of a wider home range for Hedgehog <i>Erinaceus europaeus</i> . The Site is considered to have moderate potential for hedgehogs and is of local importance.
Invertebrates	Dingy skipper <i>Erynnis tages</i> and grizzled skipper <i>Pyrgus malvae</i>, both of which are UK priority species were recorded within proximity of the Site. The Site was considered unsuitable to support dingy skipper due to lack of its favoured foodplant. Grizzled skipper may be found on-Site due to the presence of the species favoured food plant, and are likely to be associated with the grassland, and immature woodland. During the survey small white <i>Pieris rapae</i>, small skipper <i>Thymelicus sylvestris</i>, and meadow brown <i>Maniola jurtina</i> were all recorded within the grassland. The Site is deemed to have moderate potential to support notable invertebrates and is of local importance for invertebrates.
Himalayan Balsam	Two stands of Himalayan balsam <i>Impatiens glandulifera</i> , a Schedule 9 invasive weed species (Wildlife & Countryside Act 1981 [As amended]), were recorded within the area of tall ruderals in the south-east corner of the Site.

There are not anticipated to be any adverse impacts upon international or non-statutory designated sites, given the location of the Site with an industrial setting, the distance and lack of connectivity to the Site, and the nature of the development. The Site falls within the IRZ for the River Dee SSSI, which underpins the River Dee and

Bala Lake SAC located 3.4 km east of the Site boundary, the criteria listed within the designation relate to potential adverse impacts from any industrial/agricultural development that could cause

- ▲ Air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons > 750m² & manure stores > 3500t); and
- ▲ General combustion processes >50MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

As such the Local Planning Authority (LPA) should consult with Natural Resource Wales regarding potential impacts arising from the development.

3.2 Assessment of Impacts from Construction Activities without Mitigation in Place

3.2.1 Construction Phase

Nesting Birds

The proposals are to clear the Site including the removal of areas of immature woodland, and grassland. This would result in the loss of, suitable nesting habitat, with Site clearance to facilitate the construction phase having the potential to destroy active nests should it be undertaken during the bird breeding season (March to August inclusive).

Bats

The woodland and watercourses provide foraging and commuting opportunities for bats and these habitats should be retained, where possible, with no additional light spill onto them.

It is anticipated that without mitigation in place during the construction phase of works, there is the potential to disturb foraging and commuting bats at the Site from increased lighting to facilitate the works.

GCN

The Site provides suitable habitat for GCN with the immature woodland, scrub, grassland and hedgerow all providing commuting and resting opportunities for terrestrial GCN. The proposals at the site will result in further clearance of the scrub/woodland with potential impacts on the immature woodland also. It is anticipated that without mitigation in place, further clearance of the Site could result in potential harm to GCN.

The development of the Site could also impact on known GCN breeding ponds within 500 m of the Site, with increased activity in the wider area during the construction phase and increased dust, there is therefore the potential that GCN may be harmed without mitigation in place.

Reptiles

The Site provides suitable habitat for reptiles within the grassland and tall ruderals which provide commuting and resting opportunities for species of reptiles. The proposals at the site do not appear to impact the grassland, however, there is potential that reptiles could venture into the construction area. It is anticipated that without mitigation in place, further clearance of the Site could result in potential harm to species of reptiles.

Otter

The watercourses and immature woodland have potential to support otter, and the proposals require the removal of the scrub with potential impact on the immature woodland, which could result in harm to otters if due care and attention is not taken during site clearance works. There is also the risk of harm to this species should individuals fall into pits or trenches left open overnight during the works.

Hedgehogs

The Site provides suitable habitat for hedgehog, predominantly associated with the grassland and woodland edge. The majority of this habitat will be lost to facilitate the development. In addition, clearance of suitable

habitat as part of initial Site activities has the potential to result in a direct adverse effect on any individuals present, with potential for injury or fatalities. There is also the risk of harm to this species should individuals fall into pits or trenches left open overnight during the works.

Invertebrates

The Site has potential to support notable species of invertebrates which are likely to favour the immature woodland and grassland strip in the eastern extent of the Site. The construction phase of the development could impact on notable species of invertebrates through increased anthropogenic disturbance and dust generated by the construction process, as well as reducing the abundance of the species foodplant.

Himalayan Balsam

The Himalayan balsam identified with the area of tall ruderals in the south-east corner of the Site, is in close proximity to the watercourse and without treatment and removal there is potential for it to spread along the watercourse and across the Site. Furthermore, without suitable mitigation and signage in place there is potential for the species to be unknowingly spread off-Site.

3.2.2 Operational Phase

Nesting Birds

Increases in anthropogenic disturbances at the Site may disturb nesting birds, therefore, reducing the survival rate of individuals of certain species, which could potentially reduce the species assemblage of birds at the Site.

Bats

It is anticipated that without mitigation in place during the operational phase of the development, there is the potential to deter bats from roosting within identified features on-Site and immediately adjacent to the Site due to light-spill and increased anthropogenic activity. Furthermore, those bat species continuing to utilise Site edge habitats, or habitats on Site, for foraging and commuting, will be limited to light tolerant bat species.

GCN

Increases in anthropogenic disturbances at the Site may disturb GCN in the neighbouring woodland, which may also venture onto Site and become trapped, resulting in harm or death.

Reptiles

Increases in anthropogenic disturbances at the Site may disturb reptiles in the grassland, which may also venture onto Site and become trapped, resulting in harm or death.

Otter

Increases in anthropogenic and increased lighting disturbances at the Site may deter otters from utilising the adjacent habitats which could impact their territories and reduce foraging, commuting and resting opportunities for otters in the wider area.

Hedgehogs

Any fencing installed as part of the development has the potential to exclude hedgehog from the Site.

Invertebrates

Increases in anthropogenic and increased lighting disturbances at the Site may deter invertebrates from utilising the adjacent habitats which could impact their distribution in the wider area.

Himalayan Balsam

If the Himalayan balsam at the Site is not treated then there is potential for it to spread across the Site during the operational phase and spread off-Site.

4.0 Development Impacts and Mitigation Measures

The potential impacts of the proposed development on the ecological receptors identified above have been assessed and the following mitigation principles will be applied in order to avoid, reduce, mitigate or compensate for these impacts.

4.1 Habitats

All habitats on-Site that will be lost to the development are considered widespread both in the local area and nationally. Furthermore, there is potential to improve the quality of the woodland and improve connectivity to off-Site woodland assessed as being a UK Priority Habitat.

Those trees identified within the proposed demolition plan for retention will need to be adequately protected during any construction works. Measures to protect trees should follow the best practice principles set out in BS 5837: Trees in Relation to Design, Development and Construction (2012).

Prior to any site clearance works proceeding, the Root Protection Areas (RPA) of individual trees to be retained should be marked out. Marking out should be completed by a competent person with arboricultural expertise. All trees that could be impacted should be protected by barriers or ground protection around the calculated RPA.

4.2 Species Constraints and Protection Measures

4.2.1 Nesting Birds

Any removal of the scrub or immature woodland has the potential to disturb nesting birds if undertaken during the active breeding season.

The peak bird breeding season generally occurs from the beginning of March until late August. However, as a precaution a nesting bird check will be required of all areas of vegetation proposed for clearance and prior to any external strip of the building from March - August (inclusive). The length of the nesting bird season is dependent on the species of bird and weather conditions.

Should clearance work (or external stripping of potential features) be required during the active bird nesting season (March – August, inclusive) a suitably experienced ecologist will undertake a nesting bird check up to 24 hours prior to works commencing. If any active nests are found, then a buffer zone will be created around the nest location using brightly coloured tape. The ecologist will estimate the time period until all chicks have fledged and will return to check the nest after this time has passed. The buffer zone will remain in situ until the ecologist is content that all chicks have fledged the nest. A toolbox talk will be given to all staff involved in demolition and clearance works prior to the start of any works.

The following characteristics help to define an active nest:

- ▲ A nest containing eggs;
- ▲ A nest containing young;
- ▲ Bird incubating eggs;
- ▲ Adult birds carry food items to a nest;
- ▲ A nest that is under construction; and/or
- ▲ Alarm calling, or agitated adults associated with a nest.

If a nest is discovered during the building demolition / Site clearance works by a contractor all works should cease. The Site Manager as well as the ecologist should be contacted. The Ecologist will check the nest and confirm whether or not it is active. If confirmed active, works will only continue once a buffer zone large enough to ensure that the nest will not be disturbed has been created around the nest site. The buffer zone will be marked out using brightly coloured tape as previously stated and will be left in place until the Ecologist confirms that all chicks have fledged the nest.

4.2.2 Bats

To prevent any adverse impact upon the commuting and foraging habitats for bats on-Site and adjacent to the Site, the lighting design and layout for the Site must be functional and directional only and kept to a minimum servicing the public areas of the proposed development (as required for safety and security). It should be achieved through the use of baffles and screens, if necessary, to ensure no light spill onto any retained or planted vegetated corridors.

The detailed lighting design on Site should be functional and directional and in line with current guidance (BCT and ILP, 2018); BCT, 2014; Stone, E.L. (2013). The lighting should be:

- ▲ The use of lights utilising light emitting diodes (LED) without UV elements, therefore reducing the attraction of invertebrates to the lights;
- ▲ Only luminaires with 0 % upward light ratio should be used and fitted on the horizontal to avoid excessive up-lighting, back lighting and light spill onto boundary hedgerows and trees;
- ▲ A warm white spectrum (between 2000 – 3000 Kelvin) should be used in order to reduce blue light component, therefore reducing the number of invertebrates attracted to the lights;
- ▲ Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- ▲ Ideally the lux level should be 0 and 2 as this is within the range of natural moonlight; and
- ▲ The vegetation planted on Site and any roosting habitats should be unlit.

4.2.3 GCN

GCN have been recorded within 30 m of the Site within a breeding pond that is functionally connected to the Site. The species are known to move up to 500 m from a pond and, the Site has suitable habitat for terrestrial GCN, there is potential for this species to find shelter on the Site beneath areas of vegetation. Aquatic GCN surveys will be required of any ponds within 500 m of the Site, where access allows, to inform a Natural Resource Wales (NRW) European Protected Species Licence (EPSL).

An NRW EPSL will be applied for by Delta-Simons and no works will commence on-Site until the licence has been granted. As part of the associated mitigation the following will be implemented:

- ▲ Works involving GCNs will be undertaken during the active period for this species, usually mid-March to October (inclusive), when the night air temperature is above 5°C and there are no overnight frosts;
- ▲ Temporary Amphibian Fencing (TAF) will surround the working area of the Site to allow for installation of the generators and landscaping. This includes scrub and immature woodland;
- ▲ The TAF will be installed under the supervision of an experienced GCN licenced ecologist, who will check the area by hand immediately prior to the fencing being installed. Clearance of vegetation (trees and shrubs) will be required to allow for the installation of fencing, again this will be supervised by a GCN licenced ecologist who will check the area by hand immediately prior to the clearance. The fencing will surround the extent of the working area to ensure no GCNs remain where works may be required;
- ▲ Pitfall traps and refugia will be installed along all fence lines at 5 m intervals. Depending on population size trapping will take place for a minimum of 30 days under appropriate weather conditions, any captured GCN or other wildlife, will be translocated to a receptor site which will be agreed within the licence application;
- ▲ Once the minimum 30 days with five clear days with no GCNs caught has been reached then the area within the fence line will be destructively searched by the Ecologist and then cleared under supervision to ensure no GCNs or suitable habitat remains;
- ▲ The perimeter fencing will remain in-situ for the duration of the works and will be kept in good repair. The Ecologist will check the fence and ensure any defects are repaired promptly throughout the trapping and translocation period;
- ▲ Once the translocation has ceased, a 'tool-box talk' will be provided by the GCN licenced ecologist to all contractors directly involved in the proposed development, and general information on the potential presence of GCNs, the mitigation applied and what to do in the unlikely event that GCNs are found during the works will be included as part of the standard Site induction;

- ▲ A visual inspection of the fence line will be undertaken at the commencement of each working day by one of the Site contractors, who will be nominated by the Site Manager. A Reporting Sheet kept in the Site office will be completed each day and will be available for inspection. Should any damage to the fence be identified, this will be rectified the same working day, where possible. In the event that the damage requires any intrusive works at ground level, Delta-Simons licenced ecologist will be contacted and appropriate action, including Site attendance, arranged as appropriate;
- ▲ The Ecological Clerk of Works (ECoW) will also undertake monthly inspections through the duration of the works to ensure the fence line remains in the correct position and is fit for purpose;
- ▲ Should any amphibians (excluding GCN) be found during the works then they should be carefully moved (with damp hands) to an area of suitable vegetation a safe distance away from the working area in proximity to the breeding pond; and
- ▲ In the unlikely event a GCN(s) is found, when an ecologist is not present, then works must stop immediately and the Ecologist contacted for advice.

4.2.4 Reptiles

If any clearance of the grassland is required, as a precaution, the open areas of grassland should be mown initially to 15 cm to enable any reptiles to disperse and left for a period of five days before clearance proceeds. Grassland clearance should then be undertaken from the centre towards the boundaries of the Site to further encourage any remaining reptile dispersal (if present) out of the working area.

Whilst the grassland can be cleared at any time of year, clearance of scrub and hedgerow should be undertaken under the supervision of an ecologist outside of the hibernation period (November- March, inclusive, but weather depending).

During the construction phase of works, all materials should either be stored in an area of bare ground, or alternatively on pallets.

4.2.5 Otter

As is general good practice for Sites where otter may occur, it is recommended that a pre-commencement check of the Site for otter prior to the commencement of construction and a Tool-Box-Talk with regards to the species, should they venture onto Site during the development. Furthermore, no excavations or trenches are left uncovered overnight during the development works to prevent the species from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations.

4.2.6 Hedgehogs

As is general good practice for Sites where hedgehogs may occur, it is recommended that no excavations or trenches are left uncovered overnight during the development works to prevent the species from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations.

Before vegetation clearance works commence, a check should be undertaken of the scrub parcels for hedgehogs. Should one be found, it should be carefully relocated within dense vegetation outside of the development plots.

4.2.7 Invertebrates

As is general good practice for Sites where rare or notable species of invertebrates may occur, it is recommended that the areas which contain the species' favoured foodplant are protected from disturbance in the following ways;

- ▲ No works should take place within the grassland between May and August (inclusive), whilst the grizzled skipper is in its caterpillar form; and
- ▲ Areas within the grassland with agrimony *Agrimonia eupatoria* should be identified prior to clearance and clearance should be supervised to ensure the foodplant is not decimated.

4.2.8 Himalayan Balsam

This section outlines the key steps that must be taken by all operatives dealing with Himalayan balsam in the immediate future and by others to ensure the long-term control of this species on Site.

Best Practice Methodology

In order for the successful removal of the species from the Site the following must be adhered to:

- ▲ Before any works commence at the Site, a working boundary will be established around the perimeter of the contamination zone (i.e. where the species has been identified and a further 7 metres) and this should be further defined by temporary fencing and signage;
- ▲ The use of plant machinery and vehicles on the Site will be restricted to areas away from the contamination zone once identified;
- ▲ All site workers and visitors should be informed of the presence of invasive Himalayan balsam, the risk of illegal spreading and the location of the contamination zone occurring on the Site;
- ▲ All personal protective clothing, machinery and tools used to carry out control works should be cleaned thoroughly in a designated area, preferably adjoining the area where removal works are being undertaken. This is to avoid the further spread of plant seeds off-site and/or onto other parts of the Site; and
- ▲ Removal operations should avoid regularly entering the designated area containing Himalayan balsam and, instead, should involve short-term and thorough removal works during the appropriate time of year.

Short-Term Control

- ▲ All clearance works must be carried out before the end of June, before the plants produce seed;
- ▲ Where seasonal growth of the plant allows, prior to any works commencing within the contamination zone, all plants that fall within the working footprint and up to 7 m beyond should be sprayed using a glyphosate solution by a qualified person, following the manufactures guidance. Where possible, any regrowth should receive additional spot treatment. Spraying can be undertaken once the seed leaves have disappeared and before flowering April- early June;
- ▲ Where works are required prior to full eradication of the area, any soil within the working footprint is treated as contaminated and stored in a single sheltered location and then used beneath the hard surfacing as part of the works to prevent any seeds from germinating. The material should be stored on a geotextile membrane and covered to prevent germination. This should be periodically checked, and should any plants germinate whilst stored these should be either hand pulled and appropriately disposed of prior to them setting seed or chemically treated; and
- ▲ Biosecurity measures should be followed during the works to avoid spreading the plant and potential seed bank within the soil. Work should avoid tracked vehicles, where possible and a system of wheel washing must be applied for vehicles leaving the contaminated area.

Long-Term Control

A specialist contractor should advise on an appropriate long-term management plan for this species.

Himalayan balsam is likely to exist further along the watercourses off-Site and is anticipated to occur within the area surrounding the Site making long-term eradication at the Site difficult. As previously outlined, it is an offence to plant or otherwise allow this species to grow in the wild. The adjacent landowners should, therefore, be contacted and made aware of the potential presence of the species and their duty to manage this weed should it occur on their land in accordance with the legislation.

5.0 Landscape Enhancements and Management

The proposed management has been developed to enhance the biodiversity of the Site and to provide a range of resources for locally occurring wildlife including GCN, birds, bats, otters, hedgehogs and notable species of invertebrates). A maintenance and management programme to cover the first 5 years after development is included as Appendix C and a five-year management programme is included as Appendix D.

5.1 Immature Woodland & Hedgerow

5.1.1 Existing Ecological Features

The proposed development will clear the scrub in the western extent of the Site but the Immature woodland and hedgerow will remain undisturbed, it is understood that woodland management is proposed for the immature woodland in the centre of the Site, which will compensate for this loss of habitats and will maintain the connectivity of the Site with the wider landscape, and other UK Priority Habitats.

5.1.2 Influencing Factors for Management

The woodland and hedgerow will be managed to maintain its biodiversity value as well as contributing to the ecological value of the wider area. Habitat management will improve the diversity and importance of ground cover species, which would support terrestrial GCN, reptiles and hedgehogs. Dead wood should be retained, where possible, for its biodiversity value, however, safety is paramount.

5.1.3 Objectives

The objective for the tree planting at the Site post-development is to compensate for the loss of individual trees and woodland habitat, to increase the species diversity and to enhance connectivity through appropriate management and create structural diversity across the Site. Management objectives for the tree habitat are to:

- ▲ Ensure satisfactory establishment and growth of new planting;
- ▲ Maintain planting in a healthy and attractive condition, to retain their contribution to the landscape structure, biodiversity, food source to wildlife, and amenity value in accordance with BS3998:2010; and
- ▲ Retain dead wood at the Site for biodiversity value.

5.1.4 Implementation and Management

A suitable landscape architect and management company will be employed by the Client to produce detailed landscaping plans for the Site and undertake the required management in consultation with the appointed suitably qualified ecologist. It is recommended that the woodland is managed to;

- ▲ Maximise the botanical diversity of the woodland to include native flowering and fruit bearing species of trees to provide a food source for wildlife;
- ▲ Promote open glades and rides within the woodland, providing opportunities for invertebrates including grizzled skipper;
- ▲ Manage the ground flora to promote foodplants of the grizzled skipper, including agrimony, which has been recorded on-Site;
- ▲ Rotational clearance of scrub, particularly bramble, from within the woodland to prevent it from becoming dominant; and
- ▲ Any deadwood should be retained on-Site and as standing deadwood where possible and used as hibernacula and habitat piles to provide habitat for a range of species.

5.1.5 Monitoring

The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective. A review of management strategies will be undertaken every 5 years, and if necessary, will be amended to reflect the current condition of the Site.

5.2 Neutral Grassland

5.2.1 Existing Ecological Feature

The neutral grassland bounds the two watercourses that border the Site. It is understood that the proposed development will implement an 8 m buffer from the watercourses, where the grassland will be enhanced and managed to support GCN, reptiles, hedgehogs and invertebrates such as grizzled skipper and small heath.

5.2.2 Influencing Factors for Management

The grassland will be managed to enhance its biodiversity value as well as contributing to the ecological value of the wider area. Habitat management will enhance the floristic diversity of the sward and provide opportunities for a range of fauna including GCN, hedgehog, and invertebrates such as grizzled skipper and small heath. Encroaching scrub will be managed on rotation to ensure satisfactory establishment of the grassland buffers. Hibernacula will be placed within the grassland at intervals.

5.2.3 Objectives

The objective for grassland at the Site post-development is to increase the species diversity, to enhance connectivity through appropriate design and management and to create structural diversity across the Site. Management objectives for shrub planting are to:

- ▲ Ensure satisfactory establishment of grassland;
- ▲ Identify potential sites of hibernacula for GCN and reptiles following further survey works; and
- ▲ Maintain a healthy and diverse sward, cut appropriate to its function and use.

5.2.4 Implementation & Management

A suitable landscape architect and management company will be employed by the Client to produce detailed landscaping plans for the Site and undertake the required management in consultation with the appointed suitably qualified ecologist. It is recommended that the grassland is managed in the following way;

- ▲ Rotational removal of encroaching scrub from the grassland, up to 8 m from the watercourse, particularly in the western extent of the Site where young alder scrub is taking hold;
- ▲ Following the removal of scrub, any areas with minimal grasses, should be sown with a general meadow mixture, such as Emorsgate EM1 Basic General-Purpose Meadow Mix, or similar; and
- ▲ Grassland should be monitored and managed according to manufacturer's instructions; and the sward will require cutting or grazing at least annually at a time when newts are less likely to be harmed. A 'traditional' hay cut during hot dry weather in June or July is unlikely to interfere greatly with newt activity.

5.2.5 Monitoring

The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective. A review of management strategies will be undertaken every 5 years, and if necessary, will be amended to reflect the current condition of the Site.

5.3 Watercourse

5.3.1 Existing Ecological Feature

Two watercourses were recorded within the site, along the eastern and southern margins, which converge in the south-east corner of the site and then pass into a culvert *beneath Redwither Road to the south.

5.3.2 Influencing Factors for Management

The proposed developments will not impact the habitat, however, there is potential to increase the areas value for wildlife, in particular otter, with appropriate management, if the management of the watercourse falls within the Clients responsibility.

5.3.3 Objectives

The objectives for the watercourses at the Site is to:

- ▲ Maintain the biodiversity value of the watercourses and a dispersal and foraging corridor for a range of species.

5.3.4 Implementation & Management

A suitable landscape architect and management company will be employed by the Client to produce detailed landscaping plans for the Site and undertake the required management in consultation with the appointed suitably qualified ecologist. It is recommended that the watercourses are managed in the following way;

- ▲ Removal of any accumulating debris or litter to maintain flow and prevent contamination;

5.3.5 Monitoring

The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective. A review of management strategies will be undertaken every 5 years, and if necessary, will be amended to reflect the current condition of the Site.

6.0 Species Specific Enhancements

6.1 Nesting Birds

To enhance the ecological value of the Site, and to provide additional nesting opportunities for birds, a variety of bird boxes will be placed at suitable locations around the Site. These will be suitable to accommodate a range of species known to occur in the local area, and particularly those most likely to be attracted to the Site following the proposed development. Bird boxes, therefore, will include:

- ▲ One hole-fronted box (suitable to support species like goldfinch *Carduelis carduelis*); and
- ▲ One open fronted box (suitable to species like robins *Erithacus rubecula*).

All nest boxes should be placed on trees or attached to poles across the Site. All boxes should be installed in a sheltered and undisturbed position at a height of at least 3 m and avoiding a southerly aspect. All boxes should be of woodcrete construction (e.g. Schwegler branded) to ensure their longevity and to increase the likelihood of them being used. The proposed locations of the bird boxes are shown in Figure 1.

6.2 Bats

To enhance the ecological value of the Site and provide roosting opportunities for bats following the proposed development, a variety of bat roosting features will be incorporated at suitable locations around the Site. These will be suitable to accommodate a range of species known to occur in the local area and will, therefore, include:

- ▲ Two Schwegler 2FN bat boxes.

The bat boxes are to be installed on trees or attached to poles across the Site, and should be placed to avoid a northerly aspect, at a height of at least 3 m in order to avoid disturbance from humans or predators, in an area least likely to be affected by noise and light spill.

Landscape planting across the Site will incorporate native species, to encourage pollinating insects and subsequently a food source for bats. Additionally, two insect boxes will be installed at the Site to increase the ecological value of the Site for invertebrates, providing a food source for bats and other wildlife at the Site, details of which can be found below.

6.3 GCN

To enhance the ecological value of the Site to terrestrial GCN and allow the species to pass freely through the Site, an 8 m buffer zone will be managed adjacent to the watercourses, with hibernacula installed at suitable intervals within the grassland. In addition, the woodland and tall ruderals will be managed with GCN in mind, to increase the biodiversity value of the Site.

6.4 Reptiles

To enhance the ecological value of the Site for reptiles and allow the species to pass freely through the Site, an 8 m buffer zone will be managed either side of the watercourse, with hibernacula installed at suitable intervals. In addition, the woodland and grassland will be managed with reptiles in mind, to increase the biodiversity value of the Site.

6.5 Otter

To enhance the ecological value of the Site to otters and allow the species to pass freely through the Site, the watercourses that transect the Site will be managed for otters by maintaining water quality and removing any litter or debris which accumulates within the watercourses, whilst maintaining and enhancing their functionality as a corridor between adjacent habitats. Furthermore, the woodland should be managed sensitively to minimise disturbance.

6.6 Hedgehogs

To enhance the ecological value of the Site to hedgehogs and allow the species to pass freely through the Site, holes will be left in boundary fencing at specific points to facilitate this. This requires 13 cm² access to be left in a coordinated network to enable access and egress between suitable foraging habitats throughout the Site, and to the wider landscape. Hedgehogs require territories of up to 1 km and, as such, it is important large feeding areas are made available.

6.7 Invertebrates

Two insect boxes will be installed at the Site to increase the ecological value of the Site for invertebrates, providing a food source for bats and other wildlife at the Site. The boxes should be suitable to support butterflies in addition to other insects, preferably being multi-functional, and should be placed on the edge of the grassland strips at a southerly orientation.

7.0 Disclaimer

The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Appendix A – Relevant Legislation

Relevant Legislation

National Planning Policy Framework

The revised National Planning Policy Framework (NPPF), sets out, amongst other points, how *'Planning policies and decisions should contribute to and enhance the natural and local environment by:*

"Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity..."

The National Planning Policy Framework (NPPF), advises that ecological surveys are undertaken before planning permission is determined. It sets out, amongst other points, how at an overview level the *'planning system should contribute to and enhance the national and local environment by:*

The NPPF states that this should be achieved through local planning development frameworks and gives recommendations for criteria-based policies which recognise the hierarchy of designated sites which range from internationally important habitat, to sites of importance at a local level and ensure that protection is *"in a manner commensurate with their statutory status or identified quality in the development plan."*

A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF:

- ▲ *"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- ▲ *Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons¹ and a suitable compensation strategy exists;*
- ▲ *Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; and*
- ▲ *Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."*

It is also worth noting that where there are potential impacts upon internationally designated sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites) as a result of a proposed development, *"The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined."*

In addition, the Office of the Deputy Prime Minister circular 06/ 2005 remains current. It states that *'The presence of a protected species is a material consideration when a planning authority is considering a development proposal'. The circular advises that local authorities should consult Natural England before granting planning permission if the proposals could adversely affect a protected species.'*

The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 are the British response to the Habitats & Species Directive 1992 and consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

¹ For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

The Regulations for the protection of European Protected Species (EPS) have been amended and consolidated with key changes including the removal of most of the defences from Regulation 40 and Regulation 43 including the removal of the 'incidental result of an otherwise lawful operation' defence, and the increase in the threshold for the offence of deliberately disturbing a EPS. Proposals that will affect European protected species may require a licence from Natural England to allow an otherwise unlawful act. In the 2009 a new offence of 'breaching condition of an EPS licence' was added to the regulations. The licensing process is separate from and planning process. European protected species include all species of bats, great crested newt *Triturus cristatus*, dormouse *Muscardinus avellanarius*, and European otter *Lutra lutra*, amongst others.

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

This is the primary legislation covering endangered species in Wales and sets out the framework for the designation of Sites of Special Scientific Interest (SSSIs). It confers differing levels of protection on species themselves, their habitats or both depending on their conservation status. Species offered protection by the Act are listed in a series of schedules. These Schedules are subject to a rolling review every five years. Protected species are listed under Section 1 (birds), Schedule 5 (animals other than birds and invertebrates) and Schedule 8 (plants).

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Section 41 (England) list habitats and species of principal importance to the conservation of biodiversity in England. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

Under the Hedgerow Regulations 1997, it is against the law to remove or destroy certain hedgerows without permission from the local authority.

Local planning authority permission is required before removing hedges that are at least 20 metres (66 feet) in length more than 30 years old and contain certain species of plant. The authority will assess the importance of the hedgerow using criteria set out in the regulations.

Species

Birds

All wild birds are protected under Section 1 of the WCA 1981 (as amended). Subsection 1(1) makes it an offence to intentionally kill, injure, or take any wild bird; take, damage or destroy the nest of any such bird whilst it is in use or being built; or take or destroy an egg of any such wild bird. It is, furthermore, an offence to either intentionally, or recklessly, disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird. The law covers all species of wild birds including common, pest or opportunistic species.

Amphibians

All native amphibians are protected under the WCA 1981 (as amended), with some species also protected under the European Habitats Directive (92/43/EC), transposed in England and Wales through the Conservation of Habitats and Species Regulations 2017. All amphibians are protected from keeping, transporting, selling or exchanging. This means that in practice reasonable measures must be taken to avoid their incidental mortality.

The Great Crested Newt (GCN) is protected under the Conservation of Habitats and Species Regulations 2017 and Schedule 5 / 9(4)(b) and (c) of the WCA 1981 (as amended). It is an offence to deliberately kill, injure, capture GCN or to deliberately disturb this species, or to intentionally or recklessly obstruct access to their places of shelter or protection, to damage or destroy their breeding sites or resting places, or to intentionally or recklessly disturb a GCN whilst in a place of shelter or protection. The legislation applies to all stages of the life cycle including eggs, larvae and juveniles. It should be noted that GCNs spend the majority of their lives on land, venturing up to 500 m (but more usually 250 m) from their breeding ponds and as such any ground works within 500 m of a breeding pond could potentially have an adverse effect on GCNs.

Bats

All bats and their resting places are protected under Section 9(4)(b) and (c) of the WCA 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017.

It is an offence to destroy or damage a breeding site or resting place of a bat, to intentionally or recklessly obstruct access to any place of shelter or protection for bats, to deliberately disturb bat species, to intentionally or recklessly disturb a bat whilst in its place of shelter or protection, or deliberately capture, injure or kill a bat. It should be noted that a breeding site or resting place of a bat is protected whether or not bats are present, as long as it is likely that they will return, and any activity or works damaging or destroying such a breeding site or resting place are likely to require a Natural England European Protected Species Licence (EPSL).

Appendix B – References

References

BS 3998:2010 Tree work. Recommendations

BS 42020:2013 Biodiversity. Code of Practice for Planning and Development

Ministry of Housing, Communities & Local Government (2019). National Planning Policy Framework

Royal Horticultural Society Perfect for Pollinators Garden Plants. Available at
www.rhs.org.uk/perfectforpollinators

The Conservation of Habitats and Species Regulations 2010 (as amended). HMSO

The Natural Environment and Rural Communities Act 2006. HMSO

Wildlife and Countryside Act 1981 (as amended). HMSO

Appendix C – Management and Monitoring Programme

Management and Monitoring Programme

Habitat/Feature	Objective	Proposed Management	Proposed Monitoring	Performance Indicators		Remedial Actions
				Poor	Good	
Immature Woodland	Maintain trees in a healthy and attractive condition for as long as possible, to ensure continuity in tree cover and their contribution to the landscape structure, biodiversity and screening/amenity value at the Site	Existing trees should be inspected annually by a qualified arboricultural contractor in accordance with BS3998: 2010 'Tree Work – Recommendations'		Poor growth of individual plants	Healthy plants	Fell any unsafe or failed trees and leave deadwood in-situ
	Ensure that trees are healthy and safe, particularly in places within close proximity to residential properties with public access			Unhealthy trees that are not safe	Healthy trees that are safe	
Neutral Grassland	Ensure satisfactory establishment of grass sward	A 'traditional' hay cut during hot dry weather in June or July is unlikely to interfere greatly with newt activity.	Monitoring the successful establishment of individual wildflowers	Poor establishment of sward structure and species distribution	Healthy sward and good species distribution and diversity	Re-seed as appropriate in the next available planting season
Tall Ruderals	Removal of invasive species	Treatment and removal of Himalayan Balsam, recorded within the area of ruderals	The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to	Himalayan balsam observed growing on-Site	No Himalayan balsam observed growing on-Site	Treatment and removal of Himalayan Balsam, recorded within the area of ruderals
	Ensure a satisfactory growth following treatment works, with removal of scrub to	Remove bramble and thistle to encourage higher value vegetation to take		Tall ruderals dominated by bramble and thistle or other	Minimal bramble and thistle observed, with a	Remove bramble and thistle

	increase the biodiversity value	hold and to increase the biodiversity value	ensure that the Site management and enhancement measures continue to be effective	low value plants	good species diversity	
Watercourse	Maintain the biodiversity value of the watercourses and a dispersal and foraging corridor for a range of species.	Removal of any accumulating debris or litter to maintain flow and prevent contamination		Build up of litter and debris within the watercourses	Watercourse clear, with steady flow and no pollution	Remove litter and debris from the watercourse
		Removal of any plant species that may overtake the watercourse.		Vegetation begins to choke the watercourse		Remove aggressive plant species from watercourse
Nesting birds	Protection of nesting birds that may be present within areas of existing woodland.	Undertake any required clearance, management outside the nesting bird season. If any vegetation management or demolition works are to be undertaken between 1st March and 31st August, a pre-commencement check will be required by a suitably qualified ecologist	Ecologist to undertake pre-commencement nesting bird check if required	Nesting bird activity is recorded, and proposed works are delayed	No nesting birds are present within the specified habitats.	Works only to proceed outside the nesting bird season or where nesting birds are confirmed to be absent by a suitably qualified ecologist
GCN	Protection of any terrestrial GCN that may be present within areas of scrub and woodland on-Site.	A Natural Resource Wales European Protected Species Licence will be applied for by Delta-Simons. Details of which can be found in Section 4.2.3 of this Report.	Following the completion of licenced works, a destructive search will be undertaken by a Delta Simons Licenced Ecologist to ensure no GCN are present within the development area.	GCN continue to be found on-Site during the construction phase.	No GCN found on-Site during the construction phase.	Newts will be translocated out of the working area by an ecologist.
				Damage to fencing.	Fence remains undamaged.	Developer repairs damage to fencing and informs licenced ecologist.

Reptiles	Protection of any reptiles within the grassland, scrub or woodland on-Site.	Grassland should be mown initially to 15 cm to enable any reptiles to disperse and left for a period of five days before clearance proceeds. Grassland clearance should then be undertaken from the centre towards the boundaries of the Site to further encourage any remaining reptile dispersal (if present) out of the working area. Whilst the grassland can be cleared at any time of year, clearance of scrub and hedgerow should be undertaken under the supervision of an ecologist outside of the hibernation period (November- March, inclusive, but weather depending). During the construction phase of works, all materials should either be stored in an area of bare ground, or alternatively on pallets.	Clearance works to be undertaken under the supervision of a suitably qualified ecologist.	Reptile activity is recorded, and proposed works are delayed	No reptiles are present within the specified habitats.	Works only to proceed where reptiles are confirmed to be absent by a suitably qualified ecologist
Otters and Hedgehogs	To ensure no mammals are harmed during the development of the Site, including becoming trapped in trenches or during vegetation clearance.	No trenches should be left uncovered overnight during the development works, and sloping escape ramps should be created within trenches. Before vegetation clearance works commence, a check should be undertaken of the scrub for hedgehogs.	Clearance works to be undertaken under the supervision of a suitably qualified ecologist.	Hedgehogs or Otters harmed during Site clearance works and development.	No wildlife harmed during development and are able to disperse across the Site.	Works only to proceed where the species are confirmed to be absent by a suitably qualified ecologist

Bird Nest Boxes, Bat Boxes & Insect Boxes	Create additional habitat for nesting birds, roosting bats and insects.	Install bird/ bat boxes described in Section 6.1 and 6.2	N/A	Damaged boxes / boxes not utilised by wildlife	Intact boxes used by intended species	Replace any damaged boxes, relocate unused boxes to a more suitable area
GCN Hibernacula	Provide resting and hibernating opportunities for GCN and a range of other wildlife	Construct hibernacula within the grassland adjacent to the watercourse	N/A	Hibernacula fails, collapses or is damaged in any way	Hibernacula intact and used by intended species	Rebuild any failed hibernacula
Hedgehog Enhancements	Allow foraging hedgehogs to pass freely through the Site.	The creation of 13cm ² gaps at the base of boundary fences in a coordinated network across the Site.	N/A	Hedgehogs unable to disperse throughout the Site or are fragmented from suitable foraging habitats	Hedgehogs are able to disperse throughout the Site and into surrounding habitats.	Adjust/alter fencing to incorporate a 13cm ² gaps at the base

Appendix D – 5 Year Management Programme

5 Year Management Programme

Immature Woodland	Year 1	Year 2	Year 3	Year 4	Year 5
Existing trees & hedgerow	Annual inspection by a qualified arboriculturalist for disease, damage and potential problems – remedial work to be carried out as required in accordance with BS3998:2010				
Grassland Buffer & Tall Ruderals	Year 1	Year 2	Year 3	Year 4	Year 5
Grassland Buffer	The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective				
Watercourses	Year 1	Year 2	Year 3	Year 4	Year 5
Watercourses	The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective				
Species Specific Enhancements	Year 1	Year 2	Year 3	Year 4	Year 5
Bat, Bird and Insect Boxes, GCN Hibernacula and Hedgehog gaps	The Site will be visited during years 1, 2 and 5 following the completion of the development, by a suitably qualified ecologist to monitor and evaluate the current status of the habitats and provide any necessary recommendations to ensure that the Site management and enhancement measures continue to be effective				