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Phase 1 Habitat and Species Survey

Land at Langstone Technology Park, Havant, PO9 1SA

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Report Summary

1. The Ecology Co-op has been commissioned by AG Langstone B.V. and Trinity Investment Management to undertake an Extended Phase 1 Habitat Survey at Langstone Technology Park. A site walkover survey visit was carried out on the 21st March 2019, to map the habitat types and evaluate the site for its potential to support EU and UK protected species. The purpose of this report is to record the findings of the survey and identify potential ecological constraints to redevelopment of areas of the site.
2. This survey was undertaken by Paul Whitby BSc (Hons) MCIEEM CEcol and Briony Hill BSc (Hons) ACIEEM.
3. Langstone Technology Park covers approximately 16ha and can be divided into three general areas. The northern section incorporates a large office building and parking, the central section, which contains office buildings, a data centre and acts as the amenity core for the park (including a nursery) and the southern section, which is predominantly parking with a gym and plant to the far west. The main habitats across this site are buildings, hard-standing, amenity grassland, scattered trees, single species hedgerows and mixed woodland with a stream running along the eastern boundary.
4. Building 1, 2, 3, 4 and 7 have a 'low' potential to support roosting bats. The proposed application involves the partial demolition to Building 3. Therefore, one bat emergence survey is required to determine the importance of this building to bats. No external works are proposed to Buildings 1, 2, 4 and 7 however if this changes a single bat emergences/re-entry survey would be necessary.
5. If roosting bats are identified a European Protected Species (EPS) licence will be required for works which will disturb, modify or destroy a roost. A license would detail full mitigation measures dependent upon on the number and species recorded.
6. The stream along the eastern boundary of the site is suitable for water voles. Records for this species upon the sites boundary were provided by HBIC and three potential water vole burrows were identified during the site visit. There will be an 8m buffer between the crest of the streams bank and the closest proposed construction zone. As a result, it is deemed highly unlikely that any burrows would be damaged or impacted and no further surveys are necessary.
7. It is recommended that a Habitat Creation and Enhancement Plan is produced to detail the creation and management of enhancement features.



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We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake an Extended Phase 1 Habitat Survey and protected species assessment of Land at Langstone Technology Park, Havant, P09 1SA by AG Langstone B.V. and Trinity Investment Management. This report presents the findings of a walkover survey undertaken by Paul Whitby BSc (Hons), full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), Chartered Ecologist (CEcol) and Natural England licensed bat surveyor (license no: 2016-21456-CLS-CLS) and Briony Hill BSc (Hons), ACIEEM and Natural England licensed bat surveyor (licence number: 2018-34640-CLS-CLS) on 21st March 2019. It provides details on the potential for any protected species and/or habitats to be present at the site and an assessment of the potential ecological constraints to the proposed development. Recommendations for further surveys that are likely to be required to inform a planning application and meet any required Ecological Impact Assessment (EclA) of the proposal are provided. Where appropriate, measures to avoid, mitigate and/or compensate for impacts are outlined.

1.2 Background

The site is located directly south of Havant Bypass (A27) in Langstone an urbanised village situated to the south of Havant, a town in the south east corner of Hampshire. The central grid reference for the site is SU 7127 0569.

Langstone Technology Park is an approximately 16 hectares (Ha) and can be divided into three general areas. The northern section incorporates Building 1000 and parking, the central section, contains office buildings, a data centre and acts as the amenity core for the park (including a nursery) and the southern section, is predominantly parking with a gym and plant to the far west. The location of the site is shown in Figure 1.

The proposal is for full planning permission for:

- The part demolition of Building 1000, installation of a new flank elevation to the east;
- A new elevation to the north of building 4000 as a result of the above;
- The erection of new buildings in flexible B1c, B2 and B8 use in the south west corner of the site with associated parking; and
- The creation of new car parking areas and the rationalisation of existing parking areas.



Figure 1. An aerial image showing the location of Land at Langstone Technology Park. The approximate site boundary is outlined in red. Images produced courtesy of Google maps (Map data ©2019 Google).

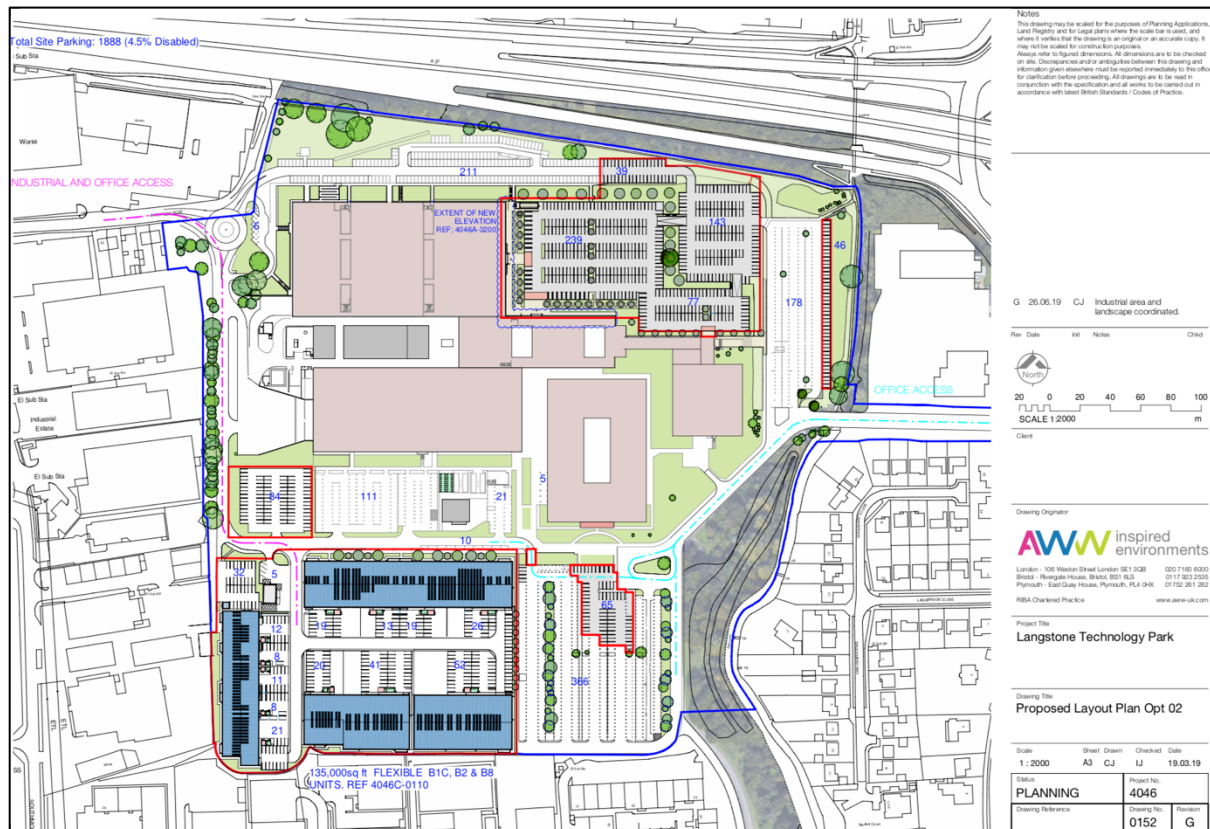


Figure 2. Proposed Layout Plan Opt 02 - Langstone Technology Park produced by AWW Inspired Environments Drawing No. 0152 Rev G. The ownership and application areas are shown with red and blue outlines.



1.3 Policy and Legislation

Legal protection applying to relevant bird, mammal, herpetofauna and invertebrate species and current nature conservation planning policy is outlined in Appendix 1 of this report.

Where possible this report has provided guidance on how the proposal can be designed to meet the requirements of both local planning policy and the National Planning Policy Framework (NPPF). Details of the NPPF can be found in Appendix 1 and relevant local planning policy by Havant Borough Council is provided in Appendix 4.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Appraisal (CIEEM 2017)¹, the Guidelines for Ecological Report Writing, Second Edition (CIEEM 2017)² and the Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018)³

2.1 Desk Study

A search for existing records of protected species, species of conservation concern and invasive non-native species, statutory and non-statutory designated sites and habitats was requested from the Hampshire Biodiversity Information centre (HBIC) within a radius of 1km of the site.

A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (relevant to great crested newts), watercourses (relevant to riparian mammals and crayfish) and connectivity to woodland, scrub, and hedgerow networks (relevant to bats, dormice) in the wider landscape around the site. The connectivity of the site to these features, buildings and other semi-natural habitats such as grassland and heathland are also relevant to bats, great crested newts and reptiles.

The MAGIC website resource (www.magic.gov.uk) was used to identify the location of designated sites for nature conservation and EPS licences granted in relation to the survey site.

2.2 Phase 1 Habitat Survey

A site walkover survey was undertaken on 21st March 2019, during which the habitats contained within the site were described and evaluated in accordance with standard Phase 1 Habitat Survey

¹ CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

² CIEEM (2017) *Guidelines for Ecological Report Writing, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

³ CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*. Chartered Institute of Ecology and Environmental Management, Winchester.



Methodology⁴. The dominant species and indicators of important habitat types such as ancient woodland or unimproved grasslands, were recorded.

A phase 1 habitat survey presents a standardised system for classifying and mapping wildlife habitats in all parts of Great Britain, including urban areas. The aim of Phase 1 survey is to provide, relatively rapidly, a record of the vegetation and wildlife habitats present over large areas of countryside. The habitat classification is based principally on vegetation, augmented by reference to topographic and substrate features, particularly where vegetation is not the dominant component of the habitat.

Data was gathered through a site walk-over survey and use of on-line aerial photography to broadly categorise the habitats present using the JNCC Phase 1 classifications. The results are presented as a map showing the distribution of habitat categories across the site. Target notes are used to describe specific features of biodiversity interest and record indicator species where appropriate. In addition to this, notable habitats, such as local and national Biodiversity Action Plan habitats are highlighted.

The Phase 1 Survey methodology is a recognised tool for initial scoping of potential ecological constraints and identifying potential impacts as part of the planning application process.

As part of the 'Extended' Phase 1 Habitat Survey, the site features were evaluated for their potential to support legally protected species and observations of any important plant communities, bird assemblages or other potentially valuable ecological features were recorded. Details of the preliminary survey methods for each legally protected species are given below.

2.3 Badgers

Habitats within the site and surrounding areas were broadly assessed for their potential to support badgers *Meles meles*. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths, foraging marks, were recorded.

Any limitations to the survey for badgers are set out in Section 3.11.

2.4 Bats

Bats can use a wide range of features including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy, and loose bark.

A detailed building inspection was carried out, looking for potential access points and 'potential roosting features (PRFs)' that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, staining or droppings. This included a ground-based external inspection around the building and internal inspection of the loft space. A high-powered torch was used during both the internal inspection and to inspect any potentially suitable features externally.

⁴ JNCC (2010) Handbook for Phase 1 habitat survey: A technique for environmental audit. Joint Nature Conservation Committee, Peterborough.



The potential for roosting bats for each feature, or group of features was assessed as either: negligible, low, moderate, or high, in accordance with best practice⁵. Any evidence confirming the presence of bats that was found was clearly recorded including photos and samples taken (e.g. droppings) where appropriate.

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats.

2.5 Breeding Birds

The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern (Eaton *et al.* 2015)⁶ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981). Further surveys are recommended as appropriate.

2.6 Dormice

The site was broadly assessed for its potential to support hazel dormouse *Muscardinus avellanarius*. This included use of on-line mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub and extensive hedgerow networks. Further surveys are recommended as appropriate in accordance with best practice guidance (Bright *et al.* 2006)⁷.

2.7 Great Crested Newt

A desk study was undertaken to identify ponds and wet ditches within 500m of the site that might support breeding great crested newts *Triturus cristatus*. Where access permission was granted, or ponds could be viewed from public roads or footpaths, the ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (H.S.I.) (Oldham *et al.* 2000)⁸. The value of the site for terrestrially foraging great crested newts and any features that might be used by hibernating newts have also been assessed.

Further surveys are recommended as appropriate, in accordance with best practice guidance (English Nature 2001)⁹.

⁵ Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

⁶ Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, Leigh., Musgrove, A., Noble, D., Stroud, D., Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. British Birds 108, pp 708-746.

⁷ Bright, P., Morris, P. and Mitchell-Jones, T. (2006) *The dormouse conservation handbook 2nd Ed.* English Nature, Peterborough.

⁸ Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

⁹ English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.



Any survey or access limitations are clearly set out in Section 3.11.

2.8 Reptiles

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and scrub). The common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis* grass snake *Natrix natrix* and adder *Vipera berus* are widespread species that can be found in any of these habitats, whereas smooth snake *Coronella austriaca* and sand lizard *Lacerta agilis* have much more restricted and isolated populations on lowland heathland and sand dunes.

2.9 Riparian Wildlife

Any watercourses identified during the desk study or field survey were assessed for their suitability to support otter *Lutra lutra*, water vole *Arvicola amphibious* and American mink *Neovison vison*. A visual search was made for the western bank of the stream to identify any field signs for the above species including, burrows, footprints, and droppings.

2.10 Other Notable Species

The site habitats were broadly assessed for their potential to support species of principle importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse, hedgehog, brown hare, and many bird species. The site was broadly assessed for its potential to support important invertebrate assemblages with specific attention paid to features such as standing dead-wood, wet flushes, bare earth banks and botanically rich areas.

3 BASELINE CONDITIONS

3.1 Designated Sites

Approximately 0.3km south of the Langstone Technology Park lies a site designated as Chichester and Langston Harbour Ramsar and Special Protection Area (SPA) and Langstone Harbour Site of Special Scientific Interest (SSSI). The Solent Maritime Special Area of Conservation (SAC) is present approximately 0.6km south. In addition, Warblington meadow SSSI, West Hayling Local Nature Reserve (LNR) and Hayling Billy LNR are present within 2km of the site (see Figure 3). Full details of the designated sites are provided in Table 1 below.

HBIC identified 5 Sites of Importance for Nature Conservation (SINC) sites. These are detailed in Table 2 below and shown in Figure 4.

There is one EPS license granted for mitigation projects concerning bats within 1km of the site shown



on the Magic Maps website. This license, dated 2014-2015, is located approximately 0.4km north west of the site and concerns the destruction of common pipistrelle *Pipistrellus pipistrellus* resting places. No EPS licenses for other species are shown within 1km of the sites boundaries.

Table 1. Designated sites

Site name	Designation	Features listed on citation	Proximity
Chichester and Langstone Harbour	Ramsar and SPA	Chichester and Langstone Harbours SPA and Ramsar cover the same area. The site covers two harbours that are separated by a stretch of water. These estuarine basins comprise sand and mudflat, which are exposed at low tide. These habitats support rich assemblages of invertebrates and algae beds, which are important for colonies of breeding terns and wintering birds. The site has particular significance for water birds, especially in migration periods and in winter. <i>This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:</i> <u>Breeding:</u> Little Tern <i>Sterna albifrons</i>: 100 pairs, representing up to 4.2% of the breeding population in Great Britain (5 year mean 1992-1996). Sandwich Tern <i>Sterna sandvicensis</i>: 158 pairs, representing up to 1.1% of the breeding population in Great Britain (1998). <u>On Passage:</u> Little Egret <i>Egretta garzetta</i>: 137 individuals, representing up to 17.1% of the population in Great Britain (1998). <u>Overwintering:</u> Bar-tailed Godwit: 1,692 individuals, representing up to 3.2% of the wintering population in Great Britain (5 year peak mean 1991/1-1995/6). Little Egret: 100 individuals, representing up to 20.0% of the wintering population in Great Britain (count as at 1998). <i>This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:</i> <u>On Passage:</u> Ringed Plover: 2,471 individuals, representing up to 4.9% of the Europe/Northern Africa wintering population (5 year peak mean 1991/2-1995/6). <u>Overwintering:</u> Black-tailed Godwit <i>Limosa limosa islandica</i>: 1,003 individuals, representing up to 1.4% of the wintering Iceland breeding population (5 year peak mean 1991/2-1995/6).	0.3km south



		Dark-bellied Brent Goose <i>Branta bernicla</i>: 17,119 individuals, representing up to 5.7% of the wintering Western Siberia/Western Europe population (5 year peak mean 1991/2-1995/6). Dunlin <i>Calidris arbor</i>: 44,294 individuals, representing up to 3.2% of the wintering Northern Siberia/Europe/Western Africa population (5 year peak mean 1991/2-1995/6). Grey Plover <i>Pluvialis squatarola</i>: 3,825 individuals, representing up to 2.5% of the wintering Eastern Atlantic (5 year peak mean 1991/2-1995/6). Redshank <i>Tringa arbor</i>: 1,788 individuals, representing up to 1.2% of the wintering Eastern Atlantic (5 year peak mean 1991/2-1995/6). Ringed Plover <i>Charadrius hiaticula</i>: 846 individuals, representing up to 1.7% of the wintering Europe/Northern Africa (5 year peak mean 1991/2-1995/6). <i>The area qualifies under Article 4.2 of the Directive (79/409/EEC) by regularly supporting at least 20,000 waterfowl including:</i> Wigeon <i>Anas arbore</i>, bar-tailed godwit <i>Limosa lapponica</i>, little grebe <i>Tachybaptus ruficollis</i>, shelduck <i>Tadorna tadorna</i>, curlew <i>Numenius arquata</i>, teal <i>Anas crecca</i>, pintail <i>Anas acuta</i>, shoveler <i>Anas clypeata</i>, red-breasted merganser <i>Mergus serrator</i>, oystercatcher <i>Haematopus ostralegu</i>, lapwing <i>Vanellus vanellus</i>, knot <i>Calidris canutus</i>, sanderling <i>Calidris alba</i>, cormorant <i>Phalacrocorax carbo</i> and whimbrel <i>Numenius phaeopus</i>.	
Solent Maritime	SAC	This site covers an area of 11243 ha. The following are the primary designating features for this site; estuaries, Spartina swards and Atlantic salt meadows. The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I: The primary reason for its designation as a SAC is the presence of the Annex I habitats: (1130) Estuaries, (1320) Spartina swards <i>Spartinion maritimae</i> and (1330) Atlantic salt meadows <i>Glauco-Puccinellietalia maritimae</i>. It also supports (1110) Sandbanks, which are slightly covered by sea water all the time, (1140) mudflats and sandflats not covered by seawater at low tide, (1150) coastal lagoons, (1210) annual vegetation of drift lines, (1220) perennial vegetation of stony banks, (1310) Salicornia and other annuals colonizing mud and sand, and (2120) "Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes), which although are not a primary reason for the sites selection, are qualifying features.	0.6km south



		The site is designated under article 4(4) of the Directive (92/43/EEC) as it hosts the following species listed in Annex II: (1016) Desmoulin's whorl snail <i>Vertigo moulinsiana</i>	
Warblington Meadow	SSSI	This designated site covers approximately 4.26Ha of unimproved grazing marsh. This sites rich flora is associated with its graduation from freshwater marsh to old reclaimed saltmarsh. A total of 158 flowering plants species have been documented upon the site.	1.4km east
West Hayling	LNR	This LNR is currently managed by the RSPB.	1.3km south
Hayling Billy	LNR	This site was afforded LNR status in 2010 and supports a number of rare plants. Three species of terns breed in the arbor islands and the Oysterbeds.	1.6km south

Table 2. SINC sites within 500m of Land at Langstone Technology Park

Site name and ref	SINC Criteria	Site Area (ha)	Proximity
Southmoor – Big Field (south edge) Ref: HV0054	4A – Semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands.	0.49	0.6km
Southmoor Reserve Ref: HV0058	2A – Agriculturally unimproved grasslands 4A – see above 5B – Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions. 6A – Sites which support one or more notable species	2.19	0.25km
Wade Court Park Ref: HV0083	6B – Sites which regularly support a significant population of a species which has a restricted distribution or has substantially declined in population or range. Such sites may be used seasonally or for only one part of a species life-cycle. 6C – Sites which support an outstanding assemblage of species.	1.12	0.5km
Langstone Mill Pond Ref: HV0084	4A – see above 5B – see above 6A – see above	0.98	0.7km
St Faith's Churchyard Ref: HV0150	2B – Semi-improved grasslands which retain a significant element of unimproved grassland. 7A – Sites of nature conservation interest which occur in areas otherwise deficient in such interest, and/or are known to be of particularly high value to local communities e.g. community wildlife sites.	0.22	0.4km

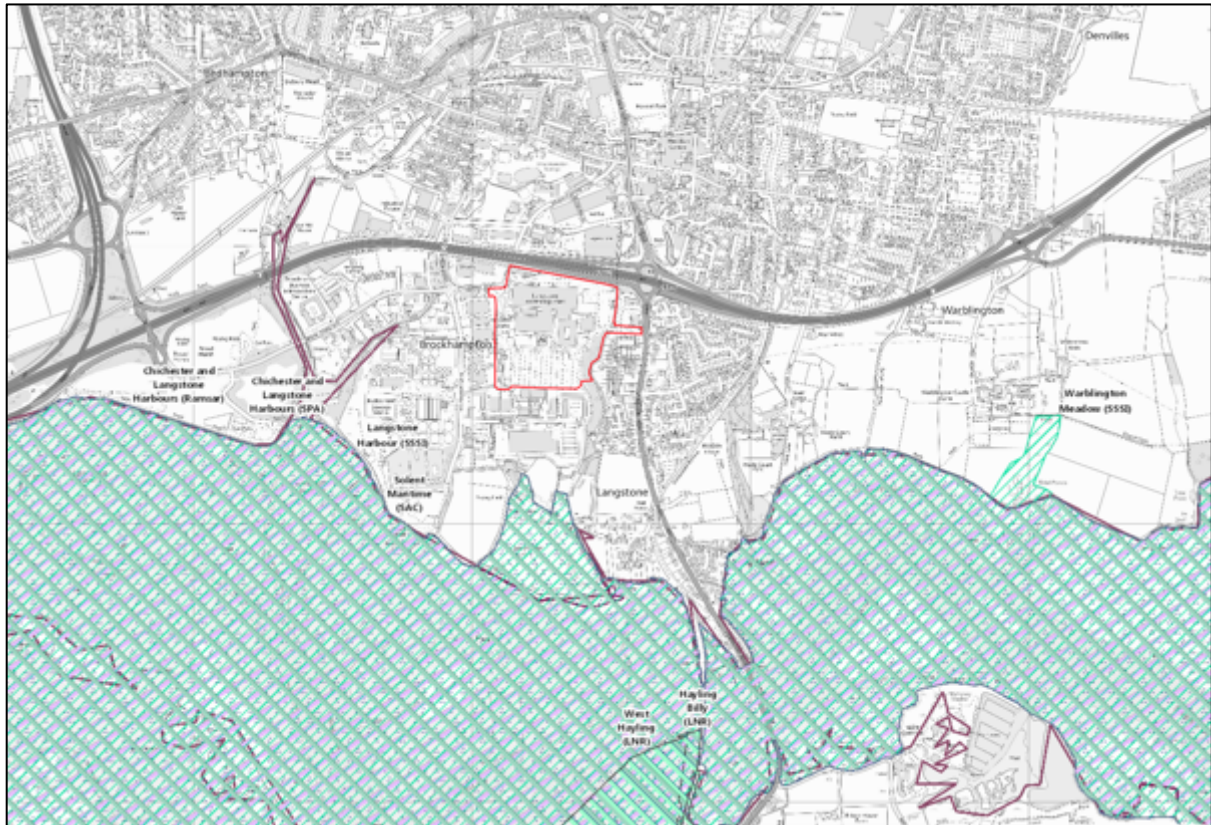


Figure 3. Designated sites within a radius of 2km of the Land at Langstone Technology Park, Havant (shown as a red dot). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>), contains public sector information licensed under the Open Government Licence v3.0).

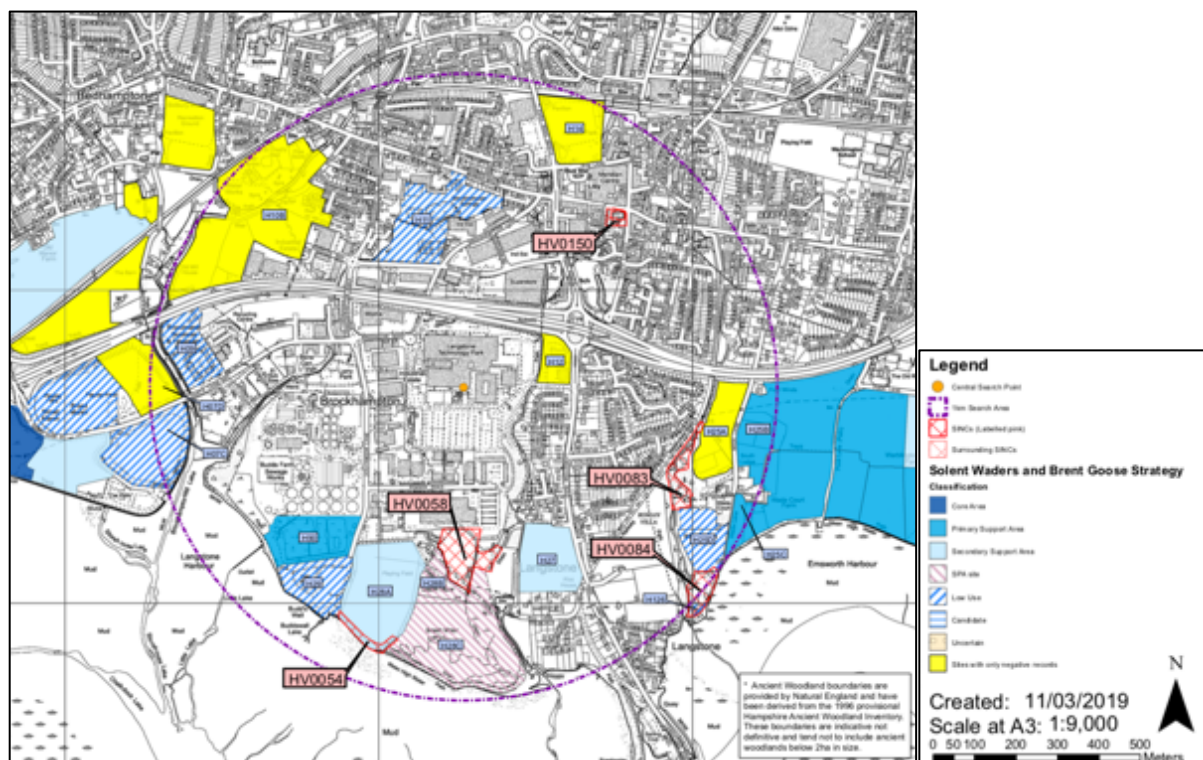


Figure 4. Non-statutory designated sites (including the Wader and Brent Goose Strategy) within 2km of Langstone Technology Park. Image produced courtesy of HBIC (Map data ©2019 HBIC).



3.2 Phase 1 Habitats

Table 2 below lists the Phase 1 Habitat categories found at the site, with target notes on specific features of interest and the general species composition. Where species were recorded using the DAFOR scale their relative abundance is shown¹⁰. Note that detailed information on buildings and ponds with respect to bats and great crested newts are presented in the following sections. The Phase 1 Habitat Map for the site and key to the standard mapping symbols used are presented in Figure 5 and 6.

Table 3. The Phase 1 habitats contained within the site.

Habitat type	JNCC Code	Area(Ha)/ Length (m)	Target note including general species composition
Bare ground	J4	7.63Ha	A large proportion of the site is comprised of tarmac parking facilities, access roads and yards along with footpaths.
Buildings	J3.6	3.97Ha	There are 11 buildings across the site. These are labelled in the Phase 1 map shown in Figure 5 and discussed in detail in Section 3.4. They include office buildings, data centres, a nursery and a gym.
Amenity grassland	J1.2	3.73Ha	Amenity grassland is prevalent across the site. It is generally tightly mown and managed with it having been allowed to grow slightly longer on the earth mounds to the north and east of the site. The following species were identified; meadow grass species <i>Poa</i> sp., creeping bent <i>Agrostis stolonifera</i> , Yorkshire fog <i>Holcus lanatus</i> , timothy <i>Phleum pratense</i> , cocks foot <i>Dactylis glomerata</i> , perennial rye grass <i>Lolium perenne</i> , Bent grass species <i>Agrostis</i> sp., red fescue <i>Festuca rubra</i> , sheeps fescue <i>Festuca ovina</i> , daisy <i>Bellis perennis</i> , dandelion <i>Taraxacum officinale</i> , spotted medick <i>Medicago arabica</i> , yarrow <i>Achillea millefolium</i> , common ragwort <i>Jacobaea vulgaris</i> , dove's-foot crane's-bill <i>Geranium molle</i> , red dead nettle <i>Lamium purpureum</i> , bittercress sp. <i>Cardamine hirsuta</i> , common mouse ear <i>Cerastium fontanum</i> , white dead nettle <i>Lamium album</i> , ribwort plantain <i>Plantago lanceolata</i> , common mallow <i>Malva sylvestris</i> , geranium species, creeping cinquefoil <i>Potentilla reptans</i> , common nettle <i>Urtica dioica</i> , creeping buttercup <i>Ranunculus repens</i> , groundsel <i>Senecio vulgaris</i> , broadleaved dock <i>Rumex obtusifolius</i> , cleavers <i>Galium aparine</i> , common hogweed <i>Heracleum sphondylium</i> and lesser celandine <i>Ficaria verna</i> .
Mixed woodland	A1.3.1	0.62Ha	The following species were identified within the woodland located along the eastern boundary of the site adjacent to

¹⁰ DAFOR Scale: Dominant (D), Abundant (A), Frequent (F), Occasional (O) and Rare (R).



semi-natural			the stream; elder <i>Sambucus nigra</i> (A), field rose <i>Rosa arvensis</i> (F), bramble <i>Rubus fruticosus</i> (F), weeping willow <i>Salix babylonica</i> (F), blackthorn <i>Prunus spinosa</i> (O), alder <i>Alnus glutinosa</i> (O), buddleia <i>Buddleja</i> sp. (O), hawthorn <i>Crataegus monogyna</i> (O), hazel <i>Corylus avellana</i> (O), horse chestnut <i>Aesculus hippocastanum</i> (O), field maple <i>Acer campestre</i> (R), bird cherry <i>Prunus padus</i> (R), goat willow <i>Salix caprea</i> (R), leylandii (R), black pine <i>Pinus nigra</i> (R), beech <i>Fagus sylvatica</i> (R) and an unidentified non-native species. In the understory the following species were identified; common nettle, ground ivy <i>Glechoma hederacea</i>, lesser celandine, lords and ladies <i>Arum maculatum</i>, cleavers, broadleaved dock, common hogweed, large perrywinkle <i>Vinca major</i>, read dead nettle, ground elder <i>Aegopodium podagraria</i>, willow herb species <i>Epilobium</i> sp., wood avens <i>Geum urbanum</i>, cow parsley <i>Anthriscus sylvestris</i>, bristly oxtongue <i>Helminthotheca echinoides</i>, speedwells species <i>Veronica</i> sp., harts tongue fern <i>Asplenium scolopendrium</i>, wild garlic <i>Allium ursinum</i>, pendulous sedge <i>Carex pendula</i>, hybrid bluebells <i>Hyacinthoides x massartiana</i>, daffodil species <i>Narcissus</i> sp., forget-me-not species <i>Myosotis</i> sp. . Along the western edge of the stream a bare ground footpath is present.
Mixed woodland – plantation	A1.3.2	0.02Ha	A small area of woodland is present to the far west of the site. The following species were recorded; eucalyptus species (A), leylandii (A), unidentified cypress species (O) and elder (O).
Broadleaved Parkland/scattered trees	A3.1	0.14Ha 276m	Two areas of scattered trees are present to the east of the site. The area to the north is comprised of regularly planted cherry species. Within the section to the south; maple species <i>Acer</i> sp. (A), Norway maple <i>Acer platanoides</i> (A), cherry species <i>Prunus</i> sp. (R), holly <i>Ilex aquifolium</i> (R) and an unidentified species were present. This trees are present over amenity grassland. Individual trees are present across the site which includes the following species; white willow <i>Salix alba</i>, field maple, birch sp. Norway maple, ash <i>Fraxinus</i> sp., cherry sp., and unidentified non-native species. A line of scattered trees are present along the western boundary of the largest area of parking across the southern portion of the site. The following species are present; ornamental cherry species (F), sycamore <i>Acer</i>



			<i>pseudopiantanus</i> (F), maple sp. (O) and alder (R). Oak <i>Quercus</i> sp. and birch <i>Betula</i> sp. saplings have been planted across a small area of amenity grassland to the north of the site. Within the southern carparking area are scattered non-native trees.
Introduced scrub	J1.4	0.04Ha	Pockets of cotoneaster are present to the north western part of the site as a landscaping feature. Smaller areas are also present around the buildings and have not be included within the map due to the small area they take up. An area planted with a non-native shrub is located between Building 2 and 5.
Other habitat	J5	0.11Ha	Surrounding the pond is a herbaceous flower bed, that has been heavily cut back, with the ground covered with rocks as a landscaping features. North of Building 1 is a rockery planted with non-native species including bamboo <i>Bambusoideae</i> sp. species and palm species. At the southern corner of the site is a man-made concrete structure used as a plant for the site.
Running water – oligotrophic	G2.2	0.18Ha	A stream is adjacent to the site's eastern boundary. The water runs north to south towards the sea. It appears to have good water quality and the clarity is good. Most of the banks are earth however on the eastern bank there are sections which have been reinforced with bricks, concrete and wooden posts. There is little vegetation on the banks with only the following identified; pendulous sedge, meadow sweet <i>Filipendula ulmaria</i>, willow herb species and yellow iris <i>Iris pseudacorus</i>. Within the waterbody water milfoil <i>Myriophyllum spicatum</i> and water starwort <i>Callitriche stagnalis</i> are present.
Standing water – mesotrophic	G1.2	0.01Ha	A small pond is situated immediately east of Building 3. This is described in more detail in Section 3.8.
Intact hedge-species-poor	J2.1.2	190m	Along the northern most point of the western boundary a line of heavily pollarded leylandii is present. Ivy <i>Hedera helix</i> (F), elder (R) and bramble (R) were also present.



			To the west of the site a yew <i>Taxus baccata</i> hedgerow runs either side of an access road that leads to a yard. A beech hedgerow is present in two locations to the north west of the site; firstly along a short section of the boundary and secondly as a landscaping feature to the north west of Building 3. Finally, a cherry laurel <i>Prunus laurocerasus</i> hedgerow is located immediately beyond a metal fence at the south western corner of the site.
Hedge with trees – species-poor	J2.3.2	202m	A mature tree line is located along part of the sites western boundary. This is comprised of eucalyptus (D), leylandii (D), ivy (O), elder (R) and blackthorn (R).
Fence	J2.4	710m	A wire mesh fence runs along the sites southern and norther boundaries. Along part of the western boundary a close board wooden fence and a metal security fence are present. A small number of scattered sycamore and hawthorn are present along the fence line.
Dry ditch	J2.6	60m	A ditch is present to the north of the site. It has gently sloping banks and measures approximately 2m wide and 2m deep. This held a maximum of 2cm water at the far north eastern end whilst the remainder was dry. The following species were identified on the banks; white dead nettle, broadleaved dock, bittercress species, soft rush <i>Juncus effusus</i> , common nettle, forget-me-not species and reed canary grass <i>Phalaris arundinacea</i> .
Target note	1		A mature white willow tree to the east of the site with bat roosting potential. Further details are provided in Section 3.4.
Target note	2		A dead tree with bat roosting potential. Further details are provided in Section 3.4.
Target note	3		A mature beech within the broadleaved woodland across the eastern boundary with bat roosting potential. Further details are provided in Section 3.4.
Target note	4		The amenity grassland to the south of the gym is more interesting botanically with the following species identified; <i>Luzula</i> species., orchid species <i>Orchidaceae sp.</i> , oxeye



			daisy <i>Leucanthemum vulgare</i>, yarrow, ribwort plantain, creeping cinquefoil, creeping buttercup, daisy, common cats ear <i>Hypochaeris radicata</i>, dove's-foot crane's-bill, bristly ox-tongue, common mouse ear, greater plantain and common ragwort <i>Plantago major</i>.
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Figure 5. Phase 1 map of Land at Langstone Technology Park. The buildings upon the site have are numbered.



Polygons	
	A1.3.1 Mixed woodland - semi-natural
	A1.3.2 Mixed woodland - plantation
	A3.1 Broadleaved Parkland/ scattered trees
	G1.2 Standing water - mesotrophic
	G2.3 Running water - oligotrophic
	J1.2 Cultivated/disturbed land - amenity grassland
	J1.4 Introduced shrub
	J3.6 Buildings
	J4 Bare ground
	J5 Other habitat
Lines	
	A3.1 Broadleaved Parkland/ scattered trees
	J2.1.2 Intact hedge - species-poor
	J2.3.2 Hedge with trees - species-poor
	J2.4 Fence
	J2.6 Dry ditch

Figure 6. Key for Phase 1 habitat map for Land at Langstone Technology Park.



Figure 7. Left – The area of carparking to the south of the site. Right – The area of car parking to the north east corner of the site with an adjacent amenity grassland bank.



Figure 8. Scattered cherry trees adjacent to the woodland habitat along the eastern boundary of the site.



Figure 9. The stream along the eastern boundary of the site.



Figure 10. Left - Amenity grassland to the north of the site. Right – another area of carparking to the north of Building 3.



Figure 11. Left – the small ornamental pond adjacent to the eastern face of Building 3. Right – the dry ditch to the north of the site which supported less than 2cm of water at the far north eastern end.



Figure 12. Left - The main access road along the western boundary of the site. Right – An access road lined with a yew hedge row.

3.3 Badgers

No signs of any badger activity were seen during the survey assessment, though there are habitats of value for this species within the site, most notably the woodland habitats to the east and green space to the north, and surrounding landscape. It is likely that if any setts were situated within 30m of the site



boundary, then some evidence of badger activity would have been observed.

Records of badgers are not provided by the records centre, due to the sensitive nature of this information.

3.4 Bats

The main body of the site is dominated by hard-standing, buildings and amenity grassland which are unlikely to support substantial numbers of invertebrates and therefore considered to provide 'low' value foraging habitats for bats, although occasional single species hedgerows, scattered trees and a ditch are likely to have higher value. It is also considered likely that the site is subject to some light pollution due to the streetlighting present. The woodland habitat, scattered trees and a stream along the eastern boundary of the site are considered to be high value habitats for foraging and provide a linear feature for commuting bats to use.

The value of all of the buildings and trees on the site that have the potential to support roosting bats have been summarized in Table 4 below, whilst accompanying photographs to support these descriptions are provided in Figures 13-22.

Table 4. Potential roost features for bats at Langstone Technology Park.

Building / Tree (refer to Figure 5)	Description of features	Assessment of potential
Building 1	This is a large square building with vertical concrete cladding panels across the lower walls with glass panel upper walls above. The gaps between the concrete cladding sections meet the ground and were investigated. The crevice between the vertical sections is approximately 3cm wide and exposed, whilst a crevice at the back of the gap behind the cladding panels appears to be shallow and it is possible, but highly unlikely that these features could be used by solitary roosting bats. At the south east corner of the building a possible gap was noted between the concrete external wall and a concrete plinth. An area of missing pug was identified at the north eastern corner of the building, which has the potential to be used by roosting bats. On the northern face is single storey flat rooved section used as a reception. The flat roof is tight fitting with no visible gaps present. A small bitumen lined flat roof access on the south side is similarly in a good condition with the lining and soffits appearing tight fitting.	Low bat roost potential
Building 2	This is a large rectangular building with an internal courtyard. It has a brick ground floor external wall and concrete panel cladding across all the outer walls with supporting pillars underneath. Where the concrete pillars connect to the building, they are poorly fitting with large gaps present providing access to a large connected space around the floor of the second storey. The concrete panel cladding has a flat pebble dash external finish and itself offers no value for roosting bats, however there is a visible crevice in places that could support individual bats.	Low bat roost potential
Building 3	This building is very similar in construction to Building 4 but is two storey. The external cladding is the same type, with a horizontal crevice behind each unit. On the north face an accessible crevice is present behind a	Low bat roost potential



	large sign attached to the wall which could be used by roosting bats.	
Building 4	This building is very similar in construction to Building 2, but without a recessed ground floor and exposed support pillars. Whilst this building also has pebbledash concreted cladding panels the join between the panels are different with horizontal gaps present. This gap extends approximately 15cm in depth and then vertically up behind the panels by approximately 6cm. These features have the potential to be used by solitary roosting bats.	Low bat roost potential
Building 5	This rectangular building is used as a nursery. It has a pitched gable roof which support concrete tiles. The tiles site flush across both faces with no potentially accessible gaps identified. The concrete ridged tiles are also tightly fitted and well pugged with no visible gaps. Wooden effect cladding is present across the external walls of the building and these did not provided any potential roosting opportunities for bats. The plastic soffits across the building are tightly fitting.	Negligible bat roost potential
Building 6	This is a two storey square building with brick lower walls and upper walls that are clad in a tight-fitting plastic material that has no visible gaps anywhere on its exterior that might support crevice-dwelling bat species. The building appears to have a flat roof and lacks a void space.	Negligible bat roost potential
Building 7	Building 7 appears to have an identical construction to Building 4, but is significantly smaller and is situated in a courtyard area with other buildings situated on all sites of it. Similarly to Building 4, the concrete cladding panels have an accessible crevice that could be used by solitary roosting bats.	Low bat roosting potential
Building 8	This is a square electrical building with aluminium cladding and a flat roof, The cladding is tight fitting and in good condition. A single gaps was identified where the fascia covers the sides of the roof but the crevice here is shallow and appears unsuitable for roosting bats.	Negligible bat roost potential
Building 9	This building is used as a gym. It has aluminium cladding across the whole of the building which is in very good condition. No visible gaps were identified between the cladding, around the soffits or across the roof.	Negligible bat roost potential
Building 10	This is a small metal structure which is devoid of any potential roosting features.	Negligible bat roost potential
Building 11	This is a small metal structure which is devoid of any potential roosting features.	Negligible bat roost potential
Tree 1	A mature white willow tree with 6 south and south east facing woodpecker holes and an area of thick flaking bark on the eastern face.	High bat roost potential
Tree 2	A dead tree with a rotten limb in the canopy and at least 3 south west facing woodpecker holes.	Moderate – high bat roost potential
Tree 3	A mature beech with a single west facing rot hole.	Low bat roost potential

HBIC provided 450 bat records in the search area comprising 12 identified species within the search area which are detailed in Table 3 below.



Table 3. Bat records returned within a 1km radius of the site.

Species	Number of Records
Common pipistrelle <i>Pipistrellus pipistrellus</i>	131
Soprano pipistrelle <i>Pipistrelle pygmaeus</i>	158
Nathusius's pipistrelle <i>Pipistrellus nathusii</i>	4
Pipistrelle species <i>Pipistrellus sp.</i>	50
Brown long-eared <i>Plecotus auratus</i>	1
Serotine <i>Eptesicus serotinus</i>	23
Noctule <i>Nyctalus noctula</i>	36
Lesser noctule <i>Nyctalus leisleri</i>	1
Daubenton's Myotis <i>Myotis daubentonii</i>	7
Natterer's Bat <i>Myotis nattereri</i>	2
Unidentified <i>Myotis</i> species	25
Unidentified bat species	12



Figure 13. Left - Building 1 with vertical concrete cladding on the lower floor and glass panels on the upper floor. Right – The flat rooved extension on the northern face of Building 1.



Figure 14. A gap at the south eastern corner of Building 1.

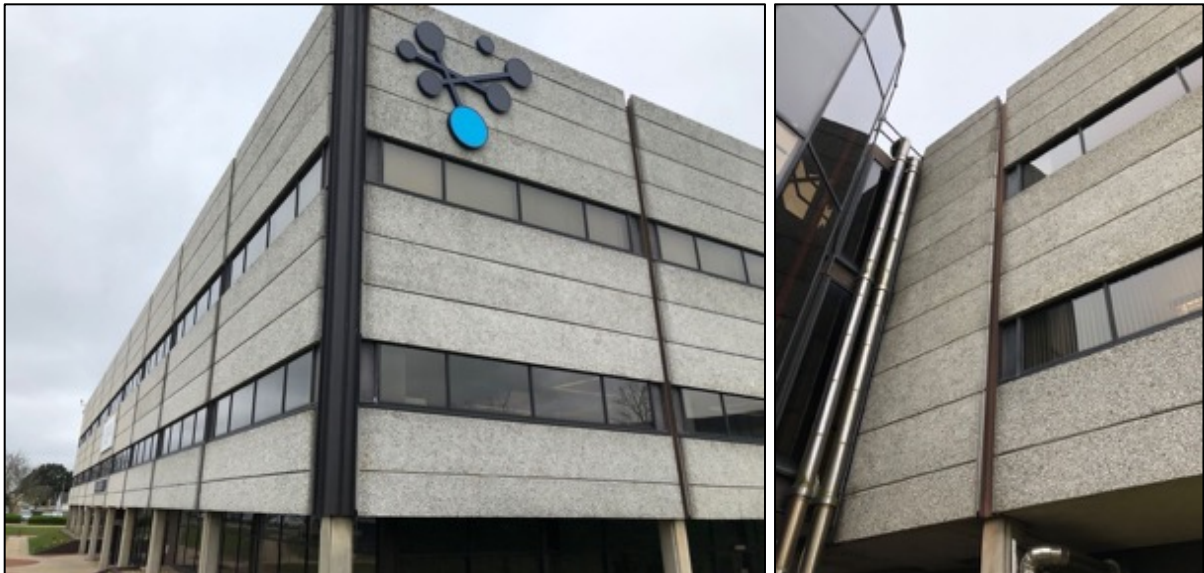


Figure 15. Left - The south and eastern elevations of Building 2 which has horizontal concrete cladding panels. Right – The western face of Building 2 and the glass connecting walk way.



Figure 16. Left – crevices visible in-between cladding panels on Building 2 Right – gaps visible around concrete support pillars at Building 2.



Figure 17. Further crevices visible around the concrete pillars supporting Building 2.



Figure 18. The northern elevation of Building 3, which is clad with horizontal concrete panels.



Figure 19. Left - A crevice behind a metal sign on the northern face of Building 3. Right – The gap present between the concrete cladding panels.



Figure 20. Building 5 (the nursery) which is clad with wood effect material and has a gable roof with tight fitting concrete tiles.



Figure 21. Left - The west and southern faces of Building 6. Right – The west and southern faces of Building 7.



Figure 22. Left – Building 8. Right – Building 9 which is used as a gym.

3.5 Breeding Birds

All of the woodland, hedgerows, scrub, and scattered semi-mature and occasional large mature trees have the potential to support a variety of common nesting birds.

HBIC provided numerous bird records for the search area concerning a total of 119 species. Most of these species are relatively common and widespread, but the list includes 19 species of principle importance for conservation (S41 NERC Act 2007), and 41 species listed on Schedule 1 of the Wildlife and Countryside Act. In addition, 40 species are red listed on the Birds of Conservation Concern

A high proportion of the records are non-breeding visitors or occasional visitors to the adjacent coast and marshes associated with the designated sites to the south of Langstone Technology Park and not relevant to the application site. However, the red kite *Milvus milvus* (Schedule 1 WCA) could potentially breed within the woodland to the east and the following S41 species could potentially breed within the woodland and scattered trees across the site: dunnock *Prunella modularis*, tree pipit *Anthus trivialis*, spotted flycatcher *Muscicapa striata*, tree sparrow *Pernis apivorus* starling *Sturnus vulgaris*, bullfinch *Pyrrhula pyrrhula*, song thrush *Turdus philomelos*, mistle thrush *Turdus viscivorus*.

A black redstart *Phoenicurus ochruros* record, which was associated with Langstone Technology Park was provided by HBIC. This record is dated 2015 but no information was provided about the type of records, i.e if it was breeding or migratory, but it is assumed most likely to be for a migrating individual given the preferred habitats of this species.

Building 2 had opportunities for nesting birds between the pillars where gaps which are large enough to accommodate house sparrow *Passer domesticus* and starling *Sturnus vulgaris* for example are present, though no evidence of their use was found. It is also possible that the flat roofs of the largest buildings (Building 1, 2, 3, and 4) could be used by gull species for nesting such as Mediterranean gull *Larus melanocephalus*, great black-backed gull *Larus marinus*, lesser black-backed gull *Larus fuscus*, herring gull *Larus argentatus*, little gull *Hydrocoloeus minutus*, black-headed gull *Chroicocephalus ridibundus* which were returned in the records by HBIC.

Records for swifts were returned by HBIC, this included a record for 2 low screaming birds



approximately 0.6km south and 3 nest along with 23 low screaming birds approximately 0.6km north indicating the probable breeding of this species. No swallow nests were identified at Landstone Technology Park.

3.6 *Wintering Birds*

HBIC returned details for the Solent Wader and Brent Goose Strategy Sites. The site itself is not identified as an important site for either brent geese or waders. However primary support areas, secondary support areas and low use sites were identified within 1 km of the site (see Figure 4). The two primary support areas are located 0.25km south west and 0.75km east of the site. The two secondary support areas are situated approximately 0.3km south west and 0.25km south east.

The site does not support any important or potentially suitable habitats for bent geese or wading birds.

3.7 *Dormice*

The woodland across the eastern boundary of the site is potentially suitable for common dormice supporting a variety of species which are known to have value for dormice including hazel, bramble, blackthorn, hawthorn and cherry sp. This woodland has connectivity to tree shaws and tree lines in the close surrounding landscape, although the extent of potentially suitable habitats appears to be limited.

The main body of the site supports isolated species poor/single species hedgerows and scattered trees. On account of the poor value and isolated nature of these habitats it is considered highly unlikely that dormice would be present within these features any anytime.

While no records of this species were provided by HBIC, this species is known to be under-recorded and could occur in any suitable habitat.

3.8 *Great Crested Newts and Other Amphibians*

A single pond (Pond 1) was identified within the sites boundaries, with this located immediately east of Building 3 (see Figure11 on page 23). A drain is also present within the northern portion of the site (See Figure 11). A search of aerial imagery and background mapping identified five waterbodies within 500m of the sites boundaries. The calculated HSI values, together with a brief description of the ponds and a summary of the recommendations for further surveys results is provided in Table 4. Full details of the HSI calculations are presented in Appendix 2.

In summary Pond 1 has a HSI value of 0.33 which corresponds to a 'poor' suitability for great crested newts. It is therefore considered highly unlikely that this pond would support great crested newts. The drainage ditch upon the site supported less than 2cm of water at the far north eastern end whilst the remainder was dry. In addition, Pond 2 and 3 were dry at the time at the time of the site assessment. Given that the drain, Pond 2 and 3 were dry in March it is highly unlikely that would support water during the breeding season for great crested newts making them unsuitable for breeding by this amphibian.

Waterbody 4 is a storage facility for Southern Water waste water and sewage treatment centre and as



such has been scoped out. Pond 5 and 6 have been scoped out as the A27 represents a significant barrier to movement by great crested newts.

Almost the entire site is comprised of tightly mown amenity grassland, buildings and hardstanding which do not have value for great crested newts. The only habitat of value is the woodland on the eastern boundary, which is a high value habitat for this species during its terrestrial phase.

HBIC provided one amphibian records in the search area, which was for a common toad *Bufo bufo* dated 2017 and situated approximately 0.6km south east. No records for great crested newts *Triturus cristatus*, were identified.

Overall it is considered highly unlikely great crested newts would be present upon the site.



Table 4. Details and HSI results of ponds within 500m of Land at Langstone Technology Park.

Water body	NGR	Description	Distance and direction from site	Significant barriers to movement	HSI value	Interpretation	Survey recommendations
Pond 1	SU 7138 0583	An artificial ornamental lined pond which has shallow water and much decaying vegetation within the waterbody.	Onsite	-	0.33	'Poor' suitability for great crested newts	No further surveys
Drain	SU 7120 0589	A 60m long ditch which held a maximum of 2cm water at the far north eastern end whilst the remainder was dry.	Onsite	-	N/A – held less than 2cm at the north east end whilst the rest was dry	N/A	No further surveys
Pond 2	SU 7114 0547	Small storage pond located within the park which was dry at the time of the site visit.	15m south	No	N/A - Dry	N/A	No further surveys
Pond 3	SU 7104 0538	Small pond heavily overgrown with willow sp and dry at the time of the site visit	105m south	No	N/A – Dry	N/A	No further surveys
Waterbody 4	SU 7079 0521	Storage facility for Southern Water waste water and sewage treatment centre	300m south west	No	N/A	N/A	No further action
Pond 5	SU 7119 0625	Large pond surrounded by woodland habitat and located within a area of green space	285m north	Yes – A27 Havant Bypass	N/A	N/A	No further action
Pond 6	SU 7111 0624	Large pond surrounded by woodland habitat and located within a area of green space	300m north	Yes – A27 Havant Bypass	N/A	N/A	No further action

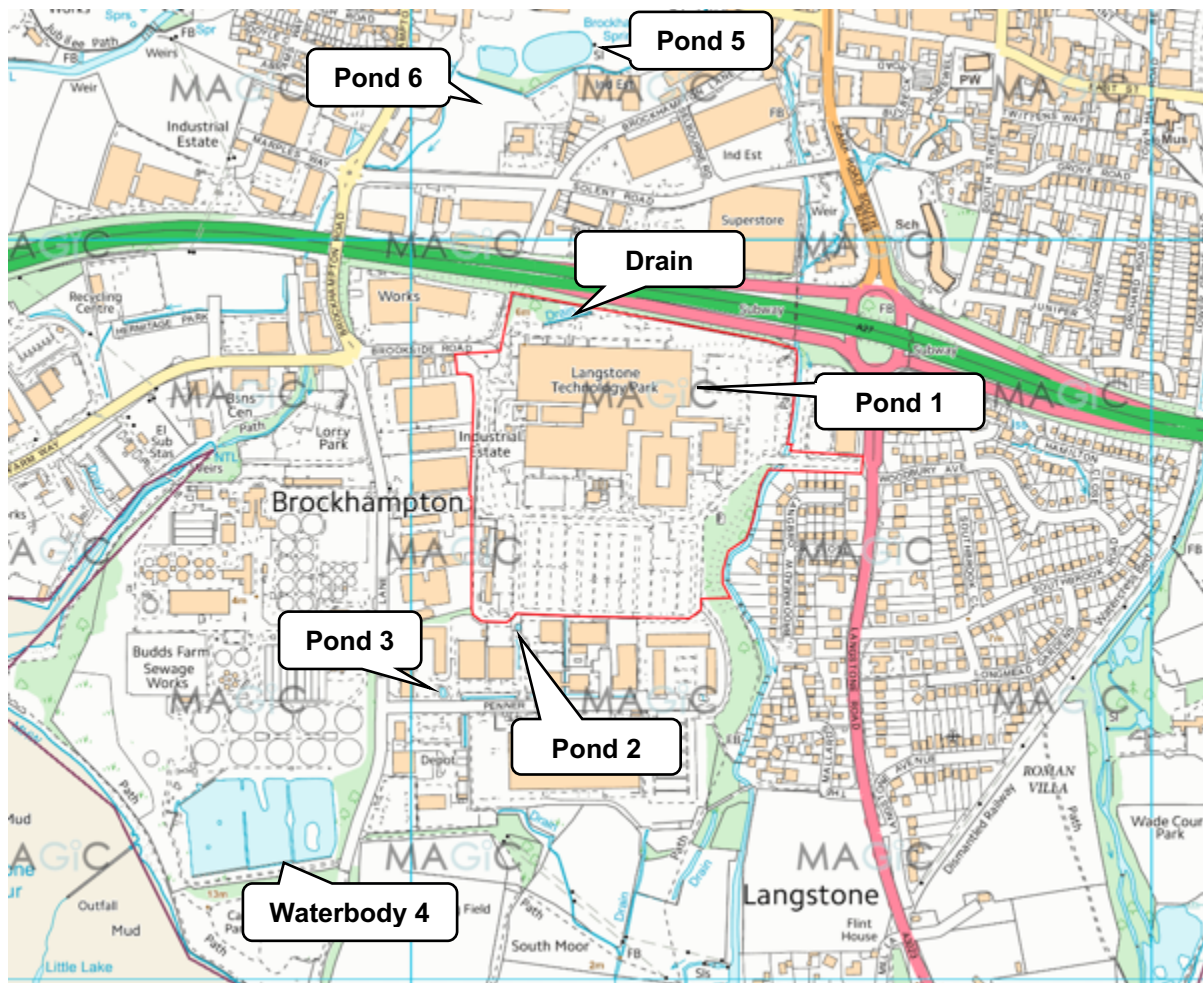


Figure 23. Ponds within 500m of the Land at Langstone Technology Park, Havant (shown as a red dot). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>), contains public sector information licensed under the Open Government Licence v3.0).

3.9 Reptiles

The main body of the site contains no suitable habitat for reptiles and comprises almost exclusively hard standing, buildings and close-mown amenity grassland. The woodland along the eastern boundary could be considered suitable habitats for slow worms and grass snakes with basking areas at the woodland edge, cover from predators and deadwood habitats with the potential to be used for hibernating.

HBIC provided 22 reptile records in the search area. This includes 21 slow worm records *Anguis fragilis* and one grass snake *Natrix helvetica* record. The slow worm record is dated 2008 and located approximately 0.3km north west. The grass snake record is dated 2006 and located approximately 0.7km east.

3.10 Riparian wildlife

A search of the banks of the stream along the southern part of the eastern boundary of the site identified three possible water vole burrows with droppings identified at the entrance to one of these. The burrows



and droppings identified were generally smaller than would be typically expected, however they may have been created by young individuals.

HBIC provided 62 records of water vole in the search area. Four of these records, dated 2013, are sited upon the sites eastern boundary where a stream is present.

This stream is also potentially suitable for white clawed crayfish having refuge available on the stony bed of the watercourse and visibly good water quality.

HBIC did not supply any records for otter or white clawed crayfish within the search area.

3.11 Invasive Non-native Species

HBIC provided records for 3 plant species listed in Wildlife and Countryside Act Schedule 9 Part 2. This includes 5 records for Japanese Knotweed *Fallopia japonica*, 1 record for False Virginia-creeper *Parthenocissus inserta* and 2 records for Japanese rose *Rosa rugosa*. The record for false virginia-creeper is situated approximately 0.7km north west of the site whilst the closest Japanese Knotweed record, dated 1997 is located approximately 0.4km north west. The grid references for Japanese rose are provided only to a 1km resolution and therefore the distance from the site cannot be accurately inferred. These invasive species were not recorded upon the site.

3.12 Other Notable Species

HBIC returned 5 records for west European hedgehog *Erinaceus europaeus*, a Priority Species listed under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC_s41). The most recent dated 2017 is located approximately 0.6km south east. The main body of the site does not have value for hedgehogs with little cover owing to the main body of the site being comprised of hard-standing, buildings and tightly mown amenity grassland, however the woodland along the eastern boundary is suitable habitat for this species.

HBIC returned 5 records for stag beetles *Coenonympha pamphilus*, a NERC_s41 species, the most recent dated 2007 and located approximately 0.3km east. There is much dead wood habitat within the woodland along the eastern boundary whilst the remaining area of the site does not support deadwood habitat.

HBIC returned 1 record for small heath *Coenonympha pamphilus*, a NERC_s41 species, which is dated 2003 and located approximately 0.4km south. Suitable habitat is not present at the site or this species of butterfly, which favours old grasslands.

3.13 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey, but may be evident at other times of the year. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.



4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Designated sites

Chichester and Langstone Harbour Ramsar and SPA is located approximately 0.3km south of the site and Solent Maritime SAC lies approximately 0.6km south. This project is for redevelopment of areas within the ownership boundary (see Figure 2). As this is a technology park there will be no increase in the number of residents. It is considered unlikely that there would be an increase in the number of vehicles to the site as there is not likely to be an increase in office space or car parking facilities.

The sites location with industrial estates and residential between it and the SPA and SAC means that impacts as a result of lighting, noise or dust are highly unlikely. Therefore, a Habitat Regulations Appropriate Assessment screening is not considered likely to be requested by the planning authority.

4.2 Habitats

The proposed construction areas are solely comprised of hard-standing, amenity grassland, building (Building 3) and a small ornamental pond, which are low value habitats in terms of ecology. Occasional scattered trees, with higher ecological value, despite the majority being ornamental and non-native species. Where trees are removed these and should be replaced in a ratio of 3:1.

However, the application areas do include the amenity grassland with higher botanical interest to the south of the gym. As the site visit was undertaken during the late winter the identification of plants was restricted. Therefore, a repeat botanical assessment should be made in May/June to fully assess the species present and determine appropriate mitigation and compensation to ensure the protection of biodiversity value.

4.3 Badgers

No signs of badger activity were identified during the assessment and no badger setts are situated on or near of the proposed construction zone. No further mitigation for badgers is advised, however if any signs of digging by large animals is identified on or near to the site prior to construction, then an ecologist should be contacted for advice.

4.4 Bats

In accordance with the Bat Conservation Trust guidelines, the overall potential for the Building 1, 2, 3, 4 and 7 is rated as 'low'. The proposed plan is for the part demolition of Building 3 and the installation of a new flank elevation to the east and a single visit bat emergence/re-entry survey will be required to cover the area of impact of Building 3 and determine the importance of the buildings to bats. To ensure adequate coverage, it is estimated that three observers would be required for the survey visit. Where external works are proposed to Building 1, 3, 4, or 7 a single bat emergence would be required.

Three trees across the site support potentially suitable bat roosting features and where these are to be



impacted, further surveys would be required to understand the use of the features identified by bats (see Figure 6). This may include a climbed inspection or emergence surveys.

Bat emergence/re-entry surveys can be undertaken between the 1st of May and 30th of September at dusk or at dawn to observe any bats emerging or re-entering roosts and use ultrasonic recording equipment to try and establish the species of bat present. The survey visits must be spaced no less than 2 weeks apart. If bats are discovered, further surveys to classify the nature of the roost may be required. The identification of a bat roost also means that during the development, careful timing of the development to avoid impacts on bats, a precautionary 'soft strip' of features supervised by a licensed and suitably qualified bat handler and provision of permanent bat roosting features into the development, may be required, depending on the nature of the roost.

A European Protected Species license will be required for any actions that would directly disturb, modify or destroy a bat roost. This would include measures to replace the existing roosting habitat such as designing integral bat roosting opportunities into the building fabric such as bat tiles and internal voids/access points for bats, depending on the scale of impact.

Buildings 5, 6, 8, 9, 10 and 11 are rated as having 'negligible' bat roosting potential and no further survey work or mitigation would be required where works to these buildings are proposed.

The main body of the site has low value for foraging bats being dominated by hard-standing, buildings and amenity grassland whilst the woodland and stream along the eastern boundary is likely to represent high value habitats for foraging and provide a linear features for commuting bats to use. As a result, it is important that the potential for disturbance from artificial lights is considered. Any change in the existing lighting scheme or new lighting scheme should be designed to be 'ecologically sensitive' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 3).

4.5 *Breeding Birds*

All of the woodland, hedgerows, scrub, and scattered semi-mature and occasional large mature trees have the potential to support a variety of common nesting birds. It will be essential for any future development to consider the nesting bird season and any vegetation removal and/or building demolition should be timed outside of the nesting bird season (typically 1st March to 31st August), unless features are first searched by a suitably qualified ecologist and no active nests are found. In the event any active nests are identified a buffer of approximately 5m must be created with the nest left undisturbed until the young have fledged.

The buildings have the potential to be used for nesting by house sparrow, starling and gull species. Therefore, the part demolition of Building 3 should be timed outside the nesting bird period unless a check by a suitably qualified ecologist concludes the absence of nesting birds.

4.6 *Dormice*

The proposed construction zones do not support any woodland, hedgerow and scrub for dormice and therefore there will be no significant impacts upon potentially suitable habitats for this species.



The woodland along the eastern boundary of the site is suitable habitat for dormice and although the extent of other suitable habitat in the close surrounding landscape is restricted, their presence cannot be ruled out. This woodland habitat will not be impacted by the proposed scheme and therefore no further survey effort or mitigation is recommended. If plans change and the woodland is to be impacted, dependent upon the scale of vegetation removal, either further survey work or precautionary mitigation would be recommended as appropriate.

Should surveys be required, these must be undertaken in accordance with current best practice guidelines to determine presence/absence by dormice and include all potentially suitable habitats present within the sites boundaries. Dormouse surveys involve fixing purpose-made nest tubes or boxes onto trees and checking for signs of occupation during the active period from April to October. Where direct impacts on habitat used by dormice cannot be avoided, a European Protected Species (EPS) licence would be necessary to allow the development to proceed legally. Mitigation and compensation measures would be required under such a licence, for example careful timing of activities and planting of native species hedgerows and scrub where appropriate.

4.7 *Great Crested Newts*

No further surveys are recommended with respect to great crested newts, as the proposed construction zone comprises of habitat that is unsuitable for this species, the only pond on the site (an artificial pond) has been deemed unsuitable for breeding and all other ponds within 250 metres are either also unsuitable for breeding, or are separated from the site by significant barriers to movement.

4.8 *Reptiles*

The only habitat which is considered suitable for reptiles is the woodland along the eastern boundary. This is outside of the proposed construction zones and therefore there are no impacts to habitats of value for this group of species.

4.9 *Riparian Wildlife*

The stream along the eastern boundary of the site is suitable for water voles. Records for this species upon the sites boundary were provided by HBIC and three potential water vole burrows were identified during the site visit. There will be an 8m buffer between the crest of the streams bank and the closest proposed construction zone. As a result, there will be no direct impact to the stream itself and it is considered highly unlikely that any burrows would be damaged or impacted in light of The Water Vole Mitigation Handbook¹¹ detailing that a suitable buffer zone would likely be in the region of 3-5m from toe¹² of bank. Due to this no further surveys necessary.

However, it is important that a visual barrier is created for example with heras fencing, to ensure that

¹¹ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

¹² The toe of the bank is defined here as the area of the bank at, and immediately above, water level.



machinery will not access, track over or work within the 8m buffer from the crest of the bank.

The stream is also potentially suitable for white clawed crayfish, but as there will be no direct impact to the stream no further surveys or mitigation is necessary.

4.10 Other Notable Species

The woodland along the eastern boundary is not proposed to be impacted as part of this application and therefore there are no anticipated potential impacts to hedgehogs or stag beetles.

4.11 Enhancement Opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme could include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF (See Appendix 1) and as such would be considered favourably when determining the planning application.

Potentially suitable enhancement options include:

- planting of native trees and scrub particularly fruiting and flowering species;
- creation of wildflower habitat;
- creation of a wildlife friendly pond;
- inclusion of bird boxes (house sparrow and swallow) upon the new proposed buildings; and
- inclusion of bat boxes upon trees and buildings across the site.

It is recommended that a Habitat Creation and Enhancement Plan is produced to detail the creation and management of enhancement features.

4.12 Conclusions

The proposed construction zones are comprised of buildings, mown amenity grassland and hard standing with low ecological value and occasional scattered trees.

Building 3, proposed for a part demolition, has a low potential to support roosting bats and a bat emergence surveys have been recommended. Buildings 1, 2, 4, or 7 also have a low potential to support roosting bats although they are not proposed to be impacted externally.

If any protected species are found during the proposed work, work should be stopped immediately, and an ecologist must be contacted for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op, info@ecologyco-op.co.uk, www.ecologyco-op.co.uk, Office: 01798 861800.



APPENDIX 1 – Wildlife Legislation and National Planning Policy

Introduction

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to wildlife in general and certain species. It includes current national planning policy relevant to nature conservation.

The ‘Birds Directive’, ‘Habitats Directive’ and ‘Natura 2000 Sites’.

The Council Directive 79/409/EEC on the Conservation of Wild Birds (“the Birds Directive”) sets a framework for the protection of wild birds. Under the directive, several provisions are made including the designation and protection of ‘Special Protection Areas’ (SPAs) – areas which support important bird populations, and the legal protection of rare or vulnerable species.

The Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the “Habitats Directive”) directs member states of the EU to take measures to maintain favourable conservation status of important habitats and species. This requires the designation of a series of sites which contain important populations of species listed on Annex II of the directive (for example Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus* and white-clawed crayfish *Austropotamobius pallipes*. Together with ‘Special Areas of Conservation’ (SPAs), designated under the Birds Directive, SACs form a network across Europe of protected areas known as the ‘Natura 2000 sites’.

Annex IV lists species in need of more strict protection, these are known as “European Protected Species (EPS)”. All bat species, common dormice *Muscardinus avellana*, otter *Lutra lutra* and great crested newts *Triturus cristatus* are examples of EPS that are regularly encountered during development projects.

The ‘Habitats Regulations’

The Conservation of Habitats and Species Regulations 2017 (the “Habitats Regulations”) is the principle means of transposing the Habitats Directive and the Birds Directive, and updates the Conservation (Natural Habitats, &c.) Regulations 1994 (“the 1994 regulations”) in England and Wales.

‘Natura 2000’ sites receive the highest level of protection under this regulation which requires that any activity within the zone of influence of these sites would be subject to a Habitats Regulations Assessment (HRA) by the competent authority (e.g. planning authority), leading to an Appropriate Assessment (AA) in cases where ‘likely significant effects on the integrity of the site are identified.

For European Protected Species, Regulation 41 makes it a criminal offence to;

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb wild animals of such species;
- Deliberately take or destroy their eggs (where relevant);
- Damage or destroy a *breeding or resting place* of such an animal;
- Possess, control, sell or exchange any live or dead animal or plant, of such species;
- Deliberately pick, collect, cut, uproot or destroy a wild plant of such species.

The Habitats Directive and Habitats Regulations provide for the derogation from these prohibitions for



specific reasons provided certain conditions are met. An EPS licensing regime allows operations that would otherwise be unlawful acts to be carried out lawfully. Natural England is the licensing Authority and, in order to grant a license, ensures that three statutory conditions (sometimes referred to as the 'three derogation tests') are met:

- A licence can be granted for the purposes of “preserving public health or safety or for other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment” (Regulation 53 (2) (e)).
- A licence can be granted if “there are no satisfactory alternatives” to the proposed action.
- A licence shall not be granted unless the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Wildlife and Countryside Act (1981) as amended.

This remains one of the most important pieces of wildlife legislation in the UK. There are various schedules to the Act protecting birds (Schedule 1), other animals including insects (Schedule 5), plants (Schedule 8), and control of invasive non-native species (Schedule 9).

Under the Wildlife and Countryside Act (WCA) 1981, all wild birds (with the exception of those listed on Schedule 2), their eggs and nests are protected by law and it is an offence to:

- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.
- Disturb any bird listed on Schedule 1, while it is nest building, or at a nest with eggs or young, or disturb the dependant young of any such bird.

Schedule 5 lists all non-avian animals receiving protection to a varied degree. At its strongest, the Act makes it an offence to intentionally kill, injure or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturb animals while occupying such places. Examples of species with *full protection* include all EPS, common reptile species, water vole *Arvicola amphibius*, white-clawed crayfish *Austropotamobius pallipes* and Roman snail *Helix pomatia*. Other species are protected from sale, barter or exchange only, such as white letter hairstreak *Satyrrium w-album*.

The Act makes it an offence to intentionally pick, uproot or destroy any plant or seed, and sell or possess any plant listed on Schedule 8. It is also an offence to intentionally uproot any wild plant not listed on Schedule 8 unless authorised [by the land owner]. Species on Schedules 5 and 8 are reviewed every 5 years when species can be added or removed.

Measures for the prevention of spreading non-native species which may be detrimental to native wildlife is included in the Act, which prohibits the release of animals or planting of plants into the wild of species listed on Schedule 9 (for example Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandifera*, New Zealand Pygmyweed *Crassula helmsii*).

The Wildlife and Countryside Act 1981 (as amended) also prohibits certain inhumane methods of traps and devices for the capture or killing of wild animals and certain additional methods such as fixed trap, poisoning with gas or smoke, or spot-lighting with vehicles for killing species listed on Schedule 6 of the Act (this includes all bat species, badger, otter, polecat, dormice, hedgehog and red squirrel).

Natural Environment and Rural Communities (NERC) Act (2006)

The NERC Act (2006) created the statutory nature conservation body Natural England, and places a



statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of *habitats and species of principal importance for the conservation of biodiversity* in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers. Section 41 of the NERC Act lists the habitats and species of principle importance. This includes a wide range of species from mosses, vascular plants, invertebrates through to mammals and birds. It originates from the priority species listed under the UK Biodiversity Action Plan (UK BAP) with some omissions and additions.

Protection of Badgers Act (1992)

The Badger *Meles meles* is afforded specific legal protection in Britain under the Protection of Badgers Act (1992), and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended) (see above).

Under this legislation, it is a criminal offence to:

- intentionally kill, injure, take, possess, or cruelly ill-treat, a Badger, or to attempt to do so;
- interfere with a sett, by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

A licence may be obtained from Natural England to permit certain prohibited actions for a number of defined reasons including interference of a sett for the purpose of development, provided that a certain number of conditions are met. Note that licenses are not normally granted for works affecting badgers between the end of November and the start of July.

National Planning Policy Framework

The National Planning Policy Framework (NPPF 2018)¹³ sets out the Government's view on how planners should balance nature conservation with development and helps ensure that Government meets its biodiversity commitments with regard to the operation of the planning system.

Paragraph 174b, which states that council policies should "*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.*" The Office of the Deputy Prime Minister (ODPM) Circular 06/2005, 2005)¹⁴. In accordance with the NPPF, it is important that developments should contribute to and enhance the natural and local environment by:

- Minimising impacts on existing biodiversity and habitats,
- Providing net gains in biodiversity and habitats, wherever possible,
- establishing coherent ecological networks that are more resilient to current and future pressures.

¹³ ¹³ HM Government (2018). National Planning Policy Framework. Department for Communities and Local Government. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf.

¹⁴ HM Government (2005) ODPM Circular 06/05 Government Circular: *Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf.



UK Post-2010 Biodiversity Framework

The UK Biodiversity Action Plan (UK BAP), first published in 1994, was the UK's response to the commitments of the Rio Convention on Biological Diversity (1992) until 2010, when the UK BAP was replaced by the UK Post-2010 Biodiversity Framework. This framework covers the period 2011 to 2020 and forms the UK government's response to the new strategic plan of the United Nations Convention on Biodiversity (CBD) published in 2010. This promotes a focus on individual countries delivering target for protection for biodiversity through their own strategies.

The most recent biodiversity strategy for England, 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services' was published by Defra (2011), and a progress update was provided in July 2013 (Defra 2013).

'Biodiversity 2020' builds on the Natural Environment White Paper for England – 'The Natural Choice', published on 7 June 2011, and sets out the strategic direction for biodiversity policy for the next decade. Biodiversity 2020 deliberately avoids setting specific targets and actions for local areas and species because the Government believes that local people and organisations are best placed to decide how to implement the strategy in the most appropriate way for their local area or situation.

Birds of Conservation Concern (BoCC)

In 1996, the UK's leading non-governmental bird conservation organisations listed the conservation status of all bird species in the UK against a series of criteria relating to their population size, trends and relative importance to global conservation. The lists, known as the 'Red', 'Amber' and 'Green' lists (in order of decreasing concern) are used to inform key conservation policy and decisions. The lists are reviewed every 5 years and are a useful reference for determining the current importance of a particular site for birds. The most recent review was undertaken in 2015 (Eaton et al, 2015), which provides an up to date assessment of the conservation status of birds in the UK.

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Wildlife and Countryside Act (WCA) (1981). HMSO London. Available at:
<http://www.legislation.gov.uk/ukpga/1981/69/contents>



APPENDIX 2 – Great crested newt ‘Habitat Suitability Index’ values

Table 1. HSI calculation for ponds assessed during the survey.

	Pond 1	
NGR		
SI attribute	SI value	Notes
Location	1.00	SE England
Pond area	0.15	75m ²
Pond drying	0.50	Sometimes
Water quality	0.33	Poor – pollution on the surface and much decaying plant debris present within the waterbody
Shade cover	1.00	40%
Water-fowl	1.00	Absent
Fish presence	1.00	Absent
No. ponds	0.10	0
Terrestrial habitat	0.01	Isolated
Macrophytes	0.71	40%
H.S.I. value	0.33	‘poor’ suitability



APPENDIX 3 - Reducing impacts of artificial light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust¹⁵ should be considered while designing the lighting scheme. A simple process which should be followed where the impact on bats is being considered as part of a proposed lighting scheme. It contains techniques which can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting on key habitats and features altogether

there is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation. However, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results;

- Dark buffers, illuminance limits and zonation
- Sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill
- Consider the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- Screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding
- Glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features.
- Creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for

¹⁵ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



any such habitat being lost to the development.

- Dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; It may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*



Further reading:

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APPENDIX 4 –Local Planning Policy

Table 1: Havant Borough Council Core Strategy Local Development Framework (March 2011) [Currently forming a Local Plan stretching to 2036).

Policy Number/Title	Policy Summary
CS11 (Protecting and Enhancing the Special Environment and Heritage of Havant Borough)	Planning permission will be granted for development that: • Protects and where possible enhances the borough statutory and non-statutory designated landscapes, habitats and features of hydrological and geological interest. This will be achieved by appropriate mitigation measures including creation of new habitats and water bodies/courses or planting of new trees and woodlands. Attention should be paid to: SPAs, SACs, SSSIs, NNRs, SINC's and LNRs. • Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation. • Ensures partnership working with landowners to ensure land management practices restore and enhance where possible new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere. • Protects wildlife corridors to prevent the fragmentation of existing habitats and to allow species like Brent Geese to respond to the local affects of climate change

End.