



**Glaven Ecology**



## **KGB Transport Tilney St Lawrence**

### **Ecological Impact Assessment**

**Prepared by  
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**on behalf of  
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*The data contained within the report are accurate to the best of our knowledge and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.*

*The report conforms to the British Standard 42020:2013 Biodiversity – Code of practice for planning and development.*

*We confirm that any opinions expressed are our best and professional true opinions. This report has been prepared by an ecology specialist and does not purport to provide legal advice.*

*Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that animals and plants can migration/establish and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.*

# 1 Summary

- 1.1 Glaven Ecology was commissioned to undertake an ecological assessment on land at KGB Transport, St Johns Road, Tilney St Lawrence, PE34 4QL. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 9<sup>th</sup> August 2021.
- 1.2 Full plans were not available at the time of writing but proposals will include the construction of new residential units.
- 1.3 The site sits within SSSI Impact Risk Zones for Islington Heronry and Wiggshall St Germans. However, the proposal does not fall within the categories requiring further consultation with Natural England.
  - 1.3.1 The site consisted of approximately 3.0ha the majority of which was to hardstanding and bare ground with working industrial units. There were areas of tall ruderal vegetation in the west with neutral grassland much of which was on heavily disturbed ground. There were three lagoons in north.
- 1.4 No further surveys for protected species are required.
- 1.5 Mitigation measures recommended include
  - Protection of boundary trees in accordance with BS 5837:2005.
  - Precautionary approach to site clearance including timing of works when clearing vegetation.
  - Good working practices e.g. no excavations or trenches are left uncovered overnight during the development works.
  - External lights associated with the development should use warm white lights at <2700k.
- 1.6 Based on successful implementation of mitigation measures and other safeguards, no significant adverse effects are predicted as a result of the proposed.
- 1.7 Enhancements recommended for the site include the installation of bat boxes, bird boxes, a bat friendly planting scheme and new hedgerow planting.

## 2 Introduction

### 2.1 Background

2.1.1 Glaven Ecology was commissioned to undertake an ecological assessment on land at KGB Transport, St Johns Road, Tilney St Lawrence, PE34 4QL. The survey work was completed by Carolyn Smith BSc. (Hons) MCIEEM on 9<sup>th</sup> August 2021.

2.1.2 This survey and report aim to establish the baseline ecology of the site and its suitability to support any protected species. It assesses potential impacts on these features as a result of the works and advises on the need for further surveys. It sets out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects

### 2.2 Site Location and Description

2.2.1 The site was located at OS Grid Reference TF 54421 14161 (Appendix 1) and consisted of approximately 3.0ha the majority of which was to hardstanding and bare ground with working industrial units. There were areas of tall ruderal vegetation in the west with neutral grassland much of which was on heavily disturbed ground. There were three lagoons in north.

2.2.2 The residential areas of Tilney St Lawrence and Terrington St John lay to the south and west with the wider environment was dominated by arable land, including some traditional orchards. There was a network of drainage ditches to the east and the A47 to the north.

### 2.3 Project Overview

2.3.1 Full plans were not available at the time of writing but proposals will include the construction of new residential units.

## 3 Legislation

3.1.1 The main piece of legislation relating to nature conservation in Great Britain is The Wildlife and Countryside Act 1981 (as amended). This Act is supplemented by provision in The Countryside and Rights of Way (CRoW) Act 2000 and The Natural Environment and Rural Communities Act 2006 (in England and Wales). This act provides varying degrees of protection for the listed species of flora and fauna, including comprehensive protection of wild birds and their nests and eggs.

3.1.2 UK wildlife is also protected under The Conservation (Natural Habitats &c.) Regulations 1994 (which were issued under the European Communities Act 1972), through inclusion on Schedule 2. In 2010, these Regulations, together with subsequent amendments, were consolidated into The Conservation of Habitats and Species Regulations 2010.

### 3.2 Badgers

3.2.1 Badgers are protected under the Protection of Badgers Act 1992. Under the Act, it is a serious offence to kill, injure, interfere or take a badger. It is also an offence to damage or interfere with an actively used sett unless a licence is obtained.

### 3.3 Bats

3.3.1 All UK bat species are protected under The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). This legislation fully protects bats and their breeding sites or resting places, making it an offence to deliberately capture, injure or kill bats, deliberately disturb bats, damage or destroy a bat breeding or resting place.

### 3.4 Birds

3.4.1 All birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended).

3.4.2 Certain species (including barn owl *Tyto alba*) are also listed under Schedule 1 of the Wildlife and Countryside Act 1981, which prevents disturbance of the species or its nest and/or eggs at any time with protection by special penalties.

### 3.5 Great Crested Newt

3.5.1 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).

### 3.6 Reptiles

3.6.1 Reptiles 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 1.1.1 amended). This means that it is an offence to intentionally kill, injure and offer for sale.

### 3.7 Water Voles

3.7.1 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is a priority conservation species. This means it is offence to:

- 1) intentionally capture, kill or injure water vole.
- 2) damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care)
- 3) disturb them in a place of shelter or protection (on purpose or by not taking enough care)
- 4) possess, sell, control or transport live or dead water voles or parts of them.

### 3.8 Statutory Designated Conservation Sites

3.8.1 National designations such as Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR), are afforded statutory protection. SSSIs are notified and protected under the Wildlife and Countryside Act 1981 as amended. SSSIs are notified based on specific criteria, including the general representativeness and rarity of the site and of the species or habitats supported by it.

## 4 Survey Methods

### 4.1 Desk Study

- 4.1.1 Records held on Magic.gov.uk on Designated Sites and granted European Protected Species Licences were reviewed in December 2021.
- 4.1.2 A data search from Norfolk Biodiversity Information Services (NBIS) with a 2km zone of influence was conducted in December 2021 to inform baseline ecology of the site and surrounding area.
- 4.1.3 The types of features considered within the desk study includes designated sites, habitats and species of principal importance for conservation of biodiversity and protected species,

### 4.2 Field Survey

- 4.2.1 A brief Phase 1 habitat survey of the site was conducted using the methodology to describe habitats as laid down in NCC (1990) and an assessment made for the presence of protected species.
- 4.2.2 The survey was undertaken by Carolyn Smith BSc (Hons) (Natural England Level 1 Licence for bats [reference 2018-34461-CLS]; Great Crested Newts [reference 2017-29746-CLS-CLS] and barn owl class licence [reference CL29/00568]) on 1<sup>st</sup> December 2021.
- 4.2.3 The weather at the time of the survey was 12°C with a slight breeze and sunny.

### 4.3 Protected Species

#### Amphibians and reptiles

- 4.3.1 The habitat was assessed for reptiles and amphibians and suitable materials were lifted to check for signs of reptiles.
- 4.3.2 The lagoons on site were appraised for their suitability for great crested newts using the Habitat Suitability Index (HSI). The HSI is an indicative tool used to rate the suitability of water-bodies for great crested newts. A total of ten characteristics and features of water-bodies, such as their size, water quality, shading and vegetation cover are assessed and classified according to prescribed criteria. These scores allow the HSI to categorise water-bodies into one of five ratings which indicate their suitability for occupation by great



crested newts. The five categories are excellent, good, average, below average and poor (Table 1).

Table 1: Great Crested Newt Habitat Suitability Index scoring system

HSI Score	Pond Suitability
< 0.50	Poor
0.50 - 0.59	Below average
0.60 - 0.69	Average
0.70 - 0.79	Good
> 0.80	Excellent

### Badger

4.3.3 The habitats on site and in the immediate surrounding area were assessed for their potential to support badgers.

4.3.4 Evidence of badger activity (including setts, footprints, latrines, trails, scratching posts, guard hairs and foraging activity) was searched for within the site.

### Bats

4.3.5 A general assessment was made of the suitability of site features for roosting, commuting and foraging bats and the likely presence of bats within the site area.

4.3.6 A Preliminary Roost Appraisal was completed on the industrial units and reception block. The survey work was completed in accordance with the Bat Conservation Trust's "Bat Surveys for Professional Ecologists" (Collins, 2016). A scoring system was applied to the building using the criteria shown in Table 2.

4.3.7 The buildings were investigated for evidence of bat use and evaluated for bat roosting potential. The visual search for signs of bats consisted of a slow methodical search both internally and externally for actual roosting bats and their signs:

- Droppings on walls, windowsills and floors can be used to identify species;
- Scratch marks and staining at roosts and exit holes can be used to identify the presence of bats;
- Dense spider webs at a potential roost can often indicate bat absence;
- The presence of butterfly wings may be an indication of bat presence.

Table 2: Assessing the potential suitability of a development site for bats (Collins, 2016)

Suitability	Description of roosting habitats	Description of commuting and foraging habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features onsite likely to be used by commuting or foraging bats
Low	<p>A structure 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, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats</p> <p>A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential</p>	<p>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 landscape by other habitat</p> <p>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</p>
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
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

### Birds

4.3.8 Evidence of nesting birds was searched for and the site was assessed as to its potential to support nesting birds.

### Water voles

4.3.9 Field signs searched for included latrines, droppings, burrows, feeding stations, footprints and runs.

4.3.10 Table 3 shows the criteria used when assessing the likelihood of a protected species being present within the survey area:

Table 3: Criteria considered when assessing the likelihood of occurrence of protected species

Assessment Category	Criteria
Present	Species are confirmed as present from the current survey or historical confirmed records.
High	Habitat and features of high quality for species/species assemblage. Species known to be present in wider landscape. Good quality surrounding habitat and good connectivity.
Moderate	Habitat and features of moderate quality. The site in combination with surrounding land provides all habitat/ecological conditions required by the species/assemblage. Within known national distribution of species and local records in desk study area. Limiting factors to suitability, including small area of suitable habitat, some severance/poor connectivity with wider landscape, poor to moderate habitat suitability in local area.
Low	Habitats within the survey area poor quality or small in size. Few or no records from data search. Despite above, presence cannot be discounted as within national range, all required features/conditions present on site and in surrounding landscape. Limiting factors could include isolation, poor quality landscape, or disturbance.
Negligible	Very limited poor quality habitats and features. No local records from desk study; site on edge of, or outside, national range. Surrounding habitats considered unlikely to support species/species assemblage.

#### 4.4 Evaluation and Assessment

4.4.1 Ecological features are evaluated and assessed with due consideration for the Chartered Institute of Ecology and Environmental Management (CIEEM) 2019 Guidelines for Ecological Impact Assessment (EclA).

4.4.2 The following the impact magnitude categories and criteria will be used:

- Major negative effect – that which has a harmful impact on the integrity of a site or the conservation status of a population of a species within a defined geographical area (e.g. fundamentally reduces the capacity to support wildlife for the entirety of a conservation site or compromises the persistence of a species' population).
- Intermediate negative effect – that which has no adverse impact on the integrity of a conservation site or the conservation status of a species' population but does have an important adverse impact in terms of achieving certain ecological objectives (e.g. sustaining target habitat conditions and levels of wildlife for a conservation site or maintaining population growth for a species).
- Minor negative effect – some minor detrimental effect is evident, but not to the extent that it has an adverse impact in terms of achieving ecological objectives.

- Neutral effect – that which has no predictable or measurable impact.
- Positive effect – that which has a net positive impact on an ecological receptor.

## 4.5 Survey Limitations

4.5.1 The NBIS data search is not an exhaustive record of species within the area and an absence of records does not preclude an absence of species. However, when assessed in conjunction with a field survey, they can contribute to a robust ecological assessment of a site.

4.5.2 The survey was completed during the sub-optimal survey period for undertaking botanical surveys thus limiting the identification of ground flora species.

## 5 Baseline Ecological Conditions

### 5.1 Designations

5.1.1 No Statutory Designated Sites or non-Statutory Sites were identified within 2km of the site via the NBIS search and MAGIC maps.

5.1.2 The site sits within a SSSI Impact Risk Zone for Islington Heronry (2800m northeast) and Wighenhall St Germans (4000m east). However, the proposal does not fall within the categories requiring further consultation with Natural England: *Infrastructure projects; Livestock and poultry units with floorspace >500m<sup>2</sup>.*

### 5.2 Habitats and Flora

#### Notable Flora Records

5.2.1 NBIS held no records of notable plant species from within the survey site and none were recorded during the survey.

5.2.2 Invasive plants such as Japanese knotweed, Himalayan balsam and giant hogweed were not recorded within the site.

#### Habitats

5.2.3 The site is approximately 3.0Ha dominated by hardstanding and large industrial units. There were areas of tall ruderal and neutral grassland to the west much of which was on disturbed ground with stored pallets and crates. There were three lagoons in the north surrounded by maintained grass (Figures 1, 2, 3 and 4 - Other site photos can be found in Appendix 3).

5.2.4 A Phase 1 habitat map can be found in Appendix 4.



Figure 1: One of the industrial units within hardstanding.



Figure 2: Hardstanding and stored crates.



Figure 3: Disturbed ground, grassland and stored crates.



Figure 4: The lagoons in the north of site.

### A1 Broadleaved trees

5.2.5 The western and eastern boundaries were to a line of broadleaved trees. The eastern boundary was wider with species such as oak *Quercus robur*, silver birch *Betula pendula* and sycamore *Acer pseudoplatanus*, with some areas of cherry laurel *Prunus laurocerasus*.

5.2.6 The western boundary was dominated by willow *Salix sp.*, and some oak.

### A2 Scrub

5.2.7 There were small areas of scrub along the western boundary, the south-eastern corner and in the north. Species were dominated by bramble *Fruticosus agg.*.

## B2 Neutral Grassland – species poor

5.2.8 There were some areas of grass in the western section that were not heavily managed but were disturbed by vehicular movement and movement of crates. Species consisted mainly of Yorkshire fog *Holcus lanatus*, Cock's-foot *Dactylis glomerata* and perennial rye grass *Lolium perenne*.

5.2.9 There were few other herbs present. Those recorded were generally low growing due to the disturbance. Species recorded included dandelion *Taraxacum agg. sp.*, creeping buttercup *Ranunculus repens*, ragwort *Senecio Jacobaea*, broad leaved dock *Rumex obtusifolius* and broadleaf plantain *Plantago major*.

## C3.1 Tall ruderal

5.2.10 Much of the area in the west and along the northern boundary was tall ruderal vegetation, dominated by nettle *Urtica dioica*, burdock *Arctium lappa*, white goosefoot *Chenopodium album*, corn camomile *Anthemis arvensis* and rosebay willowherb *Chamaenerion angustifolium*.

## G1.1 Standing water

5.2.11 There were three lagoons in the north of the site, water was pumping into two of them at the time of the survey.

## J1.2 – Amenity grassland

5.2.12 The lagoons were surrounded by maintained grass which was short and had few herbs present. The main grass species were Yorkshire fog and Cock's-foot. Other species included creeping buttercup, Dove's foot cranesbill *Geranium mole*, broadleaved dock, ragwort, prickly sow thistle *Sonchus asper* and dandelion.

## J1.3 Disturbed land

5.2.13 There were areas in the northeast and southeast of site that were heavily disturbed by vehicular movement and vegetation was ephemeral and often low growing, such as pineapple weed *Matricaria discoidea*, cats ear *Hypochaeris radicata*, broadleaf plantain and ribwort plantain *Plantago lanceolata*.



#### J2.6 Dry ditch

5.2.14 Along the western boundary was a dry ditch, heavily shaded by willow trees.

#### J3.6 Buildings

5.2.15 There were four metal framed industrial units on site, all currently in use and one breezeblock building serving as reception and offices.

#### J4 Bare ground

5.2.16 The area in the south was to a gravel parking area while the centre of the site was to hardstanding. Heavy rain prior to the survey meant some areas in the north were very muddy.

5.2.17 There was a mud track leading to the western section of the site.

### 5.3 Fauna

#### Amphibians

5.3.1 There were no class licence returns for great crested newt presence showing on Magic maps within 2km of the site.

5.3.2 There were no amphibian records returned by the NBIS search within 2km of the site.

5.3.3 The lagoons on site were surrounded by maintained grass and were devoid of bankside or in-water vegetation. The water quality appeared very poor.

5.3.4 The lagoons were connected to a wide drainage ditch to the north, but there were no other ponds within 500m. The lagoons were assessed as having poor suitability to support great crested newts with a Habitat Suitability Index score of 0.44.

5.3.5 There was potential sheltering habitat in scrub and boundary trees, but the centre of site was heavily disturbed and not suitable for amphibians.

5.3.6 It was assessed that the likelihood of great crested newt presence within the site was **negligible**



### Badgers

5.3.7 There were no records of badgers within 2km of the site returned via the NBIS search.

5.3.8 The site did not provide suitable habitat for sett creation and provided little in the way of foraging habitat.

5.3.9 No evidence of badgers such as latrines, snuffle holes, mammal runs, or badger dung found was found during the survey.

5.3.10 The likelihood of foraging badgers being occasionally present within the site is **negligible**.

### Bats

5.3.11 NBIS data returned 100 records of bats within 2km of the site. Species of note included barbastelle, Serotine *Eptesicus serotinus* and Natterer's *Myotis nattereri*. The majority of records were centred around Terrington St John to the west.

5.3.12 There were no records of a granted European Protected Species Mitigation Licence within 2km of the site and no known NE bat roosts.

5.3.13 The trees around site boundaries did not offer potential roost features for bats. There was one old willow in the southwest corner of site but the cracks in the trunk were all very close to the ground.

5.3.14 The metal framed units on site were all open to an unlined roof structure constructed of corrugated sheets. There were no windows in the units and the doors were roller shutters, which (where shut at the time of the survey) were well sealed. The units were heavily disturbed by human activity and loud machinery and with minimal roosting opportunities were assessed as having **negligible potential** to support roosting bats.

5.3.15 The reception building was single storey and had a fibre board corrugated roof with breezeblock walls. In places the breezeblock had cracked but these were all well filled with expanding foam. The building had wooden facias which were heavily cobwebbed at the wall and well-sealed uPVC windows.

5.3.16 Internally the rooms were open to the roof pitch with no roof void. The reception building was assessed as having **negligible potential** to support roosting bats.

5.3.17 No signs of bats such as droppings or staining were found during the visual inspection of the buildings. No actual bats were observed.

5.3.18 There is the likelihood that bats cross site boundaries whilst commuting but the likelihood of bats being present on site is **negligible**.

#### Birds

5.3.19 There were 26 records of birds within 2km of the site composing 16 species. The nearest record of a Schedule 1 bird being a barn owl approximately 1000m west of the site beyond Terrington St John.

5.3.20 Nesting opportunities on site would be limited to common species within site boundaries and possibly the scrub within the sorted crates in the north, but bird activity across the site was low.

5.3.21 The likelihood of nesting birds on site boundaries is assessed as **moderate**.

#### Reptiles

5.3.22 There were no records of reptiles returned via the NBIS search.

5.3.23 There was some suitable reptiles habitat in the southwest of the site within the least disturbed area of tall ruderal and scrub. There may have been suitable sheltering within stored crates, however these were regularly moved or added to and disturbance was moderately high.

5.3.24 The lagoons on site were poor water quality and offered little in the way of foraging for grass snakes, although the network of ditches to the north and east close to site did provide foraging habitat.

5.3.25 The likelihood of reptiles being present on site was assessed as **low**.

#### Water voles

5.3.26 There were two records of water vole signs 650m to the southwest of site. The drain where signs were found is beyond residential housing and two roads and is not connected to the drain running along the northern boundary of the site.

5.3.27 A water vole survey was undertaken along a 230m stretch of the drain which is 10m away from the northern boundary. The survey was undertaken from the southern side of the drain only.

5.3.28 The drain had steep sides and was bordered by maintained grass on the southern side and an arable field to the north.

5.3.29 The banks of the drain were soft and suitable for burrow creation but none were found. There was some suitable vegetation for water voles such as common reed but there were no flat surfaces for latrines to be made and no feeding remains were observed.

5.3.30 The likelihood of water voles being present close or in the site boundaries was assessed as **negligible**.

#### Other species

5.3.31 The NBIS data had records of 22 hedgehogs *Erinaceus europaeus* within 2km of the site. The majority of the records only had four figure grid references so it was not possible to pinpoint how far from the site they were.

5.3.32 There is suitable foraging for hedgehogs along the western and eastern site boundaries and within the tall ruderal vegetation in the western section. Some of the crates could provide suitable sheltering opportunities for hedgehogs.

## 6 Assessments of Effects

### 6.1 Site proposals

6.1.1 Proposals at the Site comprise the following:

- Erection of residential housing, utilising an existing accessway.

### 6.2 Assessment of Likely Significant Effects

#### Designated sites

##### *Predicted Effects*

6.2.1 No potential pathways of impact are anticipated on any Designated Sites given the scale and location of the development and the distance to any Designated Sites.

#### Habitats and Flora

##### *Predicted Effects*

6.2.2 The site is of low botanical importance and provided little in the way of foraging habitat for wildlife although the ruderal vegetation and grassland species make it a moderately good site for pollinator species.

6.2.3 There are trees down the western and eastern boundary and there is the risk of damage to trees and tree roots through site clearance and construction works.

6.2.4 Minor negative effects are predicted.

##### *Mitigation Measures*

6.2.5 Protection of boundary trees will be implemented through suitable tree protection in accordance with BS 5837:2005.

##### *Residual Effects*

6.2.6 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Fauna

### Amphibians

#### *Predicted Effects*

6.2.7 There was little in the way of suitable foraging habitat on site and the lagoons were assessed as having poor suitability for great crested newts with no other ponds within 500m of the site.

6.2.8 No significant adverse effects or legal infringements are predicted.

### Badgers

#### *Predicted Effects*

6.2.9 There was no suitable habitat for setts and foraging opportunities were limited.

6.2.10 No significant adverse effects or legal infringements are predicted.

### Bats

#### *Predicted Effects*

6.2.11 There was negligible roost potential within the site, however commuting bats may cross the site or exploit site boundaries therefore neutral effects are predicted.

#### *Mitigation Measures*

6.2.12 External lights associated with the new housing should be of a low light level to further minimise impacts on bats that might forage and commute in the vicinity.

6.2.13 Warm white lights should be used at <2700k. This reduces the ultraviolet component or that has high attraction effects on insects which can lead to a reduction in prey availability for some light sensitive bat species.

#### *Residual Effects*

6.2.14 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Birds

### *Predicted Effects*

- 6.2.15 There is opportunity for nesting birds within the scrub on site and along site boundaries.
- 6.2.16 During site clearance there is the risk of killing and injuring nesting birds, damaging their nests or eggs, as a result of vegetation clearance. In the absence of mitigation an intermediate adverse effect is predicted at the Local level.

### *Mitigation Measures*

- 6.2.17 To avoid committing an offence under the Wildlife and Countryside Act 1981 (as amended), any vegetation clearance will take place outside of the bird nesting period (i.e. outside of March to August), or failing that, following confirmation by a suitably qualified ecologist that nesting birds are absent from the habitats to be cleared.

### *Residual effects*

- 6.2.18 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

## Reptiles

### *Predicted Effects*

- 6.2.19 There was a small area of potential undisturbed habitat for reptiles in the west of the site, but if present they would be most likely be transient and in small numbers. There were no records within 2km of the site.
- 6.2.20 A neutral effect is predicted.

### *Mitigation Measures*

- 6.2.21 A precautionary approach should be undertaken to site clearance.
- 6.2.22 Site clearance should take place in the autumn months of September and October (avoiding reptile hibernation periods and bird nesting season) ideally when daytime temperatures are between 16-24°C, i.e. when reptiles are alert and mobile and can move out of an area subject to disturbance.

6.2.23 Tall ruderal and scrub vegetation should initially be cut/strimmed to approximately 10 cm in height using hand trimmers or brush cutters. Cut material should be hand raked to the sides of the area and then removed from the site.

6.2.24 The prepared area should then be left as such for several days prior to a further trim/cut as close to ground level as possible, thus allowing time for any species (if present) to move away.

6.2.25 Both stages should proceed working from the centre of the site outwards towards site boundaries, again allowing any species (if present) time to move away. The area cut must be maintained as short as possible until clearance work commences.

#### 6.2.26 *Residual effects*

6.2.27 Through the implementation of the above mitigation measures, no significant adverse effects are predicted.

#### Water voles

6.2.28 The ditch along the western boundary was dry and heavily shaded by trees and the drain adjacent to the northern boundary will not be directly affected by any works.

6.2.29 No significant adverse effects or legal infringements are predicted.

#### Other species - hedgehogs

6.2.30 There were some foraging and sheltering opportunities on site. Records showed a moderate population within 2km.

6.2.31 Hedgehogs are likely to use the site whilst foraging, but numbers using the site are unlikely to be large. Minor negative effects are predicted.

#### *Mitigation measures*

6.2.32 No excavations or trenches are left uncovered overnight during the development works in order to prevent any hedgehogs and other small mammals from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations.

6.2.33 For any closed board fences around the new houses, it is recommended that suitable gaps are left/created at the bottom of each fence (150mm<sup>2</sup>) to allow free movement of wildlife such as hedgehogs.

### Summary of Effects

6.2.34 Table 4 below summarises the assessment of effects, including any mitigation and subsequent residual effects.

Table 4: Summary of effects

Ecological Factor	Likely Significant Effect and/or Legal Implication (before mitigation)	Avoidance & Mitigation Measures	Residual Effects (after mitigation)
Designated sites	No significant effects	-	No significant effect
Habitats and flora	Minor negative effects	Tree protection in accordance with BS5837: 2005	No significant effect
Amphibians	No significant effects	-	No significant effect
Badgers	No significant effects	-	No significant effect
Bats	Neutral effects	Low level lighting scheme.	No significant effect
Birds	Intermediate adverse effects	Sensitive timing of works/nest checks by ecologist	No significant effect
Reptiles	Neutral effects	Precautionary working method in relation to site clearance.	No significant effect
Water voles	No significant effects	-	No significant effect
Hedgehogs	Minor negative effects	Good working practices; gaps in any proposed fences.	No significant effect



## 7 Enhancements

7.1.1 The Local Planning Authority has a legal duty to consider enhancements on proposed development sites. Furthermore, the National Policy Planning Framework (NPPF) requires planning decisions to aim to promote net gains in biodiversity on development sites.

7.1.2 Full plans were not available at the time of writing but the following enhancements are suggested for the site:

- There is scope to plant new hedgerow along the northern boundary. The hedgerow should be planted in double staggered rows, 40cm part with at least five plants per metre. The following hedgerow species are suggested for this location:
  - Common Hawthorn *Crataegus monogyna*
  - Hazel *Corylus Avellana*
  - Field Maple *Acer campestre*
  - Dogwood *Cornus sanguinea*
  - Dog Rose *Rosa canina*
  
- Install bat boxes on the new houses. They should ideally be installed on southern/eastern aspects as close to the eaves as possible. There are two options available:
  - *Integrated bat box*. These are built into the fabric of the building and come in a variety of designs depending on the materials being used. For example, the Habibat bat box comes in a selection of designs to suit brick built buildings (Figure 5), whilst the Schwegler bat tube (Figure 6) is designed to be installed beneath a rendered surface. This makes it ideal for situations where you wish the box to be discrete as only the entrance hole will be visible. It can also be painted to match your building with an air permeable paint if desired.
  - *Wall mounted bat box*. Fixed to the external wall of a building, the [Beaumaris bat box](#) is a popular choice as is the [Schwegler 1FQ Bat Roost](#).



Figure 5: Habitat integrated bat box with brick finish.



Figure 6: Schwegler 1FR bat tube and rendered finish with only the hole visible.

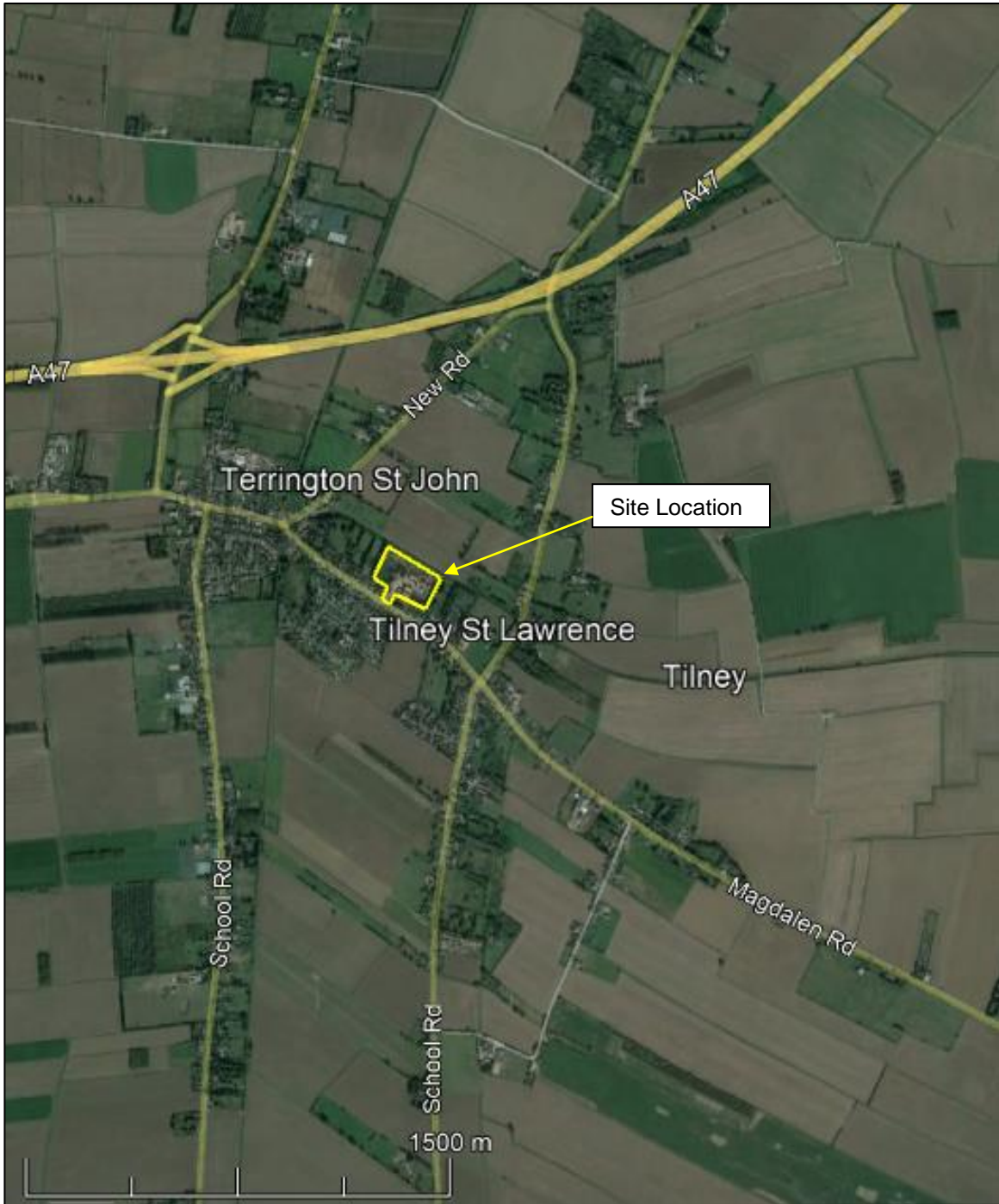
- A bird box should be integrated into the walls of each new house. There are various designs including the [Woodstone Open Nest Box](#) and the [Schwegler Brick Nest box](#). These boxes can be installed flush with the outside wall and can be rendered or covered so that only the entrance hole is visible.
- Consideration should be given to installing swift brick to the southern aspect of some of the new houses. Swifts are in decline throughout the UK but increasing numbers are recorded in Norfolk. The [Swift Nest Box A](#) or similar would be suitable.
- Consideration should also be given to incorporating pollinator and bat friendly planting schemes into any planned landscaping. Suggested plants include:

<b>Bedding Plants</b>	
Nottingham catchfly	<i>Silene nutans</i>
Night-scented catchfly	<i>S. noctiflora</i>
Bladder campion	<i>S. vulgaris</i>
Night-scented stock	<i>Matthiola bicornis</i>
Sweet rocket	<i>Hesperis matronalis</i>
Evening primrose	<i>Oenothera biennis</i>
Tobacco plant	<i>Nicotiana affinis</i>
Cherry pie	<i>Heliotropun x hybridum</i>
Soapwort	<i>Saponaria officinalis</i>
<b>Climbers</b>	
European honeysuckle	<i>Lonicera caprifolium</i>
Italian honeysuckle	<i>L. etrusca superba</i>
Japanese honeysuckle	<i>L. japonica halliana</i>
Honeysuckle (native)	<i>L. periclymenum...</i>
White jasmine	<i>Jasminium officinale</i>
Dogrose	<i>Rosa canina</i>
Sweetbriar	<i>R. rubiginosa</i>
Fieldrose	<i>R. arvensis</i>
Ivy	<i>Hedera helix</i>
Bramble	- many species

## 8 References

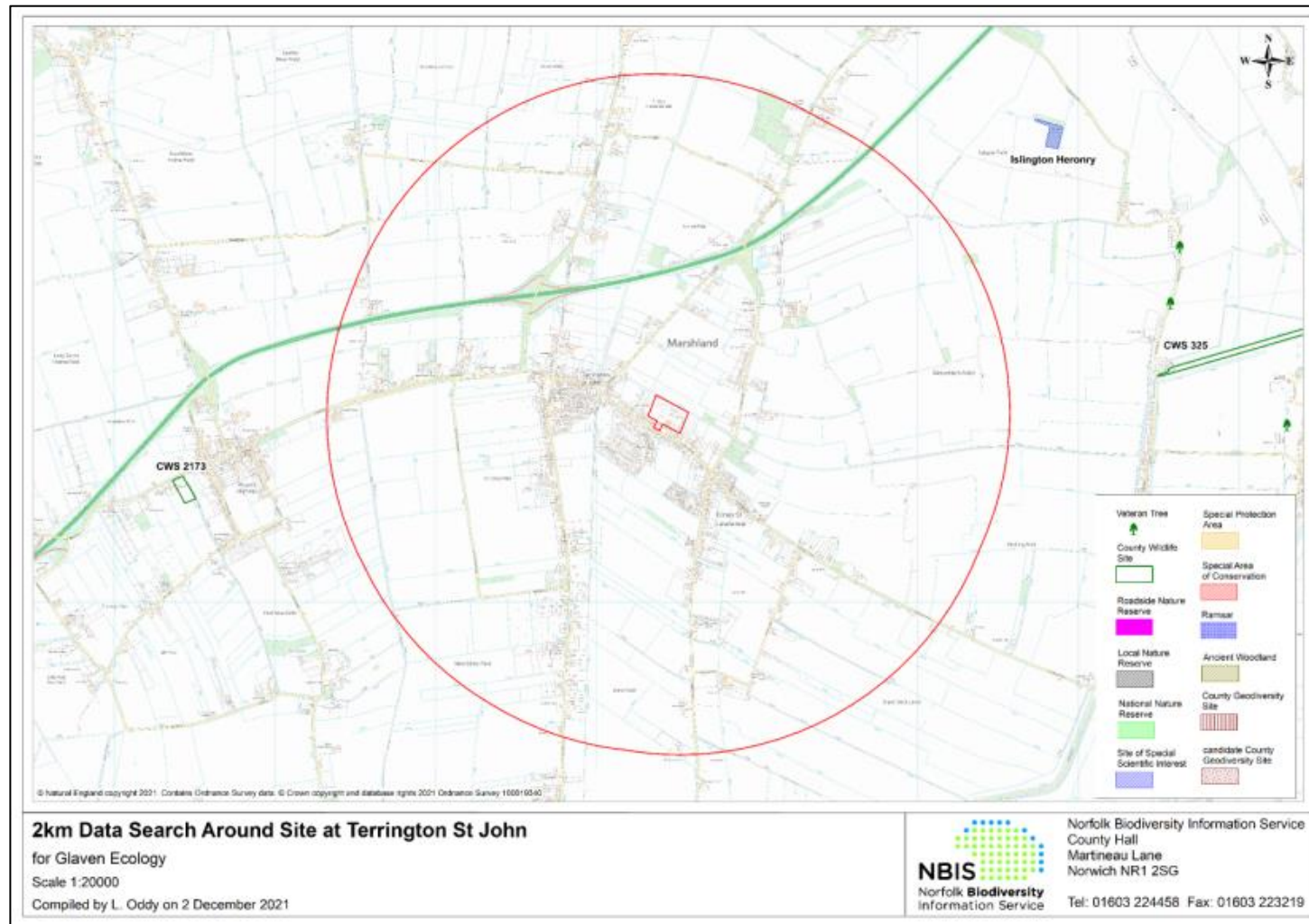
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## Appendix 1 – Site Location



Source Google Earth Pro, 2021

## Appendix 2 – NBIS Map





## Appendix 3 – Survey photos

All photos were taken on 1<sup>st</sup> December 2021.



Photograph 1: Hardstanding and reception building.



Photograph 2: Gravel in car park area



Photograph 3: Smallest unit within hardstanding.



Photograph 4: Unlined roofs of metal framed units.



Photograph 5: Hardstanding and mud areas in centre of site.



Photograph 6: Tall ruderal vegetation in west of site.





*Photograph 7: Disturbed ground and bare mud track (northwest).*



*Photograph 8: tall ruderal and disturbed ground (northern boundary).*



*Photograph 9: Lagoons and amenity grassland.*



*Photograph 10: Tall ruderal and treeline of western boundary.*



*Photograph 11: Trees in southeast corner.*



*Photograph 10: Drain adjacent northern boundary.*



## Appendix 4 – Habitat map

