



Gladman Developments Ltd.

Land at Cross Road, Deal

ECOLOGICAL APPRAISAL

November 2021

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

FPCR Environment and Design Ltd

Registered Office: Lockington Hall, Lockington, Derby DE74 2RH

Company No. 07128076. [T] 01509 672772 [E] mail@fpcr.co.uk [W] www.fpcr.co.uk

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1.0 NON-TECHNICAL SUMMARY

- 1.1 A residential development of up to 140 dwellings, with associated landscaping and infrastructure is proposed on a site located on the south-western edge of the town of Deal, Kent. An initial desk study, along with an extended Phase 1 Habitat Survey was undertaken in April 2021 in order to help inform an outline planning application.
- 1.2 The site lies within 15km of four sites of international importance for nature conservation, namely: Thanet Coast & Sandwich Bay Ramsar site/SPA; Dover to Kingsdown Cliffs SAC, Sandwich Bay SAC; and Lydden to Temple Ewell Downs SAC. There is one Site of Special Scientific Interest (SSSI) located within 2km of the site: Thanet Coast to Hacklinge Marshes SSSI, which is located 1.8km to the north-west, coincident with the Thanet Coast Ramsar site. No non-statutory sites of local nature conservation importance are located within 1km of the site.
- 1.3 The proposed development falls within the impact risk zone for the SPA/Ramsar/SSSI. Given the proximity of the proposed development to the designated site, adverse effects from increasing recreational pressure are likely. An updated Habitat Regulations Assessment (HRA) and Appropriate Assessment are being undertaken at a strategic level by Dover Council to assess these likely effects. The previous HRA considered that a financial contribution to the Thanet Coast SPA Mitigation Strategy, in the form of a bond that supports wardening and ongoing site monitoring, was appropriate to mitigate any potential impacts. It is considered likely that the new HRA will recommend similar mitigation which the development will contribute to as required.
- 1.4 The site is largely of low ecological value and is predominantly comprised cultivated arable land and species-poor grassland, bordered by a margin composed of common grasses and tall ruderal species. Plantation woodland, scattered scrub, fencing, and residential hedgerows form boundaries around the site peripheries.
- 1.5 Given the size and nature of habitats present within the site, seasonal bat activity surveys were undertaken during 2021, during which eight species/species groups were identified as occurring within the site boundaries. Common and soprano pipistrelles formed a large proportion of the registrations recorded, with the remaining species recorded comparatively less frequently. The species assemblage and levels of activity recorded on-site in 2021 were largely comparable to those recorded during surveys conducted by FPCR in 2017, and were limited to common, widespread, and ubiquitous species.
- 1.6 No trees or buildings were identified within the site boundaries as providing any potential for supporting bat roosts.
- 1.7 The scattered scrub, plantation woodland and residential boundary hedgerows each provide potential nesting habitat for birds. The majority of these habitats will be retained within the scheme wherever feasible. Any removal required should be undertaken outside of bird nesting season (April to September inclusive).
- 1.8 No ponds were present on-site suitable to support breeding GCN, and the only pond within 250m dispersal distance of the site boundaries was dry and overgrown, making it unlikely the site would be used during the GCN terrestrial phase.
- 1.9 Habitat suitable for reptiles was widespread in extent across the site and included arable field margins and the rough grassland that comprised the smaller field compartment to the north, along with associated areas of tall ruderal and scattered scrub. Several records of common lizard and slow-worm were returned from within 1km of the application site by the local records centre, with

historical surveys conducted by FPCR in 2017, and more recent surveys in 2021, having identified low populations of both species occurring on-site.

- 1.10 While sporadic records of reptiles, predominantly slow-worms, were found around the arable field margins, most sightings of reptiles were within the semi-improved field compartment to the north. The field margins and much of the semi-improved grassland will be lost to development. Reptiles present within the arable margins will be passively displaced westwards into the retained habitat around the plantation woodland. The northern section of the smaller semi-improved field will be retained as a receptor area and reptile refuge, into which the existing reptile population from the remaining area of the field will be translocated. The receptor area will be enhanced with the addition of new refugia and scattered scrub planting.
- 1.11 With the addition of new habitat, to be created along the southern edge of the site, which will provide further opportunities for reptiles once established, it is considered that the proposals will have a positive long-term impact on the conservation status of reptiles on-site.
- 1.12 Trees, scrub, and semi-improved grassland around the site boundaries are to be retained and enhanced where possible. Additional planting is to be provided to create wildlife corridors around the site, as well as providing connections through the development. A sensitive approach to lighting will ensure these corridors are kept dark to maintain their efficacy as commuting pathways for the local bat assemblage.
- 1.13 Where possible planting schemes should use native species with an emphasis on species bearing nectar, berries, fruit, and nuts, to enhance the foraging opportunities for local fauna.
- 1.14 Further opportunities to enhance the development include the provision of bat and bird boxes, deadwood habitat and insect houses, and gaps should be left under garden fencing to allow movement of mammals and amphibians between gardens.

2.0 INTRODUCTION

- 2.1 The following Ecological Appraisal has been prepared by FPCR Environment and Design Ltd on behalf of Gladman Developments for land off Cross Road, Deal, Kent (central OS Grid Reference TR 3623 5040).
- 2.2 It provides the results of an Extended Phase 1 Habitat and Preliminary Protected Species survey undertaken during April 2021, and subsequent reptile and bat surveys conducted between May and October 2021. The objective of these 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.
- 2.3 The site was previously surveyed by FPCR ecologists in November 2016, with subsequent protected species surveys conducted during the following year, during which the boundary included a second, smaller compartment of land to the east of Cross Road. This smaller field compartment was additionally surveyed during 2019.

Site Context

- 2.4 The site comprises an approximately 8.71ha area of cultivated arable land and neighbouring disused horse paddocks, with a narrow belt of immature woodland along its southwestern edge. Fencing, plantation woodland, and adjacent residential gardens border the site to the north, southwest, and northeast.
- 2.5 No waterbodies were located within the application boundaries, however one pond was identified, through inspection of OS maps and aerial images, occurring within 250m of the application boundary.
- 2.6 The towns of Walmer and Deal lie immediately to the east and north, respectively, while the surrounding landscape to the west and south is largely dominated by further expanses of arable farmland and pasture. Cross Road and Ellens Road pass along the eastern and southern boundaries, respectively. Residential dwellings, gardens, and garages along Cross Road are located immediately adjacent to the northern and eastern boundaries, with horse pasture and industrial units to the west, off Marlborough Road.

Development Proposals

- 2.7 The proposals are for a residential development of up to 140 units, with associated infrastructure and landscaping (7572-L-12 rev B FPCR). These proposals will include provision of approximately 4.54ha of green infrastructure, which will comprise public open space, additional woodland planting, a retained habitat area, an attenuation basin, drainage swales and additional structural planting (including new hedgerows, shrubs and trees).

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3.0 METHODOLOGY

Desk Study

- 3.1 In order to compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:
- Kent and Medway Environmental Record Centre (KMERC); and
- 3.2 The Multi-Agency Government Information for the Countryside (MAGIC) website (www.magic.gov.uk) has been reviewed for the presence of any statutory designated sites of international (Special Area of Conservation (SAC), Special Protection Area (SPA) or Ramsar Sites), national (Site of Special Scientific Interest, (SSSI)) or local nature conservation importance (Local Nature Reserves (LNR)) within 15km, 2km and 1km of the study area, respectively.
- 3.3 Further inspection of colour 1:25,000 OS base maps (www.ordnancesurvey.co.uk) and aerial photographs from Google Earth (www.maps.google.co.uk) was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.
- 3.4 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- Protected sites of international importance for nature conservation: 15km search around the site. 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 of 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.
 - Protected sites of national importance for nature conservation: 2km search around the site. Sites of Special Scientific Interest (SSSIs) are the principle 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.
 - Protected sites of local importance for nature conservation: 1km search around the site. 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 site. Non-statutory designated sites are sites selected by local authorities for their nature conservation importance that 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).
- Legally protected and notable species: 1km search around the site. Search included species protected under Part 1 of the Wildlife and Countryside Act 1981 (as amended)¹, the Conservation of Habitats and Species Regulations 2017 (as amended)², Protection of Badgers Act 1992³ and other notable fauna such as Biodiversity Action Plan, Red Data Book (RDB) species⁴, Birds of Conservation Concern (BoCC) red & amber listed species⁵ and Species of Principal Importance under the Natural Environment and Rural Communities Act (NERC) 2006⁶.

3.5 Datasets have been restricted in the most part to the last ten years, this is to ensure that recent, most relevant, records of protected/notable species are reflected and prioritised. However, where a protected/notable species has been recorded over ten years ago, and there are no more recent records, then these have also been included in the summary of results.

Field Surveys

Habitats/Flora

- 3.6 The update survey was undertaken on 14th April 2021 based on the standard Phase I Habitat Survey Methodology⁷, 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. The survey adopted an extended methodology, which includes an assessment of the suitability of features and habitats on-site to support protected, or otherwise notable, species.
- 3.7 Each habitat was described based on botanical merit, with target notes used (where appropriate) to highlight features, or habitats, of particular ecological interest. Structural features such as trees and buildings were also considered for their ecological value and potential to provide suitable habitats for protected species. Consideration was also given to the presence of invasive species listed on Schedule 9 of the Wildlife and Countryside Act (WCA)1981 (as amended) and under the Weed Act 1959⁸.

¹ Act of Parliament, (1981). The Wildlife and Countryside Act 1981 (as amended), London: HMSO

² Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019 <http://www.legislation.gov.uk/ukxi/2019/579/made>

³ *The Protection of Badgers Act 1992 (as amended)*. London: HMSO [Online]. Available from: <http://www.legislation.gov.uk/ukpga/1992/51/contents> .

⁴ The Vascular Plant Red Data List for Great Britain (2005), Cheffings, C. and Farrell, L. (Eds)

⁵ *Birds of Conservation Concern 4 (2015)*. British Trust for Ornithology {Online}. Available from: <http://www.bto.org/science/monitoring/psob>

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

⁷ JNCC. (1990). Handbook for Phase 1 Habitat Survey – a technique for environmental audit. Peterborough: JNCC

⁸ Act of Parliament. (1959). The Weed Act 1959. London: HMSO

3.8 Any rare or notable flora including those listed as priorities in the Post 2010 UK Biodiversity Framework⁹, species listed under the NERC Act, Local Biodiversity Action Plan (LBAP) Priority Species/Habitats, any IUCN Red listed¹⁰, Red Data Book (RDB)¹¹ and any national, regional, county or vice – county rarities were duly noted.

Hedgerows

3.9 Hedgerows were surveyed individually using the Hedgerow Evaluation and Grading System (HEGS)¹². 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.

3.10 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

3.11 Hedgerows graded 1 or 2 are considered to be a priority for nature conservation.

3.12 The hedgerows were also assessed for their potential ecological value under the Hedgerow Regulations 1997 (Statutory Instrument No: 1160)¹³ to determine whether they qualified as 'Important Hedgerows' under these Regulations. This broadly follows the above methodology, although an average number of canopy species per 30m 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)¹⁴.

3.13 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). 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.

⁹JNCC and Defra (on behalf of the Four Countries' Biodiversity Group). 2012. *UK Post-2010 Biodiversity Framework*. July 2012

¹⁰ International Union for Conservation of Nature (IUCN), Red List 2012

¹¹ The Vascular Plant Red Data List for Great Britain (2005), Cheffings, C. and Farrell, L. (Eds)

¹² 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

¹³ *The Hedgerow Regulations 1997 – Statutory Instrument 1997 No. 1160*. [Online]. London: HMSO. Available at: <http://www.legislation.gov.uk/ukSI/1997/1160/contents/made>

¹⁴ DEFRA (2007). *Hedgerow Survey Handbook: A standard procedure for local surveys in the UK*

Fauna

- 3.14 During the surveys of the site, observations of, 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 2017 (as amended) and the Protection of Badgers Act 1992 were noted, with particular attention being given to the potential presence of bats, hazel dormouse *Muscardinus avellanarius*, great crested newt *Triturus cristatus* (GCN), water-vole *Arvicola amphibius*, and badger *Meles meles*.
- 3.15 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 those listed as Species of Principal Importance on Section 41 of the NERC Act (2006), bird species included on the Birds of Conservation Concern (BoCC) red & amber lists and any Local Biodiversity Action Plan (LBAP) or Red Data Book (RDB) species.
- 3.16 The standard survey methodology was extended to assess the potential ecological value and suitability of features such as buildings and trees, or specific habitat types, to provide habitat for protected species

Badgers

- 3.17 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 Jefferies¹⁵ (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.
- 3.18 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

- 3.19 Tree assessments were undertaken from ground level, with the aid of a torch and binoculars (where appropriate). These surveys were undertaken in April 2021 by an experienced ecologist from FPCR. During the survey Potential Roosting Features (PRF) for bats such as the following were sought (Based on p.16, British Standard 8596:2015 Surveying for bats in trees and woodland, October 2015¹⁶):

¹⁵ Creswell, P., Harris, S. & Jefferies, D.J. (1989). Surveying Badgers. The Mammal Society Publication No.9 Mammal Society

¹⁶ Surveying for Bats in Trees and Woodland – Guide. British Standards Institution. BS8596:2015, UK

- 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 or loose bark, 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); and
 - Bat or bird boxes.
- 3.20 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.
- 3.21 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) guidance¹⁷.
- 3.22 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.

Table 1. Bat Roosting Potential Categories for Trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence. Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence.

¹⁷ Collins, J. (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

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

* The Conservation of Habitats & Species Regulations 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 Transect Surveys

3.23 BCT guidance (2016) recommends that 'the type of survey undertaken, and the amount of effort expended should be proportionate to the predicted impacts of the proposed activities on bats'. This draws on the ecologist's assessment of the roosting, commuting and foraging habitats present within the site and their suitability for bats. Table 4.1 within the BCT guidance identifies the characteristics of the habitats which fall within each level of suitability (Negligible, Low, Moderate and High), with survey effort proportional to the evaluation, as identified in Table 8.1 of the BCT guidance. Under this guidance the application site was considered to be of low habitat suitability for bats and falls under the seasonal survey requirement. This requires activity transects and static surveys to be done on a seasonal basis, between April and October inclusive.

- 3.24 The primary objective of transect surveys is to identify foraging areas, commuting routes, and general species utilisation of the application site. In line with the BCT guidance, the transect route for each manual activity survey was determined prior to the commencement of the survey and designed to ensure representative coverage of the various habitat types present across much of the application site.
- 3.25 In addition to the walked transect element of the manual activity survey, the route included several stops at point counts, during which time all bat activity at that specific location was recorded. The point counts were strategically located throughout the application site to ensure coverage of the various habitats present, with particular attention given to areas likely to be impacted by the development. In line with BCT guidance point counts were standardised at five minutes long, during which time all bat activity was recorded. Dusk surveys commenced at sunset and continued for two to three hours after.
- 3.26 Transects were walked at a steady pace using an Apple iPad mini, with an Echo Meter Touch (Wildlife Acoustics Version 2.0.4) microphone. The associated software identifies and tags sound files that it suggests are bat passes; with the data recorded during these surveys supplemented by written notes documenting bat activity present on site, identifying any key foraging, and commuting routes.
- 3.27 Post-survey, bat calls were analysed using Kaleidoscope Viewer version 5.1.3 (Wildlife Acoustics Inc.), by taking measurements of the peak frequency, inter-pulse interval, call duration and the end frequency of individual pulses. Analysis was undertaken by experienced ecologists from FPCR. From this, the level of bat activity across the site could be assessed, taking into account the species assemblage and spatial variation in activity within the different habitats present within the application boundaries.
- 3.28 The timings and weather conditions for the transect surveys are detailed in *Table 2* below.

Table 2. Nocturnal Activity 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)
Transect 1 – 18 th May 2021	Dusk Transect	20:42	20:42	22:48	11°C, 60-70% cloud, light air, no rain
Transect 2 – 17 th Aug 2021	Dusk Transect	20:13	20:13	22:13	16°C, 90-100% cloud, light air/breeze, sporadic light rain
Transect 3 – 6 th Oct 2021	Dusk Transect	18:22	18:22	20:24	14°C, 20-30% cloud, light air, no rain

Automated Activity Surveys

- 3.29 Static, broadband detectors were deployed on site during 2021 to supplement the transect surveys. These automated, passive logging systems (Wildlife Acoustics Inc. Song Meter SM4BAT FS detectors, with SMM_U2 mics), herein referred to as SM4BAT or static detectors, save all acoustic recordings onto an internal storage device (SD card) for later analysis. Each SM4BAT detector records sound files of up to 12 seconds in length before a new file is created. These detector units were positioned at points where the habitat present would be impacted as a result of development, and/or at locations that were considered to be suitable as possible bat navigational/foraging routes.

- 3.30 During each season, a pair of SM4BAT detectors were placed in a suitable location within the application site for a minimum of five nights of suitable and/or typical seasonal weather conditions. Each detector was programmed to activate 30 minutes before dusk, and to record continuously until 30 minutes after sunrise each day. The output from each detector was then subject to acoustic analysis, using the software package Kaleidoscope Viewer version 5.1.3 (from Wildlife Acoustics Inc.).
- 3.31 The timings of each automated activity survey undertaken, and a corresponding description of the static detector unit locations are detailed in *Table 3* below, with the locations also shown on *Figure 2 – Phase 1 Habitat Plan*.

Table 3. Static Detector Survey Dates

Position (Figure 2)	Periods Recorded	Area Covered
A	18 th – 23 rd May 2021	On the corner of residential hedgerows bordering the northern boundary of the grassland compartment to the north
B	18 th – 23 rd May 2021	Centrally along the edge of the plantation woodland on the southwest boundary of the application site
C	5 th – 10 th Aug 2021	Southern end of plantation woodland, along southern application site boundary
D	05 th – 10 th Aug 2021	Within scattered scrub located along north-western boundary fence line of smaller grassland compartment to the north
E	28 th Sep – 03 rd Oct 2021	Northern end of plantation woodland, along western application site boundary
F	13 th – 18 th Oct 2021	Southern end of residential hedgerow that forms the north-eastern boundary of smaller northern field compartment

Herpetofauna

- 3.32 Habitats were evaluated for their potential to support amphibians and reptiles (collectively referred to as herpetofauna) following guidance set out within the *Herpetofauna Workers Manual*¹⁸, these include aquatic habitats, south facing banks and field margins, transitional areas between long and short vegetation, and any other areas or features which provide basking and/or sheltering opportunities.

Great Crested Newt (GCN)

- 3.33 Where access was granted and where there were no barriers to dispersal, waterbodies within a 250m 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 great crested newts¹⁹. 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 this species recorded. Ten separate attributes are assessed for each waterbody:
- Geographic location;
 - Pond area;

¹⁸ Gent, T., & Gibson, S. [Eds.]. (2003) *Herpetofauna Workers Manual*. Peterborough: Joint Nature Conservation Committee.

¹⁹ 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.

- Pond drying;
- Water quality;
- Shade;
- Presence of water-fowl;
- Presence of fish;
- Number of linked ponds;
- Terrestrial habitat; and
- Macrophytic coverage.

3.34 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*):

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
0.7 – 0.79	Good
>0.8	Excellent

Reptiles

- 3.35 A strategic reptile survey, assessing presence or likely absence of UK species, was undertaken within the application site, and wider survey area, at specific locations that were identified as offering potential, suitable reptile habitat. These surveys were undertaken based on the methodologies detailed in the Herpetofauna Workers Manual²⁰, the Froglife Advice Sheet 10 - Reptile Survey²¹ and Reptiles: Guidance for Developers²².
- 3.36 Methods of survey 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 grassland habitats, with areas of bare ground or short vegetation, and wetland features such as ditches and pond margins.
- 3.37 Sixty artificial refugia (0.5m² sections of roofing felt) were placed within the site, in habitats considered most suitable for reptiles on 6th May 2021. Suitable habitat was limited to the semi-improved grassland paddock to the north, and amongst the tall ruderal vegetation along the margins of the arable field compartment. The arable crop was considered sub-optimal for reptiles and was not subject to reptile survey.

²⁰ Gent, T & Gibson, S (2003) Herpetofauna Worker's Manual. JNCC, Peterborough.

²¹ Froglife (1999) Reptile Survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

²² English Nature (2004) Reptiles: guidance for developers. English Nature, Peterborough.

3.38 This is in accordance with Froglife Advice Sheet 10 (1999), which recommends that refugia should be placed at a density of between five and ten refuges per hectare of suitable habitat. Refugia were left to 'bed in' for approximately 2 weeks, followed by seven separate surveys, each of which will be undertaken in accordance with the guidelines, as follows:

- At temperatures of between 9°C - 20°C
- On sunny/cloudy days with little or no wind
- Generally, before 11:00 and after 16:00 unless conditions allow
- Approaching refugia from downwind, avoiding casting a shadow, and with care so as to not disturb basking animals when checking; and
- That lifting and replacing tins is undertaken with particular care when checking for the presence of reptiles underneath in hot weather, to avoid potential harm to any animals taking refuge underneath.

3.39 Seven surveys were completed in total, as per guidelines, with the date and weather conditions for each survey detailed in *Table 5* below:

Table 5. Reptile Survey Dates and Weather Conditions

Survey Occasion	Date & Time	Weather
1	18/05/2021 18:15	Sunny intervals, light breeze, rain earlier in day, cloud cover 80-90%, light rain, 12°C
2	24/05/2021 10:50	Sunny, moderate breeze, cloud cover 60-70%, no rain, rain earlier in the day, 13°C
3	03/06/2021 09:00	Sunny, bright, and clear, cloud cover 10-20%, light air/breeze, no rain, 18°C
4	07/06/2021 09:15	Sunny, bright, and clear, cloud cover 0-10%, light air/breeze, no rain, 16°C
5	15/09/2021 08:45	Overcast and still, cloud cover 90-100%, light air/breeze, no rain, 16°C
6	17/09/2021 09:40	Sunny, bright, and clear, cloud cover 10-20%, moderate breeze, no rain, 17°C
7	30/09/2021 11:40	Overcast, cloud cover 90-100%, gentle/moderate breeze, light rain, 14°C

3.40 Reptile populations were assessed in accordance with specific criteria per population level, as stated in the Key Reptile Site Register²³. This system classifies populations of individual reptile species into three population categories, that in turn provide an assessment of 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 Advice Sheet 10)

Species	Low Population (No. of Individuals)	Good Population (No. of Individuals)	Exceptional Population (No. 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

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

Limitations

- 3.41 The analysis of the files recorded by the SM4BAT 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. Therefore, each sound file is counted as a single bat pass or registration. The number of bat registrations reflects the relative importance of the detector's location, by calculating the bat registrations per hour.
- 3.42 Static unit 28, deployed in September 2021, failed and need to be redeployed later in October. The static collected data during appropriate weather conditions, representative of the autumn season, so this equipment failure is not considered to have any detrimental impact on the assessment of bat activity on-site between seasons.
- 3.43 Throughout the survey period several of the reptile refugia were prone to disappearing, most likely due to members of the public, who regularly use the arable field margins for dog walking, removing the reptile tins from the site. Despite signage to inform people of ongoing ecological survey effort, this happened consistently and frequently.
- 3.44 Refugia were replaced as often as possible, but a few surveys were conducted without a full complement of tins, particularly around the arable margins where public footfall was most frequent. However, the number of tins remaining were still above the 10/ha of suitable habitat recommended in the guidelines, particularly in the smaller semi-improved field to the north, where all the tins remained undisturbed.
- 3.45 The final reptile survey was undertaken during unexpected light rainfall; however, a few slow-worms *Anguis fragilis* were nevertheless identified during the survey, in numbers typical of the majority of surveys undertaken during more optimal weather. As such, it is not considered that the light rain had any adverse impact on the results.

4.0 RESULTS

Desk Study

Statutory Sites of International Conservation Value

- 4.1 There are five statutorily designated sites of international importance located within 10km of the study area (*Figure 1: Consultation Plan*): The nearest section of the Thanet Coast & Sandwich Bay Ramsar Site is located approximately 1.8km north-west of the application site, whilst the nearest section of the Thanet Coast & Sandwich Bay SPA is located approximately 3.5km north-east of it; Dover to Kingsdown Cliffs SAC is located approximately 3km south-east of the application site; Sandwich Bay SAC is located approximately 3.5km to the north-east; and Lydden & Temple Ewell Downs SAC is located approximately 9km to the south-west.
- 4.2 Thanet Coast and Sandwich Bay SPA and Ramsar wetland consists of rocky shores adjoining areas of estuary, sand dune grassland, saltmarsh, and grazing marsh (*Table 7*).

Table 7: Nature conservation designations of the Thanet Coast & Sandwich Bay SPA and Ramsar site.

Designation	Justification / interest Feature
SPA	This site qualifies under Article 4.1 of the Directive (79/409/EEC) by supporting populations of European importance of the following species listed on Annex I of the Directive:
	Little tern <i>Sterna albifrons</i> B
	Golden Plover <i>Pluvialis apricaria</i> W
	This site also qualifies under Article 4.2 of the Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:
	Turnstone <i>Arenaria interpres</i> W
Ramsar	<p>Criterion 2: Supports 15 British Red Data Book wetland invertebrates.</p> <p>Criterion 6: by regularly supporting internationally important number of over-wintering populations of Turnstone (5-year peak mean 1998/9-2002/3).</p>

B = Breeding birds; W = Wintering birds

- 4.3 Dover to Kingsdown Cliffs SAC consists of sea cliffs, shingle, islets, heath scrub, and dry grassland habitats. The primary reason for their designation as an SAC is due to the presence of vegetated sea cliffs of the Atlantic and Baltic Coasts, which is an Annex I listed habitat. Semi-natural dry grassland and scrubland facies on calcareous substrates (*Festuco-Brometalia* important orchid sites) are another Annex I habitat present along the cliffs, but this is a qualifying feature not a primary reason for selection.
- 4.4 Sandwich Bay SAC consists of tidal rivers, mudflats, sand flats, lagoons, salt marshes, and sand dunes. The Annex I habitats that are the primary reason for the sites selection as an SAC are:
- Embryonic shifting dunes
 - Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")
 - Fixed coastal dunes with herbaceous vegetation ("grey dunes")

- Dunes with *Salix repens* ssp. *Argentea* (*Salicion arenariae*)

- 4.5 Humid dune slacks are another Annex I habitat present, but these are regarded as a qualifying feature, not as a primary reason for selection.
- 4.6 Lydden & Temple Ewell Downs SAC consists of habitats such as heath, scrub, dry grassland, and deciduous broad-leaved woodland. Its reason for selection as an SAC is the presence of the Annex I habitat - semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia* important orchid rich sites).
- 4.7 According to the MAGIC website, the study area is within the Impact Risk Zone for the Thanet Coast & Sandwich Bay SPA & Ramsar wetland. It is advised that the LPA should consult Natural England on the likely risks of “any residential development of 10 units or more” within these risk zones.

Sites of National or Local Importance for Nature Conservation

- 4.8 There is only one statutorily designated site of national importance located within 2km of the study area. This is Sandwich Bay to Hacklinge Marshes SSSI which is located approximately 1.8km north-west of the application site, coincident with the boundaries of the Sandwich Bay Ramsar site.
- 4.9 It is designated as a SSSI due to the presence of the most important sand dune system and sandy coastal grassland in South East England and includes a wide range of other habitats, including mudflats, saltmarsh, chalk cliffs, freshwater grazing marsh, scrub, and woodland. There are outstanding assemblages of both terrestrial and marine plants, and invertebrates present that include over 30 nationally rare and nationally scarce plant species, and 19 nationally rare, and 149 nationally scarce invertebrate species. It is also an important landfall for migrating birds and supports large wintering populations of waders, some of which regularly reach levels of national importance.
- 4.10 There are no statutorily designated sites of local nature conservation importance within 1km of the study area.

Non-statutory Designations

- 4.11 KMERC returned no records of any non-statutory sites of nature conservation interest within 1km of the study area.

Protected/Notable Species Records

- 4.12 Several records of protected, notable, or local BAP species are present within 1km of the site. These are detailed in *Table 8* below and *Figure 1*. Only records from 2010 onwards have been included, unless otherwise considered noteworthy for inclusion to provide historical context for past occupation of the area.

Table 8: Protected and Notable Species Records

Species	Dates	Conservation Status	Approximate Relative to Site	Location
Terrestrial Mammals				
Western Hedgehog <i>Erinaceus europaeus</i>	2015	NERC41	Single record, located approximately 1.59km SW	

Species	Dates	Conservation Status	Approximate Location Relative to Site
Mammals (Bats)			
Serotine <i>Eptesicus serotinus</i>	2010 - 2018	WCA5, HRegs, NERC41	Multiple records, nearest located approximately 0.42km S
Common Pipistrelle <i>Pipistrellus pipistrellus</i>	2012 - 2019	WCA5, HRegs.	Multiple records, nearest located approximately 0.36km SE
Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>	2011 - 2018	WCA5, HRegs, NERC41.	Multiple records, nearest located approximately 0.63km NNE
Pipistrelle species <i>Pipistrellus sp.</i>	2012- 2013	WCA5, HRegs, NERC41.	Multiple records, nearest located approximately 0.15km E
Birds			
Barn owl <i>Tyto alba</i>	2018	WCA1	Single record, located approximately 2.15km S
Black kite <i>Milvus migrans</i>	2013 - 2014	BirdsDirA1	Multiple records, nearest located approximately 1.28km SW
Glaucous gull <i>Larus hyperboreus</i>	2012	BoCC Amber	Multiple records, nearest located approximately 2.15km S
Grey plover <i>Pluvialis squatarola</i>	2016 - 2018	BoCC Amber	Multiple records, nearest located approximately 1.28km SW
Honey buzzard <i>Pernis apivorus</i>	2009 - 2014	BoCC Amber, BirdsDirA1	Multiple records, nearest located approximately 1.28km SW
Merlin <i>Falco columbarius</i>	2006	BoCC Red, WCA1, BirdsDirA1	Two records, nearest located approximately 1.28km SW
Reptiles and Amphibians			
Common lizard <i>Zootoca vivipara</i>	2012 - 2016	WCA5, NERC41	Multiple records, nearest located approximately 0.41km NW
Slow-worm <i>Anguis fragilis</i>	2013 - 2019	WCA5, NERC41	Multiple records, nearest located approximately 0.41km NW
Invertebrates			
Small blue butterfly <i>Cupido minimus</i>	2012	NERC41	Multiple records, nearest located approximately 1.39km SE
Adonis blue butterfly <i>Polyommatus bellargus</i>	2012 - 2013	WCA5, NERC41	Multiple records, nearest located approximately 1.39km SE
Key: NERC41 – Section 41 of the Natural Environment and Rural Communities Act 2006; HabsDirA2 – Habitat Directive Annex II species, HRegs – The Conservation of Habitats and Species Regulations 2017 (as amended); WCA1/ WCA5/WCA9 – species listed on Schedule 1, Schedule 5, and Schedule 9 of the Wildlife and Countryside Act 1981 respectively; BoCC Red/Amber- Birds of Conservation Concern Red/Amber List, BirdDirA1 – EC Council Directive of Conservation of Wild Birds (Birds Directive) Annex I			

- 4.13 A large number of bird records with four figure and two figure grid references (low resolution) that are adjacent to, or encompass the site were also provided. These include many common and widespread species, as well as several notable species i.e. NERC S41 Species of Principal Importance or listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). These included, but were not limited to: Cetti's warbler *Cettia cetti*, cuckoo *Cuculus canorus*, dunnock *Prunella modularis*, grasshopper warbler *Locustella naevia*, house sparrow *Passer domesticus*, hobby *Falco Subbuteo*, linnet *Linaria cannabina*, nightingale *Luscinia megarhynchos*, red kite *Milvus milvus*, reed bunting *Emberiza schoeniclus*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, starling *Sturnus vulgaris*, stock dove *Columba oenas*, willow warbler *Phylloscopus trochilus*, yellowhammer *Emberiza citronella*, and yellow wagtail *Motacilla flava*. Owing to the low resolution of these records it is not possible to give definitive distances of each from the site.

- 4.14 Records of birds associated with the nearby SPA and Ramsar sites were also returned by KMERC, including several gull species (black-headed *Chroicocephalus ridibundus*, Mediterranean *Larus melanocephalus*, herring *L. argentatus*, common *L. canus* and lesser black-backed *L. fuscus*), waders (dunlin *Calidris alpina*, curlew *Numenius arquata*, redshank *Tringa totanus*, turnstone *Arenaria interpres*, ringed plover *Charadrius hiaticula*) and waterfowl (wigeon *Anas penelope*, teal *A. crecca*, garganey *A. querquedula*, shoveler *A. clypeata*, and shelduck *Tadorna tadorna*), though these were similarly provided with low resolution grid references.
- 4.15 Several of the bat records were of local roosts, the nearest of which comprised two roosts of unknown type (one unidentified bat species roost located 0.18km north-east and one common pipistrelle roost located 0.58km north) and one serotine maternity roost, dating from 2010, located 0.43km to the south of the site. Large numbers of additional common lizard *Zootoca vivipara* and slow-worm records were also provided, the majority of which were from residential areas located 2km or more north-east of the application site.
- 4.16 Records of notable plant species, including bluebell *Hyacinthoides non-scripta*, pyramidal orchid *Anacamptis pyramidalis*, lizard orchid *Himantoglossum hircinum*, early-spider orchid *Ophrys sphegodes*, and autumn Lady's-tresses *Spiranthes spiralis* were also returned from within the local area, however these were also provided with low resolution grid references and could not be plotted accurately.

Field Results- Habitats and Flora

- 4.17 Habitat descriptions of the site are provided below. Target Notes (TN) and the distribution and extent of the habitats described below are mapped on *Figure 2 – Phase 1 Habitat Plan*. A full list of botanical species identified on-site, with a list of target notes highlighting additional points of interest, may be found in Appendix A.

Arable Land and Margins

- 4.18 A significant proportion of the land area included within the application boundaries comprised an arable field under active cultivation. The crop was bordered on all sides by a well-worn dirt track, with regular footfall ensuring it remained bare of vegetation.
- 4.19 Around the peripheries of the arable field were 2-5m wide margins which comprised species poor semi-improved grassland, dominated by grass species including cock's-foot *Dactylis glomerata*, Yorkshire-fog *Holcus lanatus* and red fescue *Festuca rubra*. A limited assemblage of flowering species, including occasional red dead-nettle *Lamium purpureum*, ribwort plantain *Plantago lanceolata*, bristly oxtongue *Helminthotheca echioides*, and common field speedwell *Veronica persica* were also present.
- 4.20 A section of the field margin along the eastern edge of the arable field was wider, measuring approximately 10m wide, where two manhole covers had prevented farm vehicles from ploughing the field as close to the field edges.
- 4.21 Several sections of these margins were increasingly dominated by well-established tall ruderal species, including abundant Alexander's *Smyrnium olusatrum*, and frequent common nettle *Urtica dioica* and hogweed *Heracleum sphondylium*.
- 4.22 The composition and character of the arable field and associated margins were largely unchanged from 2017.

Species-poor Semi-improved Grassland

- 4.23 North of the large arable field was a smaller field compartment comprised predominantly of species-poor semi-improved grassland, formerly sub divided into smaller paddocks with fencing that is longer present. The species composition of this area of grassland was predominantly limited to a few grass species, including cock's-foot, red fescue and Yorkshire-fog, with few flowering forbs, including locally frequent cleavers *Galium aparine*, bristly oxtongue *Helminthotheca echioides*, daisy *Bellis perennis* and wild carrot *Daucus carota*, with occasional teasel *Dipsacus fullonum*, curled dock *Rumex crispus*, and spear thistle *Cirsium vulgare*. The species composition of this grassland was similar to that identified in 2017.
- 4.24 A few areas of relatively sparse, scrambling bramble *Rubus fruticosus* agg. scrub, and scattered hawthorn *Crataegus monogyna* and elder *Sambucus nigra* saplings, were identified as encroaching into the field along its southern, eastern, and southwestern edges (*Figure 1* Target Notes TN1, TN2 and TN3). The field had not been well managed in the intervening time between 2017 and 2021. Though sparse, the extent of the scattered scrub and sapling trees had increased by the time of survey in 2021.

Tall Ruderal

- 4.25 Several of the field margins were increasingly dominated by tall ruderal vegetation, with sections along the road verges parallel with Cross Road to the east, and Ellen's Road to the south, almost entirely comprised of Alexander's, common hogweed, cow parsley *Anthriscus sylvestris* and common nettle. A small patch of the semi-improved grassland compartment to the north, along the western edge, near to where it narrowed at its northern end, was also dominated by tall ruderal species, primarily common nettle (TN4).

Scrub

- 4.26 A dense belt of mixed scrub formed the boundary between the northern edge of the larger arable field, and the neighbouring residential gardens. This dense scrub was comprised predominantly of bramble, with occasional hawthorn, holly *Ilex aquifolium*, ornamental cherry *Prunus sp.*, and dogwood *Cornus sanguinea* saplings, and an underlying ground flora dominated by common nettle and hogweed.
- 4.27 Scattered patches of bramble were identified growing in association with the fence lines that enclose the semi-improved field compartment to the north, as well as its eastern boundary with the neighbouring residential gardens, with occasional sapling trees, including hawthorn, dogwood, elder, and walnut *Juglans regia*, also scattered around the smaller field's southern, western, and northern edges.
- 4.28 These areas of scrub remained largely consistent with that identified during earlier surveys in 2017, with their composition and extent largely similar.

Deciduous Plantation Woodland

- 4.29 The southern and western edge of the arable field was bordered by a stand of deciduous plantation woodland, dominated by young trees. At its southern end, the woodland canopy was primarily composed of young willow *Salix sp.* trees, with a compact, closely packed understorey dominated by spindle *Euonymus europaeus*, dogwood and elder.

- 4.30 Moving north the composition of the woodland was diverse, with young stands of ash *Fraxinus excelsior*, English oak *Quercus robur*, beech *Fagus sylvatica*, holly, and hawthorn interspersed among the dense understorey of bramble, spindle, and dogwood. The composition and extent of this parcel of plantation woodland is unchanged from initial surveys in 2017.

Standing Water (off-site)

- 4.31 There was no standing water present within the application boundaries, though there was a small pond in the north-western corner of the field located immediately adjacent to the application site, south of Station Road (*Figure 3: Waterbody Locations Plan*). However, this pond was dry at the time of survey, consistent with its status when it was first surveyed in 2016/17. A dense coverage of nettle and bramble growing over the site of the pond indicates the waterbody had likely been dry for some time.

Hedgerows

- 4.32 Two hedgerows (H1 and H2) were present along the eastern and northern edges of the smaller field compartment to the north and formed boundaries with the neighbouring residential gardens immediately adjacent. Given their status as residential boundaries these hedgerows were not assessed under the Hedgerow Regulations 1997, or Hedgerow Evaluation and Grading (HEGS) system. Species present in these hedgerows included a mix of holly, privet *Ligustrum ovalifolium*, sycamore *Acer pseudoplatanus*, aspen *Populus tremula*, walnut, and Leyland cypress *Cupressus x leylandii*.
- 4.33 A patchily distributed line of scattered scrub (TN5), which passed parallel with Cross Road to the east, was also present. These patches of scrub were located along the eastern boundary of the larger arable field compartment that consisted of a Species present comprised a mix of dogwood, hawthorn, and blackthorn *Prunus spinosa*, with occasional bramble and ivy *Hedera helix* interspersed. This is likely to have once been a hedgerow (H3), which is now defunct and is likely to have been for some time, as the structure of this boundary has remained unchanged since previous surveys in 2017.

Fauna

Badger

- 4.34 During the phase 1 habitat survey, evidence for site utilisation by badgers was sought. While no evidence indicative of badger presence was found within the application site, the habitats (woodland edge and hedgerow bases) and topography (banks and spoil heaps) present within the application boundaries (and the surrounding area) were considered to provide suitable context for the excavation of setts; and the presence of scrub, ruderal habitat, and nearby residential dwellings, means there were several possible opportunities for foraging.
- 4.35 Moderate levels of rabbit activity (including burrow excavations and droppings) were detected on-site, particularly along the western edge of the semi-improved field to the north, where a small number of burrows, characteristic of rabbit, were found.
- 4.36 Badgers are transient in nature, and thus activity levels can vary dependent on the time of the year, therefore badger activity was monitored throughout the course of other protected species surveys conducted. No evidence indicative of badger was found.

Bats

- 4.37 There were no trees or buildings located within the application site boundaries that were identified to support potential features conducive for roosting bats.

Manual Activity Transect Surveys

- 4.38 Three manual activity surveys were undertaken in 2021, one each in May, August, and October (spring, summer, and autumn, respectively), during which contacts from three different species/species groups, were recorded. Results for each transect survey are summarised in *Table 9* below.

Table 9: Bat Transect Summary of Results 2021

Date	Total Contacts	Species Recorded (No. Contacts)	Activity Summary
18 th May 2021 Figure 4	12	Common pipistrelle (9), soprano pipistrelle (3)	<p>Two species were recorded, with most contacts originating from common pipistrelles. All the contacts from common pipistrelles were recorded in association with the eastern edge of the plantation woodland that borders the arable field. Four contacts were of common pipistrelles observed foraging for prolonged periods (for between 3 and 7 minutes) along the edge of the woodland, while the remaining contacts were single, or low numbers of passes, from commuting individuals, also travelling along the woodland edge/field margins.</p> <p>Three contacts from soprano pipistrelles were also recorded, two of which were from individuals commuting around the southern end of the plantation woodland, near point count E and the other passing along the woodland edge near point count I. All three contacts comprised no more than single passes.</p>
17 th Aug 2021 Figure 5	12	Soprano pipistrelle (6), Common pipistrelle (5), <i>Nyctalus</i> sp. (1)	<p>Three species were recorded, with most contacts originating from soprano pipistrelles. Contacts from soprano pipistrelles were identified along the edge of the plantation woodland, and from the eastern end of the northern arable field boundary (at point count PCG). Contacts from soprano pipistrelle comprised low numbers of passes from commuting individuals.</p> <p>Common pipistrelles were the next most frequently recorded, with all contacts identified in association with the eastern edge of the plantation woodland. Three contacts were of common pipistrelles observed foraging for prolonged periods along the edge of the woodland, including one observation of two bats foraging together. The remaining contacts were low numbers of passes from commuting individuals, also travelling along the woodland edge/field margins.</p> <p>A single contact from an unidentified <i>Nyctalus</i> species was also detected commuting northwest around the northern edge of the plantation woodland.</p>
6 th Oct 2021 Figure 6	10	Common pipistrelle (7), soprano pipistrelle (3),	<p>Two species were recorded, with most contacts originating from common pipistrelles. Contacts from common pipistrelles were widely distributed around the site peripheries, recorded in association with the edge of the plantation woodland, residential hedgerows, and scattered scrub. All these contacts single, or low numbers of passes, from commuting individuals travelling along the woodland edge/field margins.</p>

Date	Total Contacts	Species Recorded (No. Contacts)	Activity Summary
			Three contacts from soprano pipistrelles were also recorded, comprised of individuals noted as commuting along the southern end of the plantation woodland, near point counts C and H, or travelling north towards point count J, located along the eastern boundary of the smaller semi-improved grassland field compartment. All three contacts comprised no more than one or two passes.

- 4.39 Contacts from bats were recorded across the application site, however most were detected at specific areas, where activity from bats was notably concentrated. Few or no contacts from bats were recorded in association with the smaller field to the north (and adjacent residential gardens), or the eastern boundary with Cross Road, with only small numbers of commuting passes from pipistrelles recorded in summer and autumn.
- 4.40 Most activity from bats was identified along the edge of the plantation woodland that borders the southern and western edges of the arable field and comprised a mix of bats observed either commuting along the woodland edge or foraging for extended periods of several minutes before moving on. Bat activity recorded on manual activity surveys almost entirely comprised common and soprano pipistrelles, with soprano pipistrelles only recorded commuting along the woodland edge and site boundaries.
- 4.41 Results from 2017 transect surveys, conducted in May, July, and September, recorded similar species and levels of activity that identified in 2021. These surveys included an additional parcel of land immediately to the east, comprised of a second arable field compartment. Six contacts, all from common pipistrelle, were recorded during the transect in May. Seventeen contacts from bats were recorded in July, largely comprised of common and soprano pipistrelles, with single contacts from *Nyctalus* and *Myotis* species also recorded. Nine contacts from bats, including one brown long-eared bat, were recorded in September.
- 4.42 Most activity from bats recorded in May and July 2017 occurred along the southern boundary of the arable field, in association with the edge of the plantation woodland, with a small number of contacts occurring sporadically along the eastern edge of the additional field compartment. Contacts from bats recorded in September were located either around the field boundaries along the northern edge of the smaller field or scattered sporadically around the field margins of the additional field.

Automated Activity Surveys

- 4.43 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 several 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 may create a number of registrations, for example an individual foraging in close proximity to the microphone for a sustained period of time.

Overall Summary

- 4.44 In total, six successful static recording units were deployed, covering five days during May, August, and September/October 2021 (representing the spring, summer, and autumn seasons respectively).

- 4.45 Eight species/species groups were recorded over the survey season, consisting of common pipistrelle (comprising 92.96% of total data), soprano pipistrelle (5.03%), *Myotis* sp. (0.70%), *Pipistrellus* sp. (0.59%), *Nyctalus* sp. (0.32%), brown long-eared bat (0.19%), serotine (0.10%), and Nathusius' pipistrelle (0.10%).
- 4.46 *Table 10* summarises the activity levels recorded and the locations on-site for each of the units deployed to date. Of the six static detector units deployed during 2021, unit C, deployed in August 2021 and positioned at the southern end of the plantation woodland that forms the southwest site boundary, recorded the highest activity levels, with 5474 total registrations.
- 4.47 Unit B, deployed in May 2021, situated on the intersection of two hedgerows that form the western and northern boundaries of the smaller field compartment, recorded the fewest registrations from bats (35 in total).
- 4.48 Three static detector units were deployed during 2017, one each in May, July, and September. The spring season unit recorded the greatest numbers of bats (329 registrations total), with the July and September statics recording 113 and 65 contacts, respectively. Similarly, to 2021 pipistrelles (common and soprano) comprised the bulk of the recordings (94.7%), with low numbers of *Nyctalus* sp., *Myotis* sp., noctule, brown long-eared, serotine, and Nathusius's pipistrelle also recorded, each accounting for no more than 2% of registrations.
- 4.49 No Annex II species have been identified on-site during either 2021 or 2017, with a large proportion of the registrations recorded originating from widespread and relatively commonly occurring bat species and species groups.
- 4.50 Please see *Figure 2: Phase 1 Plan* for static (passive) detector unit locations and *Table 11* and *Appendix B* for full results.

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Table 10: Static Detector Results Descriptions 2021

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity
18 th – 23 rd May 2021	Unit A (13): Located centrally along the edge of the plantation woodland	217	Common pipistrelle (192), Soprano pipistrelle (20), Nathusius' pipistrelle (3), Brown long-eared bat (1), <i>Myotis</i> sp. (1),	<p>Common pipistrelles were the most frequently recorded bat species during the recording period, comprising 88% of contacts. Activity from common pipistrelles was recorded on all five survey nights in relatively consistent numbers, with a slight peak on 18th/19th May (with 77 registrations), and low of 4 registrations recorded on 21st/22nd May. Registrations were predominantly recorded between the hours of 21:00 and 22:00, with moderate levels of activity between 22:00 and 01:00. Activity declined into the early hours of the morning (between 01:00 and 05:00).</p> <p>Soprano pipistrelles comprised the next frequently recorded species, comprising nearly 10% of total registrations. Soprano pipistrelles were recorded every night in similarly low numbers, with most activity distributed over the first half of a given night, between 21:00 and 01:00.</p> <p>The remaining species/species groups were recorded sporadically at low frequency throughout the recording period (representing less than 2% of total contacts). Single registrations from Nathusius' pipistrelles were recorded between 23:00 and 01:00 hours on the first, second and last nights of the recording period. Single registrations from brown long-eared bats and <i>Myotis</i> species were recorded on the first and last nights of the survey period, respectively.</p>
18 th – 23 rd May 2021	Unit B (14): Located at intersection of hedgerows forming the northern and western boundaries of the smaller field compartment	35	Common pipistrelle (13), <i>Myotis</i> sp. (9), Brown long-eared bat (8), Soprano pipistrelle (3), Nathusius' pipistrelle (1), <i>Pipistrellus</i> sp. (1)	<p>Common pipistrelles were the most frequently recorded bat species, comprising nearly 40% of contacts. Activity was limited to the first survey two nights, and the last, with numbers of registrations consistent between nights. Pipistrelles were recorded predominantly between 21:00 and 22:00, with activity also recorded between 22:00 and 01:00.</p> <p>Unidentified <i>Myotis</i> species and brown long-eared bat were recorded in similar numbers of registrations, nine and eight respectively and were both recorded only on the first and last nights of the survey period. Brown-long eared bats peaked on the first night, with seven registrations. Numbers of <i>Myotis</i> bat registrations were relatively even between the two nights they were detected, but activity across both nights peaked between 00:00 and 01:00 hours.</p> <p>The remaining species/species groups were recorded sporadically at low frequency throughout the recording period (with less than 5 registrations each). Soprano pipistrelles were only recorded on the second and last survey nights, in similarly low numbers, between 21:00 and 23:00 hours. Nathusius' pipistrelle and <i>Pipistrellus</i> species were each recorded as single registrations on the first and last nights of the survey period, respectively.</p>

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity
5 th – 10 th August 2021	Unit C (12): Southern end of plantation woodland, along southern application site boundary	5474	Common pipistrelle (5161), Soprano pipistrelle (254), <i>Pipistrellus</i> sp. (31), <i>Myotis</i> sp. (17), <i>Nyctalus</i> sp. (6) Serotine (5)	<p>Common pipistrelles were the most frequently recorded bat species during the recording period, comprising nearly 95% of contacts. Activity from common pipistrelle species were recorded every night, with levels of activity greatest on 7th/8th August, and lowest on the 9th/10th August (1366 and 492 registrations, respectively). Pipistrelles were recorded throughout the night, with most activity recorded during the evening between 23:00 and 01:00 hours, with activity tailing off through the morning. Soprano pipistrelles were the next most frequently recorded species, and were also recorded every night, peaking on the first night (5th/6th). Activity from soprano pipistrelles peaked at 21:00-23:00, 01:00-02:00 and 04:00-05:00 hours. Unidentified <i>Pipistrellus</i> species were the third most frequently recorded species group, detected every night in consistent numbers (ranging between 3 and 9 registrations). Activity was greatest between 04:00 and 05:00 hours.</p> <p>Unidentified <i>Myotis</i> species were recorded every night, ranging in numbers between 1 and 6 registrations, with most activity occurring between 22:00 and 00:00 hours. Unidentified <i>Nyctalus</i> species and serotine were recorded in similarly low numbers (eight and seven registrations, respectively). <i>Nyctalus</i> species were recorded in similar numbers on the third, fourth and last nights, while serotines were only recorded on the second and third nights. Activity from both species only occurred predominantly between 21:00 and 23:00 hours.</p>
5 th – 10 th August 2021	Unit D (27): Within scattered scrub located along north-western boundary fence line of smaller grassland compartment to the north	55	Common pipistrelle (37), <i>Nyctalus</i> sp. (10), Soprano pipistrelle (5), Brown long-eared bat (2), Serotine (1)	<p>Common pipistrelles were the most frequently recorded bat species during the recording period, comprising more than 65% of contacts. Activity from common pipistrelle species was recorded every night, peaking on 9th/10th August. Pipistrelles were recorded throughout a given night, with a peak in between 04:00 and 05:00 hours.</p> <p>Unidentified <i>Nyctalus</i> species were the next most frequently recorded species/species group, recorded on three nights out of five, peaking on the last night (9th/10th). Most activity from <i>Nyctalus</i> species was recorded between 21:00 and 23:00 hours. Soprano pipistrelles were recorded every night except the first, with no more than one or two registrations. Activity was greatest between 04:00 and 05:00 hours.</p> <p>The remaining species/species groups were recorded sporadically at low frequency throughout the recording period (with less than 5 registrations each). Brown long-eared bats and serotine were each recorded as single registrations on the fourth night of the survey period (8th/9th), with a single registration from brown long-eared also recorded on the last night.</p>

Survey Period	Unit Reference / Location	Total Registrations Over 5 nights	Species recorded (in order of abundance and total number of registrations)	Summary of Activity
28 th September – 3 rd October 2021	Unit E (26): Northern end of plantation woodland, along western application site boundary	59	Common pipistrelle (46), <i>Myotis</i> sp. (8), Soprano pipistrelle (3), <i>Pipistrellus</i> sp. (1), <i>Nyctalus</i> sp. (1)	<p>Common pipistrelles were the most frequently recorded bat species during the recording period, comprising nearly 78% of contacts. Activity from common pipistrelle species was recorded every night, peaking on 1st/2nd October. Pipistrelles were recorded throughout a given night, with a peak of activity occurring between 19:00 and 21:00 hours.</p> <p>Unidentified <i>Myotis</i> species were the next most frequently recorded species group and were detected on the second and fourth nights of the survey period. Numbers of <i>Myotis</i> bat registrations were relatively even between the two nights they were detected, with activity similarly sporadically distributed through a given night.</p> <p>The remaining species/species groups were recorded sporadically at low frequency throughout the recording period (with less than 5 registrations each). Soprano pipistrelles were only recorded on the night of the 1st/2nd October, with low levels of activity at 21:00-23:00 and 03:00-05:00 hours. <i>Nyctalus</i> and <i>Pipistrellus</i> species were each recorded as single registrations on the second night of the survey period (29th/30th).</p>
13 th – 18 th October 2021	Unit F (28): Southern end of residential hedgerow that forms the north-eastern boundary of smaller northern field compartment	55	Common pipistrelle (31), Soprano pipistrelle (12), <i>Myotis</i> sp. (6), Nathusius' pipistrelle (2) <i>Pipistrellus</i> sp. (2), <i>Nyctalus</i> sp. (2)	<p>Common pipistrelles were the most frequently recorded bat species during the recording period, comprising more than 55% of contacts. Activity from common pipistrelle species was recorded every night, peaking on 14th/15th October (with 14 registrations). Pipistrelles were recorded throughout a given night, with most activity occurring between 18:00 and 20:00 hours.</p> <p>Soprano pipistrelles were the next most frequently recorded species group and were detected every night, except the third and fifth, ranging between one and 8 registrations. Activity from soprano pipistrelles was largely restricted to the hours of the morning, between 03:00 and 07:00.</p> <p>Unidentified <i>Myotis</i> species were recorded every night, except the second and last, in similar numbers (1-3 registrations). <i>Myotis</i> bat activity occurred sporadically through the night, with a slight peak between 19:00 and 20:00.</p> <p>The remaining species/species groups were recorded sporadically at low frequency throughout the recording period (with two registrations each). Nathusius' pipistrelle and <i>Pipistrellus</i> species were both recorded from single registrations on two nights. <i>Nyctalus</i> were only recorded on 13th/14th between 21:00 and 22:00 hours.</p>

Birds

- 4.51 Woodland, hedgerows, and scattered scrub provide potential nesting and foraging habitat for a range of urban/woodland edge and farmland bird species likely to be present in the local area. Due to the density of the understorey trees within the deciduous plantation woodland, there are good nesting opportunities present for open nesting species that favour low lying scrub, such as warblers and chats. The small size and partially enclosed nature of the arable field makes it less suitable potential habitat for ground nesting birds such as skylark.
- 4.52 The birds encountered on-site, included several widespread and commonly occurring species typical of cultivated land, woodland, and hedgerows situated on the edge of urban development, such as blackbird *Turdus merula*, blue tit *Cyanistes caeruleus*, goldfinch *Carduelis carduelis*, wren *Troglodytes troglodytes* and green woodpecker *Picus viridis*, all of which were observed foraging around the site.

Great Crested Newt (GCN)

- 4.53 While no waterbodies were located on-site, one waterbody (pond P1) was identified 20m south-east, on the north-western corner of the adjacent field, to the south of Station Road. The pond is considered unsuitable to support GCN as it does not appear to contain standing water and has no evidence of aquatic or marginal vegetation that would indicate it holds water. A dense covering of well-established bramble and nettle, present since initial surveys of the pond in 2016, suggests it has been dry for several years. No other ponds or ditches were identified within 250m of the site boundary.
- 4.54 The field margins, rough grassland in the northern field compartment, and woodland located within the application boundaries are conducive to support GCN during their terrestrial phase, providing opportunity for refuge and foraging. Terrestrial habitat in the immediate area for GCN was limited to the margins of the neighbouring arable fields, with a similar composition of tall ruderal and common grass species.
- 4.55 No records of GCN were returned from consultations with the local records centre from within 1km of the application site, within the last ten years.

Reptiles

- 4.56 Several records of common lizards and slow-worms were returned by KMERC from within 1 and 2km of the site, with the nearest records located 0.41km north-west of the application boundaries, in a neighbouring field associated with a local school, with further records of both species present in the surrounding residential areas.
- 4.57 Habitats suitable for reptiles were present within the application boundaries, with the unmanaged, rough semi-improved grassland field compartment to the north providing the most extensive area of potential habitat for reptiles, as the tussock forming grasses and scattered scrub form a mosaic which provides opportunity for foraging and basking. Suitable habitat around the larger southern field compartment was limited to the arable field margins, with extensive swathes of tall ruderal vegetation, and sparse scrub also found within the field margins that also provide some possible opportunities for foraging and shelter.

- 4.58 The surveys completed were conducted during weather conditions suitable for reptile sightings. *Table 11* below summarises the total number of reptiles recorded during the survey period in spring/summer 2021.

Table 11. Reptiles Recorded During Each Survey

Survey Date	Male adult	Female adult	Juvenile	Unknown Adult
18/05/21	SL x 1	CL x 3	CL x 4	SL x 1 CL x 2
24/05/21	-	-	SL x 5 GS x 1	SL x 2
03/06/21	SL x 3	SL x 1	SL x 5	CL x 1
07/06/21	SL x 2	SL x 5	SL x 1	SL x 1
15/09/21	-	SL x 2	SL x 5	-
17/09/21	-	SL x 3	-	-
30/09/21	SL x 1	SL x 2	SL x 1	

KEY: SL – Slow-worm, CL – Common Lizard, GS – Grass Snake

- 4.59 Common lizards and slow worms were identified on each of the seven surveys undertaken, with a peak count of five and eight adults, respectively. Sightings of slow-worms were widely distributed on-site, with single individuals observed sporadically within the arable field margins, along the edge of the plantation woodland and the tall ruderal along Ellen's Road. However, the majority of slow-worm sightings were concentrated in the smaller grassland compartment, with adults and juveniles recorded under refugia distributed throughout.
- 4.60 Common lizard sightings were restricted to the rough grassland to the north, where they were also encountered across the grassland extent. A single juvenile grass snake *Natrix helvetica* was also recorded from along the edge of the scattered scrub on the western boundary of the smaller field (*Figure 7: Reptile Survey Plan*).
- 4.61 In accordance with the Key Reptile Site Register (Froglife Advice Sheet 10, Table 2) a peak adult count of five common lizards and eight slow worms indicates that the application site supports a 'good population' classification for both these species. Only juvenile grass snakes were observed, so their population cannot be determined as per the Register. However, the presence of juveniles from all three of the widespread UK reptile species identified on-site, including grass snake, indicates there are likely to be established breeding populations of each species within, or nearby the application boundaries.

Invasive Species

- 4.62 No plants listed as invasive, non-native species on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified within the application boundaries.

5.0 DISCUSSION AND RECOMMENDATIONS

- 5.1 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

- 5.2 The proposals are for a residential development of up to 140 units, with associated infrastructure and landscaping (7572-L-12 rev B FPCR). The development will result in the complete loss of cultivated arable land and its associated field margins, with a small section of scattered scrub on the eastern boundary to be removed to facilitate access from Cross Road. However, green infrastructure (GI), covering an area of at least 4.5ha, is proposed for the southern edge of the site and will comprise additional tree and hedgerow planting, an attenuation basin and a wide expanse of public open greenspace that features a public play area and part of a circular pedestrian and cycle route around the perimeter of the site.

Statutory and Non-Statutory Designated Sites

Statutory Sites

- 5.3 Guidance on the implications of the legislation covering international sites is provided by Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System. In brief this states that the competent authority (the local planning authority) must establish if any proposals not directly connected to or necessary for the management of the international site, either alone or in combination, are likely to have a significant effect on the interest feature of the site. If, on a precautionary basis, there is a risk that there may be a significant effect upon the International site then a further Appropriate Assessment may be required.
- 5.4 There are four statutory sites of international importance for nature conservation importance situated within 15km of the site boundaries, the nearest of which is the Thanet Coast & Sandwich Bay Ramsar Site, located approximately 1.8km northwest of the study area. Thanet Coast & Sandwich Bay SPA, and Sandwich Bay SAC, whose boundaries overlap within those of the Ramsar site, are located approximately 3.5km northeast of the study area. Thanet Coast & Sandwich Bay qualifies as a SPA as it supports breeding populations of little tern and golden plover, and populations of migratory turnstone, each of which is a species of European conservation importance. It is designated as a Ramsar Site as it supports 15 British Red Data Book wetland invertebrate species, and because it regularly supports internationally important populations of turnstone. Additionally, it qualifies as an SAC due to the presence of 4 different Annex I listed sand dune type habitats.
- 5.5 The nearest section of the Thanet Coast Ramsar site is connected to the study area via a network of roads and public footpaths. The remainder of the Ramsar Site, and the area of the site included within the SPA and SAC boundaries are situated on the other side of the town of Deal but are accessible by roads and footpaths through the town. Habitats within the SAC/SPA/Ramsar Site consist primarily of rocky shores, sand dunes and sand dune grassland, estuary, saltmarsh, and grazing marsh, none of which are present within the study area.

- 5.6 Regarding the use of the study area as a foraging, roosting, or (in the case of little terns) breeding resource by qualifying species of the Thanet Coast SPA and Ramsar site, such use is considered unlikely due to the small size of the fields, regular disturbance from local people, and the nature of the habitats within it (predominantly semi-improved grassland and arable fields). It is possible that individual golden plover may use the grassland for feeding, but large flocks tend to use large fields for foraging, so the loss of small areas of grassland habitat would not affect the populations overwintering in the designated sites.
- 5.7 Dover to Kingsdown Cliffs SAC is located approximately 3km southeast of the study area. It is designated for its vegetated sea cliffs, a habitat that is not present within the study area. Although the town of Kingsdown is located between the site and the study area, it is connected to it via public footpaths. The main threats to the SAC are listed as habitat succession, grazing pressure and air pollution. Neither grazing pressure, nor habitat succession, will be influenced by the development, and the designated site lies outside the expected ranges within which air pollution from increased traffic, or dust from construction would be expected to travel^{24,25,26}.
- 5.8 Lydden & Temple Ewell Downs SAC is located approximately 9km southwest of the study area and is selected as an SAC due to the presence of the Annex I habitat - semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia* (important orchid rich sites)), a habitat that is not present within the study area. The site is similarly connected to the study area by public footpaths and green corridors but is separated from it by two main roads (the A2 and the A256). The site is at risk from additional recreational pressure from trampling and direct fertilisation from dog fouling. However, the distance to the SAC from the study area is considered too great to facilitate regular visits by residents from the proposed development and therefore adverse effects from additional recreational pressure upon are likely to be minimal. Because of this, this SAC will not be considered further in this report.
- 5.9 Sandwich Bay to Hacklinge Marshes SSSI which is located approximately 1.8km northwest of the study area is the only statutory site of national importance to nature conservation within 2km of the study area. It is designated as a SSSI due to the presence of important sand dune systems and sandy coastal grassland, habitats which are not present within the study area. The study area is connected to the SSSI via public footpaths.
- 5.10 A Habitats Regulations Assessment (HRA) was adopted by Dover District Council in 2012 to inform their Local Development Framework (LDF) Core Strategy (adopted February 2010)²⁷. With respect to the internationally designated sites of the Thanet Coast and Sandwich Bay (SPA, SAC, and Ramsar Site), the HRA concluded that the main impacts will be due to recreational pressure, urbanisation, impacts on water quality and water resources, and coastal squeeze. The Thanet Coast SPA Mitigation Strategy²⁸ comprises 4 elements:
- *Draw on funding (via a bond) to support wardening at Sandwich Bay for a period of 10 years;*
 - *Monitoring of potential impacts associated with Dover development;*

²⁴ Natural England Internal Guidance – Approach to Advising Competent Authorities on Road Traffic Emissions and HRAs V1.4 Final - June 2018

²⁵ Guidance on the assessment of dust from demolition and construction (2014) Institute of Air Quality Management

²⁶ Guidance on the Assessment of Mineral Dust Impacts for Planning (2016). Institute of Air Quality Management

²⁷ *Habitat Regulations Assessment of the Dover LDF Core Strategy* [online] <https://www.dover.gov.uk/Planning/Planning-Policy/Local-Plan/Core-Strategy/HabitatRegulationsAssessment.pdf>

²⁸ Dover District Council *Thanet Coast SPA Mitigation Strategy* October 2012

- *Contribution to the Pegwell Bay and Sandwich Bay Disturbance Study; and*
 - *To use the monitoring to identify lesser sources of development-related disturbance and to draw on the relevant developers contributions for mitigation of such.*
- 5.11 The overall sum for the above was calculated to be £505,000 of which £350,000 would be in the form of a bond. The development contribution is calculated per house, with the amount varying with respect to bedroom number. For outline applications where the detail of the dwelling type has not been established, an amount of £49.59 per dwelling is used (the same as for a 3-bedroom house). The Thanet Coast and Sandwich Bay SPA Mitigation Strategy, as outlined above, currently requires a financial contribution to be paid into a Strategic Access Management and Monitoring (SAMM) Plan, which is applied across the whole Dover District on all developments exceeding 15 dwellings, within 6km of the SPA. This mitigation strategy runs into 2022.
- 5.12 This SAMM Plan is now being updated, informed by a newer HRA assessment that is being completed. It will establish the specifics of the mitigation and monitoring measures for which the proposed tariffs will be raised, as well as the details of an updated tariff structure for 2022 and beyond. Proposals for the new SAMM tariff will reduce the threshold to apply to all developments of 10 dwellings or more in size. All proposals for new development within a 9km zone of influence radius of the SPA/Ramsar sites will be required to make a financial contribution towards these mitigation measures. These contributions will be set by a tariff system within the Local Plan, to be reviewed every 10 years, and collected via a S106 agreement. The strategy will be prepared as part of an evidence base for the Regulation 19 Draft Dover District Local Plan, within which DM Policy 40 will specify the requirement for developments to mitigate for likely effects on the Thanet Coast and Sandwich Bay SPA/Ramsar site.
- 5.13 The financial contribution to the Mitigation Strategy, as outlined in the Thanet Coast & Sandwich Bay SPA Mitigation Strategy, will offset recreational impacts of the proposed development on the Ramsar site (and the SSSI it shares boundaries with), and therefore effects of the development on the Thanet Coast & Sandwich Bay SPA/Ramsar site is considered to be negligible.

Non-statutory Designated Sites

- 5.14 There are no non-statutory designated sites within 1km of the study area.

Habitats/Flora

- 5.15 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland and linear habitats in NPPF, or non-statutory site designation),
 - Identification as a habitat of principal importance for biodiversity under Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within England and the local area.
- 5.16 Under NPPF development should seek to contribute a net gain in biodiversity with an emphasis on improving ecological networks and linkages wherever possible. It is recommended that hedgerows and treelines, where feasible, are to be retained, buffered, and enhanced to ensure the site's connectivity into the wider area is maintained.

- 5.17 The application site includes approximately 2ha of young plantation woodland along its southwestern edge, which contains a diverse range of native woody species and will be of increasing value for nature conservation as it matures. Proposals for the site indicate that this woodland compartment will be retained and extended along the southern boundary, adjacent Ellens Road, with 0.25ha of new planting. The existing woodland will be afforded suitable protection during construction activities i.e., working methods must adhere to standard best practise guidance. This will include BS5837 Trees in Relation to Design, Demolition and Construction – Recommendations: 2012 for trees and hedges.
- 5.18 Arable land and associated field margins, which formed the larger southern field compartment and comprised the bulk of the habitat within the application boundaries, supported limited floristic diversity, with its botanical composition dominated by common and widespread species of little conservation interest. Similarly, the semi-improved grassland which comprises the two smaller field compartments at the northern extent of the application site also predominantly supported common and widespread plants of little floristic interest. Consequently, these habitats were considered to be of low nature conservation value.
- 5.19 Proposed GI on-site includes linear sections of retained grassland which largely follows the pre-existing margins around the site boundaries. In addition, the narrower, northernmost extent of the existing rough, semi-improved grassland, which comprises the northernmost field compartment, is also to be retained as a habitat area for the existing reptile population. These areas of existing grassland should be enhanced through the planting of species-rich and tussock-forming grassland mixes wherever possible to further increase the opportunities they provide for small mammals, reptiles, and invertebrates. Similarly, the new area of public open greenspace along the southern edge of the site should include sections of grassland sown with a tussock-forming, species-rich meadow mix to enhance its value to pollinators. This could include areas around the proposed attenuation basin and along the edge of the new hedgerow.
- 5.20 Two hedgerows were recorded within, and bordering, the site. These form the northern and eastern boundaries of the northern field compartment. Given these hedgerows both form residential boundaries, neither was assessed for its conservation value under the Hedgerow Evaluation and Grading System (HEGS). Similarly, neither hedgerow meets the criteria for further consideration as important under the Hedgerow Regulations 1997. However, as these hedgerows contain a dominance of native woody species, they can be considered Habitats of Principal Importance under the NERC Act (2006), and therefore require consideration under the NPPF. Hedgerows generally are important landscape features, functioning as dispersal corridors, as well as possible foraging and nesting habitats for wildlife. As such hedgerows are identified as priority habitats and are listed as a Kent BAP Habitat. Current targets set in the BAP aim to retain and increase the extent of hedgerows and hedgerow trees within Kent.
- 5.21 These existing hedgerows on-site currently provide limited connectivity between habitats within the application site and the wider landscape. Under the current proposals these hedgerows are to be retained, with new lengths of hedgerow planting proposed, with one length to be planted along the western boundary of the northern field, and another between the development and GI space to the south. These additional hedgerows will improve linkages across the site and screen the open greenspace from the development. Additional scrub planting throughout the proposed GI, coupled with the new hedgerows, will compensate for the removal of a small section of defunct hedgerow (now a belt of sparsely scattered scrub) located along the eastern boundary with Cross Road, to facilitate site access.

- 5.22 All the semi-mature trees and scrub present within the site boundaries provide potential habitats for invertebrates, nesting birds and other wildlife and will be retained where possible. These will be protected from damage and from soil compaction during works by erecting and maintaining fenced Root Protection Areas (RPAs). Further native tree and scrub planting is to be incorporated throughout the GI, along boundaries and within the main body of the site.
- 5.23 Preference should be given within the planting scheme throughout the entire application site, including existing hedgerows and boundary features, to the use of locally native woody species, with an emphasis on species bearing nectar, berries, fruit and nuts, as these enhance the foraging opportunities for local wild fauna including birds and invertebrates. Suitable small tree species for inclusion in hedgerow and garden planting schemes include field maple, silver birch, wild cherry *Prunus avium*, bird cherry *P. padus*, holly, crab apple *Malus sylvestris* and rowan *Sorbus aucuparia*. Other shrub species suitable for inclusion within the soft landscaping design include hawthorn, hazel, blackthorn, dog-rose *Rosa canina*, honeysuckle *Lonicera periclymenum* and wild privet *Ligustrum vulgare*.
- 5.24 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.
- 5.25 The planting strategy, both within private and public areas, should therefore combine a range of native species and where appropriate, such as in gardens and more formal areas, a range of ornamental species with an accepted value for biodiversity. A variety 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.
- 5.26 An attenuation basin and associated linear drainage swale, located along the eastern edge of the woodland, are also included within the proposed GI space within the southern section of the site. The drainage pond should be designed specifically to maximise biodiversity value, with wide shallow draw down zones, scalloped edges, and deep central areas.
- 5.27 Planting should feature locally native marginal and aquatic vegetation including soft-rush *Juncus effusus* and purple loosestrife *Lythrum salicaria*, which can be planted around the pond margins, and tall emergent plants and floating-leaved plants, such as common reed *Phragmites australis* and yellow water-lily *Nuphar lutea* for deeper areas of water. The ponds can be made more visually attractive through the planting of selected species including marsh marigold *Caltha palustris*, water dock *Rumex hydrolapathum* and common water plantain *Alisma plantago-aquatica*. A denser and taller area of vegetation should be planted around the peripheries of the pond to provide additional habitats for invertebrates, and terrestrial habitats for amphibians.
- 5.28 It is considered that the provision of these enhancements, as discussed above, within areas of proposed on-site GI will improve the value of the site to biodiversity overall. As new habitats included in the greenspace mature and establish, they will provide a more diverse set of habitats than currently exist on-site, the bulk of which is dominated by arable land, which in turn will support a wider array of species.

Fauna

- 5.29 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 2017 (as amended). 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.
- 5.30 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.
- 5.31 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, LPAs 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 whose primary objective is to conserve or enhance biodiversity should be encouraged; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged*
- 5.32 The implications that various identified species or those that are thought reasonably likely to occur may have on developmental design and programming considerations are outlined below:

Bats

Potential Roost Assessment

- 5.33 No buildings were present on site and no trees were identified within the application boundaries that supported any potential roost features during the initial survey, and as such, potential bat roosts in trees are not considered a constraint to the development proposals.

Manual Activity and Automated Surveys

- 5.34 The habitats within the site, including woodland edge, grassland, and scattered scrub, all provide some potential foraging and commuting habitat for bats. Given the small size of the site and the paucity of habitats present however, the application site was considered to provide low to moderate suitability for bats. Consequently, bat activity on-site was assessed during 2021 using seasonal transect surveys and static monitoring methods, undertaken between April and October, as per BCT guidance.

- 5.35 Eight species/species groups were identified during these surveys, all of which are widespread and ubiquitous. Four of the six species/species groups were pipistrelles (common, soprano, Nathusius', and unidentified *Pipistrellus* calls with overlapping parameters); all of which are commonly occurring species, typical of urban edge, farmland, and woodland habitats. The species assemblage identified during 2021 was consistent with that recorded in previous surveys by FPCR ecologists, undertaken in 2017. Static detectors placed along the woodland edge consistently recorded greater levels of bat activity each month than those placed elsewhere around the site boundaries.
- 5.36 Comparably similar levels of bat activity were recorded in 2021 to that recorded in 2017. During surveys conducted in both years, activity from bats appeared to be concentrated in only a few specific areas of the site, with most contacts occurring along the edge of the plantation woodland to the southwest. Fewer registrations from bats were recorded from statics deployed on the peripheries of the northern field compartment. Static unit C, deployed in July 2021, sits as an outlier, with several times more registrations from bats recorded, when compared to the other static detectors set out in 2021, and indeed 2017. Review of the distribution of data on this static suggests that the larger volume of recordings comprised constantly foraging bats, triggering a high number of registrations (rather than high numbers of commuting bats).
- 5.37 Results of transect surveys provided further evidence to suggest that the woodland formed the primary area of habitat within the site boundaries for bats, though contacts were predominantly of pipistrelles (common and soprano), including both commuting passes, and prolonged periods of foraging activity lasting several minutes. Few or no contacts from bats were detected elsewhere within the application boundaries on manual activity surveys.
- 5.38 Boundary features, including the existing residential hedgerows and plantation woodland, are to be retained and enhanced where feasible, with small localised losses to a (now defunct) hedgerow along the eastern boundary to facilitate pedestrian and road access. New hedgerows will be planted as part of the GI to buffer the open greenspace from the development and enhance the northern boundary of the smaller semi-improved field compartment. Additionally, the existing woodland will be extended south and east with further structural planting along the southern site boundary. These additional areas of linear, structural habitat will improve habitat linkages across the site for bat movements through the landscape.
- 5.39 Cultivated arable land, which currently dominates the site, will be lost. However, a new area of open space will be included within the southern section of the site, which will provide significant ecological enhancements. New features included within this open space, such as the attenuation basin, open grassland and substantial new tree and scrub planting, each created using native species, will provide opportunities to increase invertebrate diversity on-site, and in turn increase the foraging potential for bat species. Planting should include early flowering native shrubs such as hawthorn, blackthorn, hazel, honeysuckle *Lonicera sp.*, and ivy *Hedera helix*.
- 5.40 The development should also provide refuge opportunities for the local bat populations through the installation of bat boxes on mature trees, and possible incorporation of tubes and/or bricks into the built fabric of residential dwellings. Bat boxes and bricks should be arranged around the development in different locations so that a number of different aspects are covered to provide a variety of alternative roost sites.

- 5.41 To further minimise any potential impacts on bats, proposals will also 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 with regard to current guidance provided by the Bat Conservation Trust³² and the Institution of Lighting Professionals³³ and adopt the following principles:
- The avoidance of direct lighting of existing trees, hedgerows, scrub, woodland, or proposed areas of habitat creation/landscape planting
 - Buffer zones and GI are not to be illuminated
 - During the construction period, no lighting should be used in proximity to boundary features, if needed lights will be directionally focused/shrouded, such measures would be detailed within a Construction and Environmental Management Plan (CEMP)
 - Lighting that is incorporated into the development design should comprise low pressure sodium lights, as they emit at one wavelength so attract less insects or LED lighting
 - Directional lighting and avoidance of 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 on properties backing on to sensitive hedgerows and woodland will be low wattage LED, which will be installed on properties at the construction stage to forestall a future homeowner installing unsuitable lighting which could impact on bats.
- 5.42 Roads and buildings in close proximity to new areas of GI and existing boundary habitats will have lighting sensitively positioned, so as to avoid illumination of canopies, which can disrupt flight patterns of bats.

Breeding Birds

- 5.43 All birds are protected whilst on the nest. Any vegetation, such as scrub or trees, that need removing, should be done outside of the bird breeding season (March to September). If this is not possible, vegetation must be checked prior to any removal by an experienced ecologist. If active nests are found in vegetation, the nest be left undisturbed and suitably buffered until all birds have fledged.
- 5.44 Existing nesting habitat located within, and immediately adjacent to the site, was limited to immature plantation woodland and scattered scrub around the site boundaries: habitats that are to be retained and enhanced as part of the proposed development. In addition, a wide swathe of GI will be implemented along the southern edge of the application site. This area of GI will include new standard trees, an attenuation feature, public greenspace, and hedgerows, as well as additional structural planting that will extend the woodland eastward. When these new areas of habitat establish, each will increase and enhance the breeding opportunities available for urban and woodland birds.

³² Bat Conservation Trust (2011) *Statement of the impact and design of artificial light on bats*

³³ Institution of Lighting Professionals (2011) *Guidance Notes for Reduction of Obtrusive Light*

- 5.45 It is also recommended that some consideration be given to the provision of nest boxes on-site. These should be of a variety of types to suit a wide range of woodland and urban-edge bird species and may be affixed to suitable retained or new trees, and/or incorporated into the built environment, further enhancing the available nesting opportunities for birds in the local area. This biodiversity measure will help contribute to the requirements of the NPPF.

Great Crested Newts

- 5.46 The great crested newt is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended) making it a European Protected Species.
- 5.47 It is an offence to:
- capture, kill, disturb or injure great crested newts (intentionally or recklessly);
 - damage or destroy a breeding or resting place (intentionally or recklessly);
 - disturb a great crested newt while it's in a structure or place of shelter or protection (intentionally or recklessly);
 - obstruct access to their resting or sheltering places (intentionally or recklessly); and
 - possess, sell, control or transport live or dead great crested newts, or parts of great crested newts.
- 5.48 GCN are also a Species of Principal Importance in England under Section 41 NERC Act and a European Protected Species. In addition, GCN is a Priority Species within the Kent BAP. The lifecycle of GCN means they spend a considerable amount of their time on land foraging, commuting, and hibernating.
- 5.49 No records of GCN were returned from KMERC during the data search. The site provided no waterbodies suitable for breeding and few potential habitats that would offer shelter and/or resting places for this species during their terrestrial phase, limited to semi-improved grassland and field margins.
- 5.50 One waterbody was identified within 250m of the application site: a pond in a neighbouring field to the south (P1). Pond P1, while accessible at the time of survey, was dry and appeared to have been for some time, suggesting it would make poor potential habitat for breeding GCN. As such, it was not assessed using HSI criteria.
- 5.51 Given the lack of local records for GCN, available breeding habitat on-site, or within 250m of the site boundaries, the limited extent of suitable terrestrial habitat on-site, or within the immediate surrounding area, and the intervening distance between the site and the nearest waterbodies with suitability to support GCN, further surveys for GCN presence/absence were not considered necessary. As such, the species not considered a development constraint.
- 5.52 Proposed enhancements within the GI will include the creation of an attenuation feature, linear drainage swales, and areas of grassland and scattered scrub in the GI along the southern edge of the site. This will enhance breeding, commuting and foraging habitat for GCN, if present, and other native amphibian species in general.

Reptiles

- 5.53 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.
- 5.54 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.
- 5.55 All common reptile species, including common lizard, are Species of Principal Importance under section 41 of the Natural Environment and Rural Communities Act 2006 (NERC) and priority species in England.
- 5.56 Common lizards and slow-worms have all been recorded from the wider area, predominantly from the neighbouring residential areas and fields to the northwest and southeast. The application site was found to provide areas of potential suitable commuting and foraging habitat for reptile species, comprising rough grassland, field margins, tall ruderal vegetation, and scattered scrub. Presence/likely absence surveys were conducted to ascertain the use of the site by reptiles, with good populations of slow-worm and common lizard recorded.
- 5.57 Slow-worms were the most widely distributed of the reptile species found on-site, with small numbers scattered around the margins of the arable field, with most found within the semi-improved grassland to the north. Common lizards were found only in the northern field compartment, mostly around the borders of the field, with two adults found under one reptile mat located in the interior of the grassland. Juveniles of both species were also recorded from the field peripheries, suggesting the populations are breeding on, or nearby, the application site. In addition, a single juvenile grass snake was also identified from the along the northern edge of the smaller grassland compartment.
- 5.58 These results were consistent with surveys undertaken on-site by FPCR ecologists in 2017 (which then included the adjacent field to the east), during which two native UK reptile species were identified, comprising a 'good' population of slow-worm and 'low' population of common lizard. Slow-worms were similarly widely distributed around much of the application site, with most recorded in the northern field compartment, with small numbers also found along the northern edge of the arable field. Common lizards were recorded along the northern edge of the arable field and the edge of the plantation woodland, as well as within the grassland that comprises the northern field compartment.

- 5.59 Passive displacement will be undertaken in areas of where sub-optimal habitats occur, including the arable field and associated grassland margins, where few or no records of reptiles have been identified. Grassland and tall ruderal habitat along the field margins will first be directionally trimmed and then fenced to prevent reptiles returning to the working area. Clearance will start at the southern and northern edges of the arable field and work west towards the retained plantation habitat along the south-west boundary.
- 5.60 Retained habitat, which includes the northernmost extension of the smaller field, would be left uncut and enhanced to provide optimal suitability for reptiles (further details below). Vegetation to be removed will be given two cuts, the first to 200mm and the second (1-2 hours later) down to 50mm. All arisings will be removed from the working area to prevent potential areas of refuge being used by reptiles moving across the area.
- 5.61 Suitable habitat within the working area, specifically the bulk of the northernmost semi-improved field compartment that will be lost to development, will be fenced with reptile exclusion fencing to ensure that removed animals do not return to the affected area. Following this, artificial reptile refugia will be laid at a rate of 100 per hectare within the working areas. Translocation will be undertaken only during the active period, between late-March to early-October when the daytime temperature is above 10°C and avoiding periods of prolonged rainfall.
- 5.62 The detailed mitigation strategy will be determined at Reserved Matters stage with the total number of trapping days to be agreed but is likely to be approximately thirty suitable days. Once it is considered that a reasonable rate of capture has been achieved, the working area will be destructively searched by a suitably experienced ecologist. Animals captured during the exercise will be recorded before translocation to a receptor area.
- 5.63 Once caught, reptiles will be swiftly transferred into clean, cloth bags, taken to the receptor area and released immediately to minimise stress to individuals.
- 5.64 All potential hibernation sites such as wood or rubble piles present within the working area shall be removed carefully by hand by experienced ecologists. Any individual found will be placed in the receptor area, under newly created refugia/hibernacula.
- 5.65 The receptor area will comprise a retained section of the northern field compartment, formed by a narrower northward extension of the field, set aside as a reptile habitat area. Prior to the translocation exercise this area will be significantly enhanced for reptile use by creating and maintaining strips of informal, tussock-forming grassland to enhance commuting and foraging activity. The creation of dead wood piles in strategic locations on new or retained habitats would provide further opportunities for shelter and basking.
- 5.66 Management of grassland throughout the completed development should be undertaken on a rotational basis every 2-3 years between October and February, to ensure the appropriate habitat mosaics are established. No more than half of the area should be cut in any one year, leaving an undisturbed refuge for wildlife. Grassland management should also avoid the use of broad-spectrum pesticides, and grass cuttings should be composted on-site in sunlit areas, if possible, to provide suitable nesting sites for grass snake.
- 5.67 Appropriate management and additional enhancements to the retained section of field compartment to the north, as outlined above, will compensate for the loss of rough grassland and arable field margin habitats, and ensure that the remaining grassland habitat in the northern field

compartment can support the existing reptile population in the short term, until new areas of habitat, included in the on-site GI, establish and mature.

- 5.68 Areas of new habitat of benefit to reptiles, that include further areas of new grassland, scattered scrub planting, hedgerows, and attenuation features, which are included in the GI for the southern section of the site, should also be managed with reptiles in mind. Enhancements within, or around these habitats, should include the creation and maintenance of strips of informal tussock-forming grassland, which will further increase commuting and foraging opportunities available to reptiles. These areas of new grassland should be similarly managed to the retained grassland. It is considered that this extensive new area of greenspace will increase the area of available habitat for reptiles on-site once the vegetation becomes established.
- 5.69 Creation of dead wood piles and hibernacula, situated in strategic locations would provide further opportunities for shelter and basking and would also provide potential habitat for other taxa, such as amphibians and invertebrates. Several new hibernacula are recommended to be included within the northern field compartment, to further enhance the capacity of the retained habitat area to support reptiles displaced from the arable margins.
- 5.70 The hibernacula design will be based upon a modification³⁴ of those described by Stebbings (2000)³⁴ and Showler *et al.* (2005)³⁵. The hibernacula will be at least 2m wide, 4m long and 1m high and their construction will be supervised by a suitably experienced ecologist. They will be constructed in sunny positions on an east-west orientation within areas of suitable habitat in order to create a feature where reptiles can both overwinter and bask on top of. To optimise these opportunities each hibernacula will be constructed in a crescent shape, however, the final construction is likely to be influenced by local conditions.
- 5.71 Construction will involve the following key steps:
- use of a mini-digger to create a trench of appropriate dimensions;
 - laying a 200mm of gravel at the base of the trench will help facilitate adequate drainage;
 - in-filling with inert rubble (that is contamination free), logs and mulch, to create a range of crevices with a humid microclimate;
 - access into the hibernacula interior will be facilitated with gaps left in the capping material at ground level;
 - back-filling with earth and capping with turf and brash; and
 - leaving the hibernacula to vegetate naturally.
- 5.72 To minimise potential impact of ground compaction, low ground pressure vehicles will be used throughout the operations. The integrity of all retained trees will be maintained in accordance with best working practices, including the avoidance of ground works within the root protection areas of retained trees.

³⁴ Stebbings R. (2000). Reptile hibernacula - providing a winter refuge. *Enact*, 8 (2), 4-7

³⁵ Showler D.A., Aldus N., & Parmenter J. (2005). Creating hibernacula for common lizards *Lacerta vivipara*, The Ham, Suffolk, England. *Conservation Evidence* . 2 96-98. [online]. Available at: <http://www.conservationevidence.com/individual-study/2175> [Accessed 09/10/2015].

- 5.73 Areas around the hibernacula should be left to develop a rank, tussocky structure, with the areas trimmed on a three-year rotation. One third will be cut in any one year, each third being uncut for successive years.
- 5.74 These enhancements will ensure that the favourable conservation status of reptiles in the local area is maintained and improved in the long term, by increasing the area of suitable habitat on-site, whilst also maintaining the connectivity to offsite reptile populations.

Other Species

West European Hedgehog

- 5.75 The West European Hedgehog *Erinaceus europaeus* is partially protected under Schedule 6 of the WCA and the Wild Mammals Protection Act (1996) and is listed as a 'Species of Principal Importance' under the NERC Act (2006). Together taken this makes it an offence to:
- deliberately or intentionally kill a hedgehog without a licence; or
 - trap a hedgehog without a licence.
- 5.76 During the desk study, a single hedgehog record was returned within 2km of the site. Hedgehogs are a generalist species and require large areas of contiguous habitat. Threats to hedgehog include loss of habitat, reduced habitat quality, and habitat fragmentation. Hedgerows can provide food, shelter from predators and can be important for nesting sites during hibernation. They are also vital corridors facilitating movement³⁶
- 5.77 It is considered that the proposed development will have a negligible impact on hedgehogs as the matrix of gardens and green spaces in towns and cities can support the highest densities of hedgehogs³⁷. Residential garden fences should have small holes cut at the bottom (approximately 13cm x 13cm³⁸) in order to keep connectivity and enable free movement for this species. Hedgerow highway signs can be purchased from the People's Trust for Endangered Species which will help inform residents and encourage them to keep the holes open.
- 5.78 The existing residential hedgerows bordering the northern and eastern peripheries of the smaller field compartment, and the grassland habitat within this field compartment will be retained, enhanced, and buffered, with new areas of rough, tussock-forming grassland, scrub, and hedgerows to be planted within the GI to the south, providing high quality habitat for hedgehogs to utilise.
- GI on-site should also include provision of additional hibernaculum suitable for this species, including log piles and patches of brush, which will allow hedgehogs to safely hibernate over winter as well as providing important habitat for insects during the warmer months which hedgehogs can feed on.

³⁶ Henry Johnson, (2015) Conservation Strategy for West-European Hedgehog (*Erinaceus europaeus*) in the United Kingdom (2015-2025) People's Trust for Endangered Species (PTES)

³⁷ Hubert, P., Julliard, R., Biagiatti, S. & Marie-Lazarine, P. (2011) Ecological factors driving the higher hedgehog (*Erinaceus europaeus*) density in an urban area compared to the adjacent rural area. Landscape and Urban Planning, 103, 34-43

³⁸ Hedgehog Street [ONLINE] Available at <http://www.hedgehogstreet.org/pages/link-your-garden.html>

Invertebrates

- 5.79 The provision of 'insect hotels' and log piles are recommended to be incorporated within the GI to provide shelter and nesting places for invertebrates in general and are particularly popular with solitary bees and beetles. These also create overwintering habitat for a variety of invertebrates that can further enhance the capacity and diversity of existing populations and provide a food source for other species.

Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus agg.</i>
Cherry species	<i>Prunus sp.</i>
Cleavers	<i>Galium aparine</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambucus nigra</i>
Garden privet	<i>Ligustrum ovalifolium</i>
Hawthorn	<i>Crataegus monogyna</i>
Holly	<i>Ilex aquifolium</i>
Ivy	<i>Hedera helix</i>
Leyland cypress	<i>Cupressus x leylandii</i>
Sycamore	<i>Acer pseudoplatanus</i>
Walnut	<i>Juglans regia</i>

Tall Ruderal

Common Name	Latin Name
Alexander's	<i>Smyrniolus satrum</i>
Bristly oxtongue	<i>Helminthotheca echioides</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Cleavers	<i>Galium aparine</i>
Common hogweed	<i>Heracleum sphondylium</i>
Common nettle	<i>Urtica dioica</i>
Cow parsley	<i>Anthriscus sylvestris</i>
Creeping thistle	<i>Cirsium arvense</i>
Green alkanet	<i>Pentaglottis sempervirens</i>
Rose-bay willowherb	<i>Chamaenerion angustifolium</i>

Plantation Woodland

Common Name	Latin Name
Ground Flora	
Cleavers	<i>Galium aparine</i>
Common nettle	<i>Urtica dioica</i>
Ivy	<i>Hedera helix</i>
Red-dead nettle	<i>Lamium purpureum</i>
Spear thistle	<i>Cirsium vulgare</i>
Wood avens	<i>Geum urbanum</i>
Understorey	
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus agg.</i>
Buddleia	<i>Buddleja davidii</i>
Dogwood	<i>Cornus sanguinea</i>
Elder	<i>Sambuca nigra</i>
Hazel	<i>Corylus avellana</i>
Hawthorn	<i>Crataegus monogyna</i>
Holly	<i>Ilex aquifolium</i>
Spindle	<i>Euonymus europaeus</i>
Willow species	<i>Salix sp.</i>
Canopy	
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
English Oak	<i>Quercus rober</i>



Gladman Developments Ltd.

Land at Cross Road, Deal

Static Detector Data –2021

Appendix B

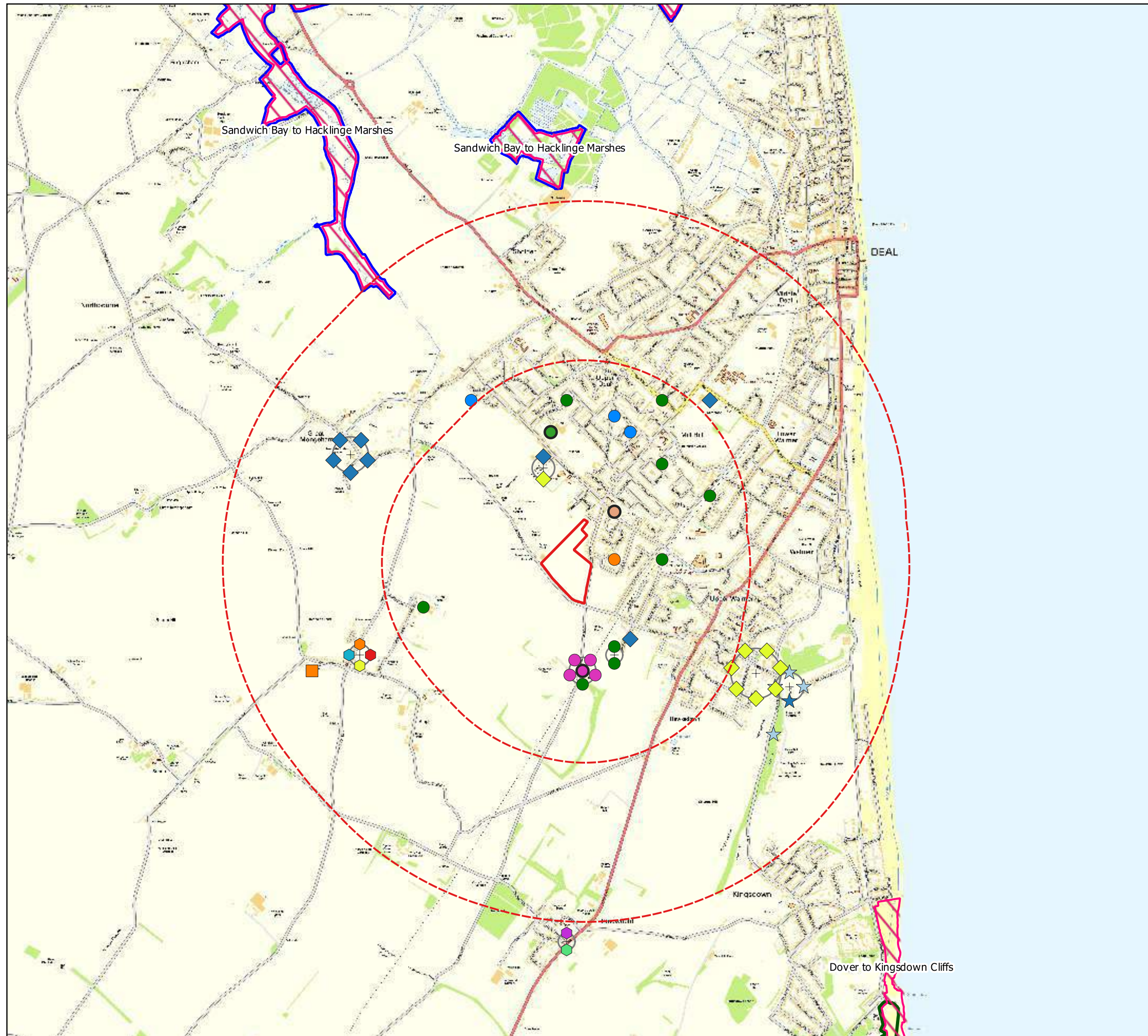
October 2021

APPENDIX B – Static Bat Detector Data –2021

Data Collected from the Static Bat Detectors – May, August, and September/October 2021

Recording Period	Species Recorded and Data Analysis (in order of peak numbers recorded)															
	Unit No.	Survey Hours	Total Avg. per hour	Total Registrations	Common Pipistrelle			Soprano Pipistrelle			Myotis species			Pipistrellus Species		
					Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour
18/05/2021 - 23/05/2021	1	45:34:42	4.761	217	192	77	4.213	20	7	0.439	1	1	0.022	0	0	0.000
	2	45:34:36	0.768	35	13	5	0.285	3	2	0.066	9	5	0.197	1	1	0.022
05/08/2021 - 10/08/2021	3	50:13:27	108.991	5474	5161	1366	102.759	254	150	5.057	17	6	0.338	31	9	0.617
	4	50:13:20	1.095	55	37	21	0.737	5	2	0.100	0	0	0.000	0	0	0.000
28/09/2021 - 03/10/2021	5	67:03:55	0.880	59	46	26	0.686	3	3	0.045	8	5	0.119	1	1	0.015
13/10/2021 - 18/10/2021	6	71:51:52	0.765	55	31	14	0.431	12	8	0.167	6	3	0.083	2	1	0.028

Nyctalus Species			Long-eared Species			Nathusius' Pipistrelle			Serotine		
Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour	Period Total	Peak Count	Av. Per Hour
0	0	0.000	1	1	0.022	3	1	0.066	0	0	0.000
0	0	0.000	8	7	0.176	1	1	0.022	0	0	0.000
6	3	0.119	0	0	0.000	0	0	0.000	5	3	0.100
10	6	0.199	2	1	0.040	0	0	0.000	1	1	0.020
1	1	0.015	0	0	0.000	0	0	0.000	0	0	0.000
2	2	0.028	0	0	0.000	2	1	0.028	0	0	0.000



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Key

- Site Boundary
- 1km search radius
- 2km search radius
- Protected Species Inventory**
- ★ Adonis Blue
- ◆ Common Lizard
- ◆ Slow-worm
- ★ Small Blue
- West European Hedgehog
- Notable and Protected Birds**
- Barn Owl
- Black Kite
- Glaucous Gull
- Grey Plover
- Honey Buzzard
- Merlin
- Bat Records**
- Common Pipistrelle (45kHz)
- Soprano Pipistrelle (55kHz)
- Pipistrellus (45 or 55kHz) species
- Serotine Bat
- Bat Roost Records**
- Unidentified Bat Species
- Common Pipistrelle(45kHz)
- Serotine Bat
- Designated sites**
- 2km Search**
- Site of Special Scientific Interest (SSSI)
- 5km Search**
- RAMSAR Sites
- Special Area of Conservation (SAC)
- Special Protection Area (SPA)

Gladman Developments Ltd.
Land at Cross Road,
Deal, Kent

fpcr CONSULTATION PLAN

scale @ A3 1:25000
drawing / figure number **Figure 1**
drawn PJP
issue 2/11/2021
rev **7572-E-01**



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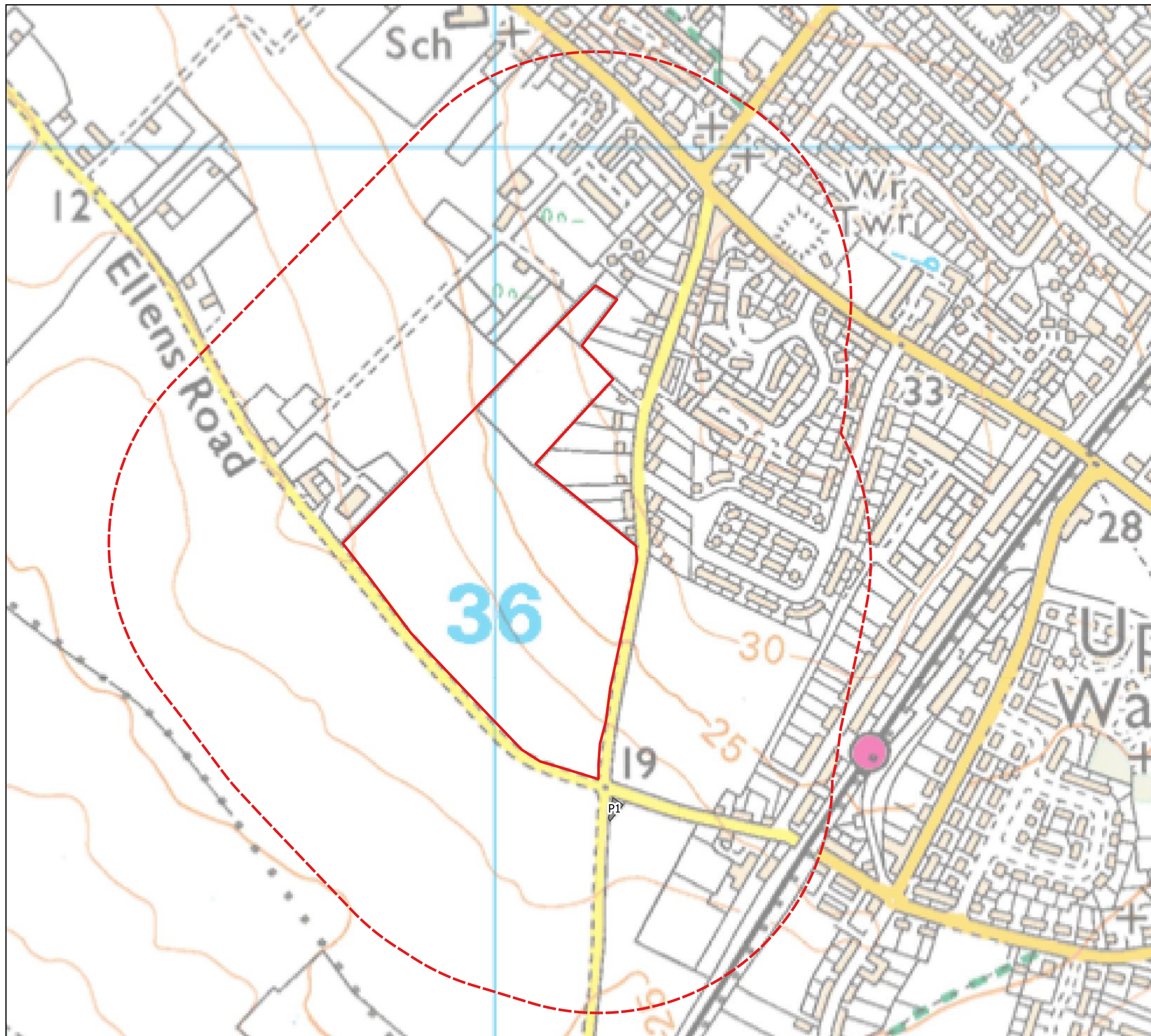
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Key

- Site Boundary
- Phase 1 Points
 - ✕ Scrub - scattered
 - ⊙ Target note
- Phase 1 Lines
 - ⊢ Fence
 - Path
 - Intact hedgerow
 - ✕ Hedge with trees
 - - Defunct hedgerow
- Phase 1 Habitats
 - ▨ Broadleaved woodland - plantation
 - Bare ground
 - ▨ Scrub - scattered
 - ▨ Scrub - dense/continuous
 - ▨ Other tall herb and fern - ruderal
 - SI Poor semi-improved grassland
 - A Cultivated/disturbed land - arable
- ★ Static Detectors
- Dates
 - A and B) - Spring (18th - 23rd May 2021)
 - C and D) - Summer (5th - 10th Aug 2021)
 - E) - Autumn (28th Sep - 3rd Oct 2021)
 - F) - Autumn (13th - 18th Oct 2021)

Gladman Developments Ltd.
Land at Cross Road,
Deal
PHASE 1 HABITAT PLAN

scale @ A3 1:2250
drawing / figure number **Figure 2**
drawn PJP
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Key

- Site Boundary
- 250m Search Area
- Waterbody (with ref.)
- Defunct

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Land at Cross Road,
Deal, Kent
WATERBODY LOCATIONS PLAN



scale @ A3
1:4250

drawn
PJP

issue
2/11/2021

drawing / figure number
Figure 3

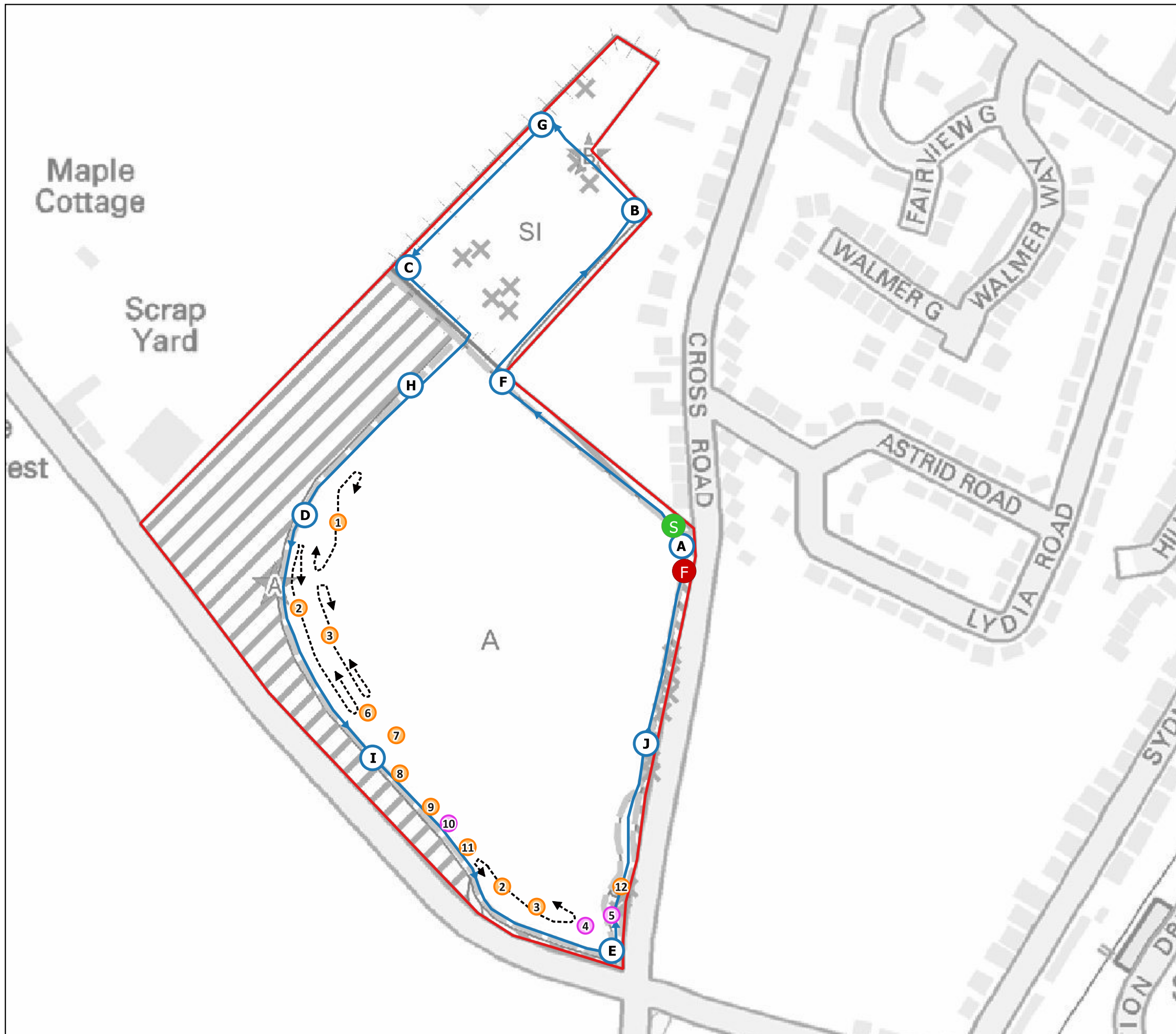
rev
7572-E-01

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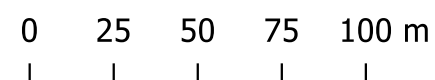
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Key:

- Site Boundary
- S Start point
- F Finish point
- Point Count (with ref.)
- ▶ Transect Route
- - -▶ Flight Arrow
- Bat Contacts (with ref.)**
- Common Pipistrelle
- Soprano Pipistrelle



Plan Reference	Time	Species	Passes	Behaviour
Start	20:42			
PCA	20:42-20:47	No bats		
PCB	20:51-20:56	No bats		
PCC	21:00-21:05	No bats		
PCD	21:11-21:16	Ref 1		
1	21:11	Common pipistrelle	1	Commuting
2	21:17-25	Common pipistrelle	continuous	Foraging
3	21:19-25	Common pipistrelle	continuous	Foraging
PCE	21:25-21:30	Ref 2-3		
2	21:25-30	Common pipistrelle	continuous	Foraging
3	21:25-31	Common pipistrelle	continuous	Foraging
4	21:26	Soprano pipistrelle	1	Commuting
5	21:30	Soprano pipistrelle	1	Commuting
PCF	21:40-21:45	No bats		
PCG	21:52-21:57	No bats		
PCH	22:10-22:15	No bats		
6	22:20	Common pipistrelle	3	Foraging
PCI	22:22-22:27	Ref 7		
7	22:23	Common pipistrelle	1	Commuting
8	22:26	Common pipistrelle	1	Commuting
9	22:28	Common pipistrelle	2	Commuting
10	22:29	Soprano pipistrelle	1	Commuting
11	22:30-33	Common pipistrelle	continuous	Foraging
12	22:35	Common pipistrelle	2	Commuting
PCJ	22:40-22:45	No bats		
Finish	22:48			



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 Land at Cross Road,
 Deal, Kent
BAT TRANSECT PLAN - SPRING (18.05.21)

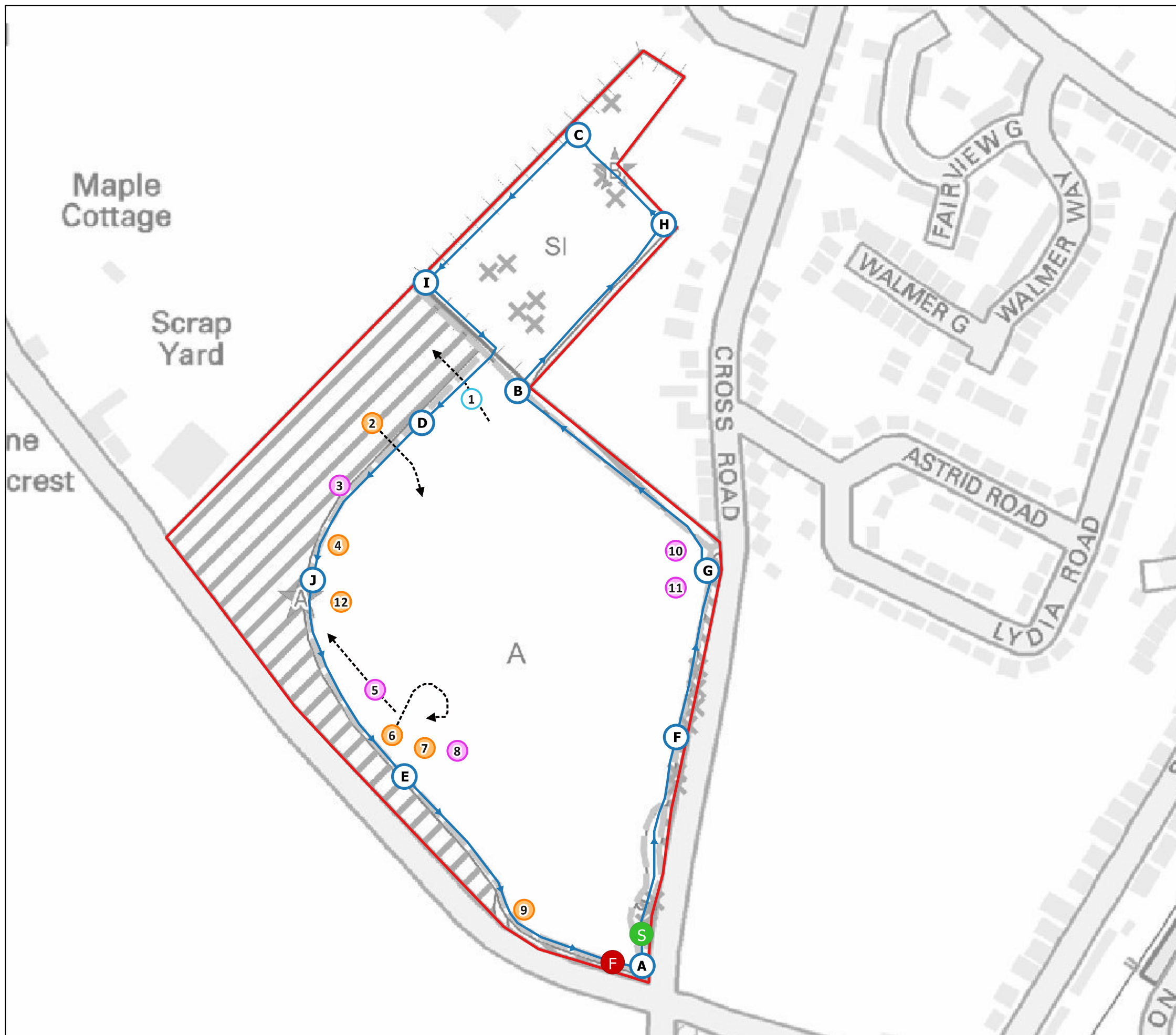
scale @ A3 1:2250
 drawing / figure number **Figure 4**
 drawn PJP
 issue 18/10/2021
 rev **7572-E-01**

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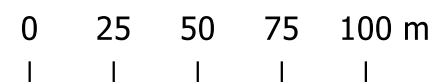
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Key:

- Site Boundary
- S Start point
- F Finish point
- Point Count (with ref.)
- Transect Route
- - - > Flight Arrow
- Bat Contacts (with ref.)**
- Common Pipistrelle
- Soprano Pipistrelle
- Nyctalus Species



Plan Reference	Time	Species	Passes	Behaviour
Start	20:13			
PCA	20:13-20:18	No bats		
PCB	20:26-20:31	No bats		
PCC	20:36-20:41	No bats		
PCD	20:47-20:52	Ref 1-2		
1	20:50	Nyctalus sp.	2	Commuting
2	20:52	Common pipistrelle	2	Commuting
3	20:54	Soprano pipistrelle	1	Commuting
4	20:56	Common pipistrelle	1	Commuting
5	20:59	Soprano pipistrelle	1	Commuting
6	20:59	Common pipistrelle	2	Commuting
7	21:01-08	Common pipistrelle x2	continuous	Foraging
8	21:02	Soprano pipistrelle	1	Commuting
PCE	21:03-21:08	Ref 7		
7	21:01-08	Common pipistrelle x2	continuous	Foraging
9	21:12	Soprano pipistrelle	3	Commuting
PCF	21:21-21:26	No bats		
PCG	21:28-21:33	Ref 10-11		
10	21:29	Soprano pipistrelle	1	Commuting
11	21:31	Soprano pipistrelle	2	Commuting
PCH	21:39-21:44	No bats		
PCI	21:49-21:54	No bats		
PCJ	21:59-22:04	Ref 12		
12	22:03	Common pipistrelle	4	Foraging
Finish	22:13			



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 Land at Cross Road,
 Deal, Kent
BAT TRANSECT PLAN - SUMMER (17.08.21)

scale @ A3 1:2250
 drawing / figure number **Figure 5**
 drawn PJP
 issue 20/10/2021
 rev **7572-E-01**



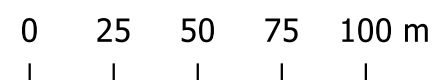
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Key:

- Site Boundary
- S Start point
- F Finish point
- Point Count (with ref.)
- Transect Route
- Bat Contacts (with ref.)
Common Pipistrelle
- Soprano Pipistrelle

Plan Reference	Time	Species	Passes	Behaviour
Start	18:22		0	
PCA	18:22-18:27	No bats	0	
PCB	18:32-18:37	No bats	0	
PCC	18:42-18:47	No bats	0	
PCD	18:54-18:59	No bats	0	
1	19:06	Common pipistrelle	1	Commute
PCE	19:06-19:11	No bats	0	
PCF	19:20-19:25	Ref 2	0	
2	19:21	Common pipistrelle	1	Commute
PCG	19:31-19:36	No bats	0	
3	19:38	Common pipistrelle	1	Commute
4	19:43	Soprano pipistrelle	2	Commute
5	19:45	Soprano pipistrelle	2	Commute
PCH	19:46-19:51	Ref 6	0	
6	19:52	Common pipistrelle	1	Commute
PCI	19:56-20:01	Ref 7	0	
7	19:59	Common pipistrelle	1	Commute
PCJ	20:08-20:13	Ref 8	0	
8	20:10	Soprano pipistrelle	1	Commute
9	20:14	Common pipistrelle	1	Commute
10	20:22	Common pipistrelle	1	Commute
Finish	20:24		0	



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Key

Site Boundary

Indicative Reptile Refugia Locations

Reptile Tin

Reptile Survey Results

- Species Identified

Common Lizard

Grass Snake

Slow-worm

(With ref. number indicating max. number of adult animals)
(total number of juveniles as #J.)



Gladman Developments Ltd.

Land at Cross Road,
Deal

REPTILE SURVEY PLAN



scale @ A3
1:2250

drawn
PJP

issue
2/11/2021



drawing / figure number
Figure 7

rev
7572-E-01