PRO VISION

Land at Havant and South Downs College

Ecological Assessment

Prepared on behalf of Places for People Development

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Land at Havant and South Downs College

Ecology 7707

Issue 02

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1.0 Executive Summary

1.1 The Client is seeking to develop the land at Havant and South Downs College for use as a residential development. Pro Vision Ecology were commissioned to provide an Ecological Assessment of the site to inform the potential design of any development on the land.

1.2 The land at Havant and South Downs College mostly comprises of a large disused car park with narrow broadleaved woodland along the east, south and west boundaries. One building is also included in the development boundary which forms part of the college.

1.3 Evidence of badger activity was recorded during the survey, and motion detecting cameras confirmed that the badger setts on the east and south boundary are active. Therefore, mitigation during construction has been provided and enhancements have been included within the design of the masterplan.

1.4 During the Phase I assessment of the habitats on site, the potential value of bat commuting, and foraging habitats were assessed in accordance with current guidance (Collins, 2016). The woodland along the east south and west boundaries provide potentially suitable habitat for commuting and foraging.

1.5 Six Phase II bat activity transects were carried out between May 2021 and October 2021 according to best practice guidelines (Collins, 2016). Two static bat detectors were also deployed in set locations on site in that period. The surveys identified a total of seven bat species down to species level, with an additional unknown number of Myotis species which were identified to genus level. Rare Annex II species barbastelle were also recorded using the site infrequently.

1.6 The site is considered of local importance to foraging and commuting bats. Proposed mitigation includes the retention of the woodland corridor along boundaries with enhancements to include provision of bat boxes and creation of wildflower areas.

1.7 The surrounding woodland offers good foraging opportunities and connectivity for dormice within the area. Surveys were carried out between May 2021 and November 2021. No dormice or evidence of dormice was found. Dormice are therefore considered absent from the site but vegetation clearance will be conducted with a precautionary method due to the presence of populations in the wider area.

1.8 The woodland boundaries provide potential habitat for common reptile species. Further surveys were carried out in 2021. No reptiles were recorded on site and they are considered absent.

1.9 The site is currently of low ecological value and the development provides opportunities to provide biodiversity net gains through the provision of wildflower planting and native planting within landscape features.

2.0 Introduction

Background

2.1 Pro Vision Ecology were commissioned in April 2020 to carry out a preliminary survey with subsequent surveys in 2021 of land at Havant and South Downs College. For the site location refer to **Appendix A**. This report will contribute to the planning application for a residential development on the site. Proposed plans are provided in **Appendix B**.

2.2 This report describes the current ecological baseline of the site, based on the findings of the preliminary ecological assessment and the phase II surveys of the site.

Brief

2.3 To carry out ecological surveys of the land (habitats and species) within the application site, to inform the Client of the ecological implications and provide mitigation and enhancement strategies for the development.

Relevant Legislation and Planning Policy

2.4 The key legislative provisions of relevance to this report with respect to the development proposals and their potential effects on ecological features are listed below:

- The Conservation of Habitats and Species Regulations 2017
- The Wildlife and Countryside Act 1981 (as amended)
- The Countryside and Rights of Way (CRoW) Act 2000
- The Natural Environment and Rural Communities (NERC) Act 2006
- The Protection of Badgers Act 1992

2.5 The UK Biodiversity Action Plan (BAP) was the Governments' response to the 1992 Convention on Biodiversity (The Rio Convention), with the aim of halting the loss of biodiversity in the UK. The new UK post-2010 Biodiversity Framework replaced the previous BAP and is the government's response to the new strategic plan on the United Nations Convention on Biological Diversity (CBD). Although the UK post-2010 Biodiversity Framework supersedes the UK BAP, the UK BAP lists of priority species and habitats still remain an important reference source for identifying habitats and species of principal importance within the UK. Within England, Section 41 of the NERC Act (2006) lists species and habitats of principal importance for the conservation of biodiversity.

2.6 The Government has set out its policies for the protection and enhancement of biodiversity through the planning system in the National Planning Policy Framework (NPPF, 2021), section 15, outlines that planning decisions should conserve and enhance the natural environment and protect areas of high ecological value.

2.7 The application site is located within the administrative area of Havant Borough Council. The Havant Borough Core Strategy, 2011, includes the core policy CS11 relating to protecting and enhancing the special environment:

Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough

Planning permission will be granted for development that:
1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.
2. Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.
3. Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map):
(i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar [International].
(ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves [National].
(iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].
4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.
5. Supports an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.
6. Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.
7. Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.
8. Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.
9. Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.
10. Protects the best and most versatile agricultural land that has the greatest potential for local food security.
11. Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.

3.0 Methodologies

Desk Study

3.1 The desk study methodology is based upon guidelines set out by the Chartered Institute of Environmental and Ecological Management (CIEEM, 2017). A data-gathering exercise was undertaken to obtain any available information relating to statutory designated sites, non-statutory designated sites and priority habitats and species (**Table 1**).

Table 1: Summary of information sources used for the Desk Study

Organisation / Source	Information Sought
Hampshire Biodiversity Information Centre (HBIC)	Records of key protected & notable species and non-statutory wildlife sites within two kilometres of the site.
MAGIC	Locations of and citations for all national statutory wildlife sites, including SSSI, within two kilometres and all international sites including SAC, SPA or Ramsar sites within five kilometres of the site. Records of EPSM licences and class licence returns within two kilometres.
Ordnance Survey Maps	Large scale habitat information and identification of off-site habitats which may require consideration (such as ponds).

Ecological Assessment

Habitats

3.2 The site survey was carried out on 15th April 2020. The weather conditions during the survey were slightly overcast or cloudy, still, and dry with an ambient temperature of 20°C. The survey was completed by experienced ecologist Hazel Burridge.

3.3 The survey employed techniques based on standard Phase I Habitat Survey methods (CIEEM, 2018). Habitat types on and adjacent to the site were identified according to standard habitat definitions and mapped at an appropriate scale using standard colour codes and/or acronyms (JNCC, 2010) (**Appendix C**).

3.4 The collection of botanical information focused on the dominant and/or key indicator species for each habitat, to allow allocation of habitats to the standard Phase I habitat types and where relevant to identify any BAP habitats which are present on site. Any habitats identified as having potentially high botanical value will be subject to further botanical surveys, if deemed necessary.

Protected species

3.5 The Ecological Assessment included an assessment of the potential for habitats on or immediately adjacent to the site to support legally protected or conservation-notable species. The location and nature of any signs of the presence of protected species (such as droppings, footprints, burrows,

etc.) were documented and mapped accordingly. Indicative methods for protected species are outlined below.

Badgers (Meles meles)

3.6 Any area that could be used for foraging by badgers or could potentially contain a badger sett was surveyed and any signs noted including:

- Evidence of active or disused setts;
- Evidence of potential badger diggings;
- Latrines / dung pits;
- Evidence of badger foraging ('snuffle holes');
- Footprints; and
- Badger hairs.

3.7 Where setts are recorded these will be classified into four main categories, defined by the number of holes present:

- Main sett: A large well used and well established sett used for breeding. There is usually only one main sett within each clan of badgers.
- Annex sett: These are additional setts often located close to the main sett connected by well worn paths.
- Subsidiary sett: These are additional setts often some 150m from the main sett which are sometimes used for breeding but do not have obvious paths linking to other setts and are not always active.
- Outlier sett: These setts are usually smaller in size than the other setts, intermittently used and located some distance from the main sett.

3.8 Motion detecting cameras were placed in various positions throughout the eastern and southern woodland boundaries of the site (see **Appendix E**). Cameras were placed through November 2021 for the duration of between five and six days. Any activity of wildlife was picked up and recorded in 30 second videos. The purpose was to confirm the presence of badgers and to determine the use of setts and presence of cubs.

Bats

3.9 Bats use features within buildings such as stone crevices or cracks in brickwork, ridge beams, gaps between roofing materials and the main building structure, and any potential access points. An internal and external inspection of the building was conducted by Louisa Jones (Bat Licence 2016-22038-CLS-CLS) and David Casson on 13th January 2022 during clear, dry conditions, with no wind and an ambient temperature of 0°C. During the survey any evidence of bats such as droppings, urine staining, claw marks, feeding remains or bats themselves were recorded. Any droppings present were sent for DNA analysis through Swift ecology. An assessment of the potential of the building to support roosts was then made in line with BCT guidelines (2016) shown in **Table 2** below.

Table 2: Assessment of buildings to support roosting bats

Potential	Criteria
Negligible	Negligible features on site likely to be used by bats
Low	Potential features present which may support low numbers of bats irregularly but no suitable features for regular use by large numbers of bats.
Moderate	A building with one or more potential roost features that may be used by bats due to their size, shelter, protection, condition and habitats present. Unlikely to support a roost of high conservation value.
High	A building with one or more potential roost sites that are suitable for use by a large number of bats on a regular basis.

3.10 Bats use trees as potential roost sites and trees on the site were inspected from the ground and an assessment made for the potential of the tree to support bats. Features which may support bats include holes and crevices, ivy covering and peeling bark. The assessment for roosting potential is based on Bat Conservation Trust (BCT) guidelines (Collins, 2016) shown below in **Table 3**.

Table 3: Potential of trees to support bat roosts

Potential	Criteria
Negligible	Negligible features on the tree
Low	A tree of sufficient size and age but features present have limited roosting potential
Medium	A tree with one or more potential roost features that may be used by bats due to their size, shelter, protection, condition and habitats present. Unlikely to support a roost of high conservation value.
High	A tree with one or more potential roost sites that are suitable for use by a large number of bats.

3.11 Bats use features in the landscape to navigate and habitats may also provide key foraging locations. Foraging and commuting habitat was assessed based on BCT guidelines (Collins, 2016) shown in **Table 4** below.

Table 4: Assessment of foraging/commuting habitat

Potential	Criteria
Negligible	Negligible features on site likely to be used by bats
Low	Suitable but isolated habitat that could be used by small numbers of bats.
Medium	Habitat that is well connected to the wider landscape and could be used by bats for foraging such as trees, scrub, grassland or water.

Potential	Criteria
High	Continuous high-quality habitat that is well connected to the wider landscape and may be used by significant numbers of bats including annex II species.

Bat Activity surveys

3.12 The bat activity surveys were conducted in accordance with current guidelines (Collins, 2016) between May 2021 and October 2021. **Table 5** provides details of each survey visit, with sunrise/sunset time and weather conditions. The surveys were undertaken by two surveyors walking a pre-determined survey transect route around the site (**Appendix F**). This gave sufficient coverage to determine how bats were using the site. The surveyors were equipped with an Echo Metre Touch Pro 2 connected to a mobile phone to obtain GPS locations. Recordings of bat echolocations were analysed with Kaleidoscope software to confirm the identity of the species encountered and call locations mapped with QGIS.

Table 5: Phase II Bat activity survey details (wind force measured using the Beaufort scale)

Date	Survey type	Duration	Weather Conditions	Sunset/Sunrise Time
25/05/21	Dusk	20:45-22:30	15°C throughout survey. Wind force 0. 40% cloud cover. No rain.	20:30
30/06/21	Dusk	21:20-23:20	18°C at start and 17°C at end of survey. Wind force 0. 100% cloud cover. No rain.	21:21
29/07/21	Dusk	20:45-22:45	13°C at start and 12°C at end of survey. Wind force 0. 100% cloud cover. No rain.	20:45
18/08/21	Dusk	20:19-22:19	17°C at start and 16°C at end of survey. Wind force 0. 50% cloud cover. No rain.	20:19
23/09/21	Dusk	19:01-21:19	19°C at start and 17°C at end of survey. Wind force 0. 100% cloud cover. No rain.	19:01
13/10/21	Dusk	18:17-20:17	16°C at start and 15°C at end of survey. Wind force 1. 100% cloud cover. No rain	18:17

Static/automatic Surveys

3.13 Two Song Meter SM4BAT FS Bat Detectors with SMM-U1 Microphones were installed in two locations per month (see **Appendix F** for locations) for six consecutive nights during the months of May to October 2021.

- Static 1 – Located within the eastern woodland boundary close to the college buildings
- Static 2 – Located on the south woodland boundary, directed to the adjacent field.

Survey Limitations

3.14 Echolocation calls are reliably distinguishable between most bat species in the UK. However, the ability to distinguish *Myotis* species can be extremely difficult, calls have therefore been attributed to species where possible, but Myotis calls which did not reliably fit the parameters of an individual species were simply labelled as 'Myotis'.

3.15 Furthermore, Static 2 failed to collect any data during the May deployment. This is the only month data was not recorded and is not considered a significant limitation.

Site Valuation Assessment for Bats

3.16 Using the data from the Phase I and Phase II bat surveys the site was assigned a value for bats using a geographical scale of reference (local, district, county, etc.). The value was determined in accordance with **Table 6, 7, and 8** which has been adapted from Valuing Bats in Ecological Assessment (Wray *et al*., 2010).

Table 6. Valuing commuting habitat for bats

Species	Number of bats	Roosts/potential roosts nearby	Type and complexity of linear features
Common **(2)**	Individual bats **(5)**	None **(1)**	Absence of (other) linear features **(1)**
		Small number **(3)**	Un-vegetated fences and large field sizes **(2)**
Rarer **(5)**	Small number of bats **(10)**	Moderate number/not known **(4)**	Walls, gappy or flailed hedgerows, isolated well - grown hedgerows and moderate field sizes **(3)**
		Large number of roosts, or close to a SSSI for the species **(5)**	Well-grown and well-connected hedgerows, small field size **(4)**
Rarest **(20)**	Large number of bats **(20)**	Close to or within a SAC for the species **(20)**	Complex network of mature well-established hedgerows, small fields and rivers/streams **(5)**

Table 7. Valuing foraging habitat for bats

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
Common **(2)**	Individual bats **(5)**	None **(1)**	Industrial or other site without established vegetation **(1)**
		Small number **(3)**	Sub-urban areas or intensive arable land **(2)**
Rarer **(5)**	Small number of bats **(10)**	Moderate number/not known **(4)**	Isolated woodland patches, less intensive arable and/or small towns and villages **(3)**

Species	Number of bats	Roosts/potential roosts nearby	Foraging habitat characteristics
		Large number of roosts, or close to a SSSI for the species **(5)**	Larger or connected woodland blocks, mixed agriculture and small villages/hamlets **(4)**
Rarest **(20)**	Large number of bats **(20)**	Close to or within a SAC for the species **(20)**	Mosaic of pasture, woodlands and wetland areas **(5)**

Table 8. Scoring system for valuing habitat features (commuting and foraging habitat) for bats

Geographic Frame of Reference	Score
International	>50
National	41-50
Regional	31-40
County	21-30
District/local or parish	11-20
Negligible importance	1-10

Dormice (Muscardinus avellanarius)

3.17 The suitability of the habitat was assessed for dormice. Any small mammal feeding signs were checked and assessed, including:

- Examination of hazel nuts; and
- Evidence of nest building.

3.18 The initial site ecological assessment highlighted areas of suitable habitat to support dormice and a series of presence/likely absence surveys were recommended if proposals were likely to affect areas of potentially suitable habitat. Current best practice survey guidance for dormice (English Nature, 2006) recommends the use of 'nest tubes' for ascertaining presence/likely absence. Natural England recommend at least 50 tubes are placed within areas of suitable habitat.

3.19 A total of 50 Dormouse tubes were installed within suitable habitat on site in May 2021 and allowed to 'bed-in' for at least four weeks. The surveys were conducted during recommended months between June 2021 and November 2021 giving an index of probability 'score' of 20.

Great Crested Newts (Triturus cristatus)

3.20 Ponds within the vicinity of the site were noted and the potential of the land to act as a commuting route, shelter or foraging resource for great crested newts was assessed. If present, areas of standing water present on-site were assessed in accordance with current Habitat Suitability Index (HSI) assessment guidance (Oldham *et al*., 2000) for their potential to support breeding newts.

Reptiles

3.21 A series of presence / likely absence surveys were conducted within the boundaries of the proposed development site, targeting areas of habitat with the potential to support reptiles. Artificial refugia were laid out within the site boundaries and left on 31st May 2021 to 'bed-in' for at least two weeks. Seven separate survey visits were conducted during suitable weather conditions as defined by Froglife (1999).

3.22 The surveys consisted of the following three methods, in accordance with current guidance (Froglife, 1999):

- *Visual Search* – The site was searched visually during each visit. Details of reptiles encountered basking in the open were recorded. Recorded data included; species, sex, age and location.
- *Extant Refugia* – Any existing potential refugia present within the site boundaries were carefully searched by hand for reptiles. Such refugia included; logs and discarded wood.
- *Artificial Refugia* – artificial refugia, consisting of bitumen roofing felt and profiled underlay were sited in areas of habitat with reptile potential. Such areas included; ruderal vegetation and grassland margins. All refugia were lifted during each survey visit and all reptiles present on, under or next to each refugia were recorded.

3.23 Dates and weather conditions and are detailed in **Table 9**.

Table 9: Weather conditions during the reptile surveys

Date	Temp (°C)	Weather condition
10/06/21	19	dry, light cloud, wind 10mph
16/06/21	20	dry, light cloud, wind 4mph
17/06/21	18	dry, light cloud, wind 5mph
28/06/21	18	dry, cloudy, wind 3mph
15/07/21	17	dry, light cloud, wind 9mph
27/07/21	18	dry, light cloud wind 6mph
04/08/21	18	dry, light cloud, still

Terrestrial Invertebrates

3.24 An assessment was made of the site for the potential to support diverse communities of invertebrates, or any Biodiversity Action Plan (BAP) species. The assessment was made based on the presence of a number of habitat features which may support important invertebrate communities such as:

- An abundance of deadwood;
- Presence of diverse plant communities;
- Presence of varied woodland structure and sunny woodland edge;
- Presence of ponds or watercourses; and
- Presence of free draining soil exposures.

3.25 During the Phase I survey no attempt was made to identify invertebrate species and where habitats were identified capable of supporting important or rare species, further Phase II survey work may be necessary to assess the importance of the site.

4.0 Results

Desk Study

International Statutory Designated Sites

4.1 Six international statutory designated sites are located within five kilometres of the development site.

- **Chichester and Langstone Harbours Special Protection Area (SPA)** is located 1.7 kilometres south of the site. The harbours provide habitat for internationally and nationally important numbers of overwintering and breeding bird species. Chichester and Langstone Harbour supports important numbers of birds including dark-bellied brent geese (*Branta bernicla*), bar-tailed godwit (*Limosa lapponica*), grey plover (*Pluvialis squatarola*) and dunlin (*Calidris alpina alpina*).
- **Chichester and Langstone Harbours Ramsar site** is located 1.8 kilometres south of the site. They are two large estuarine basins linked by the channel which divides Hayling Island from the main Hampshire coastline. The sites include intertidal mudflats, saltmarsh, sand and shingle spits, and sand dunes.
- **Solent Maritime Special Area of Conservation (SAC)** is located 1.8 kilometres south of the site. The harbour is given this status for having a range of key habitats such as tidal rivers, estuaries, mud flats, sand flats and lagoons as well as terrestrial habitats such as salt marshes, salt pastures, salt steppes and coastal sand dunes and beaches. Solent and Isle of Wight Lagoons (SAC) encompasses a series of coastal lagoons across the Solent and Isle of Wight. The Solent maritime has been designated for the combination of habitats present which includes coastal plain estuaries, areas of smooth cord-grass (*Spartina maritimae*) and Atlantic salt meadows.
- **Solent and Isle of Wight Lagoons SAC** is located 3.1 kilometre south of the site. The Solent on the south coast encompasses a series of coastal lagoons. The lagoons show a range of salinities and substrates which support a diverse fauna including large populations of three notable species, the nationally rare foxtail stonewort (*Lamprothamnium papulosum*), the nationally scarce lagoon sand shrimp (*Gammarus insensibilis*), and the nationally scarce starlet sea anemone (*Nematostella vectensis*).
- **Portsmouth Harbour Ramsar** is located 4.4 kilometres south west of the site. The area is a large industrialized estuary consisting of saltmarsh, expanses of mudflats which support extensive beds of eelgrass, green algae and sea lettuce. These provide important foraging areas for over wintering birds with large populations of black-tailed godwit (*Limosa limosa*), grey plover and dunlin present.
- **Portsmouth Harbour SPA** is located 4.4 kilometres south west of the site. The area supports large numbers of brent geese, dunlin, black-tailed godwit and red-breasted merganser (*Mergus serrator*).

4.2 The desk study data also revealed 17 sites for the Solent Waders and Brent Goose Strategy (2019) located within two kilometres of the development site. The fields located to the immediate south of the development site are listed as sites for SWBGS with two of them being listed as primary support areas and two being listed as secondary support areas.

4.3 The scale of the proposed development and the proximity to these statutory sites will likely result in impacts to these areas in the absence of mitigation. This is discussed further in **Section 5.0**.

National Statutory Designated Sites

4.4 **Farlington marshes Local Nature Reserve (LNR)** is located 1.7 kilometres south of the site and is included in the Solent and Isle of Wight Lagoons SAC. Farlington Marshes is internationally important for bird populations as well as being species rich in flora.

4.5 **Langstone Harbour Site of Special Scientific Interest (SSSI)** is located 1.7 kilometres south of the site. The harbour includes one of the largest areas of mixed saltmarsh on the south coast and extensive cord-grass (*Spartina anglica*) marsh in an advanced state of degeneration.

4.6 The proposed development will result in a significant net increase in the number of residential dwellings locally. The measures set out for the international sites will also mitigate impacts to these national sites which sit within them. This is discussed further in **Section 5.0**.

Non-Statutory Designated Sites

4.7 The desk study data revealed 44 Sites of Importance for Nature Conservation (SINCs) which fall within two kilometres of the land at Havant and South Downs College, as shown in **Appendix D.** Six of these lie within 0.5 kilometres north and east of the site:

- **Littlepark Wood West:** Located 0.1 kilometres north-east of the site. Comprised of ancient semi-natural woodland including a portion of yew woods and alder swamp woods. Split from Little Park Wood East by the A3(M). Littlepark Wood West has records of hazel dormouse.
- **Gundymoor Main:** Located 0.2 kilometres north of the site, adjacent to Littlepark Wood West. Comprised of ancient semi-natural woodland.
- **Gundymoor West:** Located 0.2 kilometres north of the site, separated from Gundymoor Main by College Road. Comprised of ancient semi-natural woodlands with a portion of yew woods and alder swamp woods.
- **Littlepark Wood East:** Located 0.3 kilometres east of the site. Comprised of ancient semi-natural woodland including a portion of yew woods and alder swamp woods.
- **Johnston's Coppice:** Lies 0.4 kilometres north of the site. It is mostly comprised of ancient semi-natural woodland with other woodland where a significant element of ancient semi-natural woodland is surviving. There are also records of hazel dormouse being present.
- **Meadow adjacent to Johnston's Coppice:** This site is comprised of ancient semi-natural woodland, semi-unimproved grasslands and wetland areas of fens and inundation grasslands. There are records of hazel dormouse on this site.

4.8 Litlepark Wood West is located close to the proposed development site, however, it is separated by Havant and South Downs College which is an urban area. The site will therefore not be impacted by the works and no further mitigation is required.

Ecological Assessment

Introduction

4.9 The results of the Ecological Assessment are presented below. A Phase I habitat survey map is shown in **Appendix C**. The map illustrates the location and extent of the habitats surveyed on the site, along with additional notable features.

Habitats

4.10 The land within the site is predominantly a hardstanding car park with narrow woodland edges (**Fig. 1**). Small areas and strips of ornamental shrubs are located throughout the carpark (**Fig. 2**).

Figures 1 and 2: Carpark hardstanding shown with ornamental shrub and tree planting on right image.

Semi-improved grassland

4.11 There are two small patches of semi-improved grassland located on site, one towards the western side of the site adjacent to the woodland separating the north and south carparks, and the other on the northeast edge of the carpark adjacent to the south side of the college buildings (**Fig. 3**). These patches of grassland were comprised of yarrow (*Achillea millefolium*), common bent (*Agrostis capillaris*), false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*), ivy (*Hedera helix*), St John's wort (*Hypericum perforatum*), perennial rye-grass (*Lolium perenne*), trefoil (*Lotus corniculatus*), black medic (*Medicago lupulina*), ribwort plantain (*Plantago lanceolata*), creeping cinquefoil (*Potentilla reptans*) and vetch (*Vicia sativa*).

Figure 3: Small strip of semi-improved grassland to the east of the site.

Amenity grassland

4.12 An area of amenity grassland is located to the south of the college buildings between the buildings and the car park (**Fig. 4**). This portion of grassland is comprised of yarrow, common mouse-ear (*Cerastium fontanum*), cat's ear (*Hypochaeris radicata*), ragwort (*Jacobaea vulgaris*), perennial rye-grass, ribwort plantain, annual meadow-grass (*Poa annua*), creeping buttercup (*Ranunculus repens*) and vetch. There are scattered trees across this portion of grassland comprising of oak (*Quercus spp.*) and field maple (*Acer campestre*).

Figure 4: Area of amenity grassland with scattered trees.

Broad-leaved woodland

4.13 The east, south and west boundaries of the site are comprised of a strip of narrow broadleaved woodland (**Figures 5 and 6**). The woodland is predominantly comprised of field maple, dogwood (*Cornus sanguinea*), hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), wild privet (*Ligistrum vulgare*), cherry (*Prunus* sp.), yew (*Taxus baccata*) and guelder-rose (*Viburnum opulus*). A species of cotoneaster is also present within the woodland boundaries. An embankment runs through the centre of the woodland and separates the site from the neighbouring fields.

Figure 5 and 6: Broad-leaved woodland lining the boundaries of the carpark

Ornamental shrubs

4.14 The sections of ornamental planted shrubs include field maple, false oat-grass, hazel, ribwort plantain, greater plantain (*Plantago major*), turkey oak and cotoneaster spp.

Protected and notable species

Badgers

4.15 There were four records returned by HBIC for badger presence within two kilometres of the site, dating from 2005 to 2017.

4.16 Badger setts of various activity were found along the embankment within the woodland boundaries from the east to the south of the site. A map of located setts can be found in **Appendix E.** The setts are located in two main areas: along the southern boundary and along the eastern boundary with well-worn mammal paths running along the embankment.

4.17 There are a total of seven sett entrances on the southern boundary which are a mixture of partially active and active. This appears to be the main area of activity and it considered likely to be a main sett for a clan of badgers.

4.18 There are four holes along the eastern boundary which are spread across a wider area which comprise partially used and active entrances. These are considered likely to be an annex or subsidiary sett.

4.19 Two latrines were found on the site, one was located near setts along the south-east woodland boundary, the other was located on the amenity grassland within the area of scattered trees lying adjacent to the college building. One sett on the eastern boundary had disturbed dirt, from digging, overflowing onto the carpark (**Fig. 7**)

Figure 7: Image of dirt overflowing onto hardstanding due to sett digging

4.20 Due to the evidence of possible badger activity, cameras were set up at different points, including outside active sett entrances and along used commuting and foraging paths, to determine activity levels of setts and whether the sett had cubs. Badger activity was regular on almost every placement of the cameras (**Fig. 8**). No cubs were recorded during placements of the cameras but regular activity was recorded.

Figure 8: Image of badger from the cameras

4.21 Badgers regularly use the site and most likely the surrounding land for both commuting and foraging. Much of the site itself provides limited foraging for badgers and mainly comprises hardstanding. The badgers are considered likely to use the surrounding fields and woodland for foraging and have utilised the embankment within the woodland boundary for sett building. The mammal paths within the embankment all lead to these areas rather than into the central car park area. The woodland surrounding the sett provides an important link to foraging areas.

4.22 The proposed development will result in the destruction of currently active setts present on the eastern boundary of the site. Further mitigation will be necessary as part of the development which is detailed further in **Section 5.0**.

Bats

4.23 The HBIC data search returned 227 records of bats within two kilometres of the site between 1985 and 2019. Species recorded include:

- Unidentified bat species (C*hiroptera*)
- Serotine (*Eptesicus serotinus*)
- Unidentified *Myotis spp.*
- Alcathoe (*Myotis alcathoe*)
- Bechstein's (*Myotis bechsteinii*)
- Brandt's (*Myotis brandtii*)
- Whiskered bat (*Myotis mystacinus*)
- Natterer's (*Myotis nattereri*)
- Noctule (*Nyctalus noctula*)
- Unidentified pipistrelle bat (*Pipistrellus spp.*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*P. pygmaeus*)
- Unidentified long-eared bat (*Plecotus spp*)
- Brown long-eared bat (*Plecotus auritus*)

4.24 A search of the Government run website MAGIC revealed the presence of one granted European Protected Species Licence (EPSL) for bats within two kilometres of the site. These referred to the destruction of a resting place for common pipistrelle.

4.25 The site offers low potential for foraging within the central area which is solely hardstanding. However, the boundaries and habitats beyond are of a higher quality and may provide important commuting routes for bats between adjacent areas. The records returned from HBIC indicate that a diverse assemblage of bat species is present in the area.

Buildings

4.24 The buildings located within the development boundary were assessed for potential bat roosts. The main college building located within the boundary is a two-storey brick construction with a small single storey section to the east. The single storey section has a pitch and hipped slate tile roof with skylights and the lead flashing present is well sealed.

4.25 The main portion of the college building has a slate tile pitched roof with some of the tiles slightly raised, the gables have wooden cladding (**Figure 8**). The mortar of the concrete ridge tiles is in good condition. Windows throughout the building are double glazed with wood frames, there is plastic piping across the building and external lights are present along every elevation. The soffit boxes present are wooden and have holes on two of the ends with one having evidence of nesting birds.

4.26 The edging of the roof has a metal grid running along the south side, facing the car park. A wooden balcony is present on the east side of the building within the courtyard area, this has a glass roof. A brick bridge connects the target building to the main building of the college campus, this has a flat roof and well-sealed lead flashing. An atrium is present along the southern side of the building, this has a pitched tile roof and glass elevations.

Figure 8: Main College building

4.27 The building was well sealed and the minor raised slates on the roof were not considered suitable for bats. The large open soffits were considered too large to provide a suitable roost space and due to the location within a well-lit area of the site the building was assessed as having negligible potential to support bat roosts.

4.28 A second structure is present within the site which is an aircraft section replica used as part of the study course at the college (**Figure 9**). This structure is a metal cylinder which provides no suitable roosting features for bats.

Figure 9: Aircraft structure

4.29 It was determined that potential for bat roosts across the buildings is negligible and bat roosts are not present in these buildings.

Trees

4.30 A large horse chestnut tree is present along the tree line that will be felled as part of the development near the new access point (**Fig.10**). The tree is in good condition apart from two broken branches. The branches have small holes but potential for bat roosts is negligible as the holes face upwards and would be exposed to the elements.

Figure 10: Tree at the proposed new access point

4.31 The trees within the tree line separating the north car park from the south have negligible potential for bat roosts. A bay tree (*Laurus nobilis*) is present but is in good condition with no potential roost features and therefore has negligible potential for bat roosts.

4.32 The woodland boundary to the east, south and west of the site was assessed and no potential roost features were found within the trees with all trunks less than 0.5 metres wide. The trees in the woodland boundary have negligible potential for bat roosts due to their small stature.

Phase II Bat Activity Transect Survey Results

4.33 The woodland boundaries provide suitable habitat for commuting and foraging bats in the wider area and provide pathways for bats to commute from the woodland areas located to the north of the site to the open fields to the south. The site is currently relatively unlit along the southern edge, with the car park lights rarely used in this half of the car park, and therefore provides dark corridors for commuting and foraging bats.

4.34 The results of the bat activity surveys are summarised in **Table 9** and shown in **Appendices F and G**. A total of five bat species were identified to species level during the transect surveys including common and soprano pipistrelles, long-eared bats, noctules, serotines, and an unknown number of Myotis bat species.

Table 9: Transect results

Date	Species Recorded
25/05/21	Common pipistrelle and soprano pipistrelle
30/06/21	Common pipistrelle, soprano pipistrelle, noctule and serotine
29/07/21	Common pipistrelle, and soprano pipistrelle
18/08/21	Common pipistrelle, soprano pipistrelle and serotine
23/09/21	Common pipistrelle
13/10/21	Common pipistrelle, soprano pipistrelle, noctule, serotine, long-eared and Myotis spp.

4.35 Key areas of activity recorded during the surveys included the tree line in the northwest corner of the site separating the carpark from the main road. Common pipistrelle were the most frequently recorded species with noctules and Myotis only recorded during the October survey. Activity levels along the southern half of the site were relatively low with only intermittent passes recorded.

Phase II Bat Activity Static/automatic bat detector survey

4.36 Static bat detectors were installed for six consecutive nights in two locations, one on the east woodland boundary and one on the south woodland boundary, during the months of May and October 2021. The results of these surveys have confirmed the presence of species recorded during the walked transect surveys and recorded additional species. A total of eight bat species were recorded and identified to species level. The results are summarised in **Fig. 11**, as well as **Appendices F and H.**

4.37 The static on the eastern woodland boundary which connects to the woodland to the north and has a semi-natural grassland adjacent to it, consistently recorded the most activity in all months. The microphones were placed facing along the woodland edge with the adjacent fields and the activity recorded highlights species which utilise the edge as commuting habitat away from the car park.

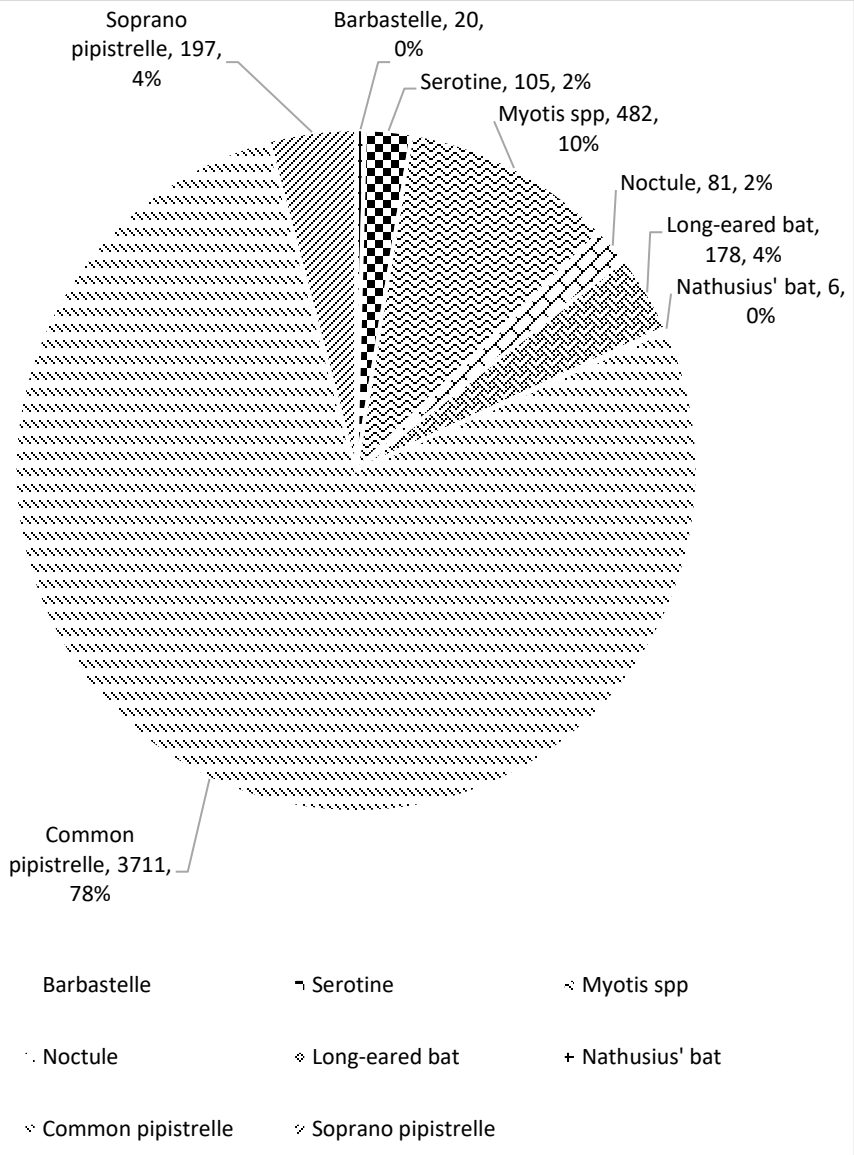

Fig. 11: Total number of passes per species

4.38 Due to a technical fault the static on the southern boundary failed to record any data in May. The highest overall levels of activity recorded were in the months of July and August for the east boundary static and June and August for the south boundary static. The lowest levels of activity recorded were in May.

4.39 The static on the east boundary recorded the most of every species recorded apart from Nathusius' pipistrelle which had more passes at the south boundary. Barbastelle activity was highest in July with an average of 1.29 passes per night.

4.40 Myotis bats were most active in September with an average of 42.33 passes per night, indicating the potential movement of bats from summer roosts using the corridor to move across the landscape. Noctules activity was quite low with July and August having the highest levels of activity. Serotine activity was also low throughout the static surveys with the most activity during June followed by July and August.

4.41 Soprano pipistrelle activity was consistently low throughout the survey period with August having the highest level of activity followed by July. Common pipistrelle activity was highest of all species of bats by a considerable number with many social calls occurring in August. The activity remained very high between June and September with levels peaking in July with an average of 166.57 passes per night. The activity in May and October was comparatively very low.

Impact assessment for bats

4.42 Based on an assessment utilizing the method recognised in Wray et al. (2010), the site has been assessed as supporting commuting and foraging routes of local importance.

4.43 This valuation has been reached using the following values from **Tables 5 and 6**, for valuing commuting and foraging areas and is shown in **Table 10 and 11**.

Table 10: Commuting route valuation

	Barbastelle	**Noctules, serotines, Nathusius' pipistrelle, Myotis**	**Common pipistrelle, soprano pipistrelle and brown long-eared**
Species	Rarest (20)	Rare (5)	Common (2)
Number of bats	Individuals (5)	Individuals (5)	Small number (10)
Roosts	Not known (4)	None (1)	Not known (4)
Linear features	Well-grown (4)	Well-grown (4)	Well-grown (4)
Total	33	15	22
Value	Regional	Local	Local

Table 11: Foraging habitat valuation

	Noctules, serotines, Nathusius' pipistrelle, Myotis	**Common pipistrelle, soprano pipistrelle and brown long-eared**
Species	Rare (5)	Common (2)
Number of bats	Individuals (5)	Small number (10)
Roosts	None (1)	Not known (4)
Foraging habitats	Sub-urban areas (2)	Sub-urban areas (2)
Total	13	18
Value	Local	Local

4.44 The assessment concludes that the site is of regional importance for commuting barbastelles. This is considered an over valuation within the context of the use of the site by other species due to the low number of passes recorded and the woodland corridor is not considered an important corridor for this species. The site is valued of local importance for commuting and foraging to local bat populations.

4.45 Further recommendations have been provided in **Section 5.0** to maintain and enhance the site for the local bat populations.

Birds

4.46 HBIC provided records for the following red list bird species of conservation concern that may be present on the site or in surrounding fields: skylark (*Alauda arvensis*), white-fronted goose (*Anser albifrons*), tree pipit (*Anthus trivialis*), ruff (*Calidris pugnax*), ringed plover (*Charadrius hiaticula*), cuckoo (*Cuculus canorus*), lesser spotted woodpecker (*Dendrocopos minor*), yellowhammer (*Emberiza citrinella*), pied flycatcher (*Ficedula hypoleuca*), black-tailed godwit (*Limosa limosa*), linnet (*Linaria cannabina*), grasshopper warbler (*Locustella naevia*), nightingale (*Luscinia megarhynchos*), grey wagtail (*Motacilla cinerea*), yellow wagtail (*Motacilla flava*), spotted flycatcher (*Muscicapa striata*), curlew (*Numenius arquata*), whimbrel (*Numenius phaeopus*), house sparrow (*Passer domesticus*), grey partridge (*Perdix perdix*), marsh tit (*Poecile palustris*), whinchat (*Saxicola rubetra*), woodcock (*Scolopax rusticola*), starling (*Sturnus vulgaris*), redwing (*Turdus iliacus*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*), ring ouzel (*Turdus torquatus*), mistle thrush (*Turdus viscivorus*) and lapwing (*Vanellus vanellus*).

4.47 In addition to these records the following Schedule 1 and/or Annex I species were returned which may breed in the area: kingfisher (*Alcedo atthis*), Cetti's warbler (*Cettia cetti*), little ringed plover (*Charadrius dubius*), marsh harrier (*Circus aeruginosus*), hen harrier (*Circus cyaneus*), peregrine (*Falco peregrinus*), hobby (*Faloc subbuteo*), common crossbill (*Loxia curvirostra*), woodlark (*Lullula arborea*), red kite (*Milvus milvus*), bearded tit (*Panurus biarmicus*), black redstart (*Phoenicurus ochruros*), avocet (*Recurvirostra avocetta*), firecrest (*Regulus ignicapilla*), and barn owl (*Tyto alba*). All other red listed and Schedule 1 species returned in the HBIC search are unlikely to be found on site.

4.48 The areas of woodland along the boundary provide potential breeding habitat for birds. Further recommendations are provided in **Section 5.0** for the retention of breeding habitat and the creation of new opportunities.

Dormice

4.49 There were 11 records returned by HBIC for dormice within two kilometres of the site with the most recent record dated 2012. Several of the local SINCs mention dormice within their citations and these are linked to the habitats on the site.

4.50 The broad-leaved woodland boundaries provide good foraging and commuting habitat for dormice. The woodland habitat surrounding the site has coppiced hazel, which is favoured by dormice. The habitat has moderate connectivity to surrounding woodland patches and includes woodlands within 0.5 kilometres of the site with known populations of domice.

4.51 Due to the suitability of habitats within the works area, surveys were conducted to establish the presence/absence of the species. The results of the surveys are provided in **Table 12** below.

Table 12: Dormice survey results

Date	Temperature (ºC)	Weather	Dormice	Other
17.06.21	19	Light wind, dry, partially cloudy	None	None
15.07.21	20	Light wind, dry, partially cloudy	None	Green leaves in 1 tube, woodmouse nest
24.08.21	19	Light wind, dry, partially cloudy	None	None
23.09.21	21	Still, dry and overcast	None	None
28.10.21	16	Still, dry, partially cloudy	None	Some wood mouse nests and larders
26.11.21	8	Still, damp, light rain, mostly cloudy	None	Three wood mouse larders on west boundary

4.52 No dormice were recorded on the site and dormice are therefore considered absent. Due to the presence of records within the local area a precautionary method will be followed during vegetation clearance which is detailed in **Section 5.0**.

Great crested newts

4.53 HBIC returned no records for great crested newts within two kilometres of the site. No EPSL for great crested newt were granted within two kilometres of the site.

4.54 While potential terrestrial habitats for the species in the form of semi-improved grassland and woodlands exist on-site, there were no ponds or water bodies in and within 500 metres of the site boundary.

4.55 Due to the absence of breeding ponds and suitable terrestrial habitats, great crested newts are considered absent from the site and further surveys and mitigation are not required.

Reptiles

4.56 HBIC returned 20 records for common species of reptiles within two kilometres of the site for common lizard (*Zootoca vivipara*) and slow worm (*Anguis fragilis*). The most recent records were dated 2016.

4.57 The patches of semi-improved grassland and woodland edges around the site provide potential sheltering and foraging habitat for common species of reptiles. The mixture of habitats present provide basking opportunities for these species.

4.58 Reptile surveys were completed on the site and the results are shown in **Table 13**.

Table 13: Reptile survey results

Date	Weather	Results
10/06/21	19°C, dry, light cloud, wind 10mph	No reptiles
16/06/21	20°C, dry, light cloud, wind 4mph	No reptiles
17/06/21	18°C, dry, light cloud, wind 5mph	No reptiles
28/06/21	18°C, cloudy, dry, wind 3mph	No reptiles
15/07/21	17°C, light cloud, dry, wind 9mph	No reptiles
27/07/21	18°C, light cloud, dry, wind 6mph	No reptiles
04/08/21	18°C, light cloud, dry, still	No reptiles, collected mats

4.59 No reptiles were recorded on site during the surveys and reptiles are considered absent.

Other mammals

4.60 There were records of European hedgehog (*Erinaceus europaeus*) returned within two kilometres of the site. Hedgehogs are listed as species of principal importance and the final development design should incorporate enhancement measures for these species. This is discussed further in **Section 5.0**.

5.0 Impacts and Mitigation

Required Mitigation and Ecological Constraints

Chichester and Langstone Harbours Ramsar and Special Protection Area (SPA)

5.1 Developments which result in an increase in residential units within 5.6 kilometres of Chichester and Langstone Harbours have been shown to increase recreational pressure on this designated area. Increased numbers of people and dogwalkers along the coast increase the disturbance to birds feeding within the harbour resulting in a significant impact.

5.2 To mitigate this impact the development will be required to pay a financial levy in line with the Solent and Waders Brent Geese Strategy. This levy funds wardens, rangers and other mitigation projects which act as off-site mitigation for this impact and has been agreed with Natural England.

5.3 The site is also located adjacent to areas identified as support areas for waders and brent geese within the Solent. These sites are important areas for the birds and provide refuge and foraging areas during high tide and are therefore functionally linked to the Solent designation and covered by the same protection. Primary support areas H113 and H125 are adjacent to the eastern boundary and secondary support area H106 is located to the south of the site.

5.4 These areas have been subject to winter bird surveys by HBIC and WYG, these were part of a proposed development for a major development at Campdown (APP/19/01101). These surveys recorded brent geese and curlew using the fields. The surveys by WYG recorded a peak count of 54 brent geese and 103 curlew on the neighbouring fields in 2017. The planning permission for this site will remove these support areas for the birds. However, this planning has not been approved and therefore mitigation has been provided on the basis of the fields as they currently stand for this application. If this development is approved and construction progresses prior to this application this mitigation will not be required.

5.5 The development will not result in any direct loss of these areas of land but will need to ensure birds are not disturbed or dissuaded from using the adjacent fields. The site is currently screened from these fields by the boundary woodland. This will be retained along the southern boundary and there will be a small loss along the eastern boundary. New planting will be instated along this edge to visually screen the development from the neighbouring fields. This will prevent any visual disturbance to the fields once the development is complete.

5.6 The neighbouring fields are on private land with no public access present. The addition of new residents to this area will not increase any recreational pressure or introduce new disturbance to these fields. The boundaries of the development will be secure with no access to the neighbouring fields.

5.7 There is the potential risk of disturbance to birds using the adjacent fields during construction of the development. This can be mitigated through the timing of works which are likely to create loud percussive noises which may flush birds from the fields, this includes any piling and concrete breaking. These works will be timed outside the winter period when birds are present, considered to be October to March.

Nutrient neutrality

5.8 The development site is within the East Hampshire catchment and due to the scheme resulting in an increase in residential dwellings there is the potential for impacts to the Solent sites due to an

increase in wastewater. Natural England have advised councils within the catchment that increased nutrients are impacting Special Protection Areas and Special Areas of Conservation within and around the Solent. This is due to high levels of nitrogen and phosphorus entering the environment and causing eutrophication.

5.9 The current recommended approach is that all new developments must achieve nutrient neutrality. This applies to developments within the East Hampshire catchment.

5.10 A nitrate budget will need to be devised once the final number of housing units has been determined. It will not be possible to provide mitigation for these impacts on site and the client owns no other land to provide this. In line with the Havant Borough Councils Position Statement and Mitigation Plan for Nutrient Neutral Development the client will pay a contribution to the works at Warblington Farm.

5.11 With this mitigation in place there will be no significant impact on the designated site.

Badgers

5.12 Badgers are present within the embankment in the woodland boundary with setts present along the eastern and southern boundaries. A main sett is present along the southern boundary with an annex/subsidiary present along the eastern boundary. The design of the scheme has been altered to minimise impacts to badgers as far as possible through the retention of the embankment and main sett and locating buildings and gardens away from this area. Some sett entrances will be lost as part of the development and there will be disturbance to retained setts. Therefore, the works will require a licence from Natural England for the closure of setts and potential disturbance to the retained sett.

5.13 Prior to construction an update survey of the badger setts will be required which will also involve cameras. Badgers are highly mobile and sett locations can alter. This information will be required for the licence application to close some of the setts. A mitigation strategy for badgers is provided below based on current information and shown in **Appendix I**. A final mitigation strategy will be incorporated into the licence based on the updated information.

5.14 The main sett will be retained within the development proposals alongside the woodland currently surrounding the sett. The design of the development ensures there are no gardens close to this area and sections of the development adjacent to the woodland will include car parking provision and areas of green space. An area of fencing with a 20 metre radius will be installed around the badger sett during construction. Any works within this buffer will be conducted under ecological supervision to monitor any disturbance to the retained setts. Activity in this area will also only be conducted during July and November and under licence.

5.15 The setts in the eastern section of the site will be closed under licence between July and November. The following procedure will be used:

- Setts will be closed with the use of one-way gates. A licence is required from Natural England to allow this, and the licence will only allow such interference with a sett between July and November when badgers are less sensitive in terms of their breeding cycle.
- The gates will be checked by an ecologist every 3 days to note activity and ensure the gates are working and that badgers have not dug back into the setts.
- Once the gates have been in place for twenty one days, with no evidence that badgers have regained access, the sett will need to be excavated under the supervision of the licensed ecologist.

- Prior to works commencing the working area will be fenced with heras fencing to dissuade badgers from entering the site during the construction period, and to prevent construction traffic driving and storing materials close to the retained badger setts.

5.16 Prior to construction works commencing, all site contractors will be given a tool-box talk to ensure they are aware of the presence of ecological constraints and protected species issues, particularly badgers.

5.17 Any excavations left open once development works commence must be effectively covered or have a means of escape fitted should a badger fall in during non-operational hours at the site. A suitable means of escape would be a wooden board or scaffolding planks at a shallow enough angle to allow any trapped animals to climb out.

5.18 Hazardous materials should be securely stored to prevent access by foraging badgers. A secure compound should be used, and materials ideally stored in sealed containers or off the ground.

5.19 The design of the development will ensure that badgers can still commute through the area. The maintenance of the woodland boundary will ensure connectivity will be retained. Consideration will be required for the potential conflict between badgers and residential gardens, this is only an issue along the eastern boundary. Badger proof fencing will be installed in key locations along the green corridors.

5.20 The landscape scheme of the development will provide areas of wildflower grassland and native tree planting which will provide foraging opportunities for the badgers. With this mitigation in place badgers will still be able to utilise areas of the site and potential foraging areas will be increased.

Bats

5.21 Activity surveys and static bat detector surveys recorded the presence of seven species with an additional unknown number of Myotis bats which were identified to genus level. This included the Annex II species barbastelle, although with only low levels of activity recorded for this species.

5.22 Deciduous woodland, wet meadows and water bodies, such as woodland streams and rivers, riparian margins and unimproved grassland are used by barbastelles. This species commutes along hedgerows, riparian corridors and treelines.

5.23 Barbastelles were recorded by the static on the east boundary making passes in July, August, September and one pass in October. Due to the low number of passes recorded, it is not considered likely that a barbastelle roost is present on or near site. Barbastelles are therefore likely using the woodland boundary as commuting habitat intermittently and the site is not considered to provide key habitat.

5.24 The surveys showed high levels of foraging activity along the east, south and west woodland boundaries by common species of bats. The woodland along the southern boundary will be retained with the eastern boundary partially cleared to a narrower feature but will still be a functional green corridor (**Appendix J**).

5.25 The development of the scheme will result in a small loss of foraging habitat for local bat populations. The scheme will provide alternative areas with the planting of wildflower meadows and native planting which will be incorporated within the landscape proposals. The inclusion of these elements will enhance the foraging opportunities on the site for the local bat populations.

5.26 Light spill within the development site may dissuade bats from utilising boundary woodland and tree lines as foraging and commuting habitat, although the site is currently well lit in the central section.

5.27 The lighting design of the development will minimise any light spill along the woodland boundary to retain and enhance this corridor for bats. In line with current guidelines, on-site lighting will:

- not exceed 1lux on boundary features and lighting will be hooded or cowled to avoid light spill on these features (ILP, 2018).
- Any necessary lighting within the development will utilise security timers where possible and be LED lighting of a warm white spectrum (<2700 Kelvin) which will feature peak wavelengths higher than 550 nm.
- Only lighting with an upward light ratio of 0% will be used.

5.28 Additional roosting features will be incorporated into the new buildings, outlined further in enhancement recommendations below.

Nesting Birds

5.29 The woodland boundaries provide habitat for nesting birds, the development will result in a loss of bird nesting habitat. This will be mitigated through native planting within the central area of the development and inclusion of nest boxes suitable for common species (**Appendix L**) in appropriate locations within the new development.

5.30 It is an offence under the Wildlife and Countryside Act 1981 (as amended) to take, damage or destroy the nest of any wild bird while that nest is in use (further details relating to current legislation are described in **Appendix K**). To avoid contravention of protected species legislation, any vegetation removal associated with the development must be scheduled to avoid peak bird nesting season (which runs from 1st March to 31st August, inclusive), unless prior inspection by an ecologist concludes that there are no nesting birds present immediately prior to the commencement of works.

5.31 If the presence of nesting birds is confirmed, any works which may disturb them will be delayed until the young birds have fledged the nest of their own accord.

Dormice

5.32 No dormice were recorded during the surveys, but populations are known to be present within the wider area. It is considered unlikely that dormice would be impacted but due to the presence of recorded populations in connected habitat there is potential for dormice to move through the vegetation along the woodland boundary. Therefore, any vegetation clearance of the woodland boundary will be conducted with a precautionary method.

5.33 Any vegetation removal along the woodland boundary will take place in either two separate stages or one stage, timed according to the dormouse life-cycle:

i. Between November and February (dormouse hibernation season) the woodland areas to be removed will be reduced to 15cm above ground level, a hand search by a licensed ecologist will be carried out to look for signs of hibernating dormice. If dormice are recorded then works will stop and Natural England will be consulted;
ii. Between May and November (dormouse active season) the remaining stumps and roots can be removed. Or vegetation will be fully cleared with a licenced ecologist present at this time

of year. The vegetation will be cleared towards retained areas which will encourage any dormice to move away from the works area. If conducted between May and August this timing will conflict with nesting bird season and may require vegetation to be retained around any active bird nests

5.34 The design of the final development includes new native species planting and the maintenance of the corridor around the edge of the site will maintain connectivity for the surrounding dormice populations. There will be no impact on the surrounding populations of dormice from the development.

Enhancement Measures for the Proposed Development

5.35 In accordance with the National Planning Policy Framework (NPPF, 2021), paragraph 180, development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

5.36 The site is currently of low ecological value and the development presents opportunities to enhance biodiversity at the site scale through the incorporation of the following simple, cost-effective measures:

- Areas of wildflower grassland will be created along the boundaries of the woodland. This should comprise seeds from a local source or a general seedmix, such as EM3 from Emorsgate, if the ground conditions are unknown. These areas will provide additional habitat for local invertebrates.
- Native planting will be included within the landscape planting with species such as hawthorn, spindle (*Euonymus europaeus*), rowan (*Sorbus aucuparia*), crab apple (*Malus sylvestris*), hazel, holly, and field maple. These species will provide additional foraging through the seasons for local birds and mammals including badgers. Suggested species are listed in **Appendix N**.
- Provision for additional bird nesting within the retained woodland through the inclusion of bird boxes suitable for a range of species. Suggested bird boxes are shown in **Appendix L**.
- The development provides the opportunity to install swift bricks at the eaves on the northern elevation of the new buildings. Groups of a minimum of four swift boxes will be installed under the eaves in shaded areas out of direct sunlight and away from windows. These bricks also provide nesting opportunities for sparrows as well swifts. Suggested designs are shown in **Appendix L**.
- New dwellings will be designed to include an integrated bat brick or bat tiles, these should be placed in dwellings along the boundaries or facing the retained woodland. Bat boxes will also be installed within the retained woodland within the development. These measures will enhance roosting opportunities for bats on site. Suggested designs are shown in **Appendix M**.
- Hedgehog friendly fencing should be incorporated within the design of the development to ensure hedgehogs can still move through the development. This can be achieved with the inclusion of gravel boards on the fencing or maintain a gap at the bottom of fences.

The inclusion of wildflower areas will also provide additional foraging opportunities for hedgehogs.

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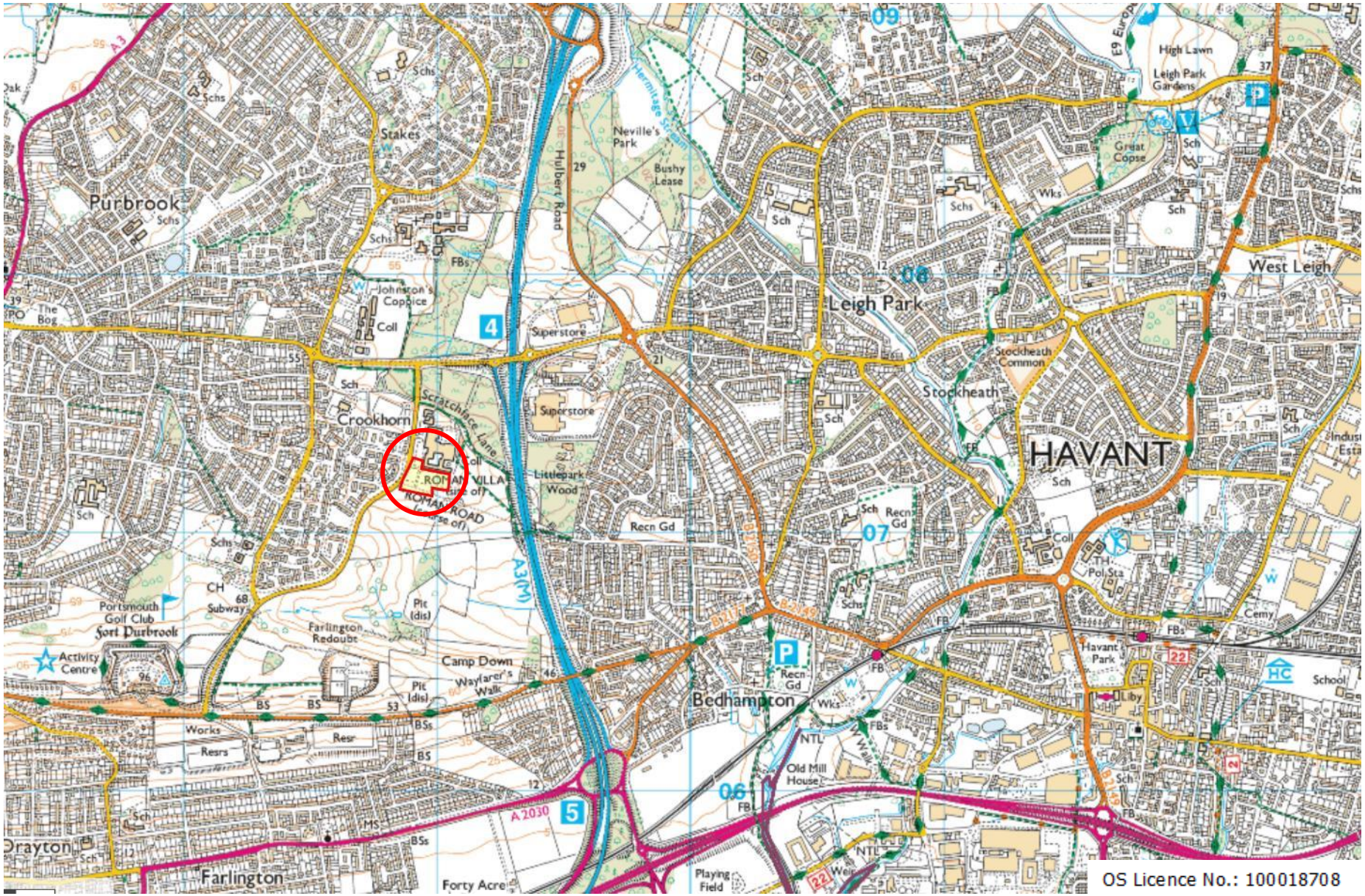
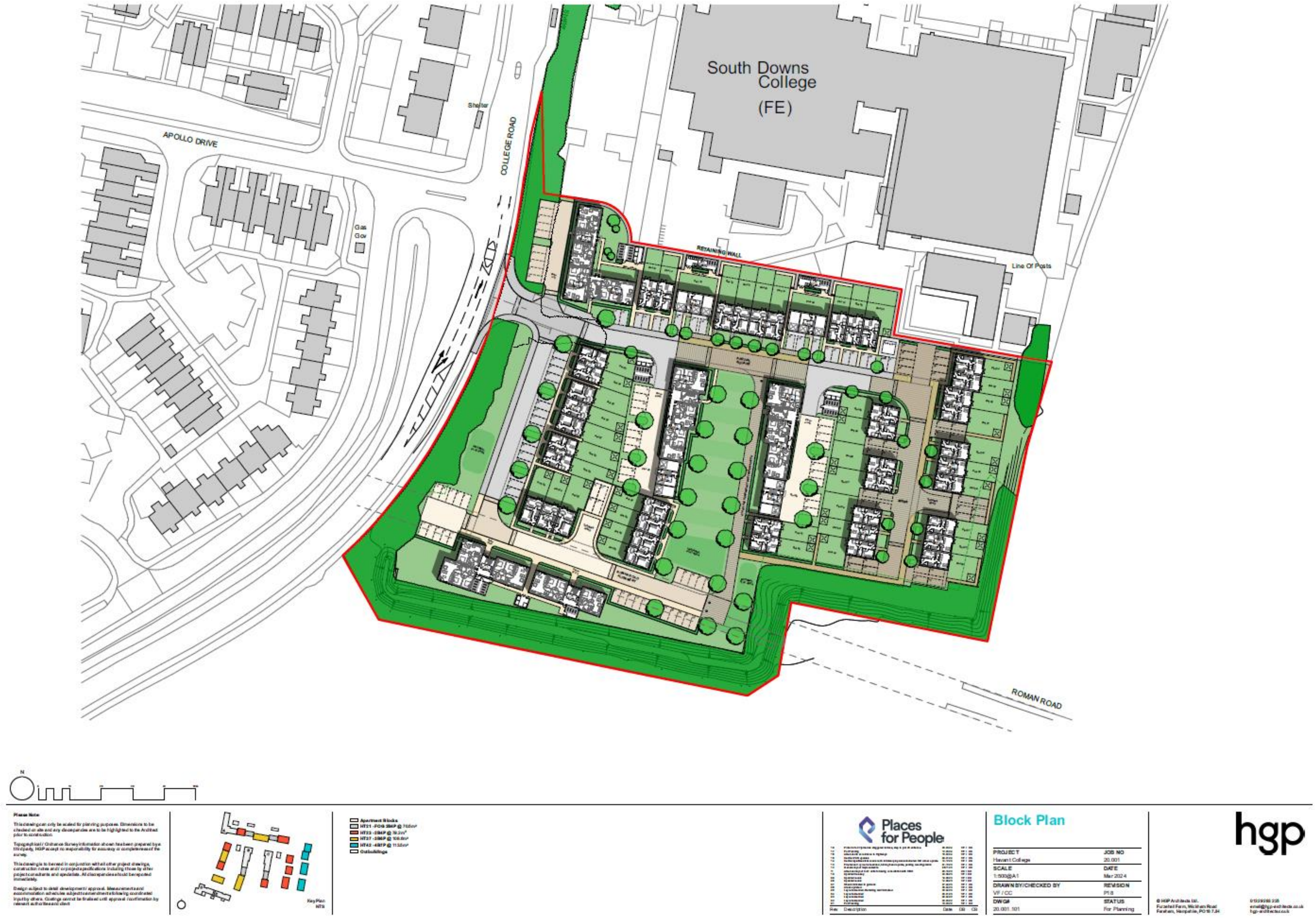
Appendices

Appendix A: Site Location ( )



Appendix B: Proposed Plans



Appendix C: Phase I habitat Map

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N

CLIENT:
Places For People

PROJECT:
Havant and South Downs College

DRAWING:
Phase 1 habitat map

DATE:
22/11/21

SCALE: 1:2200
SIZE: A4
JOB NO: 7707
DWG NO: V1
REV:

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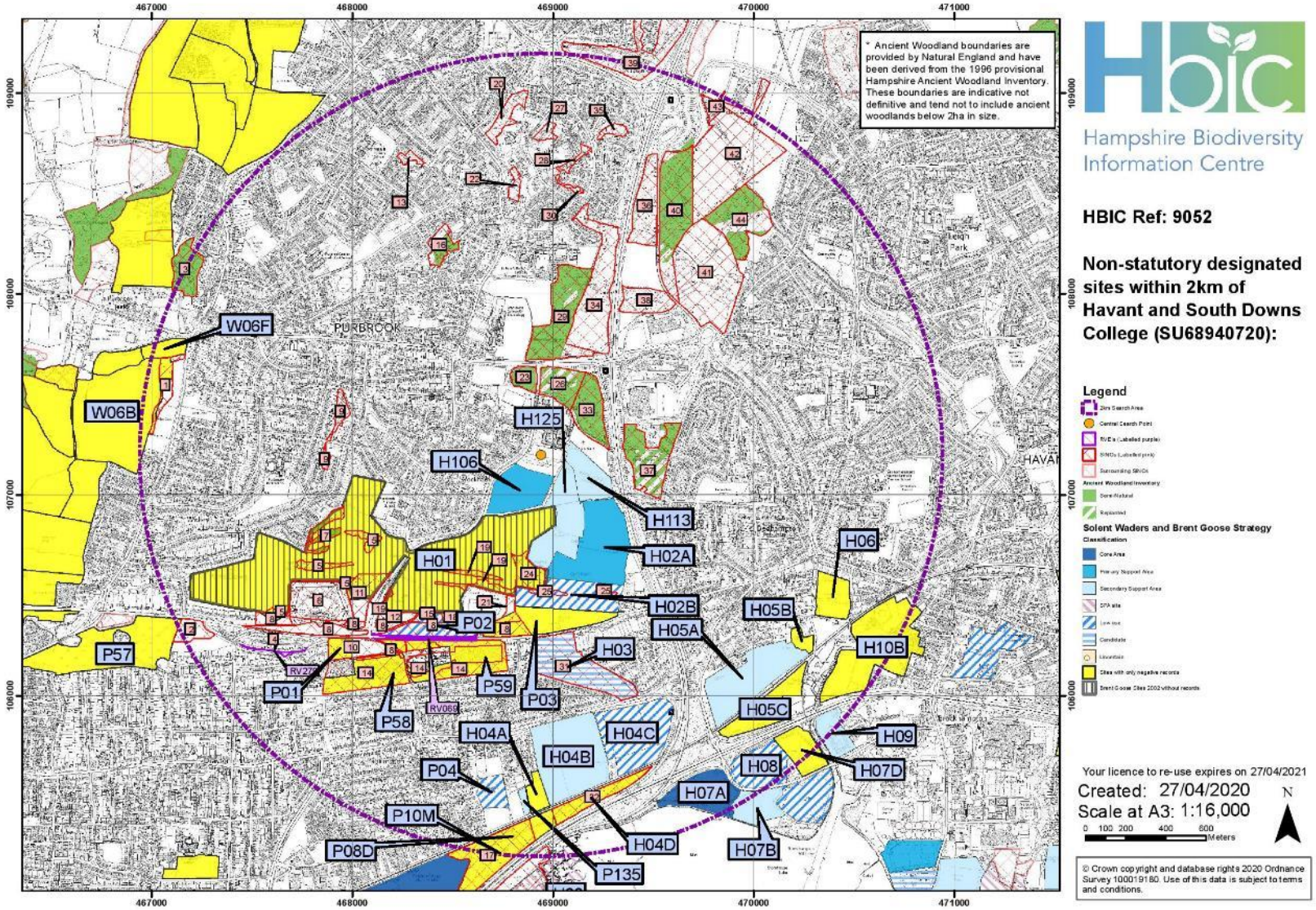
Appendix D: Non-Statutory Sites of Nature Conservation Interest within two kilometres



Appendix E: Survey Results - Badger Sett Locations

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0 20 40 m

N

CLIENT:
Places for People

PROJECT:
Havant and South Downs College

DRAWING:
Badger map

DATE:
25/01/22

SCALE: 1:2000
SIZE: A4
JOB NO: 7707
DWG NO: V1
REV:

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Appendix F: Survey Results – Bats Activity Map

Legend

Bat Transect Locations

- Serotine
- Noctule
- Common pipistrelle
- Common and Soprano pipistrelle
- Soprano pipistrelle
- Transect Route

Passes per Static

- 1477
- 3307
- boundary

0 50 100 m

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N

CLIENT: Places for People

PROJECT: Havant and South Downs College

DRAWING: Bat Activity Map

DATE: 22/11/21

SCALE: 1:2300
SIZE: A4
JOB NO: 7707
DWG NO: V1
REV:

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Appendix G: Survey Results – Bats Transect Data

Dusk 25.05.21

Surveyors:	**Alex Phillips and Matthew Norris Hill**	
Time	**Species**	**Description**
21:30	Common pipistrelle	Heard not seen
21:32	Common pipistrelle	Heard not seen
22:30	Common pipistrelle	Heard not seen
22:33	Soprano pipistrelle	Heard not seen

Dusk 30.06.21

Surveyors:	**Matthew Norris-Hill and Hazel Burridge**	
Time	**Species**	**Description**
21:49	Common pipistrelle	Heard not seen
21:53	Common pipistrelle	Heard not seen
21:53	Common pipistrelle	Foraging around corner of car park until 21:56
22:05	Common pipistrelle	Foraging around corner of car park until 22:08
22:18	Serotine	Heard not seen
22:19	Common pipistrelle	Heard not seen
22:44	Noctule	Heard not seen
22:59	Soprano pipistrelle	Heard not seen
23:01	Noctule	Heard not seen

Dusk 27/07/21

Surveyors:	Matthew Norris-Hill and Hazel Burridge	
Time	**Species**	**Description**
21:14	Common pipistrelle	Heard foraging until 21:16 but not seen
21:14	Soprano pipistrelle	Heard not seen
21:20	Common pipistrelle	Heard foraging until 21:23 but not seen
21:38	Common pipistrelle	Flight along tree line
21:52	Common pipistrelle	Heard not seen
21:57	Common pipistrelle	Heard not seen
22:00	Common pipistrelle	Heard not seen
22:02	Common pipistrelle	Heard not seen
22:03	Common pipistrelle	Heard not seen
22:08	Common pipistrelle	Heard not seen
22:12	Common pipistrelle	Heard not seen
22:13	Common pipistrelle	Heard not seen
22:15	Common pipistrelle	Heard not seen
22:17	Common pipistrelle	Heard not seen
22:21	Common pipistrelle	Heard not seen
22:23	Common pipistrelle	Heard not seen
22:33	Common pipistrelle	Heard not seen

Dusk 18/08/21

Surveyors:	Louisa Jones and Matthew Norris-Hill	
Time	**Species**	**Description**
20:33	Serotine	Heard not seen
20:57	Common pipistrelle	Heard not seen in car park 1
20:58	Soprano pipistrelle	Heard not seen in car park 1
21:01	Common pipistrelle	Car park 2, north-east corner
21:05	Common pipistrelle	Near southern boundary
21:12	Common pipistrelle	Heard not seen
21:23	Common pipistrelle	Heard not seen in car park 1 until 21:26
21:34	Common pipistrelle	Heard not seen in car park 1
21:43	Common pipistrelle	Heard not seen in car park 1
21:51	Common pipistrelle	Heard not seen in car park 1
21:59	Common pipistrelle	Heard not seen in car park 1
22:00	Common pipistrelle	Heard not seen in car park 1
22:09	Common pipistrelle	Heard not seen

Dusk 23/09/21

Surveyors:	Louisa Jones and Andrew Quayle	
Time	**Species**	**Description**
19:56	Common pipistrelle	Heard not seen
20:13	Common pipistrelle	Heard not seen with social call
20:51	Common pipistrelle	Heard not seen

Dusk 13/10/21

Surveyors:	Matthew Norris-Hill and David Casson	
Time	**Species**	**Description**
18:19	Brown long eared	Heard not seen
18:43	Soprano pipistrelle	Heard not seen
18:45	Soprano pipistrelle	Heard not seen
18:51	Noctule	Heard not seen
18:53	Common pipistrelle	Heard not seen
18:58	Common pipistrelle	Heard not seen
18:59	Noctule	Heard not seen
19:09	Serotine	Heard not seen
19:11	Soprano pipistrelle	Heard not seen
19:12	Soprano pipistrelle	Heard not seen
19:15	Common pipistrelle	Heard not seen
19:22	Common pipistrelle	Heard not seen
19:29	Myotis sp.	Heard not seen
20:02	Common pipistrelle	Heard not seen
20:03	Myotis sp.	Heard not seen

Appendix H: Survey Results – Bats statics results

Species	Static	Average Number of passes/night					
		May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21
Common pipistrelle	S1	8.40	53.40	166.57	116.67	44.83	7.40
	S2		100.40	14.71	69.67	29.17	6.40
Soprano pipistrelle	S1	0.20	2.00	6.29	9.67	2.67	0.40
	S2		3.40	1.71	4.82	1.33	0.00
Nathusius' pipistrelle	S1	0.00	0.00	0.00	0.00	0.33	0.00
	S2		0.00	0.14	0.17	0.17	0.20
Myotis spp.	S1	0.60	6.20	6.86	4.67	42.33	6.20
	S2		8.00	1.71	1.17	3.17	1.80
Noctule	S1	0.20	1.80	1.86	2.17	1.33	1.60
	S2		1.40	1.14	1.50	0.33	0.60
Long-eared bat	S1	0.20	1.00	6.29	4.67	10.33	0.80
	S2		2.20	2.29	0.33	0.67	0.20
Serotine	S1	0.00	4.00	3.29	3.82	1.17	1.80
	S2		2.80	0.43	0.33	0.17	0.60
Barbastelle	S1	0.00	0.00	1.29	0.50	1.17	0.20
	S2	0.00	0.00	0.00	0.00	0.00	0.00

Appendix I: Badger Mitigation

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0 20 40 m

N

CLIENT: Places for People

PROJECT: Havant and South Downs College

DRAWING: Badger Mitigation

DATE: 16/04/24

SCALE: 1:2000
SIZE: A4
JOB NO: 7707
DWG NO: V1
REV:

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Appendix J: Mitigation and Enhancements

Appendix K: Protected Species Legislation

CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017

The Conservation of Habitats and Species Regulations 2017 (the Habitats Regulations) transpose Habitats Directive into UK legislation. The Habitats Regulations provide for the designation and protection of European Sites and European Protected Species. European Sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which form part of the Natura 2000 network of protected areas across Europe.

European Protected Species (EPS) are those listed under Schedule 2 of the Habitats Regulations and include dormouse, great crested newt, otter and all species of bat. The regulations prohibit the deliberate capture, killing or disturbance of any EPS; it is also an offence to damage or destroy a breeding site or resting place of any of these species. In order to carry out a lawful operation (e.g. development work which has full planning permission) that may result in an offence under the Habitats Regulations, it is necessary to obtain a licence from Natural England. EPS Licences will only be granted after Natural England has been satisfied that there are no satisfactory alternative and that there will not be any adverse impacts on the favourable conservation status of the species.

WILDLIFE AND COUNTRYSIDE ACT 1981

The Wildlife and Countryside Act 1981 is the principal piece of legislative protection of wildlife in Great Britain. Various amendments have occurred since the original enactment. The Wildlife and Countryside Act contains both habitat and species protection. Certain bird, animal and plant species are afforded protection under Schedules 1, 5 and 8 of the Act. Measures for the protection of the countryside, National Parks, Sites of Special Scientific Interest (SSSIs) are also included within the Act.

COUNTRYSIDE AND RIGHTS OF WAY ACT 2000

The Countryside and Rights of Way (CRoW) Act 2000 adds to the protection afforded in the WCA to SSSI's and other important sites for nature conservation. In addition, under the Act it became a criminal offence to "recklessly disturb" Schedule 1 nesting birds and species protected under Schedule 5 of the Wildlife and Countryside Act. It also enabled heavier penalties on the conviction of wildlife offences.

THE NATURAL ENVIRONMENT AND RURAL COMMUNITIES ACT 2006

The Natural Environment and Rural Communities (NERC) Act 2006 improved wildlife protection by amending the WCA. The main function of the NERC Act was to raise the profile of biodiversity amongst public authorities. Section 40 (S40 of the Act places a 'Biodiversity Duty' on all public bodies to have regard to the conservation of biodiversity when carrying out their normal functions.

PROTECTION OF BADGERS ACT 1992

The Protection of Badgers Act 1992 consolidates previous legislation (including the Badgers Acts 1973 and 1991 Badgers (Further Protection) Act 1991). It makes it a serious offence to kill, injure or take a badger; attempt to kill, injure or take a badger; or to damage or interfere with a sett. The 1992 Act defines a badger sett as "*any structure or place which displays signs indicating current use by a badger*".

Appendix L: Ecological Enhancements – Bird Boxes

Vivara Pro Oval Open Front Woodstone Nest Box

These open nest boxes will be used by Robins, Wrens (if well hidden), Spotted Flycatchers, Pied and Grey Wagtails, Song Thrushes, and Black Redstarts and they are available in brown or green in an attractive oval shape to complement both natural woodland and garden settings.

Schwegler 1B Nest Box (32mm hole)

To attract most Tit species the nest box should be hung at a height of 1.5 metres or higher although Coal and Marsh Tits prefer much lower nest sites. Nest boxes should be angled so that they face away from the prevailing wind (usually south-westerly in the UK). The chances of occupation are higher if there is good tree or hedge cover nearby as these will provide a good source of insect food for the nestlings when they hatch.

Swift brick: Made from woodstone material, a mix of concrete and wood fibres, this swift box is designed to be built into a wall with the front panel visible. It can also be mounted externally on an outside wall. Swifts are colony breeders and boxes should be erected in pairs as high as possible, ideally under the eaves.

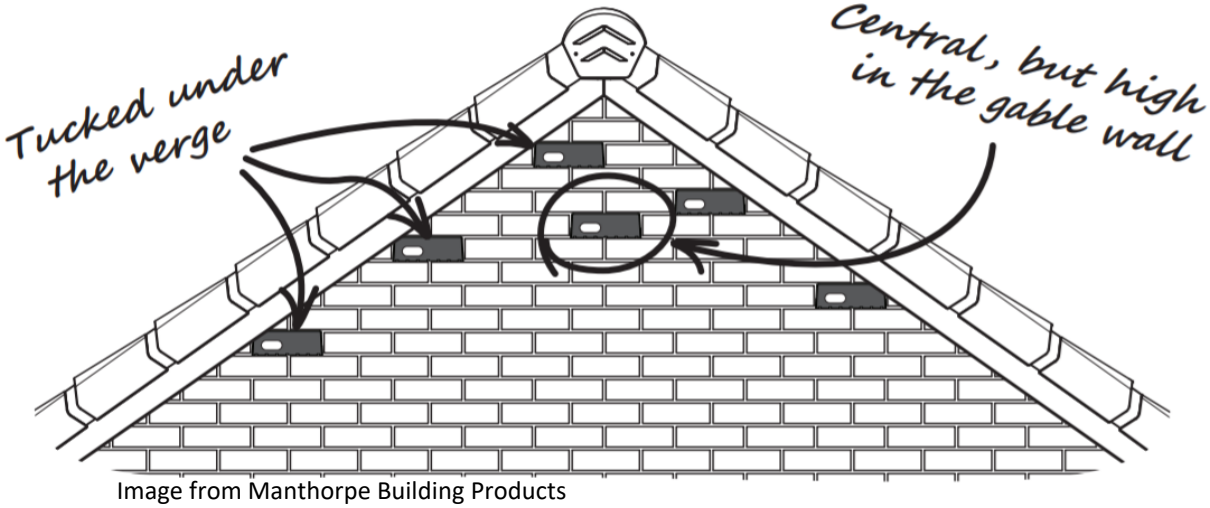


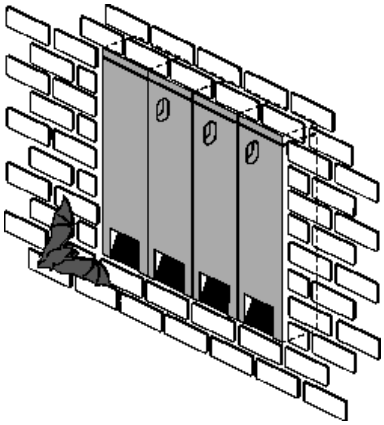
Image from Manthorpe Building Products

Appendix M: Ecological Enhancements - Bats

Schwegler 2FN Bat Box

The 2FN bat box should be sited in trees and is best positioned at a height of between 3 to 6 metres. Bat boxes should ideally be sited in open sunny positions.

Vincent Pro bat box
The box features three vertical chambers of different sizes, providing ideal roosting space for a variety of species. Proven with seven UK species: Barbastelle, Leisler's, common pipistrelle, soprano pipistrelle, brown long-eared, Natterer's and whiskered bat.



Schwegler 2FR Bat Tube

The 2FR Bat Tube is suitable for bat species which inhabit buildings and is designed to be built into the masonry of an external wall. It can either be built flush with the wall or beneath a rendered surface or cladding. The tube is constructed from woodcrete and has an integrated wooden panel onto which bats can easily cling. This box requires no maintenance as droppings fall out of the entrance ramp.

Appendix N: Ecological Enhancements - Species Planting List

Common Name	Latin Name
Trees	
Beech	*Fagus sylvatica*
Crab apple	*Malus sylvestris*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Oak	*Quercus robur*
Rowan	*Sorbus aucuparia*
Shrubs	
Dogrose	*Rosa canina*
Dogwood	*Cornus sanguinea*
Hawthorn	*Crataegus monogyna*
Blackthorn	*Prunus spinosa*
Spindle	*Euonymus europaeus*
Wild privet	*Ligustrum vulgare*
Plug planting and Seeds	
Bugle	*Ajuga reptans*
Butcher's Broom	*Ruscus aculeatus*
Common Dog Violet	*Viola riviniana*
English Bluebell	*Hyacinthoides non-scripta*
Foxglove	*Digitalis purpurea*
Ground Ivy	*Glechoma hederacea*
Ox-eye Daisy	*Leucanthemum vulgare*
Red Campion	*Silene dioica*
Stinking Hellebore	*Helleborus foetidus*
Wild Daffodil	*Narcissus pseudonarcissus*
Common knapweed	*Centaurea nigra*