

PROPOSED REPLACEMENT OF PROPERTY AT ALBY HILL, ALDBOROUGH, NORFOLK



ECOLOGICAL APPRAISAL

UPDATE

Prepared by:
Philip Parker Associates Ltd
White Row Cottage
Leziat Drove
Pott Row
King's Lynn
Norfolk
PE32 1DB

Prepared for:
Mr Watts and Ms Russell

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DOCUMENT HISTORY				
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1.0 EXECUTIVE SUMMARY

- 1.1 ACS-Architectural have prepared a planning application for the demolition of an existing property at Alby Hill, Aldborough, Norfolk and to replace it with a new property. It is anticipated that the local planning authority, North Norfolk District Council, will require an ecological assessment to accompany the planning application. Philip Parker Associates Ltd have been instructed to undertake this assessment.
- 1.2 An initial report presented the results of a preliminary assessment that was undertaken on the 26th January 2021 by senior ecologist Philip Parker MCIEEM CEnv.
- 1.3 **This update report presents the findings of the two activity surveys recommended in the Preliminary Ecological Appraisal, undertaken on the 24th May 2021 and 26th August 2021. Updates to the original report are shown in a red typeface for ease of reading from the original report.**
- 1.4 The report has been prepared following guidance prepared by the Institute of Ecology and Environmental Management (CIEEM) and BS 42020:2013 Biodiversity : Code of practice for planning and development.
- 1.5 **Site description**
The property comprises a two storey brick and flint cottage with a pantile roof. There are two single storey extensions off the eastern and western elevations.
- 1.6 The property is set within a mature garden with is laid largely to grass with some scattered trees and small shrub borders within the plot. The garden has a largely unmanaged appearance and is bordered to the north and the west by a flowing stream and beyond that by woodland.
- 1.7 **Data Search**
A 2km data search was undertaken with the Norfolk Biodiversity Information Service (NBIS) which has recorded the following. Further information has been gathered from the MAGIC.defra.gov website:
- 7 County Wildlife Sites were noted within the 2km data search. The closest was Icehouse Grove (CWS) located 25m north of the site;
 - The closest SAC was Norfolk Valley Fens (SAC) located 9.6km north-east;
 - The closest SPA was Broadland (SPA) located 17.6km south-east;
 - The closest RAMSAR was the North Norfolk Coast (RAMSAR) located 15.6km north-west;
 - The closest SSSI was Gunton Park Lake located 2.7km north-east of the site;

- The closest bat species was a daubentons noted 170m west of the site;
- The closest great crested newt record was located 760m west of the site;
- No records of reptiles were noted within the data search area.

1.8 FAUNA

Bats

Evidence of bats using the property was limited to a single pipistrelle type dropping on the window to the western elevation. There was no evidence of bats internally within the living rooms of the property or either of the single storey extensions although there were a small number of suitable cracks and cavities in both the extensions and a single cavity on the internal landing of the property. The roof void was low (c1m) and no obvious evidence of bat use was noted (there were copious amounts of mouse and rat droppings and several old wasps nests).

1.9 Externally, a small number of potential bat roosting features were noted in the walls but on inspection these all appeared webbed. There was some roosting potential between the pantiles and the bitumen underfelt. There was also potential features in recessed cavities in the eastern chimney and under lead flashing around the same chimney and the northern dormer.

1.10 The majority of the trees in the garden had negligible bat roosting potential. The exception was an ash in the south-east corner which had low bat roosting potential.

1.11 **Two dusk emergence surveys were undertaken during the summer of 2021. These did not identify the presence of any roosting bats using the building.**

1.12 Badgers

No direct evidence of badgers was noted in the proposed development area, although the surrounding habitat did have the potential to support badgers.

1.13 Water vole/otter

The stream had limited potential for water vole to occur due to the low bank and the lack of vegetation on the banks meaning lack of cover. The stream had greater potential for otter to occur and animals have been reported in recent weeks.

1.14 Hedgehogs

The areas of grassland and woodland have the potential to support foraging hedgehogs. The site is also directly connected to the wider landscape (arable farmland) via hedgerows and scrub.

1.15 **Birds**

A range of woodland bird species were noted during the survey. The thicker vegetation along the eastern boundary (including some evergreen species) have potential to support nesting birds. In addition, an old wrens nest was noted in a wall cavity in the western garage.

1.16 **Reptiles**

The rough grassy garden had some potential for grass snake and slow worm to occur. Being relatively shaded there is more limited potential for common lizard and the habitat is considered unsuitable for adder.

1.17 **Amphibians**

No ponds were noted on site, the closest pond was 50m to the south-west associated with the school woodland garden. This does not appear on the Ordnance Survey Mapping (Maybe a recent feature). The next closest pond was 255m from the property to the south. It was not possible to inspect the school pond. It is understood from the client that large numbers of frogs can be found in the overgrown garden during the summer.

1.18 **Invertebrates**

By its nature, the proposed development site is unlikely to support significant invertebrate populations.

1.19 **Other species**

A well-worn muntjac path, grey squirrel and mole evidence was noted on the site.

1.20 **IMPACT ASSESSMENT**

The development will result in the demolition of the existing property and erection of a new one which would remove potential bat roosting and bird nesting habitat (albeit none proven).

1.21 **Protected sites**

Due to the distance and nature of the development, the proposed development is unlikely to have any negative impact on any nationally and internationally designated sites. The Grove County Wildlife Site is located immediately to the north of the property and there could be some potential impacts due to light.

1.22 **Protected species**

The development plans show the existing property to be demolished and replaced with a new building on approximately the same footprint, closely resembling the existing property. The concrete slab to the south will be used as a builder's compound area.

1.23 The predicted impacts on protected species are as follows:

Bats – Potential impact of bat foraging habitat through the presence of increased lighting around the property;

Nesting birds – The development works could impact on bird nesting habitat (if any are roosting under tiles) and due to the removal of any trees and shrubs;

Badgers/ otters/ water voles – There is unlikely to be any identified impact on badgers from the proposed development;

Hedgehog – The development could impact on the foraging areas for hedgehog and prevent their movement across the landscape through the imposition of fences;

Reptiles – There is potential for any development works to impact on reptiles and reptile habitat through the loss of habitat;

Amphibians – There is limited potential for the development to impact on great crested newts but could impact on common amphibian species using the site as cover.

1.24 **Further surveys**

Bats

Two further surveys have been undertaken to confirm the presence / likely absence of roosting bats at the property. Due to an absence of bats recorded emerging during the course of the surveys, there is no need for any further survey work. A single apple tree to the west of the existing property is to be removed as part of the works this was considered to have negligible bat roosting potential. A single ash tree to the south-east of the site was considered to have low bat roosting potential. Given the negligible - low grading of the trees no surveys in respect of the trees are required subject to appropriate lighting mitigation.

1.25 **Badgers/otters/water voles/hedgehogs/breeding birds**

Subject to precautionary mitigation, no further surveys are required in respect to these species.

1.26 **Reptiles/amphibians**

The proposed development site does have some potential for reptiles and amphibians to occur. The potential presence for great crested newt cannot be completely discounted. However, if a precautionary mitigation approach is followed, the potential for impact on either group (even if present) can be mitigated. As such, no further surveys are considered necessary for these groups.

1.27 **Mitigation and enhancements**

Precautionary mitigation and enhancement proposals include:

- **Soft felling of any trees which have low value bat roosts;**
- Limitation in external lighting on the new property to prevent impacts on foraging bats;
- Incorporation of bat boxes and bird boxes into the new property and/or trees as a roost/nest enhancement;
- Use of 1F bitumen felt under any new roof tiles;
- Planting part of any gardens with flora to attract insects that bats can feed on;
- Enhancement of the garden for reptiles and amphibians.

2.0 INTRODUCTION

- 2.1 ACS-Architectural have prepared a planning application for the demolition of an existing property at Alby Hill, Aldborough, Norfolk and its replacement with a new property. It is anticipated that the local planning authority, North Norfolk District Council, will require an ecological assessment to accompany the planning application. Philip Parker Associates have been instructed to undertake this assessment.
- 2.2 A Preliminary Ecological Appraisal of the site was undertaken on the 26th January 2021 by senior ecologist Philip Parker MCIEEM CEnv. The following report providing the findings has been prepared following guidance prepared by the Institute of Ecology and Environmental Management (CIEEM) and BS 42020:2013 Biodiversity : Code of practice for planning and development and takes the form of a Preliminary Ecological Appraisal (PEA).
- 2.3 The proposed development site is located at centered on Ordnance Survey Grid Reference TG 19276 34414 as shown on the following Ordnance Survey and aerial photograph extract.

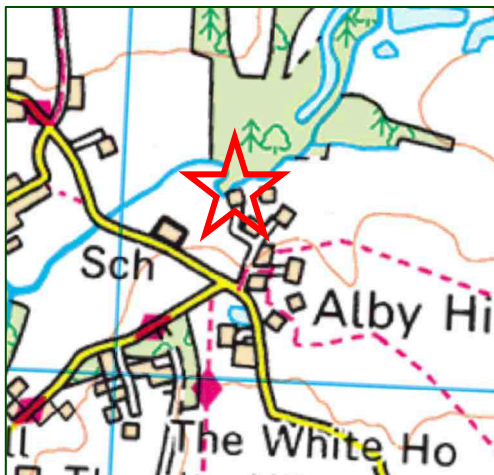


Figure 1 – Ordnance Survey location plan Crown copyright and database right 2021



Figure 2 – Aerial photograph location plan Imagery C 2021 DigitalGlobe, Getmapping plc, Intorfera Ltd & Bluesky.

2.4 Character Area

The site falls within the Central North Norfolk National Character Area (NCA). The gently undulating rural landscape of this area stretches from the slightly flatter, more open land of Mid Norfolk NCA, to the prominent glacial landform of the Cromer Ridge and the dynamic exposed coastline of coastal cliffs, where large storm events dramatically shape its character. This is ancient countryside with a long-settled agricultural character, where arable land is enclosed by winding lanes and hedgerows, interspersed with woodland and remnant heath and dissected

by lush pastoral river valleys. A patchwork of cultivated land, numerous church spires, distant wooded horizons and big skies dominate the landscape.

3.0 DATA SEARCH

3.1 In order to assess whether there are any protected species records for the development site (grid reference TG 19276 34414) and the surrounding area (2km radius), a data search was undertaken with the Norfolk Biodiversity Information Services (NBIS) on the 3rd February 2021. Further information of protected sites beyond 2km has been gained from the MAGIC website <https://magic.defra.gov.uk/>. The results of the search can be found in Appendix A and are summarised as follows:

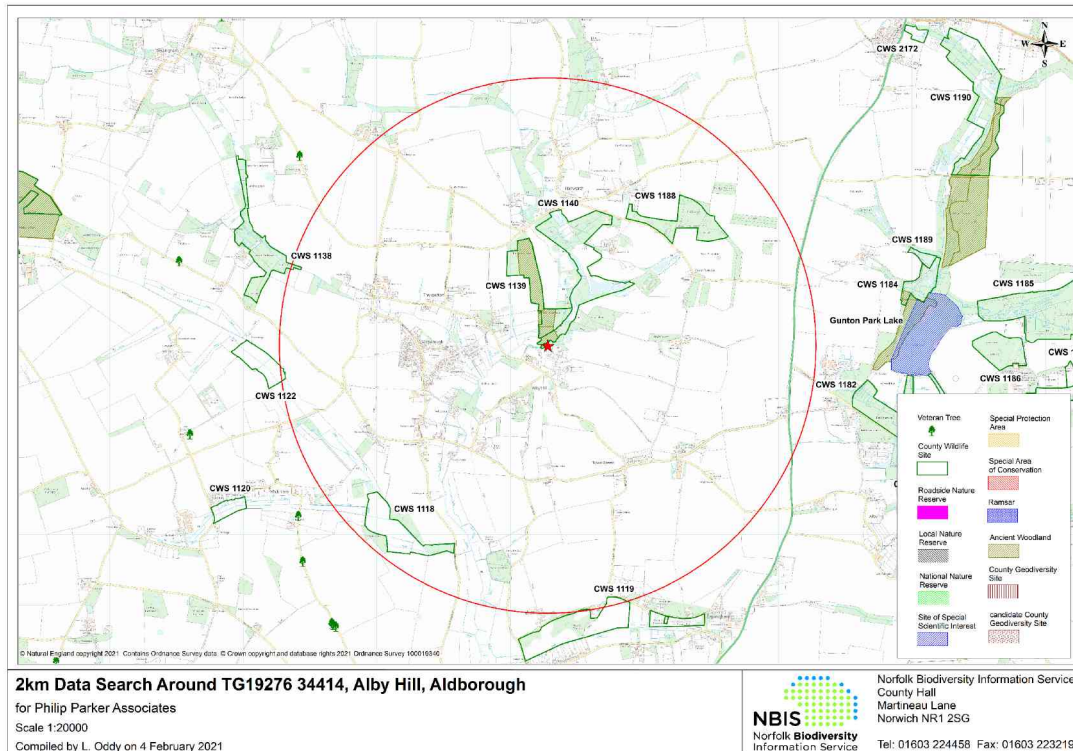


Figure 3 – NBIS data search results

3.2 PROTECTED SITES

Natura 2000 Sites

The Habitats Directive (Council Directive 92/43/EEC of 21 May 1992) requires EU Member States to create a network of protected wildlife areas, known as Natura 2000, across the European Union. This network consists of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), established to protect wild birds under the Birds Directive (Council Directive 79/409/EEC of 2nd April 1979). These sites are part of a range of measures aimed at conserving important or threatened habitats and species.

3.3 The technical changes made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 enable the UK to continue to meet its international commitments, such

as the Berne and Bonn conventions, and ensure that regulations transposing the EU habitats and wild birds directives are operable.

3.4 **Special Area of Conservation (SAC)**

Special Areas of Conservation have been given special protection under the European Union's Habitats Directive. They provide increased protection to a variety of wild animals, plants and habitats and are a vital part of global efforts to conserve the world's biodiversity.

3.5 No SAC sites were noted within 2km of the development site, the closest was Norfolk Valley Fens SAC located 9.6km north-east of the site.

3.6 **Special Protection Area (SPA)**

Special Protection Areas are strictly protected sites classified in accordance with Article 4 of the EC Directive on the conservation of wild birds (79/409/EEC), also known as the Birds Directive, which came into force in April 1979. They are classified for rare and vulnerable birds, listed in Annex I to the Birds Directive, and for regularly occurring migratory species.

3.7 No SPA sites were noted within 2km of the development site, the closest was Broadland SPA located 17.6km south-east of the site.

3.8 **RAMSAR Sites**

Ramsar sites are wetlands of international importance designated under the Ramsar Convention.

3.9 Sites proposed for selection are advised by the UK statutory nature conservation agencies, or the relevant administration in the case of Overseas Territories and Crown Dependencies, coordinated through JNCC. In selecting sites, the relevant authorities are guided by the criteria set out in the Convention. The UK also has a national Ramsar Committee composed of experts who provide further advice.

3.10 In the UK, the first Ramsar sites were designated in 1976. Since then, many more have been designated. Compared to many countries, the UK has a relatively large number of Ramsar sites, but they tend to be smaller in size than many countries. The initial emphasis was on selecting sites of importance to water birds within the UK, and consequently many Ramsar sites are also Special Protection Areas (SPA) classified under the Birds Directive. However, greater attention is now being directed towards the selection of Ramsar sites in UK Overseas Territories and Crown Dependencies; the first of these was designated in 1990. Both within the UK and

overseas, non-bird features are increasingly taken into account, both in the selection of new sites and when reviewing existing sites.

3.11 No RAMSAR sites were noted within 2km of the development site, the closest was the North Norfolk Coast located 15.6km north-west.

3.12 **Sites of Special Scientific Interest (SSSI)**

The SSSI/ASSI series has developed since 1949 as the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. These sites are also used to underpin other national and international nature conservation designations. Most SSSIs are privately-owned or managed; others are owned or managed by public bodies or non-government organisations. The SSSI/ASSI designation may extend into intertidal areas out to the jurisdictional limit of local authorities, generally Mean Low Water in England and Northern Ireland; Mean Low Water of Spring tides in Scotland. In Wales, the limit is Mean Low Water for SSSIs notified before 2002, and, for more recent notifications, the limit of Lowest Astronomical Tides, where the features of interest extend down to LAT. There is no provision for marine SSSIs/ASSIs beyond low water mark, although boundaries sometimes extend more widely within estuaries and other enclosed waters.

3.13 Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and the Nature Conservation (Scotland) Act 2004.

3.14 No SSSI sites were noted within 2km of the development site, the closest was Gunton Park Lake (SSSI) located 2.7km north-east of the site.

3.15 **County Wildlife Sites**

County Wildlife Sites are second tier ecological sites, identified as they fulfil a range of select criteria for their ecological interest on a county level. They do not receive statutory protection but are usually offered some protection under local planning policy.

3.16 ***Icehouse Grove (CWS number 1140) – Located 25m north of the site***

This site is comprised of wet semi-natural broad-leaved coppice with standards woodland, marshy neutral grasslands, fen and mesotrophic ponds. It lies to the south-west of Hunworth Common.

3.17 **Thurgarton Wood (CWS number 1139) – Located 90m north of the site**

A mature broadleaved coppice with standards woodland. Situated to the south-west of Hunworth Common. The canopy is dominated by sycamore *Acer pseudoplatanus* with oak *Quercus robur* alder *Alnus glutinosa* and bird cherry *Prunus padus* and birch *Betula spp.* The coppice layer consists of young sycamore, hazel *Corylus avellana* and hawthorn *Crataegus monogyna*.

3.18 **The Belt and The Square (CWS number 1188) – Located 1.2km north-east of the site**

This site is a broad-leaved, semi-natural woodland with mixed species situated in Hanworth Park. Over the majority of the site oak *Quercus robur*, sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica* comprise the canopy.

3.19 **Calthorpe Grazing Meadow (CWS number 1118) – Located 1.9km south-west of the site**

This site is semi-improved marshy neutral grassland. Numerous ditches have flowing water, supporting a number of aquatic species whilst others are dry and similar to the surrounding grassland. The site is managed by grazing. It is surrounded by arable, mixed woodland and similar grassland to the west.

3.20 **Thwaite Common (CWS number 1119) – 2km south of the site**

Thwaite Common is a large area of species-rich grassland with blocks of scattered scrub. The site slopes gently north to south with drier unimproved and semi-improved neutral grassland in the north and neutral marshy grassland on lower ground and abundant seepage along the slope. Two particularly active springs are present. A stream makes up the southern boundary.

3.21 **Lake Cottage Meadow (CWS number 1122) – Located 2km south-west**

This site is part of a strip of grazing meadow surrounded by arable land. The meadow is fairly species poor. It appears to be regularly grazed by cattle. There is a steep sided stream running north to south which supports the nationally rare holly-leaved naiad *Najas marina*.

3.22 **Hall Woods (CWS number 1138) – Located 2km west of the site**

This site is a semi-natural woodland with some coniferous areas. Drainage ditches run through the site but only one carries a significant amount of flowing water. Along the length of the stream, particularly in its mid-region are several wetter areas with increasingly lush vegetation. The wood is most probably used as game cover.

3.23 PROTECTED SPECIES

The following records for protected species were noted within the NBIS data search.

Bats

- Pipistrelle species *Pipistrellus pipistrellus sensu lato* – 49 records, latest 2018 – closest 230m south-west
- Soprano pipistrelle *Pipistrellus pygmaeus* – 48 records, latest 2018 – closest 555m south-west
- Western barbastelle *Barbastella barbastellus* – 10 records, latest 2018 – closest 230m south-west
- Serotine *Eptesicus serotinus* – 4 records, latest 2018 – closest 225m south-west
- Common pipistrelle *Pipistrellus pipistrellus* – 1 record, 2006 – 300m west
- Daubentons *Myotis daubentonii* – 9 records, latest 2017 – closest 170m west
- Natterers *Myotis nattereri* – 19 records, latest 2018 – closest 230m south-west
- Brown long-eared *Plecotus auritus* – 20 records, latest 2018 - closest 400m south
- Noctule *Nyctalus noctula* – 9 records, latest 2016 – closest 760m south-east
- Nathusius's Pipistrelle *Pipistrellus nathusii* – 1 record, 2016 – 260m south-west

The majority of these records were collected using Norfolk Bat Survey methodology

Mammals

- Hedgehog *Erinaceus europaeus* – 10 records, latest record 2016 - closest 1.5km south-east
- Eurasian badger *Meles meles* – 2 records, latest record 2016 - closest 1.8km east
- Brown hare *Lepus europaeus* – 8 records, latest record 2017 - closest 1.2km north-east

Amphibians

- Great crested newt *Triturus cristatus* – 13 records, latest record 2016, closest – 760m west
- Smooth newt *Lissotriton vulgaris* – 12 records, latest record 2012, closest – 1.95km south-east
- Common toad *Bufo bufo* – 12 records, latest record 2016, closest – 1.95km south-east
- Common frog *Rana temporaria* – 12 records, latest record 2016, closest – 1.95km south-east

Owls

- Barn owl *Tyto alba* – 53 records, latest record 2016 – closet – 1km north-east
- Little owl *Athene noctua* – 6 records, latest record 2016 – closest – 960m south

- Short eared owl *Asio flammeus* – 2 records, latest record 2015 – closest – 2km north-west
- Tawny owl *Strix aluco* – 22 records, latest record 2012 – closet – 1km north-west

4.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT SITE

4.1 GENERAL

The following description is based on a site visit undertaken on the 26th January 2021 by senior ecologist Philip Parker MCIEEM CEnv. The survey commenced at 13:00 and took 2.0 hours to complete.

4.2 SITE DESCRIPTION

The property comprises a two storey brick and flint cottage with a pantile roof. There are two single storey extensions off the eastern and western elevations. The property is set within a mature garden with is laid largely to grass with some scattered trees and small shrub borders within the plot. The garden has a largely unmanaged appearance and is bordered to the north and the west by a flowing stream.

4.3 A more detailed description categorising the habitats present (in accordance with the Phase 1 Habitat Codes JNCC Phase 1 handbook) are given below.

4.4 A1.1.1 Semi-natural broad-leaved woodland.

Areas of mixed broadleaved plantation woodland occurs to the north of the site, with species comprising mainly Alder *Alnus glutinosa*, oak *Quercus robur* and willow *Salix spp.* This is also a County Wildlife Site (1140)



Figure 4 – Mixed broadleaved woodland and
bramble scrub to the north of the stream

4.5 A2.2 Scattered scrub

Areas of scattered holly *Ilex aquifolium* and hazel *Corylus avellana* occur along the eastern boundary



Figure 5 – Holly and hazel along the eastern boundary to the site with broken hazel fencing

4.6 **A3 Scattered trees**

A number of scattered trees occur on and surrounding the proposed development site. A group of common alders can be found on the southern margin, a large ash *Fraxinus excelsior* tree can be found in the south-east corner and apple trees *Malus spp* can be found to the north of the property.



Figure 6 – Scattered alder trees form the southern boundary to the site

4.7 **B6 Species poor semi-improved grassland**

The majority of the garden comprises of species poor semi-improved grassland. Species present include cocksfoot *Dactylis glomerata*, ryegrass *Lolium spp*, reed sweet grass *Glyceria maxima*, common couch *Elymus repens* and annual meadow grass *Poa annua*. Herb species include dog's mercury *Mercurialis perennis*, ground ivy *Glechoma hederacea*, spear thistle *Cirsium vulgare*, creeping buttercup *Ranunculus repens*, and prickly sow thistle *Sonchus asper*.



Figure 7 – Species poor grassland surrounding the property

4.8 **C3.1 Tall ruderals**

Tall ruderals were scattered around the property. Specifically, areas of common nettle *Urtica dioica* were located in a band close to the stream.

4.9 **G2 Running water**

A running stream was present to the north and looping round to the west of the property. Water cress *Nasturtium officinale*, foals water-cress *Apium nodiflrum* and water starwort *Callitriche spp* was present within the stream.



Figure 8 – Stream course running to the north of the property

4.10 **J1.4 Introduced shrub**

A number of ornamental shrubs were present in the immediate vicinity of the property, including box *Buxus spp*, rose *Rose spp*, rosemary *Rosmarinus officianalis*, and firethorn *Pyracantha spp*.



Figure 9 – A variety of ornamental shrubs surround the property

4.11 **J 3.4 Fence**

A woven hazel fence was present along the eastern boundary to the site (refer to Figure 5).

4.12 **J 3.6 Building**

The main dwelling house was constructed from brick and flint and was positioned in the centre of the plot. Gutters were attached directly to the walls. The roof was covered in pantiles with traditional bitumen felt under enclosing a small loft void. Two chimneys were present; one each end of the building and a low dormer was present off the northern side. A single storey storeroom extension was present to the east and a single storey garage was present to the west.

4.13 A carport was located in the south-east part of the garden this comprised a roof supported by a timber frame.



Figure 10 – View of the property from the south



Figure 11 – View of the property from the north showing the dormer window



Figure 12 – View of the western gable



Figure 13 – Carport located in the south-east corner of the garden

4.14 **J4 Bare ground**

A concrete pad (the base to a former Nissan hut) was present in the south-west corner of the site. Two areas of cut vegetation was present on the pad. Other areas of bare ground occurred under a wooden carport in the south-east corner.



Figure 14 – Concrete pad with garden waste stored

5.0 FAUNA SURVEY METHODOLOGY / RESULTS

5.1 GENERAL

The potential scope of works, data search and habitats within the site have informed the base of the preliminary ecological appraisal. On this basis, the following protected and priority species have been considered further within this report:

- Bats
- Badger
- Water vole
- Otter
- Hedgehog
- Breeding birds
- Reptiles
- Amphibians

5.2 BATS

Legislation

In Britain, all bat species and their roosts are legally protected, by both domestic and international legislation, namely:

- The Wildlife and Countryside Act (1981) (as amended);
- The Countryside and Rights of Way Act, 2000 and
- The Conservation of Habitats and Species (amendment) (EU Exit) Regulations 2019

5.3 This legislation makes it an offence amongst others to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;
- Intentionally or recklessly obstruct access to a bat roost.

5.4 A bat roost is regarded as “any structure or place which any wild animal...uses for shelter or protection” As bats tend to reuse the same roosts, legal opinion is that the roost is protected whether or not the bats are present at the time.

5.5 Bats are also listed under the Natural Environment and Rural Communities Act (NERC, 2006). This is a list of habitats and species that are of principal importance for the conservation of

biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK BAP List of Priority Species and Habitats. The S41 list should be used to guide decision-makers such as local and regional authorities when implementing their duty: to have regard to the conservation of biodiversity in the exercise of their normal duties.

5.6 Existing records

Pipistrelle species, common pipistrelle, soprano pipistrelle, western barbastelle, serotine, daubentons, natterers, noctule, nathusius's pipistrelle and brown long-eared were all noted within the 2km NBIS data search. The closest record was for daubentons, located 170m west of the site.

5.7 Survey Methodology

In summer, bats typically roost in trees and buildings. They feed along hedgerows, woodland edge, old pasture and over water. In winter, hibernation sites can include trees and buildings but more commonly underground structures such as caves and ice houses.

5.8 The Bat Mitigation Guidelines produced by English Nature (now Natural England) set out the timescales for survey work, as follows:

Table 1 Timescales for bat survey

SEASON	ROOST TYPE	INSPECTION	BAT DETECTOR AND EMERGENCE COUNTS
Spring (Mar – May)	Building	Suitable (Signs, perhaps bats)	Limited, weather dependent
	Trees	Suitable (Signs only)	Static detectors may be useful
	Underground	Suitable (signs only)	Static detectors may be useful
Summer (June – August)	Building	Suitable (signs and bats)	Suitable
	Trees	Difficult	Limited, use sunrise survey
	Underground	Suitable (signs only)	Rarely useful
Autumn (September – November)	Building	Suitable (signs and bats)	Limited, weather dependent
	Trees	Difficult	Rather limited, weather dependent; use sunrise survey
	Underground	Suitable (signs, perhaps bats)	Static detectors may be useful
Winter (December – February)	Building	Suitable (signs, perhaps bats)	Rarely useful
	Trees	Difficult (best for signs after leaves have gone)	Rarely useful
	Underground	Suitable (signs and bats)	Static detectors may be useful

5.9 Building Survey Methodology

The preliminary survey was conducted by Philip Parker (Bat licence 2015-14467-CLS-CLS). The site was assessed for the presence of buildings or structures that could support roosting bats.

5.10 The survey was conducted using an extending ladder to gain access to the upper levels, a pair of 8 x 42 binoculars and a powerful Clulite lamp (fitted with a red filter where appropriate to avoid disturbing any bats that might be present). A Rigid CA-100 endoscope was used to inspect cavities where they were accessible.

5.11 The survey concentrated on checking horizontal surfaces on which bat droppings and feeding remains could rest (including windowsills, beams, gutters, stored goods) as well as vertical surfaces such as walls. Potential access points to cavities and possible roost spaces were checked for urine staining and fur rubbings.

5.12 Tree survey Methodology

Any trees which might be impacted by the proposed development were inspected visually from ground level with 8x42 binoculars in order to locate unambiguous field signs such as droppings or urine/fur-staining to identify potential roost features (PRFs). These features included: partially detached ivy cladding with stem diameters in excess of 50mm; woodpecker holes; rot holes; limb stubs; cankers; hazard beams; cavities; flaking bark; vertical or horizontal cracks and splits. The methods used were those described within the BCT Bat Survey Guidelines (2016).

5.13 Building Survey results

The results of the building inspection are given in the following table:

Table 2 Bat roost potential and evidence in the property

Area	Bat roosting potential	Bat evidence
Main house external	A small number of features at eaves level, the majority were webbed	No obvious bat evidence noted
Main house internal	Single cavity in the wall plaster at the top of the stairs	No evidence of bat use in any part of the house
Main house roof	Roosting potential between the roof tiles and the underfelt (particularly on the southern side – northern side very mossed)	No obvious bat evidence noted
	Roosting potential in roof void	Roof void only 1m in height, full of mouse and rat droppings. No obvious bat evidence noted
	Gaps in mortar joints on the eastern chimney	No obvious bat evidence noted

Area	Bat roosting potential	Bat evidence
	Gaps under lead flashing on eastern chimney and less so under flashing around the northern dormer	No obvious bat evidence noted
Eastern lean-to External	Crack in north-west corner between wall and house Gap over door Gap beside meter box	No obvious bat evidence noted
Eastern lean-to internal	Above feature extended internally	No obvious bat evidence noted
Western lean-to External	Open at the eaves Two open windows	Single pipistrelle type dropping below open window
Western lean-to Internal	Gaps between wall and rafters	No obvious bat evidence noted

5.14 Tree survey results

A number of mature trees were noted on site, but these were generally not of a great age and showed little bat roosting potential. Larger trees were noted just outside the site boundary. **A single apple tree to the west of the property is to be removed as part of the proposed development works, this was considered to have negligible bat roosting potential. At the request of the planning authority a single ash tree to the south-east of the property was re-surveyed on the 16th September 2021 by experience ecologist Karl Charters. The tree was noted to have several previous cuts (scar tissue had extended over part of the cut), a few superficial fissures and some very small dead wood at the tips. Therefore the ash tree was deemed to have low bat roosting potential.**

5.15 Bat foraging/commuting potential

The vegetated boundary features with connections to the surrounding areas have excellent potential for use by bats.

5.16 Suitability of landscape features to support roosting bats

The potential of the trees to support roosting bats has been assessed against Table 4.1 of the Bat Survey Guidelines 2016 (see Table 3 below).

Table 3 Suitability of structures for bat use

Suitability	Description of roosting habitats	Commuting and foraging habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection,	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding

Suitability	Description of roosting habitats	Commuting and foraging habitat
	appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).	landscape by another habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.
Confirmed roost	Bats discovered roosting within the building/tree or definitive evidence to suggest they do so.	

5.17 On the basis of the above, it is considered that the building had moderate bat roosting potential (mainly potential under tiles, flashing and chimney mortar joints) and high potential for foraging and commuting bats (see orange tone). The tree to be removed as part of the development works had low bat roosting potential and the remaining trees on site had low to negligible potential. The landscape around the property was considered to have potential as bat commuting and foraging habitat.

5.18 **Activity survey methodology**

The first emergence survey was undertaken on the 24th May 2021 by licensed bat workers Naomi Parker (2018-34600-CLS-CLS) and Karl Charters (2015-13353-CLS-CLS). Each surveyor was equipped with a BatBox Duet detector and an Anabat Express static recorder, a Clulite lamp with a red filter and were in communication via two-way radios. In addition, the survey was supported through the use of a Canon XA-10 and XA11 video camera and supplementary infrared lights. Anabat data was analysed using Anabat Insight software and the videos were analysed using Quick Time Player.

5.19 A second emergence survey was undertaken on 26th August 2021 by licenced bat work Karl Charters (2015-13353-CLS-CLS) assisted by experienced surveyor Kate Garner using the same methodology.

The results of the surveys are shown in the following tables. Where bats have been recorded emerging on the survey these are highlighted in orange.

5.20 A key to the species recorded is as follows:

CP	Common pipistrelle	SP	Soprano pipistrelle
BLE	Brown long eared	NAT	Natterers
NOC	Noctule		

Table 4 Emergence survey on the 24th May 2021

Sunset time: 20:55	
Time commence: 20:40	Weather: Dry and cloudy
External temp: 13.8 C	External humidity: 72%
20:30 – 20:45	No bat activity recorded.
20:45 – 21:00	No bat activity recorded.
21:00 – 21:15	Single CP pass towards the south. Continuous CP and SP passes/ foraging towards the north-east and along the eastern elevation of the property.
21:15 – 21:30	Single CP and SP pass towards the south. Several CP and SP recorded foraging towards the north of the site.
21:30 – 21:45	Constant foraging by a single SP towards the south of the property along with occasional passes from a single CP.
21:45 – 22:00	Single SP pass and frequent passes from a single foraging noctule towards the south of the property. Occasional CP passes from a single bat were also recorded towards the south. Brief foraging activity from a single NAT towards the north of the property.
22:00 – 22:15	Single NOC passed from the north to south over the property. Brief NAT pass towards the north of the property.
22:15 – 22:30	Single CP pass towards the south and frequent SP and CP foraging towards the south of the property.
22:30 – 22:45	Single BLE pass from west to east along the southern elevation. Occasional passes from a single CP and SP towards the south.
Time complete: 22:40	
External temp: 8.3 C	External humidity: 87%

5.21 During the survey, no bats were recorded emerging from the property. The foraging activity around the site was predominantly made up by single numbers of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* to both the north and south. Furthermore, single passes by natterers *Myotis nattereri*, noctule *Nyctalus noctula*, brown long-eared *Plecotus auritus* were also recorded.

Table 5 Emergence survey on the 26th August 2021

Sunset time: 19:57	
Time commence: 19:42 Weather: Cloudy, breeze, intermittent light rain External temp: 17C External humidity: 75%	
19:42 – 20:00	At 19:57 1 CP foraged over the east side of the site (having flew onto site from the east).
20:00 – 20:15	At beginning of the period 1 SP flew south to north along the western elevation of the house. At 20:00 1 CP foraging around trees to north of the property. At 20:05 single SP pass to south. At 20:08 and 20:14 1 SP flew west to east in front of property.
20:15 – 20:30	At 20:23 1 SP commuted west to north-east. At 20:27 1 CP passed to the south. Single CP foraging around trees to the north.
20:30 – 20:45	At 20:43 1 BLE heard briefly to the north. At 20:44 1 CP heard to the south. Occasional foraging passes by CP and SP to the north.
20:45 – 21:00	At 20:49 1 CP heard to the south. Frequent foraging by CP and occasionally SP to the north around the trees.
21:00 – 21:15	At 21:07 1 BLE heard briefly to the north. At 21:08 1 CP flew west to east. From 21:08 very occasional passes by CP and SP to the south. Frequent foraging by CP and occasionally SP to the north around the trees.
21:15 – 21:30	From 21:28 1 SP foraging over the roof of the property, initially looking like it was going to enter under roof tiles near west chimney but didn't enter. Later it foraged higher above the building. At 21:19 1 BLE heard briefly to the north. Occasional passes of CP and SP to the north.
21:30 – 21:45	1 SP foraging over roof of property over the period.
Time complete: 21:45	
External temp: 14C External humidity: 100%	

5.22 During the survey, no bats were recorded emerging from the property. The foraging activity around the site was frequent (focussed around the trees), largely relating to common pipistrelle. Soprano pipistrelle was the second most common species recorded, whilst a brown long-eared bat was recorded very occasionally to the north (making brief passes only).

5.23 **BADGER**

Legislation

Badgers are protected under Appendix III of the Bern Convention and are protected in Britain under the Protection of Badgers Act 1992, and under Schedule 6 of the Wildlife and Countryside Act 1981.

5.24 A badger sett is defined in the legislation as “any occurrence which displays signs indicating current use by a badger” and includes seasonally used setts.

5.25 Badgers can be disturbed by work near the sett even if there is no direct interference or damage to the sett. A licence may be required for any working within 30m of a badger sett. The licensing authority is Natural England.

5.26 **Existing records**

2 records for badger were noted within the 2km NBIS data search, the closest was located 1.8km east of the site.

5.27 **Survey methodology**

The survey involved a detailed search of the site and immediate areas to identify evidence of badger residence, foraging or territorial activity in the vicinity. Particular emphasis was placed on the location of badger setts. Paths and signs of territorial activity such as dung piles and latrines were searched for.

5.28 **Survey results**

No evidence of badger activity was noted on site. The habitat surrounding the site (pasture/woodland) does have potential for badger to occur.

5.29 **WATER VOLE**

Legislation

Water vole *Arvicola amphibius* is protected through its inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This section of the Act protects water vole places of shelter from damage and disturbance as well as protecting the water vole itself. Legal protection makes it an offence to intentionally:

- Damage, destroy or obstruct access to any structure or place that water voles use for shelter or protection;
- Kill, injure or take water voles whilst they are using shelter.

5.30 **Existing records**

No records for water vole were noted in the NBIS 2km data search.

5.31 **Survey Methodology**

Although a detailed survey was not undertaken during the preliminary assessment, the area on and immediately adjacent to the site was assessed for suitable habitat such as banks for burrows, water edge berms, vegetation cover, suitable water depth for swimming and diving and food source. Any obvious signs of the presence of water vole signs such as latrines, piles of eaten vegetation (feeding stations), burrows and runs were also noted.

5.32 **Survey Results**

The stream had limited potential for water vole to occur due to the low bank and the lack of vegetation on the banks meaning lack of cover that the animals require.

5.33 **OTTER**

Legislation

Otters are protected both under the Wildlife and Countryside Act 1981 and by the Conservation (Natural Habitats, &c.) Regulations 2017. Otters and their resting places are fully protected, and it is an offence to:

- 1) Disturb otters in their breeding or resting places;
- 2) Damage, destroy or obstruct their breeding or resting places.

5.34 Otter shelters are legally protected whether or not an otter is present.

5.35 **Existing records**

No records for otter were noted within the NBIS 2km data search.

5.36 **Survey methodology**

The habitat on the site was searched for evidence of otter including laying up sites, commuting routes under cover, and potential feeding sites.

5.37 **Survey results**

The stream had some potential for otter to occur and animals have been reported in recent weeks using the stream when in flood. The woodland on the north of the stream had features that could support breeding otter.

5.38 **HEDGEHOG**

Legislation

Hedgehogs *Erinaceus europaeus* listed as a UK 'Priority Species' under S41 of the NERC Act (2006) they are partially protected under Schedule 6 of the Wildlife and Countryside Act (1981), making it illegal to trap or kill them without a licence. They are known to be in serious decline in the countryside at the moment.

5.39 **Existing records**

Hedgehog was noted within the 2km NBIS data search. The closest record was noted 1.5km south-east of the site.

5.40 **Potential for hedgehog to occur**

No evidence of hedgehogs was noted during the survey. However, the open grassland and links to the surrounding countryside provides good foraging habitat for hedgehogs.

5.41 **BREEDING BIRDS**

Legislation

The majority of breeding birds in Britain are protected under the Wildlife and Countryside Act 1981 (plus amendments) from disturbance whilst nesting (generally from late April to the end of August).

5.42 Some birds such as barn owls receive special protection under Schedule 1 of the Wildlife and Countryside Act 1981 (plus amendments). This makes it an offence (amongst others) to intentionally or recklessly disturb the bird whilst building a nest, or when such a bird is in, on or near a nest containing eggs or young, or intentionally or recklessly disturb dependent young.

5.43 An assessment was made of the site's suitability to support breeding and wintering bird species. Nesting birds will utilise a broad range of habitats, including built structures, trees, scrub, isolated shrubs, dense herbaceous vegetation (terrestrial and aquatic) and open grassland. All bird species and evidence of breeding activity (active or inactive) observed on site was recorded.

5.44 **Existing records**

Barn owl, little owl, short-eared owl and tawny owl were noted within the NBIS 2km data search. The closest record was for little owl located 960m south of the site.

5.45 **Survey results**

The following birds were noted using the garden to the property during the course of the survey: Pheasant *Phasianus colchicus*, great spotted woodpecker *Dendrocopos major*, nuthatch *Sitta*, jay *Garrulus glandarius*, jackdaw *Corvus monedula*, wren *Troglodytidae*, treecreeper *Certhia familiaris*, blue tit *Cyanistes caeruleus*, coal tit *Periparus ater*, robin *Erithacus rubecula*, chaffinch *Fringilla coelebs*, siskin *Spinus spinus* (x30). A number of these species could potentially breed in the surrounding habitat.

5.46 **REPTILES**

Legislation

The reptiles occurring in Norfolk (common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix*, adder *Vipera berus*) are all given limited legal protection under part of Section 9 (1) and all of Section 9 (5) of the Wildlife and Countryside Act 1981 (as amended). This means that it is an offence to intentionally kill, injure and offer for sale all of these reptiles.

5.47 **Existing records**

No records for reptiles were noted within the 2km NBIS data search.

5.48 **Survey methodology**

An assessment was made of the site's suitability to support reptile populations. Key habitat features for reptiles include: tussocky/patchy grassland; scrub edge; linear watercourses; ponds; compost heaps; brush piles and rubble/soil heaps. Linkage to suitable habitat within the surrounding landscape will increase the potential for reptiles to occur, although populations can occur within isolated/fragmented habitats even within urban areas. Reptile surveys include the use of direct observation techniques and refugia (minimum 50 x 50cm metal tins or felt mats) placed at a minimum of 10 per hectare to assess for the presence/absence of reptiles on the site.

5.49 **Survey results**

The rough grassy garden had some potential for grass snake and slow worm to occur. Being relatively shaded there is less potential for common lizard and the habitat is unsuitable for adder.

5.50 **AMPHIBIANS**

Legislation

Great crested newts *Triturus cristatus* and their habitat (aquatic and terrestrial) are afforded full protection by The Wildlife and Countryside Act 1981 (Section 9, Schedule 5; and as amended) and The Conservation (Natural Habitats & c.) Regulations 1994. It is an offence to:

- 1) Disturb, injure or kill recklessly a great crested newt;
- 2) Disturb or destroy recklessly great crested newt habitat (a breeding site or place of shelter).

5.51 Great crested newt is also listed in the National Biodiversity Action Plan.

5.52 **Existing records**

Common frog, common toad and great crested newt and smooth newt were noted within the 2km NBIS data search. The great crested newt record was 760m west of the site. It is understood from the client that large numbers of common frogs can be seen in the garden during the summer months.

5.53 **Survey methodology**

Great crested newts utilise ponds for breeding and grassland areas for foraging. Newts are normally present in the breeding ponds between March and June and survey techniques to demonstrate presence or absence include torch survey, bottle trapping, netting and egg search.

It is also possible to undertake a Habitat Suitability Index assessment (HSI), which assesses the potential of a pond to support great crested newts by looking at a range of environmental factors.

5.54 Survey results

No ponds were noted on site, the closest pond (P1) was 50m to the south-west associated with the school woodland garden. This does not appear on the Ordnance Survey mapping and could be a recent feature. The next closest pond was located 120m north-east (P2) and the third was located 255m south (P3) of the property. It was not possible to inspect P1 (school pond) or P2.

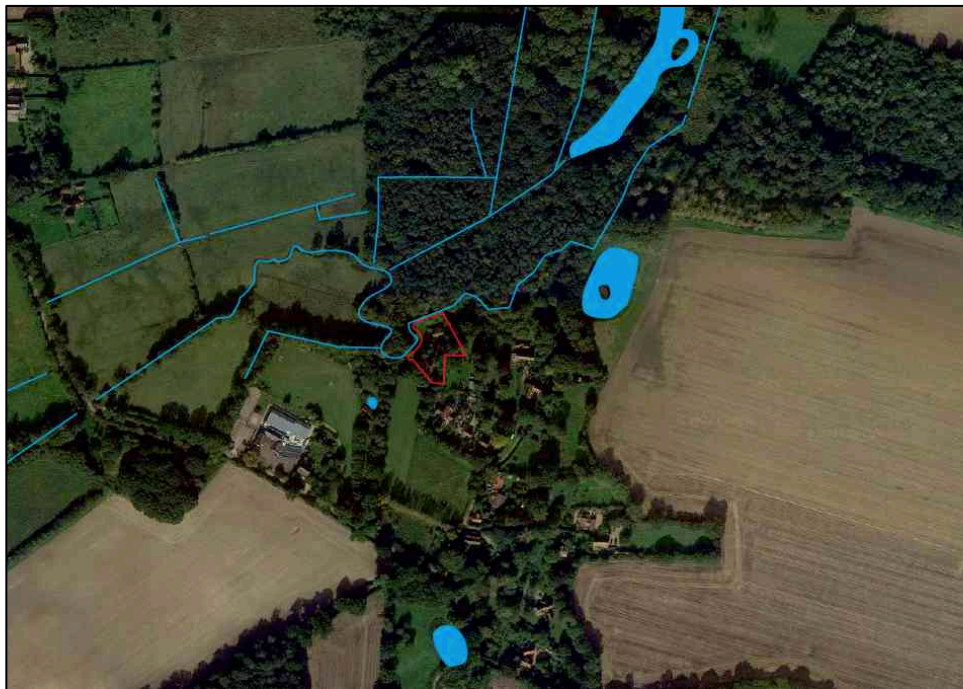


Figure 15 – The closest three ponds, the surrounding ditches and river are marked in blue and the site boundary is marked in red

5.55 Other species

A well-worn muntjac *Muntiacus reevesi* path was noted following the stream. Evidence of mole *Talpa europaea* (mole hills) were noted using the site. A grey squirrel *Sciurus carolinensis* was also seen.

6.0 EFFECTS OF THE PROPOSED DEVELOPMENT WORKS ON THE SPECIES PRESENT

6.1 PROPOSED DEVELOPMENT

The design and access statement provided by the architects (ACS Architectural Ltd) indicate a replacement property with a 91msq footprint compared to the existing property which has a footprint of 97msq. Access will be provided via a gravel drive and turning area. Overall, this results in limited change to the development footprint. ACS Architectural Ltd have provided the following plans;

- Proposed Part Site Plan – 452/19/12
- Proposed Elevations and Materials – 452/19/11
- Proposed Plans and Sections – 452/19/10

6.2 The plans indicate that the existing property will be replaced by a two storey, 3 bedroomed property with a separate carport. The plans indicate that the roof covering will be zinc or steel with a mix of copper and or timber cladding and flint walls.

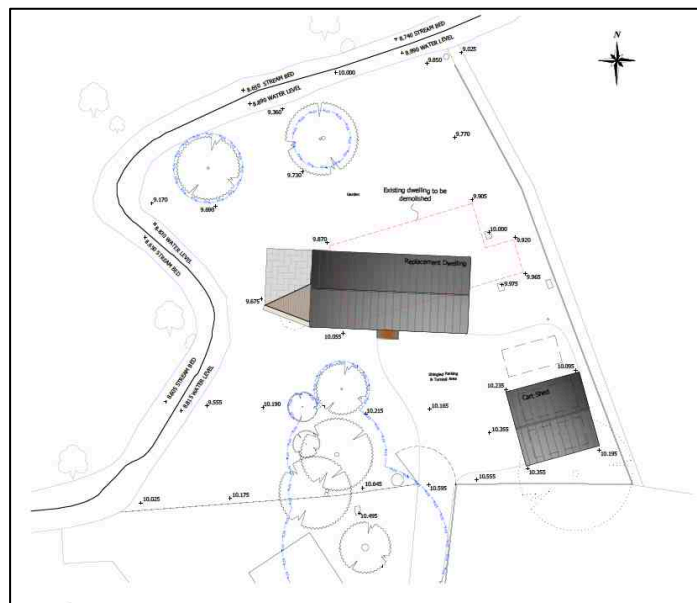


Figure 16 – Proposed site layout

6.3 IMPACTS ON PROTECTED SITES

No nationally or internationally protected sites were noted within the 2km data search, the closest protected site was Gunton Park Lake (SSSI) located 2.7km north-east of the site, therefore any impacts as a result of the proposed development are deemed unlikely. County Wildlife Site Icehouse Grove was noted immediately to the north of the stream. The proposed

development is unlikely to have any direct impacts on this site. It is possible however there could be indirect effects on the site – eg from any additional lighting from the development which could impact on the way that nocturnal species are using this CWS.

6.4 IMPACTS ON PROTECTED SPECIES

The predicted impacts on protected species are as follows:

Bats – Potential impact of bat foraging habitat through the presence of increased lighting around the property;

Nesting birds – The development works could impact on bird nesting habitat (if any are roosting under tiles) and due to the removal of any trees and shrubs;

Badgers/ otters/ water voles – There is unlikely to be any identified impact on badgers from the proposed development;

Hedgehog – The development could impact on the foraging areas for hedgehog and prevent their movement across the landscape through the imposition of fences;

Reptiles – There is potential for any development works to impact on reptiles and reptile habitat through the loss of habitat;

Amphibians – There is limited potential for the development to impact on great crested newts but could impact on common amphibian species using the site as cover.

6.5 REQUIREMENTS FOR FURTHER SURVEYS

Bats

Following the assessment of the value of the site for bats, consideration was given to the number of any follow up surveys that might be required to confirm the level of bat use as follows. Assessment against Table 7.3 of the Bat Survey Guidelines 2016 suggests the following.

Table 6 Recommended minimum number of survey visits for presence/absence surveys

Potential	Description
Negligible	No surveys required
Low suitability	One survey visit. One dusk emergence or dawn re-entry survey between May and August
Moderate suitability	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey between May and August
High suitability	Three separate survey visits between May and September. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn. At least 2 of the visits should be between May and August.

6.6 Given the identified moderate bat roosting potential of the existing property, two activity surveys were undertaken to confirm absence of roosting bats. No bats were recorded emerging from the property and as such, there is no requirement for any further survey work. Subject to mitigation, in terms of external lighting, it is not considered surveys of foraging and commuting bats (other

than what was picked up from the surveys of the building) is required. A single apple tree with negligible bat roosting potential, to the west of the existing property is to be removed as part of the works. A single ash tree with low bat roosting potential to the south-east of the property is also to be removed. Given the low - negligible grading of the trees no surveys in respect of the trees are required subject to the use of soft felling techniques (see section 7.6) and appropriate lighting mitigation (see section 7.9).

6.7 Reptiles/amphibians

Although the site has potential for both groups to occur, with appropriate precautions and mitigation, it is concluded that the development could be undertaken without further surveys.

6.8 Badgers/water voles/otters/hedgehogs/breeding birds

Given the lack of impact and appropriate levels of avoidance/mitigation, no further surveys are required in respect to the above groups.

6.9 LICENSING

A derogation licence (most usually a European Protected Species Licence) may be required from Natural England where the proposed development would result in an otherwise un-lawful activity. This includes:

- a. The killing or disturbance of a European Protected Species;
- b. Damage, destruction or obstruction of any place used by a European Protected Species for shelter or protection.

6.10 Any licence application will take a minimum of 30 working days to process and can only be processed once any relevant permissions have been issued. The granting of the relevant permissions to allow the works to proceed is no guarantee that a licence will be granted.

6.11 Following changes to the Habitats Regulations in 2007, the threshold to which a person commits an offence of deliberately disturbing a European Protected species has changed, such that the disturbance is likely to affect;

- (i) the ability of any significant group of animals of that species to survive, breed, rear or nurture their young, or
- (ii) the local distribution or abundance of that species

6.12 Further changes took place in January 2009, but these generally relate to increased monitoring of licensed mitigation works.

6.13 **BATS**

In April 2015, a new Low Impact Class Licence (now renamed the Bat Mitigation Class Licence) was introduced which covers works that impact small numbers of common bat species. Such licences are normally granted within 10 working days. Philip Parker is a registered consultant to work under this licence.

6.14 Licences cannot be issued on a precautionary basis and normally require the benefit of supporting activity surveys to categorise the nature of the roost.

6.15 Given that the proposed development should not impact on any potential bat roosting features, a derogation licence in respect of bats will not be required.

7.0 MITIGATION /ENHANCEMENT STRATEGY




7.1 The proposed strategy is to mitigate the impacts of any development on the various species as set out above: In addition, proposals are also put forward to enhance the biodiversity of the site via the development. The delivery of biodiversity enhancement of development sites is promoted by National Planning Policy Framework and Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006.




7.2 BATS

Timing of the work

The following table is based on the guidance within Table 8 given in the Bat Mitigation Guidelines. The level of mitigation required depends on the level of any future roosting identified as part of the additional surveys recommended in 6.5 - 6.6.

Table 7 Guidelines for proportionate mitigation

Roost status	Mitigation/compensation depending on the impact
Feeding perches of common/rarer species  Individual bats of common species  Small numbers of common species. Not a maternity site	Flexibility over provision of bat boxes, access to new buildings etc. No conditions about timing or monitoring
Feeding perches of Annex II species  Small numbers of rarer species. Not a maternity Site	Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements

Roost status	Mitigation/compensation depending on the impact
Hibernation sites for small numbers of common/rarer species 	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
Maternity sites of common species Maternity sites of rarer species 	
Significant hibernation sites for rarer/rarest species or all species assemblages Sites meeting SSSI guidelines 	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed, and usage demonstrated. Monitoring for at least 2 years.
Maternity sites of rarest species	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.

7.3 Due to the absence of any bat roosts being recorded at the property, no mitigation is required, however site enhancement is recommended. Recommended roost provision is set out in section 7.7 below.

7.4 **Timing of the work**

The Bat Mitigation Guidelines present the optimum seasons for works involving various types of bat roosts.

Table 8 Optimum seasons for undertaking work in different types of roost

Bat usage of the site	Optimum period for carrying out works (some variation between species)
Maternity	1 st October – 1 st May
Summer (not a proven maternity site)	1 st September – 1 st May
Hibernation	1 st May – 1 st October
Mating/swarming	1 st November – 1 st August

7.5 The demolition can be undertaken at any point, it is recommended as good practice that any demolition occurs after September to discount any nesting birds.

7.6 **Demolition of the existing property**

Albeit no bats were recorded roosting at the property on the 2 surveys, such surveys are only a snapshot in time and the property does retain bat roosting potential. As a precautionary measure, a licensed bat worker should undertake the following:

- Tool box talk to the nominated contractor prior to demolition commencing;
- Supervised removal of flashing around chimneys, roof tiles and any other areas which are considered to have bat roosting potential;

7.7 If any bats are found during this process, Natural England would be contacted to agree an appropriate way forwards.

7.8 **Tree felling**

When felling the trees as part of the development, works should be carried out in accordance with the following guidelines:

- Where appropriate, ivy on the trees should be cut and allowed to die back before the felling of the tree takes place, allowing any hidden bat roosts to be identified and checked. Any potential roost will be treated as if bats are present.
- Work should be carried out by a suitably experienced tree surgeon and advised by a licensed bat worker where appropriate;
- The sections containing the potential roosts need to be cut and carefully lowered to the ground;
- Pruning or sectional felling should avoid cuts in proximity of potential roosts;
- Limbs with internal fissures, when felled, should avoid closure of fissures;
- Cross cutting should avoid cavities and hollow sections;
- The sections containing potential bat roosts should be left on the ground for a period of at least 24 hours;
- Should any bats be found, subject to discussion with Natural England, they will be carefully placed in one of the bat boxes that have been already been placed on one of the retained trees on the site (as recommended in section 7.6).

7.9 **New roost provision**

Provision of new roosting opportunities for bats will form part of the enhancement strategy to comply with current net gain planning guidance. This should incorporate the following;

- **Install six oak Kent bat boxes (Figure 17) onto two suitable mature tree within site ownership. These should be mounted, three to a tree at a height of 5-6m, facing a south-western, south-eastern and northern aspect. The entrance to the boxes should not be obscured by surrounding branches to maintain a clear flight path into the slot entrance.**



Figure 17 – Kent bat boxes on a tree

7.10 Lighting

As identified in Section 5.17, the surrounding area has high potential for foraging and commuting bats and these could be impacted by the provision of external lighting, particularly if they shine on the surrounding boundary features.

7.11 In order to limit any effects on bats, the following should be adopted with respect to lighting:

- Any external lighting should be limited to only that absolutely necessary for safety purposes – uplighters should be avoided;
- Lighting should not shine on any bat roosting areas or boundary features which bats might be using for foraging or commuting;
- The brightness of the lighting should be as low as possible and kept at a low level and directed away from the boundary vegetation and any existing/new bat boxes/roosting areas;
- Narrow spectrum lighting with no UV light is preferred;
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- Lighting on sensors should not be so sensitive that foraging bats set them off and should be on short timers (1 minute).

7.12 Bat Friendly Planting

If planting of additional trees is proposed as part of the development, they should be native in origin so they can support insects on which bats might feed.

7.13 In addition, the incorporation of night scented flowers into any garden planting would attract moths and other insects on which bats feed, thus increasing the potential for presence and use of the new roosting facilities. Suggested plants can be found in Appendix B.

7.14 WATER VOLES/OTTERS

No part of the development works should extend any closer than 5m from the top of the bank to protect any habitat associated with the stream course that could be used by water voles and otter.

7.15 BREEDING BIRDS

Care should be taken that the development does not disturb breeding birds. Bird nests, when occupied or being built, receive legal protection under the Wildlife and Countryside Act 1981 (as amended). It is highly advisable to undertake initial disturbance works on potential bird nesting habitat (this includes the pile of cut timber in the location for the dwelling) outside the bird nesting season, which is generally seen as extending from March to the end of August, although it may extend for longer depending on local conditions. If there is no alternative to carrying out work in these areas during this period, then suitable nesting locations should be carefully inspected for evidence of nests prior to works commencing. If occupied nests are present, then works must stop in the area and only recommence once the nest becomes unoccupied of its own accord.

7.16 The addition of bird boxes is always a desirable enhancement in any development. Consider the incorporation of both a swift box and a house sparrow terrace on the new properties. Typical examples are shown in Figures 18 and 19. In addition, an artificial wren nest should be provided, to mitigate the loss of the nest site in the garage (Figure 20).



Figure 18 – Example of a Habitatbat 003 swift nest box



Figure 19 – Example of a Ecostyrocete Sparrow terrace



Figure 20 – Example of a wren nest box

7.17 Further bird nesting habitat could be incorporated onto trees around the development site. Typical boxes are Schweglar 1B (hole fronted box) and 2h (open fronted box). At least 2 of each box should be incorporated.



Figure 21 – Example of a Schweglar 1B nest box



Figure 22 – Example of a Schweglar 2H nest box

7.18 REPTILES/AMPHIBIANS/SMALL MAMMALS

As the footprint to the development is the virtually the same as existing (subject to measurement) resulting in minimal loss of habitat for the above, a precautionary approach to mitigation can be undertaken as follows:

- a. Any areas of taller vegetation in the development area (including that on the mounds) should first be cut to 150mm and carefully raked off. After three days the areas should be carefully searched by hand after which the vegetation should be cut to ground level and again raked over thus removing all cover.

- b. Clearance of piles of vegetation debris, general debris and rough vegetation should take place outside the reptile hibernation period (typically October – March), in a careful and sensitive manner, **by hand**, to allow for any animals present to leave the area of their own accord (see also hedgehogs and nesting birds);
- c. All waste shall be placed directly into skips or designated areas so that further debris piles and therefore potential refuge areas are not created;
- d. Piles of loose sand or other granular materials into which reptiles and amphibians could bury are not to be left around the site. All such materials should be delivered in bags and kept in such bags until required for use. Bags should be stored on pallets. Alternatively, if it is essential that they are delivered loose, they should be retained in fenced areas which are not accessible to any animals. It is understood that the concrete pad will be used as a builder's compound which is a sensible approach;
- e. All trenches will be left covered at night. They will be checked in the morning before they are filled in. All trenches are to be provided with a small mammal ramp to allow any animals that get trapped to escape.

7.19 If any animals are discovered during the works, they will be moved to a safe location away from the development site (near to the stream).

7.20 In order to enhance the site for reptiles and amphibians, the management of the vegetation in the garden should be zoned. Areas of amenity grass should be cut on a regular basis to prevent it providing cover for species that could then be impacted on by future mowing. Other areas should be allowed to grow long to maintain cover, ideally cutting once a year in the winter when reptiles and amphibians would be hibernating. Cutting to a minimum height of 150mm. The cuttings could be raked into piles to provide egg laying sites for grass snake. Consider using any of the rubble from the demolition to create one or more reptile/ amphibian hibernacula's (see Figure 23).

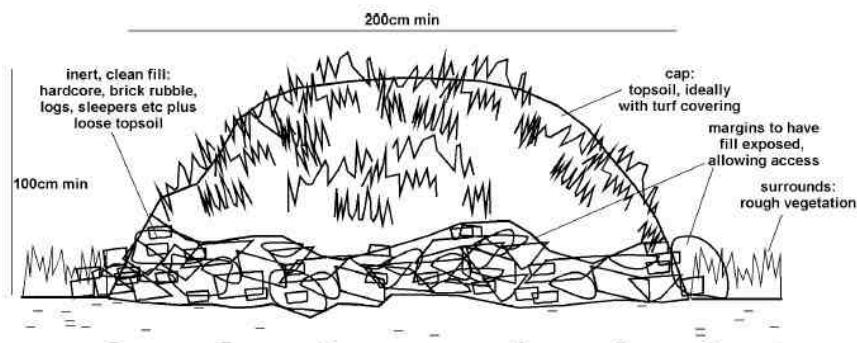


Figure 23 – Typical refugia design

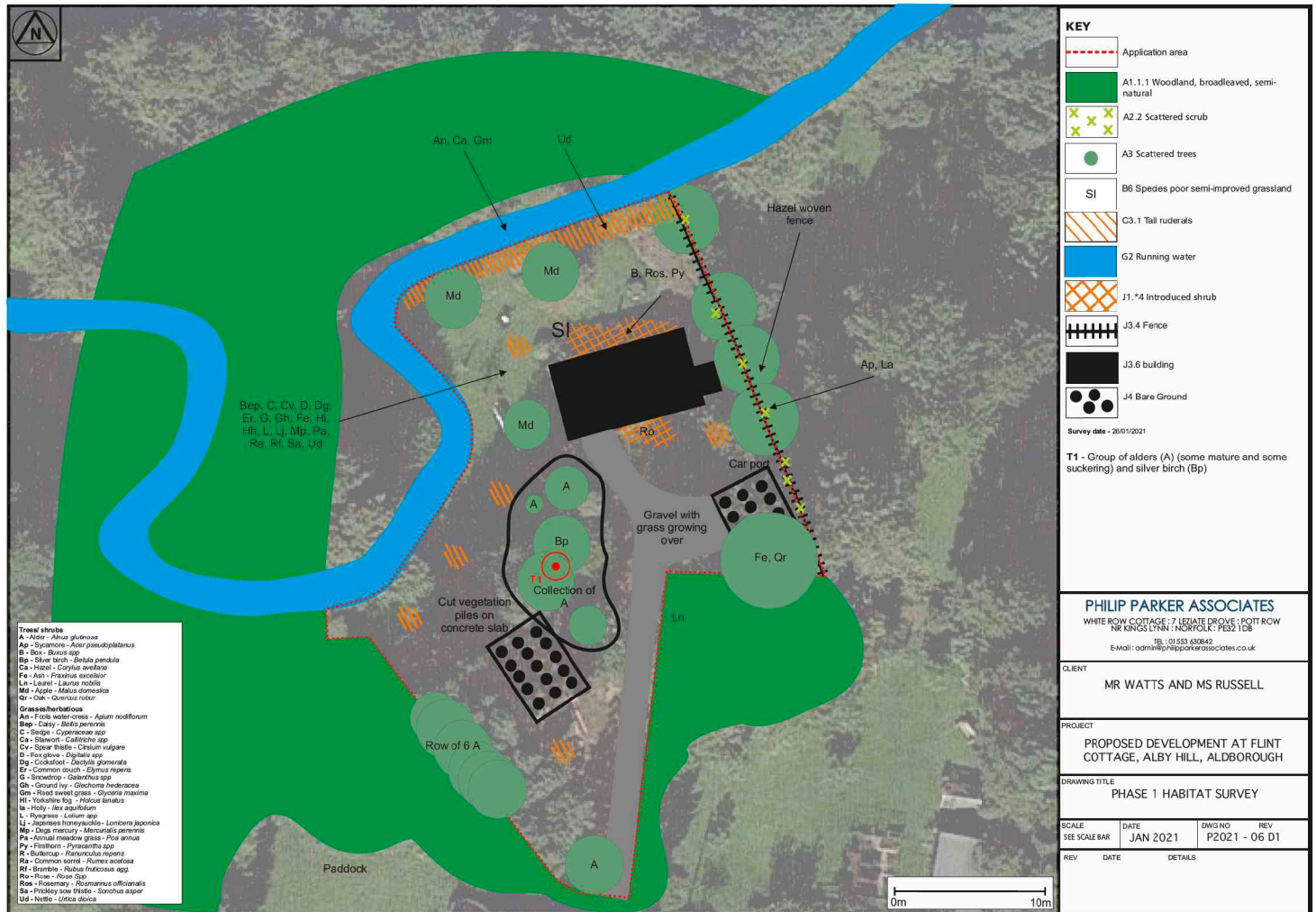
7.21 **ADVISORY NOTE**

The report presents a true reflection of habitats present and wildlife usage at the site at the time of the survey and remains valid for a period of 12 months from the date of this report. Even given the precautions set out above, it is always possible that protected species could be encountered at any time. In such a case, work should cease immediately and either Natural England or Philip Parker Associates (Tel: 07850 275605) be contacted for further advice.

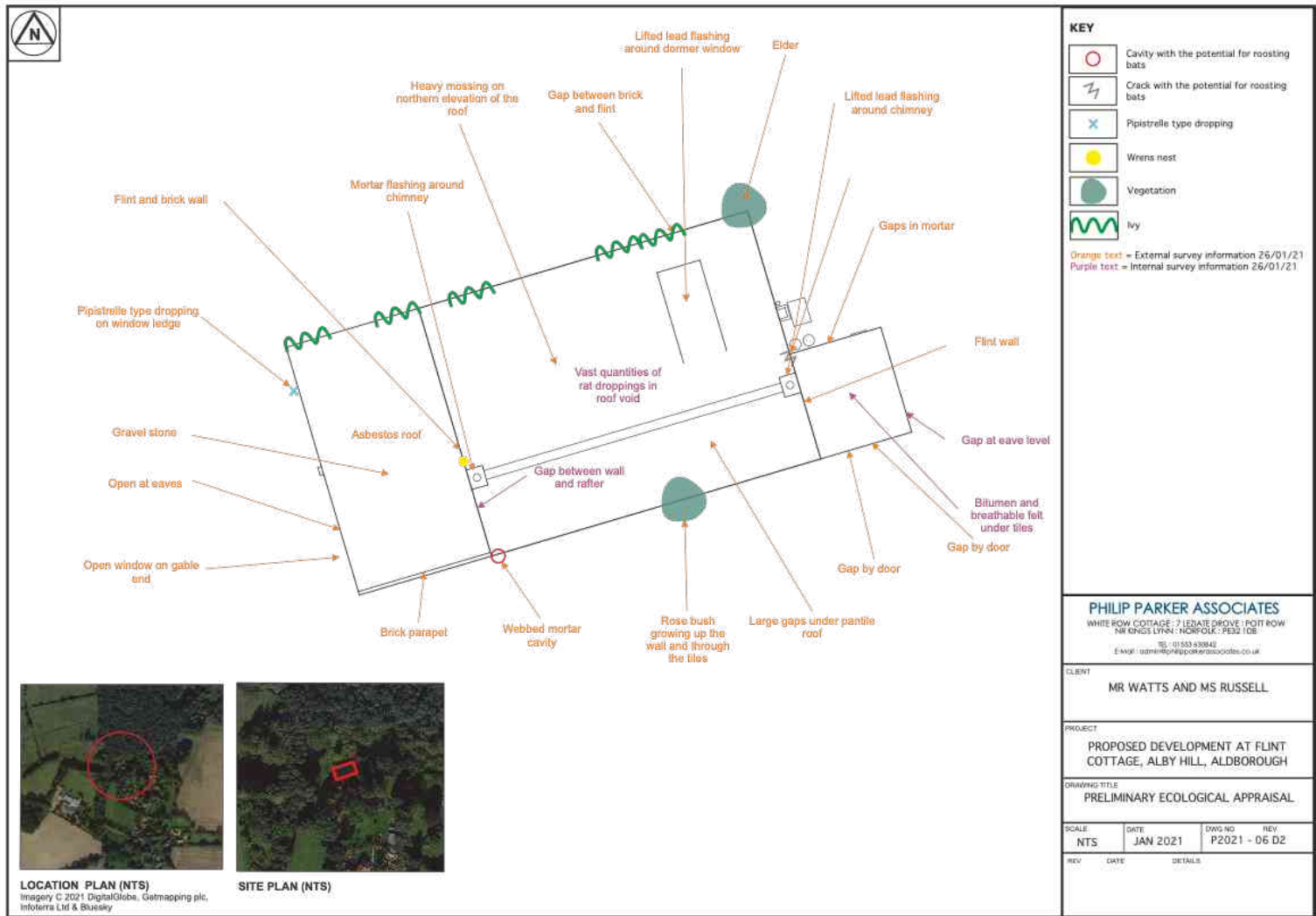
8.0 REFERENCES

- **Altringham J D, 2003**, British Bats, Collins New Naturalist
- **Bat Conservation Trust, 2016**, BCT Bat Survey Guidelines Third edition
- **Bat Conservation Trust, 2018**, Bats and artificial lighting in the UK
- **BS 42020:2013**. Biodiversity. Code of practice for planning and development
- **English Nature, 1995 Badgers** - Guidelines for Developers
- **English Nature, 2002**, Barn owls on site – A guide for developers and planners
- **Froglife 1999, Reptile Survey** - An introduction to planning, conducting and interpreting surveys for snake and lizard conservation
- **Gent T and Gibson S 1998** *Herpetofauna Workers Manual* JNCC
- **Joint Nature Conservation Committee. 1993**. A Handbook for Phase 1 Habitat Survey : A Technique for Environmental Audit. Peterborough: Joint Nature Conservation Committee.
- **Mitchell Jones AJ, 2004**, Bat Mitigation guidelines, English Nature
- **Mitchell Jones AJ and McLeish A P**, The Bat Workers Manual, JNCC
- **Natural Environment and Rural Communities Act 2006**, Ch 3, s. 40

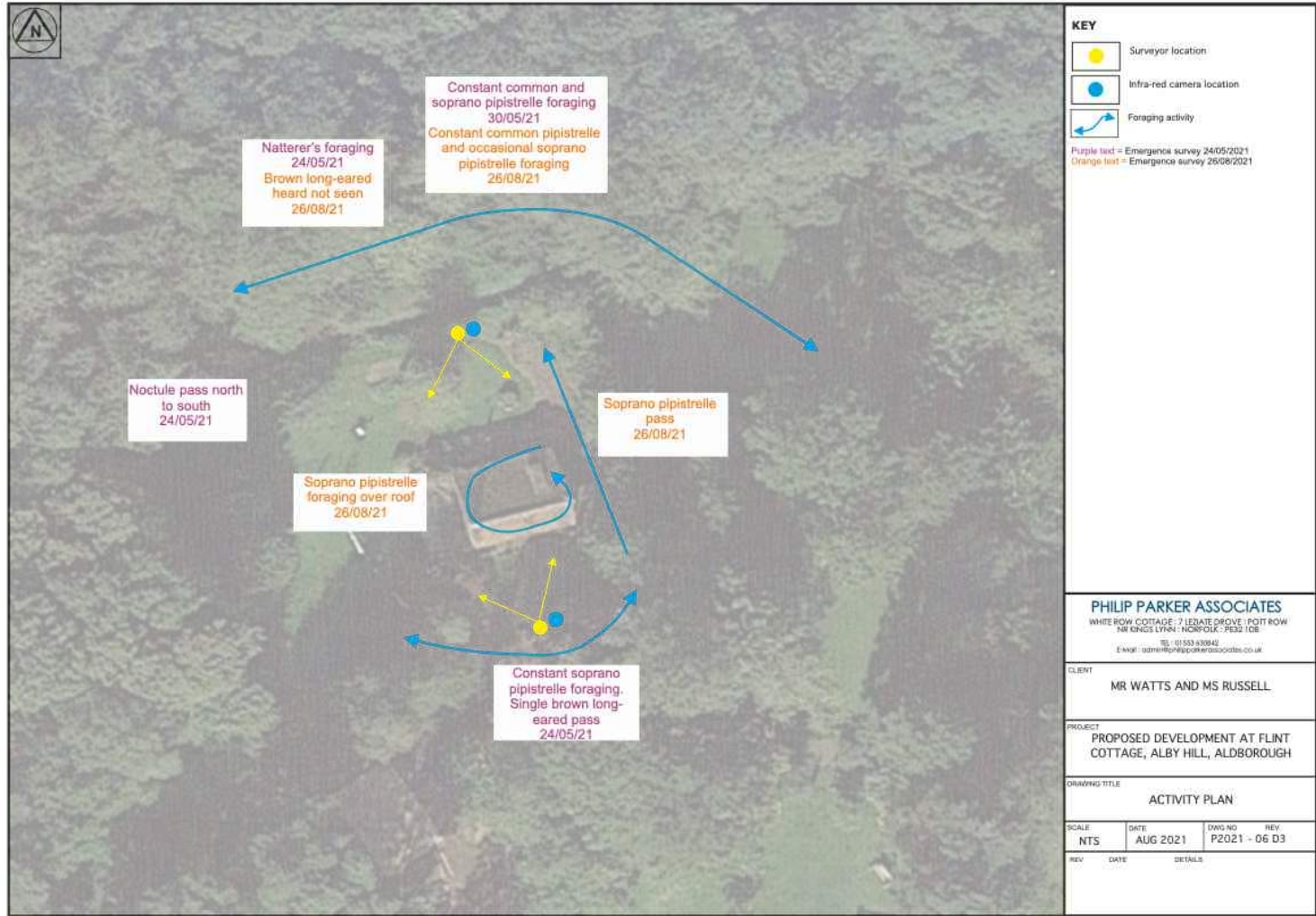
DRAWING D1 – D2 PHASE 1 HABITAT SURVEY



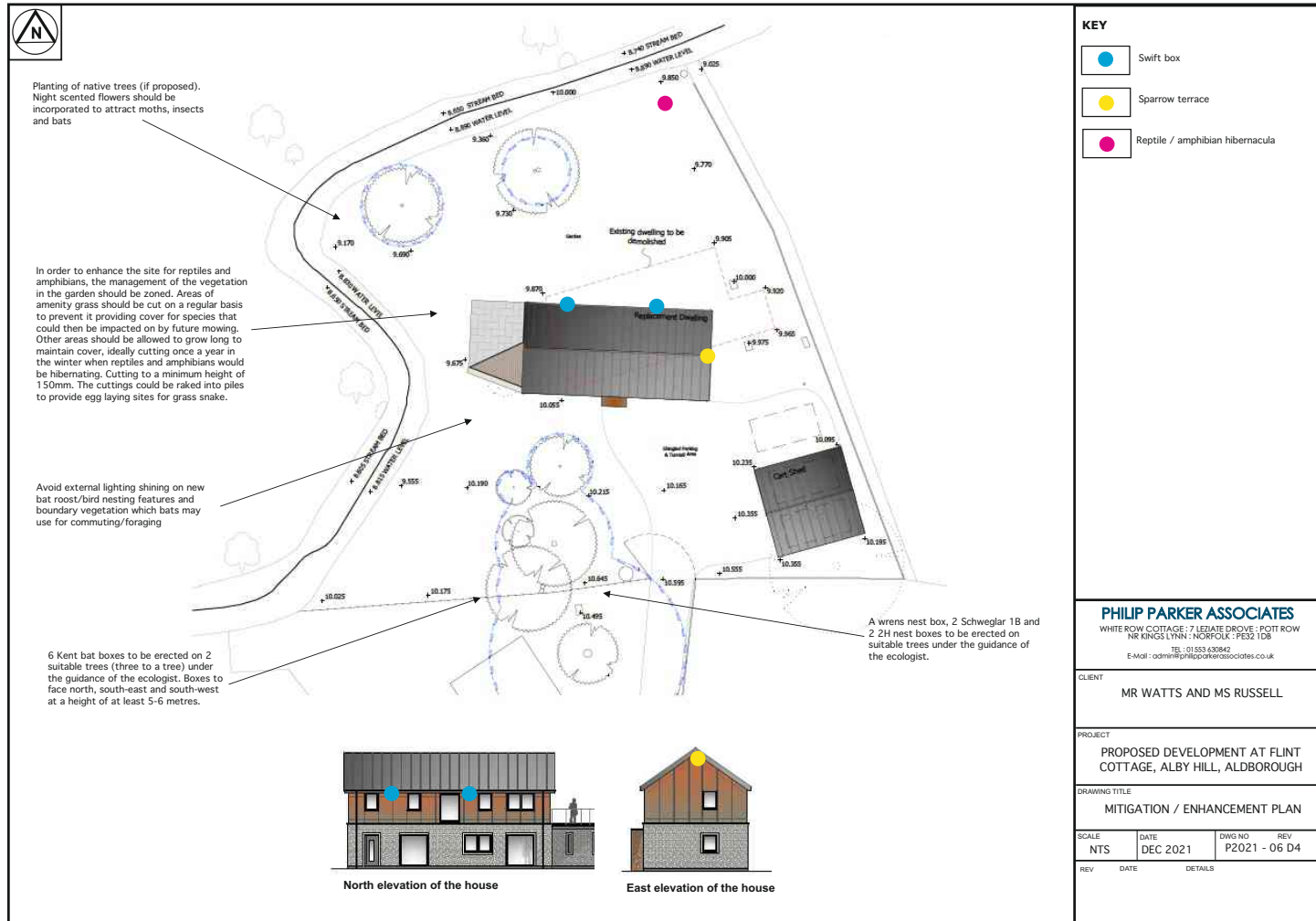
PROPOSED REPLACEMENT OF PROPERTY AT ALBY HILL, NORFOLK
 ECOLOGICAL APPRAISAL



DRAWING D3 BAT ACTIVITY SURVEY



DRAWING D4 BIODIVERSITY MITIGATION / ENHANCEMENT PLAN



APPENDIX A DESIGNATED SITES

Icehouse Grove (CWS number 1140) – Located 25m north of the site

This site is comprised of wet semi-natural broad-leaved coppice with standards woodland, marshy neutral grasslands, fen and mesotrophic ponds. It lies to the south-west of Hunworth Common. In the north-east large-leaved lime *Tilia platyphyllos* are round the boundary with oak *Quercus robur*, horse chestnut *Aesculus hippocastanum*, sycamore *Acer pseudoplatanus* some young, beech *Fagus sylvatica* sweet chestnut *Castanea sativa*. The coppice layer consists of young sycamore with willows *Salix spp.* and elder *Sambucus nigra*.

Thurgarton Wood (CWS number 1139) – Located 90m north of the site

A mature broadleaved coppice with standards woodland. Situated to the south-west of Hunworth Common. The canopy is dominated by sycamore *Acer pseudoplatanus* with oak *Quercus robur* alder *Alnus glutinosa* and bird cherry *Prunus padus* and birch *Betula spp.* The coppice layer consists of young sycamore, hazel *Corylus avellana* and hawthorn *Crataegus monogyna*. The ground flora is discontinuous with mainly bramble *Rubus fruticosus agg.*, red campion *Silene dioica*, mosses and buckler fern *Dryopteris spp.*. Honeysuckle *Lonicera periclymenum*, bluebell *Hyacinthoides non-scripta*, and bugle *Ajuga reptans* and dog's mercury *Mercurialis perennis*. Upper Grove in the north is similar to the south but has mature oaks and some old beech *Fagus sylvatica*. There is a line of ash *Fraxinus excelsior* on the eastern border. The ground flora is less diverse with more abundant bracken *Pteridium aquilinum*. (Based on the 1985 habitat survey (NWT))

The Belt and The Square (CWS number 1188) – Located 1.2km north-east of the site

This site is a broad-leaved, semi-natural woodland with mixed species situated in Hanworth Park. Over the majority of the site oak *Quercus robur*, sycamore *Acer pseudoplatanus* and beech *Fagus sylvatica* comprise the canopy. Also ash *Fraxinus excelsior* and horse-chestnut *Aesculus hippocastanum* are present. Young sycamore forms the coppice with a little elder *Sambucus nigra*. Within The Square the ground flora is largely composed of grasses and nettle *Urtica dioica* along with ground-ivy *Glechoma hederacea*, bracken *Pteridium aquilinum*, willowherb *Epilobium spp.*, brambles *Rubus fruticosus agg.*, red campion *Silene dioica*, and forget-me-not *Myosotis spp.*. The ground flora in The Belt is more dense with dominating brambles and dog's mercury *Mercurialis perennis*, bluebells *Hyacinthoides non-scripta* and ivy *Hedera helix*. (Based on the 1985 habitat survey (NWT))

Calthorpe Grazing Meadow (CWS number 1118) – Located 1.9km south-west of the site

This site is semi-improved marshy neutral grassland. Numerous ditches have flowing water, supporting a number of aquatic species whilst others are dry and similar to the surrounding grassland. The site is managed by grazing. It is surrounded by arable, mixed woodland and similar grassland to the west. The majority of the site is dominated by Yorkshire-fog *Holcus lanatus* and creeping bent *Agrostis stolonifera*, along with false oat-grass *Arrhenatherum elatius* and cock's-foot *Dactylis glomerata*. Creeping buttercup *Ranunculus repens* and common mouse-ear *Cerastium fontanum* are both frequent, along with abundant common chickweed *Stellaria media* and creeping cinquefoil *Potentilla reptans*. The stream banks are colonised by an abundance of grasses, with meadow foxtail *Alopecurus pratensis* and herbs. Greater pond-sedge *Carex riparia*, reed sweet-grass *Glyceria maxima* and bulrush *Typha latifolia* are occasional, particularly to the north.

Thwaite Common (CWS number 1119) – 2km south of the site

Thwaite Common is a large area of species-rich grassland with blocks of scattered scrub. The site slopes gently north to south with drier unimproved and semi-improved neutral grassland in the north and neutral marshy grassland on lower ground and abundant seepage along the slope. Two particularly active springs are present. A stream makes up the south boundary. The marshy areas support large numbers of common spotted orchid *Dactylorhiza fuchsii* and southern marsh orchid *Dactylorhiza praetermissa* - in 2018 over 1000 orchids were recorded. In 1996, the central pond held the nationally scarce marsh dock *Rumex palustris*, but this was not recorded during the resurvey.

Lake Cottage Meadow (CWS number 1122) – Located 2km south-west

This site is part of a strip of grazing meadow surrounded by arable land. The meadow is fairly species poor. It appears to be regularly grazed by cattle. There is a steep sided stream running north to south which supports the nationally rare holly-leaved naiad *Najas marina*. The meadow is dominated by red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus* and marsh foxtail *Alopecurus geniculatus*. Creeping buttercup *Ranunculus repens*, creeping thistle *Cirsium arvense*, sticky mouse-ear *Cerastium holosteoides* and red campion *Silene dioica*. Nettle *Urtica dioica* is also locally abundant. The stream and ditches through the site are the most floristically diverse areas. The banks are colonised by marsh foxtail, occasional reed canary-grass *Phalaris arundinacea*, hard rush *Juncus inflexus*, soft rush *Juncus effusus* and jointed rush *Juncus articulatus*. Water-cress *Rorippa nasturtium-aquaticum* common water-starwort *Callitriche stagnalis* broad-leaved pondweed *Potamogeton natans* and holly-leaved naiad were also found in local abundance. Bankside trees include frequent sloe *Prunus spinosa* and alder *Alnus glutinosa*.

Hall Woods (CWS number 1138) – Located 2km west of the site

This site is a semi-natural woodland with some coniferous areas. Drainage ditches run through the site but only one carries a significant amount of flowing water. Along the length of the stream, particularly in its mid-region are several wetter areas with increasingly lush vegetation. The wood is most probably used as game cover. The canopy is dominated by sycamore with frequent ash *Fraxinus excelsior* and occasional oak *Quercus robur*. Sycamore *Acer pseudoplatanus*, lime *Tilia cordata* and hazel *Corylus avellana* from the understory. The ground flora is variable, drier areas being dominated by red campion *Silene dioica* with locally abundant nettle *Urtica dioica* and bramble *Rubus fruticosus* agg.. Notable species include yellow archangel *Lamium galeobdolon* and early purple orchid *Orchis mascula* with alternate-leaved golden-saxifrage *Chrysosplenium alternifolium*, marsh willowherb *Epilobium palustre* and ramsons *Allium ursinum*. To the south is a small strip of Scot's pine *Pinus sylvestris* and larch *Larix decidua* woodland with a ground flora dominated by bramble with abundant ivy *Hedera helix* and locally abundant dog's mercury *Mercurialis perennis*. The stream bankside vegetation includes *Geum urbanum* wavy hair-grass *Deschampsia flexuosa* and angelica *Angelica sylvestris*, wild cherry *Prunus avium*, elder *Sambucus nigra* and hazel.

APPENDIX B BAT FRIENDLY PLANTING

Which plants should I choose?

Bat-friendly gardeners should aim to plant a mixture of flowering plants, vegetables, trees and shrubs to encourage a diversity of insects, which in turn may attract different bat species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are a good idea: night-flowering blossoms attract night-flying insects. Trees and shrubs provide food for insects and roosting opportunities for bats.

Approximate flowering periods are listed below, although they may vary according to area and weather conditions!

Flowers for borders

- *Aubretia (spring to early summer)
- *Candytuft (summer to autumn)
- *Cherry pie (summer to autumn)
- Corncockle
- Cornflower
- Corn marigold
- Corn poppy
- *Echinacea
- English Bluebell (spring)
- *Evening primrose (summer to autumn)
- Field poppies (summer)
- *Honesty (spring)
- *Ice plant 'Pink lady' (early autumn)
- Knapweed (summer to autumn)
- Mallow (summer to autumn)
- *Mexican aster (summer to autumn)
- *Michaelmas daisy (summer to autumn)
- *Night-scented stock (summer)

- Ox-eye daisy (summer)
- *Phacelia (summer to autumn)
- *Poached egg plant (summer)
- Primrose (spring)
- Red campion (spring)
- *Red valerian (summer to autumn)
- Scabious (summer)
- St John's wort (spring)
- *Sweet William (summer)
- *Tobacco plant
- *Verbena (summer to autumn)
- *Wallflowers (spring to early summer)
- Wood forget-me-not (spring)
- Yarrow (early summer)



Plants marked * are hybrids or exotics that may be useful in the garden



Herbs (both leaves & flowers are fragrant)

- | | |
|-----------------------------------|---------------------------------------|
| Angelica | Hyssop (summer to early autumn) |
| Bergamot (summer to early autumn) | Lavenders |
| Borage (spring to early autumn) | Lemon balm |
| Coriander (summer) | Marjoram (summer) |
| English marigolds | Rosemary (spring) |
| Fennel (summer to early autumn) | Sweet Cicely (spring to early summer) |
| Feverfew (summer to autumn) | Thyme (summer) |

**Philip Parker Associates Ltd
White Row Cottage
Leziate Drove
Pott Row
King's Lynn
PE32 1DB**

**Tel : 01553 630842 Mob : 07850 275605
Email : admin@philipparkerassociates.co.uk**