



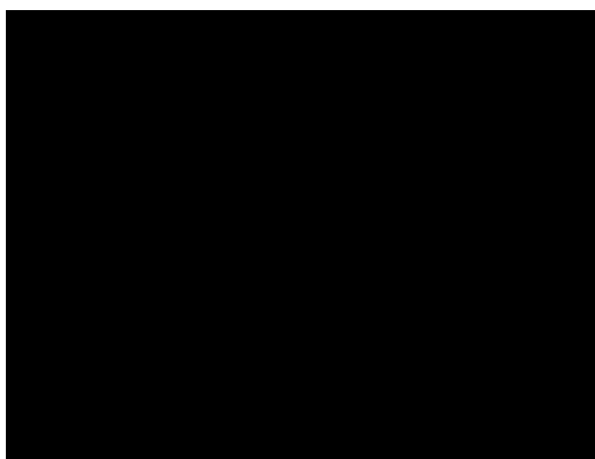
David Wilson Homes

Hook Lane, Westergate

Extended Phase One Habitat Survey Report

June 2016

1st Floor, The Pavilion, Botleigh Grange Office Campus, Hedge End, Hants, SO30 2AF



creative minds safe hands



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Prepared by:		Ben Cooke GradCIEEM Assistant Ecologist
Checked By:		John Simper MCIEEM Senior Ecologist
Verified By:		David West CEnv MCIEEM Principal Ecologist

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Executive Summary

Contents	Summary
Site Location and Proposals	The site is located at the western extent of the village of Westergate approximately 6.4km north of Bognor Regis in the Arun District of West Sussex (Ordnance Survey grid reference SU 93585 04673). The site is bound to the north a by public footpath with an arable field beyond and to the south by several small grassland field compartments separated by fencing and treelines containing both broadleaved and coniferous species. The site is bordered by a combination of residential properties, a small field to the south and Aldingbourne Primary School to the east. It is proposed to develop the site for 79 residential properties with associated open space and landscaping. Areas of green open space will be created throughout the development alongside the construction of an attenuation pond within the south eastern corner of the site. A children's play area will also be constructed centrally within the site.
Previous Reports / Surveys	A series of reports were prepared by FPCR for the site in 2013 including a phase 1 habitat assessment and protected species reports for reptiles, great crested newts (GCN) and bats.
This Survey(s)	Extended Phase 1 habitat Survey – A habitat survey and assessment for protected species at the site 'Land to the East of Hook Lane'
Results	- Habitats on-site are common and widespread - Suitable habitat to support reptiles - Suitable habitat to support commuting and foraging bats - Suitable habitat on-site to support breeding birds
Recommendations	Recommendations for avoidance: Nesting Birds: It is recommended that vegetation clearance is undertaken outside of nesting bird season (March to September inclusive). If this is not possible, it is recommended that a nesting bird check is carried out by an ecologist immediately prior to the removal of buildings and vegetation. If an active nest is found, it must be retained along within a suitable buffer until the young have fledged and cease to return to the nest. Toolbox Talk: A toolbox talk is to be provided to site contractors to ensure that should any protected or notable species be found during works (e.g. hedgehogs), they are aware of the appropriate action to take. Recommendations for enhancements - It is recommended that bird and bat boxes are incorporated into the proposed development in order to enhance the habitat on-site. - It is recommended that native trees and shrubs are planted as part of the development proposals



1.0 Introduction

1.1 Background

WYG was commissioned in January 2016 by David Wilson Homes to undertake an extended phase one habitat survey of Land to the east of Hook Lane, Westergate ('the site'). The site layout is shown in Figure 1. The report was prepared by Assistant Ecologist Ben Cooke BSc MSc GradCIEEM.

1.2 Site Location

The site is located at the western extent of the village of Westergate approximately 6.4km north of Bognor Regis in the Arun District of West Sussex (Ordnance Survey grid reference SU 93585 04673). The site is bound to the north by a public footpath with an arable field beyond and to the south by a small grassland field divided into separate compartments. The site is bordered by a combination of residential properties and Aldingbourne Primary School to the east.

The site comprises a single field of unmanaged improved grassland, formerly utilised as pasture, along within with the residential property of Oakdene and associated garden situated west of the field. The improved grassland field is delimited by fences, ditches and hedgerow with areas of scrub and ruderal vegetation around the boundary edges of the site. Oakdene is separated from the field by a fenceline and small area of dense scrub, with the rest of the grounds of the residential property consisting of hardstanding and amenity grassland.

1.3 Development Proposals

It is proposed to develop the site for 79 residential properties with associated infrastructure. Areas of green open space will be created throughout the development alongside the construction of an attenuation pond within the south eastern corner of the site. A children's play area will also be constructed centrally within the site.

1.4 Survey & Reporting Objectives

The ecological investigations undertaken by WYG included the following objectives:

- ✦ A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest, and records of protected/notable species within the site and its environs;



- » An extended Phase 1 habitat survey involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species;
- » An investigation of the trees for their potential to support bats and an external and internal assessment of buildings on-site; and
- » An assessment of the potential ecological constraints to the proposed works at the site and recommendations for further survey, avoidance, mitigation and enhancement where appropriate.



2.0 Planning Policy & Legislation

2.1 National Planning Policy

2.1.1 National Planning Policy Framework

Following the publication of the National Planning Policy Framework (NPPF) in March 2012, *Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation* (2005) has been withdrawn. However, *ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System* (the guidance document that accompanied PPS9) has not been withdrawn and, where more detailed guidance is required than is given within the NPPF, local planning authorities will continue to rely on *ODPM 06/2005*.

This guidance requires local planning authorities to take account of the conservation of protected species when determining planning applications and makes the presence of a protected species a material consideration when assessing a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

In the case of European Protected Species such as bats, planning policy emphasises that strict statutory provisions apply (including the *Conservation of Habitats and Species Regulations 2010* (as amended)), to which a planning authority must have due regard.

Where developments requiring planning permission are likely to impact upon protected species it is necessary that protected species surveys are undertaken and submitted to meet the requirements of paragraph 98 of *ODPM Circular 06/2005* which states that:

'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.'

General guidance within the body of the NPPF which are also potentially relevant to the possible presence of bats at the site includes the following statements:

"The planning system should contribute to and enhance the natural and local environment by:

- ✧ *protecting and enhancing valued landscapes, geological conservation interests and soils;*
- ✧ *recognising the wider benefits of ecosystem services;*
- ✧ *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity,*



including by establishing coherent ecological networks that are more resilient to current and future pressures."

"Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged."

"When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- *If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."*

2.1.2 Biodiversity 2020

Biodiversity 2020: A strategy for England's wildlife and ecosystem services replaces the previous *UK Biodiversity action Plan* and sets national targets to be achieved. The intent of *Biodiversity 2020*, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are those detailed under Section 41 of the NERC Act (as detailed below).

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities. Although no-longer accountable at a national level many are still managed and implemented at a local level.

2.2 Local Planning Policy

Arun District Council Local Plan 2003, general policy 29 – Nature Conservation Across the District stated:

- "Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development."



2.3 Legislation

2.3.1 Wildlife and Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the *Bern Convention* (1982) and the *Birds Directive* (1979) are implemented in the UK. Since it was first introduced, the Act has been amended several times and includes the requirement to designate Special Protection Areas (SPAs) of particular importance to birds.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- ✧ kill, injure, or take any wild bird;
- ✧ take, damage or destroy the nest of any wild bird while that nest is in use; and/or
- ✧ take or destroy an egg of any wild bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- ✧ intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5; and/or
- ✧ interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places.

The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- ✧ intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- ✧ unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; and/or
- ✧ sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates are protected under Schedule 5. Schedule 8 contains 185 protected species of flora, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise to grow in the wild any plant which is listed in Part II of Schedule 9.



Table B2 provides a comprehensive list of plant species listed in this schedule. It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

Table 1: Invasive plant species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

Common name	Scientific name
Perfoliate alexanders	<i>Smyrniium perfoliatum</i>
Red algae	<i>Grateloupia luxurians</i>
Variagated yellow archangel	<i>Lamiastrum galeobdolon</i> subsp. <i>argentatum</i>
Yellow azalea	<i>Rhododendron luteum</i>
Himalayan balsam	<i>Impatiens glandulifera</i>
Cotoneaster	<i>Cotoneaster horizontalis</i>
Entire-leaved cotoneaster	<i>Cotoneaster integrifolius</i>
Himalayan cotoneaster	<i>Cotoneaster simonsii</i>
Hollyberry cotoneaster	<i>Cotoneaster bullatus</i>
Small-leaved cotoneaster	<i>Cotoneaster microphyllus</i>
False Virginia creeper	<i>Parthenocissus inserta</i>
Virginia creeper	<i>Parthenocissus quinquefolia</i>
Purple dewplant	<i>Disphyma crassifolium</i>
Fanwort or Carolina water-shield	<i>Cabomba caroliniana</i>
Water fern	<i>Azolla filiculoides</i>
Hottentot fig	<i>Carpobrotus edulis</i>
Three-cornered garlic	<i>Allium triquetrum</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Water hyacinth	<i>Eichhornia crassipes</i>
Giant kelp	<i>Macrocystis</i> spp.
Giant knotweed	<i>Fallopia sachalinensis</i>
Hybrid knotweed	<i>Fallopia japonica</i> × <i>Fallopia sachalinensis</i>
Japanese knotweed	<i>Fallopia japonica</i>
Few-flowered garlic	<i>Allium paradoxum</i>
Water lettuce	<i>Pistia stratiotes</i>
Parrot's-feather	<i>Myriophyllum aquaticum</i>
Floating pennywort	<i>Hydrocotyle ranunculoides</i>
Duck potato	<i>Sagittaria latifolia</i>
Floating water primrose	<i>Ludwigia peploides</i>
Water primrose	<i>Ludwigia grandiflora</i>
Water primrose	<i>Ludwigia uruguayensis</i>
Pontic rhododendron	<i>Rhododendron ponticum</i>
Rhododendron	<i>Rhododendron ponticum</i> × <i>Rhododendron maximum</i>
Giant rhubarb	<i>Gunnera tinctoria</i>
Japanese rose	<i>Rosa rugosa</i>
Giant salvinia	<i>Salvinia molesta</i>
Green seafingers	<i>Codium fragile</i>
Californian red seaweed	<i>Pikea californica</i>
Hooked asparagus seaweed	<i>Asparagopsis armata</i>
Japanese seaweed	<i>Sargassum muticum</i>
Laver seaweeds (except native species)	<i>Porphyra</i> spp
Australian swamp stonecrop or New Zealand pygmyweed	<i>Crassula helmsii</i>



Common name	Scientific name
Wakame	<i>Undaria pinnatifida</i>
Curly waterweed	<i>Lagarosiphon major</i>
Waterweeds	<i>Elodea</i> spp.

2.3.2 The Conservation of Habitats and Species Regulations 2010 (as amended)

The *Conservation of Habitats and Species Regulations 2010* (as amended) originally came into force in 1994 and were updated on 16th August 2012 to ensure the various provisions of Directive 92/43/EC (the *Habitats Directive*) are transposed in a clear manner. These regulations are predominately aimed at the conservation of habitats and species other than birds and complement the Wildlife and Countryside Act.

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the *Habitats Directive* respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Areas of Conservation (SACs). The 2012 amendments include that public bodies help preserve, maintain and re-establish habitats for wild birds.

The Regulations also make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 (see Table 2).

Table 2: Schedules of the Conservation of Habitats and Species Regulations 2010 (as amended)

Schedule 2 – European Protected Species of Animals		Schedule 5 – European Protected Species of Plant	
Common name	Scientific name	Common name	Scientific name
Horseshoe bats	<i>Rhinolophidae</i> - all species	Shore dock	<i>Rumex rupestris</i>
Common bats	<i>Vespertilionidae</i> - all species	Killarney fern	<i>Trichomanes speciosum</i>
Wildcat	<i>Felis silvestris</i>	Early gentian	<i>Gentianella anglica</i>
Dolphins, porpoises and whales	<i>Cetacea</i> – all species	Lady's-slipper	<i>Cypripedium calceolus</i>
Dormouse	<i>Muscardinus avellanarius</i>	Creeping marshwort	<i>Apium repens</i>
Pool frog	<i>Rana lessonae</i>	Slender naiad	<i>Najas flexilis</i>
Sand lizard	<i>Lacerta agilis</i>	Fen orchid	<i>Liparis loeselii</i>
Fisher's estuarine moth	<i>Gortyna borelii lunata</i>	Floating-leaved water plantain	<i>Luronium natans</i>
Great crested newt	<i>Triturus cristatus</i>	Yellow marsh saxifrage	<i>Saxifraga hirculus</i>
Otter	<i>Lutra lutra</i>		
Lesser whirlpool ram's-horn Snail	<i>Anisus vorticulus</i>		
Smooth snake	<i>Coronella austriaca</i>		
Sturgeon	<i>Acipenser sturio</i>		
Natterjack toad	<i>Bufo calamita</i>		



Schedule 2 – European Protected Species of Animals		Schedule 5 – European Protected Species of Plant	
Common name	Scientific name	Common name	Scientific name
Marine turtles	<i>Caretta caretta</i> , <i>Chelonia mydas</i> , <i>Lepidochelys kempii</i> , <i>Eretmochelys imbricata</i> , <i>Dermochelys coriacea</i>		

2.3.3 Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the *Natural Environment and rural Communities (NERC) Act 2006*, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 habitats of principal importance and 1,150 species of principal importance.

2.3.4 Hedgerow Regulations 1997

The *Hedgerow Regulations* were made under Section 97 of the *Environment Act 1995* and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.



3.0 Methodology

3.1 Desk Study

3.1.1 Previous Reports

A series of reports were prepared by FPCR for the site in 2013 including a phase 1 habitat assessment and protected species reports for reptiles, great crested newts (GCN) and bats.

3.1.2 Local Records Centre

Information was gathered from Sussex Biodiversity Record Centre (SxBRC), the ecological records database for both East and West Sussex, regarding the presence of nature conservation designations and protected and notable species within 2km of the proposed development site. In addition, a search for designations was made of Natural England's interactive, web-based MAGIC (Multi Agency Geographic Information for the Countryside) database.

The data search covers:

- ❖ Statutory nature conservation designations, such as National Nature Reserves and Sites of Special Scientific Interest;
- ❖ Non-statutory nature conservation designations, such as Wildlife Sites;
- ❖ Protected species, such as badgers, great crested newts and bats; and
- ❖ Notable species, such as those listed in the local Biodiversity Action Plan.

The data search does not cover Tree Protection Orders or Conservation Areas.

3.1.3 Online Resources

The Multi-Agency Geographic Information for the Countryside database (MAGIC) was utilised to gather details of statutory designated sites within 2km of the site.



3.2 Field Surveys

An extended Phase 1 habitat survey was conducted on 28th January 2016 by Assistant Ecologist Ben Cooke within the predicted zone of influence¹ on the site at Westergate. All areas of the site were investigated, including those parts that are not expected to be affected directly by the works but may be indirectly impacted upon.

3.2.1 Habitats

The vegetation and habitat types within the site were noted during the walkover survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (Joint Nature Conservation Committee, 2003). Dominant plant species were recorded for each habitat present.

3.2.2 Protected and Notable Species

The site was inspected for evidence of and its potential to support protected or notable species, especially those listed under the *Wildlife & Countryside Act 1981* (as amended), the *Conservation of Habitats and Species Regulations 2010*, including those given extra protection under the *Countryside & Rights of Way (CROW) Act 2000*, and UK and local Biodiversity Action Plan Priority Species.

The following species were considered:

Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989). A thirty metre buffer zone around the expected zone of influence was not surveyed as recommended in English Nature's *Badgers and Development* (2002) as access was not granted to the areas surrounding the site.

Bats

The trees and buildings within the boundary were appraised by an experienced ecologist from WYG for their suitability to support breeding or resting bats using survey methods based on those outlined in the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* (2012) and English Nature's *Bat Mitigation Guidelines* (2004).

¹ **Zone of influence:** the area that may be affected by the biophysical changes caused by the activities associated with the development.



Great crested newts

The site was appraised for its suitability to support great-crested newts. The assessment was based on guidance outlined in the Joint Nature Conservation Committees' published *Herpetofauna Workers' Manual* (Joint Nature Conservation Committee, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Beckett & Foster, 2001).

Hazel Dormice

Hedgerows within the site survey areas were assessed for their suitability to support dormice (*Muscardinus avellanarius*). This assessment was based on guidance provided in the Dormouse Conservation Handbook (Bright, Morris & Mitchell-Jones, 2006).

A search was made for suitable food plants, nesting opportunities, and an assessment was made of the structure of the hedgerow and connectivity to suitable habitat in the wider area.

Other species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, birds and invertebrates in accordance with the *Guidelines for Baseline Ecological Assessment* (Institute of Environmental Assessment, 1995). Evidence of any current or historical presence of such species was recorded.

3.2.3 Invasive Species

The survey area was searched for evidence of invasive plant species, such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).

3.3 Limitations

The comprehensiveness of any ecological assessment will be limited by the season in which surveys are undertaken.

To determine likely presence or absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the *potential* of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to Planning Policy Statement 9 (PPS 9): Biodiversity & Geological Conservation (Office of the Deputy Prime Minister - ODPM, 2005), especially those given protection under UK or European wildlife legislation.



This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day of the visit and highlights areas where further survey work may be recommended.

The survey was carried out in late January, which is outside the optimum period for recording terrestrial vegetation (which is considered to be April to September inclusive), however this survey is still believed to be an accurate assessment of the site overall. No access was possible to the residential properties and school which border the site or the field to the north and south of the site to search for badger evidence. Hence some badger evidence could have been missed; however the boundary features surrounding the site were examined for signs of badger activity or trails.

The details of this report will remain valid for a period of two years. Beyond this period, if works have not yet been undertaken, it is recommended that a new review of the ecological conditions is undertaken.



4.0 Baseline Conditions

4.1 Designated Sites

4.1.1 Statutory Sites

No statutory sites were recorded within a radius of 2km from the site boundary.

4.1.2 Non-statutory Sites

No non-statutory sites were recorded within a radius of 2km from the site boundary.

4.2 Habitats

4.2.1 Buildings

There were a total of three buildings on-site; building B1 was a disused single storey stable building in the north west corner of the site whilst building B2 is a disused single storey garage situated just to the south west of the building B1. Both of the buildings were found to be in a good state of repair structurally although the exterior and interior of the buildings appeared to have been left unmaintained for some time. The majority of building B1 was surrounded by scattered scrub which in some areas was beginning to extend into the interior of the structure. The north eastern corner of building B2 was covered with a dense patch of ivy growth while dense scrub surrounded the southern and western side of the structure which was beginning to encroach into the southern section of B2.

Building B3 was the residential property of Oakdene, the building consists of two storeys and is clad in hanging tiles on its 1st floor and the pitched roof is clad in concrete tiles.



Photo 1: Building B1



Photo 2: Building B2



Photo 3: Building B3 (residential property, Oakdene, Hook Lane)

4.2.2 Dense Scrub

Areas of dense scrub were located at several locations throughout the site, concentrated along the boundaries. These areas were situated along the northern half of the eastern boundary, the central area of the southern boundary, to the south of building B2 and within the garden of B3. These areas

were dominated by bramble (*Rubus fruticosus*) although other species including hawthorn (*Crataegus monogyna*) and elder (*Sambucus nigra*) were present in small patches along the southern and eastern boundaries respectively.



Photo 4: Scrub habitat to the south of building (B2)

4.2.3 Ditches

The only ditch present on-site (D1) was located along the eastern site boundary, in association with hedgerow H2. At the time of survey the ditch was approximately 50cm wide and 50cm deep with no aquatic vegetation. Although the ditch held water at the time of study, previous reports have identified the ditch as having dried out during the spring/ summer months.



Photo 5: Ditch 1 (on-site ditch)



Photo 6: Ditch 2 (adjacent to west of Hook Lane)



Photo 7: Ditch 3 (Adjacent to the north of Hook Lane)



Photo 8: Ditch 4 (Adjacent to the south of Hook Lane)

4.2.4 Hedgerows

A total of three hedgerows occurred within around the peripheries of the site and these have been labelled as hedgerows H1 to H3 on Figure 1.

A defunct hedgerow (H1) comprises the northern half of the western site boundary and was comprised exclusively of hawthorn. The hedgerow appeared to have been left unmanaged as indicated by its height and width (approximately 3m and 2m respectively) The extent of growth of the bramble understory forming an area of dense scrub immediately south of building B2. Parts of H1 also consist of gaps in-filled with panel fencing and areas of scrub.

Hedgerow H2 which forms the eastern boundary of the site was dominated by hawthorn and blackthorn (*Prunus spinosa*) with some dog rose (*Rosa canina*) and elder recorded along its length. The hedge was approximately 1.5m in height and had a width of 1m. In addition the onsite ditch (D1) runs in association to the southern half of hedgerow H2.

Hedgerow H3 is a defunct hedgerow which forms the entirety of the northern boundary and was comprised exclusively of blackthorn and appears to have been recently subject to management to control its width. This is to allow continued uninhibited access to the public footpath running adjacent to the northern boundary. At two sections along H3 the hedgerow gaps have formed within the blackthorn leaving the hedgerow solely comprised of understory vegetation of bramble and grassy

tussocks of approximately 2-3m in length. The boundary remains stock-proof due to the fenceline present which runs in association with hedgerow H3 along its entirety. The hedgerow had been clipped to around 0.5m for approximately 5m of its length at its western extent however for the remainder of its length the hedgerow was approximately 2m in height and 1m in width.



Photo 9: Hedgerow (H1)



Photo 10: Hedgerow (H2)



Photo 11: Hedgerow (H3)

4.2.5 Improved Grassland

The centre of the site is dominated by tussocky improved grassland with red fescue (*Festuca rubra*) the most prevalent species with other species including perennial ryegrass (*Lolium perenne*), cock's foot (*Dactylis glomerata*) and false oat-grass (*Arrhenatherum elatius*) also present throughout. Historically the site had been subject to heavy grazing however as the horses are no longer on-site there are some herbaceous species present such as broadleaved dock (*Rumex obtusifolius*) and creeping buttercup (*Ranunculus repens*). In addition meadow foxtail (*Alopecurus pratensis*) is present in the south of the field with some ribwort plantain scattered throughout. A pile of conifer cuttings (Target Note, TN1) was located within the north west of the site in the vicinity of building B1 in addition a ephemeral pond had formed within the south eastern area of the site (Target Note TN2).



Photo 12: Improved Grassland



Photo 13: Brush Pile (TN1)

4.2.6 Scattered Scrub

Scattered scrub is present around the majority of the site perimeter in narrow stretches along the northern boundary, the southern half of the eastern and western boundary and southern boundary. In addition a small section was situated along the northern and western aspect of the on-site stable (B1). The areas were dominated by bramble with some elder.

4.2.7 Tall ruderal Vegetation

Tall ruderal vegetation was present along the majority of the site's perimeter particular within areas with remnants of compost material. The most abundant ruderal species were broad-leaved dock and common nettle (*Urtica dioica*), with some areas containing bristly oxtongue (*Picris echioides*), creeping thistle (*Cirsium vulgare*) and rosebay willowherb (*Chamerion angustifolium*).

There were also small patches of ruderal vegetation scattered throughout the northern half of the site consisting of broad-leaved dock, common nettle, spear thistle (*Cirsium arvense*) and ribwort plantain (*Plantago lanceolata*). This suggests that these areas have been disturbed or enriched in the recent past; this corresponds to previous reports particularly the fenced area adjacent to building B2 which had appeared to have been utilised as an allotment.



Photo 14: Tall ruderal habitat within fenced area to the south of building (B2).



4.3 Protected & Notable Species

4.3.1 Badgers

Desk Study

No records for badger were returned from the records centre.

Field Surveys

No evidence of badgers was found on the site or areas of land immediately adjacent which could be visibly surveyed. The flat topography of the site limits features available to badgers to construct setts and no mammal runs which could be attributed to any species were identified on-site.

4.3.2 Bats

Desk Study

A total of seven bat species (including three indeterminate species-groups) were returned through the data search although not all of these relate to roosts; these are summarised in Table 1 below:

Table 1: Bat records within the 2km data search area

English Name:	Scientific Name:	No. of Roosts	Nearest Roost to Site	Comments
Undetermined bat	<i>Chiroptera</i>	1	1.3km	Recorded during a building inspection in 2011
Serotine	<i>Eptesicus serotinus</i>	3	2km	All three records were recorded during building inspections and were identified from droppings alone
Noctule	<i>Nyctalus noctula</i>	0	n/a	A single bat heard using a bat detector at Tars Farm Barns in 2013
Pipistrelle species	<i>Pipistrellus sp.</i>	8	0.76km	The nearest roost is a feeding roost approximately 0.76km north east of the site. The other roosts are unspecified.
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	2	2km	Of the two roosts identified both are recorded as unspecified the nearest of which is approximately 2km to the south of the site
Long-eared bat species	<i>Plecotus sp.</i>	3	2km	All three records were recorded during building inspections the nearest of the roosts was



				approximately 2km to the east
Brown long-eared bats	<i>Plecotus auritus</i>	4	1km	All four records were recorded during building inspections the nearest of the roosts was approximately 1km to the north west of the site

Presence/ likely Absence Surveys

Building Surveys

A previous internal roost inspection of the residential property Oakdene (building B3) was completed in 2013, there was no evidence of roosting bats recorded and there was limited access noted into the roof void.

Activity Surveys

A single transect survey was completed in May 2013 during which a total of seven passes were noted all of which were attributable to common pipistrelles. The majority of the activity was noted within the south west corner of the site.

The static detector placed on-site from the 13th – 17th May 2013, recorded a total of 326 passes, comprising three bat species; common pipistrelle, soprano pipistrelle and noctule. The majority of the passes were attributed to common pipistrelles.

Field Surveys

Roosting Bats

There are few trees present on-site; the majority of the trees were situated along the southern site boundary including mature hawthorn, Monterey cypress (*Cupressus macrocarpa*) and ash, (*Fraxinus excelsior*) however these trees were located offsite and overhang into the site. There were several mature oak trees situated within the garden of B3, however no substantial roosting features such as cracks or crevices were identified. The trees onsite are therefore noted as ***negligible potential*** for roosting bats.

Building B1 was a single storey stable with a pitched corrugated roof, the interior of the building is quite open allowing high light levels into the structure. There is no interior loft space therefore offering limited opportunities for bats to roost. The building is separated into four individually accessible stable blocks. There were large gaps under the ridge tiles/ metal corrugated sheet which would allow access into the building but due to the thermal properties of the construction materials



used the building is not likely to be used by roosting bats. B1 is therefore considered to be of **negligible value** for roosting bats.

A single storey conjoined garage and stable, building B2 is comprised of a concrete structure with a wooden stable block attached to the southern end of the garage. The garage structure has a pitched corrugated roof with no soffits or barge boards with a cement fibre roof covering the stable. The stable block was an open structure, including open door frames with gaps present between the roof and walls allowing high levels of light into the interior. The garage area is much more enclosed in comparison however as with the stable area there are no internal crevices or gaps for bats to roost. B2 is therefore considered to be of **negligible value** for roosting bats.

Building B3 was a two storey brick building with a hipped roof with concrete roof tiles, brickwork, hanging tiles, eaves and soffit boxes. The internal loft space was lined with tight fitting bitumen felting that was in good condition. No evidence of bats was recorded internally and appeared to be no access points for bats to enter the loft space. A low number of rodent droppings were recorded and there is a number of bait trays present in the roof containing rodenticides. Building B3 is assessed as having **negligible potential** for roosting bats.

Commuting and Foraging Bats

As the majority of the site is comprised of improved grassland enclosed with low quality hedgerows, treelines and fencelines with a lack of similar habitat within the immediate area the site has been assessed as being of low quality for commuting and foraging bats.

4.3.3 Birds

Desk Study

A total of thirty legally protected bird species, listed on Schedule 1 of the W&CA (as amended) were returned through the data search, the majority of these records relate to breeding birds, these comprise garganey (*Anas querquedula*), common quail (*Carturnix coturnix*), red kite (*Milvus milvus*), marsh harrier (*Circus aeruginosus*), hobby (*Falco subbuteo*), peregrine falcon (*Falco peregrinus*), spotted crane (*Porzana porzana*), avocet (*Recurvirostra avosetta*), little-ringed plover (*Charadrius dubius*), black-tailed godwit (*Limosa limosa*), Mediterranean gull (*Larus melanocephalus*), barn owl (*Tyto alba*), common kingfisher (*Alcedo atthis*), firecrest (*Regulus ignicapillus*), bearded tit (*Panaurus biarmicus*), woodlark (*Lullula arborea*), cetti's warbler (*Cettia cetti*), Dartford warbler (*Sylvia undata*), savi's warbler (*Locustella luscinioides*), marsh warbler (*Acrocephalus palustris*), black redstart (*Phoenicurus ochruros*) and common crossbill (*Loxia curvirostra*).



Many of the species included in the data search above including site garganey, red kite marsh harrier hobby peregrine falcon spotted crane avocet little-ringed plover black-tailed godwit and Mediterranean gull are associated with habitats which are not present on-site and therefore would not be found breeding within the boundaries of the site.

The data search also returned fourteen records of bird species of high (Birds of Conservation Concern Red List) and thirty two medium (BoCC Amber List) within the 2km data search. Records of species considered likely or proven to be breeding on-site include grey partridge (*Perdix perdix*), turtle dove (*Streptopelia turtur*), common swift (*Apus apus*), barn swallow (*Hirundo rustica*), house martin (*Delichon urbica*), lesser-spotted woodpecker (*Dendrocopos minor*), willow tit (*Poecile montanus*), wood warbler (*Phylloscopus sibilatrix*), tree sparrow (*Passer montanus*), corn bunting (*Emberiza calandra*) and yellow wagtail (*Motacilla flava*).

The following species while included within the 2km data search are associated with coastal and estuarine habitat which is not present on-site and therefore would not be observed on-site are the Eurasian wigeon (*Anas penelope*), gadwall (*Anas strepera*), pintail (*Anas acuta*), common pochard (*Aythya farina*), little egret (*Egretta garzetta*), common snipe (*Gallinago gallinago*), eurasian curlew (*Numenius arquata*), common redshank (*Tringa tetanus*), northern lapwing (*Vanellus vanellus*), kittiwake (*Rissa tridactyla*) and common tern (*Sterna hirundo*).

Field Surveys

Breeding birds

All nesting birds are protected from disturbance whilst nesting by the *Wildlife and Countryside Act 1981* (as amended) (see Appendix B).

The hedgerows and trees on-site are likely to support common and widespread species. The marginal areas of scrub and ruderal vegetation may also provide habitat for ground-nesting birds. No birds were recorded nesting on the site at the time of the extended Phase 1 survey however this is likely a result of the survey being conducted outside of the breeding bird season (April to September inclusive). There were two disused bird nests identified on-site one within B1 and another within the stable block area of B2, based on the assessment of their structures both nests are likely the result of passerines (such as blackbird (*Turdus merula*) or song thrush (*Turdus philomelos*)). There was no evidence of nesting or roosting barn owls (e.g. pellets or droppings) recorded on site. The site is therefore considered to have **moderate** potential for breeding birds.

Wintering birds



The improved grassland that comprises the majority of the site was not considered suitable to support foraging habitat wintering birds and no wintering species were identified nesting on-site during the survey.

4.3.4 Great Crested Newts

Desk Study

The data search returned two post-2000 records of great crested newts (GCN) within the 2km data search area; the first approximately 150m west of the site and the second approximately 190m south west of the site. A historical record of GCN, identified in 1992 was returned from the data search situated approximately 760m south west of the site.

Presence/ Likely Absence Surveys

A low population of great crested newts were recorded in two ponds within 500m of the site during 2013. These were situated approximately 150m and 180m to the west of the site boundary, a total of three individual GCN (including both male and female specimens) were recorded during the suite of surveys with a peak count of two GCN. There were no GCN eggs recorded during the course of the surveys. There were no GCN were observed on-site with the additional waterbodies including the ditch present on-site were found to be dry upon undertaking the surveys

Field Surveys

A total of six waterbodies were identified. Of these one waterbody (Ditch 1) was present on-site and five lie within a radius of 500m from the site boundary. During the Phase 1 habitat survey, no access could be granted to two of the offsite waterbodies.

There are no direct commuting routes from the two off-site ponds previously noted to contain GCN however the road (Hook Lane) separating the site from the location of these waterbodies is not considered a barrier to dispersal. The habitat on-site and that within the wider landscape is considered sub-optimal for the purposes of GCN. It should be noted however that there are potential areas and features on and adjacent to the site such as adjacent gardens and the brush pile (TN1) which could provide opportunities for hibernating individuals. Although individuals have been recorded within 500m the low numbers observed, in conjunction with an absence of evidence of a breeding population and the sub-optimal habitat it is considered that the site has **low potential** for GCN.

Table 3 below provides the description of the waterbodies on-site and within a radius of 500m.

**Table 3. Waterbody Descriptions**

Pond/ Ditch Ref	OS Grid Reference	Approximate Distance (m) and Direction	Description
P1	SU 93315 04580	140m, west	No Access
P2	SU 93308 04634	120m, west	No Access
D1	SU 93656 04630	On-site, comprising a section of the eastern boundary	A shallow ditch approximately 50cm wide situated within hedgerow H2 with a depth of approximately 50cm and no aquatic vegetation.
D2	SU 93394 04751	90m, west	Shallow ditch roadside ditch along Hook Lane, with no aquatic vegetation. The ditch was almost completely shaded and had a depth of approximately 10-15cm.
D3	SU 93349 04805	150m, west	V-shaped ditch approximately 1m wide with sloping sides running adjacent to residential properties along Hook Lane. No aquatic vegetation was present with the depth of water within the ditch at approximately 20cm.
D4	SU 93313 04809	210m, west	Shallow ditch adjacent to Hook Lane; no flow: no aquatic vegetation: approximately 80% shaded

4.3.5 Hazel Dormice

Desk Study

No records of hazel dormouse (*Muscardinus avellanarius*) were returned through the data search.

Field Survey

Hazel dormice are an arboreal species often found in woodlands, hedgerows and scrub. The hedgerows and dense scrub within the proposed development site boundary, whilst they support some plants that are suitable food plants, are considered to be of **negligible potential** to dormice given that the hedgerows within the wider area are fragmented. This assessment is given further assurance as the site is situated within a largely intensively managed arable and built-up residential landscape in conjunction with the lack of local records for this species within a 2km radius of the site.

4.3.6 Reptiles

Desk Study



A total of six records of slow-worm (*Anguis fragilis*) were returned through the data search, one of which was a historical record from 1995 approximately 1.5km from the site located near the village of Barnham to the south east. This was also the nearest record of slow-worm to the site.

There are six records of grass snake (*Natrix natrix*), one of which was a historical record from 1996 recorded within a residential property in Westergate, 400m north east of the site. This was also the nearest record of grass snake to the site.

The only record of adder (*Vipera berus*) returned through the record is also a historical one, dating from 1999 from a garden of a residential property within Westergate adjacent to the east of the site.

Presence/ Likely Absence Surveys

A suite of reptile surveys were conducted between April and May 2013, with slow worm being the only species observed on-site. The species was noted on three occasions with a peak count of two adults representing a low population. It should be noted however that a juvenile was recorded along hedgerow H3 indicating the presence of a breeding population on-site.

Field Survey

The site is predominantly comprised of short improved grassland sward which provides little cover and lack any structural variation (although grassy tussocks have begun to develop across the site) which is unsuitable for reptiles. However the areas surrounding the site boundaries comprised of areas of tall ruderal vegetation and scrub which provides suitable habitat for reptiles, particularly the western boundary with remnants of garden waste and manure offering refuge and hibernation potential. The brush pile within the north western section of the site (TN1) could also be utilised for the purpose of hibernation although this is removed from any connecting areas of suitable habitat.

In conjunction with previously completed presence/ absence surveys confirming reptiles on-site, the site is therefore considered to be of **high potential** for reptiles.

4.3.7 Invertebrates

Desk Study

The data search returned several invertebrate records including-

- Two records of stag beetle (*Lucanus cervus*), were returned through the data search both were recorded approximately 1.68km east of the site within a residential property in the village of Barnham. The species is listed as an Annex II of the Habitats Directive, under



Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and as a Sussex BAP species.

- A single historical record of White Admiral (*Limenitis camilla*) butterfly was recorded approximately 1.68km to the south of the site dating from 1998. The species is listed as an IUCN vulnerable species and is listed under the NERC Act 2006 in addition to also being a Sussex BAP species.
- Two records of the Wall (*Lasiommata megera*) butterfly were returned from the data search within arable land to the south west of the site the nearest record was situated approximately 1.68km from the site boundary. The species is listed as an IUCN lower risk species and is listed under the NERC Act 2006 in addition to also being a Sussex BAP species.
- Two records of Purple Emperor (*Apatura iris*) were recorded in 2003 the nearest record was approximately 0.2km to the west of the site with the second record 0.58km to the north west. The species is listed as an IUCN lower risk species and being a Sussex BAP species.
- A single record of girdled mining bee (*Andrena (Poecilandrena) labiata*) was situated approximately 1.4km south east of the site. The species is listed on the Sussex rare species inventory.
- There were also two records of the moth species horse-chestnut leaf-miner (*Cameraria ohridella*) recorded in 2013 which is listed as an invasive. These were located approximately 1.4km to the south west of the site.

Field Survey

No invertebrates were recorded during the survey although this is likely attributable to the timing of extended Phase 1 survey being conducted in late January, the site is considered to support common and widespread species.

4.3.8 Otter

Desk Study

A single record of otter was returned from the data search situated within the Aldingbourne Rife approximately 1.8km south of the site.

Field Survey

As there is no suitable aquatic habitat present within the boundaries of the site for otter there are no requirements for this species in relation to the proposed development and therefore are not mentioned further within the report.



4.3.9 Water Voles

Desk Study

Ten records of water voles were returned through the data search; four of which were historical records noted prior to 2000. These were identified within the Aldingbourne Rife, Alidingborune Lake and the Lidsey Rife.

Field Survey

As there is no suitable aquatic habitat present within the boundaries of the site for otter there are no requirements for this species in relation to the proposed development and therefore are not mentioned further within the report.

4.3.10 Vascular Plants

Desk Study

There were six species of vascular plant recorded within the data search for the site all of which are listed under the Sussex Rare Species Inventory; these include arum (*Arum italicum subsp. neglectum*) pale toadflax (*Linaria repens*), stinking hellebore (*Helleborus foetidus*), Box (*Buxus sempervirens*), musk stork's-bill (*Erodium moschatum*) and corn parsley (*Petroselinum segetum*).

Field Survey

None of the species mentioned above were recorded on-site; therefore there are no requirements for these species in relation to the proposed development and therefore are not mentioned further within the report.

4.3.11 Invasive Plant Species

Desk Study

Records of twelve invasive plants listed on Schedule 9 of the W&CA 1981 (as amended in 2010) were returned from the data search area and these records are summarised in Table 2 below:

Table 2: Invasive plant records within the 2km data search area

English Name:	Scientific Name:	Comments
Cherry laurel	<i>Prunus laurocerasus</i>	Four records were identified between 2006 and 2014, the nearest of which is approximately 1.4km north east of the site



False-acacia	<i>Robina pseudoacacia</i>	A single record from 2009 approximately 0.9km north west of the site.
Hybrid bluebell	<i>Hyacinthoides non-scripta x hispanica</i>	Five records from between 2005 and 2009 all of which were located to the south west between 1.4km to 2km from the site
Indian balsam	<i>Impatiens glandulifera</i>	A single record approximately 2km south west of the site
Japanese knotweed	<i>Fallopia japonica</i>	Four records were present within 2km of the site between 2005 and 2015; approximately 1.2km and 1.6km from the site.
Montbretia	<i>Crocsmia pottsii x aurea</i>	Three records were returned in the data search dating from 2004 and 2009, situated 1.4km to 2km from the site to the south west
Nuttall's waterweed	<i>Elodea nuttallii</i>	A single record approximately 2km south west of the site
Red valerian	<i>Centranthus ruber</i>	Five records from between 2004 and 2006
Rhododendron	<i>Rhododendron ponticum</i>	A single record approximately 0.68km north of the site recorded in 2008
Spanish bluebell	<i>Hyacinthoides hispanica</i>	A single record approximately 2km north of the site recorded in 2004
Three-cornered garlic	<i>Allium triquetrum</i>	A single record approximately 2km south of the site recorded in 2009
Virginia creeper	<i>Parthenocissus quinquefolia</i>	A single record approximately 0.58km north of the site recorded in 2009
Wall cotoneaster	<i>Cotoneaster horizontalis</i>	Three records noted between 2006 and 2011 all of which were recorded to the south west between 1.4km and 2km from the site boundary
Winter heliotrope	<i>Petasites fragrans</i>	Seven records from between 2004 and 2014, the nearest of which was approximately 1.4km north east of the site
Yellow archangel	<i>Lamium galeobdolon subsp. argentatum</i>	Two records were recorded in 2006 and 2011 approximately 2km to the south west of the site

Field Survey

No invasive species were recorded on-site; therefore there are no requirements for these species in relation to the proposed development and therefore are not mentioned further within the report.

4.3.12 Other Species

Desk Study

A total of twenty four records of European hedgehog (*Erinaceus europaeus*) were returned through the data search, five of which were historical records identified prior to 2000. The nearest record of



European hedgehog is approximately 1km to the north west of the site. The European hedgehog is listed as a priority species on Section 41 of the NERC Act and on the Sussex BAP.

There were three records returned of European eel (*Anguilla anguilla*), one from the Aldingborune Rife in 2002 approximately 2km north west of the site. A further two records were identified within the Sewage Treatment Works in Lidsey in 2001 approximately 1km and 1.7km respectively. The European eel is listed as a priority species on Section 41 of the NERC Act and on the Sussex BAP.

Two records of brown hare were returned from the data search the first was recorded in 2009 approximately 1.6km south east of the site. The second was an historical record approximately 2km south of the site.

Records of three Sussex-rare mosses were returned through the data search, all being listed on the Sussex Rare Inventory:

- Great grimmia (*Grimmia decipiens*), was recorded at two locations approximately 1.3km and 1.4km north west of the site the former in 2010 and the latter of which , which was an historical record from the 1989.
- Marble screw-moss (*Syntrichia papillosa*) was recorded approximately 1.3km north east of the site in 2011.
- Hooded bristle-moss (*Orthotrichum cupulatum*) was a historical record identified approximately 1.3km north west of the site in 1986.

Sussex- rare lichen (*Xanthoparmelia conspersa*) was recorded in two locations in 1990 and 1992 approximately 1.6km south west and 1.4km north west of the site.

Field Surveys

Hedgehog

The habitats on site have potential to support foraging and hibernating hedgehogs.

None of the other species described above were observed on-site and therefore there are no requirements for these species in relation to the proposed development and therefore are not mentioned further within the report.



5.0 Constraints & Opportunities

5.1 Designated Sites

Statutory Designated Sites

There are no statutory designated sites located within 2km of the site.

Non-Statutory Designated Sites

There are no statutory designated sites located within 2km of the site.

5.2 Habitats

5.2.1 Buildings

All the on-site buildings are to be lost to accommodate the proposed development. Buildings B1 and B2 are not considered to be of ecologically valuable and therefore their loss is considered to be of negligible impact. Please note that birds have used B1 and B2 for nesting in the past, and therefore precautions are recommended with regards to nesting birds outlined in Section 5.3.6.

5.2.2 Ditches

The on-site ditch situated within hedgerow H2 is not considered to be particularly ecologically valuable given the absence of aquatic vegetation, therefore its loss is considered to be of negligible impact. It should be noted that there is a low risk that great crested newts (GCN) may utilise this ditch for breeding however the ditch has been found to be dry prior to the commencement of the GCN breeding season. If it is in use by GCN mitigation for its loss and / or modification may be required.

5.2.3 Hedgerows and Scattered Trees

It is understood that the majority of hedgerows and all the trees are to be retained on-site, although it is recommended that these features are protected in line with the British Standard Trees in Relation to design, Demolition and Construction – Recommendations B5837:2012 to avoid impacts to hedgerows.



5.2.4 Improved Grassland

The majority of the improved grassland will be lost to accommodate the proposed development however some of the grassland will be retained as areas of public open space. The proposed construction will result in the loss of the majority the improved grassland however it is not considered that this will not result in the loss of any ecologically significant habitat or have a significant any effect on protected or notable species likely to be present on-site.

5.2.5 Scrub, Tall Ruderal and Brush Pile

The scrub, tall ruderal habitats and the brush pile (TN1) have potential as suitable habitat for birds and reptiles. The procedure by which the brush pile is removed from site will be dependent on the presence of reptiles on-site; if reptiles are present in significant numbers the sensitive removal of the brush pile may be required.

5.3 Protected & Notable Species

5.3.1 Badgers

Badgers (*Meles meles*) and their setts are protected under the *Protection of Badgers Act 1992*, which makes it illegal for any person to kill, injure or take a badger. It is also an offence to destroy, damage or obstruct a badger's sett, or to disturb animals whilst within a sett. In addition, the likelihood of disturbing a badger sett, or adversely affecting badgers' foraging territory or links between them, or significantly increasing the likelihood of road casualties amongst badger populations, are capable of being material considerations in planning decisions (PPS 9: Office of the Deputy Prime Minister, 2005).

No evidence of badgers was found on the site or on adjacent accessible land, it is recommended that a pre-clearance check is conducted on-site and within a radius of 50m from the boundaries of the site prior to the start of construction as a precautionary measure.

5.3.2 Bats

Breeding and Roosting Bats

All species of British bats and their roosts are fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Additional protection is offered under Schedule 2 of the *Conservation of Habitats and Species Regulations 2010* which defines "European protected species of animals", Under currently accepted interpretations of these two items of legislation, as outlined in the



Bat Workers' Manual (2004), a bat roost is 'any structure or place which any wild animal ... uses for shelter or protection.'

All of the trees within and overhanging the site were assessed as being of negligible bat roost potential due to either their relative immaturity or general lack of suitable features and roosting bats are not considered to pose a constraint to their removal. No further bat surveys of trees are therefore required.

Buildings B1, B2 and B3 were considered to be of negligible potential for roosting bats due to lack of features likely to be suitable for roosting bats. No further surveys are therefore required on these buildings.

As all buildings on site are considered to have negligible potential for roosting bats, no further survey is recommended.

Foraging and Commuting Bats

Paragraph 14 of Planning Policy Statement 9: Biodiversity and Geological Conservation (2005) states that 'Development proposals provide many opportunities for building-in beneficial biodiversity or geological features as part of good design. When considering proposals, local planning authorities should maximise such opportunities in and around developments, using planning obligations where appropriate.' Therefore, where developments requiring planning permission may affect protected species, such as foraging or commuting bats, it is preferable that an appropriate mitigation strategy is produced to ensure bats are protected from the adverse effects of development and options to negate the impact should be considered.

The site has been assessed as of low quality for foraging and/or commuting bats. In line with the mitigation measures agreed at the outline planning stage, it is recommended that boundary features are retained with a sympathetic lighting strategy is incorporated into the design during both the construction and operational phase so that lighting does not shine directly on to boundary features and the spill into these areas does not exceed 1 lux.

It is recommended that bat boxes are incorporated onto trees within the proposed development in addition to invertebrate boxes to attract species to site as a potential food source for bats. It is also recommended that native trees and shrubs are incorporated where possible within the final design. Further details can be found in Appendix B and C.



5.3.3 Great Crested Newts

The great crested newt is listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) which make it an offence to:

- » Intentionally or recklessly kill, injure or take a great crested newt;
- » Possess or control any live or dead specimen or anything derived from a great crested newt;

Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt;

- » Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.

The great crested newt is afforded additional protection under the *Conservation of Habitats and Species Regulations 2010* (as amended) which applies to all life stages.

Although the site is separated from the majority of the waterbodies within a 500m radius of the site by Hook Lane it is not considered likely that the road is a barrier for great crested newts. As such it is recommended, as per the mitigation measures agreed at the outline planning stage, that a non-licensed method statement is produced outlining avoidance measures to be undertaken to prevent impacting great crested newts that may be present on or surrounding the site.

The introduction of a balancing pond in the south east corner of the site will enhance the site for amphibians. These enhancements meet the requirement of **question six within Building for Life 12**, that the proposed layout of the site takes advantage of on-site characteristics such as existing topography, landscape features (including water courses) and wildlife habitats.

5.3.4 Reptiles

All species of native reptiles are protected by law, including the *Wildlife and Countryside Act 1981* (as amended) which makes it illegal to intentionally, or recklessly, kill or injure these animals.

The grassland and hedgerows on-site provide some connectivity to the wider landscape and possible foraging areas for reptiles; in addition an on-site low population of slow worms were recorded in 2013. As such it is recommended, as per the mitigation measures agreed at the outline planning stage, that a reptile displacement exercise is completed to encourage reptiles to move into retained grassland buffers.



5.3.5 Birds

All nesting birds are protected from disturbance whilst nesting by the Wildlife and Countryside Act 1981 (as amended).

It is understood that the main bird nesting and foraging habitat on-site i.e. the hedgerow and trees are to be retained (with the exception of approximately 10m of hedgerow H1). However the removal of any hedgerows, trees, scrub, the improved grassland or any of the on-site buildings should take place between October and February to avoid the breeding bird season. If this is not possible it is recommended a check for active bird nests by an ecologist immediately before vegetation clearance should be completed. Any active bird nests found must be retained in-situ with a suitable vegetated buffer until the young have fledged and cease to return to the nest.

It is recommended that bird boxes are incorporated onto trees within the proposed development in addition to invertebrate boxes to attract species to site as a potential food source for birds. It is also recommended that native trees and shrubs are incorporated where possible within the final design. Further details can be found in Appendix B and C.

5.3.6 Other Species

Hedgehogs

The hedgehog is a Section 41 NERC species, and has potential to occur at the site. Should any hedgehogs be found during site clearance, it is recommended that they be moved away from the works area by hand. Additionally care should be taken to avoid hedgehogs being harmed by any future constructions works; any pits or trenches where hedgehogs could become trapped should be covered at night or provided with a ladder/ramp to allow hedgehogs to escape.



6.0 References

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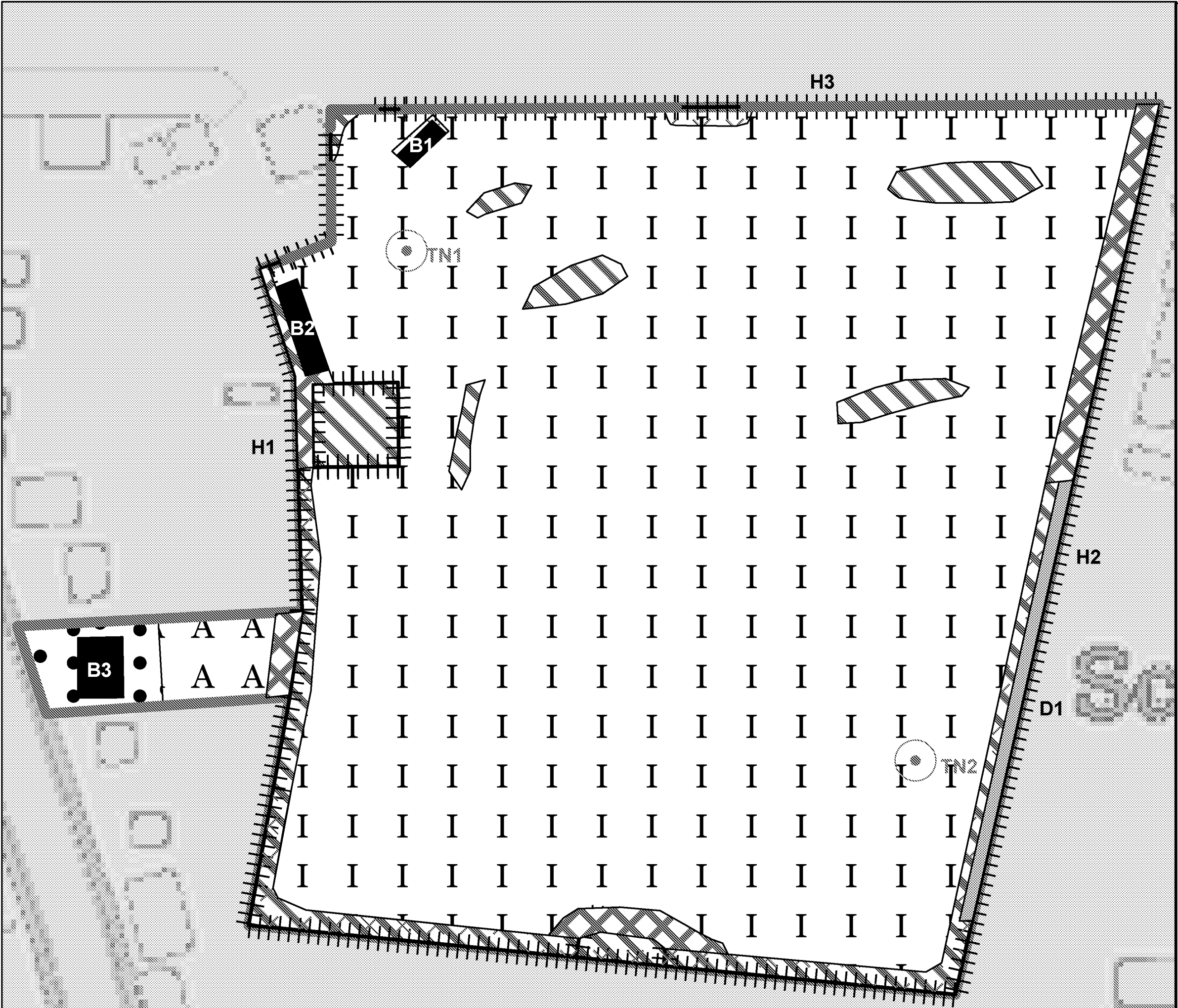
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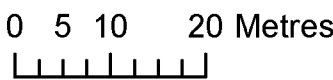
FIGURE

Figure 1 – Phase 1 Habitat Plan



Legend

- Amenity Grassland
- Bare Ground/ Hardstanding
- Building
- Dense Scrub
- Fenceline
- Improved Grassland
- Intact Species-poor Hedgerow
- Scattered Scrub
- Standing Water
- Tall Ruderal
- Target Note
- Site Boundary



The Pavillion, 1st Floor
Botleigh Grange Office Campus
Hedge End
Southampton
Hants
SO30 2AF

Tel: 02382 022800
Fax: 02382 022889
email: ecology@wyg.com



WYG Planning & Environment

**Land to the East of Hook Lane,
Westergate**

Phase 1 Habitat Survey Map

Project No: A096082	Drawn by: Date: BC 02/02/16		Checked By: Date: JS 14/03/16		Approved By: Date: DW 16/03/16	
	Office 45	Type 94	Drawing No. Figure 1		Revision	

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APPENDIX A – Wildlife Boxes

Introduction

The information in this appendix relates to bat and bird boxes that can be easily incorporated into building and landscape plans. The information provided is not exhaustive and provides examples of some of the types of boxes available.

Including bat and bird boxes throughout the development site has a number of benefits:

- ✧ Any roosting or resting places lost as a result of the work will be replaced;
- ✧ The ecological value of the site will be enhanced;
- ✧ Priority species within the UK and local Biodiversity Action Plans (BAPs) will be encouraged.

Bats

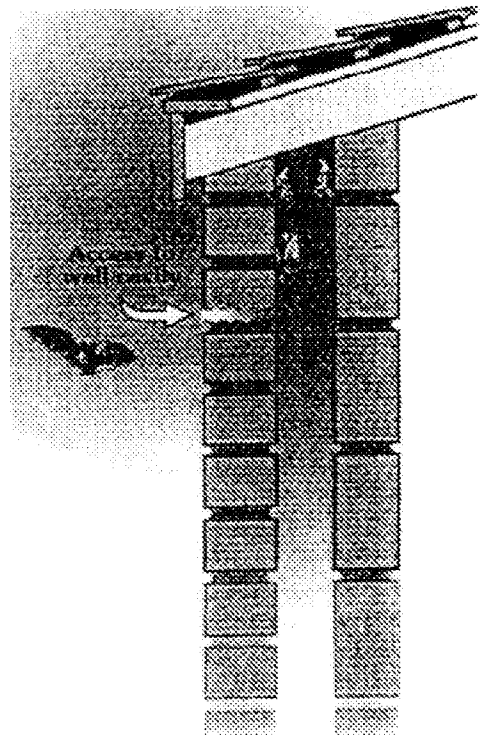
For Buildings

The inclusion of a variety of bat bricks, tubes and boxes for buildings is recommended to encourage a diversity of bat species. Bat bricks and tubes require no maintenance.

Bat Access and Roost Bricks

Source: Marshalls Clay Products (approved by the Bat conservation Trust)

'... Marshall Clay Products have been producing a Bat Access Brick specially designed to help the country's badly depleted bat population by provided access to wall cavities or roof spaces where most bat colonies tend to be (see diagram). In recent years bats have been declining at an alarming rate. Nearly all colonies tend to be on the outside of houses, in wall cavities, under slates, flashing or tiles, et c. ... Contrary to popular opinion, bats do not make pests and do absolutely no damage to buildings or roof timbers, indeed many people encourage bat colonies in their area because of the large number of insect pests, woodworm, et c. which they eat. Most colonises will use a house for only a few weeks in summer



before dispersing in autumn.'



Marshall's Bat Access Brick, which is now also available in stone.

A Bat Brick should ideally be placed as high as possible at the gable apex or close to the soffit.

Marshall's Clay Products - Quarry Lane,
Howley Park, Woodkirk, Dewsbury, West
Yorkshire, WF12 7JJ – Tel: (01132) 203535,
Fax: (01132) 203555.

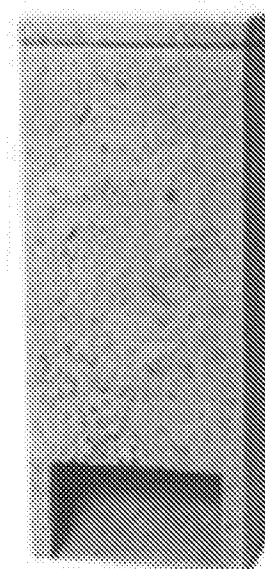
Bat Tube

Brick bat tubes are designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. They are particularly useful for new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated.

This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance-free as the entrance slit is at the bottom.

No painting required, but if painting is necessary a natural breathable paint should be used.

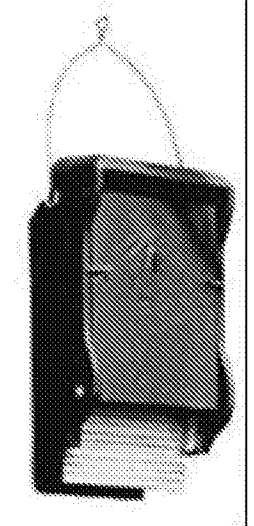
Width: 20cm; Height: 47.5cm; Depth: 12.5cm; Entrance Width: 15cm; Entrance Depth: 2cm; Weight: 13kg



Bat Box

This type of box is made of woodcrete and is expected to last approximately 25 years. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats. Woodcrete (75% wood sawdust, concrete and clay mixture).

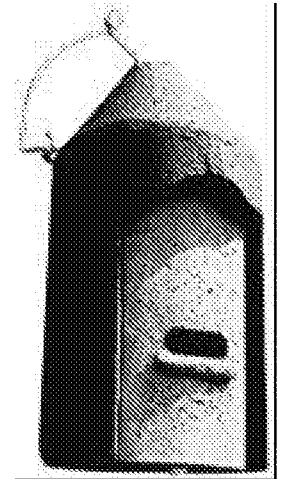
Width: 27cm; Height: 43cm; Weight: 8.3kg.



For Trees

Woodcrete boxes have the highest rates of occupation of all box types. The 75% wood sawdust, concrete and clay mixture allows natural respiration, stable temperature, and durability. They are long lasting (approx. 25 years) and are rot- and predator-proof. Hang from a tree branch near the trunk, or fix to a trunk with the supplied 'tree-friendly' aluminium nail. Attractive to smaller British bats.

Material: Woodcrete (75% wood sawdust, concrete and clay mixture); Diameter: 16cm; Height: 33cm; Weight: 4kg.



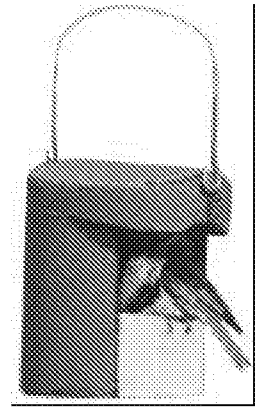
Bird Boxes

A variety of bird box designs could be installed throughout the development site to attract a diversity of species. Open fronted boxes will attract species such as robins, pied wagtails and spotted flycatchers, while boxes with entrance holes will attract tits, wrens and tree sparrows. Roost pockets will be used by roosting birds over the winter and by smaller species, such as wrens, for nesting in the spring.

Open Fronted Boxes

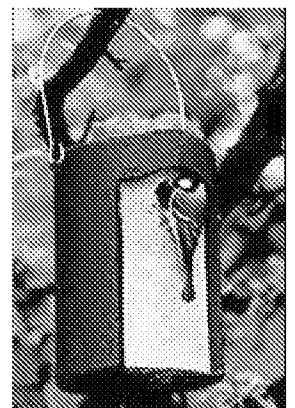
This box is attractive to robins, pied wagtails, spotted flycatcher, wrens and black redstarts and is best sited on the walls of buildings with the entrance on one side.

These woodcrete boxes are designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.



Boxes with Entrance Holes

This box is attractive to smaller birds such as tits, wrens and tree sparrows. Sparrow terraces are also available.



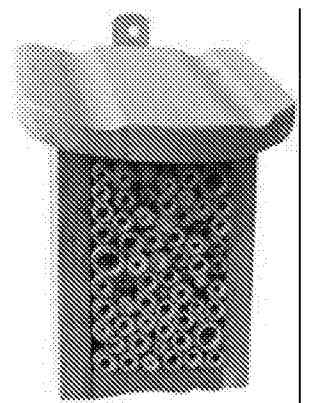
Insect Boxes

As with the bat and bird boxes, a variety of insect boxes is recommended to encourage a diversity of species.

Wooden Insect House

A general insect habitat for beneficial insects in summer and, later in the year, overwintering ladybirds and lacewings. Locate in a sheltered place near nectar or pollen plants or by a pond.

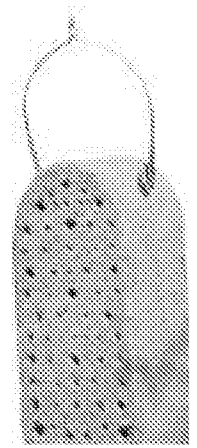
Durable and strong construction in acacia, oak or larch with no maintenance necessary. Dimensions: 22 × 13.5 × 13.5cm.



Woodcrete Insect House

An insect nest made from long-lasting, insulating, woodcrete, with holes of different sizes providing homes for a variety of beneficial insects such as bees and solitary wasps.

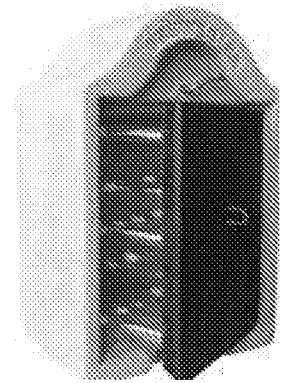
Dimensions: 14 × 8 × 26cm; Weight: 3.65kg



Insect House with Inspection Tubes

This nesting and hibernation box for insects has a woodcrete exterior with a wooden front panel which can be removed for observation. Through the transparent tubes you can see the usually hidden lifecycle of many solitary types of bees and hymenoptera including egg-laying, development of larvae and sealing of brood chambers.

Typical inhabitants are wild bees and thread-waisted wasps. All the species attracted to this box are harmless non-aggressive pollinating insects. Dimensions: 33 × 21 × 51 cm; Weight: 7.1kg.





APPENDIX B – Wildlife Friendly Planting

Table C1 Shrub species of native origin or generally thought to be beneficial to wildlife

(Source: 'Gardening with wildlife in mind', Natural England, 2008)

Common name	Scientific name
Hazel	<i>Corylus avellana</i>
Elder	<i>Sambucus nigra</i>
Goat willow	<i>Salix caprea</i>
Hawthorn	<i>Crataegus monogyna</i>
Dog rose	<i>Rosa canina</i>
Butterfly bush	<i>Buddleia davidii</i>
Guelder rose	<i>Viburnum opulus</i>
Gorse	<i>Ulex europaeus</i>
Broom	<i>Cytisus scoparius</i>
Wayfaring tree	<i>Viburnum lantana</i>
Shrubby cinquefoil	<i>Potentilla fruticosa</i>
Raspberry	<i>Rubus idaeus</i>
Alder buckthorn	<i>Frangula alnus</i>
Wild privet	<i>Ligustrum vulgare</i>
Barberry	<i>Berberis x stenophylla</i>
Barberry	<i>Berberis vulgaris</i>
Bell heather	<i>Erica cinerea</i>
Bilberry	<i>Vaccinium myrtillus</i>
Black currant	<i>Ribes nigrum</i>
Blackthorn	<i>Prunus spinosa</i>
Buckthorn	<i>Rhamnus catharticus</i>
Butcher's-broom	<i>Ruscus aculeatus</i>
Cherry laurel	<i>Prunus laurocerasus</i>
Cowberry	<i>Vaccinium vitis-idaea</i>
Cross-leaved heath	<i>Erica tetralix</i>
New Zealand holly	<i>Olearia macrodonta</i>
Daphne	<i>Daphne odora</i>
Dogwood	<i>Cornus sanguinea</i>
Field rose	<i>Rosa arvensis</i>
Firethorn	<i>Pyracanthus angustifolia</i>
Flowering Currant	<i>Ribes sanguineum</i>
Gooseberry	<i>Ribes uva-crispa</i>
Hebe 'Midsummer Beauty'	<i>Hebe species</i>
Hedgehog Rose	<i>Rosa rugosa</i>
Himalayan honeysuckle	<i>Leycesteria formosa</i>
Holly	<i>Ilex aquifolium</i>
Japanese quince	<i>Chaenomeles japonica</i>
Lilac	<i>Syringa vulgaris</i>
Mexican orange	<i>Choisya ternata</i>
Mezereon	<i>Daphne mezereum</i>
Midland Hawthorn	<i>Crataegus laevigata</i>
Oregon Grape	<i>Mahonia aquifolium</i>
Osier	<i>Salix viminalis</i>
Portugal laurel	<i>Prunus lusitanica</i>
Privet	<i>Lustrum ovalifolium</i>
Purple Willow	<i>Salix purpurea</i>
Snowy Mespilus	<i>Amelanchier canadensis, Amelanchier lamarckii</i>
Spindle	<i>Euonymus europaeus</i>
Spurge laurel	<i>Daphne laureola</i>
Sweet briar	<i>Rosa rubiginosa</i>
Wild privet	<i>Ligustrum vulgare</i>

Table C2 Tree species of native origin or generally thought to be beneficial to wildlife

(Source: 'Gardening with wildlife in mind', Natural England, 2008)

Common name	Scientific name
Pedunculate oak	<i>Quercus robur</i>
Ash	<i>Fraxinus excelsior</i>
Wych Elms	<i>Ulmus glabra</i>
Whitebeams	<i>Sorbus aria</i> agg.
Rowan	<i>Sorbus aucuparia</i>
Aspen	<i>Populus tremula</i>
Apple	<i>Malus domestica</i>
Bird Cherry	<i>Prunus pardus</i>
Common Alder	<i>Alnus glutinosa</i>
Crab apple	<i>Malus sylvestris</i>
Crack Willow	<i>Salix fragilis</i>
Downy Birch	<i>Betula pubescens</i>
False Acacia	<i>Robinia pseudoacacia</i>
Field Maple	<i>Acer campestre</i>
Hornbeam	<i>Carpinus betulus</i>
Juniper	<i>Juniperus communis</i>
Large-leaved lime	<i>Tilia platyphyllos</i>
Small-leaved lime	<i>Tilia cordata</i>
Pear	<i>Pyrus communis</i>
Scots Pine	<i>Pinus sylvestris</i>
Sessile oak	<i>Quercus petraea</i>
Silver birch	<i>Betula pendula</i>
Sweet chestnut	<i>Castanea sativa</i>
Wild Cherry	<i>Prunus avium</i>
Wild service-tree	<i>Sorbus torminalis</i>
Yew	<i>Taxus baccata</i>

Table C3 Gardening for bats

Aim at having flowers in bloom throughout the year, including both annuals and herbaceous perennials. Below are some suggestions, but this is not an exhaustive list. Flowering times are approximate, varying dependent on region. Regular dead-heading extends flowering period in many flowers.

A=annual, HA= hardy, annual, HHA=half-hardy annual, P=perennial, W=wild flower.

Flowers for borders			
St. John's Wort	<i>Hypericum</i>	P	March
Marigolds	<i>Calendula</i>	H/A	March-October
Aubrietia	<i>Aubrietia deltoidea</i>	P	March-June
Honesty	<i>Lunaria rediviva</i>	HB	March
Forget-me-not	<i>Myosotis</i> sp.	A/P	March-May
Elephant ears	<i>Bergenia</i>	P	April
Wallflowers	<i>Erysimum</i>	B	April-June
Cranesbills	<i>Geranium</i> sp.	P	May-September
Yarrow	<i>Achillea</i>	P	May-
Poppies	<i>Papaver</i> sp.	A	May- July
Dames violet	<i>Hesperis matronalis</i>	P	May-August
Red Valerian	<i>Centranthus ruber</i>	P	May-Sept
Poached egg plant	<i>Limnanthes</i>	HA	June-August
Knapweed	<i>Centaurea nigra</i>	P	June-September
Phacelia		HA	June-September
Ox-eye daisy	<i>Leucanthemum vulgare</i>	P	June-August
Evening primrose	<i>Oenothera biennis</i>	B	June-September
Candytuft	<i>Iberis umbellate</i>	HA	June-September
Sweet William	<i>Dianthus barbatus</i>	B	June-July
Blanket flowers	<i>Gaillardia</i>	P	June -
Verbena	<i>Verbena bonariensis</i>	HHA	June-October
Scabious	<i>Knautia arvensis</i>	P	July-August
Night-scented stock	<i>Mattiola bicornia</i>	HA	July-August
Pincushion flower	<i>Scabious</i> sp.	A/P	July-September
Cherry pie	<i>Heliotrope</i>	HHA	July-October
Mexican aster	<i>Cosmos</i> sp.	A/P	July-October
Cone flower	<i>Rudbeckia</i> sp.	A/P	August-November
Mallow	<i>Lavatera</i> sp.	P	August-October
Michaelmas daisy	<i>Aster</i> sp.	P	August-September
Ice plant 'Pink lady'	<i>Sedum spectabile</i>	P	September
Herbs – both leaves and flowers are fragrant			
Fennel	<i>Foeniculum vulgare</i>		July-September

Bergamont	<i>Monarda didyma</i>		June-September
Sweet Cicely	<i>Myrrhis odorata</i>		April-June
Hyssop	<i>Hyssopus officinalis</i>		July-September
Feverfew	<i>Tanacetum parthenium</i>		June-September
Borage	<i>Borago officinalis</i>		May-September
Rosemary	<i>Rosmarinus officinalis</i>		March-May
Lemon balm	<i>Melissa officinalis</i>		
Coriander	<i>Coprianrum sativum</i>		June-August
Lavenders	<i>Lavendula</i> sp.		
Marjoram	<i>Origanum</i> sp.		
Trees, shrubs and climbers important to insects			
Oak	<i>Quercus</i> sp.		large gardens only
Silver birch	<i>Betula pendula</i>		
Common alder	<i>Alnus glutinosa</i>		Suitable for coppicing
Hazel	<i>Corylus avellana</i>		Suitable for coppicing
Elder	<i>Sambucus nigra</i>		Small
Goat willow	<i>Salix caprea</i>		Suitable for coppicing
Hawthorn	<i>Crataegus monogyna</i>		Suitable for coppicing
Honeysuckle	<i>Lonicera</i> sp.		Grow a variety for succession
Dog rose	<i>Rosa canina</i>		Climber
Bramble	<i>Rubus fruticosus</i>		Climber
Ivy	<i>Hedera helix</i>		Climber
Buddleia	<i>Buddleija davidii</i>		Shrub
Guelder rose	<i>Viburnum opulus</i>		Shrub
Gorse	<i>Ulex</i> sp.		Shrub
Plants for pond edges and marshy areas			
Purple loosestrife	<i>Lythrum salicaria</i>	W	June-August
Meadow sweet	<i>Filipendula ulmaria</i>	W	June-September
Lady's smock	<i>Cardamine pratensis</i>	W	April-June
Water mint	<i>Mentha aquatica</i>	W	July-September
Angelica	<i>Angelica sylvestris</i>	W	July-September
Hemp agrimony	<i>Eupatorium cannabinum</i>	W	March-May
Marsh marigold	<i>Caltha palustris</i>	W	June-September
Creeping Jenny	<i>Lysimachia nummularium</i>	W	May-August
Fringed water lily	<i>Nymphoides peltata</i>	W	June-September
Water forget-me-not	<i>Myosotis scorpioides</i>	W	June-September

Allow part lawns to grow long in summer and cut in autumn, removing the clippings. Avoid using fertilisers. Compost heaps are food producers of insects too.