Preliminary Ecological Appraisal Report

Site: Former Prestatyn Library, LL19 9LH

Ref: 20087/E1

Client: North Wales Housing, Denbighshire County Council

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SUMMARY

At the former Prestatyn Library on Nant Hall Road in Prestatyn, planning permission is being sought for the redevelopment of the site.

In February 2020, Indigo Surveys Ltd was instructed to carry out a Preliminary Ecological Appraisal of the site. This was undertaken to determine the presence of any important habitats or species which might be impacted on by the proposed development.

Ecological data from COFNOD, the North Wales Environmental Information Service, and MAGIC, revealed a number of records of European Protected Species, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species within a 2.0 km radius of the site.

There were a large number of designated sites within the search area. The closest statutory site was Prestatyn Hillside, 850 metres to the south, an area of grassland, heathland and woodland.

Other sites included The Dee Estuary Special Protection Area (SPA), Special Area for Conservation (SAC), RAMSAR and Site of Special Scientific Interest (SSSI) 950 metres to the northeast. The site is designated for habitats including tidal rivers, estuaries, mud flats, sand flats, lagoons and salt marshes, whilst species include Sea Lamprey *Petromyzon marinus,* River Lamprey *Lampetra fluviatilis* and Petalwort *Petalophyllum ralfsii*.

Liverpool Bay SPA 1.0 km north and Gronant Dunes and Talacre Warren SSSI and Local Nature Reserve 1.2 km northeast were also present within the search area.

There were no wildlife sites within the 2.0 km search area, although there were many beyond this.

Although the designated sites were within relatively close proximity to the survey site, there was no direct connectivity, as the site was separated from them by main and local roads and residential and industrial areas. Furthermore, the small scale of the works will have no impact on the citation features of the site.

There were a large number of Badger *Meles meles* records from within the search, the closest of which was 325 metres to the west in 2018.

Otter *Lutra lutra* have been recorded 1.5 km to the northeast in 2017, whilst Water Vole *Arvicola amphibius* have been recorded more often and more widespread across the search area.

Bat records included a Common Pipistrelle *Pipistrellus pipistrellus* 85 metres to the south, recording flying through the area in 2014, along with a myotis species *Myotis sp.* A single Natterer's Bat *M. nattereri* and a Whiskered/Brandt's Bat *M. mystacinus/M. brandtii* have been recorded within the search area, 2.0 km south. There were also several unidentified bat records.

There were two historic records of Common Frog *Rana temporaria,* along with a single historic record of Common Toad *Bufo bufo.* Three Great Crested Newt *Triturus cristatus* records were present from 1.5 km southeast up until 2004, but there were no other records for the area. A single Natterjack Toad *Epidalea calamita* was recorded 1.8 km northeast in 2013.

Sand Lizards *Lacerta agilis* have been recorded along the estuary 1.1 km to the north, within the last 3 years. A large number of Common Lizard *Zootoca vivipara* records were present, the closest from 600 metres to the northeast in 2019.

A large number of bird records are present for the area, particularly in association with the estuary and its designations.

The Phase 1 visit took place on 11th February 2020, in cold and cloudy conditions, with a very strong wind.

The site comprised a former library building and a block of flats. Pathways of hardstanding ran around the buildings, with a small car park. Areas of amenity grassland were present, with a few scattered trees and a species poor, intact hedgerow.

No rare vascular plants were found, and all species recorded were common and widespread. There were no invasive or notifiable species.

Due to the small size and nature of the site, no birds were observed. It is known that gulls have previously nested on the roof of the former library building, whilst the trees also provided potentially suitable habitat for nesting.

Since all in-use bird's nests and their contents are protected from damage or destruction, any tree or shrub removal or works which may affect a nest should be undertaken outside the period 1st March to 31st August inclusive.

If this time frame cannot be avoided, a close inspection of the trees, shrubs or structures to be removed should be undertaken prior to clearance. Work should not be carried out within a minimum of 5.0 metres of any in-use nest, although this distance could be more depending on the sensitivity of the species.

None of the trees contained features such as decay cavities, woodpecker holes, fissures and exfoliating bark, that would be considered suitable for bat roosting and/or hibernation.

The former library building was also inspected for its suitability to support roosting bats. This was considered to be negligible, as there were no external crevices or cavities, and certainly no evidence of roosting bats was found.

The site itself had very limited value to foraging bats, as although there was some cover, the site was very small in extent, and there was little to attract prey items.

No evidence of Badgers was found, with no signs of Otters or Water Voles.

With no still water or other wetland features, no suitable refugia or hibernacula and limited foraging opportunities, the site was considered unsuitable for reptiles and amphibians.

Despite this, at all times care will be taken when carrying out earthworks, as small mammals could be present. Any small mammals or common amphibians disturbed or uncovered will either be caught by hand and relocated to a safe area, or left to vacate the work site in their own time.

Since the site was dominated by buildings and hardstanding, it was concluded that there was low potential for significant invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan.

If excavations are to be undertaken, it should be noted that open trenches could potentially trap wildlife, especially if these fill up with water. Escape routes should therefore be provided if trenches cannot be infilled immediately.

These can be in the form of branches or boards placed on the bottom of the trench, with their upper ends above ground level and touching the sides, or sloping ends left in trenches.

*

The proposed works will not have a lasting or significant impact on wildlife, and the implementation of suitable landscaping as part of the development of the site could significantly enhance wildlife opportunities, particularly if planting schemes include nectar rich and/or native plant species.

Ecological mitigation measures are detailed in section 4.4 of this report but will include the protection of retained trees, the erection of two bat boxes, three bird boxes and replacement tree and shrub planting with a native species mix.

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1. INTRODUCTION

1.1 Background and survey objectives

At the former Prestatyn Library on Nant Hall Road in Prestatyn, planning permission is being sought for the development of the site.

In February 2020, Indigo Surveys Ltd was instructed to carry out a Preliminary Ecological Appraisal of the site. This was undertaken to determine the presence of any important habitats or species which might be impacted on by the proposed development.

Ecological data from COFNOD, the North Wales Environmental Information Service, and MAGIC, revealed a number of records of European Protected Species, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species within a 2.0 km radius of the site.

1.2 Site description

The site comprised a former library building and a block of flats. Pathways of hardstanding ran around the buildings, with a small car park.

Areas of amenity grassland were present, with grasses represented by Creeping Fescue *Festuca rubra*, meadow-grasses *Poa spp.*, Cocksfoot *Dactylis glomerata* and False Oatgrass *Arrhenatherum elatius*. Wildflowers included White Clover *Trifolium repens*, Daisy *Perennis bellis*, Dandelion *Taraxacum* Section *vulgaris* and Ribwort Plantain *Plantago lanceolata.*

A few scattered trees were present around the site, these including Wild Cherry *Prunus avium*, Horse Chestnut *Aesculus hippocastanum*, Weeping Willow *Salix babylonica* and Ash *Fraxinus excelsior.*

A species poor, intact hedgerow of Beech *Fagus sylvatica* separated the two buildings.

A wall ran along part of the southern boundary of the site.

The Ordnance Survey Grid Reference is SJ 06697 82926 centred on the middle of the site.

1.3 Proposed works

The proposed works are for the redevelopment of the site.

2. METHODOLOGY

2.1 Desk study

A detailed desk study was undertaken to determine the nature conservation designations and protected species that had been recorded within a 2.0 km radius of the site. This involved contacting statutory and non-statutory organisations, and then assimilating and reviewing the data provided.

The consultees for the desk study were:

- Multi Agency Geographic Information (MAGIC) website www.magic.gov.uk;
- COFNOD (North Wales Environmental Information Service).

2.2 Habitat survey

A Phase 1 Habitat Survey was carried out across the whole of the survey site. It was conducted using standard JNCC (2003) techniques and methodologies.

The Phase 1 visit took place on 11th February 2020, in cold and cloudy conditions, with a very strong wind.

2.3 Badgers

Badgers are generally nocturnal and evidence of their presence in an area often comes from field signs rather than sightings of the animals. Useful field signs include:

- Setts (main, outlying, annex or subsidiary)
- Tufts of hair caught on barbed wire fences;
- Conspicuous Badger paths;
- Footprints;
- Latrines – small excavated pits in which droppings are deposited;
- 'Snuffle holes' – small scrapes where Badgers have searched for insects and plant tubers;
- Day nests – bundles of grass and other vegetation where Badgers may sleep above ground;
- Scratch marks on trees (usually near the sett).

Daytime surveys looking for field signs can be carried out at any time of the year, and should be non-intrusive, but nocturnal surveys of setts (if required), are only likely to be effective from April to November, when Badgers are most active, and any cubs present will have emerged.

A search for Badger presence and the field signs listed above was carried out as part of the ecological appraisal on 11th February 2020. The search area included the application site and a 30 m buffer around the boundaries (where this could be accessed or viewed).

2.4 Bats

In order to fully assess bat occupation of a particular site, the Bat Conservation Trust (2016) recommends that information gathered from a desk study of known bat records, and a daytime site walkover, is used to inform the type and extent of future bat survey work, potentially including nocturnal surveys.

The diurnal walkover provides an opportunity to check for signs of occupancy, such as droppings, scratch marks, feeding remains, carcasses, or even animals in residence, whilst nocturnal surveys (if required) allow numbers and species of bats to be confirmed.

The latter are also used to determine the presence or absence of bats, where signs of bat activity are indeterminate or absent but the suitability for bat roosting is considered to be low, medium or high.

Roosting places vary depending on the species. Pipistrelles usually inhabit narrow cracks or cavities around the outside of buildings, but they will roost in similar niches inside larger barns. Typical sites include soffit spaces, gaps behind fascia boards and end rafters, crevices around the ends of projecting purlins, under warped or lifted roof and ridge tiles, or in gaps in stone and brickwork where mortar has dropped out.

Larger species such as Brown Long-eared Bats *Plecotus auritus*, Myotis bats (Natterer's *Myotis nattereri* and Whiskered/Brandt's *M. mystacinus/M. brandtii*), and Lesser Horseshoes *Rhinolophus hipposideros*, like to roost in the roof voids of buildings, and can often be found hanging singly or in small groups from ridge boards or roof timbers, especially where these butt up against gable walls or chimney breasts. They especially favour older structures with timber frames. Here they squeeze into tight crevices making them difficult to observe.

Diurnal walkovers can be carried out at any time of the year, but nocturnal surveys should only be undertaken when bats are out of hibernation and in their summer roosts. The recommended period is from May to September inclusive, with May to August optimum and September sub-optimum. The season can be extended into October, although particularly cold weather will render this inadvisable. Indeed, the air temperature at the start of each survey must be at least 10°C or above.

Visits will be a minimum of two weeks apart, and the number of surveys is dependent on the evidence found or the suitability of the site to bats.

Where bats are found, or there is evidence of bat occupation or activity, i.e. that bat use is confirmed, the number and timing of visits will be decided by the ecologist, and will be appropriate for the type of roost. In general at least two nocturnal surveys will be carried out, both of which can be emergence surveys, or one emergence and one dawn re-entry.

Where there is no evidence of bat presence, and no or negligible suitability for roosting, no nocturnal surveys will be needed.

For a site with no evidence but low suitability, just one nocturnal emergence survey is required, this to be in the optimum period.

For medium suitability a minimum of two visits are needed, of which one must be in the optimum period, and one must be a dawn re-entry survey. With high suitability, three visits will be necessary, of which two must be in the optimum period.

At least one of these must be a dawn re-entry survey, with the third visit either an emergence or a dawn re-entry.

For sites < 5 ha in size, and/or regularly shaped structures, at least two surveyors must be present, with more surveyors at larger sites and more complex buildings, e.g. those with multiple elevations and/or roof structures.

On 11th February 2020, Mollie Paxford (working under Natural England bat licence No. 2015-16489-CLS-CLS) made a thorough inspection (from the ground) of the trees on site, including any gaps in the bark, patches of exfoliating bark, fissures, splits, cracks and cavities, including woodpecker holes.

The former library building was also inspected, including the external and internal walls, roof coverings and roof space, eaves, window casements and doorframes.

2.5 Birds

Most resident and migrant birds breed in the spring and summer, although Woodpigeons *Columba palumbus* and Collared Doves *Streptopelia decaocto* nest throughout the year, and as a result could be on eggs in almost any month.

In season, signs of breeding include singing males, display and copulation, birds gathering nesting materials, adults carrying food, calling chicks, etc.

In winter none of these activities may be occurring, so a survey for old nests and/or nest holes is the most reliable method of determining the presence or absence of breeding birds.

A search for signs of nesting birds was carried out as part of the ecological appraisal on 11th February 2020. This included the various structures as well as the trees and other vegetation.

2.6 Reptiles

Commoner reptiles which may be encountered in rural areas include Grass Snake *Natrix natrix*, Slow-worm *Anguis fragilis*, and Common Lizard *Zootoca vivipara*.

During the winter months, from mid-October to late February or early March, they are in hibernation, usually deep in underground hibernacula, such as holes and cracks in the ground, among rocks or the roots of large trees, down animal burrows, or in piles of rubble or stone. In the spring and summer they live above ground in well-vegetated places, with Grass Snakes often near or in water. Being cold-blooded all reptiles like to bask, and can often be found in open places.

There are very few signs of reptile presence, but these include:

- Shedded skin (snakes);
- Eggs (but not Common Lizard which gives birth to live young).

A search for signs of reptile presence was carried out during the ecological appraisal, along with a check for basking animals.

A survey for Great Crested Newts may be indicated when background information on distribution suggests that they may be present. More detailed indicators are:

- *Any historical records of Great Crested Newts on the site or in the general area;*
- *A pond on or near the site (within around 500 m), even if it holds water only seasonally;*
- *Sites with refuges (such as piles of logs or rubble), grassland, scrub, woodland or hedgerows within 500 m of a pond.*

There are several field survey methods which can be employed depending on the time of year:

- *Bottle or funnel trapping – adults ideally February to May, with June and July sub-optimal, and August to September for detection of larvae (i.e. young);*
- *Egg search – April to June ideally, with March and July sub-optimal;*
- *Torch survey – March to May for adults, with February and June to July sub-optimal, and August to September for larvae;*
- *Netting – March to May for adults, with February and June to July sub-optimal, and August to September for larvae;*
- *Pitfall trapping – March to May and September for adults, with February, June to August and October sub-optimal;*
- *Refuge search – April to September ideally, with March and October sub-optimal.*

The latter two methods involve terrestrial habitats, the others aquatic habitats, for which a minimum of 4 visits per year are recommended, with at least 2 visits between mid-April and mid-May to record peak numbers (English Nature, 2001).

Outside the optimum survey period, a Habitat Suitability Index (HSI) for a particular water body can be calculated. This is a scoring system developed as a means of evaluating habitat quality and quantity. The HSI for Great Crested Newts incorporates ten indices, all of which are thought to affect the species.

None of these methods were employed as there was nothing to suggest that newts would be present.

2.7 Otter

Otters are nocturnal and are active all year round. They are large with an adult male reaching up to 1.2 m from nose to tail, and weighing about 10 kg.

Feeding mainly on fish and amphibians, Otters live by undisturbed waters where there is plenty of cover, mostly by freshwater lakes, rivers and quiet small streams as well as some coasts.

An Otter may use over 40 km of river and needs many resting places throughout this range. A female otter will give birth to 1 to 3 cubs in a natal holt, which is often away from the main river and must be completely undisturbed.

Field signs include:

- Prints in soft mud;
- Spraints (faeces);
- Holts.

A search for evidence of Otter presence on site was undertaken as part of the Ecological Appraisal.

2.8 Water Vole

The Water Vole is the largest of the British voles. It lives in a series of holes or burrows at the water's edge and can be found along the banks of ditches, streams, rivers, lakes and canals. Although Water Voles live in colonies, the breeding females are territorial, each defining their contiguous territory with latrines during the breeding season. This lasts from March to October.

The Water Vole is herbivorous, feeding primarily on the lush aerial stems and leaves of waterside plants. Its activity is normally confined to the area within two metres of the watercourse, the bankside vegetation in this area not only essential for food, but also for cover from predators.

Water Vole activity can be assessed by looking for the following signs:

- Burrows;
- Faeces and latrines;
- Feeding stations;
- Runs;
- Paw prints in areas of soft mud;
- Feeding 'lawns';

- Predator field signs.

A search for evidence of Water Vole presence on site was undertaken as part of the Ecological Appraisal.

The results of the species and habitat survey are detailed in Section 3.

2.9 Constraints

The survey was carried out outside the optimum period, as such some plant species may not have been visible at the time of the survey. However, given the habitat types present on the site this was not considered to be a significant constraint.

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3. RESULTS

3.1 Desk study

3.1.1 Designated sites

There were a large number of designated sites within the search area. The closest statutory site was Prestatyn Hillside, 850 metres to the south, an area of grassland, heathland and woodland.

Other sites included The Dee Estuary Special Protection Area (SPA), Special Area for Conservation (SAC), RAMSAR and Site of Special Scientific Interest (SSSI) 950 metres to the northeast. The site is designated for habitats including tidal rivers, estuaries, mud flats, sand flats, lagoons and salt marshes, whilst species include Sea Lamprey, River Lamprey and Petalwort.

Liverpool Bay SPA 1.0 km north and Gronant Dunes and Talacre Warren SSSI and Local Nature Reserve 1.2 km northeast were also present within the search area.

There were no wildlife sites within the 2.0 km search area, although there were many beyond this.

Although the designated sites were within relatively close proximity to the survey site, there was no direct connectivity, as the site was separated from them by main and local roads and residential and industrial areas. Furthermore, the small scale of the works will have no impact on the citation features of the site.

3.1.2 Protected species

Ecological data from COFNOD, the North Wales Environmental Information Service, and MAGIC, revealed a number of records of European Protected Species, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species within a 2.0 km radius of the site.

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Bat records included a Common Pipistrelle 85 metres to the south, recording flying through the area in 2014, along with a myotis species. A single Natterer's Bat and a Whiskered/Brandt's Bat have been recorded within the search area, 2.0 km south. There were also several unidentified bat records.

There were two historic records of Common Frog, along with a single historic record of Common Toad. Three Great Crested Newt records were present from 1.5 km southeast up until 2004, but there were no other records for the area. A single Natterjack Toad was recorded 1.8 km northeast in 2013.

Sand Lizards have been recorded along the estuary 1.1 km to the north, within the last 3 years. A large number of Common Lizard records were present, the closest from 600 metres to the northeast in 2019.

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3.2 Habitat survey

3.2.1 Habitat descriptions

The following habitats were recorded across the site:

- Amenity grassland;
- Scattered trees;
- Species poor, intact hedgerow;
- Buildings and hardstanding;
- Wall.

These are shown on the Phase 1 Habitat Survey map in Appendix 1, with a bird's-eye image in Appendix 2.

Amenity grassland

Areas of amenity grassland were present, with grasses represented by Creeping Fescue, meadow-grasses, Cocksfoot and False Oatgrass. Wildflowers included White Clover, Daisy, Dandelion and Ribwort Plantain (Figs. 1 and 2).

Figs. 1 & 2 Amenity grassland

Scattered trees

A few scattered trees were present around the site, these including Wild Cherry, Horse Chestnut, Weeping Willow and Ash (Figs. 3 and 4).

Figs. 3 & 4 Scattered trees

Species poor, intact hedgerow

A species poor, intact hedgerow of Beech separated the two buildings (Fig. 5).

Fig. 5 Species poor, intact hedgerow

Buildings and hardstanding

The site comprised a former library building (Fig. 6) and a block of flats (Fig. 7). Pathways of hardstanding ran around the buildings, with a small car park (Figs. 8 and 9).

Figs. 6 & 7 Former library and flats

Figs. 8 & 9 Hardstanding

Wall

A wall ran along part of the southern boundary of the site (Fig. 10).

Fig. 10 Wall

3.2.2 Flora

The botanical composition of each habitat was typical, and all species recorded were common and widespread.

No rare vascular plants were found, and there were no invasive species or notifiable weeds.

3.3 Protected species survey

3.3.1 Bats

The block of flats was not inspected as it will not be impacted on by the proposed development.

The former library building had a flat roof, which was covered in tarred felt and appeared to be in good condition throughout (Figs. 11 and 12).


Figs. 11 & 12 Flat roofed library building

The eaves were finished with a fascia which was tightly fitting to the brick walls all round, with an overhang present at the front of the building (Figs. 13 and 14).


Figs. 13 & 14 Eaves

The brickwork was sound throughout, whilst all the window casements and doorframes were tightly fitting.

Internally there was a false ceiling, with some tiles removed for investigations, which revealed the underside of the timber roof (Figs. 15 and 16). The whole building was brightly illuminated through the windows.

Figs. 15 & 16 Interior of former library building

No evidence of bat activity or occupation was found in or around the former library building.

None of the trees contained features such as decay cavities, woodpecker holes, fissures and exfoliating bark, that would be considered suitable for bat roosting and/or hibernation.

The site itself had limited value to foraging bats, as although there was some cover, there was little to attract prey items and the site was very small in extent.

3.3.2 Badgers

There were no signs of Badger activity.

3.3.3 Otters

There were no signs of Otter activity along the river side or along the brook.

3.3.4 Water Voles

No evidence of Water Vole presence was found.

3.3.5 Birds

Due to the small size and nature of the site, no birds were observed. It is known that gulls have previously nested on the roof of the former library building, whilst the trees also provided potentially suitable habitat for nesting.

A full list of species observed is given in Appendix 3.

3.3.6 Reptiles

With no still water or other wetland features, no suitable refugia or hibernacula and limited foraging opportunities, the site was considered unsuitable for reptiles.

3.3.7 Great Crested Newts

With no still water or other wetland features, no suitable refugia or hibernacula and limited foraging opportunities, the site was considered unsuitable for amphibians.

3.3.8 Invertebrates

Since the site was largely buildings and hardstanding, it was concluded that there was low potential for significant invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan.

3.3.9 Other species

No other protected or LBAP species were observed during the site visit.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Site evaluation

The site was of limited value to wildlife, as the scrub contained only a small range of species, with forbs relatively scarce throughout the sward. Indeed, no rare vascular plants were found, and all species recorded were common and widespread. There were no invasive or notifiable species.

Due to the small size and nature of the site, no birds were observed. It is known that gulls have previously nested on the roof of the former library building, whilst the trees also provided potentially suitable habitat for nesting.

None of the trees contained features such as decay cavities, woodpecker holes, fissures and exfoliating bark, that would be considered suitable for bat roosting and/or hibernation.

The former library building was unsuitable for roosting bats as there were no crevices or cavities. Certainly no evidence of bat activity or occupation was found.

The site itself had very limited value to foraging bats, as although there was some cover, the site was very small in extent, and there was little to attract prey items.

No evidence of Badgers was found, with no signs of Otters or Water Voles.

With no still water or other wetland features, no suitable refugia or hibernacula and limited foraging opportunities, the site was considered unsuitable for reptiles and amphibians.

Since the site was dominated by buildings and hardstanding, it was concluded that there was low potential for significant invertebrate assemblages, in particular those species listed as a priority in the UK Biodiversity Action Plan and/or Local Biodiversity Action Plan.

Although the designated sites were within relatively close proximity to the survey site, there was no direct connectivity, as the site was separated from them by main and local roads and residential and industrial areas. Furthermore, the small scale of the works will have no impact on the citation features of the site.

4.2 Possible impacts of proposed work and recommendations

Since all in-use bird's nests and their contents are protected from damage or destruction, any tree or shrub removal or works which may affect a nest should be undertaken outside the period 1st March to 31st August inclusive. If this time frame cannot be avoided, a close inspection of the trees, shrubs or structures to be removed should be undertaken prior to clearance.

Work should not be carried out within a minimum of 5.0 metres of any in-use nest, although this distance could be more depending on the sensitivity of the species.

Despite the presumed absence of breeding amphibians and reptiles on the site, at all times care will be taken when carrying out earthworks, as small mammals could be present.

Any small mammals or common amphibians disturbed or uncovered will either be caught by hand and relocated to a safe area, or left to vacate the work site in their own time.

If excavations are to be undertaken, it should be noted that open trenches could potentially trap wildlife, especially if these fill up with water. Escape routes should therefore be provided if trenches cannot be infilled immediately. These can be in the form of branches or boards placed on the bottom of the trench, with their upper ends above ground level and touching the sides, or sloping ends left in trenches.

The proposed works will not have a lasting or significant impact on wildlife, indeed the implementation of suitable landscaping as part of the redevelopment of the site could significantly enhance wildlife opportunities, particularly if planting schemes include nectar rich and/or native plant species

4.3 Further surveys

If any tree or shrub removal or works which may affect a nest cannot be timed appropriately to avoid the bird nesting period (considered to be March to August inclusive), then further surveys for nesting birds will be required.

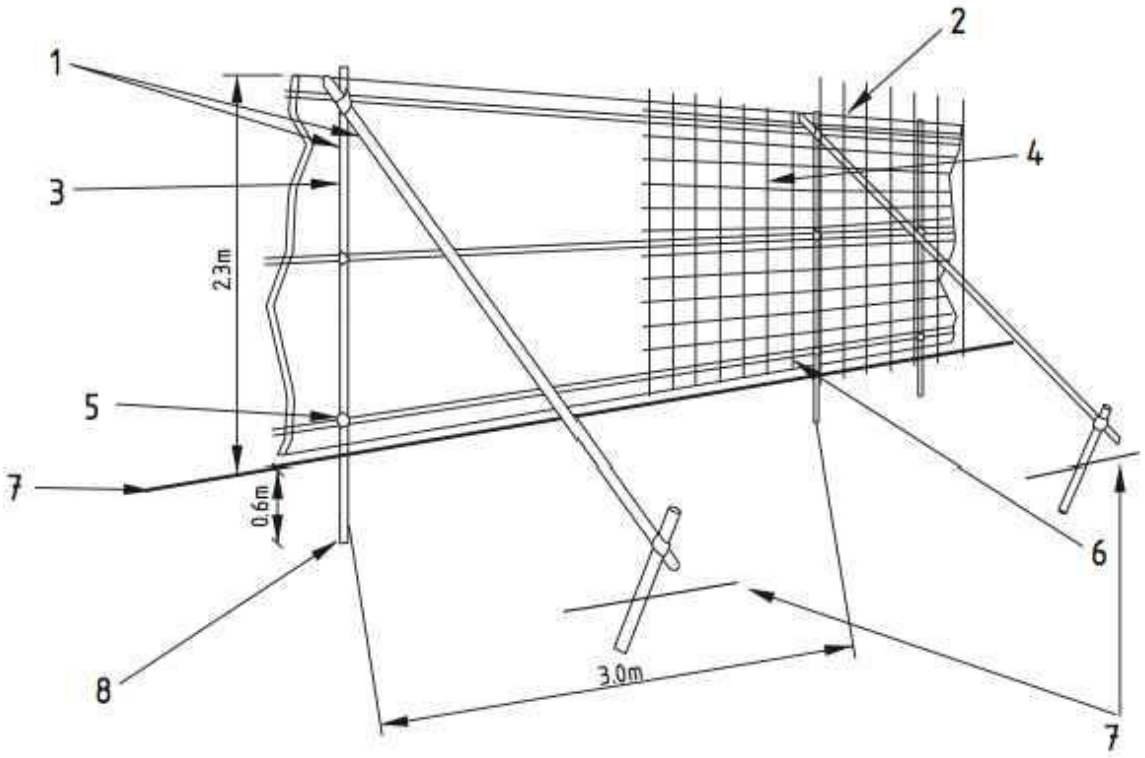
No other surveys were considered necessary.

4.4 Ecological Mitigation Measures

The retained trees may require special protection measures in accordance with British Standard *BS5837:2012 Trees in relation to Design, Demolition and Construction – Recommendations*. If protection is subsequently required, it will be installed on site prior to the commencement of any works on site, and will include appropriate protective barrier fencing (PBF) as shown in Fig. 17 overleaf.

The PBF is to consist of "a vertical and horizontal (scaffold) framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3.0 m. Onto this, weld mesh panels will be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and will not be used.

Tree protection signage denoting the words "TREE PROTECTION ZONE – KEEP OUT" is to be fixed onto every other panel of the PBF (Fig. 18 overleaf).



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary andard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Fig. 17 Protective Barrier Fencing

Fig. 18 Example of signage

In order to comply with paragraph 125 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats by maintaining dark routes for commuting and foraging where possible. As such any lighting installed will follow the guidance provided by the Bat Conservation Trust and the Institute of Lighting Engineers.

Lights will be low lux with lighting columns will be kept as low as possible, and the design of the luminaire will be such that light spillage will be kept to a minimum. Hoods or cowls may have to be used.

The relevant Pollution Prevention Guidelines listed overleaf will be adhered to, to ensure construction works are undertaken in an environmentally responsible manner.

Any environmentally hazardous material used will be kept in dedicated stores and storage tanks will have appropriate bunding.

- PPG1: General Guide to the Prevention of Pollution;
- PPG2: Above Ground Oil Storage Tanks;
- PPG3: Use and Design of Oil Separators in Surface Water Drainage Systems;
- PPG5: Works in, Near, or Liable to Affect Watercourses;
- PPG6: Working at Construction and Demolition Sites;
- PPG21: Pollution Incident Response Planning;
- PPG23: Maintenance of Structures over Water.

Earthworks will be undertaken according to the guideline given in PPG6: Working at Construction and Demolition Sites.

The following measures will be implemented as required to prevent pollution from earthworks:

- Erosion control measures – these aim to prevent runoff from flowing across exposed ground and becoming polluted with sediments;
- Sediment control measures – these aim to slow runoff and allow for settlement of sediment as close to the source as possible; and
- Site measures – these aim to provide end of pipe treatment for polluted water, for example reed beds or settlement ponds.

As excavations are to be undertaken, it is noted that open trenches could potentially trap wildlife, especially if these fill up with water. If trenches cannot be infilled immediately then they will either be covered overnight or escape routes will be provided.

These will be in the form of cover-plating, chain link fencing, branches or boards placed on the bottom of the trench, with their upper ends above ground level and touching the sides, or sloping ends left in trenches.

Open pipework larger than 150 mm outside diameter will be blanked off at the end of each working day.

In terms of enhancements, two Schwegler 2F bat boxes (or similar) will be erected on retained trees or on new buildings within the site (Fig. 19).

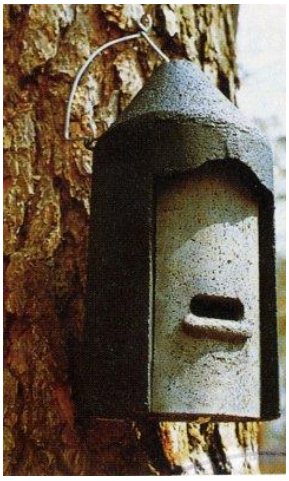


Fig. 19 Schwegler 2F bat box

Schwegler woodcrete boxes have the highest rates of occupation of all box types. The 75% wood sawdust, concrete and clay mixture allows natural respiration, stable temperature, and durability. They are extremely long lasting and rot- and predator-proof, and will hang from a tree branch near the trunk, or can be fixed to a trunk.

The 2F is the most popular general purpose box, particularly attractive to the smaller British bats. It has a simple design with a narrow entrance slit on the front.

The boxes will be at least 5.0 m above ground level and clear of any overhanging branches or wires. They will face anywhere from SE to SW to provide differing aspects to suit different weather conditions.

For birds, three nest boxes will be erected on retained mature trees within the site. These will be one each of Schwegler 1B (26 mm hole and 32 mm hole) and 2H (or similar – Fig. 20).

Woodcrete Nest Boxes come with a 25 year guarantee against rot, weather and natural damage. The 1B is available with a 26 mm hole for the tit *Parus spp* family and a 32 mm hole suitable for sparrows *Passer spp*. The 2H is open-fronted for a variety of species such as Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Spotted Flycatcher *Muscicapa striolatum* and Pied Wagtail *Motacilla alba*.

Fig. 20 Schwegler bird nest boxes 1B (26 mm), 2H and 1B (32 mm)

The grassland within the proposed site plan will retain the current semi-improved grassland which is already present in these areas. However, if new planting is carried out then a basic general purpose wild flower mix (EM1F) would be recommended; 2.5% *Achillea millefolium* Yarrow, 22.5% *Centaurea nigra* Common Knapweed, 15% *Galium verum* Lady's Bedstraw, 5% *Leucanthemum vulgare* Ox-eye Daisy, 5% *Sanguisorba minor*, Salad Burnet, 15% *Prunella vulgaris* Selfheal, 25% *Ranunculus acris* Meadow Buttercup, 2.5% *Rumex acetosa* Common Sorrel and 7.5% *Silene dioica* Red Campion.

Replacement tree planting will be a mix of native species, which may include Crab Apple *Malus sylvestris*, Wild Pear *Pyrus communis*, Bullace (Damson) *Prunus insititia*, Rowan *Sorbus aucuparia*, Hazel *Corylus avellana*, Field Maple *Acer campestre* and Guelder Rose *Viburnum opulus*.

In the long term, maintenance of the site will be carried out to include the upkeep of the green areas, removing litter and debris, keeping a check on scrub encroachment, mowing grass, etc.

The bat and bird boxes will need no maintenance, and will last for many years as stated above.

The most common and effective method of avoiding disturbance, killing or injury to bats, birds and reptiles, is to carry out the work at the most appropriate time of the year.

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APPENDICES

Appendix 1: Phase 1 Habitat Survey

Appendix 2: Bird species list

Appendix 3: Relevant legislation

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Appendix 1: Phase 1 Habitat Survey Map

Not to scale

Legend			
	Survey boundary		Wall
	Amenity grassland		Species poor, intact hedgerow
	Scattered trees		Buildings and hardstanding

Appendix 2: Relevant legislation

2.1 Badgers

Badgers are protected in Britain by the Protection of Badgers Act 1992. The purpose of this Act is to protect the animals from deliberate cruelty and from the incidental effects of lawful activities which could cause them harm. Under this legislation it is an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or attempt to do so;
- Interfere with a sett by damaging or destroying it;
- Obstruct access to, or any entrance of, a Badger sett;
- Disturb a Badger when it is occupying a sett.

Note that if any of the above resulted from a person being reckless, even if they had no intention of committing the offence, their action would still be considered an offence.

A person is not guilty of an offence if it can be shown that the act was 'the incidental result of a lawful operation and could not have been reasonably avoided'; only a court can decide what is 'reasonable' in any set of circumstances. Penalties for offences under this legislation can be up to six months in prison and a fine of up to £5,000 for each offence.

A Badger sett is defined in the Act as 'any structure or place which displays signs indicating current use by a Badger'. This can include culverts, pipes and holes under sheds, piles of boulders, old mines and quarries, etc.

'Current use' does not simply mean 'current occupation' and for licensing purposes it is defined as 'any sett within an occupied Badger territory regardless of when it may have last been used'.

A sett therefore, in an occupied territory, is classified as in current use even if it is only used seasonally or occasionally by Badgers, and is afforded the same protection in law.

2.2 Bats

In England, Scotland and Wales, all bat species are fully protected under the Wildlife and Countryside Act 1981 (WCA) (as amended), through inclusion in Schedule 5. In England and Wales this Act has been amended by the Countryside and Rights of Way Act 2000 (CRoW), which adds an extra offence, makes species offences arrestable, increases the time limits for some prosecutions, and increases penalties.

All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations 1994, (or Northern Ireland 1995) (the Habitats Regulations), which defines ‘European protected species of animals’.

The above legislation can be summarised thus (Mitchell-Jones and McLeish, 2004):

- *Intentionally or deliberately kill, injure or capture (or take) bats;*

- *Deliberately disturb bats (whether in a roost or not;*
- *Recklessly disturb roosting bats or obstruct access to their roosts;*
- *Damage or destroy roosts;*
- *Possess or transport a bat or any part of a part of a bat, unless acquired legally;*
- *Sell (or offer for sale) or exchange bats, or parts of bats.*

The word 'roost' is not used in the legislation, but is used here for simplicity. The actual wording is 'any structure or place which any wild animal…uses for shelter or protection' (WCA), or 'breeding site or resting place' (Habitats Regulations).
As bats generally have both a winter and a summer roost, the legislation is clear that all roosts are protected whether bats are in residence at the time or not.

2.3 Birds

In Britain, all wild birds, their nests and eggs are protected under the Wildlife & Countryside Act 1981. There are penalties for:

- *Killing, injuring or capturing them, or attempting any of these;*
- *Taking or damaging the nest whilst in use;*
- *Taking or destroying the eggs.*

2.4 Great Crested Newts

Great Crested Newts are protected under Schedule 5 of the Wildlife & Countryside Act (1981) as amended, and Schedule 2 of the Conservation of Habitats and Species Regulations 2010. As a result of their rarity across Europe, they are also protected under Annexes IIa and IVa of the Habitats and Species Directive, and under the Berne Convention (the Convention on the Conservation of European Wildlife and Natural Habitats).

The above legislation can be summarised thus (Langton *et al*, 2001):

- *Intentionally or deliberately capture or kill, or intentionally injure Great Crested Newts;*
- *Deliberately disturb Great Crested Newts or intentionally or recklessly disturb them in a place used for shelter or protection;*
- *Damage or destroy a breeding or resting place;*
- *Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection;*
- *Possess a Great Crested Newt, or any part of it, unless acquired lawfully;*
- *Sell, barter, exchange or offer for sale Great Crested Newts or parts of them.*

2.5 Reptiles

All common reptiles (Common Lizard, Grass Snake, Slow-worm and Adder *Vipera berus*) are afforded legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) largely as a consequence of a national decline in numbers associated with persecution and habitat loss.

Under the terms of the Act it is illegal to intentionally kill or injure a reptile.

2.6 Otters

Otters are protected under Sections 9.1 and 9.4, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), Annex 2 and 4 of the Conservation (Natural Habitats &c.) Regulations 1994 as amended, and are a priority species under the UK BAP. Actions that are prohibited include intentional killing, injuring or taking; and intentional or reckless damage, destruction or obstruction of any structure or place used for shelter or protection.

2.7 Water Voles

As of 12 August 2008, Water Voles have been given full protection under Section 9 of the Wildlife and Countryside Act 1981.

Offences under Section 9 carry a maximum penalty of a fine up to £5000, imprisonment for up to six months, or both, for each animal in respect of which an offence is committed. It is now an offence to:

- Intentionally kill, injure or take (capture) a Water Vole;
- Possess or control a live or dead Water Vole, or any part of a Water Vole or anything derived from a Water Vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a Water Vole uses for shelter or protection;
- Intentionally or recklessly disturb a Water Vole while it is occupying a structure or place which it uses for shelter or protection.