



Gladman Developments Ltd

**Land to the West of White Post Road, Banbury Oxfordshire**

**Ecological Appraisal**

June 2015

**FPCR Environment and Design Ltd**

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## 1.0 INTRODUCTION

### Background

- 1.1 This report has been produced by FPCR Environment and Design Ltd for Gladman Developments Ltd and provides details of ecological surveys undertaken at a site off White Post Road, Banbury, Oxfordshire. Grid reference for the centre of the site is SP 45726 38347. See Figure 1 for site location.
- 1.2 The approximately 17.5ha site is located to the west of White Post Road and south of the Saltway and comprises mainly arable fields, with boundary hedgerows and an area of grassland with mature open grown trees. Some allotments border the site to the south-west, Banbury Cricket Club and Wykham Lane are located to the south of the site, the town of Banbury to the north and the village of Bodicote to the south east. Land to the west of the site is rural and primarily in agricultural use.
- 1.3 The objectives of the ecology surveys conducted by FPCR in both 2013 and 2015 at the site were to gain an understanding of the baseline ecology of the site and immediate surrounding area and to determine whether there was potential for the site to support protected species. This investigation involved a desk study, extended Phase 1 habitat survey and assessment of trees for potential to support roosting bats in 2013 with a walkover survey in 2015.
- 1.4 An aerial inspection was subsequently made of two trees with potential for roosting bats, the methodology and results of which are also provide in this report.

### Proposed Development

- 1.5 Proposals for the site are for a residential development of up to 280 units. Boundary and internal hedgerows are to be retained, with gaps created for a spine road connecting to an adjacent future development site to the west. Development of the site will create open space and recreational areas as well as green links to connect to the north and south of the site.

## 2.0 METHODOLOGY

### Desk Study

- 2.1 To support the field survey and further compile existing baseline information relevant to the site, ecological information was sought from third parties, including records of protected or notable species and sites designated for nature conservation interest. Organisations contacted included:
  - Thames Valley Environmental Records Centre (TVERC);
  - Oxfordshire Badger Group;
  - Oxfordshire Amphibian and Reptile Group; and
  - Oxfordshire Bat Group.
- 2.2 Online sources of ecological data were also sought including:
  - Multi Agency Geographic Information for the Countryside (Magic) website (<http://magic.defra.gov.uk/>)

- 2.3 The search area of interest varied depending upon the likely significance and zone of influence of the data requested, as follows:
- Up to a 10km radius around the site was searched for sites of international importance with a statutory designation of Special Area of Conservation (SAC), Special Protection Area (SPA) and RAMSAR sites;
  - Up to a 2km radius around the site for sites of national importance with a statutory designation of Site of Special Scientific Importance (SSSI) or National Nature Reserve (NNR);
  - Up to a 1km radius around the site for sites of local importance with statutory designation of Local Nature Reserve, or non-statutory designation of Site for Importance for Nature Conservation (SINC) or the equivalent Local Wildlife Site (LWS); and
  - 1km radius search area was also covered for records of protected species and Priority Species and Habitats (i.e. including former UK and Local Biodiversity Action Plan habitats and species).
- 2.4 In addition to using the above resources, data presented in a report from a previous Phase 1 habitat survey of the site was reviewed and considered when assessing the site's ecology (PJC Ecology, April 2012)<sup>1</sup> in order to inform the 2013 FPCR report.
- 2.5 By the time of the updated 2015 assessment of the site, an outline planning application had been made to Cherwell District Council for development of arable land immediately to the west of the site. The ecology chapter of the Environmental Statement supporting this adjacent application (Wardell Armstrong 2014) was therefore reviewed and the information contained within considered as further desk study data for assessing the context of this site and potential impacts of the development on the local ecology.

### **Habitat Survey**

- 2.6 The site was initially visited on 23<sup>rd</sup> July 2013 and an Extended Phase 1 habitat survey conducted. This is a survey technique recommended by Natural England that largely follows JNCC 2010<sup>2</sup>, with the scale of recording of habitat parcels adjusted to provide more detail for smaller sites. The survey comprised a walkover of the site mapping the principal habitat types present and identifying the dominant or characteristic plant species present within them. The abundance of species was quantified using the DAFOR scale, ranging from Dominant to Abundant, through Frequent and Occasional to Rare.
- 2.7 Any habitats suitable for, or features with the potential to support, protected or notable species were also assessed and recorded.
- 2.8 Subsequently, the site was visited again on 20<sup>th</sup> May 2015 to undertake an update walkover to check for any significant changes to habitats present and potential for protected and notable species given the time elapsed since the original survey.

<sup>1</sup> PJC Ecology. April 2012. Land at Whitepost Lane, Bodicote. Extended Phase 1 Habitat Survey. A report for Hives Planning.

<sup>2</sup> JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7

## Hedgerow Assessment

- 2.9 The value of the hedgerows present on the site was also assessed during the initial site visit on 23<sup>rd</sup> July 2013 (and checked for any significant changes on 20<sup>th</sup> May 2015) using the standard Hedgerow Evaluation and Grading System (HEGS)<sup>3</sup> methodology to assess their conservation value. The following attributes were recorded:
- Canopy species present;
  - Structure (height, width, shape and percentage gaps);
  - Associated features (banks, ditches, grass verges, mature trees);
  - Connectivity to other hedgerows, woods or ponds;
  - Associated ground flora of interest.
- 2.10 Hedgerows can then be scored and graded accordingly:
- 1 – High to Very High conservation value;
  - 2 – Moderately High to High conservation value;
  - 3 – Moderate conservation value;
  - 4 – Low conservation value.
- 2.11 The hedgerows were also assessed considering their potential ecological value against the wildlife and landscape criteria of statutory instrument No: 1160 - The Hedgerow Regulations 1997. A series of 30m sections of hedgerows were surveyed, recording features including woody and floral species and associated features as detailed in the statutory document.
- 2.12 These were then classified against the criteria as laid down in the regulations, which specify in detail how the criteria are met. A brief summary is given below:
- (i.) marks a pre-1850 parish or township boundary,
  - (ii.) incorporates an archaeological feature,
  - (iii.) is part of or associated with an archaeological site,
  - (iv.) marks the boundary of, or is associated with, a pre-1600 estate or manor,
  - (v.) forms an integral part of a pre-Parliamentary enclosure field system,
  - (vi.) contains certain categories of species of birds, animals or plants listed in the Wildlife and Countryside Act or Joint Nature Conservation Committee (JNCC Publications),
  - (vii.) includes:
    - (a) at least 7 woody species, on average, in a 30m length;
    - (b) at least 6 woody species, on average, in a 30m length and has at least 3 associated features;
    - (c) at least 6 woody species, on average, in a 30m length, including a black poplar tree, or large-leaved lime, or small-leaved lime or wild service tree; or

<sup>3</sup> Clements, D. and Toft, R. 1992. Hedgerow Evaluation and Grading System (HEGS) A Methodology for the ecological survey, evaluation and grading of hedgerows.

(d) at least 5 woody species, on average, in a 30m length and has at least 4 associated features.

*NB: The number of woody species is reduced by one in northern counties. The list of 56 woody species comprises mainly shrubs and trees. It generally excludes climbers (such as clematis, honeysuckle and bramble) but includes wild roses.*

(viii.) runs alongside a bridleway, footpath, road used as a public path or byway open to all traffic and includes at least 4 woody species, on average, in a 30m length and has at least 2 of the associated features listed at (a) - (e) below.

- (a) a bank or wall supporting the hedgerow;
- (b) less than 10% gaps;
- (c) on average, at least one tree per 50m;
- (d) at least 3 species from a list of 57 woodland plants;
- (e) a ditch;
- (f) a number of connections with other hedgerows, ponds or woodland;
- (g) a parallel hedge within 15 metres.

### Limitations

- 2.13 The species data collated for the desk study is derived from records submitted by members of the public and from specialist volunteer group surveys. It does not represent a definitive list of species that occur in the local area, and the absence of records does not necessarily imply absence of such species.
- 2.14 The extended Phase 1 habitat survey, update survey and hedgerow assessments were undertaken at an optimal time of year.

### Assessment of Trees for Bat Roost Potential

- 2.15 During the extended Phase 1 habitat survey, all semi-mature and mature trees within the site were assessed for their potential to support roosting bats. Tree assessments were undertaken from ground level, with the aid of a torch and binoculars where required. During the survey features considered to provide suitable roost sites for bats such as the following were sought:
  - Trunk cavity – Large hole in trunk caused by rot or injury.
  - Branch cavity - Large hole in branch caused by rot or injury.
  - Trunk split – Large split / fissure in trunk caused by rot or injury.
  - Branch spilt – Large split / fissure in branch caused by rot or injury.
  - Branch socket cavity – Where a branch has fallen from the tree and resulted in formation of an access point in to a cavity.
  - Woodpecker hole – Hole created by nesting birds suitable for use by roosting bats.
  - Lifted bark – Areas of bark which has rotted / lifted to form suitable access point/roost site for bats.

- Hollow trunk – Decay in heartwood leading to internal cavity in trunk.
- Hazard beam failure- Where a section of the tree stem/branch has failed causing collapse and leading to longitudinal fractures / splits / cracks along its length.
- Ivy cover – Dense / mature ivy cover where the woody stems could create small cavities / crevices, or where dense ivy cover may be obscuring other suitable features (only relevant for trees that are of age or form likely to have such features)

2.16 The trees were classified into general bat roost potential groups based on the presence of features listed above. Table 1 below classifies the potential categories as accurately as possible. This table is based upon Table 8.4 in Bat Surveys- Good Practice Guidelines (Bat Conservation Trust, 2012). The table within the guidelines has been designed to inform assessments completed prior to the completion of arboricultural works. Consequently, the suggested survey methods have been refined to suit development works and considers the definition of a breeding site or resting place as described in the Habitat Regulations.

**Table 1: Bat Survey Protocol for Trees**

Tree category and description	Survey requirements prior to determination.	Recommended mitigation works and/or further surveys.
<b>Category 1</b> Confirmed bat roost with field evidence of the presence of bats, e.g. live / dead bats, droppings, scratch marks, grease marks and / or urine staining.	Identified on a plan and in the field. Further assessment such as climb and inspect and/or dusk/dawn surveys should be undertaken, if the trees are affected by the development, to provide an assessment on the likely use of the roost, numbers and species of bat present.	Avoid disturbance where possible. Felling or other works that would affect the roost would require an EPS licence with like for like roost replacement as a minimum. Works may also be subject to timing constraints.
<b>Category 2a</b> Trees that have a high / moderate potential to support bat roosts.	Identified on a plan and in the field to assess the potential use of suitable cavities, based on the habitat preferences of bats. Where the tree(s) will be affected by the proposed development, further assessment such as climb and inspect and/or dusk/dawn surveys (up to 2/3 nocturnal surveys) should be undertaken (as appropriate), to ascertain presence/absence of roosting bats. Trees may be upgraded if presence of roosting bats is confirmed or downgraded following further surveys if features present are of low suitability and / or no evidence of a breeding site or resting place* is found within features that can be assessed fully.	<b>Trees where no bat roost confirmed after further surveys:</b> Avoid disturbance where possible. In situations where disturbance cannot be avoided and where no evidence of occupation of suitable cavities has been confirmed during the initial surveys or nocturnal surveys (as appropriate), further precautionary survey work following the granting of planning permission and prior to works being completed is recommended to ensure features have not been occupied by bats.  The additional precautionary survey work could comprise



Tree category and description	Survey requirements prior to determination.	Recommended mitigation works and/or further surveys.
		further nocturnal surveys during the active bat season immediately prior to felling or management works or the completion of additional aerial inspections. Use "soft felling" techniques, removing ivy cover by hand and avoid cutting through tree cavities is recommended once the presence of a roost has been discounted.
<b>Category 2b</b> Trees with a low potential to support bat roosts.	Identified on a plan and in the field to assess the potential use of suitable cavities, based on the habitat preferences of bats. Where the tree(s) will be affected by the proposed development, further assessment such as climb and inspect and/or dusk/dawn surveys (one nocturnal survey) should be undertaken (as appropriate), to ascertain presence/absence of roosting bats. Trees may be upgraded if presence of roosting bats is confirmed or downgraded following further surveys if features present are not suitable for bats and / or no evidence of a breeding site or resting place* is found within features that can be assessed fully.	<b>Trees where no bat roost confirmed after further surveys:</b> Avoid disturbance where possible. In situations where disturbance cannot be avoided and where no evidence of occupation of suitable cavities has been confirmed during the initial surveys or nocturnal surveys (as appropriate), further precautionary survey work following the granting of planning permission and prior to works being completed is recommended to ensure features have not been occupied by bats.  The additional precautionary survey work could comprise further nocturnal surveys during the active bat season immediately prior to felling or management works or the completion of additional aerial inspections. Use "soft felling" techniques, removing ivy cover by hand and avoid cutting through tree cavities is recommended once the presence of a roost has been discounted.
<b>Category 3</b>	Identified on a plan and in the field	None.

Tree category and description	Survey requirements prior to determination.	Recommended mitigation works and/or further surveys.
Trees with no / negligible potential to support bat roosts.	to assess the potential use of suitable cavities, based on the habitat preferences of bats.	

\* The Conservation of Habitats & Species Regulations 2010 (as amended) affords protection to breeding sites or resting places at all times. For an area to be classified as a breeding site or resting place, the Regulations require there to be a reasonably high probability that the species will return to the sites and / or place.

Confirmation of a breeding site or resting place in trees can be established through the completion of aerial inspection and/or nocturnal surveys (as appropriate). In situations where nocturnal surveys are completed and a breeding site or resting site is not confirmed, the survey effort is considered to be sufficient to reasonably discount the presence of roosting bats (for a period of time as defined in Natural England's current Standing Advice). However, further precautionary works may be recommended if the trees is affected by works.

Where features of a tree are identified as providing potential to be used as a breeding site or resting place, evidence of current or previous use of the feature should be identified during an aerial inspection to necessitate the completion of further detailed nocturnal survey work prior to the granting of planning permission. In situations where no evidence of use is identified it is reasonable to conclude that a feature is not being used as a breeding site or resting place as defined by the Regulations but further precautionary measures maybe recommended if a tree is affected by development to ensure occupation has not occurred following completion of the survey. If the presence of a breeding site or resting place cannot be discounted from ground level or aerial inspections, nocturnal survey work should be completed.

### Limitations

- 2.17 The inspection of trees for roosting bats can be undertaken at any time of year. However, in the summer months where trees are in full leaf this can restrict views of parts of the tree and potentially obscure features. However, visibility of the trees on the site was adequate to give an indication of the level of potential to support for roosting bats, especially given the good form and condition of the tree stock. Seasonality of the survey is unlikely to have impacted on the results of the survey.

### Aerial Assessment of Trees

- 2.18 Where it was safe to do so, all trees assessed from the ground as likely to have potential to support roosting bats that may be affected by the proposed development or are categorised as 'U', unsuitable for retention by the arboricultural assessment were then subject to aerial assessment on 28<sup>th</sup> May 2015. These surveys were undertaken by FPCR staff who are NPTC Certified to Climb Trees (J/101/2449) and Perform Aerial Rescue (A/101/2450) – Level 2 and at least one of whom has Natural England bat survey licence (CLS00227). The climbing methodology used follows that detailed within the Arboriculture and Forestry Advisory Group (AFAG) Tree Climbing Operations Leaflet (AFAG401). Furthermore, to ensure any risks associated with aerial climbing are minimised FPCR Risk Assessment OOR18 was followed.
- 2.19 The survey involved a thorough inspection of features assessed above as providing suitable bat roost sites. A total of two trees were identified that had features suitable for roosting bats and may be affected by the proposed development.

- 2.20 Features identified as providing potential to support roosting bats during the aerial climbing inspection were thoroughly examined using endoscopes, mirrors and torches. Evidence of bat occupation sought included the physical presence of bats, droppings, urine staining, and mammalian oil staining.

### 3.0 RESULTS

#### Desk Study

- 3.1 Responses were received from Thames Valley Environmental Records Centre and Oxfordshire Badger Group and a summary of the results of the desk study are provided below.

#### Statutory Designated Sites

- 3.2 There are no statutory designated sites located within the search areas.

#### Non-Statutory Designated Sites

- 3.3 There are no non-statutory designated sites located within the 1km search area. There is, however, one proposed Local Wildlife Site (pLWS) located in close proximity to the site, The Saltway, located approximately 120m to the west of the site. The 5.7ha ancient road is of interest for its species-rich hedgerows, which widen to form wooded strips in places. Species supported include hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, dogwood *Cornus sanguinea*, elder *Sambucus nigra* and elm *Ulmus procera* with bluebell *Hyacinthoides non-scripta*, wood sedge *Carex sylvatica* and false brome *Brachypodium sylvaticum* recorded in the field layer.
- 3.4 This proposed designated bridleway does actually extend further to the east, adjacent to and parallel with the northern boundary of the site, although this section of the bridleway is not part of the pLWS.

#### Species

- 3.5 Records of protected and priority faunal species derived from the desk study consultees are given in Table 2 below. Records older than 20 years are considered to have expired in relevance and have therefore not been included.

**Table 2: Summary of Relevant Species Records**

Species	Conservation Status	Total Number of Records	Location / Minimum distance from site
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	Habs Regs WCA Sch5	3	580m E
Pipistrelle bat <i>Pipistrellus</i> sp.	Habs Regs WCA Sch5	1	540m NW
West European Hedgehog <i>Erinaceus europaeus</i>	NERC	1	670m S
Badger <i>Meles meles</i>	PBA	1	180m E
Grass snake <i>Natrix natrix</i>	WCA Sch5 NERC	5	420m S

Species	Conservation Status	Total Number of Records	Location / Minimum distance from site
Common Toad <i>Bufo bufo</i>	NERC	1	420m S
Common Swift <i>Apus apus</i>	Amber	25	500m S
White-letter Hairstreak butterfly <i>Satyrion w-album</i>	NERC	3	220m W (The Saltway pLWS)
Small Heath butterfly <i>Coenonympha pamphilus</i>	NERC	1	830m S

**Key:** N = North, S = South, E = East, W = West. Habs Regs = The Conservation of Habitats and Species Regulations (2010)(as amended). PBA = Protection of Badgers Act (1992). WCA = Wildlife and Countryside Act (1981). Sch1 = Schedule 1 of WCA. Sch5 = Schedule 5 of WCA. NERC = Natural Environment and Rural Communities Act (2006), Section 41 list of Priority Species. Red list / Amber list = BTO Birds of Conservation Concern listed species (2009). RDB (NT) = Red Data Book – Nationally Threatened

## Extended Phase 1 Habitat Survey and Botanical Survey

### Habitats / Flora

- 3.6 The habitats described below correspond to those mapped on Figure 2. Plant species lists for the habitats are provided in Appendix A. Photographs of the habitats taken on 23<sup>rd</sup> July 2013 and 20<sup>th</sup> May 2015 are provided throughout the text (date as indicated).

#### Species-poor Semi-improved Grassland

- 3.7 In the east of the site are two areas of species poor semi-improved grassland, separated by a metal rail fence. The grassland to the north of the fence line comprises a close mown field, believed to be used for occasional recreational purposes and parking. Grassland to the south of the fence line comprises grass verges either side of a hard surfaced driveway into Banbury Cricket Club grounds. Species recorded include perennial rye-grass *Lolium perenne*, Yorkshire-fog *Holcus lanatus*, white clover *Trifolium repens*, and cock's-foot *Dactylis glomerata*. There is an area of bare ground where vehicles have accessed the site in the north-eastern corner, and scattered trees present, which are described in further detail below.



**Photograph 1: Species-poor semi-improved grassland habitat with hedgerow H1 in the background (23/07/13)**



**Photograph 2: Arable field with hedgerow H5 shown to the right (23/07/13)**

Scattered Broadleaved Trees

- 3.8 Present within the grassland in the north of the site are mature open-grown trees of beech *Fagus sylvatica*, copper beech *Fagus sylvatica* 'Purpurea', pedunculate oak *Quercus robur*, horse chestnut *Aesculus hippocastanum* and common lime *Tilia x. europaea*. These trees were in good health and had a good structure and form. Within the southern area of grassland are many more scattered broadleaved trees, young in age and comprising species such as hornbeam *Carpinus betulus*, copper beech, maple species *Acer* sp. and sycamore *Acer pseudoplatanus*.
- 3.9 Scattered trees are also present along the central southern boundary, north of Banbury Cricket Club. Hawthorn, ash *Fraxinus excelsior*, field maple *Acer campestre* and elder *Sambucus nigra* are present. The specimens may have originally been planted as a hedgerow, and long term lack of management has led to large gaps appearing and individual trees forming.



**Photograph 3: Eastern arable field under grassland fodder crop (20/05/15)**

Tall Ruderal Vegetation

- 3.10 Two distinct areas of tall ruderal vegetation were surveyed. TR1 is outside of the site boundary located to the northwest of the semi-improved grassland area. Common nettle *Urtica dioica* dominates the sward with abundant creeping thistle *Cirsium arvense* and frequent couch grass *Elytrigia repens* and hogweed *Heracleum sphondylium*. Hedge woundwort *Stachys sylvatica* was occasionally recorded. A strip of tall ruderal habitat (TR2) was recorded on a mound along the northern boundary of the allotments to the south western corner of the site that may follow the line of a former hedge or fence. Nettle dominates this area with abundant cleavers *Galium aparine* and false oat-grass *Arrhenatherum elatius*. Remnant cereal crop grasses are also evident in the sward.



**Photograph 4: Arable field with tall ruderal vegetation at the edge of allotments (23/07/13)**



**Photograph 5: Species-poor semi-improved grassland with hedgerow H3 (23/07/13)**

Arable

- 3.11 A large proportion of the site comprises arable fields. The larger, western-most field had been planted with grassland leys and the eastern field with barley in 2013, with both fields planted with grass fodder crops at the time of survey in 2015. Field margins are narrow (up to approximately 1m) and have been considered as continuous with hedgerow ground flora.
- 3.12 Species recorded within the sward during the 2015 walkover survey include a dominance of perennial rye-grass, abundant white clover, frequent meadow fescue and occasional sweet vernal grass, Yorkshire-fog and white campion.

Allotments

- 3.13 In an off-site location to the south-west of the site is located a complex of allotments with individual cultivated plots and occasional temporary glass house and wooden shed structures. Separate plots were demarcated by narrow close-mown grassland borders and no hedgerows or shrubs were present within this area (except the southern and western boundary hedgerows described below). The allotment site was active and extensively cultivated at the time of survey, with various fruit and vegetable crops growing in all plots.

Hedgerows

- 3.14 Eight hedgerows were recorded within and around the site. All are considered to be species rich, as they support a mix of native shrub species. H1 borders the site to the east, adjacent to White Post Road, and is predominantly a hawthorn hedge. Three mature standards are present within the hedge, of common lime *Tilia x europaea*. Ground flora included ruderal species such as cock's-foot, false oat-grass *Arrhenatherum elatius* as well as ground ivy *Glechoma hederacea* and ivy *Hedera helix*. H2 demarcates the north eastern site boundary, growing from the off-site land to the north. Many native woody species are present and there are many trees such as holly *Ilex aquifolium*, elder, yew *Taxus baccata* and box *Buxus sempervirens*, as well as ornamental species such as false acacia *Robinia pseudoacacia* and cherry laurel *Prunus laurocerasus*.
- 3.15 Hedgerow H3 is located towards the eastern half of the site in a north-south orientation and provides a stock-proof barrier with very few gaps. Predominantly a hawthorn hedge with occasional elder and English elm *Ulmus procera*. Ground flora includes nettle, ivy and cow parsley *Anthriscus sylvestris*. Hedgerow H4 along the central northern boundary of the site adjacent to Salt Way is an elder and hawthorn-dominated hedgerow with a mix of other native species such as field maple and blackthorn. Hedgerow H5 lies parallel to H3, down the centre of the site and is an English elm and hawthorn-dominated hedgerow. Elder is abundant and field maple frequent, hazel *Corylus avellanarius* was rarely recorded. Wood avens *Geum urbanum*, nipplewort *Lapsana communis* and remnant cereal crops were present within the ground flora.
- 3.16 Hedgerow H6 is a mixed native hedge along the southern boundary adjacent to Wykham Lane. Species recorded included abundant blackthorn, field maple and elder as well as frequent English elm and occasional hazel. Hedgerow H7 is another mixed native hedge with a diverse range of species including those recorded elsewhere on the site as well as young trees of wild cherry *Prunus avium*, pedunculate oak, and rarely guelder rose *Viburnum opulus*, crab apple *Malus sylvestris* and wych elm *Ulmus glabra*. Hedgerow H8 is along the western part of the north of the site adjacent to Salt Way and comprises abundant elder and English elm and rarely wild privet *Ligustrum vulgare*, wayfaring tree *Viburnum lanata*, dog-rose *Rosa canina* agg. and ash.



### Hedgerow Assessment

- 3.17 Eight hedgerows are present within the site. Details of the woody species and associated features for which the hedgerows were assessed are provided in Table 3 below.
- 3.18 Under the HEGS assessment hedgerow H2 is of High conservation value, hedgerows H4, H5, H7, H7 and H8 have Moderately High to High conservation value and hedgerows H1 and H3 have Moderate conservation value. Hedgerow H2 is likely to have greater value given its tall height and large numbers of trees present. All of the hedgerows comprise a good mix of native species, and are reasonably wide and well managed. Hedgerows H4, H5 and H8 had gaps, so were not stock-proof, but these gaps constituted less than 10% of the length of the hedge.
- 3.19 None of the hedgerows are considered important under the Hedgerows Regulations 1997.

**Table 3: Results of Hedgerows Assessment**

Hedge	Woody Species present	HEGS Grade	Woody Species (sampled per 100m)	Associated Features	Important Under Habitat Regs	Contains >80% Native Species
H1	<i>T x e, Up, Cm, Sn, Ps</i>	-3	3.5	< 10% gaps, 3 standard trees (1 per 50m)	No	Yes
H2	<i>la, Sn, Cm, Ca, Tb, Bs, Rc, Salix sp.</i>	-1	6	<10% gaps, 8 standard trees (2.5 per 50m)	No	Yes
H3	<i>Cm, Ca, la, Up, Sn, Rc</i>	3	4.5	<10% gaps	No	Yes
H4	<i>Fe, Sn, Up, Ac, Rc, Cm, Ps</i>	-2	5	<10% gaps	No	Yes
H5	<i>Up, Sn, Cm, Ps, Ac, Fe</i>	-2	4	<10% gaps	No	Yes
H6	<i>Sn, Fe, Up, Ps, Ac</i>	-2	5	<10% gaps, Parallel hedge within 15m	No	Yes
H7	<i>Up, Rf, Qr, Pa, Fs, Ac, Cm, Fe, Ps, Rc, Sn</i>	2	6	None	No	Yes
H8	<i>Sn, Cm, Fe, Lv, Rc, Up, Ps</i>	-2	4.5	<10% gaps, Hedge bank for >50% of length	No	Yes

Key: *T x e* *Tilia x europaea* – Common lime. *Cm* *Crataegus monogyna* – Common hawthorn. *UP* *Ulmus procera* – English elm. *Sn* *Sambucus nigra* – Elder. *Ca* *Corylus avellana* – Hazel. *Bs* – *Buxus sempervirens*. *la* *Ilex aquifolium* – Holly. *Tb* – *Taxus baccata* – Yew. *Rc* *Rosa canina* – Dog rose. *Salix sp.* Willow species. *Ac* *Acer campestre* – Field maple. *Ps* *Prunus spinosa* – Blackthorn. *Fe* *Fraxinus excelsior* – Ash. *Qr* *Quercus robur* – Pedunculate oak. *Rf* *Rubus fruticosus agg.* – Bramble. *Pa* – . *Fs* *Fagus sylvaticus* – Beech. *Lv* *Ligustrum vulgare* – Wild privet.

## Fauna

- 3.20 Incidental records of fauna encountered during the extended Phase 1 habitat were also made, and included brown hare *Lepus europaeus*, wren *Troglodytes troglodytes* and blackbird *Turdus merula*. Badger field signs were recorded, which is discussed further in a separate confidential badger survey report (FPCR 2015).
- 3.21 The trees and hedgerows provide suitable habitat for breeding birds, and during the 2013 survey the arable fields provided suitable habitat for ground-nesting birds. During the 2015 update survey the arable field crop was considered too tall to provide this suitability.
- 3.22 None of the temporary glass and wooden structures present within the off-site allotment plots were suitable for roosting bats, given the lack of suitable features and likely high levels of disturbance inside sheds from use by allotment holders.
- 3.23 The field margins provide suitable habitat for reptiles and amphibians, although likely only for dispersal and passage rather than supporting a breeding population. The off-site allotments may also provide habitat for amphibians, grass snake and slow worm.
- 3.24 No records of great crested newt were obtained from the desk study and the site includes extremely limited habitat suitable to support this species in the form of the thin strip of tall ruderal adjacent the off-site allotments and the hedgerow bases. OS maps of the area show one pond that is not separated by major roads located within 500m of the site. This pond is located at approximately 180m from the western site boundary, at the neighbouring Wykham Farm. From looking at aerial images this pond appears to be heavily shaded and surrounded by trees and terrestrial habitat of considerably better suitability for GCN (specifically areas of woodland) than that on-site. Data obtained in support of the adjacent planning application as presented in the Wardell Armstrong ES also indicates that there is a strong possibility that this pond is dry.
- 3.25 With a lack of aquatic habitats on or adjacent to the site, suitable habitat is not present for otter or water vole.
- 3.26 Although the hedgerows are dense and generally species-rich, given the lack of connectivity of the hedgerows to any woodland habitats the site is considered to not provide suitable habitat for dormouse. This species is also not recorded in the wider area, with no records provided from the desk study.

## Ground Based Assessment of Trees for Bats

- 3.27 Two of the mature open grown trees located within grassland in the north-east of the site and one semi-mature tree at the south-eastern site boundary were assessed from the ground as having some features suitable for roosting bats. Details are as follows:
- **T1:** Pedunculate oak with a partially non-occluded wound where a limb has been lost. It also has a small split in a limb with some decay and loose bark, however features are small and very exposed. Low potential to support roosting bats, initially categorised as Category 2b. (*Tree reference T7 in Arboricultural Survey Report, FPCR 2015*)
  - **T2:** Horse chestnut with a deep fissure in northern main limb and small areas of lifted bark throughout. Shallow rot holes are present in the end of two limbs. Low potential to



support roosting bats, initially categorised as Category 2b. (*Tree reference T8 in Arboricultural Survey Report, FPCR 2015*)

- **T3:** Ivy clad semi-mature sycamore. Deadwood present in crown, including a partially hollow decayed limb on the southern aspect. Moderate - high potential to support roosting bats, initially categorised as Category 2a. (*Tree reference T24 in Arboricultural Survey Report, FPCR 2015*)



**Photograph 6: Minor deadwood providing limited roosting features of tree T2 (23/07/13)**



**Photograph 7: Deadwood with cavity in limb of tree T3 (23/07/13)**

### Aerial Assessment of Trees

- 3.28 Trees T2 (T8 in Arboricultural survey report) and T3 (T24 in Arboricultural survey report) were subject to aerial assessment using climbing survey methods. T2 was successfully climbed and all potential features could be adequately inspected. No evidence of current or previous occupation by roosting bats was recorded and the tree was therefore confirmed not to support a roost. From closer inspection of the features the initial categorisation of the tree as having low potential (Category 2b) was confirmed. Prior to any works to this tree it should therefore be subject to a further aerial inspection to ensure that no bats have occupied the features in the interim period.
- 3.29 Unfortunately, at the time of survey a great tit's *Parus major* nest was present with dependent young within T3 and this tree could therefore not be climbed as this may disturb the birds (and contravene the protection afforded by the Wildlife and Countryside Act 1981, as amended). However, from more detailed examination from ground level and collaborative discussion between the bat specialist and Arboriculturist it was apparent that this tree could be made safe without the need to entirely remove the potential bat roost features. Therefore, in order to avoid disturbance of roosting bats or to make sure that no roost is present when any arboricultural works are undertaken, a pre-works inspection should be conducted. The categorisation of this tree remains Category 2a.
- 3.30 Tree T1 did not require assessment using aerial inspection survey as it is proposed to be retained and will be unaffected by the development of the site.

## 4.0 DISCUSSION AND MITIGATION RECOMMENDATIONS

### Designated Sites

- 4.1 The degree to which designated sites receive consideration under the planning system and legislative protection depends on the designation itself and its level of importance and value. This ranges from sites of international importance protected by UK legislation that transposes European directives to protection under UK legislation or consideration under national and local planning policy.
- 4.2 There are no statutory or non statutory designated sites that will be affected by the proposed development. The Saltway, located in close proximity to the north of the site is a proposed Local Wildlife Site (pLWS) of note for its historical heritage and species-rich hedgerows and patches woodland, features that will be unaffected by the proposed development. The pathway is surfaced and will not be damaged by increase in footfall. Connectivity for wildlife to these hedgerows and bridleway will be maintained by the proposed development, given the green links that will connect through the site to The Saltway pLWS.

### Habitats and Flora

- 4.3 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland, wildlife corridors and ecological networks in NPPF, or non-statutory site designation),
  - Identification as a Habitat of Principal Importance for biodiversity under section 41 of the Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within the local Biodiversity Action Plan (BAP) and a Priority Habitat for England under Biodiversity 2020.
- 4.4 Under NPPF development should seek to contribute a net gain in biodiversity with an emphasis on improving ecological networks and linkages where possible.
- 4.5 The site comprises mainly common habitats of low ecological value supporting widespread floral species, such as arable fields and species-poor grassland. However, the hedgerows are species-rich and fulfil the criteria of being considered Habitat of Principal Importance under the NERC Act (2006) and Local Biodiversity Action Plan hedgerows. Maximising retention of the hedgerows and protecting them from damage during the construction period and appropriate management post-development is therefore recommended to ensure that existing ecological value of the site can be maintained. Protection of the ground flora at the base of the hedgerows and the underground root system will be required and can be achieved by installing Heras type fencing in front of the hedgerows, to demarcate and restrict access to a protected zone. The fencing should be positioned at least 2m from the hedgerow canopy.
- 4.6 With the exception of gaps created for access roads, proposals include hedgerow retention and buffering with green links and soft landscaping along all of the hedgerows. Where partial hedgerow removal and gap creation is unavoidable to allow for road creation for hedgerows H1, H3, H5 and H7, this should be mitigated for with the planting of replacement hedgerows comprised of native species appropriate to the local area and replicating that which is to be lost. Species to be planted therefore include those listed for the existing hedgerows such as elder,

hazel, elm, hawthorn, holly, wild privet and blackthorn. New hedgerows should provide connective links through the site by connecting with existing retained hedgerows, where possible.

- 4.7 New and retained existing hedgerows should be brought into appropriate management that will ensure their long term longevity and enhance their value as a resource for wildlife. Cutting should take place on a rotational basis with no one section cut every year to maximise flowering and fruiting on older growth. It is recommended that the public open space provision, green links and hedgerows of the site are managed under an Ecological Management Plan to ensure such appropriate management.

### Protected Species

- 4.8 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2010 (as amended). Some species, for example badgers, also have their own protective legislation (Protection of Badger Act 1992). The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.
- 4.9 This guidance states that as the presence of protected species is a material consideration in any planning decision, it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.
- 4.10 In addition to protected species, there are those that are otherwise of conservation merit, such as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006. These are recognised in the National Planning Policy Framework (NPPF), which advises that when determining planning applications, LPA's should aim to conserve and enhance biodiversity by applying a set of principles including:
- *If significant harm resulting from a development cannot be avoided....., adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
  - *Development proposals where the primary objective is to conserve or enhance biodiversity should be encouraged.*
- 4.11 The implications for the proposed development that various species identified from the desk study and field survey, or those that are otherwise thought reasonably likely to occur, are outlined below:

### Bats

- 4.12 All species of bats and their roosts are listed on the Conservation of Habitats and Species Regulations 2010 (as amended) making it illegal to deliberately disturb any such animal or damage / destroy a breeding site or roosting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or

protection or disturb any animal whilst they are occupying such a place of shelter or protection. Some bat species are Priority Species in England/species of principal importance.

- 4.13 There are records of common pipistrelle and unidentified bat species obtained from the desk study and the boundary and internal hedgerows are likely to be used as foraging and dispersal routes by bats. It is considered that the arable habitats of which the site is largely comprised would not provide a significant resource for bats, given the heavily managed and exposed nature of such habitat. The data obtained for the adjacent development site (Wardell Armstrong 2014) indicates that the adjacent development site supports foraging and commuting common pipistrelle, soprano pipistrelle and very occasionally noctule and a potential single pass from a *Myotis* bat. These are all common and widespread species, and the levels of activity appeared to be unexceptional for the urban edge/rural location. The majority of bat activity recorded appeared to be in the west of this land parcel and along the Saltway to the north. Given the findings of the bat survey of adjacent land, the only limited resources for bats currently provided by the site and the proposals for retention of existing hedgerows and mature trees, an activity survey for bats is not considered necessary, especially as mitigation in the form of 'hop-overs' and sensitive lighting is to be implemented as standard on the assumption that bats will be present in the area and should be accommodated in any scheme. This pragmatic approach has been agreed with the Local Authority Ecologist, as survey data is highly unlikely to influence the development beyond measures that are already to be implemented including those mentioned above and the creation of extensive green infrastructure, as proposed.
- 4.14 The Saltway corridor is to be unaffected by the proposed development of the site and this important corridor will be buffered from the built development by 10 metres. This buffer zone will allow for the ecological value of The Saltway to be maintained and enhanced as a semi-natural corridor, as opposed to the existing heavily-managed arable habitat. Lighting of this corridor and dispersal route should be avoided and light levels kept as existing as far as possible so as to maximise the value of this corridor for bats. Although the species known to inhabit the local area are not particularly sensitive to light, artificial lighting can influence the temporal dynamics of the invertebrate fauna, which in turn can affect bat foraging behaviour and prey abundance. The buffer should also be appropriately managed under an Ecological Management Plan that promotes environmentally sensitive management such as reduced mowing frequency of grassland and avoidance of pesticide use.
- 4.15 The bat species recorded locally are also not particularly sensitive to gap creation in hedgerows and will readily forage in urban areas and over gardens and intermittent habitat lines, such as gappy hedgerows. However, as a precaution and to maximise habitat connectivity through the development, where gap creation is required for road creation, it is recommended that a standard tree is planted at the edge of each access gap i.e. either side of the new access roads bisecting the site, so that over time as the canopies spread, aerial connectivity through the centre of the site will be restored. Also, as with the Saltway corridor, it is recommended that lighting of green links and retained hedgerows is minimised to prevent impacts on invertebrate distribution in the wider environment and potentially bat foraging routes. If lighting is required for safety or security purposes it should utilise LED, or low or high pressure sodium instead of mercury or metal halide

lamps, and should be directional and low level to minimise spill, in line with published guidance on lighting and the effects on bats<sup>4,5</sup>

- 4.16 There are two mature open grown trees located in the north-east of the site, T1 and T2, which have been classified as Category 2b having low potential to support roosting bats. Both of which are to be retained and should be unaffected by the proposed development. However, given the close proximity of T2 to the proposed spine road and therefore possibility that there may be future pressure to remove this tree, as a precaution, it was subject to aerial inspection. No evidence of past or current use by roosting bats was recorded and roosting bats would not, at present represent a constraint to the removal of this tree. However, given that it does have some limited suitable features, prior to felling or arboricultural works, it should be re-surveyed using aerial inspection methods. T3, a semi-mature sycamore on the south-eastern site boundary, has more extensive deadwood and a distinct cavity present and has been categorised as Category 2a. This tree had also been scheduled for aerial inspection to establish whether it supported a bat roosting, but owing to the presence of nesting birds, this could not be conducted. However, on closer inspection and through onsite discussion between the Arboriculturist and bat specialist, it is apparent that should proposals allow, it would be possible to make the tree safe and also retain many of the features suitable for roosting bats. The tree is also positioned in a location that will allow for its retention. Therefore given that there is scope to retain this tree as a habitat feature, prior to any necessary arboricultural works taking place, the cavities should be inspected by a bat-licensed ecologist using a torch and endoscope, to check for evidence of use by bats prior to any works. This method will determine whether a roost is present and if so how to avoid harm or disturbance to bats, or if unavoidable, to inform a licence to Natural England, which would be required before any works can take place.

#### **Badger**

- 4.17 Information on badgers is provided in a separate report (FPCR 2015).

#### **Brown Hare**

- 4.18 Brown hare were recorded within the site during the field surveys. As a Priority Species and species of principal importance under the NERC Act, consideration should be given to the protection of this species and its habitat. Development proposals include the retention of large areas of open space that will continue to provide sub-optimal but suitable grassland habitat for this species to forage, as well as important connectivity to the wider environment. It is recommended that management of the open space and hedgerows within the open space takes account of the presence of hares and ground flora is left to grow tall for much of the year to provide suitable cover along hedgerows. However, as a predominantly arable species, reduction in the use of the site by this species is inevitable and surrounding arable habitats will become of greater importance locally.

#### **Breeding Birds**

- 4.19 The trees and hedgerows provide suitable habitat for breeding birds and arable fields would be suitable for some common ground nesting species, depending on the crop rotation and timing of

<sup>4</sup> *Artificial lighting and wildlife. Interim guidance: Recommendations to help minimise the impact of artificial lighting.* Bat Conservation Trust (2014)

<sup>5</sup> *Bats and Lighting in the UK. Bat and the Built Environment Series.* Bat Conservation Trust (2009)

growth and harvest. Records of ground nesting species have not been located for the wider area. As all breeding birds, their eggs, active nests and dependant young are protected by the Wildlife and Countryside Act 1981 (as amended), clearance of these habitats should be undertaken outside of the breeding bird season (i.e. site clearance of these habitats should be undertaken in the period September to February, inclusive). If site clearance during this period is not possible, then all habitat requiring clearance should first be checked by a suitably experienced ecologist for active nests. Should an active nest be found during clearance, works in this area must stop until the young have fledged or the nest is no longer active.

### Herptiles

- 4.20 There are records of grass snake and common toad from approximately 420m south from the site. All widespread reptile species are partially protected under the Wildlife and Countryside Act 1981, protecting them from intentional killing or injury and all native reptiles and some amphibians, including common toad are listed as Priority Species. The majority of the site does not offer suitable habitat for reptiles and amphibians (collectively herptiles), although the narrow field margins at the base of hedgerows are suitable for dispersal and passage.
- 4.21 Retention of the hedgerows and protection of a buffer of a minimum of 3m either side will prevent harm to reptiles or amphibians that may be present in these areas. Creation of additional open space within the site to the south of the built development will provide additional connectivity and habitat for common herptiles.
- 4.22 There is one pond within 500m of the site that is not separated by major roads, located approximately 180m from the western boundary of the site at the neighbouring Wykham Farm. From looking at aerial images of the area, it is apparent that the pond is surrounded by trees and shrubs that would provide terrestrial habitat suitable for great crested newt, if this species was to be present in the pond. Beyond the trees and between the pond and the site is a farm yard and buildings, a grassland and an arable field; habitats less suited to support great crested newts in their terrestrial phase. Therefore given the distance of the pond from the site, lack of a network of ponds including any within or to the east of the site and lack of connecting suitable habitats, the presence of great crested newts within the site is considered highly unlikely. This view is supported by the lack of records for this species derived from the desk study. Furthermore, anecdotal evidence from the Environmental Statement produced by Wardell Armstrong for the parcel of adjacent land indicates that this pond is likely to be dry and heavily shaded, significantly reducing the likelihood that it supports amphibians, especially great crested newts. It is therefore considered that GCN do not pose a statutory constraint to the proposals.

### Hedgehog

- 4.23 One record of hedgehog from 670m south of the site was found from the desk study. As for herptiles, the hedgerows and the field margins provide connectivity for this Priority Species. As hedgehogs thrive in an urban environment, the development of the site will not result in loss of habitat for this species and hedgerow retention and green link creation will maintain connectivity. However, it is recommended that when installed, small gaps are left at the bottom, or in the corner of, garden fences to aid wildlife dispersal across the site, including hedgehog.



**Invertebrates**

- 4.24 The desk study found records of white letter hairstreak and small heath butterflies from The Saltway pLWS and the wider area. Although both are Priority Species, small heath have quite broad food plant requirements, such as grasses and bramble and white letter hairstreak larvae feed on elms, species that will be retained in the existing hedgerows and are recommended to be planted in new native hedgerows throughout the development. Development of the site is therefore unlikely to negatively impact upon their presence in the area.

**5.0 ECOLOGICAL ENHANCEMENTS**

- 5.1 In line with NPPF, it is recommended that the development of the site results in a gain in value for wildlife by incorporating biodiversity in and around the development via the use of ecological enhancement measures. The following are recommended as relevant for this site:
- Soft landscaping using native and ecologically valuable species would enhance the site, avoid using non-native species with overly complex flower structure or those of an invasive nature such as cotoneasters;
  - Sustainable drainage water attenuation and storage features should be designed so as to provide year-round waterbodies for wildlife and planted with only native marginal vegetation;
  - Low effort, high impact green roofs could be installed on any communal buildings, such as sedum roof to provide sources of nectar and pollen for invertebrates and in turn forage for insectivorous birds and bats; and
  - A variety of types of bat and bird boxes could be installed on retained trees and on and integrated into the structure of new buildings adjacent to retained and created open space to increase availability of roosting and nesting sites.

**6.0 CONCLUSIONS**

- 6.1 Designated sites will not be adversely impacted by the proposed development, with none in the vicinity of the site. The Saltway, an adjacent proposed Local Wildlife Site, will also be unaffected being suited to withstand additional footfall and with connectivity with its hedgerows retained. The Saltway is also to be buffered from built development, adding to the width of this locally important open space. The site does not support any notable plant species or habitats, except for hedgerows, which will largely be retained and incorporated into the development layout. Where loss is unavoidable this will be mitigated with the planting of replacement and additional native hedgerows appropriate to the local area.
- 6.2 Mitigation has been recommended that will prevent harm to bats and breeding birds and proposed habitat retention will prevent harm to and retain connectivity for hedgehog, common herptiles and brown hare that may be present on the site.

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## 7.0 APPENDIX A – BOTANICAL SPECIES LISTS

Species recorded are mainly dominant, conspicuous or characteristic species. Species lists are therefore not exhaustive of all flora present in each habitat type.

### Scattered Trees

Common Name	Scientific Name
Beech	<i>Fagus sylvatica</i>
Common lime	<i>Tilia x europaea</i>
Copper beech	<i>Fagus sylvatica 'Purpurea'</i>
Hornbeam	<i>Carpinus betulus</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Pedunculate oak	<i>Quercus robur</i>
Sycamore	<i>Acer pseudoplatanus</i>

### Species-poor Semi-improved Grassland

Common Name	Scientific Name
Autumn hawkbit	<i>Scorzoneroides autumnalis</i>
Cock's-foot	<i>Dactylis glomerata</i>
Daisy	<i>Bellis perennis</i>
Dandelion	<i>Taraxacum agg.</i>
Field bindweed	<i>Convolvulus arvensis</i>
Greater plantain	<i>Plantago major</i>
Meadow grass sp.	<i>Poa sp.</i>
Perennial rye-grass	<i>Lolium perenne</i>
White clover	<i>Trifolium repens</i>
Yorkshire-fog	<i>Holcus lanatus</i>

### Arable (recorded during 2015 update survey)

Common Name	Scientific Name
Barren brome	<i>Bromus sterilis</i>
Black grass	<i>Alopecurus myosuroides</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common field speedwell	<i>Veronica persica</i>
Common mouse-ear	<i>Cerastium fontanum</i>
Daisy	<i>Bellis perennis</i>
Field pansy	<i>Viola arvensis</i>
Great burnet	<i>Sanguisorba officinalis</i>
Meadow fescue	<i>Festuca pratensis</i>
Perennial rye-grass	<i>Lolium perenne</i>
Rough meadow grass	<i>Poa trivialis</i>
Sainfoin	<i>Onobrychis viciifolia</i>
Shepherd's purse	<i>Capsella bursa-pastoris</i>
Soft brome	<i>Bromus hordeaceus</i>
Sweet vernal grass	<i>Anthoxanum odoratum</i>
White campion	<i>Silene latifolia</i>
White clover	<i>Trifolium repens</i>
Yorkshire-fog	<i>Holcus lanatus</i>

### Tall Ruderal Vegetation

Common Name	Scientific Name
Cleavers	<i>Galium aparine</i>
Common nettle	<i>Urtica dioica</i>
Couch grass	<i>Elytrigia repens</i>
Creeping thistle	<i>Cirsium arvense</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Hedge woundwort	<i>Stachys sylvatica</i>

Common Name	Scientific Name
Hogweed	<i>Heracleum sphondylium</i>
Rosebay willowherb	<i>Chamerion augustifolium</i>

## Hedgerows

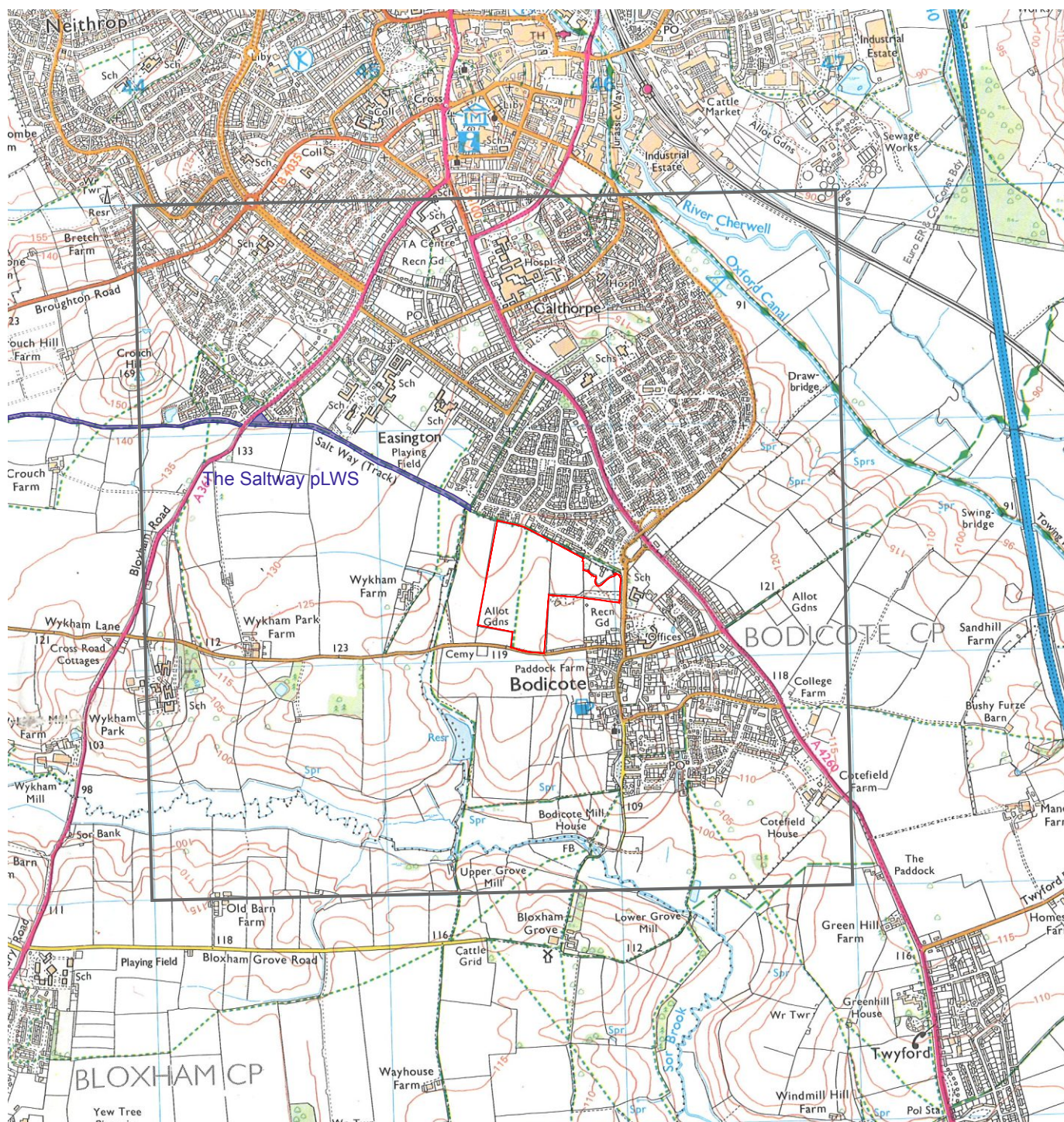
Common Name	Scientific Name
<b>H1</b>	
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common lime	<i>Tilia x europaea</i>
Common nettle	<i>Urtica dioica</i>
Dog rose	<i>Rosa canina</i> agg.
Elder	<i>Sambucus nigra</i>
English elm	<i>Ulmus procera</i>
Ground ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i>
Ivy	<i>Hedera helix</i>
White deadnettle	<i>Lamium album</i>
Woody nightshade	<i>Solanum dulcamara</i>
<b>H2</b>	
Bay laurel	<i>Laurus nobilis</i>
Box	<i>Buxus sempervirens</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broadleaved dock	<i>Rumex obtusifolius</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Common nettle	<i>Urtica dioica</i>
Creeping thistle	<i>Cirsium arvense</i>
Dog rose	<i>Rose canina</i> agg.
Elder	<i>Sambucus nigra</i>
False acacia	<i>Robina pseudoacacia</i>
False oat-grass	<i>Arrhenatherum elatius</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Coryllus avellanarius</i>
Herb-Robert	<i>Geranium robertianum</i>
Holly	<i>Ilex aquifolium</i>
Ivy	<i>Hedera helix</i>
Sycamore	<i>Acer pseudoplatanus</i>
White deadnettle	<i>Lamium album</i>
Willow	<i>Salix</i> sp.
Yew	<i>Taxus baccata</i>
<b>H3</b>	
Ash	<i>Fraxinus excelsior</i>
Common nettle	<i>Urtica dioica</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Dog rose	<i>Rose canina</i> agg.
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus</i> sp.
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellanarius</i>
Holly	<i>Ilex aquifolium</i>
Ivy	<i>Hedera helix</i>
<b>H4</b>	
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>

Common Name	Scientific Name
Comfrey sp.	<i>Symphytum</i> sp.
Common nettle	<i>Urtica dioica</i>
Dog rose	<i>Rose canina</i> agg.
Elder	<i>Sambucus nigra</i>
English elm	<i>Ulmus procera</i>
Field bindweed	<i>Convolvulus arvensis</i>
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Ivy	<i>Hedera helix</i>
Spear thistle	<i>Cirsium vulgare</i>
<b>H5</b>	
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Cleavers	<i>Galium aparine</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Elder	<i>Sambucus nigra</i>
English elm	<i>Ulmus procera</i>
Field bindweed	<i>Convolvulus arvensis</i>
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellanarius</i>
Ivy	<i>Hedera helix</i>
Nipplewort	<i>Lapsana communis</i>
Sycamore	<i>Acer pseudoplatanus</i>
Wood avens	<i>Geum urbanum</i>
<b>H6</b>	
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Cleavers	<i>Galium aparine</i>
Common nettle	<i>Urtica dioica</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Elder	<i>Sambucus nigra</i>
English elm	<i>Ulmus procera</i>
Field maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Hogweed	<i>Heracleum sphondylium</i>
<b>H7</b>	
Apple	<i>Malus</i> sp.
Ash	<i>Fraxinus excelsior</i>
Blackthorn	<i>Prunus spinosa</i>
Dog rose	<i>Rose canina</i> agg.
English elm	<i>Ulmus procera</i>
Field maple	<i>Acer campestre</i>
Guelder rose	<i>Viburnum opulus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hazel	<i>Corylus avellanarius</i>
Pedunculate oak	<i>Quercus robur</i>
Wild cherry	<i>Prunus avium</i>
Wytch elm	<i>Ulmus glabra</i>
<b>H8</b>	
Ash	<i>Fraxinus excelsior</i>
Dog rose	<i>Rose canina</i> agg.
Elder	<i>Sambucus nigra</i>
Elm sp.	<i>Ulmus</i> sp.
English elm	<i>Ulmus procera</i>
Hawthorn	<i>Crataegus monogyna</i>

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Common Name	Scientific Name
Hedge bindweed	<i>Calystegia sepium</i>
Wayfaring tree	<i>Viburnum lanata</i>
Wild privet	<i>Ligustrum sylvestris</i>

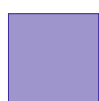




Site Boundary



Desk Study 1km Search Area



Potential Local Wildlife Site (pLWS)



Gladman Developments Ltd

Land off White Post Road  
Banbury, Oxfordshire

**SITE LOCATION AND DESK STUDY  
RESULTS PLAN**

1:50 000 @ A3

EA /

June 2015



**Figure 1**

**5691-E-01A**

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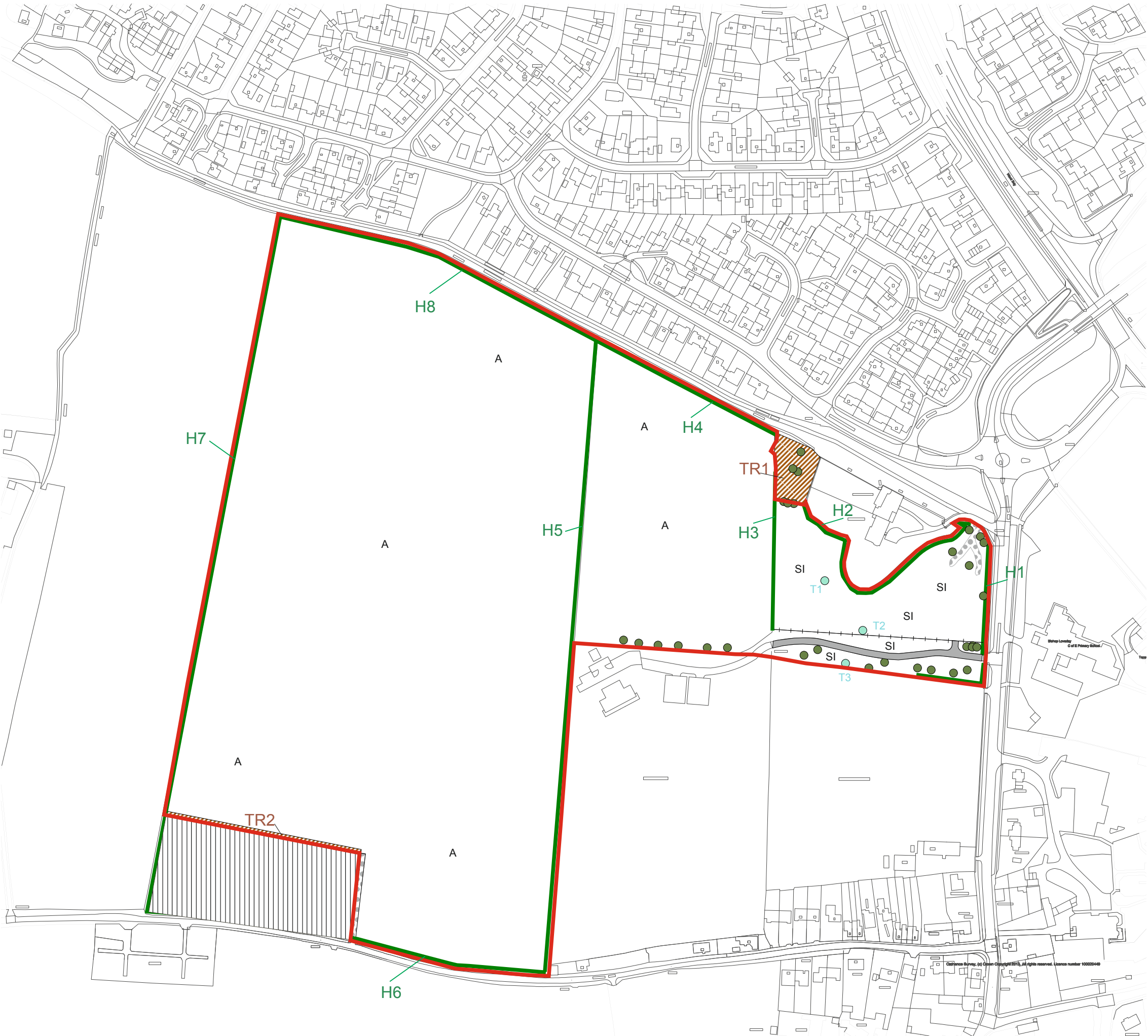
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- Site Boundary
- Scattered Broadleaved Trees
- Tall Ruderal Vegetation
- SI Species-poor Semi-improved Grassland
- Bare Ground
- A Arable
- Hedgerows
- Allotments
- Scattered tree with bat potential (with reference)

**Figure 2** 5691-E-02A

NTS @ A3 EA / RJS June 2015

Land to the West of White Post Road, Banbury  
Oxfordshire  
EXTENDED PHASE 1 HABITAT SURVEY PLAN

Gladman Developments Ltd

fpcr

NTS @ A3 EA / RJS June 2015

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