

MILLER HOMES LTD

TADMARTON ROAD,  
BLOXHAM

## Ecological Assessment

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## **1. INTRODUCTION**

### **1.1. Background & Proposals**

- 1.1.1. Aspect Ecology was commissioned by Miller Homes Ltd in April 2012 to conduct an ecological assessment in respect of land at Tadmarton Road, Bloxham (see Plan 1170/ECO1), centred at grid reference SP 421 358.
- 1.1.2. The proposals are for the construction of up to 60 residential dwellings, with associated gardens, car-parking and landscaping within the north of the site, in addition to a substantial area of open space within the south (see Appendix 1).

### **1.2. Site Characteristics**

- 1.2.1. The site is located to the south of Tadmarton Road, within a predominantly rural context, just outside the western outskirts of Bloxham, Oxfordshire. The site is bound to the north by Tadmarton Road, beyond which lies Bloxham Primary School and farmland, and to the west by a number of arable fields. Residential development bounds the eastern site boundary, whilst the south of the site is bound by a small woodland known as The Slade Nature Reserve.
- 1.2.2. The site itself is dominated by a field of improved pasture in the north, and a section of arable field in the south. These fields are bound by a number of hedgerows, and separated by a strip of tall ruderal vegetation and rank grassland, which features a mixture of scattered and dense scrub, and incorporates part of a dis-used water filled quarry.

### **1.3. Ecological Assessment**

- 1.3.1. This document assesses the ecological interest of the site as a whole. The importance of the habitats and species present is evaluated. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for ecological enhancement are proposed with reference to national and local Biodiversity Action Plans (BAPs).

## 2. SURVEY AND EVALUATION METHODOLOGY

2.1. The methodology utilised for the survey work can be split into 3 main areas: a desktop study, habitat survey, and faunal survey. These are discussed in more detail below.

### 2.2. Desktop Study

2.2.1. In order to compile background information on the site and its immediate surroundings, the following organisation was contacted:

- Thames Valley Environmental Records Centre (TVERC)

2.2.2. Where information has been received from the above organisation, this is summarised where appropriate on Plan 1170/ECO2.

2.2.3. Information on statutory designated sites was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, and Natural England's online resource, 'Nature on the Map'. This information is reproduced at Appendix 2, and where appropriate on Plan 1170/ECO2.

2.2.4. The National Biodiversity Network (NBN) database was also searched for any relevant biological records of nature conservation interest within the locality, with relevant information discussed within this report, where appropriate.<sup>1</sup>

### 2.3. Habitat Survey

2.3.1. A wider study area incorporating the site was surveyed in April 2012, in order to ascertain the general ecological value of the land contained within the boundaries of the study area and to identify the main habitats associated with the site.

2.3.2. The study area was surveyed based on extended Phase 1 survey methodology (Joint Nature Conservation Committee, 2010), as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the study area was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. Nonetheless, the survey work was undertaken within the optimal period for botanical work,

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<sup>1</sup> Please note that the data provider, the original recorder of the data, and the NBN Trust bear no responsibility for any further analysis or interpretation of that material, data and/or information.

and therefore it is considered that a robust survey and assessment of the habitats present was undertaken.

## 2.4. Faunal Surveys

2.4.1. General faunal activity, such as mammals or birds observed visually or by call during the course of the survey was recorded. Specific attention was also paid to the potential presence of any protected, rare or notable species, and specific survey work was undertaken for bats, Badger, Great Crested Newt, and reptiles.

### Bats<sup>2</sup>

2.4.2. **Trees.** An examination of the trees within the study area was undertaken to search for the presence of features which could be of potential value for bats such as splits, cracks, rot holes, coverings of Ivy, peeling bark or similar. The potential for the trees to support roosting bats will be ranked in accordance with the criteria set out in the publication entitled 'Bat Surveys - Good Practice Guidelines,' by the Bat Conservation Trust (BCT) (2007):

- Category 1: Confirmed bat roost tree with field evidence of the presence of bats, e.g. droppings, scratch marks, grease marks or urine staining.
- Category 2a: Trees that have a high potential to support roosting bats.
- Category 2b: Trees with a moderate/low potential to support roosting bats.
- Category 3: Trees with negligible potential to support bat roosts.

2.4.3. Where appropriate, a schedule is then produced documenting the presence of any such features.

2.4.4. **Walked Transect / Bat Activity Surveys.** Set transects with pre-selected listening points were walked by surveyors equipped with Anabat SD2 detectors, with bat activity recorded for a period of approximately 4 minutes at each listening point, and all activity also noted whilst walking between listening points. Two activity surveys were carried out in total, one in July and one in August, both of which began 15 minutes before dusk, and continued for up to 2-3 hours, according to standard best practice<sup>2</sup>.

2.4.5. **Remote Detector Surveys.** In order to supplement the above bat activity surveys, following each activity survey, two Anabat SD2 detectors were affixed to appropriate listening points within the study area (one along the hedgerow H5 adjacent to Tadmarton Road, and one at the edge of The Slade Nature Reserve). These detectors were sited at the listening points and set to automatically record for three consecutive nights.

2.4.6. **Data Analysis.** The data captured by the Anabat recorders has subsequently been analysed using AnalookW (version 3.7.23, 2009). All ultrasound captured has been analysed by a suitably experienced ecologist and a summary table of the results produced.

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<sup>2</sup> Surveys based on: English Nature (2004) "Bat Mitigation Guidelines" & Bat Conservation Trust (2007 & 2012) "Bat Surveys – Good Practice Guidelines"

### Badgers<sup>3</sup>

2.4.7. A Badger survey was undertaken at the study area in April 2012 and comprised two main elements. Firstly, searching thoroughly for evidence of Badger setts. For any setts that were encountered, each sett entrance was noted and plotted even if the entrance appeared disused. The following information was recorded:

- The number and location of well used or very active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently.
- The number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance.
- The number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

2.4.8. Secondly, Badger activity such as well-worn paths and push-throughs, snagged hair, footprints, latrines and foraging signs were recorded so as to build up a picture of the use of the study area by Badgers.

### Great Crested Newt<sup>4</sup>

2.4.9. Two linked ponds (former quarry pits) were identified within the site itself (see Plan 1170/ECO3), and a further three ponds and a single ditch were identified within 250m (the typical maximum migratory range of the species) of the site boundary (see Plan 1170/ECO4). These were assessed for their potential to support Great Crested Newts *Triturus cristatus*, based on the 'Habitat Suitability Index' (HSI)<sup>5</sup>. The HSI uses a number of factors such as pond size, presence of vegetation, fish, waterfowl, etc. to determine how likely a pond is to support Great Crested Newts.

2.4.10. The two linked ponds (P1 and P2) within the site were initially considered to hold potential to support Great Crested Newt, albeit further survey work indicated the presence of large numbers of waterfowl, and exceptionally poor water quality, which rendered this assessment void, and additional surveys inappropriate. One pond (P5) and one ditch (D1) within 250m of the site were also assessed as demonstrating 'average' to 'good' potential to support Great Crested Newts, and accordingly these were subject to additional survey work. The remaining two ponds (P3 and P4) were assessed as holding 'poor' potential (see Table 4 at section 5.5), and accordingly were not subject to detailed survey.

2.4.11. Surveys of pond P5 and ditch D1 were undertaken in suitable weather conditions, using at least three of the following survey methods: torch surveying, bottle-trapping, egg searching and netting, where possible, per visit in accordance with the 'Great Crested Newt Mitigation Guidelines' to determine the presence or absence of Great Crested Newts within the site.

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<sup>3</sup> Based on: Mammal Society (1989) "Occasional Publication No. 9 – Surveying Badgers"

<sup>4</sup> Surveys based on: English Nature. (2001). "Great Crested Newt Mitigation Guidelines".

<sup>5</sup> Amphibian and Reptiles Groups of the UK. (2010). "Great Crested Newt Habitat Suitability Index".

- 2.4.12. Suitable weather conditions are those nights when the night-time air temperature is 5°C or warmer, with little or no wind, and little or no rain. All surveys were conducted during such conditions, as shown in Table 1 below.

Survey Dates	Weather Conditions
08-09 May 2012	Light drizzle, calm, 10°C
14-15 May 2012	No rain, calm, 9°C
17-18 May 2012	No rain, calm, 10°C
21-22 May 2012	No rain, calm, 15°C
06-07 June 2012	No rain, calm, 12°C
14-15 June 2012	No rain, fresh breeze, 15°C

**Table 1:** Weather conditions during 2012 Great Crested Newt surveys

- 2.4.13. Torch surveys involved the use of high-powered torches to count the number of each amphibian species present. As recommended by Natural England the entire margin of each pond/ditch was walked once, slowly searching for Great Crested Newts.
- 2.4.14. Bottle-trapping involved setting traps made from 2-litre plastic bottles around the pond margins, and leaving the traps in place overnight before checking them the following morning. A density of one trap every two metres of shoreline was employed, where possible, as recommended by Natural England.
- 2.4.15. In theory, netting involves sampling for a period dictated by the size of the waterbody, and Natural England recommends 15 minutes of search time for every 50 metres of shoreline. In practice, where undertaken, the search time significantly exceeded this value.
- 2.4.16. Terrestrial habitats were also searched for Great Crested Newts. This involved searching under logs, rocks and rubbish, which are favoured hiding places.

#### Reptiles<sup>6</sup>

- 2.4.17. Given the presence of potentially suitable reptile habitat within the site boundary, in the form of rank grassland / tall ruderal vegetation bordered by scrub, specific surveys were undertaken in May and June 2012 to establish the presence/absence of common reptile species within the site.
- 2.4.18. A total of 63 50x50cm sheets of thick roofing felt were placed within suitable areas across the site to act as artificial refugia (see Plan 1170/ECO5). The refugia, or 'tins', provide shelter and heat up more quickly than their surroundings in the morning and can remain warmer than their surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask under and raise their body temperature, which allows them to forage earlier and later in the day. Therefore, checking the refugia at appropriate times of the day (morning and evening) enables the presence/absence of common reptiles to be determined.

<sup>6</sup> Surveys based on: Froglife Advice Sheet 10 (1999) "Reptile Survey - an introduction to planning, conducting and interpreting surveys for snake and lizard conservation."



- 2.4.19. The refugia remained undisturbed for an initial period to allow reptiles to find and start using them. Following this initial bedding-in period, refugia were checked at appropriate times of the day during suitable weather conditions over 7 visits. In addition, reptiles were also actively searched for in suitable locations throughout the study area.

## 2.5. Principles of Ecological Evaluation

- 2.5.1. The evaluation of ecological features and resources should be based on sound professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described in 'Guidelines for Ecological Impact Assessment in the United Kingdom' published by the Institute of Ecology and Environmental Management (IEEM), 2006. In evaluating ecological features and resources the following key factors are taken into account:

### Geographic Frame of Reference

- 2.5.2. The value of an ecological feature or resource is determined within a defined geographical context using the following frame of reference:

- International
- National
- Regional
- County (or Metropolitan)
- District (or Unitary Authority, City or Borough)
- Local (or Parish)
- At the Site level only

- 2.5.3. Within this frame of reference, certain sites may carry a statutory ecological designation, e.g. Special Area of Conservation (SAC) for internationally important sites or Site of Special Scientific Interest (SSSI) for sites of national importance.

- 2.5.4. Sites of more localised nature conservation importance do not receive statutory protection but may be designated by Local Planning Authorities or other bodies, e.g. Wildlife Trusts. Such non-statutory designations or "Local Sites"<sup>7</sup> include County Wildlife Sites (CWSs) and Sites of Nature Conservation Interest (SNCIs), for example.

### Biodiversity Value

#### *Habitats*

- 2.5.5. In certain cases, the value of a habitat can be measured against known selection criteria, e.g. SAC selection criteria, "Guidelines for the selection of biological SSSIs" and the Hedgerows Regulations 1997. However, for the majority of commonly encountered sites, the most relevant habitat evaluation will be at a more localised level and based on relevant factors such as antiquity, size, species-diversity, potential, naturalness, rarity, fragility and typicalness (Ratcliffe, 1977). The ability to restore or re-create

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<sup>7</sup> DEFRA (2006) "Local Sites – Guidance on their Identification, Selection and Management"

the habitat can also be an important consideration, for example in the case of ancient woodland.

- 2.5.6. Regard should also be given to habitats listed as priorities for conservation under the UK Biodiversity Action Plan (BAP) in accordance with Section 41 of the NERC Act, 2006, so called “Habitats of Principal Importance”, as the likely effect of a development on such habitats is a potential material consideration within the planning process. Certain habitats may also be listed within more regionally or locally specific BAPs, albeit the listing of a particular habitat under a BAP does not in itself imply any specific level of importance.

#### *Species*

- 2.5.7. The assessment of the value of a species is based on factors including distribution, status, historical trends, population size and rarity. With respect to rarity, this can apply across the geographic frame of reference and particular regard is given to populations where the UK holds a large or significant proportion of the international population of a species.
- 2.5.8. For certain species groups, e.g. waterfowl, there are established criteria that can be used for defining nationally and internationally important populations.
- 2.5.9. Regard should also be given to species listed as priorities for conservation under the UK BAP in accordance with Section 41 of the NERC Act 2006, so called “Species of Principal Importance”. Certain species may also be listed within more regionally or locally specific BAPs, albeit as with habitats the listing of a particular species under a BAP does not in itself imply any specific level of importance.

#### Secondary or Supporting Value

- 2.5.10. Some habitats or features that are of no intrinsic biodiversity value may nonetheless perform an ecological function, e.g. as a buffer. In addition, certain features of the landscape which by virtue of their linear or continuous nature (e.g. rivers) or their function as “stepping stones” (e.g. small woods) may be of value for the migration, dispersal and genetic exchange of wild species.

#### Other Value

- 2.5.11. Other tertiary factors may also be relevant in evaluating the value of a particular ecological receptor including social and economic factors.

### 2.6. **The Five Point Approach**

- 2.6.1. The National Planning Policy Framework (NPPF)<sup>8</sup> describes the Government’s national policies on the protection of biodiversity [and geological] conservation through the planning system. NPPF emphasises the need for planning authorities to ensure that the potential effects of planning decisions on biodiversity conservation are fully considered. A five-

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<sup>8</sup> Department for Communities and Local Government (2012) “*National Planning Policy Framework*”

point best practice approach<sup>9,10,11</sup> to the assessment of such effects within the development control process is recommended:

1. **Information** – gathering a sufficient evidence base on which to make sound planning decisions
2. **Avoidance** – adverse effects on habitats and species should be avoided where possible
3. **Mitigation** – where it is unavoidable, mitigation measures should be employed to minimise adverse effects
4. **Compensation** – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm
5. **New benefits** – many planning decisions present the opportunity to deliver enhancements for habitats or species

2.6.2. The assessment of ecological effects set out within this report are based on the above five-point approach, where appropriate.

## 2.7. **Survey Constraints/Limitations**

2.7.1. There were no constraints to the survey of the site.

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<sup>9</sup> Royal Town Planning Institute (1999) “*Planning for Biodiversity – Good Practice Guide*”

<sup>10</sup> ODPM (2006) “*Planning for Biodiversity and Geological Conservation – A Guide to Good Practice*”

<sup>11</sup> PAS 2010 “*Planning to Halt the Loss of Biodiversity, Biodiversity Conservation Standards for Planning in the United Kingdom – Code of Practice.*”

### 3. ECOLOGICAL DESIGNATIONS

#### 3.1. Statutory Designations

3.1.1. The statutory designations of nature conservation interest that occur within the local area are summarised in Table 2 below. The nearest statutory designation is Hook Norton Cutting and Banks Site of Special Scientific Interest (SSSI) located approximately 7km south-west of the study area, and the next nearest is Little Tew Meadows SSSI located approximately 8.7km south-west of the study area.

3.1.2. All statutory designations in the local area are well separated from the study area by existing development and farmland.

#### 3.2. Non-statutory Designations

3.2.1. The non-statutory designations of nature conservation interest that occur within the local area are shown on Plan 1170/ECO2, and summarised below in Table 2. The nearest site of ecological interest is The Slade Nature Reserve, which abuts the southern site boundary, albeit this Reserve is not subject to a statutory or non-statutory designation. The Slade is a small area of deciduous woodland criss-crossed by a number of streams and ditches.

3.2.2. A balancing pond is proposed within the area of proposed open space adjacent to The Slade Nature Reserve, which will result in outfall via a swale into one of the woodland streams. However, the outfall flow rate will be very low such that it will have a negligible effect on existing flows within the network of streams and ditches. Furthermore, the outflow water quality from the balancing pond will represent an improvement in comparison to current run-off from the agricultural field.

3.2.3. Nevertheless, given the close proximity of The Slade to the site, in order to safeguard against any potential run-off or pollution events during construction, best management practice will be followed in accordance with the advice issued by the Environment Agency in its Pollution Prevention Guidelines or relevant updated documents. This will essentially reduce potential pollution effects to nil, minimising any harm to wildlife associated with the streams / ditches within The Slade. This will include relevant safeguards such as:

- Storage areas for chemicals, fuels, etc. will be sited well away from the streams/ditches, and stored on an impervious base within an oil-tight bund with no drainage outlet;
- Where possible, and with prior agreement of the sewage undertaker, silty water should be disposed of to the foul sewer;
- Water washing of vehicles, particularly those carrying fresh concrete and cement, mixing plant, etc. will be carried out in a contained area as far from the streams within The Slade as practical, to avoid contaminated water entering the watercourses;
- Refuelling of plant will take place in a designated area, preferably on an impermeable surface.

3.2.4. Furthermore, a buffer zone of native planting a minimum of 10m in width, will be incorporated within the area of open space adjacent to The Slade. Care will also be taken to ensure that no footpaths are within this buffer, and

any lighting associated with the open space will be designed so as to minimise illumination of the off-site woodland.

- 3.2.5. The nearest non-statutory designation is Barford Marsh Local Wildlife Site (LWS), located approximately 1.8km south of the study, whilst the next nearest non-statutory designation is Tadmarton Orchid Field proposed LWS, located approximately 2.1km north-west of the study area. All non-statutory designations in the local area are separated from the study area by existing development and hard-standing and will therefore be unaffected by the proposals.

Name	Designation	Brief Description	Approximate Distance and Direction from site
<b>Statutory Designations</b>			
Hook Norton Cutting and Banks	SSSI	An old railway line incorporating habitats including species-rich calcareous grassland.	7km SW
Little Tew Meadows	SSSI	A large area of unimproved grassland, with several locally uncommon plants and a number of wet flushes that support a range of bird species.	8.7km SW
<b>Non-statutory Designations</b>			
The Slade Nature Reserve	Not designated	A small area of deciduous woodland criss-crossed with streams and ditches, and featuring substantial amounts of standing and fallen dead wood.	Abutting the southern site boundary
Barford Marsh	LWS	Wet grassland adjacent to the River Swere, supporting a range of botanical and invertebrate species of interest.	1.8km S
Tadmarton Orchid Field	pLWS	A grazed wet meadow featuring a small area of deciduous woodland and two recently created ponds.	2.1km NW

**Table 2:** Statutory and Non-Statutory Designations situated within the Local Area

Summary

- 3.2.6. The study area itself is not subject to any statutory or non-statutory nature conservation designation. All ecological designations in the local area are well separated from the study area and will not therefore be affected by the proposals. Subject to the above recommendations, it is also considered that the adjacent un-designated nature reserve; **The Slade; will remain unaffected by the proposals.**

## 4. HABITATS, ECOLOGICAL FEATURES AND EVALUATION

4.1. The following main habitat/vegetation types were identified within/adjacent to the site:

- Arable
- Improved Pasture
- Rank Grass / Tall Ruderal Vegetation
- Hedgerows
- Trees and Scrub
- Ponds
- Bare Ground / Hard-standing

4.2. The locations of these habitat types and features are represented on Plan 1170/ECO3, and the composition and structure of each habitat is summarised below, with an account of the representative plant species present where appropriate. In addition, the habitats are evaluated in terms of ecological value and assessed with respect to potential effects arising from the proposals.

### 4.3. **Arable**

#### Description of the Habitat

4.3.1. The south of the site is dominated by a section of an arable field, the remainder of which is situated within the wider study area (see Photograph 1 and Plan 1170/ECO3). At the time of the original survey, the field was fallow, with very little colonising vegetation, however during subsequent faunal surveys it was noted that it had been densely sown with Maize. Opportunistic native species, which have sparsely colonised, are limited to the occasional specimen of Common Nettle *Urtica dioica*, Mayweed *Anthemis cotula*, Willowherb *Epilobium* sp., Common Ragwort *Senecio jacobaea* and a Brassica crop species. Typical of arable fields, this habitat appears to receive intensive management, however very narrow rank grassland / tall ruderal field margins, generally less than one metre wide, are present around the majority of the field edge, adjacent to boundary hedgerows (this habitat is discussed in more detail in section 4.5).

#### Evaluation

4.3.2. The arable field appears to be intensively managed and supports little, if any, in the way of plant species, such that the arable field within the site is considered to be of low to negligible ecological value at the site level and therefore its loss to the proposals is of negligible ecological significance.

### 4.4. **Improved Pasture**

#### Description of the Habitat

4.4.1. The north of the site is dominated by improved pasture (see Plan 1170/ECO3 and Photograph 2), which is bound by an electric fence, and regularly grazed by cattle, or mown. This habitat is dominated by relatively tall grasses including Perennial Ryegrass *Lolium perenne*, Cock's-foot *Dactylis glomerata*, Couch *Elmus repens* and Fescues *Festuca* sp., and

also includes a number of herb species including Cleavers *Galium aparine*, Chickweed *Stellaria media*, Broad-leaved Dock *Rumex obtusifolius*, Dandelion *Taraxacum officinale*, Lesser Celandine *Ranunculus ficaria*, Red Dead-nettle *Lamium purpureum*, Bitter-cress *Barbarea vulgaris* and Clovers *Trifolium* sp., with the occasional tall ruderal species including Spear Thistle *Cirsium vulgare*, Cow Parsley *Anthriscus sylvestris* and Common Nettle.

### Evaluation

- 4.4.2. The improved pasture habitat within the site comprises a limited diversity of species, and this habitat type is common and widespread in the local and national context, and is therefore of low ecological value at the site level. The loss of this habitat under the proposals is therefore considered to be of minor ecological significance.

## 4.5. Rank Grassland / Tall Ruderal Vegetation

### Description of the Habitat

- 4.5.1. Three main areas of rank grassland / tall ruderal vegetation are present within the site, the largest of which is a wide band that surrounds the two ponds within the site, and extends eastwards towards Tadmarton Road (see Photograph 3). Two strips of rank grassland / tall ruderal vegetation are also present either side of the main access track entering into the site from Tadmarton Road, and a narrow field margin, measuring approximately 1m wide, surrounds the arable field within the south of the site, as mentioned above.
- 4.5.2. The wide band of rank grassland / tall ruderal vegetation that sits within the centre of the site is dominated by tall ruderal and herb species including Dock *Rumex* sp., Cow Parsley, Hogweed *Heracleum sphondylium*, Cleavers, Common Nettle, Willowherb, Vetch *Vicia sativa*, Red Dead-nettle, White Dead-nettle *Lamium album*, Ribwort Plantain *Plantago lanceolata*, Dandelion, Hedge Woundwort *Stachys sylvatica*, Teasel *Dipsacus fullonum*, and Mayweed. Where it is situated adjacent to the ponds and lies beneath dense scrub, this habitat becomes grass dominated, with a tussocky structure, as it nears the eastern site boundary. Grass species present in this area include Perennial Ryegrass, Couch, Cock's-foot and Fescues. A large manure pile is also present within this band, located south of the dense scrub to the east of the quarry ponds.
- 4.5.3. The strips of rank grassland / tall ruderal vegetation adjacent to the main access track have a species composition very similar to that described above, albeit these are wholly tall ruderal / herb dominated.
- 4.5.4. The narrow field margins surrounding the arable field within the south of the site are generally of a similar species composition and structure to that described above in section 4.5.2, albeit a number of additional species including Yarrow *Achillea millefolium*, Common Chickweed, Speedwell *Veronica* sp. and Hedge Bindweed *Calystegia sepium* are also present. Furthermore, the section of field margin abutting the adjacent woodland nature reserve also incorporates species including Ivy *Hedera* sp., Lesser Celandine, Lords and Ladies *Arum maculatum*, Garlic Mustard *Alliaria petiolata* and Bramble *Rubus fruticosus* agg..

### Evaluation

4.6. Arable field margins are included within the list formed from Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006 as a Habitat of Principal Importance. However, in consideration that the field margins do not appear to be retained or managed for the benefit of wildlife, and are extremely limited in size, based on UK BAP Priority Habitat Descriptions, the field margins at the site are considered unlikely to qualify as Habitats of Principal Importance.

4.6.1. Overall, the field margins and the remaining rank grassland / tall ruderal habitat comprise a limited range of species that are both common and widespread in the local and national context, and are therefore of low ecological value at the site level. Any loss of these habitats under the proposals is therefore considered to be of minor ecological significance.

### 4.7. Hedgerows

#### Description of the Habitat

4.7.1. There are seven hedgerows within the study area, which are labelled **H1 – H7** on Plan 1170/ECO3, and described below. All hedgerows with the exception of **H2, H3** and **H7** are also situated within the site boundary.

4.7.2. **H1** is a stretch of apparently unmanaged Hawthorn *Crataegus monogyna* dominated hedgerow measuring approximately 300m long, 4m high and 3m wide, and is located along the eastern boundary of the arable field located towards the south of the site. Other species present within this hedgerow include Blackthorn *Prunus spinosa*, Ash *Fraxinus excelsior*, Apple *Malus* sp., Dog Rose *Rosa canina* and Elder *Sambucus nigra*.

4.7.3. **H2** is a very gappy, unstructured, and apparently unmanaged hedgerow, with a total length of approximately 90m, and measuring approximately 3m high and 3m wide. This hedgerow is located between the two arable fields within the wider study area (outside the site boundary), and species present are limited to Elder, Blackthorn and Dog Rose.

4.7.4. **H3** and **H4** are two short stretches of double-planted hedgerow which run along Tadmarton Road, either side of the main access track within the north of the site. Approximately 105m of Hedgerow H3 is situated within the wider study area (albeit this hedgerow continues northwards out of the study area), whilst H4 is approximately 36m long. Both hedgerows are approximately 1.5m high and 3m wide, heavily managed, and associated with a dry ditch. Species present within these hedgerows include Hawthorn, Blackthorn, Elder, Elm *Ulmus procera* and Bramble.

4.7.5. **H5** is a continuation of hedgerow H4, which runs southwards along Tadmarton Road, adjacent to a dry ditch. This hedgerow is approximately 180m long, 4m high and 3m wide, and is apparently unmanaged, such that in some places the hedgerow resembles a line of young trees. Species present within this hedgerow include Sycamore *Acer pseudoplatanus*, Elder, *Prunus* sp., Ash, Bramble and Ivy.

4.7.6. **H6** is a stretch of apparently unmanaged hedgerow abutting the southern edge of the two ponds within the site, and therefore sits upon a ridge, which



was once the southern quarry edge. Approximately 130m of H6 is situated within the study area (albeit this hedgerow continues westwards out of the site and study area), and is approximately 3m high and 3m wide. This hedgerow is dominated by Hawthorn and Blackthorn, with Willow *Salix* sp., and Dog Rose also present in places.

- 4.7.7. **H7** is a stretch of managed hedgerow located along the western edge of the arable field within the south of the study area (outside the site boundary), and is approximately 140m long, 2m high and 1.5m wide. This hedgerow is dominated by Hawthorn and Elm, with Elder also present in places.
- 4.7.8. All of these hedgerows are dense in structure, and over shadow the ground below, such that the ground flora is generally sparse, and limited to the occasional shade tolerant ruderal species such as Cow Parsley and Common Nettle.

#### Evaluation

- 4.7.9. The hedgerows on site, although relatively continuous, are generally of a poor structure, predominantly composed of a small number of species, and have little in the way of ground flora. As such, they are considered unlikely to be classified as `important` under the Hedgerows Regulations (1997) criteria.
- 4.8. Hedgerows are also included within the Section 41 list of the NERC Act 2006 as a Habitat of Principal Importance. Based on the UK BAP Priority Habitat Descriptions (BRIG 2008) for hedgerows, these hedgerows are likely to qualify as a Habitat of Principal Importance, but do not represent particularly good examples of this habitat type given their limited diversity.
- 4.8.1. Accordingly, any loss of these hedgerows to the proposals is considered to be of no more than low ecological significance at the local level. In any event, a review of the proposals indicates that the extent of this habitat to be lost to the proposals is extremely minimal, and the open space proposed, which incorporates hedgerow H1, will be sensitively managed for local wildlife.

#### 4.9. **Trees and Scrub**

##### Description of the Habitat

- 4.9.1. A small number of trees (ranging from young to mature in age) are present within the study area, the majority of which are located just outside the south-western corner of the site, immediately adjacent to The Slade nature reserve (see Plan 1170/ECO3), and are dominated by Willow *Salix* sp., and Alder *Alnus glutinosa*. A semi-mature Ash tree is also present within the north of the site, adjacent to the main access track.
- 4.9.2. Several areas of scrub are present within the site, the largest of which is located either side, and to the east of the quarry ponds that lie within the site (see Plan 1170/ECO3). This scrub is dense, and forms a closed canopy in places adjacent to the ponds, whilst becoming more scattered towards the east. A dense line of scrub approximately 5m wide is also present along the eastern site boundary, and occasional scattered scrub is located at the boundaries of the arable field within the south of the site.

- 4.9.3. The scrub adjacent to the ponds is dominated by Blackthorn, with Hawthorn, Bramble, Willow and Elder also frequent, whilst the line of scrub at the eastern site boundary comprises Blackthorn, Dog Rose, Hawthorn and Bramble.

Evaluation

- 4.9.4. The trees and scrub within and adjacent to the site comprise species that are both common and widespread in the local and national context, and are therefore considered to be of no more than low ecological value. In any event, although the removal of a small number of trees may be required to facilitate installation of the drainage connection from the new balancing pond to the woodland stream, a substantial number of new trees are to be planted, including new areas of woodland, and utilising locally native species where appropriate.

Recommendation

- 4.9.5. In order to fully safeguard the trees which will be retained under the proposals, and the trees within the woodland outside the southern site boundary, standard arboricultural best practice guidelines (BS5837) will be adhered to during and after any construction / site levelling works in these areas. Accordingly, with the implementation of the above recommendation, it is considered that there will be no long-term decrease in net ecological value in regard to trees within and immediately adjacent to the site.

4.10. **Ponds**

Description of the Habitat

- 4.10.1. Two interlinked ponds (P1 and P2) are present within the centre of the site, which extend off-site beyond the western site boundary (see Photograph 4). These ponds are located within a small abandoned quarry, and as such are relatively deep at their centres, with stony vertical banks. Both ponds are large in size, P1 being approximately 90m long and 12m wide, whilst P2 is approximately 157 long in its entirety (some of which lies outside the site boundary), and 12m wide.
- 4.10.2. Both ponds are sometimes used to hold large numbers of farmed waterfowl and associated feed and equipment is stored adjacent to the ponds. As such there is very little in the way of emergent or aquatic vegetation, and the water quality appears particularly poor. There is a small island within pond P1, which is covered in a mixture of tall ruderal vegetation and Willow scrub.

Evaluation

- 4.10.3. As outlined above, the ponds within the site support large numbers of farmed waterfowl, and a number of barrels, presumably holding feed, were floating in the ponds at the time of survey. It is evident that the presence of these waterfowl has caused the ponds to be subject to high levels of nitrogen, and as such the vegetation surrounding the ponds is dominated by coarse tall ruderal vegetation such as Common Nettle, and a layer of floating algae was present over much of the ponds' surface. Accordingly, neither pond supports much, if any, emergent or aquatic vegetation, and

both ponds are therefore considered unlikely to represent any more than negligible to low ecological value at the site level. In any event, these ponds will be retained under the proposals, and new waterbodies of enhanced ecological value will be created within the proposed open space area, in association with the SUDS scheme for the development (see section 5.9 below).

#### 4.11. **Bare Ground / Hard-standing**

##### Description of the Habitat

- 4.11.1. Two main areas of bare ground / hard-standing are present within the site, the first comprising the main access track to the farmyard which lies beyond the western site boundary. This track is well used, and supports little, if any, recolonising vegetation.
- 4.11.2. In addition to the main access track, a smaller track, which splits into two to allow access to both the pond and the pasture, is present within the centre of the site. This track does not appear as regularly used, and as such is over-grown with surrounding vegetation.

##### Evaluation

- 4.11.3. These habitats are considered to be of negligible inherent ecological value and the main access track supports limited, if any recolonising vegetation. The smaller access track, although overgrown with vegetation, supports a species assemblage essentially identical to the surrounding tall ruderal / rank grassland habitats, and accordingly is considered to have equivalent (i.e. low) ecological value. Therefore, any losses of these habitats to the proposals are of low – negligible ecological significance.

#### 4.12. **Background Records**

- 4.12.1. Data obtained from the datasearch exercise includes a small number of records of protected, rare or notable plant species from within the vicinity of the site, however none of these are located within or immediately adjacent to the site.

## 5. FAUNAL USE OF THE SITE AND EVALUATION

5.1. During the survey work, general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected or notable species. Specific surveys were conducted in respect of bats, Badger, Great Crested Newt and reptiles. Below, the potential presence of these species within the site is evaluated, along with an assessment of any potential effects arising from the development.

### 5.2. **Bats**

#### Legislation

5.2.1. All British bats are classed as European Protected Species and therefore receive protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a bat;
- Deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance;
- Damage or destroy a breeding site or resting place of a bat.

5.2.2. In addition, all British bats are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Damage or destroy, or obstruct access to, any structure or place which any bat uses for shelter or protection; or
- Disturb bats while occupying a structure or place that it uses for that purpose.

5.2.3. If proposed development work is likely to result in an offence a licence will need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats.

5.2.4. There are at least 17 breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance/damage to roosts. Of these 17 species, a number regularly use buildings and trees as roost sites.

#### Potential use of site

5.2.5. **Roosts: Trees.** A number of young to mature trees are present within and adjacent to the site (see Plan 1170/ECO3). These trees were assessed for their potential to support roosting bats and rated according to BCT guidelines as either Category 1 – a confirmed roost, Category 2a – high potential, Category 2b – moderate/low potential or Category 3 – negligible potential.

5.2.6. Several trees, located at the south-western corner of the site, including two mature Willows, one mature and one semi-mature Alder, exhibit a number of features, including split limbs and woodpecker holes, of potential interest

to roosting bats (see Plan 1170/ECO3), and could therefore be considered to have moderate / low potential to support roosting bats, thus falling within Category 2b.

5.2.7. **Foraging / Commuting.** The hedgerows and scrub within and adjacent to the site are likely to offer some potential as foraging/commuting features for bats, and indeed as shown in Table 3 below, bouts of foraging and commuting activity by Common Pipistrelle, Soprano Pipistrelle, Noctule, Brown Long-eared bat and *Myotis* were recorded along the hedgerow adjacent to Tadmarton Road during the remote detector surveys. However, all of the species above, in addition to *Nyctalus/Eptesicus* agg., were recorded at a significantly greater frequency where the southern site boundary abuts the adjacent woodland nature reserve (The Slade), and accordingly it is considered likely that this woodland habitat provides far superior opportunities for foraging/commuting bats.

5.2.8. The results of the walked transect surveys accord with this assessment (see Plan 1170/ECO6 and Appendix 3), with the highest levels of bat activity being recorded at the woodland edge, and along the scrub adjacent to the on-site ponds, albeit low levels of activity were also recorded adjacent to scrub and hedgerow habitat throughout the site.

Date	Bat activity recorded at listening point:	
	Tadmarton Road	Woodland edge
27/07/2012	Total of 27 passes of Pip45, 1 pass of Pip55 and 1 pass of Noctule	Total of 109 passes of Pip45, 1 pass of Noctule, and 1 pass of Brown Long-eared
28/07/2012	Total of 23 passes of Pip45	Total of 124 passes of Pip45, 1 pass of Pip55, 1 pass of Noctule and 3 passes of <i>Myotis</i>
29/07/2012	Total of 10 passes of Pip45 and 4 passes of Noctule	Total of 175 passes of Pip45, 9 passes of Noctule, 2 passes of <i>Myotis</i> and 2 passes of Brown Long-eared
17/08/2012	Total of 13 passes of Pip45, 1 pass of <i>Myotis</i> and 1 pass of Brown Long-eared	Total of 139 passes of Pip45, 1 pass of Pip55, 2 passes of Noctule, 6 passes of <i>Myotis</i> and 1 pass of Brown Long-eared
18/08/2012	Total of 23 passes of Pip45	Total of 53 passes of Pip45, 5 passes of Pip55, 11 passes of Noctule, 10 passes of <i>Myotis</i> and 1 pass of <i>Nyctalus/Eptesicus</i> agg.
19/08/2012	No bats recorded	Total of 102 passes of Pip45, 4 passes of Pip55, 21 passes of Noctule, 16 passes of <i>Myotis</i> and 3 passes of Brown Long-eared

**Table 3:** Remote Detector Survey Results

Background Records

5.2.9. Data obtained from Thames Valley Environmental Records Centre (TVERC) includes a small number of records of bats within the vicinity of the site, the

nearest of which are for Daubenton's *Myotis daubentonii*, Whiskered *Myotis mystacinus* and Common Pipistrelle *Pipistrellus pipistrellus*, located within The Slade nature reserve immediately to the south of the site. No further details pertaining to the record type (e.g. roost, sighting etc) is provided.

### Evaluation

- 5.2.10. **Roosting: Trees.** Two mature Willow trees, and one mature and one semi-mature Alder located at the south-western corner of the site are considered to have low to moderate potential (Category 2b) to support roosting bats, primarily due to a small number of woodpecker holes, and split limbs. It is understood that the loss of up to two of these trees may be required to facilitate installation of the drainage connection from the new balancing pond to the woodland stream, and accordingly, the recommendations outlined below will be implemented in order to safeguard any bats that may potentially be roosting within these trees.
- 5.2.11. **Foraging/Commuting.** The hedgerows and scrub within the site are likely to offer some limited opportunities for foraging/commuting bats at the local level. Indeed as shown in Table 3 above, and within Plan 1170/ECO6, low levels of foraging and commuting activity were recorded during walked transect and remote detector surveys along scrub and hedgerow features throughout the site. Higher levels of bat activity were recorded at the southern site boundary, where the adjacent woodland nature reserve (The Slade) abuts the site, and along the scrub which lies either side of the on-site ponds within the centre of the site.
- 5.2.12. Overall, based on the habitats present and level of activity recorded, the site is considered to be of no more than low value to foraging/commuting bats at the local level, albeit the ponds within the site along with the surrounding scrub habitat would appear to be of marginally elevated value as a foraging habitat for common bat species. However, a review of the proposals indicates that this habitat will be retained post development, and buffered from the development by landscape planting such that the connectivity and functionality of this habitat for bats foraging and/or commuting will be maintained. In addition, the majority of hedgerows within the site will be retained, thus maintaining any potential flight paths, and a sensitive approach to the lighting scheme will be incorporated, as outlined below. A short section of hedgerow H5 adjacent to Tadmarton Road will be removed in order to facilitate the proposals, however this represents only a minor loss of habitat and accordingly is of minor / negligible ecological significance.
- 5.2.13. Furthermore, the off-site woodland, which was recorded to support the highest levels of bat activity during both the walked transect surveys and the remote detector surveys, and likely provides far superior opportunities for foraging/commuting bats, will be retained and buffered from the development by a large area of sensitively managed open space.
- 5.2.14. The remainder of the habitats within the site (i.e. arable, pasture, tall ruderal and rank grassland) provide negligible habitat for foraging/commuting bats.
- 5.2.15. Subject to the implementation of the recommendations outlined below, along with the provision of new roosting opportunities and other enhancements (see section 5.9), it is considered likely that there will be a

*net positive effect* on the local population status of bats as a result of development within the site.

### Recommendations

- 5.2.16. A review of the proposals shows that two of the trees with moderate to low bat potential may need to be felled to facilitate the development. Accordingly, in order to safeguard any bats that may potentially be roosting within these trees, it is recommended that a precautionary approach be employed. The approach would involve a 'soft felling' technique which involves slowly lowering and cushioning any limbs and tree sections which exhibit features (such as woodpecker holes, split limbs, etc.) considered potentially suitable for bats, thereby reducing the impact on these tree sections as they are brought to the ground. This soft felling should also be preceded by a pre-dawn survey (if within the active bat season of May to September), or otherwise if the felling is to take place outside of the season, a thorough endoscopic search of the potential roosting features should be undertaken. In the event that bats are encountered, the tree felling will be postponed whilst an appropriate mitigation strategy is devised.
- 5.2.17. Any lighting should be positioned so as to not excessively illuminate the retained on-site trees and hedgerows, existing off-site trees, and new bat boxes (see section 5.2.19 below), as far as is practicable. Directional lighting, reduced wattage lamps and fitted louvres can be fitted to reduce night-time illumination of these areas further, if required.
- 5.2.18. Any footpaths associated with the proposed open space should be positioned away from these trees, and the woodland edge, so as to minimise disturbance to any bats using these features.
- 5.2.19. In addition, in order to provide new roosting opportunities for bats, it is recommended that a number of bat boxes be erected on a proportion of the proposed buildings, where architectural design allows (see section 5.9 for details).

### 5.3. **Badger (*Meles meles*)**

#### Legislation

- 5.3.1. In the UK the relevant legislation pertaining to Badger is the Protection of Badgers Act 1992. The legislation aims to protect the species from persecution, rather than being a response to an unfavourable conservation status, as the species is in fact common over most of Britain. It should be noted that the legislation is not intended to prevent properly authorised development. It is the duty of planning authorities to consider the conservation and welfare impacts of development upon Badger and issue permissions accordingly. Planning authorities are, therefore, obliged to consult the appropriate Statutory Nature Conservation Organisation (SNCO) over any planning application that is likely to adversely affect Badger. The SNCO for England is Natural England.
- 5.3.2. Under the Protection of Badgers Act it is an offence to:
- Wilfully kill, injure, take, possess or cruelly ill-treat\* a Badger, or attempt to do so;

- To intentionally or recklessly interfere with a sett<sup>#</sup> (this includes disturbing Badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it).

\* the intentional elimination of sufficient foraging area to support a known social group of Badgers may, in certain circumstances, be construed as an offence by constituting “cruel ill treatment” of a Badger.

# A sett is defined as “any structure or place which displays signs indicating current use by a Badger”. Advice issued by Natural England (June 2009) is that a sett is protected as long as such signs remain present, which in practice could potentially be for some time after the last actual occupation by Badger.

- 5.3.3. Licences can be obtained from the SNCO for development activities that would otherwise be unlawful under the legislation. Guidance on the types of activity that should be licensed is laid out in the publications “Badgers and Development” (English Nature, 2002) and “Badgers and Development: A Guide to Best Practice and Licensing. Interim Guidance Document” (Natural England, 2007). For example, excavation work or use of heavy machinery within 20m of any entrance to an active Badger sett may require a licence.

#### Potential use of site

- 5.3.4. No Badger setts were found within or adjacent to the site, however a single Badger latrine was recorded at the northern site boundary, adjacent to the hedgerow abutting Tadmarton Road. Accordingly, it is possible that Badgers, on occasion, commute through the site, and forage within the areas of pasture and rank grassland within the site.

#### Background Records

- 5.3.5. Data obtained from TVERC included a small number of records of Badger from within the vicinity of the site, the nearest of which is located within The Slade nature reserve, immediately beyond the southern site boundary. However this record refers only to tracks / other Badger signs, and does not represent a sett.

#### Evaluation

- 5.3.6. The habitats within the site provide some limited potential foraging habitat for Badger, and there is some evidence that Badgers pass through the site on occasion. Due to the intensively managed nature of the site, the potential foraging habitat within the site is of no more than low value for Badgers, and although some potential foraging habitat will be lost under the proposals, habitat of greater value for foraging Badgers will be created within the proposed area of open space. Nevertheless, in order to safeguard Badgers during the construction period, a number of best practice recommendations are set out below.

#### Recommendations

- 5.3.7. The following safeguards will be employed to ensure Badgers can continue to move safely throughout the site during the construction phase:



- Construction works will primarily be limited to hours of daylight when Badgers are less likely to be present.
- An unobstructed path through the construction zone will be made available at the end of each day to enable Badgers to move through the site.
- Any trenches or deep pits within the development site that are to be left open overnight will be provided with a means of escape should a Badger enter. This could simply be in the form of a roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water.
- Any trenches/pits will be inspected each morning to ensure no Badgers have become trapped overnight. Should a Badger become trapped in a trench it will likely attempt to dig itself into the side of the trench, by forming a temporary sett. Should a trapped Badger be encountered Aspect Ecology should be contacted immediately for further advice.
- The storage of topsoil or other 'soft' building materials on site will be given careful consideration. Badgers will readily adopt such mounds as setts. So as to avoid the adoption of any mounds, these will be kept to a minimum and any essential mounds subject to daily inspections with consideration given to temporarily fencing any such mounds to exclude Badgers.
- The storage of any chemicals on site will be contained in such a way that they cannot be accessed or knocked over by any roaming Badgers.

#### 5.4. Other Mammals

- 5.4.1. No evidence of any other protected, rare or notable mammal species was recorded within the site.

##### Background Records

- 5.4.2. Data obtained from TVERC includes a small number of records of Brown Hare *Lepus lepus*, the nearest of which is located within The Slade nature reserve, immediately adjacent to the southern site boundary, albeit this record dates from 1986.
- 5.4.3. Information obtained from the NBN database<sup>12</sup> also includes a single record of Water Vole *Arvicola amphibius* within the same 10km grid square as the site, albeit this record dates from 1985, and no suitable aquatic habitat (e.g. wet ditches with soft banks suitable for burrowing) is currently present for this species within the site.

##### Evaluation

- 5.4.4. The rank grassland habitats within the site provide some limited potential habitat for common mammals such as Field Vole *Microtus agrestis*,

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<sup>12</sup> Data obtained from the dataset 'Mammal records from Britain from the Atlas of mammals (1993), with some subsequent records' provided by 'Biological Records Centre'.

however the presence of such species is of negligible ecological significance.

## 5.5. Amphibians

### Legislation

5.5.1. All British amphibian species receive a degree of protection under the 1981 Wildlife and Countryside Act (as amended). The level of protection varies from protection from sale or trade only, as is the case with species such as Smooth Newt *Triturus vulgaris* and Common Toad *Bufo bufo*, to the more rigorous protection afforded to species such as the Great Crested Newt *Triturus cristatus*.

5.5.2. Although Great Crested Newts are regularly encountered throughout much of lowland England and Wales, the UK holds a large percentage of the world population of the species. As such, the UK has an international obligation to conserve the species and it receives full protection under domestic and European legislation. Specifically, Great Crested Newt is classified as a European Protected Species and therefore receives protection under the Conservation of Habitats and Species Regulations 2010 (as amended), making it an offence *inter alia* to:

- Deliberately kill, injure or capture a Great Crested Newt;
- Deliberately disturb Great Crested Newts, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to hibernate, or migrate, or which is likely to affect significantly their local distribution or abundance;
- Deliberately take or destroy the eggs of a Great Crested Newt;
- Damage or destroy a breeding site or resting place of a Great Crested Newt.

5.5.3. In addition, the Great Crested Newt is also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) which contains further provisions making it an offence to intentionally or recklessly:

- Damage or destroy, or obstruct access to, any structure or place which any Great Crested Newt uses for shelter or protection; or
- Disturb any Great Crested Newt while occupying a structure or place which it uses for that purpose.

5.5.4. If proposed development work is likely to result in an offence a licence may need to be obtained from Natural England which would be subject to appropriate measures to safeguard Great Crested Newt.

### Background Records

5.5.5. Data obtained from TVERC includes a single record of Great Crested Newt, located approximately 2.1km south of the site, and a small number of records of Common Toad *Bufo bufo*, the nearest of which is located approximately 0.4km SE of the site.

Survey Findings

- 5.5.6. As discussed at section 2.4.9 previously, a number of ponds and ditches have been identified both on-site, and within close proximity (250m) to the site. An initial appraisal of each pond was made using an HSI to identify any potential to support Great Crested Newts, see Table 4, below.

Suitability Indices (SI)	Pond P1 (on-site)	Pond P2 (on-site)	Pond P3 (dry)	Pond P4 (dry)	Pond P5	Ditch D1
SI 1 - Location	1	1	1	1	1	1
SI 2 - Pond Area	0.94	0.84	0.1	0.05	0.05	0.1
SI 3 - Pond Drying	0.9	0.9	0.1	0.1	1	1
SI 4 - Water Quality	0.01	0.01	0.33	0.33	0.67	0.67
SI 5 - Shade	1	0.8	1	1	1	1
SI 6 - Fowl	0.01	0.01	1	1	1	1
SI 7 - Fish	0.67	0.67	1	1	0.67	0.67
SI 8 - Ponds	1	1	1	1	1	1
SI 9 - Terrestrial Habitat	0.67	0.67	0.33	0.33	0.67	1
SI 10 - Macrophytes	0.3	0.3	0.3	0.3	0.8	0.9
<b>HSI Score</b>	0.320	0.310	0.448	0.418	0.643	0.726
<b>Categorisation</b>	<b>Poor</b>	<b>Poor</b>	<b>Poor</b>	<b>Poor</b>	<b>Average</b>	<b>Good</b>

**Table 4:** HSI assessment of ponds on and adjacent to the site

- 5.5.7. In summary, Pond P5 (see Photograph 5) and Ditch D1 (see Photograph 6) were found to be of increased potential to support Great Crested Newts, while Ponds P3 and P4 were found to be dry and have poor habitat suitability for Newts, and the on-site Ponds P1 and P2 were also found to have poor habitat suitability for Newts. Due to the potentially suitable terrestrial habitat within the site and the favourable HSI scores of nearby ponds/ditches, specific Great Crested Newt survey work was undertaken on Pond P5 and Ditch D1 during May to June 2012, the results of which are set out in Table 5 below.
- 5.5.8. No evidence of any protected, rare or notable amphibian species was recorded within the site. In fact, no amphibians of any kind were found during the extensive searching conducted of existing refugia, such as timber, stones and discarded waste within the site, nor under any of the 63 refugia checked on 7 occasions as part of the reptile survey.

Date	Pond	Weather Conditions	Great Crested Newt				Smooth Newt	Palmate Newt	Other amphibians	Fish
			♂	♀	Eggs	Total				
08-May-12	P5	10°C, BF1, light drizzle	2	7	Yes	9	5	0	1 Toad	x
	D1		0	0	No	0	0	0	x	x
14-Jun-12	P5	9°C, BF1, dry	5	7	-	12	3	0	x	x
	D1		0	0	No	0	0	0	x	x
17-Jun-12	P5	10°C, BF0, dry	4	10	-	14	4	0	1 Frog	x
	D1		0	0	No	0	0	0	x	x
21-Jun-12	P5	15°C, BF1, dry	6	8	-	14	3	0	x	x
	D1		0	0	No	0	0	0	x	x
06-Jun-12	P5	12°C, BF1, dry	1	7	-	8	2	0	x	x
	D1		0	0	No	0	0	0	x	x
14-Jun-12	P5	15°C, BF3, dry	0	3	-	3	5	0	x	x
	D1		0	0	No	0	0	0	x	x
<b>Peak Count:</b>			<b>14 (P5)</b>							

**Table 5:** Results of 2012 Great Crested Newt Surveys

5.5.9. In summary, the results confirm that Pond P5 supports a breeding population of Great Crested Newts, as well as a breeding population of Smooth Newts, whereas ditch D1 does not support any Newts.

### Evaluation

5.5.10. Although two ponds are present within the site, these have been assessed as being unsuitable to support Great Crested Newt, primarily due to their poor water quality and lack of emergent or aquatic vegetation. Furthermore, the terrestrial habitats within the site are considered sub-optimal given their relatively poor species diversity, and the intensively managed nature of most of the site, the only exceptions being rank grass / tall ruderal vegetation, log piles and scrub. Overall, the site is therefore considered to be of limited value to Great Crested Newts. However, a pond, in which a peak count of 14 Great Crested Newts (i.e. a 'medium' population) was recorded during the above surveys, lies off-site, beyond Tadmarton Road at the northern site boundary. Given that this pond is isolated from the site by the busy Tadmarton Road, it is considered reasonably unlikely that Great Crested Newt regularly travel between the pond and the site. However the remote possibility remains that the sporadic, errant Great Crested Newt could cross the road and make use of the rank grassland, scrub and hedgerow bases within the site on occasion.

5.5.11. *Likelihood of committing an offence* – Natural England's risk assessment tool<sup>13</sup> for Great Crested Newts indicates that an offence is 'highly likely' to occur if more than 0.5ha of land within 100m of a breeding pond is to be lost to development. However, the risk assessment tool emphasises that it 'has been developed as a general guide only', and 'it is not a substitute for a site-specific risk assessment informed by a survey'. A more site-specific risk assessment is therefore set out below.

<sup>13</sup> WML-A14-2. Instructions for completion of Method Statement template. Application tools: (1) "Do I need a licence?" - rapid risk assessment. March 2011

5.5.12. The risk assessment tool states that for a site-specific risk assessment the following factors, which are likely to have an important role in determining whether an offence would occur, should be considered:

- **Population Size** (a large population size indicates increased risk)  
- Specific surveys of the adjacent off-site pond identified a medium sized Great Crested Newt population to be present (a peak count of 14 during surveys). In consideration that this constitutes a relatively small population of Newts (a medium population is defined as between 11 and 100 peak count), and the pond they were found in is small in size and relatively isolated from other suitable ponds, it is considered unlikely that the carrying capacity of the pond would support a much larger population in the future.
- **Pond Density** (a high density indicates increased risk)  
– Several further ponds are present in the local area, however these are located north of the off-site pond surveyed, and therefore away from the potential development site. As such, the site is unlikely to form part of a dispersal route to these ponds. In consideration that only three ponds lie within 500m of the site, the site is not situated in an area of high pond density.
- **Terrestrial Habitat** (good terrestrial habitat indicates increased risk)  
- As stated above, the terrestrial habitats within the site are considered overall to be sub-optimal to Great Crested Newts, being dominated by arable and heavily grazed pasture, which affords negligible opportunities to Great Crested Newts.
- **Pre-existing Fragmentation** (pre-existing fragmentation indicates increased risk) – The landscape surrounding the site is predominantly un-fragmented, such that no significant barriers exist to prevent the movement and migration of Great Crested Newts.
- **Pre-existing Dispersal Barriers** – Tadmarton Road, which bounds the site to the north, provides a pre-existing dispersal barrier to Great Crested Newts. Accordingly, any important dispersal routes for Great Crested Newts would likely lead to the north of the pond, i.e. away from the site, thereby decreasing the risk of an offence occurring.
- **Development Footprint** (a large development footprint indicates increased risk) – Where the development footprint encroaches the core area (within 50m) of the pond, the only terrestrial habitat being lost is restricted to habitat (grazed species-poor pasture, and a small stretch of hedgerow) of relatively low value to Great Crested Newts.
- **Construction Period** (a longer period indicates increased risk)  
– In consideration that the construction works are limited to the development footprint, the majority of which is of low value to Great Crested Newts, and considering that any important dispersal corridors likely lead away from the site, the construction period is considered unlikely to have a significant bearing on the impact of the development on this species in this case.

- 5.5.13. The above site-specific risk assessment demonstrates that overall the development poses a very low risk to Great Crested Newts. This assessment is indirectly supported by the findings of the reptile survey (see section 5.6), during which no Great Crested Newts were recorded using the refugia. At the most, it is considered possible, albeit unlikely, that wandering Great Crested Newts could be encountered within features such as hedgerow bases as an occasional / chance event. However, it is considered that the site is unlikely to form an essential component of the species' breeding, hibernating or dispersal habitat in a local or national context, and that the probability of an offence occurring within the core breeding and resting area of the medium population of Great Crested Newts in pond P5 is very low. Accordingly, having due regard to European guidance<sup>14</sup> it is considered that any features within the site that may be subject to sporadic occasional use by Great Crested Newts, e.g. hedgerow bases, would not constitute 'resting places' (and would certainly not be considered 'breeding sites') and therefore the risk of an offence being triggered by the proposals is also very low, albeit reasonable avoidance measures will be implemented to minimise the risk to individual Newts, as set out below (see section 5.5.17).
- 5.5.14. Overall, the effect on the population is expected to be negligible, such that the proposals will have little or no tangible adverse impact on the viability of the Great Crested Newt population. On the contrary, the creation of open space within the proposals, including new wetland features, hibernacula and suitable terrestrial habitat, will likely improve opportunities for Great Crested Newt within the site. In conclusion, on balance, the proposals are considered reasonably unlikely to adversely affect Great Crested Newts. An extensive exercise involving trapping and translocation in these circumstances is therefore of questionable conservation value.
- 5.5.15. *Need for a Licence* - Guidance on the need to obtain a licence for works that may affect European Protected Species, such as Great Crested Newt, is set out within Natural England's note WML-G12<sup>15</sup> and states "*Natural England advocates the use of good practice and avoidance measures to minimise the impact of a proposed activity on European Protected Species and notes that licensing should be seen as the last resort where all other alternative ways of avoiding impacts on the species have been discounted.*"
- 5.5.16. Therefore, based on the above assessment of the likely effects of the proposed works and the legislation/guidance concerning Great Crested Newt, an appropriate approach would be to undertake Reasonable Avoidance Measures to minimise any impact on Great Crested Newts, thereby undertaking works carefully without a requirement for licensing.
- 5.5.17. *Reasonable Avoidance Measures* –The following key avoidance measures will be implemented:
- **Habitat Manipulation.** Areas of rank grassland to be lost to the development will be strimmed towards the new open space in a 2-stage process. Following a fingertip search by a suitably qualified

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<sup>14</sup> Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC (February 2007)

<sup>15</sup> WML-G12 - European Protected Species: Mitigation Licensing – How to get a licence. Natural England. January 2012

professional, licensed ecologist to ensure that no Newts are present, the first strimming phase will cut the vegetation to ~100mm above ground level. The second strimming phase will be undertaken no less than 1 hour after completion of the first phase, and will follow a second finger-tip search of the area by the ecologist before the vegetation is cut to ground level. The new open space will be prepared in advance either through the sowing of a native meadow mixture, or the relaxation of management to allow a taller grassland sward to develop, or a combination of the two.

- **Finger-tip Search.** Under the current proposals, a small section of hedgerow adjacent to Tadmarton Road will be removed to facilitate the development. This stretch of hedgerow lies within 50m of the off-site pond supporting Great Crested Newts, and accordingly, the removal of this vegetation will be supervised by a suitably qualified ecologist, following a finger-tip search of the ground flora and hedgerow base. The ecologist will also examine any suitable features such as log/rock piles within this area. These can then be carefully dismantled by hand under the ecologist's supervision and removed from the area.
- **Timing.** Timing of the habitat manipulation and finger-tip search will be guided by prevailing weather conditions but generally the habitat manipulation and finger-tip search will be undertaken between February to November, i.e. avoiding the sensitive hibernation season.
- **Ecological Supervision.** All parts of the habitat strimming works will be supervised by a suitably qualified professional, licensed ecologist. Any landscaping undertaken at the site boundaries, involving existing hedgerows, will also be undertaken under the supervision of a suitably qualified professional, licensed ecologist.
- **GCN Encounter.** In the unlikely event that small numbers of Great Crested Newt are encountered during the habitat manipulation exercise, these will be carefully relocated to undisturbed areas within the proposed area of open space. Should larger numbers of Great Crested Newts be encountered, works will stop immediately, the mitigation strategy will be reviewed and amended accordingly, and a licence will be sought from Natural England, if deemed necessary by the consulting ecologist.
- **Lighting.** Care will be taken when positioning any lighting close to the north-eastern corner of the southern section of the site, so as not to illuminate the off-site pond and surrounding terrestrial habitat, in order to minimise any disruption of use of these habitats by Great Crested Newts.

## 5.6. Reptiles

### Legislation

- 5.6.1. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). However, a higher level of protection is afforded to Sand Lizard *Lacerta agilis* and Smooth Snake

*Coronella austriaca* than to Adder *Vipera berus*, Grass Snake *Natrix natrix*, Slow-worm *Anguis fragilis* and Common Lizard *Lacerta vivipara*.

5.6.2. For all British reptile species, Section 9 of the Wildlife and Countryside Act 1981 (as amended) contains provisions making it an offence to intentionally:

- Kill or injure; or to
- Sell, offer for sale or trade any British reptile.

5.6.3. Because Slow-worm, Common Lizard, Grass Snake and Adder are relatively widespread British species, their habitat is not directly protected. Nevertheless, because of their partial protection, disturbing or destroying their habitat whilst they are present may lead to an offence.

Survey findings

5.6.4. A specific survey to establish presence/ absence was undertaken in May and June 2012, the results of which are presented in the table below.

Survey Visit	Date	Weather Conditions	Common Lizard			Slow-worm			Grass Snake			Other reptiles
			Adult	Juv	Total	Adult	Juv	Total	Adult	Juv	Total	
1	30/05/2012	25% cloud cover, sunny, warm and calm. Dry. 19°C	3	1	4	0	0	0	0	0	0	0
2	07/06/2012	Overcast, cool with slight breeze. Dry. 14°C	3	0	3	0	0	0	0	0	0	0
3	08/06/2012	80% cloud cover, cool with fresh breeze. Dry. 14°C	6	2	8	0	0	0	0	0	0	0
4	12/06/2012	80% cloud cover, cool with fresh breeze. Dry. 12°C	4	0	4	0	0	0	0	0	0	0
5	18/06/2012	70% cloud cover, cool with slight breeze. Dry. 12°C	4	1	5	0	0	0	0	0	0	0
6	20/06/2012	60% cloud cover, sunny, warm with slight breeze. Dry. 22°C	2	0	2	0	0	0	0	0	0	0
7	24/06/2012	40% cloud cover, sunny, warm with slight breeze. Dry. 22°C	4	0	3	0	0	0	0	0	0	0

**Table 6:** Results of 2012 reptile Surveys

5.6.5. In summary, only Common Lizard have been recorded at the site, with a peak count of 6 adults recorded at the site on the 8<sup>th</sup> June 2012. No other reptiles have been recorded at the site.



### Background Records

- 5.6.6. Information obtained by the datasearch exercise included a small number of records of Grass Snake *Natrix natrix* within the vicinity of the site, the nearest of which is located within The Slade nature reserve, immediately beyond the southern site boundary.

### Evaluation

- 5.6.7. The results of the recent survey work indicate that a low population of only a single common reptiles species, namely Common Lizard, resides within the site, such that the site is not considered to be a key/important site for reptiles<sup>16</sup>.
- 5.6.8. A review of the current proposals shows that several incursions of suitable reptile habitat at the site will be necessary to facilitate development. These incursions are considered unlikely to adversely affect the local population status of common reptiles, particularly as, in the long-term, the open space planned within the development will increase the suitability of the site for reptiles (see section 5.9).
- 5.6.9. In consideration of the small size of the Common Lizard population recorded at the site, the likelihood of encountering reptiles whilst undertaking works within areas of suitable habitat is low, and therefore a full translocation exercise is deemed unnecessary. Nonetheless, the Reasonable Avoidance Measures which will be undertaken at the site (see section 5.5.17) for Great Crested Newts, in particular the phased strimming / habitat manipulation exercise and fingertip searching, will equally serve to protect the small number of reptiles at the site. Any reptiles encountered will be carefully relocated, by the supervising ecologist, to suitable habitat within the proposed area of open space, which will have been prepared in advance.
- 5.6.10. With the implementation of the measures set out at section 5.5.17 of this report it is considered that there will be no net loss of local reptile conservation status.

## 5.7. **Birds**

### Legislation

- 5.7.1. Section 1 of the Wildlife & Countryside Act 1981 (as amended) is concerned with the protection of wild birds. With certain exceptions, all wild birds are protected such that it is an offence to intentionally:
- Kill, injure or take any wild bird;
  - Take, damage or destroy the nest of any wild bird whilst in use\* or being built;
  - Take or destroy an egg of any wild bird.

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<sup>16</sup> Froglife Advice Sheet 10: Reptile Survey – An introduction to planning, conducting and interpreting surveys for snake and lizard conservation.

- \* The nests of birds that re-use their nests as listed under Schedule ZA1, e.g. Golden Eagle, are protected against taking, damage or destruction irrespective of whether they are in use or not.

5.7.2. Species listed under Schedule 1 of the Act receive greater protection such that they are also protected against intentional or reckless disturbance whilst building a nest or whilst they are in, on or near a nest containing eggs or young. The dependent young of Schedule 1 birds are also protected against intentional or reckless disturbance. Offences in respect of Schedule 1 species are subject to special, i.e. greater, penalties.

5.7.3. **Conservation Status.** The RSPB categorise British bird species in terms of conservation importance based on a number of criteria including the level of threat to a species' population status<sup>17</sup>. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline ( $\geq 50\%$  over the past 25 years).

#### Potential use of site

5.7.4. During the survey Pheasant *Phasianus colchicus* was flushed from scrub, and Wood Pigeon *Columba palumbus* from trees, whilst Blackcap *Sylvia atricapilla*, Robin *Erithacus rubecula*, Starling *Sturnus vulgaris*, Greenfinch *Carduelis chloris*, Chaffinch *Fringilla coelebs*, Blue Tit *Cyanistes caeruleus*, Goldfinch *Carduelis carduelis* and Dunnock *Prunella modularis* were all identified, either through site or sound, to be present at the site. Carrion Crow *Corvus corone* was also observed flying over the site.

5.7.5. None of the birds recorded on or immediately adjacent to the site are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), although Starling is listed as an RSPB Red list species due to a decline of at least 50% over the last 25 years.

#### Background Records

5.7.6. The datasearch exercise returned a number of records of protected, rare and notable bird species, none of which originate from within the site or land immediately adjacent to the site.

#### Evaluation and Recommendations

5.7.7. The trees, scrub and hedgerows at the site offer some limited potential nesting and foraging habitat for common birds. Although a small stretch of hedgerow, a tree and some scrub will be lost to the development, the majority of suitable habitat is to be retained under the proposals. Furthermore, additional tree and shrub planting incorporating native berry-producing species, along with the erection of new nest boxes (see section 5.9) will enhance the breeding opportunities for common birds within the site.

5.7.8. Within the site, it is recommended that any clearance of potential nesting habitat be undertaken outside of the nesting season (i.e. outside March to August inclusive). Should this not be possible, it is recommended that an

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<sup>17</sup> RSPB "The population status of birds in the UK - *Birds of Conservation Concern: 2009*"

ecologist first checks any suitable habitat to be cleared in order to determine the location of any nests before removal. Any nests identified should be cordoned off and protected until the end of the nesting season or until the nests are no longer active.

## 5.8. Invertebrates

### Potential use of site and Evaluation

- 5.8.1. The invertebrates recorded during site surveys include Seven-spotted Ladybird *Coccinella 7-punctata*, Red-tailed Bumblebee *Bombus lapidarius* and Speckled Wood *Pararge aegeria*, all of which are common and widespread species. Although no Stag Beetles were recorded at the site, due to the presence of logpiles and decaying wood within some of the boundary hedgerows, there is potential for this species to be present.

### Background Records

- 5.8.2. No specific records of invertebrates were returned from within or immediately adjacent to the site by the datasearch exercise.

### Recommendation

- 5.8.3. Any logpiles that will need to be deconstructed to facilitate the development will be done by hand and reconstructed at a suitable alternative location within the site. Any Stag Beetles encountered during these works will be gently moved to an alternative location within the site which will not be disturbed by the construction works. Any logpiles identified will be retained at the site post-construction for the use of Stag Beetles and other saproxylic flora and fauna.

## 5.9. Enhancements

- 5.9.1. National Planning Policy requires developments to maximise the opportunities for biodiversity by building in enhancement measures. The proposals present the opportunity to deliver ecological enhancements at the site for the benefit of local biodiversity, thereby making a positive contribution towards the broad objectives of the national and local Biodiversity Action Plan (BAP).

- 5.9.2. Given the types of habitats and ecological features within and adjacent to the site, the following enhancements would be appropriate in the local context, taking account of the National and Local Biodiversity Action Plan (BAP):

### Vegetation Enhancements

- 5.9.3. **Tree, Hedgerow and Shrub Planting.** New tree, hedgerow and shrub planting will incorporate native berry or nut producing species of local occurrence, including species such as Hazel *Corylus avellana*, Wild Cherry *Prunus avium*, Hawthorn *Crataegus monogyna*, Blackthorn *Prunus spinosa* and Rowan *Sorbus aucuparia*.
- 5.9.4. **Wildflower Grassland.** New wildflower grassland will be sown onto part of the land currently occupied by an arable field within the south of the site.

The wildflower grassland will provide a sharp contrast to the intensively managed nearby off-site habitats, such as pasture and amenity grassland, in terms of species diversity and sward height. The wildflower grassland will be established using an appropriate wildflower seed mixture such as Emorsgate's `Special General Purpose Meadow Mixture` type EM3.

- 5.9.5. Management of the grassland will be undertaken on a rotational basis, creating a varied sward structure and diversity of micro-climatic conditions that will benefit invertebrates, for example. Reptiles and amphibians will also likely benefit from the range in sward height, providing areas for basking and shelter, and also from an increase in foraging potential due to the increase in invertebrate diversity/biomass.
- 5.9.6. **SUDS.** A number of wetland features including a swale and two ponds will be created within the area of proposed open space within the south of the site. Any features likely to support water only ephemeraly, will be sown with a suitable wet wildflower grassland seed mix (no less than 24 species) such as Emorsgate's `Meadow Mixture for Wetland` type EM8. These will provide an ephemeral aquatic habitat attractive to amphibians and reptiles, although no doubt invertebrates, birds and mammals will also benefit from the increase in aquatic habitat within the site. Any more permanent pond features will be created, where practicable, following these key ecological principles:
- Sinuuous/shallow Margins. The most wildlife-rich areas of a pond are the shallows, where water depth is less than 10cm. Therefore a wide draw-down zone will be created using very shallowly-sloping margins where possible, and a maximum depth at the centre of the pond of less than a metre. Use of sinuous, irregular margins will maximise the ecologically valuable edge habitat.
  - Lining the Pond. Given that the proposed use of the ponds are as part of SUDS, it may be possible to create ponds without using a liner. If lining the pond proves necessary, then clay liners (e.g. Bentomat/Rawmat) can be used, with a layer of clean sand/gravel or subsoil on top (not topsoil/compost). It is envisaged that the ponds will fill naturally with rainwater over the winter.
  - Natural Colonisation. The ponds should be allowed to colonise naturally, allowing a suite of locally native species to develop into a balanced plant community; planting up would put the pond at risk of becoming dominated by a few vigorous planted species, and at risk of accidental introduction of invasive non-native species. Furthermore, the initial habitat of bare wet mud is a valuable habitat in its own right.
- 5.9.7. **Management.** It is recommended that all new and existing habitat on site be subject to ongoing management according to ecological principles to maximise the value of these habitats to wildlife. Such an approach will involve minimised use of pesticides, vegetation removal/pruning works to take place outside of the nesting bird season, and a relaxed mowing regime, where possible.

### Faunal Enhancements

- 5.9.8. **Bat Boxes.** A range of bat boxes (see Appendix 4 for specifications) will be incorporated on a proportion of suitable buildings within the development, subject to architectural design. The bat boxes themselves will be installed as high up as possible, facing either a southerly, south-easterly, or south-westerly direction so that they gain exposure to the sun for at least part of the day.
- 5.9.9. The provision of bat boxes will provide new roosting opportunities for bats in the area, including Pipistrelle bats *Pipistrellus* sp. which are Oxfordshire's BAP species.
- 5.9.10. **Bird Boxes.** A range of bird boxes (see Appendix 5 for specifications) will be incorporated on a proportion of suitable buildings within the development, subject to architectural design, thereby providing new nesting opportunities for birds within the site. In particular, the provision of Sparrow Terraces will provide new nesting opportunities for birds such as House Sparrow *Passer domesticus*, which is listed as an RSPB Red list species due to a decline of at least 50% over the last 25 years. The exact locations of the bird boxes will be determined by the supervising ecologist at the time of installation.
- 5.9.11. **Lighting.** So as to maximise the benefits of the above recommendations for bats and birds, it is recommended that care is taken in the placement of external lighting to ensure that no lights are placed near the entrance/exit points of new potential roost / nest sites, and that low spill lighting is employed wherever possible, particularly at the northern, and southern boundaries. Furthermore, lighting situated adjacent to the site boundaries should be kept to a minimum so as not to disrupt the potential function of hedgerows as a wildlife refuge/corridor for bats and other fauna.

## 6. SUMMARY AND CONCLUSIONS

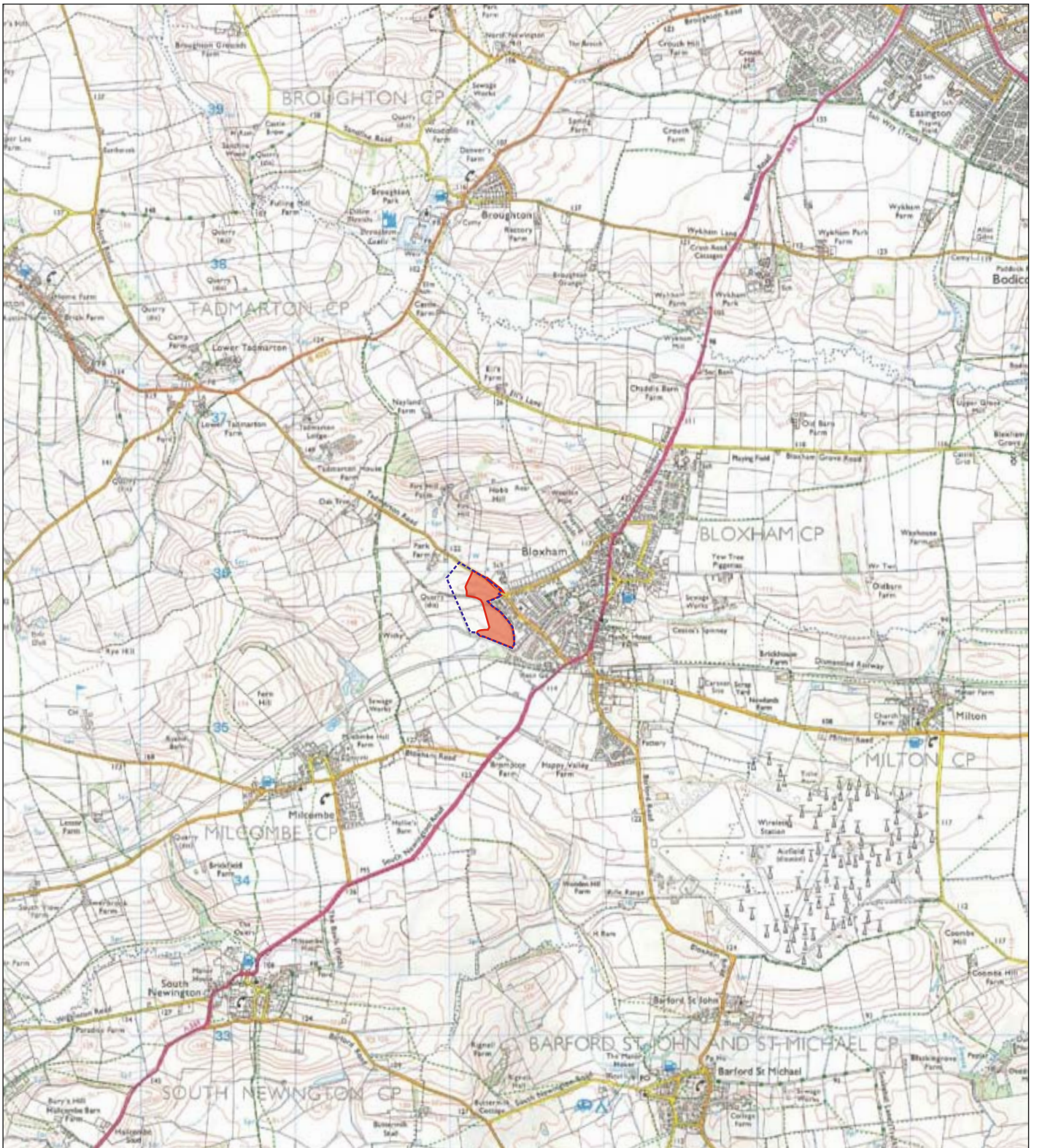
- 6.1. Aspect Ecology was commissioned by Miller Homes Ltd in April 2012 to undertake an ecological assessment in respect of land at Tadmarton Road, Bloxham.
- 6.2. A wider study area incorporating the current site was surveyed in April 2012 based on extended Phase 1 methodology as recommended by Natural England. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats, Badger, Great Crested Newt and reptiles.
- 6.3. **Ecological Designations.** The site itself is not subject to any statutory or non-statutory nature conservation designation. The nearest statutory designation is Hook Norton Cutting and Banks SSSI, located approximately 7km south-west of the site, whilst the nearest non-statutory designation is Barford Marsh LWS, located approximately 1.8km south of the site. These and all other ecological designations in the local area are well separated from the site and will therefore be unaffected by the proposals.
- 6.4. The Slade Nature Reserve; an un-designated site of ecological interest, which abuts the southern site boundary; will also remain unaffected by the proposals, subject to the recommendations outlined within section 3 of this report.
- 6.5. **Habitats.** The habitats at the site include arable, improved pasture, rank grassland/tall ruderal vegetation, hedgerows, trees, scrub, ponds and bare ground, and have been assessed to be of low to negligible ecological value at the local level, the loss of which (where relevant) is of minor ecological significance. In any event, the habitats of greatest relative ecological value, namely the hedgerows and trees will largely be retained within the development, and enhanced under the proposals. The off-site woodland habitat will be buffered from the development by retained and new, sensitively managed, open space.
- 6.6. **Protected Species.** The habitats at the site provide limited opportunities for bats, Badger, Great Crested Newts, and common birds, and therefore appropriate measures will be undertaken to safeguard these species at the site. The site also supports a low population of Common Lizard, and accordingly suitable measures will be employed to safeguard this species such that the local conservation status of this population is maintained.
- 6.7. **Conclusion.** In conclusion, based on the evidence obtained from detailed ecological survey work and with the implementation of the recommendations set out in this report, there is no reason to suggest that any ecological designations, habitats of nature conservation interest or any protected species will be significantly harmed by the proposals.

## PLANS



**PLAN 1170/ECO1**

Site Location





**KEY:**

-  SITE LOCATION
-  STUDY AREA



Aspect Ecology Limited - West Court - Hardwick Business Park  
 Noral Way - Banbury - Oxfordshire - OX16 2AF  
 01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com

**TADMARTON ROAD,  
 BLOXHAM** PROJECT

**SITE LOCATION** TITLE

1170/ECO1 DRAWING NO.

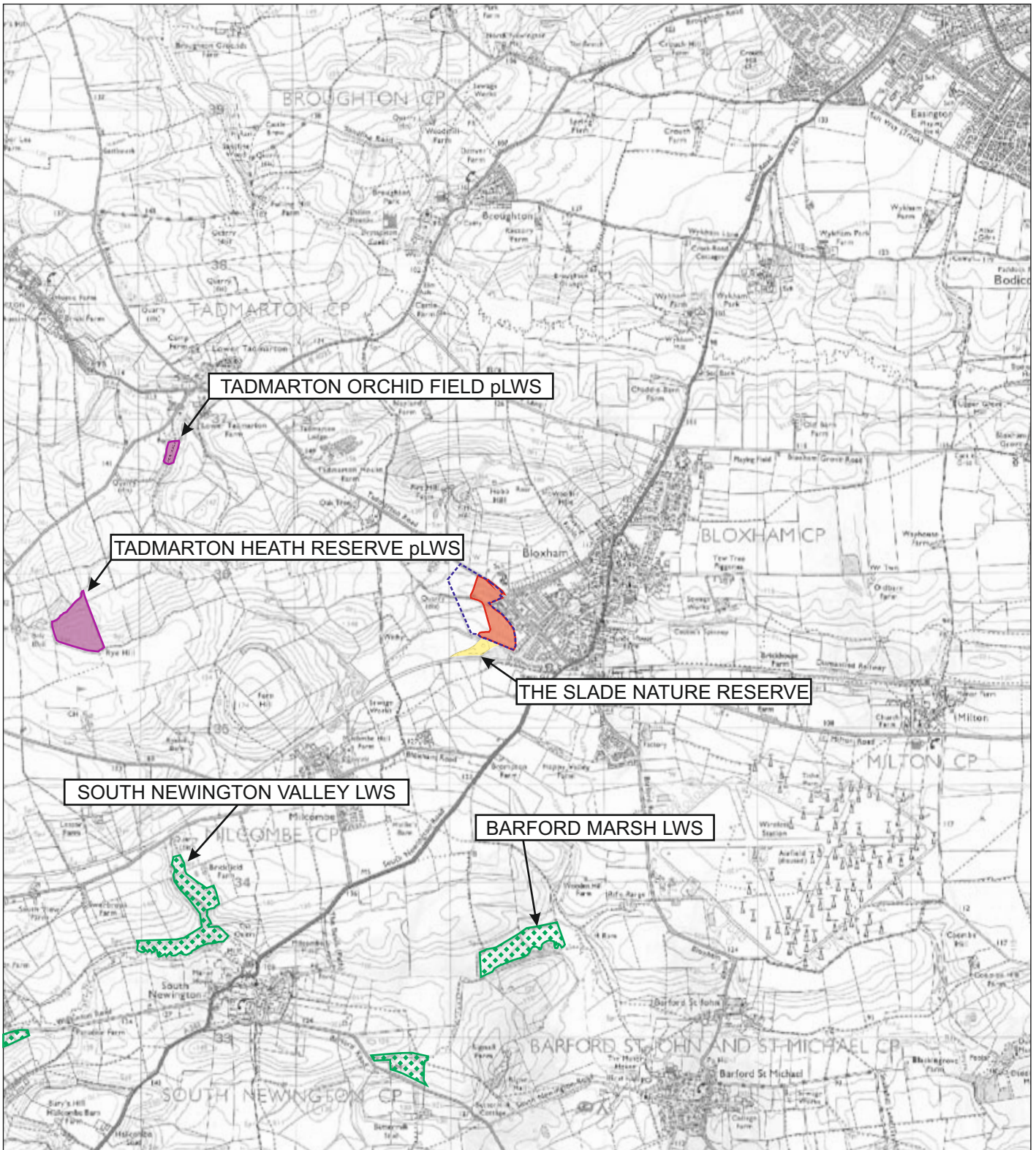
REV.

MARCH 2013 DATE



**PLAN 1170/ECO2**

Ecological Designations



**KEY:**

- SITE LOCATION
- STUDY AREA
- LOCAL WILDLIFE SITE (LWS)
- PROPOSED LOCAL WILDLIFE SITE (pLWS)
- THE SLADE NATURE RESERVE



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**TADMARTON ROAD,  
 BLOXHAM**  
 ECOLOGICAL DESIGNATIONS

PROJECT

TITLE

1170/ECO2

DRAWING NO.

REV.

MARCH 2013




















DATE



**PLAN 1170/ECO3**

Habitats, Ecological Features and Photographs



- KEY:**
-  SITE BOUNDARY
  -  STUDY AREA
  -  IMPROVED PASTURE
  -  ARABLE
  -  TALL RUDERAL VEGETATION
  -  RANK GRASSLAND
  -  TALL RUDERAL/RANK GRASSLAND
  -  BARE GROUND
  -  SCRUB
  -  TREE
  -  TREE WITH LOW / MODERATE POTENTIAL (2b) TO SUPPORT ROOSTING BATS
  -  HEDGEROW
  -  POND
  -  GATE
  -  BADGER LATRINE
  -  DRY / WET DITCH
  -  WOOD PILE
  -  MANURE PILE
  -  PHOTOGRAPH LOCATION

TADMARTON ROAD,  
BLOXHAM PROJECT

HABITATS, ECOLOGICAL  
FEATURES & PHOTOGRAPHS TITLE

1170/ECO3 DRAWING NO.

MARCH 2013 REV. DATE

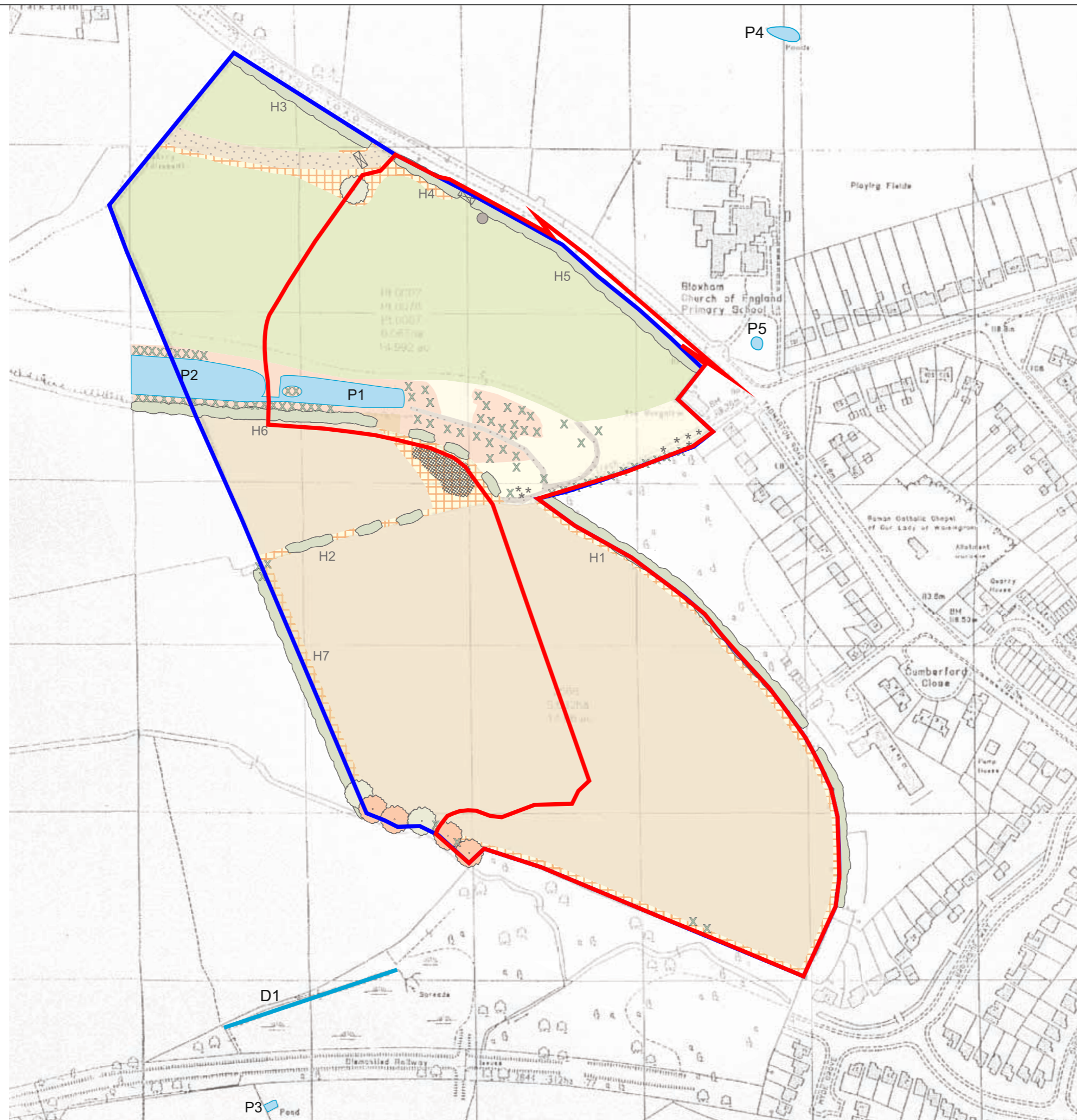





















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**PLAN 1170/ECO4**

Pond Locations



- KEY:**
-  SITE BOUNDARY
  -  STUDY AREA
  -  POND
  -  IMPROVED PASTURE
  -  ARABLE
  -  TALL RUDERAL VEGETATION
  -  RANK GRASSLAND
  -  TALL RUDERAL/RANK GRASSLAND
  -  BARE GROUND
  -  SCRUB
  -  TREE
  -  TREE WITH LOW / MODERATE POTENTIAL (2b) TO SUPPORT ROOSTING BATS
  -  HEDGEROW
  -  GATE
  -  BADGER LATRINE
  -  DRY / WET DITCH
  -  WOOD PILE
  -  MANURE PILE
  -  PHOTOGRAPH LOCATION

TADMARTON ROAD,  
BLOXHAM

PROJECT

POND LOCATIONS.

TITLE

1170/ECO4

DRAWING NO.

MARCH 2013

REV.  
DATE



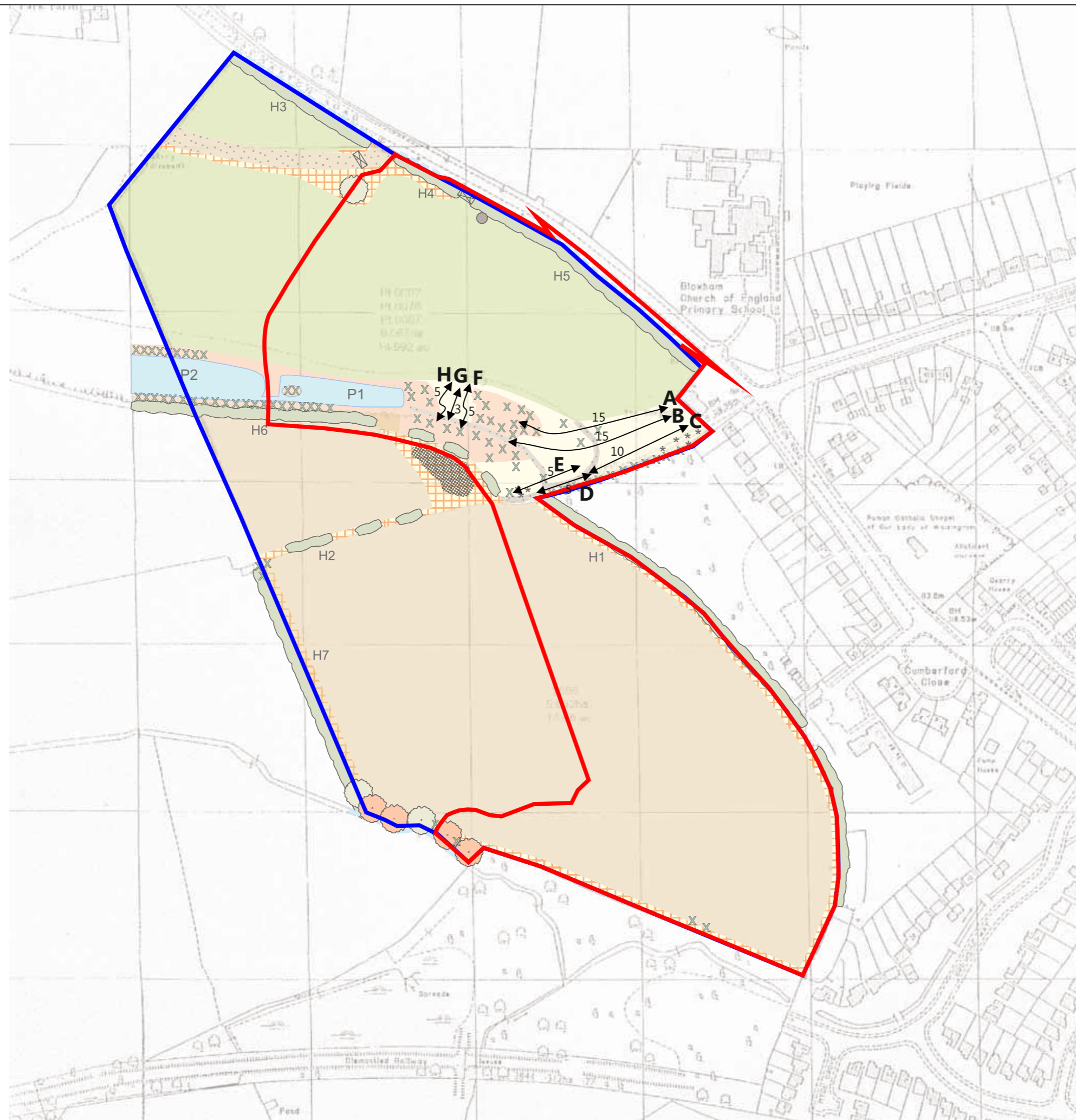
Aspect Ecology Limited - West Court - Hardwick Business Park  
Noral Way - Banbury - Oxfordshire - OX16 2AF  
01295 276066 - info@aspect-ecology.com - www.aspect-ecology.com







**PLAN 1170/ECO5**

Reptile Refugia Locations





- KEY:**
-  SITE BOUNDARY
  -  STUDY AREA
  -  TRANSECT
  -  QUANTITY OF REFUGIA

**TADMARTON ROAD,  
BLOXHAM** PROJECT

**REPTILE REFUGIA  
LOCATIONS** TITLE

1170/ECO5 DRAWING NO.



MARCH 2013 DATE

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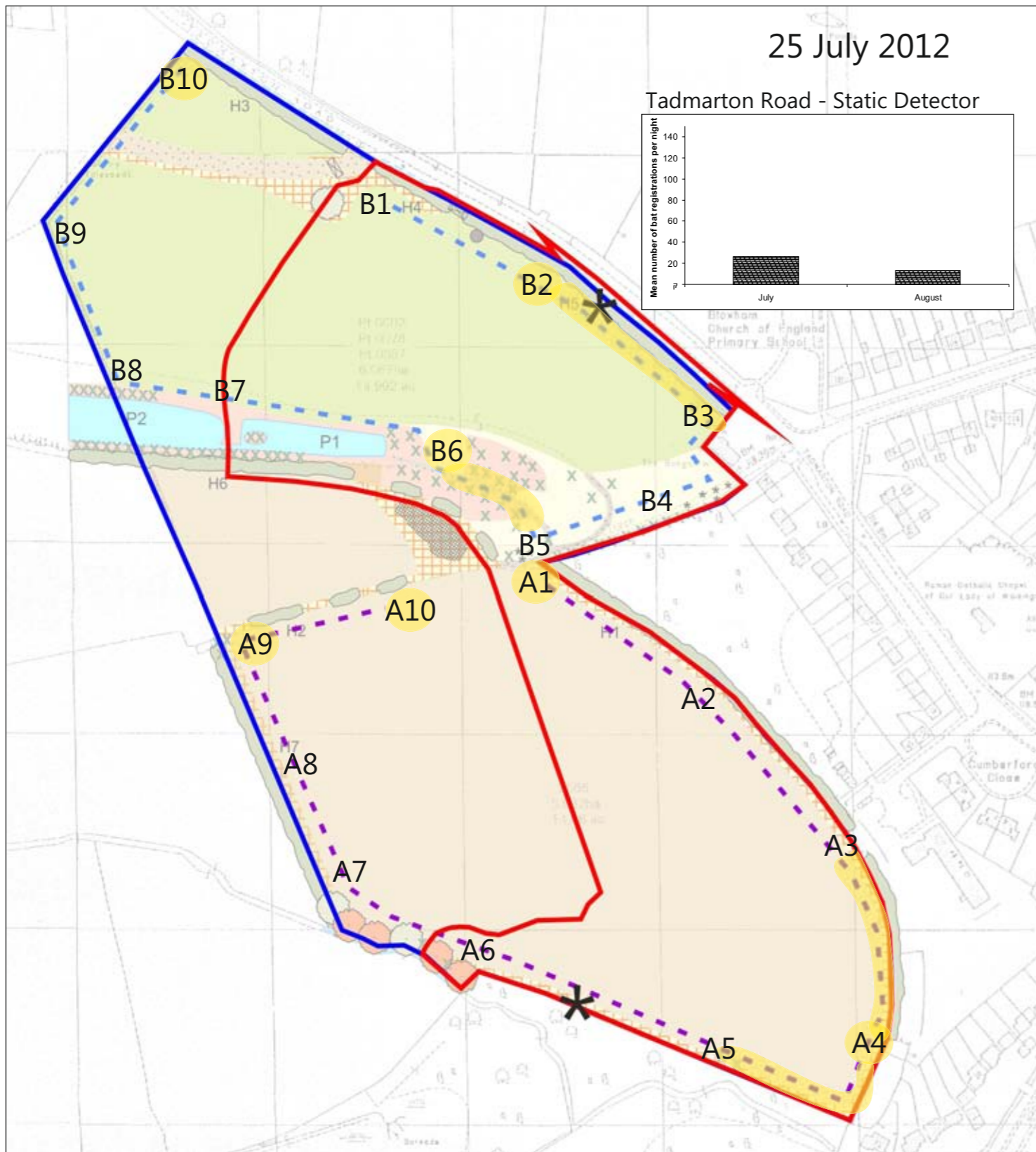
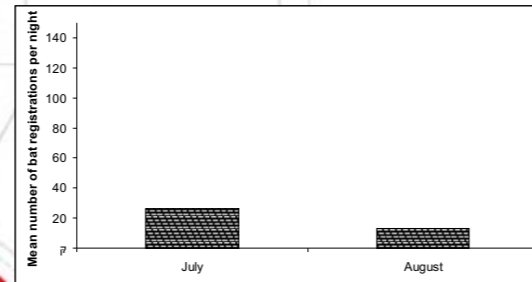


**PLAN 1170/ECO6**

Bat Activity Survey Results

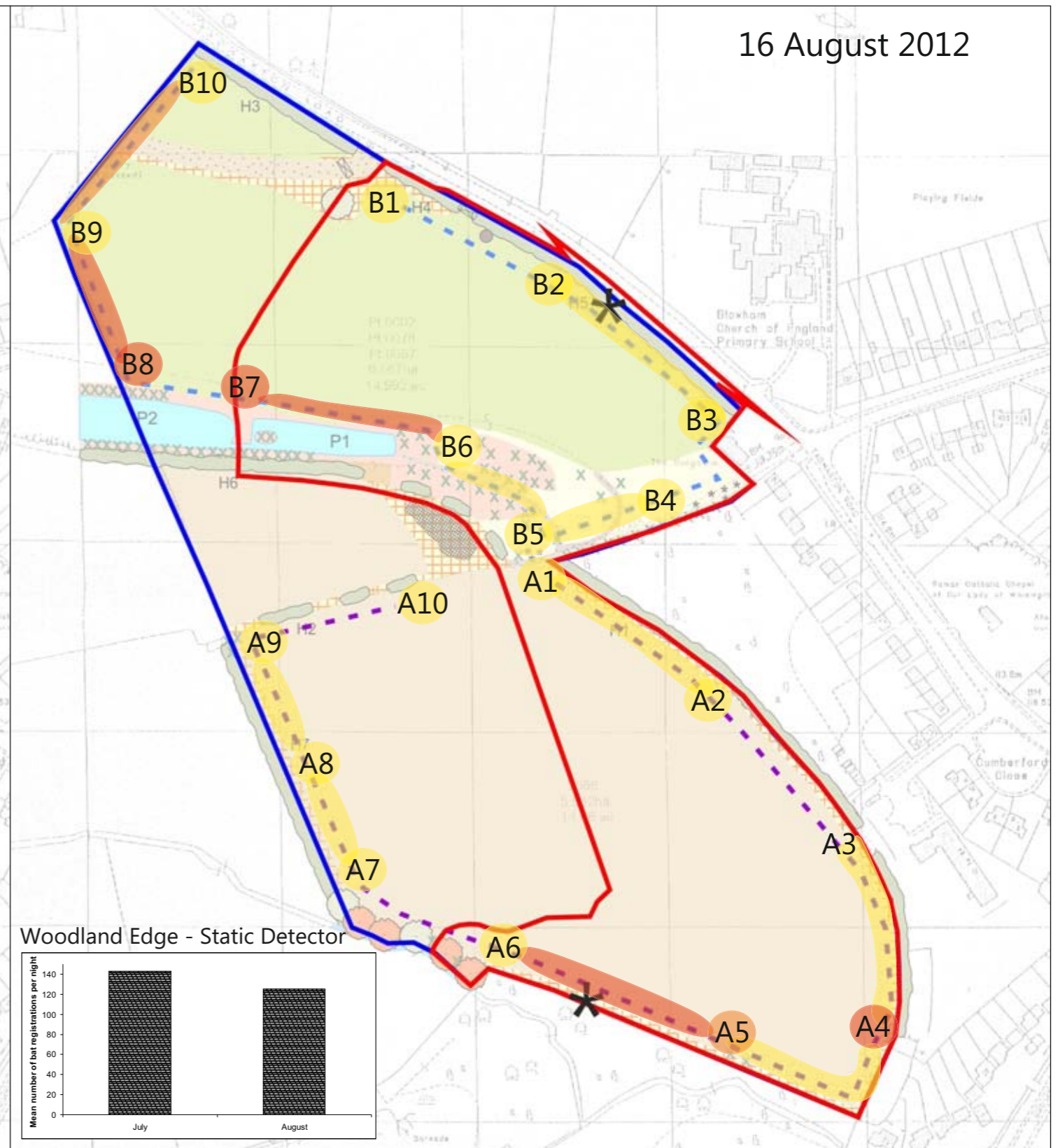
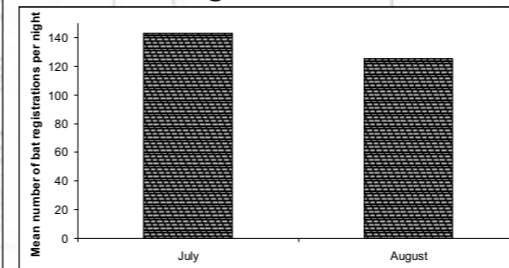
25 July 2012

Tadmarton Road - Static Detector



16 August 2012

Woodland Edge - Static Detector



KEY:

- SITE BOUNDARY
- STUDY AREA
- WALKED TRANSECT ROUTE & LISTENING POINTS
- STATIC DETECTOR LOCATION
- HIGH LEVEL OF BAT ACTIVITY (>10 REGISTRATIONS)
- MODERATE LEVEL OF BAT ACTIVITY (5-10 REGISTRATIONS)
- LOW LEVEL OF BAT ACTIVITY (<5 REGISTRATIONS)

**aspect ecology**

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TADMARTON ROAD, BLOXHAM PROJECT  
BAT ACTIVITY SURVEY RESULTS TITLE



1170ECO6 DRAWING NO.  
- REV.  
MARCH 2013 DATE

## **APPENDICES**

## **APPENDIX 1**

Indicative Proposals Plan



LEGEND

- Site Boundary
- Existing Trees and Vegetation
- Proposed Landscaping



F	18.03.13	TB	Amended footpath adjacent to school car park.
E	18.03.13	TB	Amended boundary of community parkland.
D	13.03.13	SM	Addition of pump station and ditch. Woodland buffer to western boundary added.
C	07.03.13	SEM	Proposed car park increased from 17 spaces to 29 spaces
B	20.12.12	SE	Text amendment.
A	07.11.12	SE	Western boundary extended to accommodate additional landscaping. Minor amendment to south-west house.

Revision Date By Description

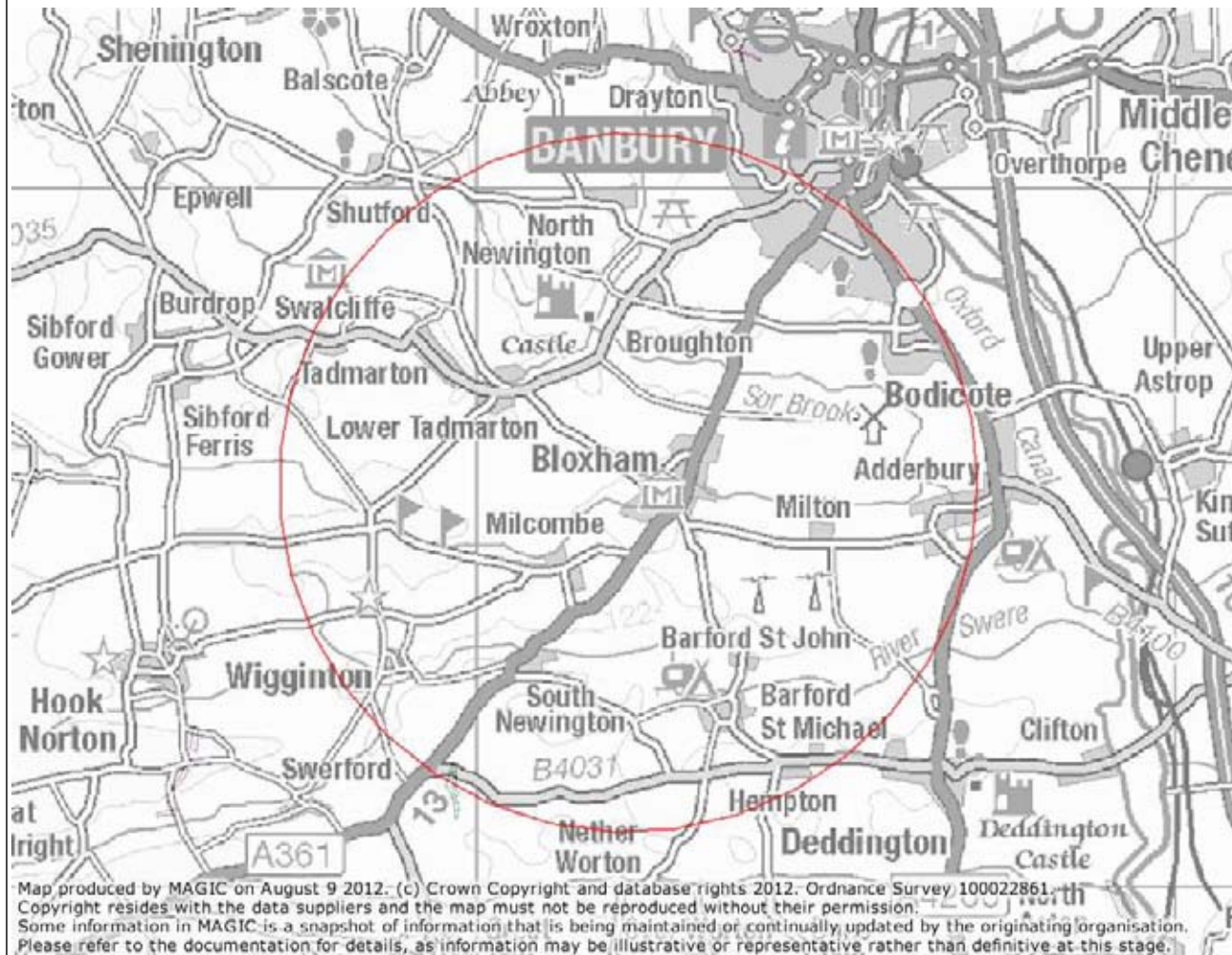
	Dixes Bams, High Street, Ashwell, Hertfordshire, SG7 9AT t: 01462 743647 f: 01462 743648 e: ashwell@csaenvironmental.co.uk	
	Project Tadmarton Road, Bloxham	
Title Indicative Masterplan (DRAFT)		
Client Miller Strategic Land		
Scale @ Size	1:1000@ A1	Drawn SE
Date	October 2012	Checked RR
Drawing Number	CSA/1985/108	Revision F

## **APPENDIX 2**

Information obtained from Multi-Agency Geographic Information for the Countryside (MAGIC) and Nature on the Map (Natural England) online databases




## ECO1170





**Ancient Woodland (England)**


 Ancient & Semi-Natural


 Ancient Replanted

 Local Nature Reserves (England)


 National Nature Reserves (England)

 Ramsar Sites (England)

 Special Protection Areas (England)

 Special Areas of Conservation (England)

 Sites of Special Scientific Interest Units (England)

 Sites of Special Scientific Interest (England)



## Site Check Report

Report generated on August 3 2012.

### You clicked on the point:

Grid Ref: **SP 418 357**

Full Grid Ref: **441841 , 235782**

The following features have been found within 5,000 metres of your search point:

### Counties, Metropolitan Districts and Unitary Authorities (GB)

Name	Geographic Level
OXFORDSHIRE	COUNTY

### NUTS1 - Government Office Regions (GB)

Name	Reference	Hotlink
SOUTH EAST	UKJ	<a href="http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/european/south-east/index.html">http://www.ons.gov.uk/ons/guide-method/geography/beginner-s-guide/european/south-east/index.html</a>

### Ancient Woodland (England)

Grid Reference	Wood Name	Theme ID	Theme Name
sp396315		1412306	ANCIENT & SEMI-NATURAL WOODLAND

### Local Nature Reserves (England)

There are no features within your search area.

### National Nature Reserves (England)

There are no features within your search area.

### Ramsar Sites (England)

There are no features within your search area.

### Special Protection Areas (England)

There are no features within your search area.

### Special Areas of Conservation (England)

There are no features within your search area.

### Sites of Special Scientific Interest Units (England)

There are no features within your search area.

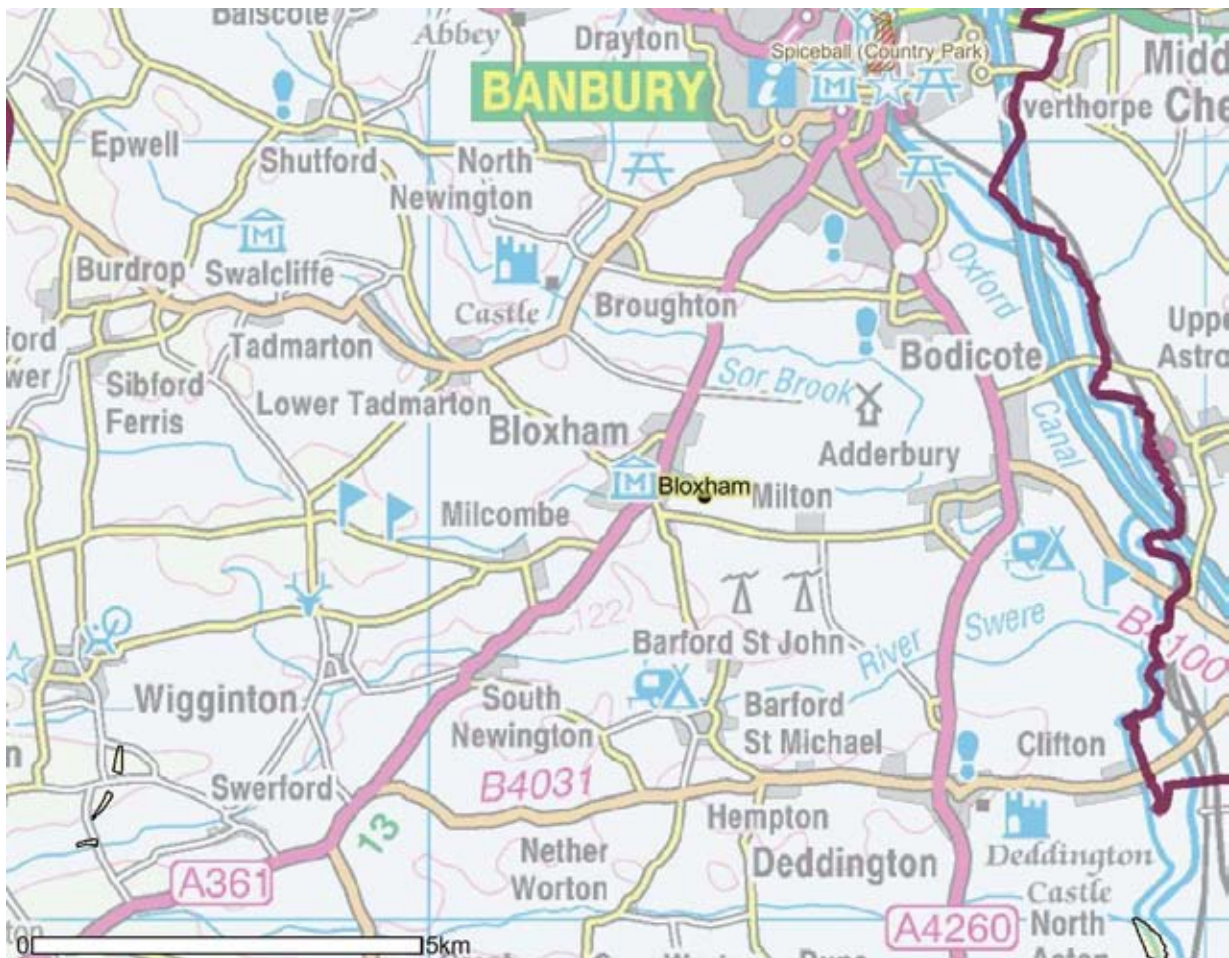
### Sites of Special Scientific Interest (England)

There are no features within your search area.

To save the report, select "Save" or "Save As" from the File menu. You should save the file with a **.html** extension and give it a name of your choice. You can then open your report using your web browser software.

[Print Report](#) | [Close Window](#)

ECO1170



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- |                               |                                        |
|-------------------------------|----------------------------------------|
| ★ Natural England Offices     | □ Sites of Special Scientific Interest |
| □ National Nature Reserves    | □ Natural England Regions              |
| □ Local Nature Reserves       | □ Natural England Area Teams           |
| □ Country Parks               | □ Scotland, Wales and Ireland          |
| □ Green Flag Country Park     | □ Ordnance Survey background mapping   |
| □ Non Green Flag Country Park | □ England                              |
| ● Millennium Greens           |                                        |
| ▲ Doorstep Greens             |                                        |

## **APPENDIX 3**

Bat activity results summary

Sample point	25/07/2012	16/08/2012
A1	A single pass of Pip45	A single pass of Pip45 and a single pass of PipNaths
A1 - A2	No bats recorded	A single pass of Brown Long-eared
A2	No bats recorded	A single pass of Pip45
A2 - A3	No bats recorded	No bats recorded
A3	No bats recorded	No bats recorded
A3 - A4	A single pass of Pip45	A single pass of Pip45
A4	A single pass of Pip45	Several passes of Pip45 and a single pass of Serotine
A4 - A5	Three passes of Pip45	Three passes of Pip45 and a single pass of Myotis
A5	No bats recorded	Several passes of Pip45, two passes of Noctule, a single pass of Brown Long-eared, and a single pass of Nyctalus/Eptesicus agg.
A5 - A6	No bats recorded	Several passes of Pip45
A6	No bats recorded	A single pass of Pip45
A6 - A7	No bats recorded	No bats recorded
A7	No bats recorded	Three passes of Noctule and a single pass of Pip45
A7 - A8	No bats recorded	A single pass of Myotis
A8	No bats recorded	Three passes of Pip45
A8 - A9	No bats recorded	Two passes of Noctule and a single pass of Pip45
A9	A single pass of Pip45	Three passes of Pip45
A9 - A10	No bats recorded	No bats recorded
A10	A single pass of Pip45	A single pass of Pip45
B1	No bats recorded	A single pass of Pip45 and two passes of Serotine
B1 - B2	No bats recorded	No bats recorded
B2	Two passes of Pip45	A single pass of Pip45
B2 - B3	A single pass of Pip45	Two passes of Pip45
B3	No bats recorded	Three passes of Pip45 and a single pass of Brown Long-eared
B3 - B4	No bats recorded	No bats recorded
B4	No bats recorded	Three passes of Pip45 and a single pass of Noctule
B4 - B5	No bats recorded	A single pass of Noctule
B5	No bats recorded	Three passes of Pip45
B5 - B6	A single pass of Pip45	A single pass of Pip45
B6	A single pass of Pip45	A single pass of Pip45 and a single pass of Noctule
B6 - B7	No bats recorded	Several passes of Pip45, four passes of Noctule and a single pass of Serotine
B7	No bats recorded	Many passes of Pip45, a single pass of Noctule and a single pass of Myotis
B7 - B8	No bats recorded	No bats recorded
B8	No bats recorded	Four passes of Noctule and many passes of Pip45
B8 - B9	No bats recorded	Many passes of Pip45 and a single pass of Lesser Horseshoe
B9	No bats recorded	Four passes of Noctule
B9 - B10	No bats recorded	Three passes of Pip45 and three passes of Noctule
B10	A single pass of Pip45	A single pass of Pip45

## **APPENDIX 4**

Bat box specifications

# Bat Boxes



## Bat Box 1FQ

The latest model from Schwegler is an attractive box designed specifically to be fitted on the external wall of a house, barn or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside as well as a roughened front panel to enable the bats to land securely. Access into the box is via a step-like recess. Inside the box, rough pieces of wood are incorporated into the back of the box which are good insulators and are used by the bats as perches. The internal layout offers three different areas with varying degrees of brightness and temperature. This durable box is easy to attach to most walls, requires no maintenance or cleaning and will last for decades.

*Woodcrete (75% wood sawdust, concrete and clay mixture)*

*Height: 565mm*

*Width: 350mm*

*Depth: 85mm*

*Weight: 15kg*

*Please note that this box is designed to be fitted to a wall. Due to the weight it is unsuitable for fences or sheds.*

## 1WQ Summer & Winter Bat Roost

A sophisticated bat box designed for the safe hibernation of bats in winter as well as for roosting, forming colonies and raising their young during the summer. It has an attractive design and is easy and convenient to install on the wall of a building.

The integrated insulation in combination with the well known advantages of Schwegler woodcrete are ideal for the year-round needs of bat species which inhabit the buildings. The new box uses the same patented Schwegler "double wall system" as the 1FW Hibernation Box, which has been tested and proven for decades and used in many professional and scientific projects in forests all over Europe.

The overall design and combination of several well-insulating materials in layer structure ensures outstanding insulation properties but still guarantees sufficient air-convection and permeability. The extremely durable material will last for many decades providing shelter for bats.

The insulation not only protects the bats in winter but also prevents overheating during the summer.

This box is self-cleaning and thus completely maintenance free.

*Woodcrete (75% wood sawdust, concrete and clay mixture)*

*Height: 580mm*

*Width: 380mm*

*Depth: 115mm*

*Weight: 21kg*

*Please note that this box is designed to be fitted to a wall.*

*Due to the weight it is unsuitable for fences or sheds.*



## **APPENDIX 5**

Bird box specifications

# Urban Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from 'Woodcrete'. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.



## 1SP Sparrow Terrace

House sparrows are gregarious and prefer to nest close to each other, so this woodcrete box provides room for three families under one roof.

For siting on buildings of all kinds at a height of at least 2m (e.g. under eaves.)

## Schwegler 9A House Martin Nests

These woodcrete nests are durable and ready for immediate use when birds return each summer. Easily fixed under the eaves on the outside walls of buildings, at least 2 metres from the ground. The backing board may be painted to match the building.

*Model 9A is a double unit with two nests mounted side by side on a backing board, as shown.*



## Schwegler No 16 Swift Box

The design of this box mimics bell tower louvres. It has a removable panel for easy inspection of the nest chamber. The entrance hole should be positioned at least 5m above the ground. Ensure unobstructed access for birds entering or leaving the box. Designed for fixing on or within walls.

*Dimensions: 240H x 430W x 220D mm. Weight 11kg*



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