



Church Commissioners for England

Land West of New Barn Lane, Bognor Regis

Ecological Appraisal

May 2016

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EXECUTIVE SUMMARY

This report provides details of an ecological assessment for an outline planning application with all matters reserved for land to the west of New Barn Lane, North Bersted. The site is proposed for up to 50 residential units, landscaping, amenity space, car and cycle parking and road, service and drainage infrastructure. The green infrastructure will be designed to promote biodiversity.

A Phase 1 Habitat Survey was undertaken on 29th February 2016 to identify the habitats present on site, assess the ecological value and identify further surveys required. The site comprises a single field compartment supporting species-poor semi-improved grassland, partially bound by hedgerows and dense scrub. The semi-improved grassland, which will be lost to the development, was considered to be of low ecological value due to the lack of species diversity and structure. Habitats considered to be of some ecological value consisted of hedgerows, dense scrub, ruderal, mature trees and ditches. All boundary features, including hedgerows, mature trees and ditches are to be retained.

Habitats suitable to provide roosting, foraging and commuting habitat for bats were restricted to site boundaries and are to be retained through proposals. Seasonal bat surveys are to be undertaken to determine the importance of the site for bats and the species assemblage present. Habitats suitable for reptiles were restricted to hedgerow bases, scrub, ruderal vegetation and ditches which largely lie on the site boundaries and are to be retained and enhanced. The hedgerows bounding the site provide suitable habitat for hazel dormouse *Muscardinus avellanarius* and since a small section of hedgerow will be removed to facilitate access, further surveys are to be completed to determine their status on site.

Six internationally important sites were identified within 15km of the site boundary; Pagham Harbour SPA/Ramsar/SSSI being the closest at 3.9km south-west. Owing to the intervening distance between the site and the internationally important sites, it is considered that development will not have an adverse impact upon them.

The proposed green infrastructure has been designed to strengthen the boundary features present, enhancing connectivity around the site and into the wider area. The hedgerows will be 'gapped up' with native species and buffers provided to ensure foraging and cover opportunities remain for local wildlife. The incorporation of new habitats such as attenuation, tussock and species-rich grassland and additional native tree planting will provide ecological enhancements.

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1.0 INTRODUCTION

- 1.1 The following report details the results of an ecological appraisal undertaken by FPCR Environment and Design Ltd on behalf of Church Commissioners for England for a proposed residential development on land west of New Barn Lane, Bognor Regis, West Sussex (SU 917 009).
- 1.2 Phase 1 habitat and initial protected species surveys were undertaken on 29th February 2016. These surveys were commissioned to assess potential ecological constraints to development arising from the presence of any rare/notable habitats or the presence, or potential presence, of protected species.

Site Context

- 1.3 The site comprises a single field compartment, measuring 1.89ha. The field supports species-poor semi-improved grassland which is completely bound by stock-proof fencing with hedgerows and ditches partially bordering the northern, southern and western boundaries.
- 1.4 The site is located at North Bersted with farmland lying to the south, west and north of the site, Jubilee Recreation Ground lies immediately to the south with a caravan park and arable fields located in the wider area to the north. Existing residential development is present directly to the east.

Development Proposals

- 1.5 Proposals are for the creation of up to 50 residential units, which will include the retention of all boundary features including the hedgerows, trees and ditches. The Green Infrastructure (GI) will incorporate formal and informal public open space, balancing facilities and areas designed for biodiversity enhancements.

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2.0 METHODOLOGY

Desk Study

- 2.1 In order to compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:
- Multi Agency Geographic Information for the Countryside (MAGIC)¹;
 - Sussex Biodiversity Records Centre (SBRC).
- 2.2 Further inspection of colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk) was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.
- 2.3 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- 15km around the application area for sites of International Importance (e.g. Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites).
 - 2km around the application area for sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNR)).
 - 1km around the application area for sites of County Importance (e.g. Sites of Importance for Nature Conservation (SINC) / Local Wildlife Sites (LWS) and species records (e.g.: protected, Species of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities Act 2006² (NERC) or other notable species).

Field Surveys – Habitats / Flora

Extended Phase 1 Survey

- 2.4 The initial survey on 29th February 2016 using the standard Extended Phase 1 Habitat Survey Methodology as recommended by Natural England which follows methods in the Handbook for Phase 1 Survey³. This comprised a systematic walkover of the site mapping and broadly describing the principal habitat types and identifying the dominant plant species/communities present within each habitat type. Each habitat was described based on botanical merit and target notes were used to highlight features or habitats of particular interest.
- 2.5 Consideration was given to the presence of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA)⁴ and under the Weed Act 1959⁵. Any rare or notable flora including those listed as priorities in the Post 2010 UK Biodiversity Framework⁶, species listed under the NERC Act, Local Biodiversity Action Plan (LBAP) Priority

¹ www.magic.defra.gov.uk [Accessed 06.10.15]

² The Natural Environment and Rural Communities Act 2006. [Online]. Available from: <http://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed 11/11/2015]

³ JNCC. (1990). *Handbook for Phase 1 habitat survey – a technique for environmental audit*. Peterborough: JNCC (as amended 2003 & 2007)

⁴ Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO

⁵ Act of Parliament. (1959). The Weed Act 1959. London: HMSO

⁶ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). 2012. *UK Post-2010 Biodiversity Framework*. July 2012

Species/Habitats, any IUCN Red listed⁷, Red Data Book (RDB)⁸ and any national, regional, county or vice – county rarities were duly noted.

Hedgerows

- 2.6 Hedgerows were surveyed individually using the Hedgerow Evaluation and Grading System (HEGS)⁹. This method of assessment includes noting down canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, number and species of mature trees, and associated features such banks, ditches and grass verges.
- 2.7 Each hedgerow is given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:
- Grade 1 – High to very high value
 - Grade 2 – Moderately high to high value
 - Grade 3 – Moderate value
 - Grade 4 – Low value
- 2.8 Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.
- 2.9 Hedgerows were also assessed under the wildlife and landscape criteria of the Hedgerow Regulations 1997, Statutory Instrument No: 1160. This broadly follows the above methodology, although an average canopy species per 100 metres is calculated. Additional features which enhance hedgerows, when found in association with the hedge, such as mature trees, ditches and hedge banks are also considered. This methodology is broadly consistent with that outlined in The Hedgerow Survey Handbook (DEFRA, 2007)¹⁰.

Constraints

- 2.10 Whilst the initial habitat survey was completed outside the optimum survey period, it is considered that the survey identified all broad habitats; however the species lists should not be regarded as exhaustive.

Field Survey - Fauna

- 2.11 During walkover surveys in 2016, observations, signs of and suitable habitat for any species protected under Part 1 of the WCA 1981 (as amended), the Conservation of Habitats and Species Regulations 2010 (as amended)¹¹ and the Protection of Badgers Act 1992¹² were noted with particular attention being given to the potential presence of bats, reptiles, great crested newt

⁷ International Union for Conservation of Nature (IUCN), Red List 2012

⁸ The Vascular Plant Red Data List for Great Britain (2005), Cheffings, C. and Farrell, L. (Eds)

⁹ Clements, D.K. & Tofts, R.J. (1992) Hedgerow Evaluation and Grading System (HEGS): A methodology for the ecological survey, evaluation and grading of hedgerows.

¹⁰ DEFRA (2007). Hedgerow Survey Handbook: A standard procedure for local surveys in the UK

¹¹ *The Conservation of Habitats and Species Regulations* (as amended 2012). [Online]. Available from: <http://www.legislation.gov.uk/uksl/2010/490/contents/made> [Accessed 11/11/2013]

¹² *The Protection of Badgers Act 1992 (as amended)*. London: HMSO [Online]. Available from: <http://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed 03/05/2013].

Triturus cristatus, water vole *Arvicola amphibius*, badger *Meles meles* and birds. Throughout the survey consideration was also given to the existence and use of the site by other protected species or locally notable fauna such as Species of Principal Importance as listed on Section 41 of the NERC Act 2006, Bird of Conservation Concern (BoCC) red & amber listed bird species¹³, LBAP or Red Data Book (RDB) species.

- 2.12 The standard survey methodology was extended to assess the potential presence of protected species within features such as buildings and trees or specific habitats considered for their ecological value and potential to provide suitable habitats for protected species.

Badgers

- 2.13 Land within the development area was surveyed following the methodology outlined by Harris *et al* (1989)¹⁴. This involves a walkover of the site searching for field signs which would indicate the presence of badgers, which included the following:
- Setts: including earth mounds and evidence of bedding and or runways between identified setts;
 - Latrines: often located close to setts; at territory boundaries or adjacent to favoured feeding areas;
 - Prints and established track or runways;
 - Hairs caught on rough wood or fencing;
 - Other evidence: including snuffle holes, feeding and playing areas and scratching posts.
- 2.14 The identification of these latter signs on their own does not necessarily provide conclusive evidence of the presence of badgers. A number of such signs need to be seen in conjunction before badgers can be confirmed as being present.

Bats

Tree Assessments

- 2.15 Tree assessments were undertaken from ground level, with the aid of a torch and binoculars where required. During the survey Potential Roosting Features (PRFs) for bats such as the following were sought (based on P16, British Standard, Surveying for bats in trees and woodland – Guide, October 2015)¹⁵:
- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar.
 - Man-made holes (e.g. cavities that have developed from flush cuts or cavities created by branches tearing out from parent stems).
 - Woodpecker holes.
 - Cracks / splits in stems or branches (horizontal and vertical).

¹³ *Birds of Conservation Concern 4 (2015)*. British Trust for Ornithology {Online}. Available from: <http://www.bto.org/science/monitoring/psob>

¹⁴ Harris, S., Cresswell, P. & Jefferies, D. 1989. Surveying for badgers. Occasional Publication of the Mammal Society No. 9. Mammal Society, Bristol.

¹⁵ *British Standards Institute (2015) Surveying for Bats in Trees and Woodland- Guide*

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- Partially detached, loose or platy bark.
 - Cankers (caused by localised bark death) in which cavities have developed.
 - Other hollows or cavities, including butt rots.
 - Compression of forks with included bark, forming potential cavities.
 - Crossing stems or branches with suitable roosting space between.
 - Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk).
 - Bat or bird boxes.
- 2.16 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings and its location in respect to other features, may enhance or reduce the potential value.
- 2.17 Based on the above, trees were classified into general bat roost potential groups based on the presence of these features. Table 1 (below) broadly classifies the potential categories as accurately as possible as well as discussing the relevance of the features. This table is based upon Table 4.1 and Chapter 6 in Bat Surveys for Professional Ecologists: Good Practice Guidelines (J., Collins (Bat Conservation Trust), 2016¹⁶) (hereafter referred to as BCT Guidelines).
- 2.18 Although the British Standard Document³ groups trees with moderate and high potential, these have been separated below (as per Table 4.1 in The Bat Conservation Trust Guidelines) to allow more specific survey criteria to be applied.

¹⁶ *Bat conservation Trust (2016) Professional Ecologists: Good Practice Guidelines, Bat Conservation Trust, London.*

Table 1: Classification and Survey Requirements for Bats in Trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence. Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence. However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.
High Potential	A tree with one or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree may be upgraded or downgraded based on findings. If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from Natural England will be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
Moderate Potential	A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status). Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.	A combination of aerial assessment by roped access bat workers and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree may be upgraded or downgraded based on findings. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate. If a roost site/s is confirmed a licence from Natural England will be required.
Low Potential	A tree of sufficient size and age to contain Potential Roosting Features but with none seen from ground or features seen only very limited potential. Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.	No further survey required but a precautionary working method statement may be appropriate.
Negligible/No potential	Negligible/no habitat features likely to be used by roosting bats	None.

* 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 to confirm the presence of a breeding site or resting place should be completed.

Where features suitable to be used as a roost site (as above) were identified, evidence that bats had used the site as a roost was sought. This evidence can comprise live or dead bats, droppings, urine staining, and grease /scratch marks on wood.

Great Crested Newt

Habitat Suitability Index (HSI)

- 2.19 Where access was granted and where there were no barriers to dispersal, waterbodies within a 500m radius of the site were assessed, using the Habitat Suitability Index (HSI) for their potential suitability for GCN. The HSI provides a measure of the likely suitability that a waterbody will support newts¹⁷. In general, waterbodies with a higher score are more likely to support GCNs than those with a lower score and there is a positive correlation between HSI scores and waterbodies with newts recorded. Ten separate attributes are assessed for each waterbody:

- Geographic location
- Pond area
- Pond drying
- Water quality
- Shade
- Presence of waterfowl
- Presence of fish
- Number of linked ponds
- Terrestrial habitat
- Macrophytic coverage

- 2.20 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Waterbody suitability is then determined according to the following scale:

Table 2: Habitat Suitability Index Scores and Waterbody Suitability

HSI Score	Waterbody Suitability
<0.5	Poor
0.5 - 0.59	Below average
0.6 – 0.69	Average
0.7 – 0.79	Good
>0.8	Excellent

¹⁷ Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

- 2.21 An assessment of the suitability of the terrestrial habitats to support GCNs was completed with each waterbody. Suitable terrestrial habitat includes refuge opportunities such as scrub and rank vegetation and habitat that could provide suitable hibernation sites such as rubble piles or tussock grassland.

Aquatic Surveys

- 2.22 Survey methods followed those recommended by Natural England as detailed in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). To determine the presence or absence of great crested newts, four individual survey visits are proposed, which will take place in April, May and June with at least two of these visits undertaken within the peak season of mid-April to mid-May. If GCN are recorded, two further surveys will be undertaken to allow an estimation of population size in accordance with the guidelines. On each survey occasion three of a possible four different techniques will be employed (egg search, sweep net, bottle trap and torch). A summary of these techniques is detailed below:

Bottle Trapping

- 2.23 Bottle traps were set within the water body in the evening at densities of one trap per two metres of shoreline (where feasible) and left overnight for inspection in the morning. Traps were partially submerged in the water leaving an air bubble in the bottle and secured by a cane marked with a high visibility tape to ensure relocation the following day. Care was taken to ensure that trapping did not occur during excessively warm weather, when the temperature inside the trap could rise considerably, reducing oxygen levels and potentially suffocating the newts.

Sweep Netting

- 2.24 Long handled sweep-nets were used to sample the margins of the pond for great crested newts, with approximately 15 minutes of netting per 50m of shoreline.

Torching

- 2.25 Torching involved searching the water body after dusk using high-powered torches to scan the margins and potential display areas for newts. The perimeter of the pond was walked slowly spending approximately 15 minutes torching each 50m of shoreline recording any newts observed. Torch surveys are unsuitable within heavily vegetated and/or turbid ponds or after periods of heavy rain as visibility is diminished.

Egg Searching

- 2.26 Newts lay single eggs on leaves of aquatic plants or other suitable pliable material, after which the material is folded over the egg to protect it. Great crested newt eggs can be distinguished from those of the other newts by their size, shape and colour. Submerged vegetation was examined for newt eggs and folded leaves gently opened to check for eggs. Once a great crested newt egg is identified, no further leaves need to be examined to minimise any further potential disturbance. All surveys were conducted by at least one licensed or accredited ecologist from FPCR Environment and Design Ltd. All surveys were completed during suitable conditions i.e. when the ambient air temperature exceeds 5°C, with little/no wind and no rain.

Population Size Class Assessment

- 2.27 Population size class assessments are based on the highest maximum (peak) count of great crested newts observed on any one survey occasion.

Table 3 – Determining Population Size Class (Great Crested Newt Mitigation Guidelines, 2001)

Population Size Class	Peak Counts
Low Population	0 – 10 animals
Medium Population	11 – 100 animals
High Population	> 101 animals

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3.0 RESULTS

Desk study

- 3.1 Locations of statutory and non-statutory sites referred to in the following section are illustrated on Figure 1: Consultation Results Plan.

Statutory Sites of International Conservation Value

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) website indicates that there are six internationally designated site within 15km of the site boundary including: Pagham Harbour Ramsar/SPA/SSSI (3.9km south-west); Solent Maritime SAC and Chichester & Langstone Harbours (Ramsar/SPA (both 8.1km west); Kingsley Vale SAC (12.9km north-west); Duncton to Bignor Escarpment SAC (13.2km north-east); and Singleton & Cocking Tunnels SAC/SSSI (13.7km north). There are no nationally designated sites present within 2km of the site boundary. Details of all statutory designated sites are contained in the table below:

Table 4: Details of Statutory Designated Sites within 15km of the Site

Site Name	Designation	Approximate Location from Site	Size (ha)	Reasons for Designation
Pagham Harbour	Ramsar, SPA & SSSI	3.9km south-west	636.68	Supports populations of European importance of the following species Annex I: Breeding season; Little Tern <i>Sterna albifrons</i> , Over winter; Ruff <i>Philomachus pugnax</i> , Supports populations of European importance of the following migratory species: Over winter; Pintail <i>Anas acuta</i> .
Solent Maritime	SAC	8.1km west	5138 ha	Annex I Habitats: Estuaries, Spartina swards (<i>Spartinion maritimae</i>), Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>). Annex I Habitats as qualifying species: Sandbanks, Mudflats, Coastal lagoons Annex II species present as a qualifying feature: Desmoulin's whorl snail <i>Vertigo moulinsiana</i>
Chichester & Langstone Harbours	Ramsar & SPA	8.1km west	1687.26 ha	Supports populations of European importance of the following species Annex I: Breeding season; Little Tern; Sandwich Tern <i>Sterna sandvicensis</i> On passage; Little Egret <i>Egretta garzetta</i> Over winter; Bar-tailed Godwit <i>Limosa lapponica</i> ; Little Egret <i>Egretta garzetta</i> Supports populations of European importance of the following migratory species: On passage; Ringed Plover <i>Charadrius hiaticula</i> Over winter; Black-tailed Godwit <i>Limosa limosa islandica</i> ; Dark-bellied Brent Goose <i>Branta bernicla bernicla</i> ; Dunlin <i>Calidris alpina alpina</i> ; Grey Plover <i>Pluvialis squatarola</i> ; Redshank

				<i>Tringa totanus</i> ; Ringed Plover <i>Charadrius hiaticula</i> Assemblage qualification: Regularly supporting at least 20,000 waterfowl. Over winter, the area regularly supports 93,142 individual waterfowl
Kingsley Vale	SAC	12.9km north-west	200.94	Qualifying habitats: Annex I: Taxus baccata woods of the British Isles. (Yew-dominated woodland)* Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia)
Duncton to Bignor Escarpment	SAC	13.2 km north-east	211.84	Annex I Habitats: Mature beech <i>Fagus sylvatica</i> woodland located on the steep scarp face of the South Downs. Beech dominates in a mosaic with ash <i>Fraxinus excelsior</i> woodland, scrub and grassland.
Singleton & Cocking Tunnels	SAC	13.7km north	1.88	Annex II Species: Barbastelle bat Bechstein's bat Most important sites for hibernating bats in south-east England

Non-Statutory Sites of Local Conservation Interest

- 3.2 There are no sites within 1km of the site which have been designated as Sites of Importance for Nature Conservation (SINC).

Protected and Priority Species

- 3.3 The results from the desk study recorded an absence of protected /notable species within the site boundary. Several records of protected, notable or local BAP species were present within 1 km, detailed in Table 5 below:

Table 5: Notable and Protected Species Recorded within 1 km of the Site Boundary

Name	Designation	Distance and Bearing (from Site Boundary) and Potential On Site Habitat
Pipistrelle bat species <i>Pipistrellus sp.</i>	WCA	One record, c. 795m south-east (2008). Suitable foraging, commuting and roosting habitat present on site boundary in the form of hedgerows and trees.
Barn owl <i>Tyto alba</i>	WCA, Schedule 1	Two records, only accurate to 1km ² with the centre point of this grid located approximately 595m north-west of the site (2010, 2012). Limited foraging habitat in the form of grassland.
Red kite <i>Milvus milvus</i>	Schedule 1	One record, c. 190m north-east (2012). Limited suitable foraging habitat.
Adder <i>Vipera berus</i>	WCA, NERC, LBAP	One record c. 427m south-east (2011). Suitable habitat present on site in the form of the grassland compartment, scrub, field margins, hedgerows and on site ditch.
Common lizard <i>Zootoca vivipara</i>	WCA, NERC, LBAP	One record c. 422m south-east (2011). Suitable habitat present on site in the form of the grassland compartment, scrub, field margins, hedgerows and on site ditches.

Name	Designation	Distance and Bearing (from Site Boundary) and Potential On Site Habitat
Slow worm <i>Anguis fragilis</i>	WCA, NERC, LBAP	Two records c. 422m south-east and c. 850m south-east (2012). Suitable habitat present on site in the form of the grassland compartment, scrub, field margins, hedgerows and on site ditches.
European Water vole <i>Arvicola amphibius</i>	NERC, LBAP	One record c. 814m east (2012) seen in a rife which backs onto a residential garden. Suitable habitat present on site in the form of a flowing ditch network.

LBAP – Local Biodiversity Action Plan, NERC – Natural Environment and Rural Communities Act 2006, WCA – Wildlife and Countryside Act 1981, Schedule 1 – WCA (Birds).

Field Survey – Habitats / Flora

Poor Semi-improved Grassland

- 3.4 The species-poor semi-improved grassland was dominated by grass species indicative of improvement. Perennial rye-grass *Lolium perenne* dominated the sward with Timothy *Phleum pratense* and red fescue *Festuca rubra* recorded in low abundance. The field margins supported species-poor herb and scrub communities which predominantly constituted common nettle *Urtica dioica*, common ivy *Hedera helix* and common figwort *Scrophularia nodosa*.

Trees

- 3.5 There were a number of mature trees present on site, all of which were located within hedgerows and on the boundaries. The most abundantly recorded species was crack willow *Salix fragilis* which was recorded on the south-western and south-eastern boundaries. Other species recorded included sessile oak *Quercus petraea*, ash *Fraxinus excelsior* and horse-chestnut *Aesculus hippocatanum*. Although generally appearing to be in good condition, many of the trees contained woodpecker holes and supported ivy, features of which provide suitable bat roosting potential (see section 3.14).

Ruderal

- 3.6 There was a narrow strip of ruderal vegetation lying parallel to the western section of hedgerow H1. Additionally, there was an area of ruderal vegetation extending into the field from the south-western boundary. Species recorded in these areas primarily consisted of common nettle, spear thistle *Cirsium vulgare*, common couch *Elytrigia repens*, broad-leaved dock *Rumex obtusifolius*, bristly ox-tongue *Picris echioides*, common ivy and common figwort.

Scrub

- 3.7 There were areas of dense scrub present on site which were limited to the field boundaries, partially bounding the north-eastern boundary, the western boundary and the south-western boundary. Additionally, there was an area of outgrown scrub protruding into the field from the south-west boundary. The species recorded comprised bramble *Rubus fruticosus* agg, hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*.

Hedgerows

- 3.8 Three hedgerows present on site, all of which contain over 80% native species and are therefore identified as Habitats of Principal Importance under Section 41 of the NERC Act. None of the hedgerows present on site qualify as important under the wildlife and landscape criteria of the Hedgerow Regulations 1997.

Table 6: Hedgerow Composition and Descriptions

Ref	Canopy Species	Length	Notes	HEGS grade / value
H1	Qp, Rf, Ca, Ps, Fe, Sf	125m,	Northern boundary hedgerow, <10% gaps, 9 mature trees, 3 connections, wet ditch lying adjacent to hedgerow absent of vegetation	3+ / moderate
H2	Rf, Ca, Qr, Ps, Sf	194m	Western boundary hedgerow, 10-0% gaps, 11 mature trees, 2 connections, no associated ditch, verge or bank	3 / moderate
H3	Ah, Rf, Cm, Sf, Ca	104m	Southern boundary hedgerow, 30-10% gaps, 10 mature trees, 1 connections, wet ditch lying adjacent to hedgerow absent of vegetation	-3 / moderate

Key to hedgerow species: Qp *Quercus petraea* Sessile oak, Rf *Rubus fruticosus* Bramble, Ps *Prunus spinosa* Blackthorn, Fe *Fraxinus excelsior* Ash, Sf *Salix fragilis* Crack willow, Ca *Corylus avellana* Hazel

Ditches

- 3.9 Ditch D2, located adjacent to hedgerow H1, contained slow-flowing water which ran in a north-easterly direction. This ditch was steep-sided and approximately two feet deep, contained no aquatic or marginal vegetation and appeared to have been recently dredged and excavated. Ditch D4 lay adjacent to the south-eastern and was linked ditch D3 that extends along the western boundary, both were dry at the time of survey. However during aquatic surveys in April a small section of standing water was present in ditch D3. Both ditches were approximately 1m in depth and contained no marginal or aquatic vegetation indicative of wetness.

Buildings

- 3.10 There was one building, building B1, located on the western boundary of the site. This consisted of a small, timber-clad shed with a felt-lined flat roof which offered no roosting potential for bats due to the absence of any features.

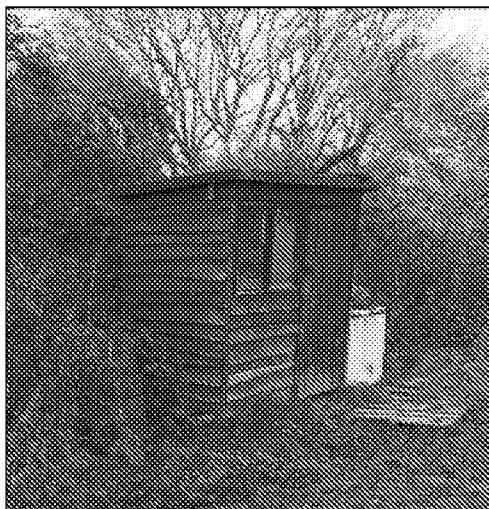


Photo 1: B1 (shed structure)**Fauna****Badger**

- 3.11 No setts or evidence of badger was identified during surveys. In addition, the site is unlikely to provide a substantial foraging resource for badgers, should they be present in the local area, due to its small size.

Bats

- 3.12 The grassland, trees, ditches, hedgerows and scrub provide suitable foraging and commuting habitat for bats.

Tree Assessment

- 3.13 Thirteen trees were considered to have bat roosting potential which were predominantly located along the south-western boundary but were also present on the south-eastern and northern boundaries. Details of the features present and classification are contained within the table below:

Table 7: Details of Trees with Bat Potential

Tree	Species	Bat Potential	Features
T1	Crack willow	High/moderate potential	North-facing woodpecker holes 2m and 3m high. North-east facing crevice 4m high.
T2	Crack willow	High/moderate potential	North-facing woodpecker hole 3m high.
T3	Crack willow	High/moderate potential	North-facing deadwood and crevice 4.5m high. Woodpecker hole at 3m
T4	Crack willow	Low potential	Ivy clad up to 10m high
T5	Crack willow	High/moderate potential	Three north-facing woodpecker holes at 3m, 4m and 5.5m high. Small holes on central leader
T6 + T7	Crack willow	Low potential	Ivy clad to 9m high
T8	Crack willow	High/moderate potential	North-facing deadwood and crevice 6m high
T9	Crack willow	High/moderate potential	Two cavities present on west-facing limbs, approximately 6m high

T10 /T11	Crack willow	Low potential	Ivy clad extending up to the top of the tree
T12	Sessile oak	Low potential	Ivy clad to 6m high
T13	Crack Willow	High/moderate potential	East-facing woodpecker hole 7m, with other smaller holes

Birds

- 3.14 The hedgerows, trees and scrub provide suitable nesting, roosting and foraging opportunities for birds. A number of bird species typically associated with urban edge development were recorded during the survey and, of note, included starling *Sturnus vulgaris*, house sparrow *Passer domesticus* and dunnock *Prunella modularis* all identified within the boundary hedgerows. Starling and house sparrow are BoCC red listed, dunnock is BoCC amber listed and all three are Species of Principle Importance on Section 41 of the NERC Act 2006.

Great Crested Newt (Figure 3)

- 3.15 No waterbodies were identified on site, however two ponds were identified through aerial inspection and OS maps within 500m of the site boundary, which provide breeding habitat suitable for GCN. The ditches in the surroundings contained slow-flowing water which could provide additional opportunities for GCN, however the majority were either recently dredged or void of aquatic or marginal vegetation.
- 3.16 Terrestrial habitat for GCNs is present in the form hedgerow bases, ruderal vegetation and scrub which provide suitable refuge, commuting and foraging habitat. The grassland provides sub-optimal habitat for commuting and foraging due its lack of structure.

Aquatic Habitat Descriptions

- 3.17 Pond P1 measures approximately 9000m² and is located within the Bersted Park residential development to the north east, circa. 360m from site. The lake has been enhanced to provide a sanctuary for wildlife with an emphasis upon wildfowl. The habitat surrounding the lake provided little cover from predation, with amenity grassland beyond the marginal vegetation which included common reedmace *Typha latifolia*. The waterbody was free of macrophytic coverage at the time of survey and whilst observations of fish could not be confirmed it is highly likely that a population exists, providing a food source for wildfowl using the site.
- 3.18 Pond P2 was located approximately 419m north of site and was at the tip of the Bersted Park development on the southern side of a busy roundabout. The pond spanned approximately 125m² and like P1, appeared to have undergone enhancement with fresh planting of dogwood *Cornus sanguinea* and hazel *Corylus avellana* stands. Grassland which surrounded the pond had been allowed to develop a tussocky structure with perennial rye-grass and red fescue *Festuca rubra* recorded. A ditch runs to the south and provides limited refuge for GCN, beyond which the residential park and road network continued.

Habitat Suitability Index (HSI)

- 3.19 An HSI assessment was undertaken on all water-bodies where water was present within the survey area and within 500m of the site boundary, where access was permitted or where assessments could be made from public rights of way.
- 3.20 An HSI assessment was undertaken on ponds P1 and P2. The probability of annual drying of pond P2, as well as its size, provided a below average suitability (0.59), with pond P1 achieving poor suitability for GCN (0.31) due to the presence of wildfowl, the likely presence of fish and the poor surrounding habitat comprising amenity grassland.

Aquatic Surveys

- 3.21 On the 12th April an aquatic survey was undertaken on ditches D1, D2, D3, D8 and D9. During which it was confirmed that smooth newts *Lissotriton vulgaris* were found in ditches D1, D3, D8 and D9, with palmate *Lissotriton helveticus* in ditches D3 & D9.

Hazel Dormice

- 3.22 The site was partially bounded by hedgerows in addition to small areas of scrub within the field edges. The habitats provided nesting and foraging opportunities for dormice, including hazel, bramble, sessile oak and blackthorn. No records of dormice were returned within 1km of the site boundary.

Reptiles

- 3.23 The hedgerow bases, ditches and scrub represent suitable, albeit limited, habitats for reptiles providing commuting, sheltering and foraging opportunities. The poor semi-improved grassland was considered to offer sub-optimal habitat for reptiles, as it lacked the structure required with the exception of narrow field margins (c. 0.25m in width) which contained unmanaged grassland.

Water vole

- 3.24 The on site ditches provide a bank system considered to be suitable for water vole, however, the lack of aquatic and marginal vegetation reduces the suitability of the ditches for this species. Ditch D2 was dry at the time of survey and no evidence of water vole was observed within any ditches during the Phase 1 survey.

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4.0 DISCUSSION AND RECOMMENDATIONS

- 4.1 The following section provides an evaluation of the site and identifies the likely ecological constraints associated with the proposed development. Where appropriate, recommendations have been made for mitigation, compensation and further surveys where required.

Designated Sites

- 4.2 There are six internationally designated sites within 15km of the site boundary. Due to the small-scale of works, the intervening distance is considered to be great enough to prevent adverse impacts from indirect effects such as pollution, hydrology changes and increased public pressure.
- 4.3 Pagham Harbour SPA/Ramsar lies approximately 3.9km south-west from the site boundary, which falls within the 5km zone of influence for this statutory site. The proposed development will deliver approximately 0.63ha of public open space, which will provide opportunities for recreational activities; the footpaths will provide a circular route that can be used for dog walking. Such walks could also extend into the adjacent Jubilee Recreational Ground, which also includes a play area and playing field. It is envisaged that the intervening distance from the SPA and the proposed recreational facilities will mitigate for visits to the SPA.

Habitats/Flora

- 4.4 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 and linear habitats in NPPF, or non-statutory site designation),
 - Identification as a habitat of Principal Importance for biodiversity under Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within England and the local area.
- 4.5 The semi-improved grassland provided limited conservation value due its low species diversity and poor structure.
- 4.6 Under National Planning Policy Framework (NPPF) the development should seek to contribute a net gain in biodiversity with an emphasis on improving ecological networks and linkages where possible.
- 4.7 The site is partially bound by mature native species hedgerows which qualify as Habitats of Principal Importance in England under NERC. All hedgerows and trees are important in their functions as corridors and foraging and nesting habitats for wildlife. All hedgerows are to be retained (with exception of a small section of hedgerow H1 to allow for access), enhanced and suitably buffered from the development, with wide grassland margins created. In order to enhance the connectivity across the site, the hedgerows have additional native hedgerow and tree species planted. This will compensate for the small loss of hedgerow H1.
- 4.8 In addition, further tree planting will be incorporated into the GI and where feasible, particularly alongside hedgerows, areas of species-rich tussock grassland will be created to provide enhanced foraging habitats for invertebrates, birds and bats.

- 4.9 Throughout construction and operational phases of development, root protection areas (RPAs) will be created along hedgerows and tree specimens, which will protect them from direct damage and compaction of the soil, which would in the longer term effect the health of the specimen.
- 4.10 Preference should be given within the planting scheme to the use of locally native woody species, with an emphasis on species bearing nectar, berries, fruit and nuts as these enhance the foraging opportunities for local wild fauna.
- 4.11 Two attenuation basins will be created within area of open space, where feasible these will be designed and planted to maximise its biodiversity value with shallow draw down zones, scalloped edges and deep central areas.

Protected Species

Bats

- 4.12 The boundary hedgerows and trees provide suitable commuting and foraging habitats for bats. The main body of the site (poor semi-improved grassland) is considered to be of sub-optimal value for bats due to the lack of floral diversity and subsequent invertebrate life. All hedgerows and trees (excluding a small section for access) are to be retained, enhanced and buffered and through incorporation of a suitable lighting scheme (see below), it is considered that the existing corridors will continue to provide valuable routes for local bat populations.
- 4.13 In order to determine the assemblage of bats present further surveys are recommended. The site is deemed to be of low habitat quality for bats in accordance with the Bat Conservation Trust's guidance¹⁸. Therefore, it is recommended that seasonal bat transects (spring, summer and autumn) are carried out and on each survey occasion a single static detector will be deployed. The static detector will be positioned at a different location on each occasion and will be left in-situ for a minimum of five nights.
- 4.14 A number of mature trees provide features which are suitable to support roosting bats. Since these trees all lie on the site boundaries, these trees will not be directly disturbed and through implementation of a suitable lighting strategy it is considered that disturbance will remain negligible.

Habitat Enhancements for Bats

- 4.15 The retention of the majority of mature trees and hedgerows ensures connectivity is maintained and the inclusion of additional tree and hedgerow planting will enhance foraging and commuting habitats around the site and into the wider area. It is considered that, through development, there will be no significant effect on bats using the local area.
- 4.16 Hedgerow enhancement and inclusion of buffers will improve hedgerow structure creating better microclimates and sheltered areas that will benefit invertebrate species which will in turn provide enhanced foraging opportunities for bats. The creation of attenuation facilities will also provide additional foraging opportunities, as a diverse range of invertebrates use waterbodies for their life cycle.

¹⁸ Collins, J. (ed.) 2016 Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

- 4.17 Where the small gap is required to facilitate access through the site, this will be kept to a minimum and the use of 'hop-overs' will ensure flight lines are maintained. This entails the planting of taller vegetation on the edges of gaps greater than 7m wide to increase the flight lines of passing bats, allowing continued echolocation, and so avoiding vehicles and light.
- 4.18 If feasible within the development design, roosting opportunities should be enhanced through the installation of bat boxes on retained trees or incorporated on to selected new buildings. These could include Ibstock bat bricks or Schwegler 1FR Bat Tubes which can easily be incorporated into the walls of the new buildings and Schwegler 1F and 2FN bat boxes for trees. The provision of such features would be in accordance with National and Local Planning Policy helping to enhance biodiversity within the local area.

Lighting

- 4.19 The development lighting scheme should be designed with regard to good practice guidance, as set out in the Bat Conservation Trust (document *Statement on the impact and design of artificial light on bats*¹⁹ and the Institution of Lighting Professionals Guidance Notes. Therefore, the lighting scheme should include the following:
- The avoidance of direct lighting of existing trees, hedgerows, scrub, woodland, or proposed areas of habitat creation/landscape planting;
 - Use of low pressure sodium or high pressure sodium instead of mercury or metal halide lamps;
 - Directional lighting and avoidance of light spillage;
 - Lighting columns to be as short as possible, although in some locations taller columns would allow reduced horizontal spill and
 - Lighting levels to be as low as guidelines permit and only used where required for public safety.
- 4.20 This will minimise light spill onto potential commuting/foraging routes and minimise potential disturbance caused through the lighting of corridors.
- 4.21 The strategic implementation of these general measures and habitat enhancement/creation will ensure that the potential for any indirect impacts upon foraging and commuting habitats used by the local bat population would be reduced to negligible levels and has the potential to result in a small net improvement through provision of additional roosting opportunities.

Birds

- 4.22 Three records of Schedule 1 species of birds; barn owl, red kite and hobby were returned. It is highly unlikely that the site would provide foraging opportunities for any of these species due to the habitats present and the lack of structure of the grassland, which does not provide conditions for small mammals (prey for barn owl).
- 4.23 A small number of notable birds were recorded on site; starling, house sparrow and dunnoek. The habitats of importance to these species, trees and hedgerows, will be retained and enhanced

¹⁹ Bat Conservation Trust (May 2011). *Statement on the impact and design of artificial light on bats*. <http://www.bats.org.uk/publications.php?keyword=lighting&month=&year=&category=&search=Search> (accessed on 14.04.16).

through proposals, ensuring nesting and foraging opportunities remain. The proposed development is expected to have a positive impact on these species as all three are readily associated with residential areas and associated green spaces such as gardens and parks. The proposed new habitats will likely lead to an increase in available foraging and nesting resources.

- 4.24 Further enhancements that could be integrated into the development proposals include the erection of a mixture of nest box types. These boxes can be sited within retained habitats or designed into the built environment, and may include:
- A mixture of small hole (26mm and 32mm) boxes placed throughout the site on suitable trees and buildings will provide nesting opportunities for blue tit and great tit. These boxes generally have a high uptake rate;
 - Small open fronted nest boxes again should be placed throughout the site especially on trees which support a climber such as ivy *Hedera helix* which provides a degree of concealment. These boxes typically attract robin, blackbird and spotted flycatcher *Muscicapa striata*; and,
 - A mixture of more specialised nest boxes should be placed on retained trees particularly in the southern extent of the site and should include boxes for stock dove *Columba oenas*, tawny owl *Strix aluco* and kestrel *Falco tinnunculus*.
- 4.25 Any removal of woody vegetation should occur outside the bird breeding season (March to August/September inclusive) to minimise the risk of disturbance to breeding birds. If this is not possible, vegetation should be checked prior to removal by a suitably experienced ecologist. If active nests are found, vegetation should be left untouched and suitably buffered from works until all birds have fledged.

Great Crested Newts

- 4.26 Under Regulation 53 of the Habitats and Species Regulations, 2010 it is necessary for development proposals to demonstrate that they will not be detrimental to the maintenance of the population of the European Protected Species (EPS) concerned at a Favourable Conservation Status (FCS) within their natural range. Any proposals must also demonstrate that they do not offend the prohibitions in article 12 (1), Regulation 9 (5) of the Conservation of Habitats and Species Regulations, 2010; in this case, namely, the destruction of GCN habitat.
- 4.27 No records of GCN were returned from the data consultation. The site provides suitable terrestrial habitat for GCN in the form of hedgerow bases, scrub and ruderal vegetation. The semi-improved grassland also provided limited foraging opportunities for GCN due to its lack of structure. Two off-site water-bodies have been identified within 500m of the site boundary; however it is considered both of these ponds do not require further survey. Both ponds are separated from the site by the busy A529 (Colchester Road) which represents a significant barrier to dispersal. Additionally, due to the presence of residential houses located between the ponds and the site, GCNs would not be able to commute directly to the site, whereby they would have to commute over 500m. Research published by Natural England²⁰ suggests that GCNs rarely move further than 200-250m from ponds/waterbodies, this research suggests:

²⁰ Cresswell and Whitworth. 2004. *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature Research Report No 576. Peterborough: English Nature.

“...at distances greater than 200-250m, capture and exclusion operations will hardly ever be appropriate. These recommendations are broadly consistent with findings in literature, since although a maximum routine migratory range has been estimated at approximately 250m from a breeding pond (Franklin, 1993²¹; Oldham and Nicholson, 1986²²; Jehle, 2000²³), Jehle (2000)²⁴ determined a terrestrial zone of 63m, within which 95% of summer refuges were located. In addition, following the breeding season, Jehle and Arntzen (2000)²⁴ recorded 64% of newts within 20m of the pond edge.”

- 4.28 One on site ditch contained slow-flowing water which offers suitable breeding habitat. However, due to the absence of aquatic and marginal vegetation at the time of survey, together with being recently dredged, this represents low habitat quality due to the lack of egg-laying opportunities.
- 4.29 During the first aquatic survey in April, smooth and palmate newts were found in ditch D3 that runs along the western boundary. Surrounding ditches within third party land were also surveyed and these also found there to be palmate and smooth newts. During these initial surveys no GCN were found and therefore currently there are no statutory constraints concerning this species.

Hazel Dormice

- 4.30 The hazel dormouse is listed under Annex IVa of the EC Habitats Directive and as a result is covered by Section 41 of the Conservation of Habitats and Species Regulations 2010 (as amended). They are listed as "species of principal importance for the conservation of biological diversity" in the NERC (2006), and they are also a Sussex BAP species. It is also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these make it an offence to:
- deliberately capture or intentionally take a dormouse;
 - deliberately or intentionally kill or injure a dormouse;
 - to be in possession or control of any live or dead dormouse or any part of, or anything derived from a dormouse;
 - damage or destroy a breeding site or resting place of a dormouse;
 - Intentionally or recklessly obstruct access to any place that a dormouse uses for shelter or protection;
 - intentionally or recklessly disturb a dormouse while it is occupying a structure or place that it uses for shelter or protection;
 - deliberately disturb any dormouse in particular any disturbance which is likely to
 - impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or

²¹ Franklin, P. S. 1993. The migratory ecology and terrestrial habitat preferences of the great crested newt (*Triturus cristatus*) at Little Wittenham Nature Reserve. De Montford University unpublished thesis.

²² Oldham, R. S & Nicholson, M. 1986. *Status and ecology of the warty newt Triturus cristatus*, Report to the Nature Conservancy Council (Contract HF 3/05/123), Peterborough.

²³ Jehle, R. 2000. The terrestrial summer habitat of radio-tracked great crested newts (*Triturus cristatus*) and marbled newts (*T. marmoratus*). *Herpetological Journal*. 10, pp. 137-142.

²⁴ Jehle, R. & Arntzen, J. W. Post-breeding migrations of newts with contrasting ecological requirements. *Journal of Zoology, London*, 251, pp 297-306

- to affect significantly the local distribution or abundance of the species to which they belong.

- 4.31 No dormouse records have been identified following consultation. However, the hedgerows on site provide suitable habitat for dormouse and contain several species of value including hazel, sessile oak, bramble and blackthorn. These species provide nesting and foraging opportunities for dormice in the form of fruit, flowers and insect provision. It is also accepted that the south east and west of the UK are a stronghold for this species and they are thought to be under recorded in such areas. Due to the severance of hedgerow H1 for access, precautionary presence/absence surveys are recommended to determine dormouse status within the site.

Reptiles

- 4.32 All common UK reptiles species are partially protected under Schedule 5 (Sections 9(1) and 9(5)) of the Wildlife and Countryside Act 1981 (as amended).
- 4.33 Habitats for reptiles were restricted to the hedgerow bases, ditches, ruderal vegetation, scrub and narrow field margins which provide habitat suitable for commuting, foraging and for refuge. Records of adder, common lizard and slow-worm have been identified, with all three species recorded within 500m of the site boundary. It is considered that further surveys are not necessary due to the limited area of suitable habitat available for reptiles on site. These habitats are restricted to the site boundaries and are to be retained and enhanced as part of the GI; therefore the development is likely to enhance the site's value for reptiles. A precautionary Method Statement will be written at the detailed planning stage, when a finalised design has been confirmed, this will detail measures to ensure if reptiles are present within the retained habitats that they are protected from harm, injury or death. Such measures will include passive displacement from areas where there will be potential temporary or permanent losses of habitat.

Water Vole

- 4.34 Water voles are fully protected under section 9 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to: -
- Intentionally kill, injure or take water voles;
 - Possess or control live or dead water voles or derivatives;
 - Damage, destroy and obstruct access to any structure or place used by water voles for shelter or protection;
 - Disturb water voles whilst they are using such a place.
- 4.35 One record of water vole was returned within 1km following consultation, located within the residential area of North Bersted approximately 814m east. Whilst it is considered that this record is not directly linked to the site and sufficiently isolated, the existence of a further ten records between 1.5 – 2km north highlights the possible presence of water vole within on site ditches. During the walkover survey no signs of water vole such as feeding stations or droppings were observed, however further observations will be made on subsequent visits to site to confirm the likely absence of this species.

5.0 CONCLUSION

- 5.1 Six internationally important sites are located within 15km and no nationally important sites are located within 2km of the site boundary. Due to the intervening distances involved and on site GI, these sites will not be impacted by proposals.
- 5.2 No non-statutory sites are located within 1km of the site boundary.
- 5.3 The site comprises a single field compartment comprising species-poor, semi-improved grassland which was partially bounded by hedgerows and dense scrub. The semi-improved grassland was considered to be of low ecological value due to the lack of species diversity and structure. Areas of scattered scrub, mature trees, ditches and hedgerows on the site's peripheries are of value to wildlife.
- 5.4 There were thirteen trees on site which were identified as offering bat roosting opportunities, seven of which were deemed to be of high/moderate potential. Commuting and foraging habitat was restricted to the hedgerows and trees which form the site boundary; the on site habitats were considered to be of low value to bats which dictates that seasonal bat surveys are required. All linear features are to be retained and a suitable lighting scheme devised to maintain the favourable conservation status of the local bat population.
- 5.5 Two ponds are located within 500m of the site, however these are separated by barriers to dispersal and will not require further surveys. Aquatic surveys on the ditch network have found palmate and smooth newts, but GCN are currently absent.
- 5.6 No hazel dormice records were identified through consultation, however presence/absence surveys are recommended due to the suitable habitat in the form of boundary hedgerows.
- 5.7 There is limited suitable reptile habitat present on site in the form hedgerow bases, dense scrub, ditches, ruderal vegetation and narrow field margins which are restricted to the site boundaries. These habitats are to be retained and enhanced within the GI, therefore it is considered that further surveys are not required.
- 5.8 No evidence of water vole was recorded within any of the ditches on site; however due to records of this species in the wider area further surveys will be required to establish presence/likely absence on site.
- 5.9 It is recommended that works start on site prior to the breeding bird season. If this is not possible and clearance is required during the breeding season the site should be checked for the presence of active nests by a suitably qualified ecologist.

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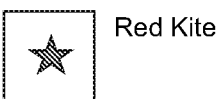
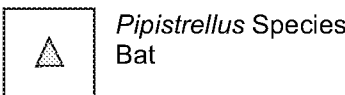
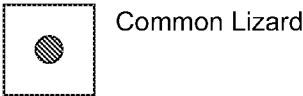
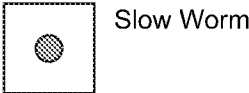


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Protected Species:



Church Commisioners for England

New Barn Lane, Bersted
Bognor Regis

CONSULTATION RESULTS PLAN

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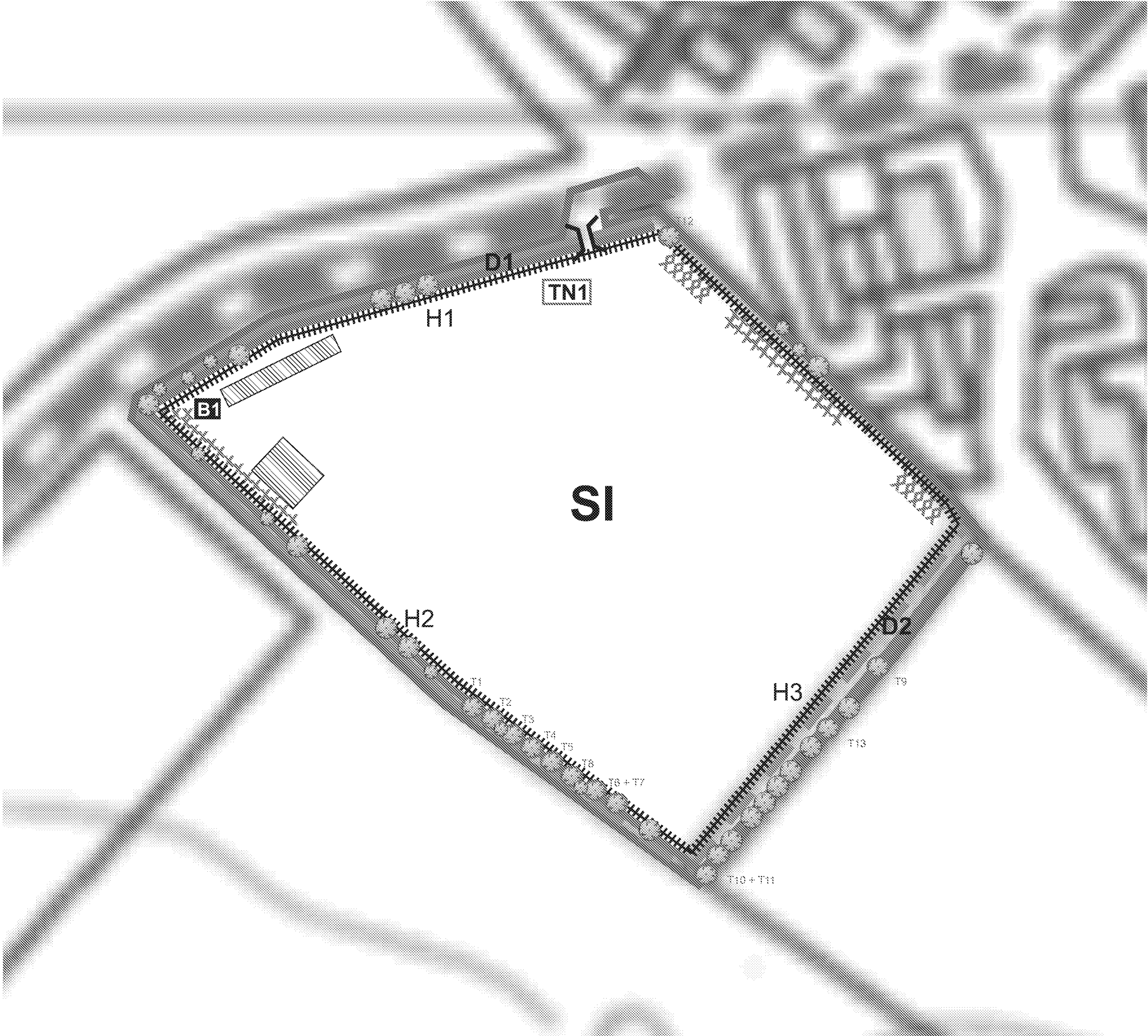
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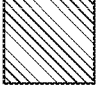
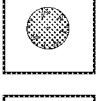
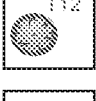
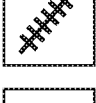
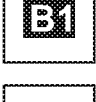
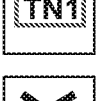
Figure 1

7096-E-01



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-  Site Boundary
-  Hedgerow
-  Wet Ditch
-  Dry Ditch
-  Tall Ruderal
-  Dense Scrub
-  Tree
-  Tree with Bat Potential and reference
-  Fence
-  Building
-  Semi-improved Grassland
-  Target Note
-  Gate



Church Commissioners for England

New Barn Lane, Bognor Regis
West Sussex

PHASE 1 HABITAT PLAN



NTS @ A3 BC / 17.03.2016

Figure 2 **7096-E-02**



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-  Site Boundary
-  Pond with Reference

Pond Reference	Distance from Site Boundary (m)
P1	360
P2	419

 Church Commissioners for England

New Barn Lane, West Bersted
Bognor Regis

POND LOCATION PLAN

 NTS @ A3 TJL 19.01.2016

Figure 3 7096-E-03