



Brackley Investments Ltd

Land at Bartons Road, Havant

Ecological Appraisal

November 2020

This report may contain sensitive ecological information, it is the responsibility of the Local Authority to determine if this should be made publicly available.

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1.0 INTRODUCTION

- 1.1 The following Ecological Appraisal has been prepared by FPCR Environment and Design Ltd on behalf of Brackley Investments Ltd for land south of Bartons Road, Havant, Hampshire (central OS Grid Reference SU733079).
- 1.2 It provides the results of an Extended Phase 1 Habitat and Preliminary Protected Species survey undertaken during June 2020 and subsequent specific species surveys completed from the end of June 2020 through to October 2020. The objective of the surveys was to gain an understanding of the baseline ecology of the application site and immediate surrounding area and to determine whether the application site supports or has the potential to support protected, rare or otherwise notable species.
- 1.3 This preliminary assessment was followed by subsequent targeted surveys for protected, rare or otherwise notable species or groups.

Site Context

- 1.4 The site comprises approximately 0.6 ha of land, currently grassland with hedgerows forming the western, southern, and eastern site boundaries. The central body of the site supported species poor semi-improved grassland. No waterbodies are present within the site boundary, but two waterbodies were identified through inspection of OS maps and aerial images, within 500m of the site boundary.
- 1.5 The site is situated on the north-eastern fringe of Havant which lies to the north-east of Portsmouth. The surrounding landscape is composed largely of residential dwellings or newly built housing developments with areas of green space in the form of recreational grounds and horse-grazed pastures and a large block of woodland to the east.

Development Proposals

- 1.6 The proposals are for the construction of a care home with associated infrastructure such as parking and road access, comprising a two storey 64 bed CQC-regulated Care Centre (C2 use) providing 24 hour nursing, personal and dementia care for a range of acuities. As the facility would follow the best practice 'household' model guests reside in 8 bedroom wings of accommodation and would be both self-contained and secure – on-site facilities would include hair salon, café, gym and cinema, together with various lounge and dining areas, balconies and terraces all set around landscaped grounds. The facility is focussed on end-of-life care, with residents expected to have reduced capacity and would only leave the premises when accompanied by staff or their guests.
- 1.7 There is scope within the proposals to accommodate biodiversity requirements across the site through habitat creation and sensitive landscape planting within both formal and informal areas.

2.0 METHODOLOGY

Desk Study

- 2.1 To compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:
- Hampshire Biodiversity Information Centre (HBIC);
 - Multi Agency Geographic Information for the Countryside (MAGIC) website (www.magic.defra.gov.uk).
- 2.2 Further inspection of colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk) was also undertaken to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.
- 2.3 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- International Sites: 15km search around the Survey Area. Article 3 (1) of the EC Directive 92/43/EEC5 on the Conservation of Natural Habitats and of Wild Flora and Fauna, commonly known as the “Habitats Directive”, sets out the requirement for the establishment of “a coherent European network of special areas of conservation”. The network entitled “Natura 2000” consists of Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar Sites. These sites are designated based on the presence of Qualifying Features identified as being listed on Annex I (habitats) and Annex II (species) of the Habitats Directive; on Annex I of The Bird’s Directive 79/409/EEC; and on features designated based on the nine Ramsar Site Criteria.
 - Nationally Protected Sites: 2km search around the Survey Area. Sites of Special Scientific Interest (SSSIs) are the principal statutory designation of sites in the UK and offences are enforced through Natural England. Laws protecting areas designated as SSSI’s are described in Sections 28 to 33 of Part 2 Wildlife and Countryside Act 1981 (as amended). This search also includes National Nature Reserves (NNRs) which are all designated as SSSIs.
 - Local Protected Sites: 1km search around the Survey Area. Local Nature Reserve (LNR) is a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 and amended by Schedule 11 of the Natural Environment and Rural Communities Act 2006. Local authorities have the powers to acquire, declare and manage LNRs. Parish and town councils may declare LNRs providing power is given by the district or county council. LNRs may or may not have other statutory designations such as SSSI status. LNRs are usually owned by local authorities, with management often passed onto other organisations such as County Wildlife Trusts etc. They often have good public access and facilities. There is no legal necessity to manage an LNR to any set standard but management agreements and plans often exist. Protection of LNRs is usually provided through local planning policy and through local bylaws.
- Non-Statutory Designated Sites:
- 1km search around the Survey Area. Non-statutory Designated Sites are sites designated by local authorities which fall outside the statutory criteria for designation. They are policy

protected and included in the National Planning Policy Framework (NPPF) as “Local Sites”. Local Planning Authorities should set criteria-based policies against which proposals for developments on or affecting protected wildlife sites should be judged. Non-statutory sites are given various names including County Wildlife Sites (CWS), Sites of Importance for Nature Conservation (SINC) and Local Wildlife Sites (LWS). A search of the Ancient Woodland Inventory is also included here.

- Legally Protected and Notable Species. 1km search around the Survey Area. Searches include species protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2019 (as amendment, EU Exit)¹, Protection of Badgers Act 1992 and other notable fauna such as Biodiversity Action Plan, Red Data Book (RDB) species, Birds of Conservation Concern (BoCC) red & amber listed bird species and Species of Principal Importance under the Natural Environment and Rural Communities Act (NERC) 2006.
- 2.4 Data sets were restricted to the last ten years, this is to ensure that recent accounts of protected/notable species are reflected and prioritised, as they will be more relevant. However, where a protected/notable species has been documented older than ten years, and there are no recent accounts, then these have been included.

Field Surveys – Habitats / Flora

Flora

- 2.5 The initial survey was undertaken in June 2020 based on the standard Extended Phase I Habitat Survey Methodology as recommended by Natural England², to identify specific habitats and features of ecological interest. This comprised a systematic walkover of the site mapping and broadly describing the principal habitat types and identifying the dominant plant species / communities present within each habitat type.
- 2.6 The abundance of plant species was quantified using the DAFOR scale, ranging from Dominant (>75%) to Abundant (75-51%), through Frequent (50-26%) and Occasional (25-11%) to Rare (10-1%). Whilst the plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types.
- 2.7 Each habitat was described based on botanical merit and target notes used where appropriate to highlight features or habitats of particular interest. Features such as trees were considered with regard to their ecological value and potential to provide suitable habitats for protected species.
- 2.8 Consideration was given to the presence of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (WCA)1981 (as amended)³ and under the Weed Act 1959⁴. Any rare or notable flora including those listed as priorities in the Post 2010 UK Biodiversity Framework⁵, species listed under the NERC Act, Local Biodiversity Action Plan (LBAP)

¹ The Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit). [Online]. <http://www.legislation.gov.uk/ukdsi/2019/9780111176573>

² JNCC. (1990). Handbook for Phase 1 Habitat Survey – a technique for environmental audit. Peterborough: JNCC

³ Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO

⁴ Act of Parliament. (1959). The Weed Act 1959. London: HMSO

⁵ JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). 2012. *UK Post-2010 Biodiversity Framework*. July 2012

Priority Species/Habitats, any IUCN Red listed⁶, Red Data Book (RDB)⁷ and any national, regional, county or vice – county rarities were duly noted.

Hedgerows

- 2.9 Hedgerows were surveyed individually using the Hedgerow Evaluation and Grading System (HEGS)⁸ This method of assessment includes noting down canopy species composition, associated ground flora and climbers, structure of the hedgerow including height, width and gaps, number and species of mature trees, and associated features such as banks, ditches and grass verges.
- 2.10 Each hedgerow is given a grade using HEGS with the suffixes '+' and '-', representing the upper and lower limits of each grade respectively. These grades represent a continuum on a scale from 1+ (the highest score and denoting hedges of the greatest nature conservation priority) to 4- (representing the lowest score and hedges of the least nature conservation priority) as follows:
- Grade -1, 1, 1+ High to Very High Value
 - Grade -2, 2, 2+ Moderately High to High Value
 - Grade -3, 3, 3+ Moderate Value
 - Grade -4, 4, 4+ Low Value
- 2.11 Hedgerows graded 1 or 2 are a priority for nature conservation.
- 2.12 The hedgerows were also assessed for their potential ecological value under the Hedgerow Regulations 1997 (Statutory Instrument No: 1160)⁹ to determine whether they qualified as 'Important Hedgerows' under the Regulations. This broadly follows the above methodology, although an average canopy species per 30 metres is calculated, dependant on the length of hedgerow. Additional features which enhance hedgerows, when found in association with the hedge, such as mature trees, ditches, hedge banks and connections are also considered. This methodology is broadly consistent with that outlined in The Hedgerow Survey Handbook (DEFRA, 2007)¹⁰.
- 2.13 The REGS assessment will result in the hedgerow being either statutory protected or not, which may have implications for their future management and any requirement for removal to facilitate the scheme.
- 2.14 Hedgerows were also assessed to determine if they met the habitat descriptions for Hedgerow Habitat of Principal Importance as listed within Section 41 of the NERC Act, (i.e. whether they consisted of 80% or more native species) or Priority Habitat of the Hampshire LBAP.
- 2.15 It should be noted that hedgerows may also qualify as important under the Archaeological criteria of this Act, which is beyond the scope of this assessment.

⁶ International Union for Conservation of Nature (IUCN), Red List 2012

⁷ The Vascular Plant Red Data List for Great Britain (2005), Cheffings, C. and Farrell, L. (Eds)

⁸ Clements, D. & Toft, R. (1992). Hedgerow Evaluation and Grading System (HEGS) – a methodology for the ecological survey, evaluation and grading of hedgerows. Countryside Planning and Management

⁹ *The Hedgerow Regulations 1997 – Statutory Instrument 1997 No. 1160*. [Online]. London: HMSO. Available at: <http://www.legislation.gov.uk/ukSI/1997/1160/contents/made> [Accessed 09/04/2016].

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

Fauna

- 2.16 During the surveys of the site, observations, signs of or suitable habitat for any species protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2019 and the Protection of Badgers Act 1992¹¹ were noted with particular attention being given to the potential presence of bats, hazel dormouse *Muscardinus avellanarius*, great crested newt *Triturus cristatus*, water vole *Arvicola amphibious* and badger *Meles meles*. Throughout the survey consideration was also given to the existence and use of the site by other protected species or locally notable fauna such as Species of Principal Importance as listed on Section 41 of the NERC Act (2006), Birds of Conservation Concern (BoCC) red & amber listed bird species¹² and any Local Biodiversity Action Plan (LBAP) or Red Data Book (RDB) species.
- 2.17 The standard survey methodology was extended to assess the potential presence of protected species within features such as buildings and trees or specific habitats considered for their ecological value and potential to provide suitable habitats for protected species.

Badgers

- 2.18 As part of the survey all hedgerows, scrub, and other suitable habitats within the site and immediately adjacent, were searched for evidence of badger activity. The standard methodology was used, as outlined by Harris, Creswell, and Jefferies¹³ (1989). This involved a thorough search for evidence of the presence of badgers, including:
- Setts, including earth mounds, evidence of bedding and runways between setts.
 - Latrines, often located close to setts, at territory boundaries or adjacent to favoured feeding areas.
 - Prints and paths or track ways.
 - Hairs caught on rough wood or fencing; and
 - Other evidence including snuffle holes, feeding, and playing areas and scratching posts.
- 2.19 The identification of snuffle holes, scratching posts or feeding signs on their own are not necessarily conclusive evidence of the presence of badgers. A number of such signs need to be seen in conjunction before they can be said to be conclusive of badger activity.

Bats

Tree Roost Assessments

- 2.20 Tree assessments were undertaken from ground level, with the aid of a torch and binoculars (where appropriate). These surveys were undertaken in June 2020 by an experienced ecologist from FPCR. During the survey Potential Roosting Features (PRF) for bats such as

¹¹ The Protection of Badgers Act 1992 (as amended). London: HMSO [Online]. Available from: <http://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed 03/05/2013].

¹² *Birds of Conservation Concern 4 (2015)*. British Trust for Ornithology [Online]. Available from: <http://www.bto.org/science/monitoring/psob>

¹³ Cresswell, P., Harris, S. & Jefferies, D.J. (1989). *Surveying Badgers*. The Mammal Society Publication No.9 Mammal Society

the following were sought (Based on p.16, British Standard 8596:2015 Surveying for bats in trees and woodland, October 2015¹⁴):

- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar.
- Man-made holes that have developed from flush cuts or cavities created by branches tearing out from parent stems.
- Woodpecker holes.
- Cracks/splits in stems or branches (horizontal and vertical).
- Partially detached, loose or bark plates.
- Cankers (caused by localised bark death) in which cavities have developed.
- Other hollows or cavities, including butt rots.
- Compression of forks with occluded bark, forming potential cavities.
- Crossing stems or branches with suitable roosting space between.
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk);
- Bat or bird boxes; and
- Other suitable places of rest or shelter.

- 2.21 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings, and its location in respect to other features may enhance or reduce the potential value.
- 2.22 Trees were classified into general bat roost potential groups based upon the presence of these features. *Table 1* (below) broadly classifies the potential categories as accurately as possible as well as discussing the relevance of the features. This table is based upon Table 4.1 and Chapter 6 in the Bat Conservation Trust (BCT) guidance¹⁵.
- 2.23 Although the British Standard 8596:2015 document groups trees with moderate and high potential, these have been separated below (as per Table 4.1 in BCT Guidelines) to allow more specific survey criteria to be applied, particularly with reference to the definition of a breeding site or resting place as described in the Habitat Regulations.

¹⁴ Surveying for Bats in Trees and Woodland – Guide. British Standards Institution. BS8596:2015, UK.

¹⁵ Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Table 1. Bat Roosting Potential Categorises

Classification of Tree / Building	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence. Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence. However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.
High Potential	One or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree/buildings may be upgraded or downgraded based on findings. If roost sites are confirmed and the roost is to be affected by proposals a licence from Natural England will be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.
Moderate Potential	A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status). Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.	A combination of aerial assessment by roped access bat workers (trees) and / or nocturnal survey during appropriate period (May to August). Following additional assessments, roost may be upgraded or downgraded based on findings. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate. If a roost site/s is confirmed a licence from Natural England will be required.
Low Potential	Contain Potential Roosting Features but with none seen from ground or features seen only very limited potential. Examples include (but are not limited to); loose/lifted bark/tiles, shallow splits exposed to elements or upward facing holes/cavities.	No further survey required but a precautionary working method statement may be appropriate.
Negligible / No potential	Negligible/no habitat features likely to be used by roosting bats	None.

** The Conservation of Habitats & Species Regulations 2017 (as amended) affords protection to “breeding sites” and “resting places” of bats. The EU Commission’s Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, February 2007 states that these are places “where there is a reasonably high probability that the species concerned will return”.*

Manual Activity Surveys

- 2.24 Following the initial Extended Phase 1 Habitat and Preliminary Protected Species survey in June 2020, bat survey effort was reviewed against Natural England¹⁶ and BCT guidance (2012)¹⁷. This assessed the site to be of small size and providing low habitat quality (refer Table 7.2, Bat Surveys – Good Practice Guidelines). In accordance with BCT guidance (2012), the survey effort required one static detector to be utilised during activity surveys which were to be undertaken during each season (spring, summer and autumn).
- 2.25 Updated survey guidance from the Bat Conservation Trust¹⁸ was published in early 2016; this recommends that any site, regardless of its size, should be subject to activity assessments. Under this new guidance the site was of low suitability and falls under the seasonal survey requirements. The deviations from the BCT 2012 guidance are a) the requirement of the static (passive) detector units to be in position for five consecutive nights instead of three b) point counts during the manual activity surveys were to be kept between 3 – 5 minutes and c) commencement of manual activity surveys was to begin at sunset, rather than 15 minutes before.
- 2.26 However, it was decided that survey effort would be increased from the offset due to the fact background records returned evidence of a confirmed Bechstein's bat (Annex II species) roost in the wider landscape. Survey effort was increased to monthly as some potentially suitable habitat for this species (woodland) was present along the site boundary.
- 2.27 The primary objective of the activity surveys was to identify foraging areas, commuting routes and general species utilisation of the site.
- 2.28 The BCT guidance (2016)¹⁸ recommends that any site, regardless of its size, should be subject to activity assessments where suitable habitats or roosting habitats are present. Under this guidance, the site was considered to be of low habitat suitability (Table 4.1, BCT Guidance 2016) and fell under the seasonal survey requirements (Table 8.3 BCT Guidance, 2016), whereby activity transects and static surveys are required once each season – Spring (April / May), Summer (June / July / August) and Autumn (September / October). However, as mentioned previously, survey effort was increased due to the potential of Bechstein's bats utilising the site.
- 2.29 In line with the BCT guidance the transect route was predetermined prior to survey to comprehensively cover all areas of the site and included five-minute point count stops, during which time all bat activity was recorded. The point counts were strategically located throughout the site to account for any habitat loss or potential impacts from the proposed development, and to ensure a comprehensive coverage of habitats.
- 2.30 The dusk transects commenced at sunset and continued for approximately 2-3 hours. Surveys were undertaken in conditions that were close to optimal as described within the BCT guidance (2016), where sunset temperatures were 10°C or above with no rain or strong winds.

¹⁶ Jones AJ (2004) Bat Mitigation Guidelines, English Nature

¹⁷ Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust, London.

¹⁸ Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London

Dawn surveys commenced 2 hours before sunrise and ended at sunrise or later if bat activity continued.

- 2.31 The surveys were undertaken by appropriately experienced/licenced ecologists from FPCR. The transect was walked at a steady pace using an Apple iPad mini with an Echo Meter Touch (Wildlife Acoustics Version 2.0.4). This software identifies and tags sound files that it suggests are bat passes; these surveys are also supplemented by written notes documenting bat activity present on site and identifying any key foraging and commuting routes.
- 2.32 Post-survey, bat calls were analysed using BatSound (Version 4.1.4) and Analook (Titley Electronics, Version 4.1) / Kaleidoscope Viewer (Version 4.5.4), by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. Analysis was undertaken by experienced ecologists from FPCR. From this, the level of bat activity across the site was assessed by taking into account the species assemblage and spatial variation in activity within different habitats.
- 2.33 The timings and weather conditions for the activity transects are shown in *Table 2* below.

Table 2. Transect Survey Timings and Weather Conditions

Survey ref/ Date	Survey Type	Start Time	Sunset/ Sunrise Time	Finish Time	Weather Conditions (temp °C; cloud cover %; wind; and rain)
Activity Transects					
Transect 1 – 02/07/2020	Transect	21:20	21:20	23:20	50% cloud; light breeze; no rain; 18°C
Transect 2 – 28/07/2020	Transect	20:55	20:55	22:55	5% cloud; light breeze; dry; 17°C
Transect 3 – 17/09/2020	Transect	19:12	19:12	21:17	0-10% cloud; moderate breeze; dry; 17°C
Transect 4 – 01/09/2020	Transect (Dusk)	19:48	19:48	21:48	90% cloud; no wind; no rain; 18°C
Transect 5 – 02/09/2020	Transect (Dawn)	04:20	06:20	06:30	50% cloud, no wind; no rain; 10°C
Transect 6 – 08/10/2020	Transect	18:26	18:26	20:26	70% cloud; light breeze; no rain; 14°C

Automated Activity Surveys

- 2.34 A static passive recording broadband detector was deployed on site each month to supplement the activity transect survey. These automated logging systems, Wildlife Acoustics Inc. Song Meter SM4BAT FS detectors, herein referred to as SM4BAT detectors, save all recordings onto an internal storage device, which can be analysed following the survey.
- 2.35 The SM4BAT detectors were deployed each month (June – October 2020), each for a minimum period of five consecutive nights in line with the current guidance (BCT, 2016). The static unit was programmed to activate 30 minutes before dusk and record continuously until 30 minutes following sunrise. The output from this detector was subject to computer analysis using the AnalookW software package (Titley Electronics) and BatSound (Version 4.1.4).
- 2.36 The SM4BAT records sound files of up to 12 seconds in length before a new file is created. The analysis of the SM4BAT files recorded can highlight the presence of more than one bat if they are recorded simultaneously on the same sound file. However, it is not possible to determine whether consecutive sound files have been recorded as the result of a single bat passing the detector as it commutes across the landscape or by one bat repeatedly triggering the detector as it forages in close proximity for an extended period (unlike the transect section above where the number of bats can often be visually identified). Therefore, each sound file is counted as a single bat pass or registration and the number of registrations provides an indication of the relative importance of the site / the detector location for bats.
- 2.37 The timings for the static detector surveys undertaken are shown in *Table 3* below.

Table 3. Static Detector Survey Timings and Weather Conditions

Survey Occasion	Location/s (see Figure 3)	Date/Timings
Static Survey 1 – June 2020	One unit: S1 – Western boundary, Central H3.	26 th June to 1 st July – 5 nights
Static Survey 2 – July 2020	One unit: S2 – H6, South-western boundary, along H3.	23 rd to 28 th July – 5 nights
Static Survey 3 – August 2020	One unit: S3 – Northern boundary, dense scrub.	19 th to 24 th August – 5 nights
Static Survey 4 – September 2020	One unit: S4 – H3, South-western boundary corner.	17 th to 22 nd September – 5 nights
Static Survey 5 – October 2020	One Unit: S5 – Eastern boundary, mature tree along H1.	8 th to 13 th October – 5 nights

Dormice

- 2.38 Given the presence of only sub-optimal habitat on site and the isolated nature of the site in terms of connectivity to the wider landscape, it is not considered the site is utilised by Dormice. In addition, only a single record was returned from HBIC, approximately 1.8km north of the site in 2017.
- 2.39 As such, this species group is considered no further in the assessment of potential impacts resulting from development of this site.

Great Crested Newts (GCN)

Habitat Suitability Index (HSI)

- 2.40 Where access was granted and where there were no barriers to dispersal, waterbodies within a 500m radius of the site were assessed, using the Habitat Suitability Index (HSI) for their potential suitability for GCN. The HSI provides a measure of the likely suitability that a waterbody will support newts²⁰. In general, waterbodies with a higher score are more likely to support GCNs than those with a lower score and there is a positive correlation between HSI scores and waterbodies with newts recorded. Ten separate attributes are assessed for each waterbody:
- Geographic location.
 - Pond area.
 - Pond drying.
 - Water quality.
 - Shade.
 - Presence of water-fowl.
 - Presence of fish.
 - Number of linked ponds.
 - Terrestrial habitat; and
 - Macrophyte coverage.
- 2.41 A score is assigned according to the most appropriate criteria level set within each attribute and a total score calculated of between 0 and 1. Pond suitability is then determined according to the following scale:

Table 4. Habitat Suitability Index Scores and Pond Suitability

HSI Score	Pond Suitability
<0.5	Poor
0.5 - 0.59	Below average
0.6 – 0.69	Average

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

HSI Score	Pond Suitability
0.7 – 0.79	Good
>0.8	Excellent

eDNA Sampling and Analysis

- 2.42 eDNA sampling was undertaken on the offsite waterbody, to the east, in accordance with the protocol recommended by Natural England²¹. Access was not granted for the second waterbody, even further east.
- 2.43 Sampling was undertaken on 26th June 2020 by an appropriately licenced and experienced ecologist who would typically collect a water sample from the waterbodies in question. However, the waterbody was dry at the time of initial survey.

Reptiles

- 2.44 A strategic reptile presence / likely absence survey was undertaken within the site at specific locations identified as offering potential habitat suitability for the species. The survey was undertaken based on methodology detailed in the Herpetofauna Workers Manual²², the Froglife Advice Sheet 10 - Reptile Survey²³ and Reptiles: Guidance for Developers²⁴. Methods involved a search for basking reptiles on/under naturally occurring and strategically positioned artificial refugia. These were placed in locations that offered the most suitable habitat for common reptiles, i.e. structurally diverse 'edge' habitats with areas of bare ground/short vegetation. Froglife recommends between five and ten refuges per hectare, the survey area measures approximately 0.6 hectares in size, however as the development footprint bisects the grassland field, refugia were placed all along the boundary of this habitat in order to gauge if reptiles were utilising this habitat. As a result, owing to the small size of the site, reptile surveys also encompassed suitable reptile habitat directly adjacent to the northern boundary of the site, labelled 'survey area' on *Figure 4*. This provided further context to the site and the immediate surrounding environment.
- 2.45 The surveys within the site were carried out following those guidelines within the Froglife Advice Sheet¹⁰, which recommend surveys undertaken:
- At temperatures of between 9°C-18°C;
 - On sunny / cloudy days with little or no wind; and
 - Between 8:30 & 11:00 and between 1600 & 18:30 hrs.
- 2.46 In addition, guidance also recommends:
- Using regularly spaced corrugated tin sheeting / similar (0.5m²) as artificial refugia with a black upper side.

²¹ Biggs J, et. al, 2014. *Analytical and Methodological Development for Improved Surveillance of the Great Crested Newt. Appendix 5: Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA*, Freshwater Habitats Trust, Oxford

²² Gent, T & Gibson, S (2003) Herpetofauna Worker's Manual. JNCC, Peterborough.

²³ Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

²⁴ English Nature (2004) Reptiles: guidance for developers. English Nature, Peterborough.

- Approaching refugia from downwind, casting no shadow and with care to avoid disturbing basking animals when completing checks.
 - That lifting and replacing tins, to check for the presence of reptiles underneath in hot weather is undertaken with care, to avoid potential harm to any animals underneath; and
 - That the location and number of tins are mapped to aid survey and avoid the possibility of leaving tins *in situ* after completion of the survey.
- 2.47 In some circumstance's conditions may be more suitable but fall outside of the guidelines mention above; for example, sunny periods after rainfall but after 11am. Such conditions would be more favourable to reptiles and likely increase the likelihood of positive encounters. Therefore, the guideline are only suggestive periods, surveyors experience and weather assessment can prove to be fruitful outside guidance periods, but only where conditions are suitable.
- 2.48 To confirm the presence / likely absence of reptiles within the site and inform the population assessment, seven reptile surveys were carried out between July and September 2020; these were conducted within the recommended survey period and during conditions optimal for reptile sightings. The dates of these surveys can be seen below:

Table 5. Reptile Survey Date and Weather Conditions

Survey Occasion	Date & Time	Weather
1	24/07/20 07:00	Rain earlier in the day, light breeze, cloud cover 90-100%, 17°C
2	28/07/20 19:30	Sunny conditions, light breeze, no rain, cloud cover 5%, 18°C
3	07/09/20	Sunny conditions, moderate breeze, no rain, cloud cover 0-10%, 16°C
4	14/09/20 08:14	Sunny conditions, moderate breeze, no rain, cloud cover 0-10%, 15°C
5	18/09/20 10:00	Sunny conditions, moderate breeze, no rain, cloud cover 0-10%, 16°C
6	22/09/20 08:10	Sunny conditions, light breeze, no rain, cloud cover 30-40%, 12°C
7	28/09/20 11:00	Sunny conditions, no wind, no rain, cloud cover 0%, 15°C

- 2.49 For reference, reptile populations are assessed in accordance with population level criteria as stated in the Key Reptile Site Register. This system classifies populations of individual reptile species into three population categories assessing the importance of the population (*Table 6*). These categories are based on the peak number of adult animals observed during individual survey occasions.

Table 6. Key Reptile Site Survey Assessment Categories (Froglife Advise Sheet 10)

Species	Low Population (Number of Individuals)	Good Population (Number of Individuals)	Exceptional Population (Number of Individuals)
Adder	<5	5-10	>10
Common lizard	<5	5-20	>20
Grass snake	<5	5-10	>10
Slow worm	<5	5-20	>20

Constraints and Limitations

- 2.50 As mentioned briefly above, during the initial habitat survey it was not possible to assess the suitability in terms of HSI and carry out eDNA surveys of the offsite ponds. Firstly, the 'wet issue' identified by OS maps and MAGIC was dry at the time of survey indicating that this waterbody is dry at a minimum annually. Therefore, greatly decreasing its suitability for amphibian species. In addition, access was not granted for the garden pond further east. Therefore, an eDNA survey could not be conducted for this waterbody. However, this pond can be scoped out due to the fact a significant dispersal barrier exists between the waterbody and the site in the form of Eastleigh Road. Consequently, the restrictions to surveying third party ponds have not been identified as a significant constraint in assessing the effects of the development on the local newt population.
- 2.51 With regards to reptiles, one survey undertaken in August 2020 had to be repeated at a later date due to sub-optimal weather conditions at the time of survey.
- 2.52 Due to the initial assessment of the site being of low habitat quality for bats, seasonal surveys were recommended. However, following the identification of a confirmed Bechstein's (Annex II species) roost nearby and the presence of some suitable woodland habitat on the site boundaries, the survey effort was increased to monthly surveys.
- 2.53 Due to the variable properties of bat echolocation calls it is not always possible to identify a series of echolocation calls down to species level. In the majority of cases it was possible to identify to genus level which was suitable to allow potential affects to be assessed and appropriate mitigation designed. The lower amplitude of calls of species such as long-eared bat *Plecotus sp.* or barbastelle *Barbastella barbastellus* or the higher-pitched calls of species such as the horseshoe bats are more difficult to detect and calls may not have been received by the directional microphone at the time of recording. Therefore, it was possible that these species may have been under recorded.

- 2.54 The static (passive) recording units do not discern between individual bats or a single bat passing the microphone several times and therefore the data recorded can only provide an indication of bat activity as bat registrations per unit time.
- 2.55 It is considered that the overall dataset obtained once the full suite of surveys is complete will be representative of the level of bat activity within the application site during the survey period. Furthermore, it is unlikely that the above limitations will result in a significant detrimental impact upon the quality of the data and will have minimal effect on the subsequent conclusions and recommendations provided in the future.
- 2.56 Where calls could not be identified to species level, for example due to the lower quality of those recordings, or where there are similarities between species echolocation calls (particularly for *Myotis* and *Nyctalus* genus bats) that make definite identification difficult, a likely species identification is provided. This is based on the features displayed by the calls when analysed using the software package AnalookW and taking in to account the geographical location of the site and the habitats present. It was therefore considered that:
- *Pipistrellus* species bats were either common *Pipistrellus pipistrellus*, soprano *Pipistrellus pygmaeus* or Nathusius' pipistrelle *Pipistrellus nathusii*;
 - *Nyctalus* species bats were either noctule *Nyctalus noctula* or Leisler's *Nyctalus leisleri* bats.
 - *Plecotus* species bats were likely brown long-eared.
 - *Myotis* species bats were likely whiskered / Brandt's *Myotis mystacinus* / *brandti* or Daubenton's *Myotis daubentonii* bats.

3.0 RESULTS

Desk Study

Statutory and Non-Statutory Sites of Nature Conservation Importance

Statutory Sites of International Conservation Value

- 3.1 The Multi-Agency Geographic Information for the Countryside (MAGIC) website indicates that there are several internationally designated sites within 15km of the application boundary.
- 3.2 Chichester and Langstone Harbours are situated approximately 2.9km south of the site and are designated as Special Protection Areas (SPA) and a Ramsar site. They are large, sheltered estuarine basins comprising extensive sand- and mudflats exposed at low tide. These harbours are designated due to being a wetland of international importance and regularly supporting over 20,000 waterfowl.
- 3.3 Solent Maritime is a Special Area of Conservation (SAC) and is located approximately 7km south-east. This area is designated for containing many Annex I habitats, including estuaries, Spartina swards and Atlantic salt meadows.
- 3.4 Kingley Vale is situated approximately 7.5km south-east and is designated as a Special Area of Conservation (SAC). This area is designated due to being the largest area of yew woodland in Britain.
- 3.5 Singleton and Cocking Tunnels is located approximately 15km north-west and is designated as a Special of Conservation (SAC) due to supporting the Annex II species barbastelle bat *Barbastella barbastellus* and Bechstein's bat *Myotis bechsteinii*.

Statutory Sites of National Conservation Value

- 3.6 There are no Sites of Special Scientific Interest (SSSI) located within 2km of the site:

Non-Statutory Designated Sites

- 3.7 Data received from HBIC identified several non-statutory sites within 2km of the application boundary. The closest of which was Barton's Copse and The Slip, located approximately 0.5km north of the site. This is designated on account of it being a substantial area of ancient, semi-natural woodland.

Protected / Notable Species Records

- 3.8 Several records of protected, notable, or local BAP species are present within 2 km of the site, detailed in *Table 7* below and *Figure 1*.
- 3.9 In general, only records since 2007 were included, however where the only records provided for a notable species of conservation importance dated back further than this these species are also included in the table. Only birds on the Birds of Conservation Concern Amber or Red lists or on the Wildlife and Countryside Act Schedule 1 are included, unless considered a notable species.

Table 7. Protected and Notable Species Records

Species	Date	Conservation Status	Approximate Location Relative to Site
<u>Mammals – Terrestrial (Non-bats)</u>			
Eurasian Badger <i>Meles meles</i>	2006	PBA	Two records, closest 1.4 km S
Hazel Dormouse <i>Muscardinus avellanarius</i>	2017	EU_Hab_4 HabReg_s2 IUCN_GB_2001:VU NERC_s41 WCA_s5s94b WCA_s5s94c CI	One record 1.8 km N
West European Hedgehog <i>Erinaceus europaeus</i>	2008 – 2019	IUCN_GB_2001:VU NERC_s41	Multiple records, closest 0.77 km SW of site
<u>Herpetofauna</u>			
Slow worm <i>Anguis fragilis</i>	2014 – 2018	NERC_s41 WCA_s5s91(t)	Two records, closest 1.9 km SE
Grass snake <i>Natrix helvetica</i>	2018	NERC_s41 WCA_s5s91(t)	One record 2.3 km NW
Adder <i>Vipera berus</i>	2006	NERC_s41 WCA_s5s91(t)	One record 1.9 km NW
Common Lizard <i>Zootoca vivipara</i>	2018	NERC_s41 WCA_s5s91(t)	One record 1.9 km NW
<u>Bats</u>			
Western Barbastelle <i>Barbastella barbastellus</i>	2016 - 2019	EU_Hab_2np EU_Hab_4 HabReg_s2 IUCN_GB_2001:VU NERC_s41 WCA_s5s94b WCA_s5s94c CI	Multiple records, closest 0.20 km N
Serotine <i>Eptesicus serotinus</i>	2002 – 2019	EU_Hab_4 HabReg_s2 IUCN_GB_2001:VU WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Alcathoe Bat <i>Myotis alcathoe</i>	2018	EU_Hab_4 HabReg_s2 IUCN_GB_2001:DD NERC_s41 WCA_s5s94b WCA_s5s94c	One record 0.20 km N

Species	Date	Conservation Status	Approximate Location Relative to Site
Bechstein's Bat <i>Myotis bechsteinii</i>	2005 - 2018	EU_Hab_2np EU_Hab_4 HabReg_s2 NERC_s41 WCA_s5s94b WCA_s5s94c CI	Multiple records closest 0.36 km E
Brandt's Bat <i>Myotis brandtii</i>	2009 - 2018	EU_Hab_4 HabReg_s2 IUCN_GB_2001:DD WCA_s5s94b WCA_s5s94c	Two records, closest 0.20 km N
Daubenton's Bat <i>Myotis daubentonii</i>	2015 - 2017	EU_Hab_4 HabReg_s2 WCA_s5s94b WCA_s5s94c	Two records, closest 1.56 km E
Whiskered Bat <i>Myotis mystacinus</i>	2017 – 2018	HabReg_s2 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Natterer's Bat <i>Myotis nattereri</i>	2009 – 2019	EU_Hab_4 HabReg_s2 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Lesser Noctule <i>Nyctalus leisleri</i>	2013 – 2019	EU_Hab_4 HabReg_s2 WCA_s5s94b WCA_s5s94c	Multiple records, closest 1.47 km E
Noctule <i>Nyctalus noctula</i>	2000 – 2019	EU_Hab_4, HabReg_s2 NERC_s4 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Nathusius's Pipistrelle <i>Pipistrellus nathusii</i>	2014 – 2019	EU_Hab_4 HabReg_s2 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	2000 – 2019	EU_Hab_4 HabReg_s2 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	2003 – 2019	EU_Hab_4 HabReg_s2 NERC_s41 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N

Species	Date	Conservation Status	Approximate Location Relative to Site
Long-eared <i>Plecotus spp.</i>	2008 – 2019	EU_Hab_4 HabReg_s2 IUCN_GB_2001:EN NERC_s41 WCA_s5s94b WCA_s5s94c CI	Multiple records, closest 0.36 km E
Brown Long-eared Bat <i>Plecotus auritus</i>	1997 – 2019	EU_Hab_4 HabReg_s2 NERC_s41 WCA_s5s94b WCA_s5s94c	Multiple records, closest 0.20 km N
<u>Birds (Present within 1km from site)</u>			
Lesser Redpoll <i>Acanthis cabaret</i>	2005 – 2018	BOCC_Red NERC_s41	Multiple records, closest approximately 1.72 km NW
Skylark <i>Alauda arvensis</i>	2004 - 2018	BOCC_Red NERC_s41	Multiple records, closest 0.69 km E
Kingfisher <i>Alcedo atthis</i>	2004 - 2018	EU_Bird_1 WCA_s1p1	Multiple records, closest 1.73 km NW
Tree Pipit <i>Anthus trivialis</i>	2014	BOCC_Red NERC_s41	One record 3.2 km S
Cetti's Warbler <i>Cettia cetti</i>	2004 – 2018	WCA_s1p1 CS	Multiple records, closest 2.9 km S
Little Ringed Plover <i>Charadrius dubius</i>	2009	WCA_s1p1 CS	One record, location sensitive
Ringed Plover <i>Charadrius hiaticula</i>	2010 - 2018	BOCC_Red	Multiple records, closest 2.9 km S
Black Tern <i>Chlidonias niger</i>	2015 - 2017	EU_Bird_1 WCA_s1p1	Two records, closest 2.9 km S
Marsh Harrier <i>Circus aeruginosus</i>	2013 - 2016	EU_Bird_1 WCA_s1p1 CR	Multiple records, closest 3.2 km SW
Hen Harrier <i>Circus cyaneus</i>	2017 – 2018	EU_Bird_1 BOCC_Red NERC_s41 WCA_s1p1	Two records, closest 3.2 km SW
Long-tailed Duck <i>Clangula hyemalis</i>	2004	BOCC_Red WCA_s1p1	One record 3.2 km SW
Hawfinch <i>Coccothraustes coccothraustes</i>	2013 - 2016	BOCC_Red NERC_s41 CI	Two records, closest 1.39 km NE
Cuckoo <i>Cuculus canorus</i>	2004 - 2018	BOCC_Red NERC_s41	Multiple records, closest 2.0 km NW

Species	Date	Conservation Status	Approximate Location Relative to Site
Yellowhammer <i>Emberiza citrinella</i>	2005 – 2017	BOCC_Red NERC_s41	Multiple records, closest 2.9 km S
Merlin <i>Falco columbarius</i>	2012	EU_Bird_1 BOCC_Red WCA_s1p1	One record 2.3 km SW
Peregrine <i>Falco peregrinus</i>	2004 - 2017	EU_Bird_1 WCA_s1p1 CR	Multiple records, location sensitive
Hobby <i>Falco subbuteo</i>	2004 – 2018	WCA_s1p1 CI	Multiple records, location sensitive
Pied Flycatcher <i>Ficedula hypoleuca</i>	2008	BOCC_Red CR	One record, 3.2 km SW
Brambling <i>Fringilla montifringilla</i>	2011 - 2018	WCA_s1p1	Multiple records, closest 1.3 km SE
Black-throated Diver <i>Gavia arctica</i>	2017 - 2018	EU_Bird_1 WCA_s1p1	Multiple records, closest 2.0 km SE
Great Northern Diver <i>Gavia immer</i>	2015	EU_Bird_1 WCA_s1p1	One record, 3.2 km S
Red-throated Diver <i>Gavia stellata</i>	2007	EU_Bird_1 WCA_s1p1	One record, 2.9 km S
Little Gull <i>Hydrocoloeus minutus</i>	2013 - 2015	EU_Bird_1 WCA_s1p1	Multiple records, closest 2.9 km S
Wryneck <i>Jynx torquilla</i>	2017 - 2018	WCA_s1p1	Two records, closest 2.0 km SW
Herring Gull <i>Larus argentatus</i>	2004 - 2018	BOCC_Red CR	Multiple records, closest 0.69 km E
Lesser Black-backed Gull <i>Larus fuscus</i>	2004 - 2018	BOCC_Red CR	Multiple records, closest 1.1 km SE
Mediterranean Gull <i>Larus melanocephalus</i>	2004 – 2018	EU_Bird_1 WCA_s1p1 CR	Multiple records, closest 0.56 km NE
Black-tailed Godwit <i>Limosa limosa</i>	2004 - 2018	BOCC_Red WCA_s1p1 CI	Multiple records, closest 2.9 km S
Linnet <i>Linaria cannabina</i>	2004 - 2018	BOCC_Red	Multiple records, closest 1.12 km N
Common Crossbill <i>Loxia curvirostra</i>	2018	WCA_s1p1 CS	One record 1.8 km SW
Common Scoter <i>Melanitta nigra</i>	2016	BOCC_Red NERC_s41 WCA_s1p1	One record 2.9 km S

Species	Date	Conservation Status	Approximate Location Relative to Site
Red Kite <i>Milvus milvus</i>	2004 – 2018	EU_Bird_1 WCA_s1p1 CR	Multiple records, closest 0.67 km E
Grey Wagtail <i>Motacilla cinerea</i>	2004 - 2018	BOCC_Red	Multiple records, closest 1.3 km NE
Yellow Wagtail <i>Motacilla flava</i>	2008 – 2017	BOCC_Red CR	Multiple records, closest 2.3 km W
Spotted Flycatcher <i>Muscicapa striata</i>	2006 – 2018	BOCC_Red NERC_s41	Multiple records, closest 0.69 km N
Curlew <i>Numenius arquata</i>	2004 - 2018	BOCC_Red NERC_s41	Multiple records, closest 1.6 km N
Whimbrel <i>Numenius phaeopus</i>	2004 – 2017	BOCC_Red WCA_s1p1	Multiple records, closest 2.3 km NW
Osprey <i>Pandion haliaetus</i>	2007 - 2018	EU_Bird_1 WCA_s1p1	Multiple records, closest 2.3 km W
Breaded Tit <i>Panurus biarmicus</i>	2013	WCA_s1p1 CR	One record, 2.9 km S
House Sparrow <i>Passer domesticus</i>	2004 – 2018	BOCC_Red NERC_s41	Multiple records, closest 1.09 km NW
Honey-buzzard <i>Pernis apivorus</i>	2010 – 2016	EU_Bird_1 WCA_s1p1 CR	Multiple records, location sensitive
Black Redstart <i>Phoenicurus ochruros</i>	2004 – 2015	BOCC_Red WCA_s1p1 CR	Multiple records, closest 2.0 km SE
Spoonbill <i>Platalea leucorodia</i>	2007 – 2015	EU_Bird_1 WCA_s1p1	Two records, closest 2.9 km S
Slavonian Grebe <i>Podiceps auritus</i>	2017 – 2018	EU_Bird_1 WCA_s1p1	Two records, closest 2.0 km SE
Red-necked Grebe <i>Podiceps grisegena</i>	2007 - 2016	BOCC_Red	Two records, closest 2.9 km S
Black-necked Grebe <i>Podiceps nigricollis</i>	2007 – 2018	WCA_s1p1	Two records, closest 2.0 km SE
Marsh Tit <i>Poecile palustris</i>	2005 – 2018	BOCC_Red	Multiple records, closest 0.1 km N
Avocet <i>Recurvirostra avosetta</i>	2015 - 2018	EU_Bird_1 WCA_s1p1 CR	Multiple records, closest 3.1 km SE
Firecrest <i>Regulus ignicapilla</i>	2004 - 2018	WCA_s1p1 CS	Multiple records, closest 0.56 km N
Whinchat <i>Saxicola rubetra</i>	2004 - 2018	BOCC_Red CR	Multiple records, closest 0.71 km N

Species	Date	Conservation Status	Approximate Location Relative to Site
Woodcock <i>Scolopax rusticola</i>	2004 - 2010	BOCC_Red	Two records closest 2.32 km SW
Serin <i>Serinus serinus</i>	2018	WCA_s1p1	One record 1.3 km W
Little Tern <i>Sternula albifrons</i>	2014 - 2017	EU_Bird_1 WCA_s1p1 CR	Multiple records, closest 3.1 km SW
Turtle Dove <i>Streptopelia turtur</i>	2013 – 2016	BOCC_Red NERC_s41	Multiple records, closest 1.3 km NE
Starling <i>Sturnus vulgaris</i>	2004 – 2018	BOCC_Red	Multiple records closest 1.68 km E
Dartford Warbler <i>Sylvia undata</i>	2006	EU_Bird_1 WCA_s1p1 CI	One record 0.69 km E
Greenshank <i>Tringa nebularia</i>	2004 - 2018	WCA_s1p1	Multiple records, closest 2.9 km S
Green Sandpiper <i>Tringa ochropus</i>	2008 – 2018	WCA_s1p1	Multiple records, closest 2.3 km W
Redwing <i>Turdus iliacus</i>	2004 – 2018	BOCC_Red WCA_s1p1	Multiple records, closest, 1.8 km SE
Song Thrush <i>Turdus philomelos</i>	2004 – 2018	BOCC_Red	Multiple records, closest 0.99 km N
Fieldfare <i>Turdus pilaris</i>	2010 – 2017	BOCC_Red WCA_s1p1	Multiple records, closest 2.3 km W
Ring Ouzel <i>Turdus torquatus</i>	2013 – 2016	BOCC_Red NERC_s41	Multiple records, closest 2.3 km W
Mistle Thrush <i>Turdus viscivorus</i>	2007 – 2018	BOCC_Red	Multiple records, closest 0.68 km E
Barn Owl <i>Tyto alba</i>	2005 - 2010	WCA_s1p1	Two records, closest 1.1 km NW
Lapwing <i>Vanellus vanellus</i>	2004 – 2018	BOCC_Red NERC_s41	Multiple records, closest 1.60 km NW

Key to Conservation Status: **NERC41** – Section 41 of the Natural Environment and Rural Communities Act 2006; **HabsDirA2** – Habitats Directive Annex II species, **HRegs** – The Conservation of Habitats and Species Regulations 2017; **UKBAP** – UK Biodiversity Action Plan Species; **LBAP** – Local Biodiversity Action Plan; **WCA1/ WCA5/WCA9**– species listed on Schedule 1, 5 or 9 of the Wildlife and Countryside Act 1981 respectively;

Field Results- Habitats and Flora

- 3.10 Habitat descriptions of the site are provided below. The locations of the habitats described below can be found on *Figure 2 – Phase 1 Habitat Plan*.

Species-poor Semi-improved Grassland

- 3.11 The site is dominated by a large expanse of species-poor semi-improved grassland which during the initial survey seemed to have been recently managed. Floral diversity was low. Species present include meadow buttercup *Ranunculus acris*, cinquefoil *Potentilla reptans*, ivy *Hedera helix*, woodavens *Geum urbanum*, common ragwort *Jacobaea vulgaris*, hogweed *Heracleum sphondylium*, yarrow *Achillea millefolium*, foxglove *Digitalis purpurea*, perennial rye *Lolium perenne*, daisy *Bellis perennis*, dandelion *Taraxacum* sp., scarlet pimpernel *Anagallis arvensis*, mayweed *Anthemis arvensis*, greater burdock *Arctium lappa*, broom *Cytisus scoparius*, Yorkshire fog *Holcus lanatus* and cock's-foot *Dactylis glomerata*. Marginal habitat developed along the site boundaries supported a grass sward of similar species composition and no greater interest to the central site area but of greater height (1-2 metres in width having not received the same level of management as applied to the centre of the site) , with some areas grading into scrub and areas of extant woodland.

Hedgerows

- 3.12 Three mixed species hedgerows were present along the eastern, southern, and western boundaries of the site. *Table 8* provides a summary of hedgerow survey results,
- 3.13 Hedgerow **H1** is approximately 2 metres in height and 1 metre wide, containing several semi-mature/mature trees and located along the eastern boundary of the site. Species present include bramble *Rubus fruticosus*, pedunculate oak *Quercus robur*, ivy, blackthorn *Prunus spinosa*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra*, broad-leaved dock *Rumex obtusifolius*, cherry laurel *Prunus laurocerasus*, ash *Fraxinus excelsior*, crack willow *Salix fragilis* and plum *Prunus* sp.
- 3.14 Hedgerow **H2** is located along the southern boundary and of similar size and depth when compared with **H1** but was more gappy in nature. Species present included bramble, ivy, hawthorn, crack willow, ash, wild cherry *Prunus avium* and pedunculate oak.
- 3.15 Hedgerow **H3** is located along the western boundary of the site and is approximately 2 metres wide and tall and particularly dense. Species present include bramble, rosebay willowherb *Chamaenerion angustifolium*, dog-rose *Rosa canina*, nettle *Urtica dioica*, spear thistle *Cirsium vulgare* and butterfly-bush *Buddleja davidii*.

Table 8. Summary of hedgerow survey results

Ref	Canopy Sp.	Length (m)	Notes	HEGS Value and Score	Important Under REGS
H1	<i>Rf, Qr, ivy, Ps, Cm, Sn, cherry laurel, Fe, crack willow, plum sp.</i>	76	Boundary hedgerow on the east of the site; 10 mature standards, no young standards, no gaps, 3 connections, mixed native species dominance, no associated features.	2+ – Moderately high to high value	Not important
H2	<i>Rf, ivy, Cm, crack willow, Fe, Pa, Qr</i>	62	Boundary hedgerow on the south of the site; 5 mature standards, no young standards, 10-30% gaps, 3 connections, mixed native species dominance, no associated features.	-2 – Moderately high to high value	Not important
H3	<i>Buddleia, Rf, rosa sp.</i>	59	Boundary hedgerow on the west of the site; no mature standards; no young standards; no gaps' 3 connections, 1-2 native species dominance, no associated features.	-2 – Moderately high to high value	Not important

Key to hedgerow species: *Ps* *Prunus spinosa* - blackthorn, *Cm* *Crataegus monogyna* – hawthorn, *Qr* *Quercus Robur* – pedunculate oak, *Rf* *Rubus fruticosus* – bramble, *Fe* *Fraxinus excelsior* – ash, *Rosa sp* – rose species, *Sn* *Sambucus nigra* – elder, *Pa* *Prunus avium* – wild cherry.

Woodland

- 3.16 The Phase 1 Habitat Survey identified a semi-mature broadleaved woodland strip along the western, eastern, and southern peripheries of the site. According to desktop study data, collected from MAGIC and the Hampshire Biodiversity Information Centre (HBIC), this habitat has been classified as a priority lowland mixed deciduous woodland habitat. However, the habitat area identified by these two sources differs in size and location. Due to the differences in spatial data coverage and update frequency between these two data sources, the HBIC habitat area was used as the representative data source for the assessing the extent of priority woodland present onsite. This priority habitat is shown within the FPCR consultation/Phase 1 plans. It should further be noted that survey evidence collected onsite revealed the woodland habitat to be patchy, within a managed semi-improved grassland mosaic.
- 3.17 It should be noted that an area Tree Preservation Order (TPO) applies to the site. The TPO applies to four trees across the wider H25 draft allocation site which includes two Oak trees on the application site. HBC Ref: (2105) 2020. The previous Area TPO lapsed and was replaced by the new TPO covering just the four trees (for further details refer to the submitted Tree Survey Report (CBA Trees). Trees have been considered in respect of ecological value only for details regarding the arboricultural significance of the TPO's refer to the above tree survey report.

- 3.18 The habitat survey identified a sparse canopy of native tree species including pedunculate oak, ash, elm *Ulmus minor* 'atina', apple *Malus* and wild cherry, as well as non-native introduced species including turkey oak *Quercus cerris*, lawson cypress *Chamaecyparis lawsoniana*, *Eucalyptus* and Leyland cypress *Cupressus x leylandii*. The understorey was comprised of sparse areas of dense native shrub and scrub including hawthorn, butcher's broom *Ruscus aculeatus*, holly *Ilex aquifolium*, as well as a number of introduced species including cherry laurel, Portuguese laurel *Prunus lusitanica*, butterfly-bush and bamboo *Bambusa vulgaris*. During the time of survey, the ground flora layer consisted of limited woodland indicator species including herb-Robert *Geranium robertianum*, ground ivy, cuckoo pint *Arum* and male fern *Dryopteris filix-mas*, as well as areas of abundant tall ruderal species including common nettle, broadleaved dock and hedge mustard *Sisymbrium officinale*.
- 3.19 The canopy of this woodland strip also supported non-native tree species, including, turkey oak, Lawson cypress, eucalyptus, and Leyland cypress. Many of these will have been planted in the woodland. Further presence of non-native understorey bamboo, cherry laurel, Portuguese laurel and butterfly bush are also likely to be planted specimens, (originating from a house and former grounds north of the site). All these species detract from the native distinctiveness of the woodland and further indicate lack of appropriate management. Notably some of these species including cherry laurel and butterfly bush also present a potential threat as unchecked they can spread vigorously, resulting in further loss/modification of the woodland ground flora and will require management.
- 3.20 The remaining grassland areas surrounding the woodland compartments, supported a short-mown managed sward at the time of survey, with a limited botanical diversity. Further presence of rubbish including scrap metal within the woodland habitat beyond the site boundary to the west, indicated a lack of sympathetic management of the woodland onsite.
- 3.21 The landscape proposals will result in the removal of a cluster of trees within the centre of the site, as well as selected trees around the perimeter of the site (Group 9 – CBA Tree Survey Plan, 2019). All these trees were given the Arboricultural classification category of either C – Trees of Low Quality or U – Unsuitable for Retention. Furthermore, some of these trees included neophyte and cultivated species which do not naturally occur within native broadleaved woodland types in the UK. It is therefore considered that the removal of these trees will not impact the long-term priority woodland status within these areas.
- 3.22 Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 identifies individual living organisms and types of habitats as '*principal importance for the purpose of conserving biodiversity*'. The list of these species and habitats under this act provide a baseline for protecting the most distinct, but also vulnerable species and habitats within the UK. The phase 1 assessment completed by FPCR in June 2020 confirmed that woodland on the site at Havant, satisfies the criteria of Lowland Mixed Deciduous Woodland under the NERC Act 2006. Despite this, the Phase 1 assessment also provides clear evidence of deterioration of this woodland from the priority habitat description.
- 3.23 It is further considered that the minimal loss of woodland onsite can be mitigated and retained areas enhanced (see Section 4 Discussion and Recommendations).

Fauna

Badger

- 3.24 During the Habitat survey no badger setts, latrines, runs or squeezes were identified within the site boundary.

Reptiles

- 3.25 Seven reptile surveys were carried out between July and October 2020; these were conducted within the recommended survey period and during conditions optimal for reptile sightings. *Table 9* below summarises the total number of reptiles recorded during the above period.

Table 9. Summary of Reptile Survey Results

Survey Date	Slow-worms Recorded
24/07/20	0
28/07/20	1 x adult (unknown sex)
07/09/20	9 x adults (unknown sex)
14/09/20	2 x adults (unknown sex)
18/09/20	4 x adults (unknown sex) – 1 found dead at the time of survey
22/09/20	1 x female adult
28/09/20	0

- 3.26 Suitable on-site habitat for reptiles comprised scrub and grassland (with associated field margins) providing foraging, commuting and basking opportunities.
- 3.27 Reptile surveys once finalised indicated a good population of slow-worm (peak count five adults) was recorded within the site boundary during surveys (originally reported as low based on earlier evidence but additional evidence confirmed the population to be higher all being adults with no juveniles observed) . Within the wider survey area (see *Figure 4*) a higher number of individuals were found (peak count of nine adults) yet still qualified as a good

population. It is considered that this species is not reliant on the habitats on site in terms of the wider landscape and also not important in terms of breeding.

Bats

- 3.28 There were no buildings to assess within the site boundary but during the initial habitat survey, two trees were identified as having features with potential to support roosting bats, along the eastern and southern boundaries.
- 3.29 As such, independent emergence and re-entry surveys were undertaken by a suitably qualified ecologist on the 22nd July 2020 and scoped out as not being utilised by roosting bats (completed by Hampshire Ecological Services Ltd on T37 & T3 and a dead tree outside of the red line. All work followed standard survey protocol in Bat Surveys – Good Practice Guidelines, 3rd edition (2016) and was supervised/ reviewed by John Poland CEnv MCIEEM CBiol MSB, who is a full member of CIEEM, a Chartered Environmentalist (CEnv), a Chartered Biologist (CBiol) and multi-species licence holder with 20 years of experience in ecological consultancy).

Manual Activity Surveys

- 3.30 The habitats within the site and within the immediate surroundings, including semi-mature trees, hedgerows and scrub provide foraging and commuting routes for bats. In order to establish the significance of these habitats for bats in this area, further nocturnal survey work was completed in accordance with BCT guidance (2012 & 2016).
- 3.31 A total of seven bat species / species groups have been recorded on site. Common pipistrelle were the most frequently recorded bat species during the transect surveys, accounting for c. 67.21% of the total contacts, followed by soprano pipistrelle with c. 19.67%, and then unidentified *Plecotus* species with c. 4.92% of all activity recorded. Unidentified *Myotis* species and serotine both accounted for c. 3.28% and *Nyctalus* species accounted for 1.64% of activity recorded.
- 3.32 Over the course of surveys undertaken, a peak amount of activity was recorded during the 1st September survey with 19 contacts recorded. Across each of the transects, areas of activity were found to be similar with concentrations occurring within the south-western and south-eastern corners of the site, and along the eastern boundary. Detailed descriptions of bat activity encountered during manual activity surveys is reported in *Table 10* below.
- 3.33 No Annex II listed species were recorded during the transect surveys.

Table 10. Bat Transect SURVEYS Summary of Results 2020

Month	Total Contacts	Species Recorded (No. contacts)	Activity Summary
2 nd July 2020 <i>Figure 5</i>	11	Common pipistrelle (19) Soprano pipistrelle (2)	Activity was sporadically recorded across the site with small increases in activity recorded along the western boundary and centrally along the eastern boundary. The majority of activity was identified as common pipistrelles undertaking single commuting passes. Foraging activity was recorded at two locations, once in the south-eastern corner identified as a common pipistrelle, and once along the western boundary by a soprano pipistrelle continuously foraging.
28 th July 2020 <i>Figure 6</i>	5	Common pipistrelle (3) Soprano pipistrelle (1) <i>Plecotus</i> sp. (1)	The majority of activity was recorded on the southern boundary of the site. The majority of activity was identified as common pipistrelle. Continuous foraging was recorded within the south-eastern corner of the site and along the western boundary of the wider survey area. An unidentified <i>Plecotus</i> species was recorded within the south-eastern corner of the site making a single commuting pass.
1 st September 2020 (DUSK) <i>Figure 7</i>	19	Common pipistrelle (9) Soprano pipistrelle (5) <i>Myotis</i> sp. (2) Serotine (2) <i>Plecotus</i> sp. (1)	Activity was widespread with slight concentrations of activity recorded within the south-western corner and along the eastern boundary of the wider survey area. Continuous foraging was recorded at two locations, once in the south-eastern corner and once along the western boundary, both of these contacts were identified as common pipistrelle. Commuting passes identified as serotine, <i>Myotis</i> species, and <i>Plecotus</i> species were also recorded in the south-western corner, along the eastern boundary of the wider survey area and near the western boundary of the site.
2 nd September 2020 (DAWN)	0	0	No Bats Recorded.
17 th September 2020	11	Common pipistrelle (9) Soprano pipistrelle (1)	Common pipistrelle were the most frequently encountered species with activity largely concentrated along the eastern boundary of the site. Foraging activity, identified as

Figure 8		<i>Plecotus</i> sp. (1)	common pipistrelle, was recorded sporadically around the site. Commuting passes by soprano pipistrelle and <i>Plecotus</i> species were also recorded.
8 th October 2020 Figure 9	10	Common pipistrelle (7) Soprano pipistrelle (2) <i>Nyctalus</i> sp (1)	Activity, largely identified as common pipistrelle, was sporadically recorded across the site with five contacts recorded within the site and five contacts recorded within the larger survey area. Continuous foraging identified as a common pipistrelle was recorded within the north-western corner of the site. All other contacts comprised commuting passes, including a single <i>Nyctalus</i> species pass along the northern boundary of the wider survey area.

Automated Activity Surveys

- 3.34 The following paragraphs detail the findings of the automated activity surveys. In this context, the term 'registration' refers to a unique sound file created over the course of a number of seconds. Based on this, numerous 'registrations' does not necessarily refer to multiple bats (unlike the manual activity survey section above where the number of bats can often be visually identified), as one bat can create a number of registrations, for example a bat which is foraging in the area surrounding the microphone for a sustained period of time.

Overall Summary

- 3.35 During the automated surveys, where five successful units were installed between June and October 2020, a total of 1,491 registrations were recorded, with common pipistrelle (approximately 64.72% of total data), soprano pipistrelle (15.90%), *Myotis* sp (14.42%), serotine (1.48%), *Nyctalus* sp (0.81%), *Plecotus* sp (0.81%), barbastelle (0.74%), *Pipistrellus* sp (0.40%) and nathusius pipistrelle (0.34%),
- 3.36 *Table 11* summarises the activity levels recorded and the locations of the units; from these surveys, there appears to be two particular areas (northern boundary and hedgerow H3) that had higher numbers of registrations in comparison to other locations. The August static on the northern boundary recorded 681 registrations and the July and September statics on hedgerow H3 recorded 253 and 399 registrations, respectively.
- 3.37 The most notable species recorded during surveys was barbastelle (Annex II species). Barbastelle bats were recorded during the September surveys with a total of 11 registrations. The barbastelle activity only made up 0.74% of the dataset.
- 3.38 Please see *Figure 3* for static detector unit locations and *Table 11* for summary of results.

Table 11. Static Detector Surveys Summary of Results 2020

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity	Barbastelle Activity
26/06/2020 – 02/07/2020	Unit 1:	67	5 species: Common pipistrelle (57), soprano pipistrelle (5), serotine (2), <i>Myotis</i> sp (2) and <i>Nyctalus</i> sp (1)	Activity was consistent throughout the June survey period totalling 67 registrations with a peak in activity recorded on 30 th -1 st with 20 calls, the majority of calls being Common pipistrelle with 14 calls respectively. A drop in activity was recorded with 4 Common pipistrelle calls registered in total on 27 th – 28 th . A moderate species diversity was recorded with a total of 5 species, the majority was made up of Common pipistrelle followed by some Soprano pipistrelle activity which peaked on the 30 th -1 st . One <i>Nyctalus</i> sp call was recorded on the 30 th -1 st . 2 Serotine and <i>Myotis</i> sp. calls were recorded throughout the survey period.	None recorded.
23/07/2020 – 28/07/2020	Unit 2	253	5 species: Common pipistrelle (181), <i>Myotis</i> sp (47), serotine (13), soprano pipistrelle (6) and <i>Nyctalus</i> sp (6)	Activity was evenly spread throughout the survey period excluding a peak in activity on 24 th -25 th which made up 44.3% of the total 253 registrations. The majority of these calls were Common pipistrelle totalling 181 calls over the survey period. Notably, a large number of <i>Myotis</i> sp. were recorded totalling 47 calls (18.6%). A peak in <i>Myotis</i> sp. activity was recorded on 27 th -28 th with 22 registrations. Species diversity was considered moderate with 6 species recorded. 13 Serotine calls were recorded, activity was evenly spread between three nights, 23 rd – 26 th . 6 Soprano pipistrelles were recorded and 6 <i>Nyctalus</i> sp. on the 24 th – 25 th .	None recorded.

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity	Barbastelle Activity
20/08/2020 – 24/08/2020	Unit 3	681	6 species: Common pipistrelle (484), <i>Myotis</i> sp (142), soprano pipistrelle (41), serotine (6), <i>Pipistrellus</i> sp (4), <i>Nyctalus</i> sp (3) and <i>Plecotus</i> sp (1)	This survey period totalled 681 registrations which were predominantly Common pipistrelle (484 calls, 71.7%). Activity was fairly consistent on the nights of the 19 th -20 th (156 calls), 21 st -22 nd (190 calls) and 22 nd -23 rd (210 calls). There was a drop in activity on the 20 th -21 st (66 calls) and 23 rd -24 th (59 calls). Species diversity was comparatively high with a total of 8 species/ species groups recorded. <i>Myotis</i> sp. activity was high with a total of 142 registrations. These were evenly spread throughout the survey period peaking on 21 st -22 nd . 41 Soprano pipistrelles were recorded with a peak in activity on 19 th -20 th and 4 <i>Pipistrellus</i> sp. peaking on 21 st -22 nd and 3 <i>Nyctalus</i> sp. were recorded on the 21 st -22 nd and 22 nd -23 rd . In total 6 Serotines were recorded, half of the activity was recorded on 20 th -21 st . Notably, one <i>Plecotus</i> sp. was recorded on 22 nd -23 rd only.	None recorded.
17/09/2020 – 22/09/2020	Unit 4	399	8 species: Common pipistrelle (173), soprano pipistrelle (173), <i>Myotis</i> sp (18), barbastelle (11), <i>Plecotus</i> sp (10), <i>Nyctalus</i> sp (7), nathusius' pipistrelle (5) and <i>Pipistrellus</i> sp (2)	This static recorded a total of 399 bat calls. Activity peaked on 21 st -22 nd with a total of 103 registrations which were predominantly Soprano pipistrelles (65 calls). There was a drop in activity on the 19 th -20 th with 50 registrations. A total of 9 species/ species groups were recorded. The highest number of registrations were equally Common pipistrelle and Soprano pipistrelle with 173 calls respectively. 7 <i>Nyctalus</i> sp were recorded over the survey period, with activity consistent throughout. 10 <i>Plecotus</i> sp. were recorded peaking on 20 th -21 st . 18 <i>Myotis</i> sp. were recorded with activity fairly evenly spread throughout. Notably, 5 Nathusius' pipistrelles were recorded, with activity peaking on the 20 th -21 st and 11 Barbastelles were recorded with peaks in activity on the 19 th -20 th and 20 th -21 st . These latter two species are the only recordings during the survey period.	11 Barbastelles were recorded in total between 19 th -22 nd . Activity on the 19 th -20 th peaked between the hours of 00:00-01:00. On the 20 th -21 st activity was evenly spread between the hours of 20:00-23:00. One registration occurred on the 22 nd at 01:00.

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity	Barbastelle Activity
08/10/2020 – 13/10/2020	Unit 5	91	6 species: Common pipistrelle (70), soprano pipistrelle (12), <i>Myotis</i> sp (6), <i>Nyctalus</i> sp (1), serotine (1), and <i>Plecotus</i> sp (1)	Significantly less activity was recorded on this static with a total of 91 registrations. Activity peaked on the 8 th -9 th with a total of 46 calls, of which 82.6% were Common pipistrelle. 6 species were recorded, with 1 <i>Nyctalus</i> sp, Serotine and <i>Plecotus</i> sp. recorded solely on the 11 th -12 th . 6 <i>Myotis</i> sp. calls were recorded, 5 of which were on 8 th -9 th . 12 Soprano pipistrelle were recorded with activity peaking on the 11 th -12 th . Notably, 0 bat calls were recorded on the 12 th -13 th .	None recorded.

Great Crested Newt

- 3.39 No waterbodies were identified within the site boundary.
- 3.40 Two waterbodies were identified within a 50m radius of the site boundary. Of which, the 'wet issue' was found to be dry at the time of initial survey. Despite being denied access by the landowner, the second waterbody located further east, was an ornamental garden pond was present in a residential setting with considerable dispersal barriers present between it and the site. Locations of both these off-site waterbodies can be found on *Figure 10*.
- 3.41 Terrestrial habitat for GCN was present, although limited, in the form of the hedgerow bases, field margins and scrub. These habitats are considered to provide sub-optimal foraging and commuting habitat for GCN.
- 3.42 As such, great crested newts have been discounted as a potential constraint and was not considered any further in the assessment and this report.

4.0 DISCUSSION AND RECOMMENDATIONS

- 4.1 The following section provides an evaluation of the site and identifies the likely ecological constraints associated with the proposed development. Where appropriate, measures for the avoidance, mitigation, and compensation of any likely potential impacts together with any enhancements are discussed.

Site Proposals and effects of development

- 4.2 The aims of ecological work used to inform the planning process are to minimize harm and to maximize benefits for biodiversity resulting from development. The generally accepted way of doing this, is to follow the "mitigation hierarchy". This seeks as a preference to avoid impacts then to mitigate unavoidable impacts, and, as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures.
- 4.3 This site forms part of a wider proposed allocation for residential development as part of the emerging Local Plan 2036.
- 4.4 The proposals are for the construction of a care home with associated infrastructure including parking and road access. The development is to be built within a small land parcel currently supporting managed grassland of low value with linear and degraded woodland around the eastern & southern site boundaries, part of the former grounds of a larger property in the north of the site. Smaller discrete areas of scrub are also present in the northwest of the land parcel. Native species hedges denote the eastern, southern, and western site boundaries.
- 4.5 Development will primarily result in the loss of grassland, that make up the significant site area, small areas of scrub, and loss of parts of the degraded linear woodland lying along the eastern and southern site boundaries. Sections of existing hedgerow and some scattered trees would also be affected, though the three native species boundary hedges will be retained.

- 4.6 In consideration of the hierarchy, and with regard to the sites existing allocation, mitigation would be required for impacts resulting in loss of habitats of site value for local wildlife.
- 4.7 Further details of the significance of this and the likely impacts to ecology and nature conservation is also set out in context below.

Statutory and Non-Statutory Designated Sites

- 4.8 No SSSIs lie within 2km of the site.
- 4.9 MAGIC website indicates there are several Internationally Designated Sites within 15km of the site. The closest of which is Chichester and Langstone Harbours Ramsar/SPA is located 2.9km south of the site. It is designated due to being a wetland of international importance and regularly supporting over 20,000 waterfowl, of which, there is a 5.6km zone of influence set. However, given the nature and scale of the proposals, it is considered that the proposed development has no potential to have a significant effect on the European site through factors such as increased recreational pressure.

Draft Local Plan 2036 & Solent Mitigation Recreation Strategy

Solent Recreation Mitigation Strategy

- 4.10 Havant Borough Council in a letter to Brackley Investments Ltd of the 22nd June 2020 confirms that the LPA have had due regard to the Solent Recreation Mitigation Strategy – December 2017, which can be found at the following link: https://solent.birdaware.org/media/29372/Bird-Aware-Solent-Strategy/pdf/Solent_Recreation_Mitigation_Strategy.pdf
- 4.11 This document sets out the rationale for the strategy and associated contributions policy. Research on the effects of meeting housing locally confirms that residential development could lead to more people visiting the coast for recreation, potentially causing additional disturbance to these birds. Paragraph 6.9 of this document outlines that:

“The need for mitigation for the recreational impact of other types of residential accommodation will be assessed on a case-by-case basis by the local planning authority. The key ‘test’ is based around the likelihood of the proposed development generating additional recreational visits to the SPA(s). For example, in respect of residential accommodation designed specifically for elderly people, a developer contribution (or bespoke mitigation) will be required for apartments for the active elderly, but not for secure accommodation such as a residential nursing home for people who are unable to independently leave that accommodation and which does not provide residents parking or allow pets (this would also apply to people living with conditions that limit their mobility). However, mitigation may be required for any staff living on-site. Retirement properties designed for independent living with parking provision and which allow pets will be treated the same as C3 residential properties”.
- 4.12 In the above letter the Principal Planning Officer noted in the pre-application submission that proposal was for a two storey 64 bed CQC-regulated Care Centre (C2 use) which will provide 24 hour nursing, personal and dementia care for a range of acuities. The facility would also follow the best practice ‘household’ model whereby guests reside in 8 bedroom wings of accommodation and would be both self-contained and secure – on-site facilities would include hair salon, café, gym and cinema, together with various lounge and dining areas, balconies

and terraces all set around landscaped grounds. The Officer also noted that the facility is focussed on end-of-life care – the average age of entrants being 85, and the average length of stay around 18 months. Residents have reduced mental and/or physical abilities and would only leave the premises when accompanied by staff or their guests.

- 4.13 As such the Planning Officer confirmed that a contribution would only be appropriate for any staff living on-site. The LPA would need to understand these arrangements in any planning application, to advise the relevant contribution, and undertake an Appropriate Assessment. To confirm there are to be no live-in staff.
- 4.14 The LPA in consultation with the applicant has confirmed that a contribution toward SRMS is not therefore likely to be required.

Nitrate Neutrality and Mitigation Plan for Nutrient Neutral Development

- 4.15 It is noted that Havant Borough benefits from its position on the Solent coast which is internationally designated for its wildfowl and wading species. This creates a high-quality natural environment highly worthy of protection for both its intrinsic value as well as its value in making Havant Borough an attractive place to live, work and study (*extract from Position Statement and Mitigation Plan for Nutrient Neutral Development August 2020, Havant Borough Council*). The Council has an ambitious regeneration agenda and development strategy set out in the Havant Borough Local Plan and Regeneration Strategy. Nonetheless, the Council is also committed to development only taking place if it is sustainable development that includes relevant environmental protections. Part of the consideration of this is whether there would be a detrimental impact on the water quality on any European Designated Nature Conservation Sites.
- 4.16 The Local Plan contains a specific policy to address the issue of nutrient neutrality. Emerging Policy EX1 Water Quality impact on the Solent European Sites provides explicit expectations for all new development:
- 4.17 New dwellings and/or net gain in overnight accommodation which would cause a likely significant effect on the designated sites will need to provide a nutrient budget. Planning permission will therefore only then be granted if a mitigation package is provided which will remove the likely significant effect. This mitigation can be provided through either:
- A financial contribution towards the Council's strategic mitigation package; or
 - A developer provided package of measures associated with the proposed development supported by evidence that it will avoid or mitigate any likely significant effect on the Solent European Sites; or
 - A combination of measures in (a) and (b) above.
- 4.18 It is considered that Policy EX1 and E12 provides a robust policy framework for ensuring that all new development with potential to result in increased nutrient inputs to the Solent International sites will only be permitted after adequate mitigation has been demonstrated.
- 4.19 A financial contribution will be made, as necessary,

Policy E15 Ecological conservation

- 4.20 This policy acknowledges that the Borough has a rich and diverse natural environment as documented by its range of protective national and international designations, as well as its range of natural features. These consist of an extensive coastline which includes Langstone and Chichester Harbours as well as trees, woodlands, hedgerows, rivers, streams, stream corridors, springs, ditches, and ponds. The Borough's ancient woodlands and mature trees are the remnants of the ancient Forest of Bere which once stretched across southern Hampshire from Eastleigh to the Havant and Emsworth area.
- 4.21 Paragraph 5.173 acknowledges that an extensive, high quality natural environment is one of the three pillars of sustainable development and can improve quality of life, support biodiversity and stimulate the economy. Nature conservation is not simply considered as just desirable but is regarded as essential to the Borough's future. It can provide a wealth of benefits which include:
- *"The protection and enhancement of habitat and movement corridors for a variety of animal and plant species*
 - *The protection and enhancement of the Borough's landscape and cultural heritage which helps to create a sense of place and identity*
 - *Vital amenity and recreational space for residents*
 - *Opportunities for people to take part in sport and engage in physical activity thus improving health and wellbeing"*
- 4.22 Policy EN15 requires that development on any site in the Borough should conserve and enhance the natural environment wherever possible. Planning permission on any site in the Borough will be permitted where:
- a. *"The applicant has identified and assessed the level of ecological value of the site through appropriate assessment(s) and any matters arising have been addressed through the development proposal at the earliest stage possible;*
 - b. *The development results in a net gain in biodiversity wherever possible;*
 - c. *Development avoids the fragmentation and isolation of habitats and wildlife corridors within or close to the development site;*
 - d. *The development is informed and influenced by the presence of woodlands, trees and hedgerows on site, particularly those protected by a Tree Preservation Order (TPO) or within a conservation area. If the removal of any tree is unavoidable because it would be in best arboricultural practice a replacement tree of at least equal value to that lost should be planted on site unless it is shown to be impractical to do so; and*
 - e. *Any necessary mitigation plan includes provision for ongoing management and maintenance*
- 4.23 In addition to the above, it is stated that *"priority habitats in the Borough have been identified and afforded protection by a network of designated sites. Development proposals which could affect a designated site will need to consider the impact and respond appropriately"*.
- 4.24 It is also stated that the Council's priority will be to focus resources on protecting, enhancing and linking together the existing natural environment. As such, there will be a presumption

against any development involving the net loss of biodiversity or the loss of any natural features, unless there are wider public benefits that outweigh the harm of this loss.

- 4.25 The Council will also look to applicants to approach an impact on biodiversity in the following order:
- Avoid
 - Mitigate
 - Compensate.
- 4.26 As set out in Para 5.175 and as part of the above, the Council will look favourably towards proposals which enhance the biodiversity of a site and its surrounding area. As such, the Council also encourages pre-application discussions to determine potential methods for enhancements.
- 4.27 The Council will also require ecological assessments (including the relevant sections of Environmental Statements and information to support HRAs) to be submitted with an application and be of an appropriate level of detail (Para 5.176 of Local Plan refers).
- 4.28 The scope and detail of any assessment must be appropriate to the nature conservation value of the site and any features outside the site but within the development's zone of impact. To do this, the LPA expects applicants will need to request data searches from the Hampshire Biodiversity Information Centre (HBIC) to inform their assessments. Submitted ecological assessments must also highlight the impact of the development upon the natural environment and demonstrate what mitigation measures will be put in place to the satisfaction of the Council's Ecologist and Natural England.
- 4.29 Regarding Policy E15 it is apparent that the development should seek to the retention as far as is feasible of areas of higher wildlife value and seek to create a high quality natural environment as part of proposed measures.

Policy E18 Protected Species

- 4.30 This policy states that all development proposals should aim to achieve a net increase in biodiversity through the development and certainly to avoid a loss in biodiversity generally. However, there are many species and habitats which are afforded specific legal protection. As a result, any development proposals must not cause overall harm to these species. This should ideally be through mitigating harm using the mitigation hierarchy; avoid - mitigate - compensate, to ensure that no overall harm takes place.
- 4.31 Emphasis has been placed on Bechstein's bat as this species is found in internationally important numbers in the ancient Forest of Bere landscape. This has the potential to particularly affect development sites towards the Borough's northern boundary. Bechstein's bat is a rare non-migratory bat species associated with woodland habitats and is afforded a high degree of legal protection in the UK and Europe. The species is found in internationally important numbers in Hampshire and is likely to occur within suitable woodlands (including fragmented woodland areas) and associated habitats throughout South Hampshire. Open habitats such as grassland are also used. This species is associated with the landscape where the ancient Forest of Bere once stood. The species is listed as near threatened on the IUCN Red List 2008 and is afforded legal protection under the Bonn Convention Appendix II and

Bern Convention Appendix II. The species is afforded protection in the UK under the Conservation of Habitats and Species Regulations 2010, Wildlife & Countryside Act 1981, Countryside & Rights of Way Act 2000, Natural Environment & Rural Communities Act 2006 and is listed as a Priority Species in the UK Biodiversity Action Plan (BAP). The UK is also a signatory to the EUROBATS agreement 1994. And therefore, this bat species is considered as a constraint to built development within the former Forest of Bere landscape. Proposed development sites must take full account of the potential issues associated with this species.

- 4.32 Policy E18 therefore requires developments to achieve net gains, avoid loss of biodiversity whilst minimising harm to protected species. The following sections confirms that the proposals would have minimal effects given the relatively low value of existing habitats and a general lack of any fauna or species assemblages of note.

Effects on Habitats/Flora

- 4.33 The degree to which habitats receive consideration within the planning system relies on several mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland, and linear habitats in NPPF, or non-statutory site designation),
 - Identification as a habitat of principal importance for biodiversity under Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within England and the local area.
- 4.34 The grassland habitat, which comprises most of the site, was found to be of low intrinsic and conservation importance, with no rare or notable species recorded.
- 4.35 Three hedgerows were recorded within the site associated with the field/woodland boundaries. Although two (**H1 & H2**) were identified as species-rich, none (including **H3**) were assessed as important hedgerows under the Regulations 1997. All hedgerows present do have a moderately high to high value when considered against the criteria of the Hedgerow Evaluation and Grading System (HEGS) and all are classed as Habitats of Principal Importance under the NERC Act (2006) due to the dominance of native species, and therefore require consideration under the NPPF.
- 4.36 The hedgerows present within the site boundary provide connectivity between habitats on site. Due to the isolated nature of the site, the hedgerows provide a limited amount of connectivity in terms of the wider landscape. All three hedgerows will be retained and buffered within the proposals (see Mitigation proposals below).
- 4.37 All the mature trees present within the site provide potential habitats for invertebrates, nesting birds and other wildlife. As far as it has been feasible trees have been retained (see submitted Landscape Plan). These are ones lying predominantly near to the western, eastern and southern site boundaries and trees for which there are also extant Tree Preservation Orders.

Effects on Fauna

- 4.38 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2010. Some species, for example badgers, also have their own protective legislation (Protection of Badgers Act 1992 as amended). The impact that this legislation has on the planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory obligations and their impact within the Planning System.
- 4.39 This guidance states that as the presence of protected species is a material consideration in any planning decision, it is essential that the presence or otherwise of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.
- 4.40 In addition to protected species, there are those that are otherwise of conservation merit, such as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006. These are recognised in the NPPF

which advises that when determining planning applications, LPA's should aim to conserve and enhance biodiversity by applying a set of principles including:

- If significant harm resulting from a development cannot be avoided....., adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- Development proposals where the primary objective is to conserve or enhance biodiversity should be encouraged.

4.41 The implications that various identified faunal species or those that are thought reasonably likely to occur may have on developmental design and programming considerations are outlined below:

Badger

4.42 Badgers are protected under the Protection of Badgers Act 1992. This act is based on the need to protect badgers from baiting and deliberate harm or injury and makes it an offence to:

- Wilfully kill, injure, take, possess, or cruelly ill-treat a badger, or attempted to do so; and
- Intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access routes.
- A sett is defined as: "Any structure or place that displays signs indicating current use by a badger"

4.43 During the field studies to date, no sightings or other evidence of Badger was found.

4.44 Due to no badger sett being found on the application site or within the immediate surrounding area; and no observation of any other signs of use or occupation, badger pose no constraints to the development. However, as a precautionary measure any excavations such as ditches or foundations should be covered overnight, or a means of escape provide which should include sloping banks, as this will prevent badgers and other mammals falling in and becoming injured and trapping. Also, any piping such as that used for drainage, should also be covered, and inspected before use, to ensure that mammals have not become trapped.

Reptiles

4.45 All common reptile species, including slow worm, common lizard and grass snake are partially protected under Section 9(1) and 9(5) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation protects these animals from:

- Intentional killing and injury; and
- Selling, offering for sale, possessing, or transporting for the purpose of sale or publishing advertisements to buy or sell a protected species.

4.46 This partial protection does not directly protect the habitat of these reptile species. Where these animals are present on land that is to be affected by development, the implications of legislation are that providing that killing can reasonably be avoided then an operation is legal. This requires that:

- the animals must be protected from injury or killing.

- mitigation should be provided to maintain the conservation status of the species; and
 - following operations, the population should be monitored.
- 4.47 All common reptile species, including slow worm, are species of principal importance under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC) and priority species in England.
- 4.48 The site is predominantly managed (cut/mown) grassland which although provides some suitable habitat it is sub-optimal. More suitable areas were generally confined to the margins of the site and which provided foraging, commuting and basking opportunities, though limited in extent. The proposed development will result in the loss of marginal habitat along all boundaries of the site, especially along the eastern boundary. In addition, areas of grassland habitat will be lost throughout the central area of the site.
- 4.49 Reptile surveys undertaken during 2020 have confirmed the site and surrounds support a good population of slow-worms. As previously mentioned, a peak count of nine was recorded, but several of these results were located in the wider 'survey area'. Only a peak count of five was recorded within the site itself. Whilst this is still deemed as a good population (peak count of 5-10) the surveys indicated that within the site, recordings were concentrated along the eastern boundary.
- 4.50 Retained habitats on site and new areas of planting will be enhanced to provide suitable connected habitat mosaics for reptiles (see Section below *Reptile Mitigation Proposals*)

Bats

- 4.51 All bat species and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. In summary, these make it an offence to damage, destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure, or take a bat.

Manual Activity Surveys

- 4.52 The activity transects recorded seven bat species (order of abundance) common pipistrelle, soprano pipistrelle, unidentified *Plecotus* species, unidentified *Myotis* species, serotine and *Nyctalus* species. The contacts ranged from zero (September Dawn Survey 2020) to 19 (September Dusk Survey 2020), which over the current surveys averages 9.3 contacts per transect (excluding point counts). The level of bat activity during the transect surveys was not considered to be significant.
- 4.53 Across each of the transects, areas of activity were found to be similar with concentrations occurring within the south-western and south-eastern corners of the site, and along the eastern boundary.
- 4.54 No Annex II listed species were recorded during the transect surveys.
- 4.55 Based upon the transect findings it is considered that the linear features across the site support commuting and foraging bats; with those areas in the south-western and south-eastern corners, and the eastern boundary of highest value. However, it is not considered that local bat populations are reliant on the habitats within the site boundary in terms of the wider landscape.

Automated Activity Survey

- 4.56 The registration numbers were the lowest in the static deployed in late June 2020 on the eastern boundary, with a total of 67 registrations. The highest level of activity was recorded in August 2020 with 681 registrations occurring along the northern boundary of the site. Other periods of moderate activity include 399 and 253 registrations in the south-western corner and western boundary of the sight, respectively. The remaining activity level recorded was a total of 91 registrations in the south-eastern corner of the site. The total number of registrations over the five static periods was 1491.
- 4.57 There were 11 registrations from barbastelle bats during the September 2020 survey, in the south-western corner of the site. The peak of barbastelle activity occurred between 19th and 22nd of September. Activity on the 19th-20th peaked between the hours of 00:00-01:00. On the 20th-21st activity was evenly spread between the hours of 20:00-23:00. One registration occurred on the 22nd at 01:00. This species is an Annex II species of the Habitats Directive and are species of Principal Importance under S41 of the NERC Act (2006). The Joint Nature Conservation Committee (JNCC)²⁶ UK status and distribution information for barbastelles shows that there are records of these species in the vicinity of the site, although this is not in sufficient detail to accurately assess, and specific consultations recorded no such species within 2km of the site; JNCC note that:
- “The barbastelle is widely distributed across southern England and across Wales but is likely to have been significantly under-recorded within its range.”*
- 4.58 Barbastelle bats are known to utilise woodland, streams and rivers; the immediate habitats around the site boundary are lacking significant woodland areas, however, the site is located within close proximity to Southleigh Forest, approximately 1km north-east, which could provide foraging opportunities for this species. The Joint Nature Conservation Committee UK Status & Trends distribution map suggests that the species have been recorded within the wider area, and so it is not surprising that barbastelle have been recorded in low numbers.
- 4.59 Barbastelles were only recorded in September, therefore, all registrations occurred within the south-western corner of the site where hedgerow H2 and H3 meet. The residential area of Havant can be found to the west of the site with increases in light pollution and urban landscapes; barbastelle tend to avoid such areas, so it is not expected that the individual/s came from these areas as more registrations would have been anticipated throughout the survey period. It is likely that they were using habitats to the north or east, and then came into the site for commuting/foraging purposes. Barbastelles are known to forage over large distances, with foraging routes changing during the season in response to life stages and food availability, it is therefore likely that the site falls within the home range of barbastelles; but due to the low registration numbers, the site does not function as an important resource.
- 4.60 In addition, another key potential constraint identified initially was that Bechstein's bats were known to occur locally and that recent surveys in the immediate landscape have also revealed the presence of rarely recorded Alcaho bat.

²⁶ The Joint Nature Conservation Committee UK Status & Trends: Barbastelle. <http://jncc.defra.gov.uk/publications/JNCC312/species.asp?FeatureIntCode=S1308>. Assessed 06.08.16

- 4.61 Over the 2020 static survey period of 278 recording hours, only 215 *Myotis* bat species registrations were recorded. This can be deemed as relatively low numbers given that the total number of registrations was 1491. Low numbers of registrations were also recorded during the manual activity surveys during the dusk transect in September 2020. It is considered unlikely that should Bechstein's *Myotis bechsteinii* be present on site, that any significant proportion of these registrations are from Bechstein's bat and more probable that the majority of these registrations are from more common *Myotis* bat species such as Natterer's which is also a woodland specialist. From this assessment the site does not provide a significant resource for the local *Myotis* bat species population. Consequently, the potential effects to the local *Myotis* bat species' population from development of the site are likely to be negligible.
- 4.62 The same can be said in the instance of Alcahloe bats although, far less is known in general about the distribution and behaviour of this species as it is very rare and hardly recorded/studied. No Alcahloe bat calls were identified during the manual call analysis work. These species have a distinctive cut-off frequency which other *Myotis* bat species do not present. Nonetheless, in terms of mitigation and recommendations for *Myotis* bat species, the woodland buffer kept around the peripheries of the site should be a minimum of 15 metres if feasible or as large as possible, and unlit with a maximum of 1 lux light spill from the proposed development. In addition, any security or designated walkway/path lighting should be sympathetic to these bat species. Moreover, the Bellway development to the south of the site would have already considered and employed a sympathetic lighting regime with regards to bats and so the development proposals shouldn't alter the current levels of light at the site by any significant amount by comparison given the nature of the development.
- 4.63 With regards to the nearby Bechstein's bat roost in the wider area, it is assumed to be in the nearby Hollybank Woods/Southleigh Forest (approximately 500 metres NE). However, it should be noted that no records were returned during the consultation exercise (see Figure 1). Given that this high-quality off-site habitat is present it is considered far more likely that this habitat is being utilised by Bechstein's if present in the area and covers a large land area near to this proposed development site. It is considered that any high conservation significance roost (such as a maternity colony) will be reliant on this high-quality off-site habitat in terms of acting as food resource, roosting, and mating opportunities. Therefore, it is considered that should any of the *Myotis* bat calls recorded during our survey effort consist of Bechstein's bats (and therefore utilising the proposed development site) are most likely to be individual, male bats that do not form part of a high conservation significance roost and are utilising sub-optimal habitat for foraging and commuting purposes. Therefore, the proposed loss of this small area of woodland habitat is considered likely to have a low conservation significance if this were to occur.
- 4.64 As such, the potential effects from loss of suitable habitat and uncontrolled lighting are likely to be long term minor negative effects to individual animals at a site level, particularly given the large off-site areas of habitat available. However, given the low levels of activity from *Myotis* bat species identified it is highly unlikely that such effects will affect the favourable conservation status of the local population. Therefore, given the limited use of the site by *Myotis* species and the presence of optimal habitat in the form of Hollybank Woods/Southleigh Forest, the long-term effects at a population level are likely to be negligible.

- 4.65 Alcatloe bats utilise similar habitat to Bechstein's so the reasoning as to why this species may not be reliant on the habitats/resources on site is similar. However, this species is very rare and infrequently recorded/studied. Therefore, little is known about their distribution and behaviour in comparison to the more common and widespread species.
- 4.66 Furthermore, there is additional information accessible on the planning portal (reference: APP/20/00761) where the Planning Support Statement explains that 'A survey for Bechstein's bat has been undertaken by a qualified ecologist and submitted alongside this planning application which has not found any evidence of bats utilising the site for roosting or foraging'. In terms of impacts to this species therefore, none are anticipated.

Mitigation and Measures to enhance on site biodiversity

- 4.67 Under NPPF development should seek to contribute a net gain in biodiversity. Biodiversity Net Gain (BNG) has three aims.
- minimising losses of biodiversity
 - restoring ecological networks
 - leaving biodiversity in a better state than before (or in applying BNG principles schemes are brought forward that provide an overall increase in habitat and ecological features)
- 4.68 Hence there is an emphasis on developments that can improve ecological networks and linkages where possible and that can achieve enhancements. With the above objectives in mind and the nature of the development the following approach to mitigation is considered necessary to achieve these objectives.

Habitat Creation and Enhancement Proposals

- 4.69 By careful design, the grounds of the care home can be both wildlife friendly and attractive. Through selecting the most appropriate species consideration can also be given to drought resistance, lower maintenance requirements, and sustainability.
- 4.70 Therefore preference has been given within the landscape planting proposals to the use of locally native and cultivated species including woody (trees, shrubs and climbers), herb, grass, sedge species, with an emphasis on species bearing nectar, berries, fruit and nuts, as these enhance the foraging opportunities for local wild fauna including birds, bats, reptiles, small mammals and invertebrates. To maximise habitat potential, therefore both formal and informal areas have been included in the design. It has been possible to create a wildlife garden which would also enhance the enjoyment of those working, visiting and resident on site.
- 4.71 The approaches used are based on Urban wildlife design techniques. In addition, this facility will include a living roof, details of which are also described below. Including a living roof on the facility would provide greater opportunities for wildlife and increase the area available to enhance biodiversity on site (see section below)
- 4.72 Informal areas will contain retained habitats which lie on the site boundaries and will include new structural planting and smaller scale habitat creation techniques such as wood piles, stone walls, bug, bird, and bat boxes. For retained woodland areas opportunities to enhance structure and plant diversity have been maximised. Formal areas will be created closer to

buildings but can be designed to include many features & measures routinely and successfully used to attract wildlife in more urban settings (as described below and refer to Landscape Planting Plan).

Hedges

- 4.73 The hedgerows bounding the site contained native species and, as such, also qualify as habitats of principal importance under NERC. All hedgerows are important in their functions as corridors and foraging and nesting habitats for wildlife and as such are identified as priority habitats. In addition, hedgerows are listed as Hampshire BAP Habitats and current targets aim to retain and increase the number of hedgerows and hedgerow trees within Hampshire. Measures to retain and enhance the three hedgerows on site would achieve these objectives.
- 4.74 In addition, these hedges will require protection from damage and from soil compaction during construction works by erecting and maintaining fenced Root Protection Zones (RPZs). RPZ's will also ensure habitats around the edges of the site remain undisturbed.
- 4.75 Hedgerows H1, H2 and H3 will be strengthened by additional native woody planting including tree, shrub and woody climbing species (these will include but not be limited to honeysuckle, ivy, dog rose, hazel, holly, hawthorn, ash, field maple, crab apple, wild plum (refer also to Appendix 1 & Landscape Plan),
- 4.76 As far as possible hedges will be allowed to develop strips of natural ground flora at the base, increasing the value of the hedgerows as corridors for wildlife movement. A woodland edge can easily be translated into proportions available on site adjacent to hedges. A few metres are enough to establish the sort of dynamic habitat that will encourage birds and butterflies to stop by, mice and hedgehogs to forage among the leaf litter, and frogs and toads to hibernate over winter.
- 4.77 Planting will consist of primarily native locally appropriate woodland herbaceous, sedge and grass species but will also contain other species selected for their value for insect such as bees being known to be nectar rich. Refer to Appendix 1 for species list.
- 4.78 By retaining, enhancing, and buffering through encouraging the development of a native woodland ground flora, this would help to maintain habitat linkage beyond the site in the future.

Trees & retained linear woodland

- 4.79 All retained trees will be subject to Root Protection and Fencing will be provided to prevent damage to trees during construction/ site works (for details see separate tree report).
- 4.80 As some trees will need to be removed within the site and around the site boundaries to accommodate the development, landscape proposals will include replacement trees as well as shrubby species to help diversify and reinforce the remaining habitat.
- 4.81 Where possible planting within the site will seek to provide additional habitat for urban and suburban wildlife. While native species are often of value to biodiversity generally, it is now clear that many cultivated varieties and exotic plants are also good for wildlife provided that their flowers are not too complex or that hybrid varieties, which may produce little or no pollen or nectar and so are not of interest to bees, butterflies or other pollinating insects, are not used. The planting strategy, both within formal and informal areas, will therefore combine a range of native species and where appropriate, such as in gardens and more formal areas,

with a range of ornamental species with an accepted value for biodiversity. A range of small shrubs, low growing woody species, grasses and perennials, would provide a range of forms, sizes and finer scale variation to enhance the future structural and three-dimensional complexity of the site (essential also given the need to use all available undeveloped land for nature conservation).

- 4.82 Further planting of seed mixes such as Emorsgate EW1 – Woodland Mixture, should be spread to promote a typical woodland ground flora layer. This will also be augmented by selected plug and bulb planting which will help to establish the habitat more quickly and ensure that it becomes more diverse. Selected removal of species such as Eucalyptus, Leyland & Lawson cypress and replacement with more appropriate native woodland species will also be completed as part of grounds management and to achieve the objectives of site biodiversity enhancement.
- 4.83 Woodland habitat would benefit from additional planting of understory shrubby species to include hazel, holly, honeysuckle, field maple, hawthorn, rowan, wild cherry, wild service tree.
- 4.84 Under the landscape proposals, retained woodland strips will also be appropriately managed along with all retained and new garden habitats. This can all be done as part of regular grounds maintenance.
- 4.85 It is considered that with these recommendations will enhance the retained woodland, preserving and improving the natural character of the priority habitat woodland.

Formal/informal garden spaces

- 4.86 These will make up most of the areas around the main building and will contain native grassland (neutral meadow mix) which will extend available seminatural habitat in the south and west of the site. The grassland can be further augmented by plug plants and bulbs such as crocuses which will attract bees. This will be separated from more formal planting beds using step over apples and pear species, and/or short ornamental hedges made from yew or an open flowering variety of English rose (hedging varieties are available and will attract bees, hoverflies) Along paths/accesses small standard trees (such as apple, crab apple, field maple (also various Crataegus species (which are also well known for fruit and flowers), Amelanchier all species chosen for fruit, berries, and nectar rich flowers attractive to insects, birds and small mammals), shrubs (Abelia, Hebe, rose of Sharon, Philadelphus Ceanothus etc), and herbaceous planting (Russian comfrey, lavenders, pulmonarias etc) will be combined in large planting beds. Using gravel, slates and stone slabs and railway sleepers and areas of dry-stone walls would also add further depth and dimension reducing water demand and providing sunning, resting and hibernation sites for insects and potentially slow worms. Some of the planting beds would be made into rockeries and would allow additional plants preferring drier conditions such as oregano, marjoram's, rock roses, heathers to provide additional nectar sources and colour to the grounds (see Appendix 1 for additional species).
- 4.87 A water feature whilst designed to be more ornamental would support open water and marginal/emergent native species to attract damsel, dragon flies, etc and provide a source of water for birds and insects. Species would include bogbean, yellow flag, water plantain, mare's tail, water forget me not. An area of cobbles will be provided to enable insects to reach the water.

- 4.88 As part of the design bird boxes, bug boxes and bird tables can add additional interest for staff and residents and would be valuable for local wildlife attracting beneficial insects, overwintering solitary bees and lady birds amongst other insects, and more garden birds (see also below Mitigation for Fauna).
- 4.89 A living wall can be accommodated on selected buildings or free standing both to improve aesthetics and provide vertical habitats. These would be covered in native ivy and will provide additional nesting places for small birds such as wrens. Scented climbing roses and ramblers are also to be used as they will provide additional nectar, pollen. And nesting habitats as well as providing food sources for some bees and saw flies.

Living Roof Design

- 4.90 Dependent on the final detailed design of the living roof either a green or an original brown roof would be achievable.
- 4.91 Detailed research in Switzerland and the United Kingdom has shown that ecologically designed extensive green roofs can provide good habitat for wildlife. Plant communities best included on a green roof are species of dry grasslands and species of post-industrial sites (more diverse than a simple sedum brown roof, but even on a brown roof if more varied substrate can be achieved in parts then more species reminiscent of post-industrial plant communities can be accommodated. For brown roofs there is a reliance on natural colonisation which is not considered practical here.
- 4.92 Subject to feasibility and the need to accommodate solar panels (and access for maintenance) the preference for this site is a biodiverse seeded/planted green roof.
- 4.93 A green roof designed for biodiversity should include:
- a varied substrate depth
 - planted and or seeded with a wide range of drought tolerant wildflowers (sedums can also be added)
- 4.94 By applying these principles many interesting native invertebrate species will be attracted to green roofs. Wildflower green roofs are particularly good for pollinators such as bees. A wide range of insects associated with dry grasslands will find their way to an extensive green roof. green roofs can also provide important foraging habitat for birds. This is particularly important for rare species, such as the Black Redstart. Other species in Europe that will also use green roofs for foraging include Goldfinches, Starlings and Wagtails.

Fauna

Mitigation and Enhancements for the Local Bat Population

- 4.95 The retention of the hedgerows on site will ensure connectivity is maintained and foraging/commuting opportunities will be enhanced with the proposed new planting.
- 4.96 To minimise impacts on bats, proposals will adopt a sensitive external lighting scheme which will be designed to minimise light spill on retained and proposed habitats of value to commuting and foraging bats. The lighting scheme would be designed to current guidance provided by the Bat Conservation Trust and the Institution of Lighting Professionals and adopt the following principles:

- The avoidance of direct lighting of existing trees, hedgerows, scrub, woodland, or proposed areas of habitat creation/landscape planting.
 - Site boundaries are not to be illuminated to maintain a dark corridor around the site.
 - During the construction period, no lighting should be used in proximity to boundary features, if needed lights will be directional focuses/shrouded.
 - Lighting that is incorporated into the development design should comprise low pressure sodium lights, as they emit at one wavelength so attract less insects.
 - Directional lighting and avoidance upward lighting and / or light spillage.
 - Lighting columns to be as short as possible, although in some locations taller columns would allow reduced horizontal spill; and
 - Security lighting near to sensitive hedgerows and woodland will be low wattage LED, which will be installed on properties at construction stage to forestall a future installation of unsuitable lighting which could impact on bats.
- 4.97 A dark corridor around the edge of the site will benefit all bat species, as they could utilise the corridors as linkages to surrounding areas,
- 4.98 Roosting opportunities should be enhanced through the installation of bat boxes on retained trees or incorporated on to selected new buildings. These could include Ibstock bat bricks or Schwegler 1FR Bat Tubes which can easily be incorporated into the walls of the new buildings and Schwegler 1F and 2FN bat boxes for trees. The provision of such features would be in accordance with National and Local Planning Policy helping to enhance biodiversity within the local area.
- 4.99 The site location falls within range of a known Bechstein's roost but does not function as important habitat for this species.
- 4.100 The proposed enhancements and habitat creation will enhance features already present which will have a minor / moderate beneficial effect at a site / local level.

Reptile Mitigation Proposals

- 4.101 Currently, the site supports a moderate slow-worm population. As such, specific mitigation is recommended for this species.
- 4.102 Slow worms are frequently found in a variety of habitats including gardens, woodland edge, hedges, grassland, wherever habitat is varied and there are basking and feeding and hibernating opportunities,
- 4.103 To reinstate habitat for slow-worm and provide habitats of better quality in the long term a number of approaches will be adopted which includes measures to enhance retained habitat on the site boundaries and creating where feasible more informal planting adjacent to retained habitat and seeking to optimise the habitat value of more formal areas closer to the new care home which are to make up new gardens. It is possible to create conditions which are suitable for supporting good slow worm habitat as well as an attractive and more managed setting for residents and staff on site.
- 4.104 In the absence of mitigation, construction operations could result in accidental killing or injury of reptiles, which as a result of the protection afforded to them, will need to be avoided. To

prevent this, it will be necessary to passively displace any reptiles present from proposed works areas that contain suitable habitat. This will involve small scale habitat manipulation at appropriate times of the year.

- 4.105 In addition, the use of heavy machinery to remove any outstanding areas of vegetation across the site over winter should be avoided as this can cause soil compaction which could kill or injure any slow-worm hibernating underground. Therefore, it is recommended only hand-tools to be used under supervision or to consult a suitably qualified ecologist in order to find the most pragmatic solution to any works potentially taking place over winter.

Treatment to Boundary habitats for slow worm (hedges 1,2 & 3, linear woodland on the eastern, and southern site boundaries along with existing grassland/ground flora).

- 4.106 Retained habitats will need to be reinforced by new native, locally appropriate planting to create better quality hedgerow, hedgerow margin, woodland edge, linear woodland, and grassland habitat (see species mixes, Appendix XX and Landscape Plan).
- 4.107 As the smaller reptile species like Slow worms eat insects, spiders, small snails, and slugs attracting insects by creating a diverse flowering woody and herbaceous planting in sunny areas of the site is essential. Cultivated and native species valued for their rich nectar and pollen sources will attract a variety of insect species (a list is provided in Appendix XX & shown on the Landscape Plan).
- 4.108 Retained trees with their associated Root Protection Areas (RPA's) would provide areas of undisturbed ground essential for minimising impacts to a species that is also largely subterranean and relies on holes around tree roots to provide shelter and hibernation. As the ground flora and understory (shrub layer) is poorly developed additional planting would be provided to recreate better woodland conditions (Appendix XX refers).
- 4.109 Smaller areas of grassland will be retained around the site (largely the east, south and west boundaries) and as far as feasible should be allowed to develop a range of heights (higher and more tussocky at the back and mown shorter to the front to ensure a more tidy appearance).
- 4.110 Hibernacula could also be created in appropriate areas to provide additional basking, refuge, and hibernation opportunities for reptiles. These can either be artificially produced or made of natural materials from tree felling for example, or rock, stone, cobbles, slate, paving and having compost heaps on site for garden waste). Small wooden structures such as pavilions and sheds can also be attractive as hibernation sites.

Living walls, Bat boxes, bird boxes, hedgehog boxes, bird baths, and bug hotels, wood piles, stone walls, sheds, and compost areas

- 4.111 The value of such installations cannot be underestimated particularly in more formal settings, these can be made to add interest to garden spaces. Living walls have been described above under habitat creation proposals. Proprietary bird and bat boxes, the former with different openings and types which should include colony nesting, open and enclosed boxes, and boxes for martins, swifts, and swallows. For bat boxes these should include external and free-standing varieties which can be attached to trees and selected buildings. Bat bricks and cavity bat boxes will also be used again in selected areas. The benefit of these installations will be

to provide residents and staff with views of birds and bats, and along with other wildlife can be valued by those who might otherwise have limited experiences.

- 4.112 Bug hotels can be made of different materials and can also be bought off the shelf. However, larger installations can be used as garden sculptures and able to accommodate a larger number of insects and their requirements.
- 4.113 Woodpiles from felled timber will be in areas of retained woodland and naturalised with additional woodland ground-flora planting to increase the benefit to wildlife. Areas of dry-stone walls or retaining walls using sleepers will provide additional hibernacula sources. A compost area is provided to the west of the site. This can be attractive to slow worms as well as providing refuge for hedgehogs and small mammals. Whilst hedgehog boxes may be purchased, suitable places of refuge can be created near to compost areas by creating separate leaf litter heaps which when rotted can be used to mulch flower beds (also good for attracting insects involved in the decay process which in turn will attract garden birds. Wooden structures such as sheds and pavilions will also attract wildlife that use areas under such structures and these will also be used to attach feeding stations, additional bird boxes and have climbers planted to grow up and increase the available planting and structure of the grounds.

5.0 CONCLUSIONS

- 5.1 The site support habitats of local value located largely around the site boundaries. No international sites or European protected species are directly affected by proposals.
- 5.2 The extent of habitat loss and impacts to fauna including protected species have been determined through surveys. These surveys have informed the mitigation and habitat creation measures proposed. Habitats of relative higher value are retained as part of the proposals and measures applied to optimise nature conservation value.
- 5.3 The proposals include formal and informal grounds which incorporate, retained habitats (some areas of grassland, trees, hedges, linear relic woodland) and along with more sympathetic habitat management will restore and improve the existing biodiversity of the site and will maintain linkage to external habitats.
- 5.4 The landscape proposals will maximise wildlife habitats through adopting good design principles and measures routinely and successfully used to attract wildlife in more urban settings. The provision of a Living green roof maximises the potential for wildlife friendly features and extends available habitat on site.
- 5.5 The proposals as described above would improve the quality and quantity of habitats on site for the benefit of local wildlife and provide an opportunity to create a valuable and attractive setting for residents and staff of the proposed care home.
- 5.6 Effects on biodiversity of the development have therefore been minimised as far as is feasible, and the measures proposed will leave retained habitats in a better state than before. Furthermore, the adoption of good principles of habitat creation and landscape design will achieve an overall increase in habitat diversity, structure and ecological features that include improvements in the structure of retained woodland and hedges, areas of species rich grassland, a small wildlife pond, native planting augmented by cultivars providing seeds, berries, pollen and nectar sources known to be valued by insects and birds.
- 5.7 Subject to the report's recommendations being incorporated the scheme will thus accord with the Local Plan Policies E15 & E18, emerging Policy EX1 and the principles of NPPF "*Section 11: Making effective use of land, Paragraph 118 (a) ...encourage multiple benefit from both urban and rural land...and taking opportunities to achieve net environmental gains-such as developments that enable new habitat creation & (b)..recognise that some undeveloped land can perform many functions such as wildlife, recreation,...cooling shading...*"
- 5.8 By ensuring at the site level that retained woodland and hedgerow is enhanced through new structural planting, the planting of new native trees, shrubs and plant species selected for their value for local fauna, creation of areas of species rich grassland, a living roof supporting species of dry grassland and post-industrial sites, a small pond, new refuges, resting, hibernation, breeding sites, and food sources, the existing ecological network at the site level will be retained and strengthened. Thus, the development is consistent with the objectives *Para 170 minimising impacts on and providing net gains for biodiversity, including establishing ecological networks that are more resilient to current and future pressures*
- 5.9 The site is largely comprised of low-quality grassland, habitats of greater value lying on the site boundaries have been retained and will be improved structurally and reinforced by new planting. No national or international sites or sites, species assemblages formally protected, designated, and recognised for their nature conservation value will be affected by proposals.

Low numbers of slow-worm and bats have been recorded and impacts on a local level have been mitigated by a number of measures consistent with the operation of Para 175 of the NPPF which states “When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) 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 encouraged, especially where this can secure measurable net gains for biodiversity.

Appendix 1

Reference should be made to the Landscape Planting Plan. A summary of the treatments to each area of open space is given below:

NW area-Formal Garden

Opportunity exists to create a series of wildlife friendly formal gardens. Amenity grassland is avoided in preference for naturalistic plantings of, trees, shrubs, and herbaceous perennials within a setting of cobbles, recycled stone/rock gravel and bark mulch. T 43 (TPO 4) an English Oak will be under planted with woodland species including *iris foetidissima*, bluebell (native) snowdrops and winter aconite, lesser celandine, hellebores, woodrush, and tussock sedge amongst other species. Herbaceous perennial plants for naturalistic plantings will be selected from a list of species of high value for wildlife with nectar & pollen rich flower, fruits & seeds as well as their drought tolerance and resilience to lower levels of maintenance.

Below Tree 44 a common ash additional woodland planting would be made. In addition, arboreal ivy can be left to recolonise extant trees, but would be further enhanced by ramblers which provide nectar for bees.

Where light conditions are better away from mature tree canopies woodland would grade into planting mixes of herbaceous perennials smaller tree species and shrubs all selected on the basis of their higher wildlife value. Tree species will include field maple, small-leaved lime, wild cherry, and bird cherry and along pathways stepover apple and pears would add further structure along with hazel, holly, California lilac *Ceanothus*, Wayfaring tree *Viburnum lantana*, honey suckle (both climbers and modern bush forms), herbs to include Michaelmas daisy *Asters*, Canada goldenrod *Solidago canadensis*, sedum London pride, Russian comfrey amongst others.

Hedge 3 will be bordered by new woodland planting as a degree of shade tolerance will be required here along the western site boundary.

The southern formal garden & woodland boundary

This garden will be a combination of formal open space grading into woodland habitat. To add further structure informal areas will also have a number of woodpiles and the canopy trees will be under planted to create better structure (shrub and field/ground layer) and diversity.

The area is capable of supporting a small meadow to the south of the formal section which will again grade into areas of natural plantings of herbaceous perennials (no amenity grassland to achieve maximum biodiversity value). A small semi-ornamental pond with naturalistic planting will be created here. Also compost area and sheds provide further opportunities to create wildlife friendly features (e.g., compost, leaf mulching, and nest boxes).

Eastern Woodland boundary

Extraneous species such as cypresses, cherry laurel and Portuguese laurel will be removed and replaced by native shrub species including holly and hazel and under retained trees such as T1 & T4 there will be additional ground flora woodland planting. Again, as this area is likely to be shaded it is better suited to being managed as primarily woodland habitat. And given the relatively limited area it is best to focus on one major habitat type. This will allow the habitat to develop more value.

Plant species lists to be included in landscape planting areas and retained habitats

Shade, Understory and Woodland Edge Planting

Growing under canopy trees or adjacent to retained hedges, this layer can include both sun-loving and shade-tolerant plants.

- Bugle *Ajuga reptans*
- Common Hawthorn *Crataegus monogyna*
- Crab Apple *Malus sylvestris*
- Dog-rose *Rosa canina*
- Male Fern *Dryopteris mas*
- Lady Fern *Athyrium filix femina*
- Elder *Sambucus nigra*
- English Bluebell *Hyacinthoides non-scripta*
- Foxglove *Digitalis purpurea*
- Harts tongue fern
- Hazel *Corylus avellana*
- Holly *Ilex aquifolium*
- Honeysuckle *Lonicera periclymenum*
- Ivy *Hedera helix*
- Primrose *Primula vulgaris*
- Red Campion *Silene dioica*
- Rowan *Sorbus aucuparia*
- Sallow *Salix caprea*
- Shield fern *Dryopteris dilatata*
- Silver Birch *Betula pendula*
- Snowdrop *Galanthus nivalis*
- Stinking iris *Iris foetidissima*
- Sweet Woodruff *Galium odoratum*
- Wood Anemone *Anemone nemorosa*
- Wood Betony *Stachys officinalis*
- Wood sage (*Teucrium scorodonia*)
- Sweet Violet (*Viola odorata*),
- Common Dog Violet (*Viola riviniana*)

- Wild Strawberries (*Fragaria vesca*),
- Solomon's Seal (*Polygonatum multiflorum*),
- Lesser Celandine *Ranunculus minor*
- Lily of the Valley (*Convallaria majalis*),
- Wood Cranesbill (*Geranium sylvaticum*)
- Wild Garlic or Ramsons (*Allium ursinum*).

Trees and Shrubs Species

- Field maple *Acer campestre*
- Small-leaved lime *Tilia cordata*
- Wild Cherry *Prunus avium*
- Bird Cherry *Prunus padus*
- Silver Birch (*Betula pendula*),
- Alder (*Alnus glutinosa*),
- Hornbeam (*Carpinus betulus*)
- Snowy *Mespilus Amelanchier*
- Yew (*Taxus baccata* internal hedging and shaped),
- Hazel (*Corylus avellana*) (which, can be coppiced),
- Crab Apple (*Malus sylvestris*),
- Rowan (*Sorbus aucuparia*),
- Spindle (*Euonymus europaeus*),
- Hawthorn (*Crataegus monogyna*)
- Guelder Rose (*Viburnum opulus*),
- Black Elder *Sambucus nigra* var Black lace
- Dogwoods (*Cornus sanguinea*),
- Holly (*Ilex aquifolium*) (can be trimmed and shaped for more formal appearance).
- California lilac *Ceanothus spp.*
- *Skimmia* (male plants)
- *Mahonia spp*
- *Abelia* (Bee bush)
- Lilacs

Smaller shrubs and Herbaceous perennials (Plants selected for nectar, bee, and insect friendly) list not exhaustive.

- Honey suckles various bush varieties and climbers
- Roses various species of climbing, hedge, and ramblers with open flowers
- Lavender
- *Pulmonaria spp* Lungworts
- Sedums
- Winter aconite
- Crocuses
- Phacelia
- Perennial wallflowers
- Snow drops
- Marjoram
- Teucriums
- Chives
- Rosemary
- Sages
- Cowslip
- Russian Comfrey
- Forget me not
- Red valerian
- Meadow sweet
- Bluebells
- Boston creeper (placed on selected walls in south facing position-valuable for bees)
- *Solidago canadensis*
- Red hot poker *Kniphofia spp.*

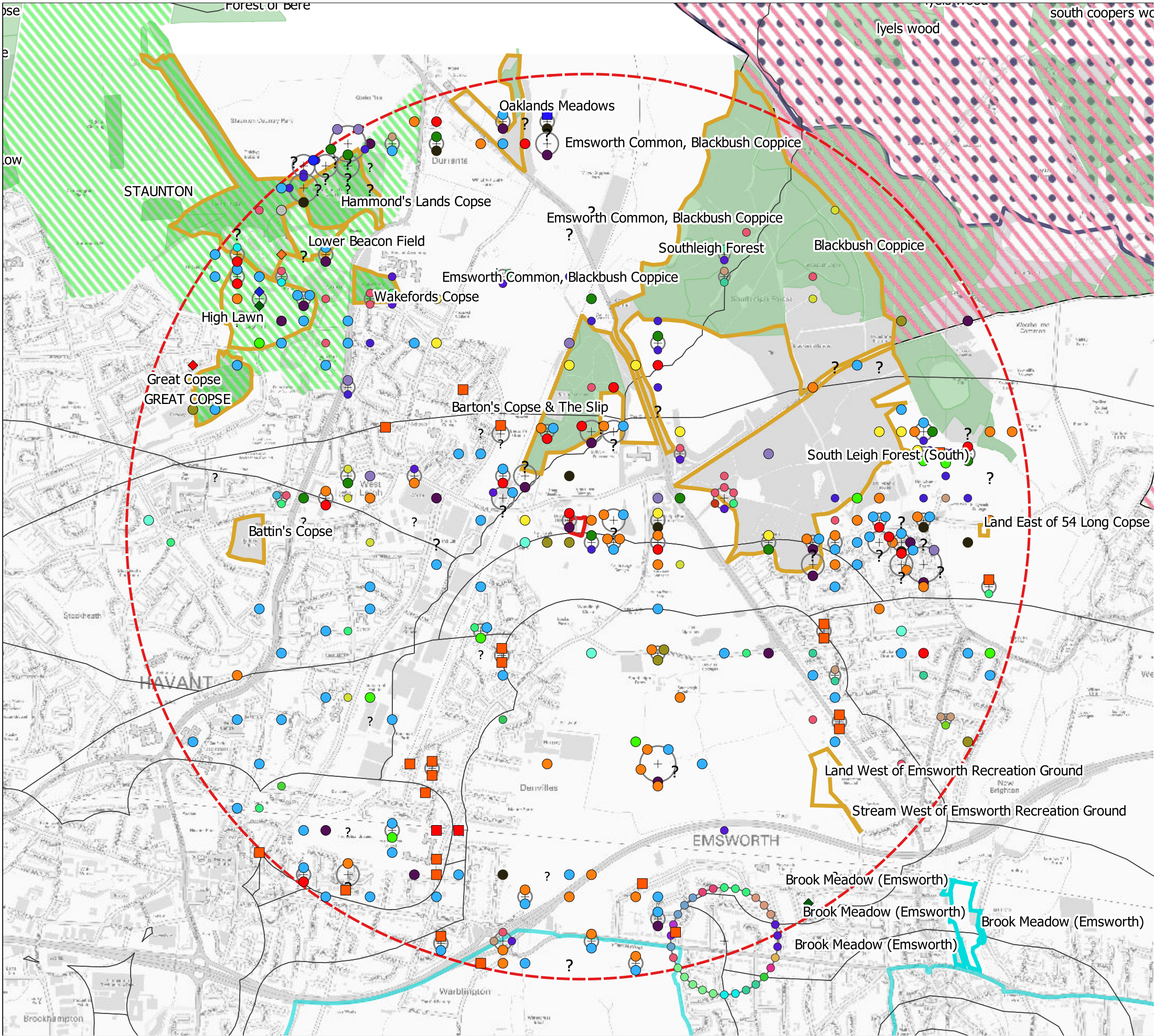
Neutral Grassland Mix (proprietary mix containing some or all of species listed or similar) managed as per suppliers' recommendations

- Common knapweed *Centaurea nigra*
- Wild carrot *Daucus carota*
- Ladys bedstraw *Galium verum*
- Ox- eye daisy *Leucanthemum vulgare*
- Musk mallow *Malva moschata*
- Ribwort Plantain *Plantago lanceolata*
- Salad burnet *Poterium sanguisorba*

- Self-heal *Prunella vulgaris*
- Sheeps sorrel *Rumex acetosa*
- White campion *Silene dioica*
- Common bent *Agrostis capillaris*
- Crested dogstail *Cynosurus cristatus*
- Red fescue *Festuca rubra*
- Smaller catstail *Phleum bertolonii*
- Smooth stalked meadow grass *Poa pratense*
- Yellow rattle *Rhinathus minor*
- Birdsfoot trefoil *Lotus corniculatus*

Semi-Ornamental Water feature

- Yellow flag,
- flowering rush
- Water plantain,
- Mares tail,
- Water forget me not



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Key

- Site Boundary

2 km Buffer

Species Records

Adder

Barn Owl

Bats

Bechstein's Bat

Black Redstart

Black-necked Grebe

Black-tailed Godwit

Black-throated Diver

Brambling

Brandt's Bat

Brown Long-eared Bat

Cetti's Warbler

Common Crossbill

Common Lizard

Common Pipistrelle

Dartford Warbler

Daubenton's Bat

Eurasian Badger

Fieldfare

Firecrest

Grass Snake

Green Sandpiper

Greenshank

Hazel Dormouse

Kingfisher

Lesser Noctule

Little Gull

Long-eared Bat species

Mediterranean Gull

Myotis spp

Nathusius's Pipistrelle

Natterer's Bat

Noctule Bat

Osprey

Pipistrelle Bat species

Red Kite

Redwing

Serin

Serotine

Slavonian Grebe

Slow-worm

Soprano Pipistrelle

West European Hedgehog

Western Barbastelle

Whimbrel

Whiskered Bat

Whiskered/Brandt's Bat

Wryneck
- Designated sites

1km Search

Site of Importance for Nature Conservation (SINC)

Local Nature Reserve (LNR)

Country Parks

2km Search

Site of Scientific Interest - Impact Risk Zone

Site of Special Scientific Interest (SSSI)

Other

Area of Outstanding Natural Beauty (AONB)

National Parks

Ancient Woodland Inventory Sites



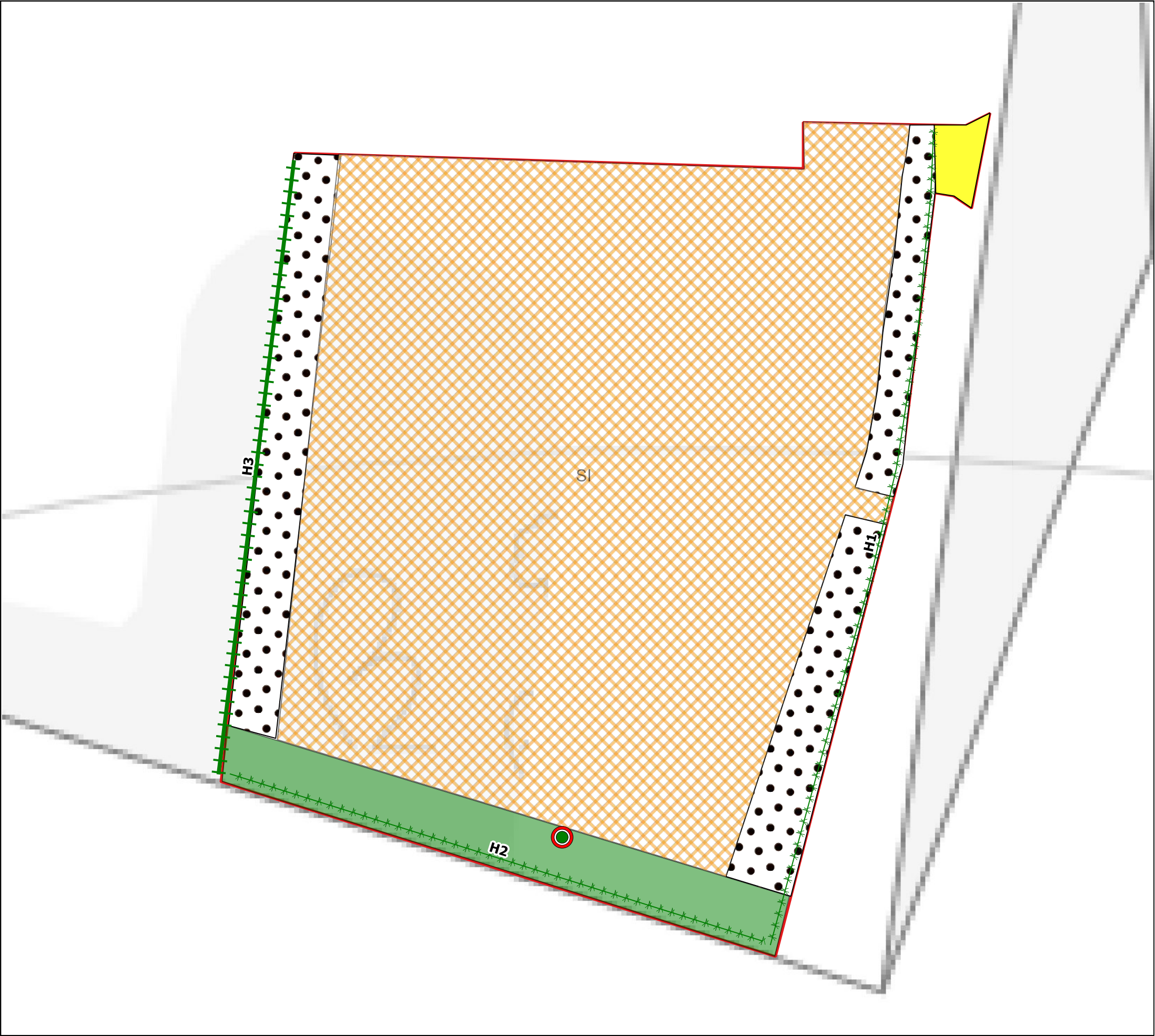
Bartons Road,
Havant
CONSULTATION PLAN

scale @ A3
1:15000
drawn HG
issue 13/8/2020

drawing / figure number

Figure 1

rev
9594 -E- 01



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Legend

Site Boundary

Phase 1 Points

Tree with bat potential

Phase 1 Lines

Hedge with trees - species-poor

Hedge with trees - native species-rich

Phase 1 Habitats

Broadleaved woodland - semi-natural

Bare ground

Calcareous grassland - semi-improved

Cultivated/disturbed land - amenity grassland



Bartons Road,
Havant
PHASE 1 HABITAT PLAN

scale @ A3
1:5000

drawn
HG

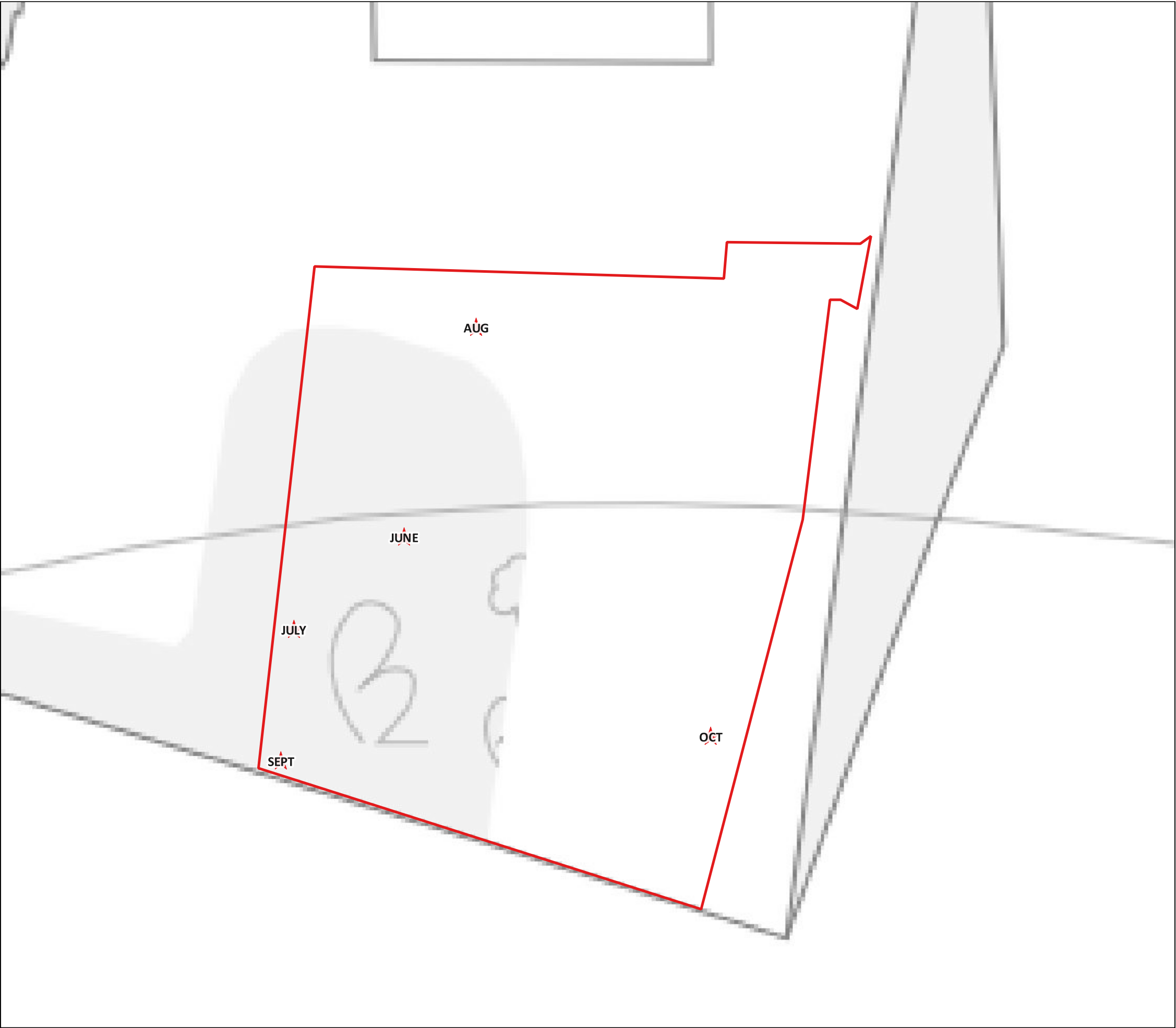
issue
26/8/2020

drawing / figure number

Figure 2

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9594-E-02



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Key:

 Site Boundary

Static locations

 June (Unit 1)

 July (Unit 2)

 August (Unit 3)

 September (Unit 4)

 October (Unit 5)



Brackley Investments Ltd.

Bartons Road,
Havant

STATIC DETECTOR LOCATION PLAN

scale @ A3
1:504

drawn
HG

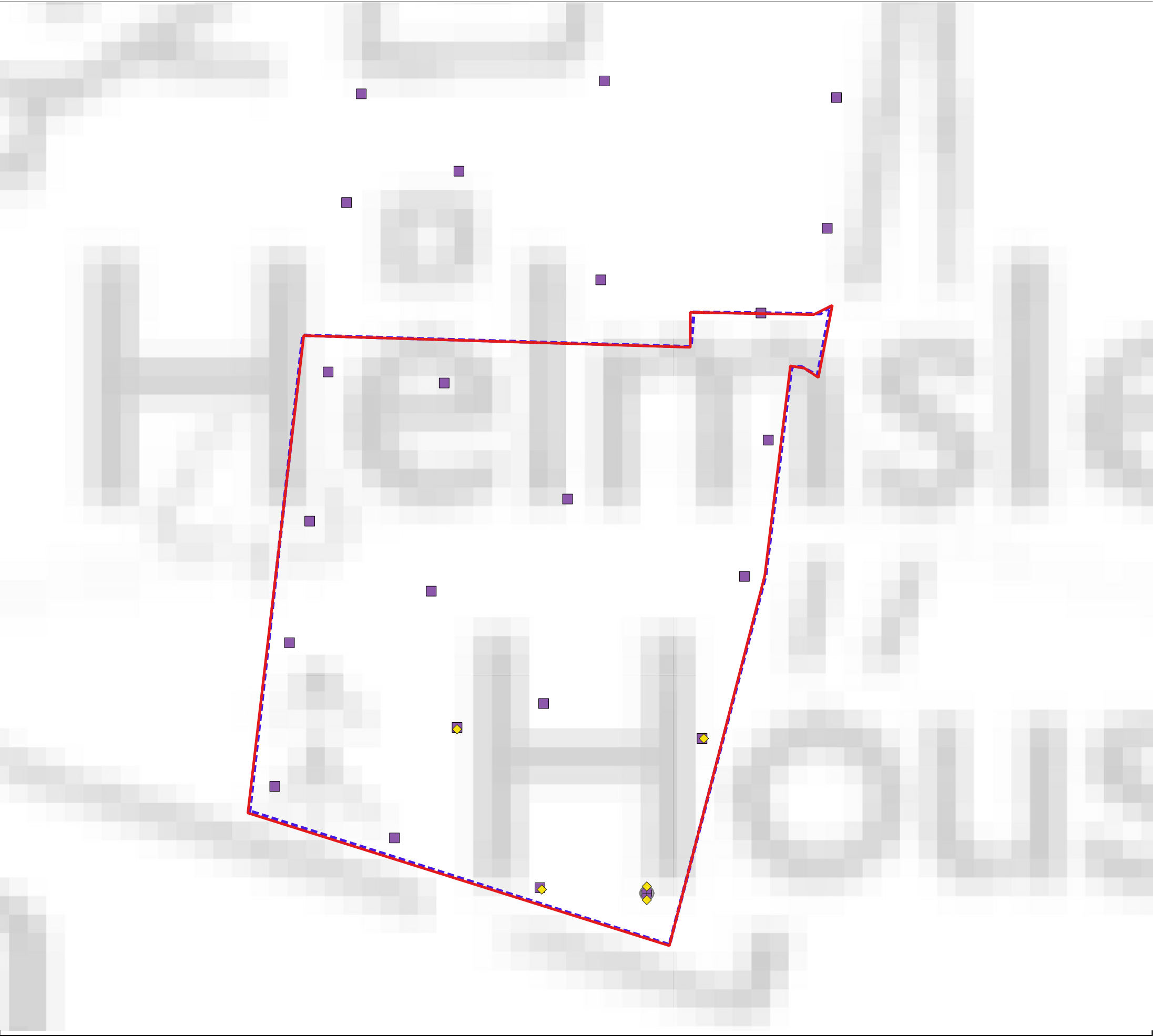
issue
29/10/2020

drawing / figure number

Figure 3

rev

9594 - E - 01



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Key

-  Site Boundary
-  Survey Area
-  Reptile Species Identified
-  Indicative Refugia Locations



Bartons Road,
Havant
REPTLE SURVEY PLAN



scale:
1:15000

drawn
SG

issue
29/10/2021

drawing / figure number
Figure 4

rev
9594-E-01

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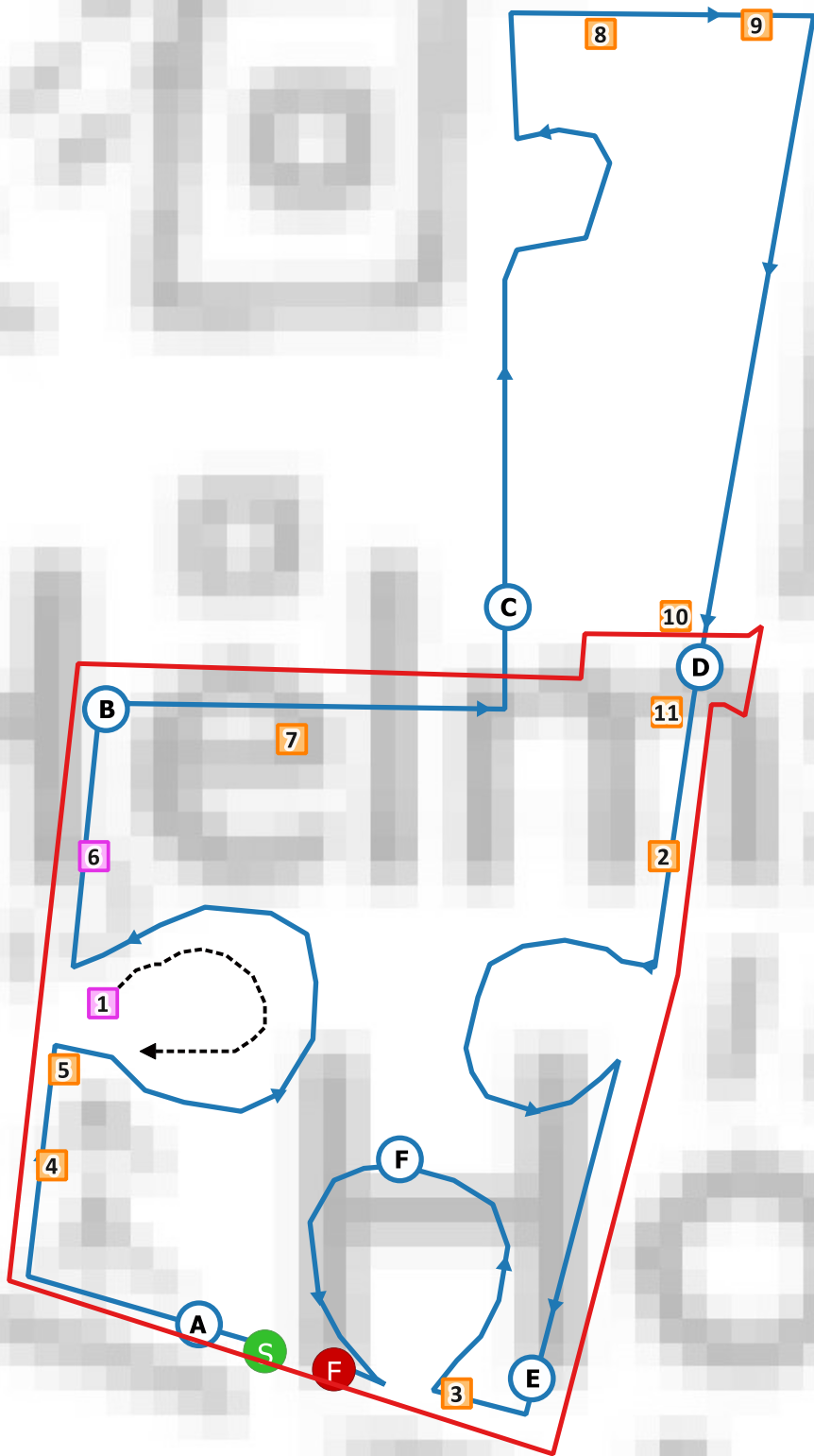
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Site Boundary

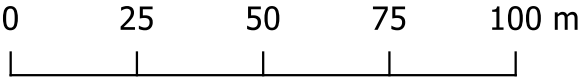
- S Start point
- F Finish point
- Point Count (with ref.)
- Transect Route
- Flight Path

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle



Plan Reference	Time	Species	Passes	Behaviour
Start	21:20			
PCA	21:20-21:25			
PCB	21:32-21:37			
1	21:34	Soprano pipistrelle	continuous	foraging
PCC	21:42-21:47			
PCD	21:52-21:57			
2	21:58	Common pipistrelle	1	passing
PCE	22:02-22:07			
3	22:09	Common pipistrelle	continuous	foraging
PCF	22:12-22:17			
4	22:16	Common pipistrelle	1	passing
5	22:21	Common pipistrelle	2	passing
6	22:23	Soprano pipistrelle	1	passing
7	22:25	Common pipistrelle	1	passing
PCA2	22:27-22:32			
8	22:32	Common pipistrelle	1	passing
9	22:35	Common pipistrelle	1	passing
PCB2	22:37-22:42			
10	22:40	Common pipistrelle	1	passing
PCC2	22:45-22:50			
11	22:47	Common pipistrelle	1	passing
PCD2	22:58-23:03			
PCE2	23:10-23:15			
Finish	23:20			



Bartons Road,
Havant
BAT TRANSECT PLAN (02.07.20)

scale @ A3
1:1497

drawn
SG

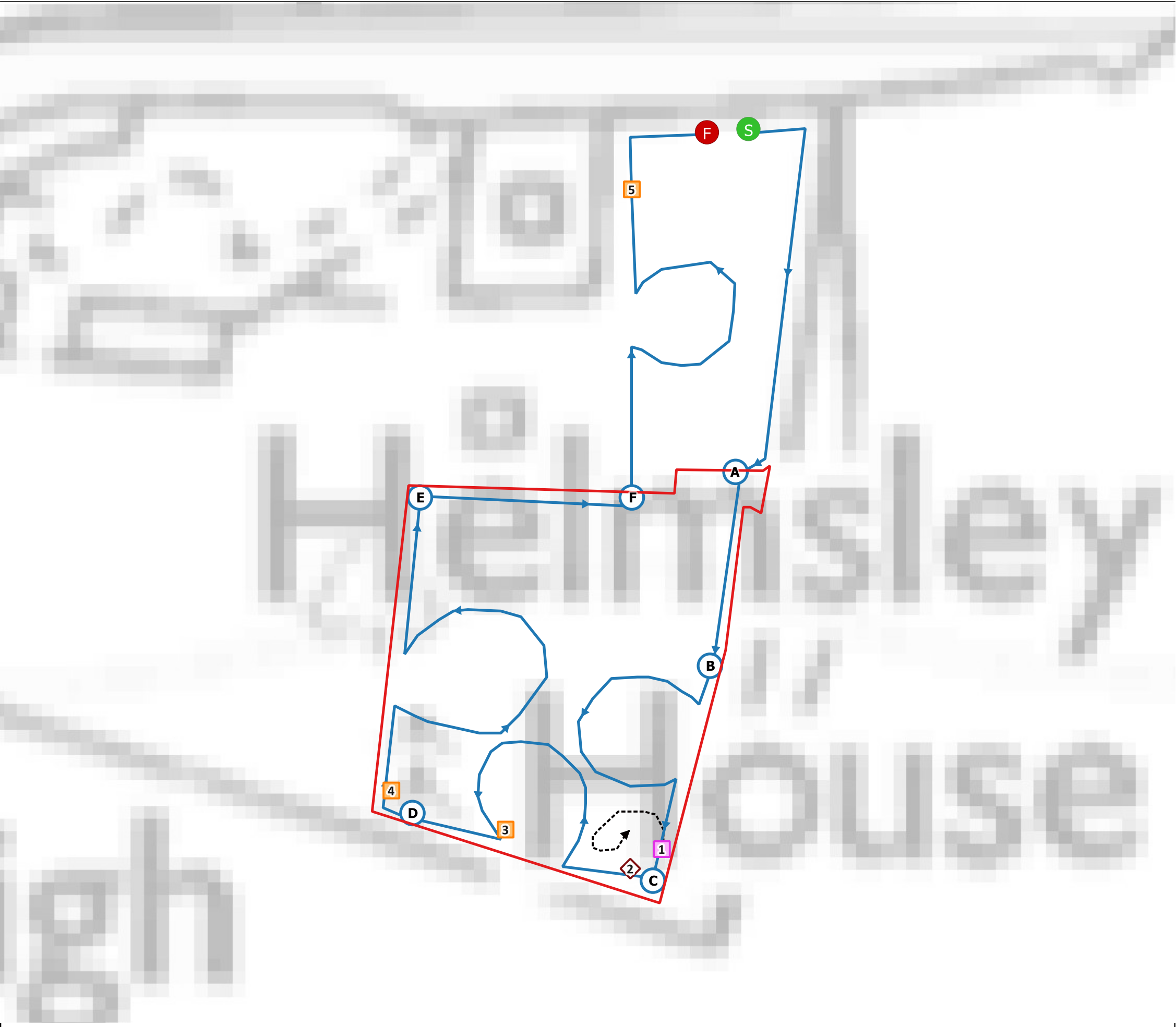
issue
29/10/2021

drawing / figure number

Figure 5

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9594-E-01



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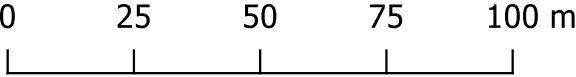
Site Boundary

- S Start point
- F Finish point
- Point Count (with ref.)
- ▶ Transect Route
- - -▶ Flight Arrow

Bat Contacts

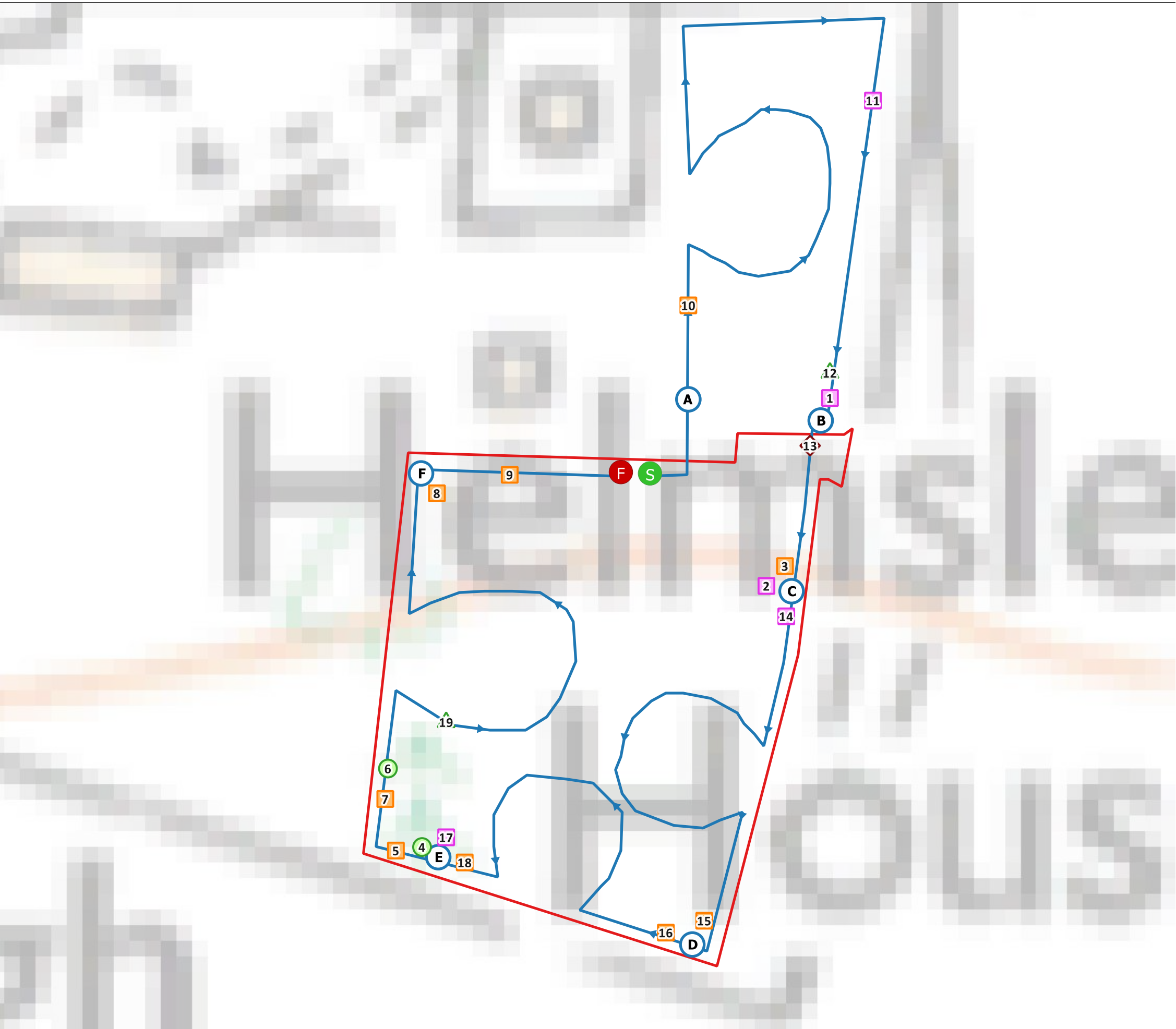
- Common Pipistrelle
- Soprano Pipistrelle
- Plecotus Species

Plan Reference	Time	Species	Passes	Behaviour
Start	20:55			
PCA	20:59-21:04			
PCB	21:06-21:11			
PCC	21:14-21:19			
1	21:19	Soprano pipistrelle	continuous	Foraging
PCD	21:24-21:29			
PCE	21:35-21:39			
PCF	21:41-21:55			
PCA2	21:55-22:00			
PCB2	22:03-22:08			
PCC2	22:12-22:17			
2	22:12	Plecotus sp	1	passing
PCD2	22:21-22:26			
3	22:26	Common pipistrelle	2	Foraging
4	22:28	Common pipistrelle	1	Foraging
PCE2	22:31-22:36			
PCF2	22:38-22:43			
5	22:48	Common pipistrelle	continuous	Foraging
Finish	22:55			



Bartons Road,
Havant
BAT TRANSECT PLAN (28.07.20)

scale @ A3
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Figure 6
drawn
SG
issue
29/10/2021
rev
9594-E-01



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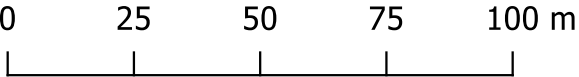
Site Boundary

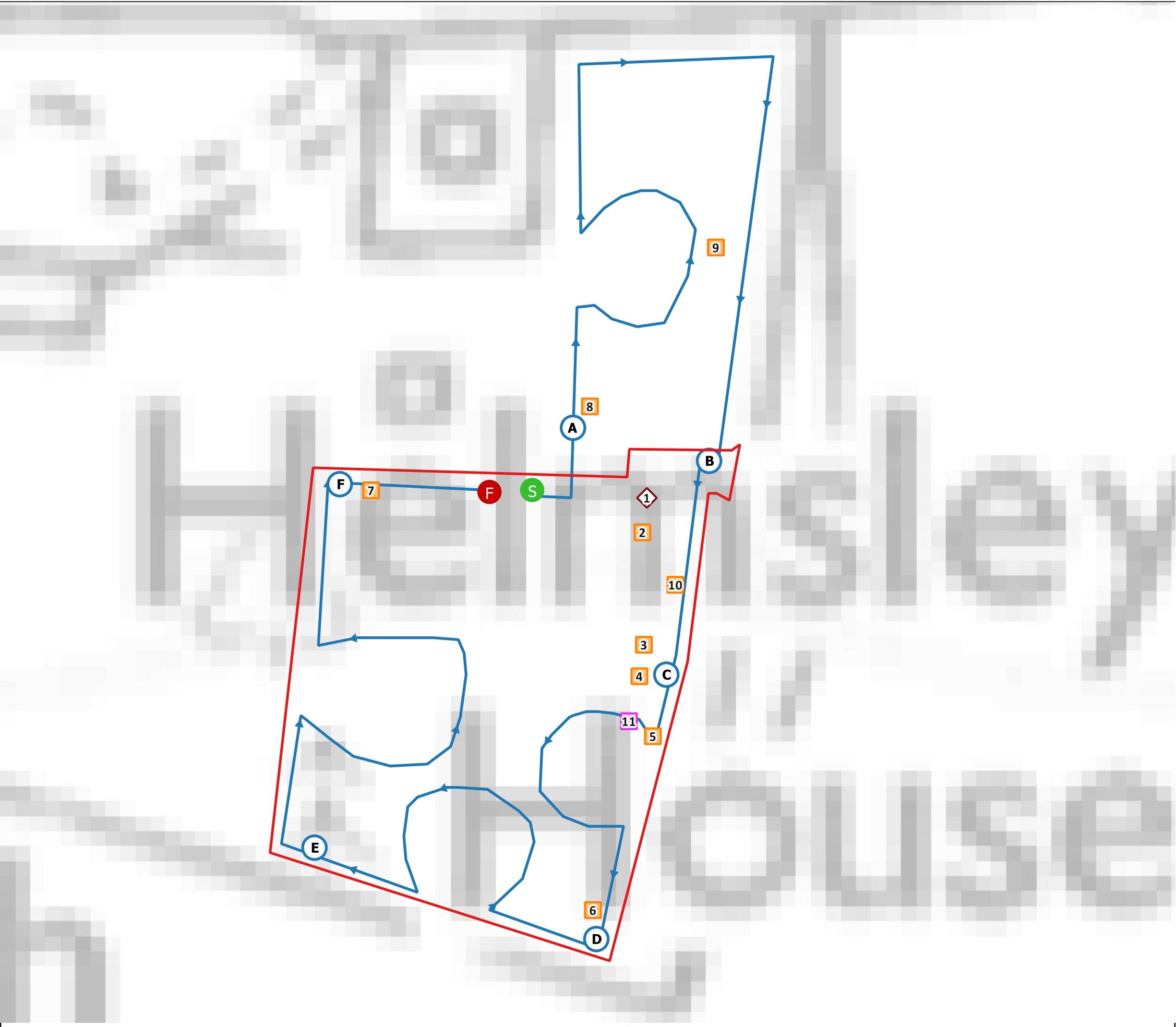
- S Start point
- F Finish point
- Point Count (with ref.)
- ▶ Transect Route
- - -▶ Flight Arrow

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- △ Myotis Species
- ◇ Plecotus Species
- Serotine

Plan Reference	Time	Species	Passes	Behaviour
Start	19:48			
PCA	19:51-19:56			
PCB	20:05-20:10			
1	20:08	Soprano pipistrelle	1	Passing
PCC	20:13-20:18			
2	20:14	Soprano pipistrelle	3	Foraging
3	20:15	Common pipistrelle	2	Passing
PCD	20:22-20:27			
PCE	20:30-20:35			
4	20:30	Serotine	1	Passing
5	20:36	Common pipistrelle	1	Passing
6	05:37	Serotine	2	Passing
7	20:37	Common pipistrelle	continuous	Foraging
PCF	20:42-20:47			
8	20:46	Common pipistrelle	1	Passing
9	20:49	Common pipistrelle	3	Passing
PCA2	20:51-20:56			
10	21:00	Common pipistrelle	continuous	Foraging
11	21:03	Soprano pipistrelle	2	Foraging
12	21:04	Myotis	1	Passing
PCB2	21:06-21:11			
13	21:09	Plecotus spp	1	Passing
PCC2	21:14-21:19			
14	21:18	Soprano pipistrelle	1	Passing
PCD2	21:23-21:28			
15	21:26	Common pipistrelle	2	Passing
16	21:27	Common pipistrelle	2	Foraging
PCE2	21:31-21:36			
17	21:32	Soprano pipistrelle	1	Passing
18	21:35	Common pipistrelle	2	Passing
19	21:38	Myotis	1	Passing
PCF2	21:42-21:47			
Finish	21:48			





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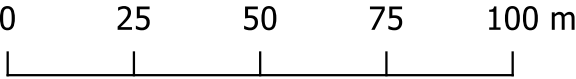
Site Boundary

- S Start point
- F Finish point
- Point Count (with ref.)
- ▶ Transect Route
- - -▶ Flight Arrow

Bat Contacts

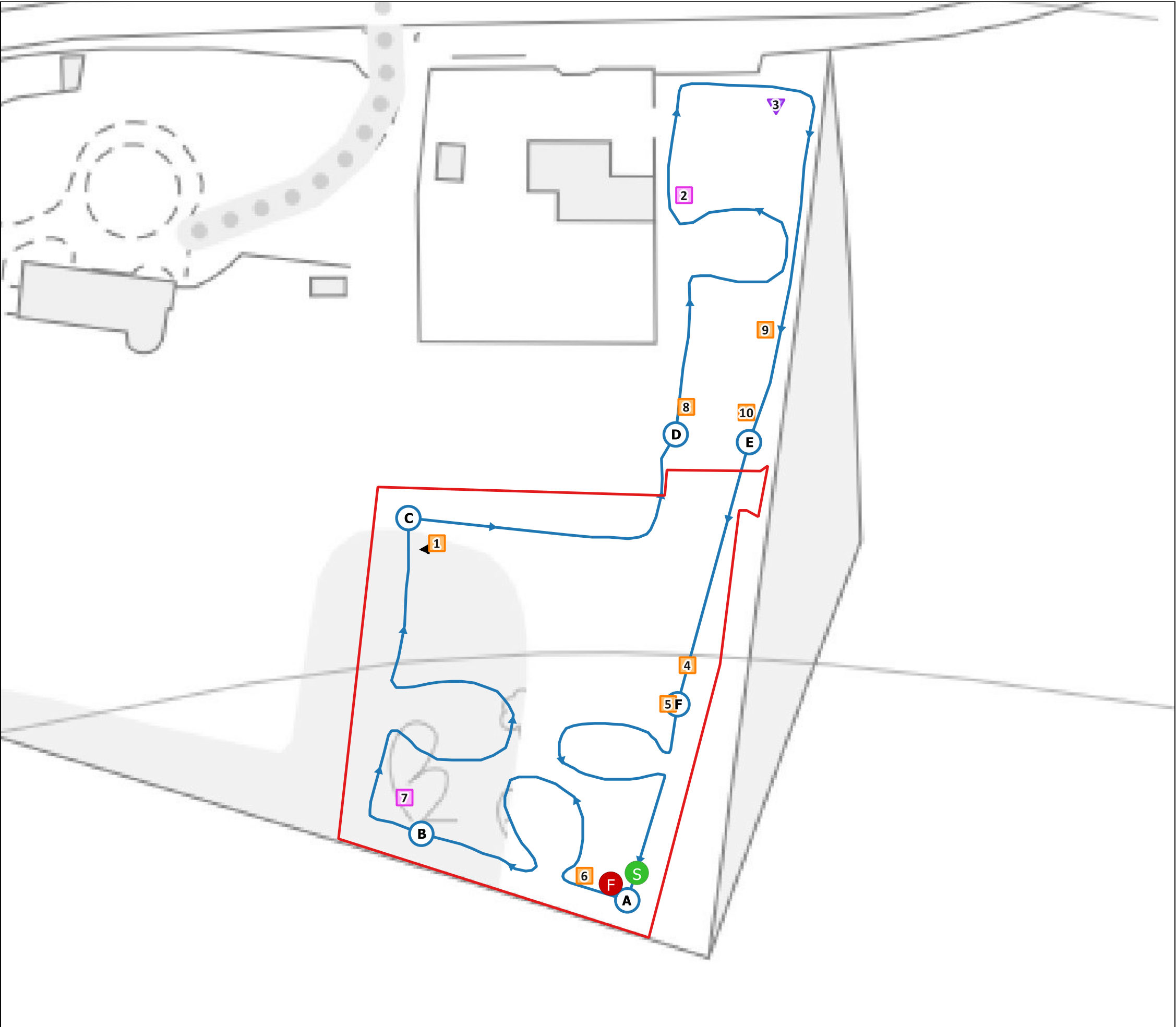
- Common Pipistrelle
- Soprano Pipistrelle
- Plecotus Species

Plan Reference	Time	Species	Passes	Behaviour
Start	19:12			
PCA	19:12-19:17			
PCB	19:30-19:35			
1	19:31	Plecotus sp	1	commuting
2	19:34	Common pipistrelle	1	commuting
3	19:42	Common pipistrelle	continuous	foraging
PCC	19:42-19:47			
4	19:46	Common pipistrelle	1	commuting
5	19:48	Common pipistrelle	1	commuting
PCD	19:54-19:59			
6	19:55	Common pipistrelle	3	foraging
PCE	20:04-20:09			
PCF	20:18-20:23			
7	20:23	Common pipistrelle	3	social
PCA2	20:26-20:31			
8	20:29	Common pipistrelle	continuous	foraging
9	20:38	Common pipistrelle	continuous	foraging
PCB2	20:42-20:47			
10	20:48	Common pipistrelle	2	foraging
PCC2	20:53-20:58			
11	20:59	Soprano pipistrelle	2	commuting
PCD2	21:04-21:09			
PCE2	21:12-21:17			
Finish	21:17			



Bartons Road,
Havant
BAT TRANSECT PLAN (17.09.20)

scale @ A3
drawing / figure number
Figure 8
drawn SG
issue 29/10/2021
rev
9594-E-01



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Key:

- S

 Start point

F

 Finish point

Point Count (with ref.)

Transect Route

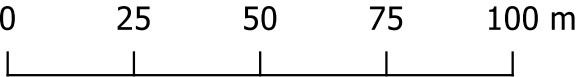
 Flight Arrow
- Bat Contacts

Common Pipistrelle

Soprano Pipistrelle

Noctule

Plan Reference	Time	Species	Passes	Behaviour
Start	18:26			
PCA	18:26 - 18:31			
PCB	18:35 - 18:40			
PCC	18:43 - 18:48			
1	18:46	Common Pipistrelle	Cont.	Foraging
PCD	18:49 - 18:54			
2	18:57	Soprano Pipistrelle	1	Commuting
3	18:58	Noctule	1	Commuting
PCE	19:00 - 19:05			
4	19:08	Common Pipistrelle	1	Commuting
PCF	19:09 - 19:14			
5	19:14	Common Pipistrelle	1	Commuting
PCA2				
6	19:21	Common Pipistrelle	1	Commuting
PCB2	19:27 - 19:32			
7	19:30	Soprano Pipistrelle	1	Commuting
PCC2	19:37 - 19:42			
PCD2	19:44 - 19:49			
8	19:48	Common Pipistrelle	2	Commuting
9	19:52	Common Pipistrelle	1	Commuting
PCE2	19:53 - 19:58			
10	19:57	Common Pipistrelle	1	Commuting
PCF2	20:00 - 20:05			
Finish	20:26			



Client
Project Name,
Project Location
BAT TRANSECT PLAN (08.10.20)

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issue 29/10/2020

Figure 9
9595 - E - 01



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Key

-  Site Boundary
-  Pond (No Access)
-  Dry Ditch



Bartons Road,
Havant
WATERBODY LOCATIONS PLAN



scale:
1:17326

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SG

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29/10/2021

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**Figure
10**

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