

Preliminary Ecological Appraisal

Land North of Roundstone-By-Pass, Angmering

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

- 1.1 The Ecology Partnership was commissioned by Strutt and Parker Ltd to undertake a preliminary ecological appraisal (PEA) and internal/external bat survey of buildings located on Land North of Roundstone-By-Pass, Roundstone By Pass, Angmering, BN16 4BD.
- 1.2 This report presents the results of The Ecology Partnership's surveys in and around the site, which aims specifically to assess the site's potential to support protected species and protected habitats that may be affected by the proposed development. Potential mitigation measures and recommendations for the site are included within this report.
- 1.3 Section 2 of this report sets out the methodologies of the Ecology Partnership's surveys. In section 3, the results of the surveys are presented. Discussions and implications for development are found in section 4, including general site enhancements. Conclusions drawn from the report are presented in section 5.

Site Context and Status

- 1.4 The site is located to the south-east of Angmering, West Sussex (TQ 0750 0329). It covers approximately c. 0.3ha and comprised of degraded hard-standing, scrub, ephemerals, poor semi-improved grassland and scattered broadleaved trees. The immediate surroundings comprised of a main road, low-density residential housing, amenity grasslands and commercial units. There are no Sites of Special Scientific Interest (SSSI) or Local Nature Reserves within 2km of the red line boundary.
- 1.5 The aerial photograph (Figure 1) shows the site and its immediate surroundings. The red line depicts the approximate site boundary and survey area.



Figure 1: Approximate location of the red line boundary

Description of Proposed Development

- 1.6 Current proposals for the site involve the expansion of the adjacent car park into the area within the red line boundary.

Relevant Planning and Legislation

- 1.7 National and local planning policies and legislation may affect the proposed development. The following paragraphs identify relevant planning policies and legislation and discuss these in the context of the site.
- 1.8 Under the Natural Environment and Rural Communities (NERC) Act (2006), “Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. In order to comply with

this 'Biodiversity Duty', planning decisions must ensure that they adequately consider the potential ecological impacts of a proposed development.

1.9 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principle importance for conserving biodiversity. These were known as BAP habitats and species. The UK BAP lists of priority species and habitats remain an important and valuable reference certainly at county levels. However, the UK Post 2010 Biodiversity Framework (published 2012) has succeeded BAP. It was produced by JNCC and Defra, on behalf of the Four Countries' Biodiversity Group (4CBG), through which the environment departments of all four governments in the UK work together to achieve the 'Aichi Biodiversity Targets' and the aims of the EU biodiversity strategy.

1.10 National policy guidance is provided by National Planning Policy Framework (NPPF), which sets out the Government's planning policies for England and how they should be applied. Section 11 of the document is entitled 'Conserving and Enhancing the Natural Environment'. This section highlights the following:

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

- Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- Recognising the wider benefits of ecosystem services;*
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."*

1.11 In addition to this, the following paragraphs are also considered to be relevant:

"In preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework."

“Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value. Local planning authorities may continue to consider the case for setting a locally appropriate target for the use of brownfield land.”

- 1.12 The site falls under the jurisdiction of Arun District Council. A new Local Plan is currently being developed, and in the meantime, the existing Arun District Local Plan (updated July 2018) contains policies relating to nature conservation and relevant to the site including:

Policy ENV DM1

Designated Sites of biodiversity or geological importance

- a. *“Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance as listed in Tables 17.1 - 17.7 or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Consideration will be given to the exact designated features present on the site, their scarcity/rarity and recognition of the protection offered by their existing status. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated:*
- i. *There is no alternative solution (which shall be adequately demonstrated by the developer).*
 - ii. *There are reasons of public health or public safety or*
 - iii. *There are benefits of primary importance to the environment or*
 - iv. *There are imperative reasons of overriding public interest.*

Notwithstanding the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.

- b. *In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;*
- i. *The European, National or Local status and designation of the site;*
 - ii. *The nature and quality of the site's features, including its rarity value;*

- iii. *The extent of any adverse impacts on the notified features of interest;*
- iv. *The need for compensatory measures in order to re-create remaining features of habitats on or off the site.*
- c. *Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate."*

Policy ENV DM2

Pagham Harbour

- a. *Within Zone A (0-400m from the boundary) as identified on the Policies Maps, development will only be permitted in exceptional circumstances where the developer is able to demonstrate there will be no detrimental effects on Pagham Harbour, including non-native species and the water environment. Regard shall also be had to tests 1-4 as set out in Policy DM1 (Designated Sites of Biodiversity or Geological Importance).*
- b. *Within Zone B (0-5km) for all new residential development and development which is likely to have an impact on Pagham Harbour will be required to:*
 - i. *Make developer contributions towards the agreed strategic approach to access management at Pagham Harbour.*
 - ii. *create easily accessible new green spaces for recreation within or adjacent to the development site. These shall be capable of accommodating the predicted increases in demand for local walking, including dog walking. Good pedestrian links shall be provided between housing areas and new and existing green space*
 - iii. *in order to discourage car use.*
- c. *Major developments (as defined in the GDPO 1995 as amended) taking place outside Zone B and close to its boundary will be considered on a case by case basis to determine any potential effects on Pagham Harbour, and the need for any avoidance or mitigation measures."*

Policy ENV DM3

Biodiversity Opportunity Areas

"Development shall:

- a. *Retain and sympathetically incorporate locally valued and important habitats, including wildlife corridors and stepping stones*
- b. *Be designed in order to minimise disturbance to habitats*

Development proposals that do not reasonably address opportunities for enhancing these through their design, layout and landscaping or access/management shall not be permitted. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified on the Policies Maps or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a properly conducted survey of the presence of that species and habitat and impact(s) that development may have on the BOA."

Policy ENV DM4

Protection of trees

"Development will be permitted where it can be demonstrated that trees protected by a Tree Preservation Order(s), (TPO) identified as Ancient Woodland, in a Conservation Area or contributing to local amenity, will not be damaged or destroyed now and as they reach maturity, unless development:

- a. Would result in the removal of one or more trees in the interests of good arboricultural practice. This shall be demonstrated by the developer following the advice of a suitably qualified person which shall be guided by BS 5837 (2012). Details of any advice received having regard to BS 5837 (2012) shall be submitted, in writing, as part of a planning application; or*
- b. Would enhance the survival and growth prospects of other protected trees;*
- c. The benefits of the proposed development in a particular location outweigh the loss of trees or woodland, especially ancient woodland.*

Where planning permission is granted in any of the above instances, conditions shall be used to ensure that, for any trees which are removed as part of a development, at least an equivalent number of a similar species and age (where practical) are planted on the proposed development site. Sufficient space for replacement trees to mature without causing future nuisance or damage shall be provided. The planting of new trees shall form an integral part of the design of any development scheme.

Proper provision must be made for the protection and management of trees or areas of woodland on-site when undertaking development. A management plan shall be provided as part of a

planning application in accordance with BS 5837 (2012) in order to ensure that trees are adequately protected during development and appropriately maintained in the future. Conditions for the continued protection of trees on sites shall be included in any planning permission given.

Where there are existing trees on or adjacent to a development site, developers shall be required to provide:

- d. Land and tree surveys*
- e. A tree constraints plan*
- f. An arboricultural impact assessment to include a tree protection plan and arboricultural method statement*

These will ensure that development is planned to take a comprehensive view of tree issues at an early stage in the design process and that development works do not have a negative impact on existing trees."

Policy ENV DM5

Development and biodiversity

"Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not). Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.

Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person.

All developments shall have regard to Natural England's standing advice for protected species."

- 1.13 The site was surveyed to assess its ecological value and to ensure compliance with national and local plan policies. The report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM, 2017) and in accordance with BS 42020:2013 Biodiversity – Code of Practise for Planning and Development.

2.0 Methodology

Desktop Study

- 2.1 A desktop study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and an internet-based aerial mapping service (maps.google.co.uk) was used to understand the habitats present in and around the survey area including identifying habitat linkages and features (ponds, woodlands etc.) within the wider landscape. Records for the site and local area (up to 2km) were purchased from the Sussex Biodiversity Records Centre.

Preliminary Ecological Appraisal

- 2.2 An extended preliminary ecological appraisal was undertaken on the 24th July 2018 by Principal Ecologist Chris Jennings BSc (Hons) MSc MCIEEM and Graduate Ecologist Jade Brennan BSc (Hons) MSc Grad CIEEM. The surveyors identified the habitats present, following the standard 'Phase 1 habitat survey' auditing method developed by the Joint Nature Conservancy Council (JNCC). The site was surveyed on foot and the existing habitats and land uses were recorded on an appropriately scaled map (JNCC 2010). In addition, the dominant plant species in each habitat were recorded. The potential for the site to support protected species was also assessed.

Badger Survey

- 2.3 A badger survey was undertaken at the site to assess if badgers were using the area and if any setts were located on or within 30m of the site that may constrain development. The evaluation of badger activity was based on methodology developed for the National Survey of Badgers (Creswell *et al.*, 1990) and includes searching for badger field signs such

as setts, badger pathways, tracks (paw-prints), dung piles with latrines, badger hairs and feeding signs such as snuffle holes.

2.4 During the survey, all habitats potentially suitable for badgers were systematically examined for evidence of badger activity including:

- Setts: several sett types may be present within a social group territory, ranging from a single hole to numerous interconnecting tunnels. Setts can be categorised into main, annexe, subsidiary and outlier (Wilson *et al.*, 1997).
- Latrine sites: badgers characteristically deposit dung in pits, which may be located along the boundaries and within the social group territory. These sites serve as means of inter- and intra-group communication.
- Paths and runs: well used routes between setts and/or foraging areas. Often used by generations of badgers.
- Snuffle holes: areas of disturbed vegetation often formed by badgers foraging for ground dwelling invertebrates such as earthworms and larvae and the underground storage organs of plants.
- Hair: often found among spoil and bedding outside entrances to setts or snagged on fences (such as barbwire) along well-used runs.
- Footprints: easily distinguishable from other large mammal species. Often found along paths and runs or in spoil outside sett entrances.

Tree Assessment for Bats

2.5 Trees on site were assessed for their potential to support roosting bats. Bats can use trees to rest, give birth, raise young and/or hibernate. The trees were assessed visually for evidence of bats as well as for features that increase the likelihood of roosting bats, such as the following:

- Woodpecker holes, natural cracks and rot holes in trunks and branches;
- Frost cracks;
- Trunk and branch splits;
- Hollow sections of trunk and branches;
- Loose bark;
- Cavities beneath old root buttresses and coppice stools;

- Dense epicormic growth;
- Dense ivy cover.

2.6 Veteran trees typically exhibit many of these features and should usually be regarded as sites with clear potential, but any tree possessing one or more such feature, may host bats. Any tree species can be suitable but oak and beech often seem to be the preferred options. However, bats rarely restrict themselves to one tree. They change their roost sites frequently, sometimes every two to three days, looking for small differences in temperature and humidity.

2.7 Roosts of bats in trees may be identified from the following field signs:

- Black stains beneath cracks, splits and other features where bat droppings have fallen;
- Dark marks at entrance points where bats have rubbed against the wood and left natural body oils;
- Feeding remains beneath roosts, such as insect wings;
- Chattering of bats;
- Bat droppings under access points;
- Scratch marks around a feature (cavity or split) caused by bat claws;
- Urine stains below the entrance or end of split;
- Large roosts or regularly used sites may produce an odour;
- Flies around the entrance, attracted by the smell of guano.

2.8 Trees which may be affected by arboricultural work should also be assessed, and may be categorised to relate the value of their features to recommended actions (Table 1). This approach allows trees to be graded according to their potential to support bat roosts. Trees may be assessed as having the potential to support bats (from an individual to a larger roost) even if no bats have been found.

Table 1: Protocol for visual inspection of trees to assess their value to bats - taken from Table 4.1 within the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition' (Bat Conservation Trust 2016)

Suitability	Roosting habitat description
Negligible	Negligible habitat features on-site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
High	A tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

Habitat Suitability for GCNs

2.9 Habitat surveys were carried out to assess the potential of the site to hold great crested newts (*Triturus cristatus*). Before visiting site, searches on Google Maps and Magic Maps were carried out to assess the habitat types in the wider landscape. On site, surveyors looked for the presence of factors that would increase the suitability of the site for great crested newts (GCNs) such as:

- The presence of suitable breeding place (water bodies) on site and within 500m of the site in the wider landscape;
- Habitat connectivity between ponds (if present) in the wider landscape and on site;
- The condition of the ponds whether there were factors that would render them unsuitable for GCNs such as fish;
- Land uses surrounding the site that may affect the potential of the site to hold GCNs such as agriculture;
- Type of suitable habitat on site such as scrub/grassland mosaic;
- Patches of woodland in the wider landscape that can provide terrestrial habitat;
- Any barriers between known populations of GCNs such as motorways and roads;
- Hibernation features on site for GCNs such as log and rubble piles.

Habitat Suitability for Reptiles

2.10 Habitat surveys were carried out to assess the potential of the site to hold populations of reptile species. This involved looking for the presence of factors that would increase the suitability of the site for reptiles such as:

- Scrub and grassland (long sward) mosaic across the site;
- Features that can be potential hibernation sites for common reptiles such as log piles;
- Grass tussocks within the grassland that can act as shelter and burrowing sites;
- Water bodies or damp places on site (grass snakes);
- Compost heaps or decaying vegetation (slow worms);
- Features that can act as refugia on the ground such as disused roofing felt.

Other Protected Species

2.11 The site was also inspected for indications of the presence of other protected species, as follows:

- Relevant habitat for dormice such as dense deciduous woodland, coppice and thick shrubbery
- Ponds and associated habitat suitable to support great crested newts
- The presence of ditches for water voles
- The presence of fresh water stream/rivers for otters
- Suitable nesting places for birds
- Other potential protected species

Limitations

2.12 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment. The site was visited over the period of one site visit, as such seasonal variations cannot be observed and potentially only a selection of all species that potentially occur within the site have been recorded. Therefore, the survey provides a general assessment of potential nature conservation value of the site and does not include a definitive plant species list.

- 2.13 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on site, based on the suitability of the habitat and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group. The assessment is only valid for the time when the survey was carried out. Additional surveys may be recommended if, on the basis of this assessment, it is considered reasonably likely that protected species may be present.

3.0 Results

Desktop Study

- 3.1 The site is not designated for its nature conservation value nor does the site lie adjacent to any designated sites. The closest statutory designations are the Climping Beach SSSI and West Beach LNR which are respectively c. 5 km west of the site. The Pagham Harbour SPA SSSI is also over 19km west of the site.
- 3.2 There are no Local Nature Reserves within 2km of the site, with the closest site being the West Beach LNR, which is approximately c. 5k m from the site.
- 3.3 In terms of non-statutory designations, there are two Local Wildlife Sites (LWS) within 2km of the site. These are:
- Ferring Rife and Meadows LWS which is approximately c. 1.3km SE of the site;
 - Highdown Hill and the Miller's Tomb LWS which is approximately c. 1.6km NE of the site.
- 3.4 The site itself does not support any Habitats of Principal Importance, however several are present within the local landscape including the Priority Habitats: good quality semi-improved grassland, deciduous woodland, coastal and floodplain grazing marsh, and lowland calcareous grassland (Figure 2). The Habitat of Principal Importance: Ancient & semi-natural woodland, was also present within the local surroundings.

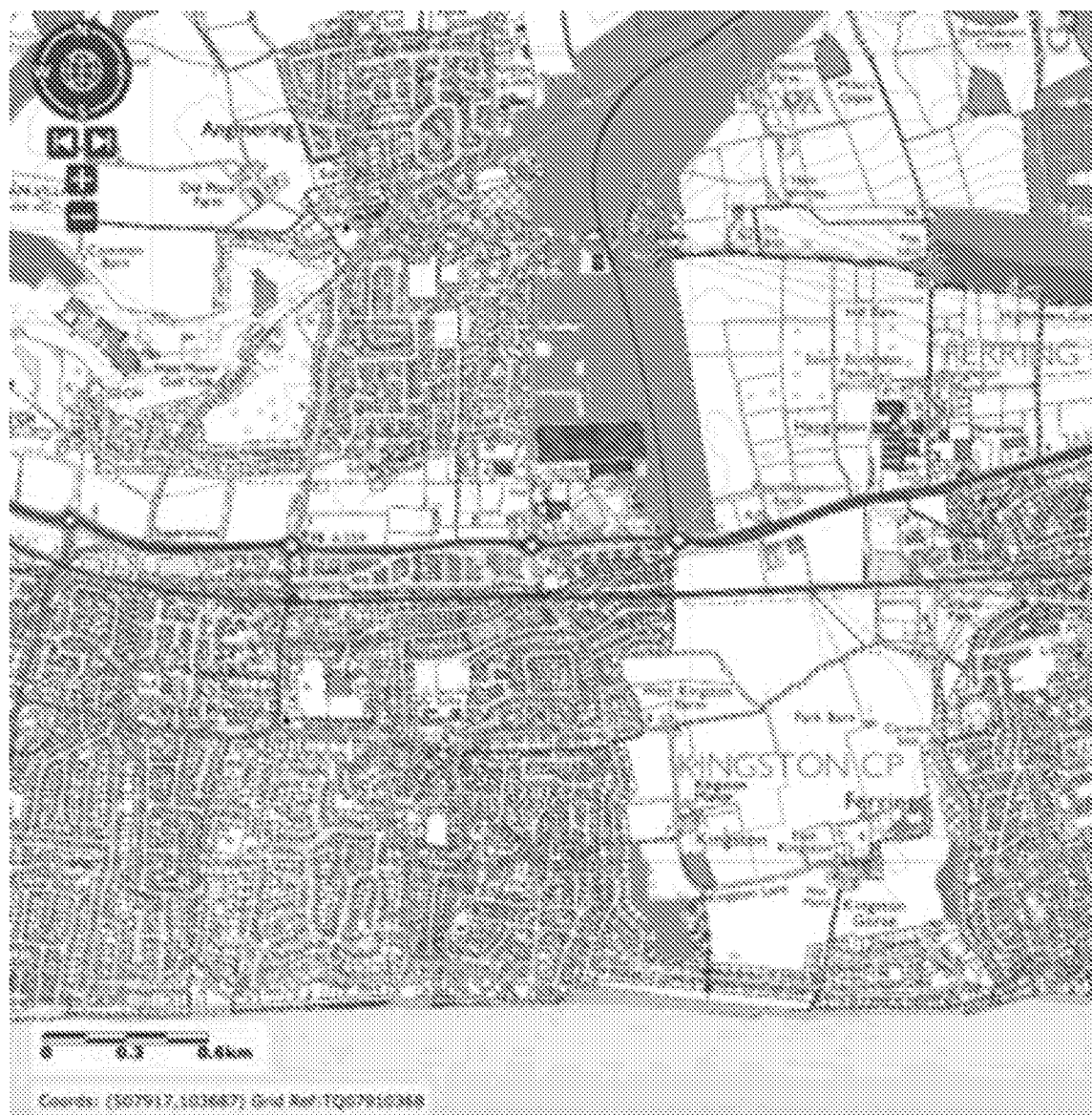


Figure 2: Priority Habitats: good quality semi-improved grassland (pink), deciduous woodland (dark green), coastal and floodplain grazing marsh (blue,) and lowland calcareous grassland (dark green) surrounding the red line boundary. The Habitat of Principal Importance: Ancient & semi-natural woodland (dark green hatching) was also present within the local surroundings.

3.5 In terms of waterbodies, OS maps revealed one water-body within 250m of the red line boundary.

- 3.6 A 2km radius data search was requested from the Sussex Biodiversity Records Centre. Notable protected species from this search are outlined below (Table 2) and only records from within the last ten years and those closest to site have been included.

Table 2: Biological Records from Sussex Biodiversity Records Centre

Species*	Legislation	Distance from site	Most recent record
Water Vole <i>Arvicola amphibius</i>	Wildlife and Countryside Act 1981 (as amended) Schedule 5; NERC Act (2006) Section 41.	Approximately c. 1.1km south-east of the site	2016
Slow-worm <i>Anguis fragilis</i>	Wildlife and Countryside Act 1981 (as amended) Schedule 5; NERC Act (2006) Section 41; UK BAP Priority species	Approximately c. 250m west of the site	2017
Serotine <i>Eptesicus serotinus</i>	The Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; UK BAP Priority	Approximately c. 1.2km north-west of the site	2011
Noctule <i>Nyctalus noctula</i>	The Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; UK BAP Priority	Approximately c. 1.2km north-west of the site	2011
Common pipistrelle <i>Pipistrellus pipistrellus</i>	The Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; UK BAP Priority	Approximately c. 25m west of the site	2017
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5; UK BAP Priority	Approximately c. 600m north of the site	2011

Brown Long-eared Bat <i>Plecotus auritus</i>	The Conservation of Habitats and Species Regulations (2017) Schedule 2; Habitat and Species Directive (1992) Annex 4; Wildlife and Countryside Act (1981 as amended) Schedule 5	Approximately c. 1.7km north of the site	2014
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*Additional species are present within the biological records but may be older than 10years or outside our search radius. Some species have not been included due to the likelihood of presence on site due to habitat types.

Phase 1 Habitat Survey

- 3.7 The site comprised of a degraded hard-standing, scrub, ephemerals, poor semi-improved grassland and scattered broadleaved trees. The majority of the vegetation on site was growing on a lined gravel substrate sectioned by degraded concrete paths. A single water-body was present within 250m of the site. These habitats are all discussed further in the relevant sections of this report.

Scattered and dense scrub

- 3.8 Scattered and dense scrub was abundant in patches across the site growing on the lined gravel substrate. Frequent species included bramble (*Rubus fruticosus agg.*), common nettle (*Urtica dioica*) and a buddleja species (*Buddleja sp.*). Vegetation height was approximately c. 0.5m tall.

Scattered trees

- 3.9 Scattered mature trees were present predominantly along the northern and adjacent to the southern site boundaries, with a small number scattered across the central portion of the site. Tree species present included silver birch (*Betula pendula*), hawthorn (*Crataegus monogyna*), goat willow (*Salix caprea*), a pine species (*Pinus sp.*) and elder (*Sambucus nigra*) alongside a number of introduced species were also present including a cherry species (*Prunus sp.*) and a beech species (*Fagus sp.*). Hedge bindweed (*Calystegia sepium*) and stinking iris (*Iris foetidissima*) were present at the base of several trees, and tree height varied from approximately c. 5 to 25m tall.

Ephemerals/ short perennials

- 3.10 A number of ephemeral species were growing on a lined gravel substrate up to 50cm tall in some areas and species present included common nettle, great willowherb (*Epilobium hirsutum*) and rosebay willowherb (*Chamerion angustifolium*). Several short perennial species were also present in these areas including Yorkshire fog (*Holcus lanatus*), common ragwort (*Jacobaea vulgaris*), spear thistle (*Cirsium vulgare*), creeping thistle (*Cirsium arvense*), petty spurge (*Euphorbia peplus*), bristly oxtongue (*Picris echioides*) and wood avens (*Geum urbanum*).

Neutral semi-improved grassland

- 3.11 A small section of neutral semi-improved grassland was present along the western and southern site boundaries. This area appeared to have been grazed in some areas with vegetation height varying from approximately c. 5 to 15cm tall. Grass species present included creeping bent (*Agrostis stolonifera*) and Yorkshire fog in addition to ground ivy (*Glechoma hederacea*), common nettle, scarlet pimpernel (*Anagallis arvensis*), field bindweed (*Convolvulus arvensis*), birds foot trefoil (*Lotus corniculatus*), creeping buttercup (*Ranunculus repens*), dandelion (*Taraxacum agg.*) and cut-leaved cranesbill (*Geranium dissectum*).

Bare Earth

- 3.12 A strip of bare earth was present adjacent to the eastern site boundary and a small number of swine-cress (*Coronopus squamatus*) individuals were present scattered in this area. A number of bare earth patches were also present in the semi-improved grasslands along the western and southern site boundaries.

Lined gravel substrate

- 3.13 The majority of the site was dominated by a lined gravel substrate.

Hard-standing

- 3.14 The central portion of the site was dominated by degraded hard-standing paths.

Store piles

- 3.15 A number of scattered store piles were present across the site at Target Note 1 (Appendix 1).

Protected Species*Badgers*

- 3.16 No evidence of badgers, such as setts, latrines or snuffle holes, was identified on site. However, it is likely that badgers utilise the site for foraging and commuting purposes due to the quantity of suitable habitats on site. It must also be noted that due to the density of vegetation on site, in particular the scrub, not all areas of the site could be comprehensively searched for evidence of badger activity.

Bats*Tree Assessment for bats*

- 3.17 None of the trees on site were considered to have potential for roosting bats due to lacking in features suitable for roosting bats such as cracks in bark or woodpecker holes.

Foraging and commuting habitats for bats

- 3.18 The boundary tree lines, scrub, semi-improved and ephemerals/ short perennials on site could provide only limited foraging and commuting opportunities for local bats. These habitats were poorly connected to each other and the surrounding landscape due to the site being surrounded by a development, two main roads and large commercial units. The habitats in the surrounding landscape were also considered to provide only limited opportunities for bats in the local area due to the dominance of high-density housing with maintained gardens, hard-standing, amenity grasslands and arable fields. There were also records for serotine, noctule, common pipistrelle, soprano pipistrelle and brown long-eared bat within 2km of the site. However, due to the separation of the site from the surrounding landscape and the limited number of suitable habitats within the local surroundings, the site overall was considered to have only limited suitability for foraging and commuting bats.

Great Crested Newts

- 3.19 There was a single water-body within 250m of the site (Figure 3). This was identified using aerial photography, mapping services and visually during the site visit. This pond was inaccessible to be assessed at the time of the survey due to being located on private land. Due to its separation from the site by a main road, commercial units with associated hard-standing and residential housing, which may all act as barriers to dispersal, it is considered highly unlikely that GCN would traverse from the pond to the site.

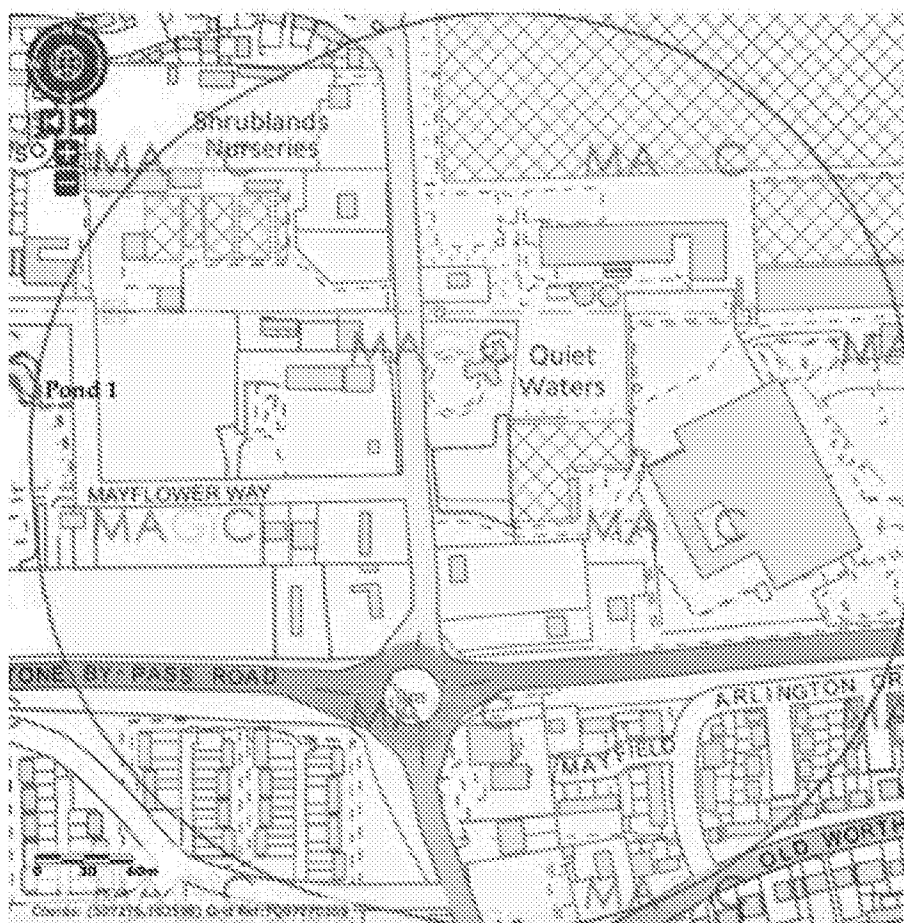


Figure 3: Location of water-bodies within 250m of the site.

- 3.20 The site comprised predominantly of degraded hard-standing and lined gravel substrate which do not provide suitable habitats for GCN in their terrestrial phase. The semi-improved grassland, scrub, scattered tree lines and ephemeral/short perennial vegetation provide only limited opportunities for GCN. This due to these habitats species poor, predominantly sparsely distributed and isolated from the surrounding landscape by main

roads, large commercial units and a development which may all act as barriers to dispersal. The store piles on site at Target Note 1 (Appendix 1) were also sparse and comprised of materials that would not provide suitable crevices for GCN. The habitats within the surrounding landscape were also considered to have limited suitability for GCN and there were no records for GCN within 2km of the site.

Dormice

- 3.21 The site comprised predominantly of degraded hard-standing, lined gravel substrates and small sections of semi-improved grassland which do not provide suitable habitats for dormice. The boundary tree lines and scrub on site could provide only limited commuting and foraging opportunities. This is due to them being species poor, predominantly sparse and poorly connected to each other due to large gaps between the scattered trees. They were also poorly connected to the surrounding landscape, reducing the ability for dormice to use these features, and the suitable habitats in the surrounding landscape were limited and separated from the site by roads. There were also no historical records for dormice within 2km of the site.

Reptiles

- 3.22 Degraded hard-standing and lined gravel substrates on site are not considered to provide any suitable opportunities for reptiles. The semi-improved grassland, scrub, ephemeral/ short perennial vegetation and scattered tree margins also provide only limited foraging, commuting and/ or refuge habitats. This is due to sparse distribution of vegetation in these areas and the isolation of these habitats from the surrounding landscape. The store piles on site at Target Note 1 (Appendix 1) also only provide some basking opportunities. The surrounding landscape is also dominated by habitats which are not considered to be suitable for reptiles including high-density housing with maintained gardens and hard-standing. The closest historical records for reptiles are for slow-worm approximately c. 250m west from the site.

Other Species

- 3.23 Breeding birds are likely to utilise the scattered trees and scrub on site for nesting.

- 3.24 A number of rabbit droppings were present on the hard-standing (see Target Note 2, Appendix 1) and a single rabbit was observed on site.
- 3.25 There were no habitats on site considered to be suitable for water voles or otters.

4.0 Discussion

Sites

- 4.1 The site itself does not fall within or adjacent to any national or international statutory designations, and there are no such sites within 2km of the site boundary. The closest statutory designations are the Climping Beach SSSI and West Beach LNR which are respectively c. 5 km from the site's red line boundary. The Pagham Harbour SPA and SSSI is also located over 19km west of the site.
- 4.2 The proposals on site must be completed in accordance with **Arun District Council's Policies ENV DM1 and DM2** in which proposals must not have any adverse direct or indirect impacts on land with the designated features of any Site of Biodiversity, in particular the Pagham Harbour SPA and SSSI. Due to the distances involved, the proposals do not fall within the SSSI impact zones which would require proposals to have a consultation Local Planning Authority, furthermore, the site is located outside the impact zones for the SPA and as such it is considered that further work with regards to SPAs is not considered to be necessary. Additionally, due to the nature of the proposals and the surrounding landscape, it is not considered that the proposals would have any adverse direct or indirect impacts on any of the above sites, particularly as the site is not located on or adjacent to any of these sites. The site is also separated from these designated sites by dense residential housing, roads and agricultural land with limited direct ecological connections to the site. Therefore, any development within the red line boundary would not result in the loss, fragmentation or isolation of any habitats on local designated sites. Consequently, it is considered that the proposals would be completed in accordance with the above policies.
- 4.3 There were also two Local Wildlife Sites (LoWS) located within 2km of the redline boundary. These are sufficiently distanced from the site that any direct or indirect impacts

would be minimal. To ensure there are no adverse impacts on these surrounding habitats and features, it is recommended that the proposals must retain important ecological features and seek to enhance and protect the sites biodiversity as a whole.

Habitats

- 4.4 The habitats on site are common and widespread throughout the local area and the UK as a whole with the site being dominated by degraded hard-standing and lined gravel substrates which both have limited ecological value. The scattered trees, scrub, neutral semi-improved grassland and ephemeral/ short perennial habitats were also considered to have only limited ecological value by providing opportunities for protected species, namely badgers, bats, rabbits and nesting birds. The proposals will affect all habitats on site and due to the nature of the site and its surrounding, it is considered that any potential impacts would be limited, particularly if the below recommendations for further surveys and mitigation are implemented. If these measures are followed, then it is considered that the proposals would be completed in accordance with **Arun District Council's Policy ENV DM5** in which proposals must *"include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species."*

Other habitats

The site does not support any Habitats of Principle Importance such as ancient woodland nor does it support any Priority Habitats such as good quality semi-improved grassland or deciduous woodland. These are present in the surrounding landscape, however due to the separation from the site from these features by roads and other infrastructure, it is considered that these habitats will not be impacted, directly or indirectly, by the proposals. To ensure this, it is recommended that the boundary features, in particular, the boundary trees, are retained where possible to ensure the existing ecological network is maintained post-development. This would also ensure that the proposals are completed in accordance with **Policy ENV DM3** which requires development to *"retain and sympathetically incorporate locally valued and important habitats"* and to *"be designed in order to minimise disturbance to habitats."*

Protected Species

Badgers

- 4.5 No evidence of badgers, such as setts or latrines, was observed anywhere on site, although these features could be present in the dense vegetation on site. Should these areas need to be cleared, it is recommended that this is conducted under ecological supervision with hand tools only. As such, if a mammal hole or confirmed badger sett is identified, then the clearance would not have impacted upon the nature or structure of the sett. If indeed a sett is identified it is recommended that a more detailed badger survey is completed across the site to identify the size and type of sett.
- 4.6 Best practice guidelines should also be followed even if a badger sett is not confirmed on site as badgers are likely to be present in the local surroundings. The guidelines are as follows:
- Any trenches or excavations on site should be either covered over at night or a plank of wood placed in so as to allow any mammals to escape if the badgers were to accidentally fall in;
 - Any open pipes or conduits laid should be blocked off each night to prevent badgers from entering them.
- 4.7 The ephemerals/ short perennial, scrub and site boundary habitats could provide some foraging opportunities for badgers in the local area. Foraging habitat and commuting corridors for badgers are not legally protected, however as badgers are protected for welfare purposes, how badgers move within the landscape and a consideration for significant loss of foraging habitat, must be made. It is considered that the foraging territory of badgers will not be affected by current proposals as these habitats will be maintained and the size and scale of the redevelopment of the site is limited. Furthermore, the majority of the site is considered to be unsuitable for foraging badgers.
- 4.8 It is always recommended that badger update surveys are undertaken across the site prior to any works or if there is a lapse in time between the survey and the works as badgers may move onto the site in the intervening period.

Bats

Tree Assessment for bats

- 4.9 None of the trees on site were considered to have potential for roosting bats due to the lack of suitable features, consequently no further surveys are recommended. Despite this, it is recommended that as many of the scattered trees along the site boundary are retained where possible to maintain an ecological network of habitats
- 4.10 As several trees are to be removed on site, it is recommended that new roosting opportunities are provided in the proposals by hanging bat boxes on retained mature trees around the site. Recommended boxes include:
- Schwegler 2F Bat Box – A general purpose bat box that supports a range of species (Figure 4). These can be hung on trees in a variety of heights and aspects in order to provide a variety of micro-climates.
 - Schwegler 2FN Bat Box – This is slightly larger than the 2F and provides opportunities for the larger bats such as noctules. These should be hung on mature trees.
 - Schwegler 1FD Bat Box – A bat box for smaller species, this model has proven effective as a nursing area (Figure 4).

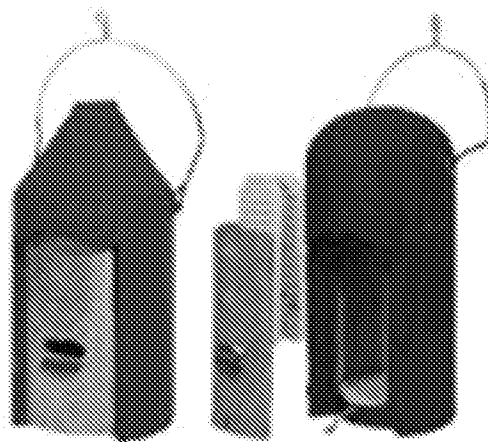


Figure 4: Schwegler 2F (left) and 1FD (right) bat boxes

- 4.11 The siting of bat boxes is important and have the best rate of occupancy when they are situated within or adjacent to bat-friendly features, such as on trees to provide connectivity to the wider landscape. The bat boxes should be situated where they are

sheltered from strong winds, and should be exposed to the sun for most of the day, therefore southern aspects are favourable. Multiple boxes may be hung on one large tree, facing different aspects. Bat boxes should be hung as high as possible, preferably around 5m high, although lower boxes may also be used by brown long-eared bats.

Foraging and commuting habitats

4.12 The boundary tree lines, scrub, semi-improved grassland and ephemerals/ short perennials habitats on site could only provide limited foraging and commuting opportunities for bats in the local landscape. These habitats are poorly connected to each other and the surrounding landscape due to the presence of roads and other infrastructure. The habitats in the surrounding landscape are also considered to be sub-optimal for foraging and commuting bats. There were records for common pipistrelle and brown long-eared bat within 2km of the site. However due to the sub-optimal condition of the site and its limited connectivity to the surrounding landscape, the site overall is considered to have only limited potential for foraging and commuting bats.

4.13 The Bat Conservation Trust survey guidelines (Collins 2016) states that in table 4.1, *“guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement”*. It is important that proportionality is employed when recommending further survey work for bat species on a proposed development site. As stated within section 8.2.7. of these guidelines (Collins, 2016), the following points need to be taken into account with regard to planning activity surveys:

- Likelihood of bats being present;
- Likely species concerned;
- Number of individuals;
- Type of habitat affected;
- Predicted impacts of the proposed development on bats;
- Type and scale of proposed development.

4.14 Current plans for the site involve the removal of the majority of vegetation on site to allow for the construction of a car park within the red line boundary. The site is currently

considered to provide only limited opportunities for foraging and/ or commuting bats. It is considered that as long as the boundary features, in particular the scattered trees, are retained where possible, and an appropriate mitigation strategy is implemented, then the favourable conservation status of bats within the local area will be maintained post-development. Particularly if the development considers bats within the master planning by retaining important landscape features and providing enhancements for bats post-development, it would reduce impacts to bat species to a level which would not be considered significant. Therefore, as long as the boundary features are retained, a sensitive lighting scheme is used and enhancements for bats are provided, then it is considered that activity transect surveys for bats would not be required.

4.15 Any proposed lighting scheme as part of any development will also have to take into account bats in the surrounding area as well as the site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels, which can affect both their roosting and foraging behaviour. This needs to be taken into account with a sympathetic lighting scheme. Recommendations include:

- Installing lighting only if there is a significant need;
- Using low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
- Directing light to where it is needed and avoiding light spillage;
- Using baffled lighting where light is directed towards the ground;
- Avoid putting lighting near treelines or hedgerows and angling light away from these linear features which are used by commuting and foraging bats;
- Planting a barrier or using man-made features required within the scheme to form a barrier.

Great Crested Newts

4.16 The total area within the redline site boundary is approximately c. 0.2ha. This area comprised of degraded hard-standing, lined gravel substratum, scattered trees, semi-improved grassland, scrub and ephemeral/ short perennial habitats. Hard-standing and

lined gravel substrates on site are not considered to be suitable for great crested newts (GCN). The remaining habitats were also considered to provide only limited opportunities for GCN due to being species poor and isolated from the surrounding landscape. The habitats in the local surroundings are also predominantly unsuitable for GCN, particularly those within the local surroundings, and many of these features, in particular the road, isolates the site from the single water-body within 250m of the site by potentially acting as a barrier to dispersal. The store piles on site at Target Note 1 (Appendix 1) were also considered to provide limited opportunities for GCN. There were also no historical records for GCN within 2km of the site, due to this and the sub-optimal condition of the site for GCN it is considered highly unlikely that GCN would persist on site, therefore no further surveys are considered necessary

Dormice

- 4.17 The scattered tree lines and scrub on site are considered to provide only limited habitat opportunities for dormice due to being species poor, predominantly sparsely distributed and poorly connected to each other and the surrounding landscape. The immediate surroundings also comprised of habitats with limited opportunities for dormice and the suitable habitats further afar were isolated from the site by roads and other infrastructure. There were also no historical records for dormice within 2km of the site. Due to the sub-optimal quality of the site for dormice and the lack of historical records for dormice within 2km of the site, it is considered highly unlikely that dormice would be present site, therefore no further surveys are recommended.

Reptiles

- 4.18 The semi-improved grassland, scrub, ephemeral/ short perennial vegetation and scattered tree margins could only provide limited foraging, commuting and/ or refuge opportunities for reptiles. This is due to the predominantly sparse distribution of vegetation in these areas and the isolation of these habitats from the surrounding landscape. The surrounding landscape was also dominated by habitats which were not considered to be suitable for reptiles including high-density housing with maintained gardens and hard-standing. There were local records for slow worms approximately 250m from the site, however this is isolated from the site by a large main road, commercial units

and hard-standing. Consequently, it is considered highly unlikely that slow worms would be able to traverse from this location to the site. Due to this and the sub-optimal condition of the site, it is considered highly unlikely that reptiles would be present on site, therefore no further surveys are considered necessary.

Birds

- 4.19 Scrub and scattered trees along the site boundaries are considered likely to support a number of bird species including house sparrows and other common passerine species. The removal of the scrub and/ or trees should occur outside of the breeding bird season (March - September) or immediately after a nesting bird check by a suitably qualified ecologist. If active nests are identified, works in the vicinity of the nest must cease until the birds have fledged the nest.

Other species

- 4.20 Several piles of rabbit droppings were observed on site (see Target Note 2, Appendix 1) and a single rabbit was observed on site. No mammal holes were observed at the time of the survey; however, it was considered likely that mammal holes were present within the scrub. Under the Wild Mammals Protection Act 1996 states that it is an offence to crush or cause asphyxiation to mammals. Should any burrows be identified during the vegetation, then these should be excavated by hand rather than using mechanical equipment.
- 4.21 The site did not support habitats which are considered suitable to support other protected species including otters or water voles.

General Site Enhancements

- 4.22 A number of enhancements can be made to the final development to help reduce potential ecological impacts. The development will also have to give due regard to the proposed *Arun District Council's Policy ENV DM5* in which states that "*development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site.*" Proposals should also "*incorporate elements of biodiversity including green walls, roofs, bat and*

bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not)."

- 4.23 It is recommended that newly formed landscaped areas around the car park boundaries are supplemented with variety of native species post-development. Patches of bare soil can be sown with wildflower seed mixes to increase the biodiversity of the site and also offer aspects of aesthetic appeal. Shrubs should also be planted and can include native species such as dogwood (*Cornus sanguinea*), guelder rose (*Virburnum opulus*), wild privet (*Ligustrum vulgare*) and box (*Buxus sempervirens*).
- 4.24 The planting of new trees, particularly within the retained tree line gaps, is recommended to provide suitable foraging habitat and improve the shelter provided for a range of species. Suitable native species of value to wildlife include hazel (*Corylus avellana*), beech (*Fagus sylvatica*), elder (*Sambucus nigra*), hawthorn (*Crataegus monogyna*), wild cherry (*Prunus avium*), apple (*Malus sp.*), yew (*Taxus baccata*), spindle (*Eunomyas europaea*), and holly (*Ilex aquifolium*). Shrubs should also be planted and can include native species such as dogwood (*Cornus sanguinea*), guelder rose (*Virburnum opulus*), wild privet (*Ligustrum vulgare*) and box (*Buxus sempervirens*).
- 4.25 Nest boxes should also be installed to provide new nesting opportunities for birds and to achieve ecological enhancements in line with policies set out by the local planning authority. These can be hung on the surrounding mature trees post-development. Recommended boxes include:
- Schwegler 1N Deep Nest Box – gives added nest protection from predators;
 - Schwegler 1B Bird Box – general purpose bird box, suitable for many species.

5.0 Ecological Impact Assessment

- 5.1 This section of the report forms an EclA (Ecological Impact Assessment) and is designed to quantify and evaluate the potential impacts of the development on habitats and species present on site, or within the local area.

Methodology

- 5.2 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2016). The guidelines recommend the following approach to EcIA:
- Identification of the ecological features on site, both habitats and species, from baseline surveys;
 - Identification of the works on site, both during construction and operation that are likely to have impacts on ecological features (habitats and species);
 - Identification of the zone of influence;
 - Evaluation of the ecological receptors likely to be affected;
 - Identification of impacts, for example positive or negative, on receptors and assess their significance;
 - Incorporation of mitigation measures to reduced potential impacts;
 - Review assessment in light of mitigation of negative impacts;
 - Assessment of cumulative impacts;
 - Assessment of residual effects and the potential need for compensation for negative effects which remain significant after mitigation.
- 5.3 The work undertaken by The Ecology Partnership forms the baseline for the assessment. Future baseline is considered to be the year of completion of the project and takes into account the 'worst case' development permitted within the parameters being applied for.
- 5.4 Receptors are defined as a feature affected by an impact and may have negligible value for nature conservation or it may have value at site, local, county, national or international level. Impacts on ecology are assessed by (a) determining the level of importance/sensitivity of the receptor, for example national, county, or local; (b) determining the type, magnitude and timescale of the impact; and then (c) using this information on the receptor and impact to determine the significance of the impact: described as major, moderate, or minor significant, or of negligible significance.
- 5.5 In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes, within identified zones of influences, on identified ecological

features and receptors. The proposals are subsequently reviewed, and iterations undertaken to include enhancements and mitigation measures to reduce negative impacts.

Assessment Conclusions

- 5.6 It is considered that any direct or indirect ecological impacts of the proposals on habitats and ecosystems within the surroundings would be restricted to a site level only. The site is dominated by several common habitats growing on degraded hard-standing and lined gravel substratum including scattered trees, scrub, ephemerals/ short perennials and semi-improved grassland which are all have limited ecological value. The local surroundings comprise of main roads, commercial units and dense residential housing which are of limited ecological value and isolate the site from the broader landscape. The site is also not directly adjacent to or connected to any Habitats of Principal Importance or Priority Habitats. Habitats of Principal Importance and Priority Habitats are present in the local area but the proposals are isolated from these by distance, residential dwellings and infrastructure. To ensure there are no negative impacts on these habitats, recommendations have been made to retain the boundary features where possible to ensure the ecological network around these habitats is maintained post-development.
- 5.7 There are also no direct ecological connections from the designated sites to the survey area, as such the development of the site would not result in the alteration of ecological pathways or corridors. Due to the nature of the proposals and the surrounding landscape and their separation from these sites, it is not considered likely that the proposals would have any adverse direct or impacts on these sites. They also will not result in the loss, fragmentation or modification of the habitats present on these sites as they are separated from the site by distance and features which includes roads, commercial units and dense residential housing.
- 5.8 The proposals will likely affect the majority of habitats on site which are considered to have limited ecological value due to being species poor and isolated from the surrounding landscape. Recommendations have been made to retain the boundary habitats where possible as these are considered to retain some ecological value. Therefore, as long as these features are retained and enhanced through the use of native species planting, bird and bat boxes, then the proposals would result in an increase of ecologically more valuable

habitats at site level. Consequently, it is considered that the proposals on site would not result in the isolation, truncation or fragmentation of the designated habitats nor would it result in the loss of habitats or ecosystems of ecological importance.

- 5.9 The site has also been assessed for its potential to support protected species and wildlife. The scrub and scattered tree boundaries on site are considered to have some potential to support several protected species, namely badgers, bats, rabbits and nesting birds. It is considered that recommendations for precautionary measures, mitigation and compensation would limit and offset any negative ecological impacts.

6.0 Conclusions

- 6.1 There were no designated sites within 2km of the site. The closest statutory designations are the Climping Beach SSSI and West Beach LNR which are respectively c. 5 km from the site's red line boundary. The Pagham Harbour SPA and SSSI is also located over 19km west of the site. Due to the separation of these sites from the site through roads, commercial units, residential development, roads and arable fields, it is considered that these sites will not be impacted directly by any proposed development.
- 6.2 Habitats of Principle Importance and Priority Habitats are present within the local surroundings, including: ancient and semi-natural woodland, good quality semi-improved grassland, deciduous woodland, coastal and floodplain grazing marsh, and lowland calcareous grassland. However, due to the separation of these habitats from the proposals it is considered that the development will not result in any direct or indirect impacts on these habitats.
- 6.3 The habitats on site are common and widespread throughout the local area and the UK as a whole. Degraded hard-standing and lined gravel substrates are dominant on site and these are considered to have limited ecological value. The most ecologically valuable habitats are the tree lines, scrub, semi-improved grassland and ephemerals/ short perennials but only at a local level. Recommendations have been made to retain and enhance the scattered tree lines where possible through the use of supplementary planting.

- 6.4 No evidence of badgers was found on site but they may venture on to site from the surrounding area. Precautionary methods of work have been outlined to take this species into consideration during proposed works
- 6.5 None of the trees on site were considered to have potential for roosting bats, consequently no further surveys are recommended.
- 6.6 Given the sub-optimal condition of the site for foraging and/ or commuting bats and the nature of current proposals and the surrounding landscape, it is considered that further activity surveys are not required, as long as suitable mitigation and enhancement measures are implemented and the boundary features are retained where possible.
- 6.7 The habitats on site could provide only some foraging and commuting opportunities for GCN in their terrestrial phase as the site is isolated from the surrounding landscape by roads and other infrastructure. The store pile on site at Target Note 1 (Appendix 1) also provides only limited refuge opportunities for GCN and the single pond within 250m of the pond was also isolated from the site by roads and other infrastructure. Consequently, due to the sub-optimal condition of the site for GCN, the lack of historical records within 250m of the site and the sites isolation from the single pond within 250m of the site, it is considered highly unlikely that GCN would be present on site and no further surveys are recommended.
- 6.8 The tree lines and scrub could provide only very limited opportunities for dormice due to being isolated from the surrounding landscape. There local surroundings could also provide very few opportunities for dormice due to the lack of suitable habitats and there were no historical records for dormice within 2km of the site. Due to the sub-optimal condition of the site and the lack of local historical records, no further surveys are recommended.
- 6.9 The tree lines, scrub and semi-improved grassland could provide only limited foraging, commuting and refuge opportunities for reptiles due to the sites separation from the surrounding landscape. There were historical records for slow worms within 2km of the

site but this was isolated from the site by roads and other infrastructure. Due to the separation of the site from the local reptile record and the sub-optimal condition of the site for reptiles, no further surveys are recommended.

- 6.10 Birds are likely to nest within the tree lines and scrub on site. The removal of any of these habitats should be undertaken outside of the bird nesting season (March – September). If this is not possible, a qualified ecologist should re-check any potential nesting habitats immediately prior to their removal.
- 6.11 Rabbit droppings and a single rabbit was observed on site at Target Note 2 (Appendix 1) and it is likely that mammal holes are present within the scrub on site. The necessary precautionary measures have been outlined as this vegetation is to be removed under current proposals.
- 6.12 The site does not contain habitats considered suitable for supporting water voles or otters, therefore no further surveys are recommended.
- 6.13 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post development.

7.0 References

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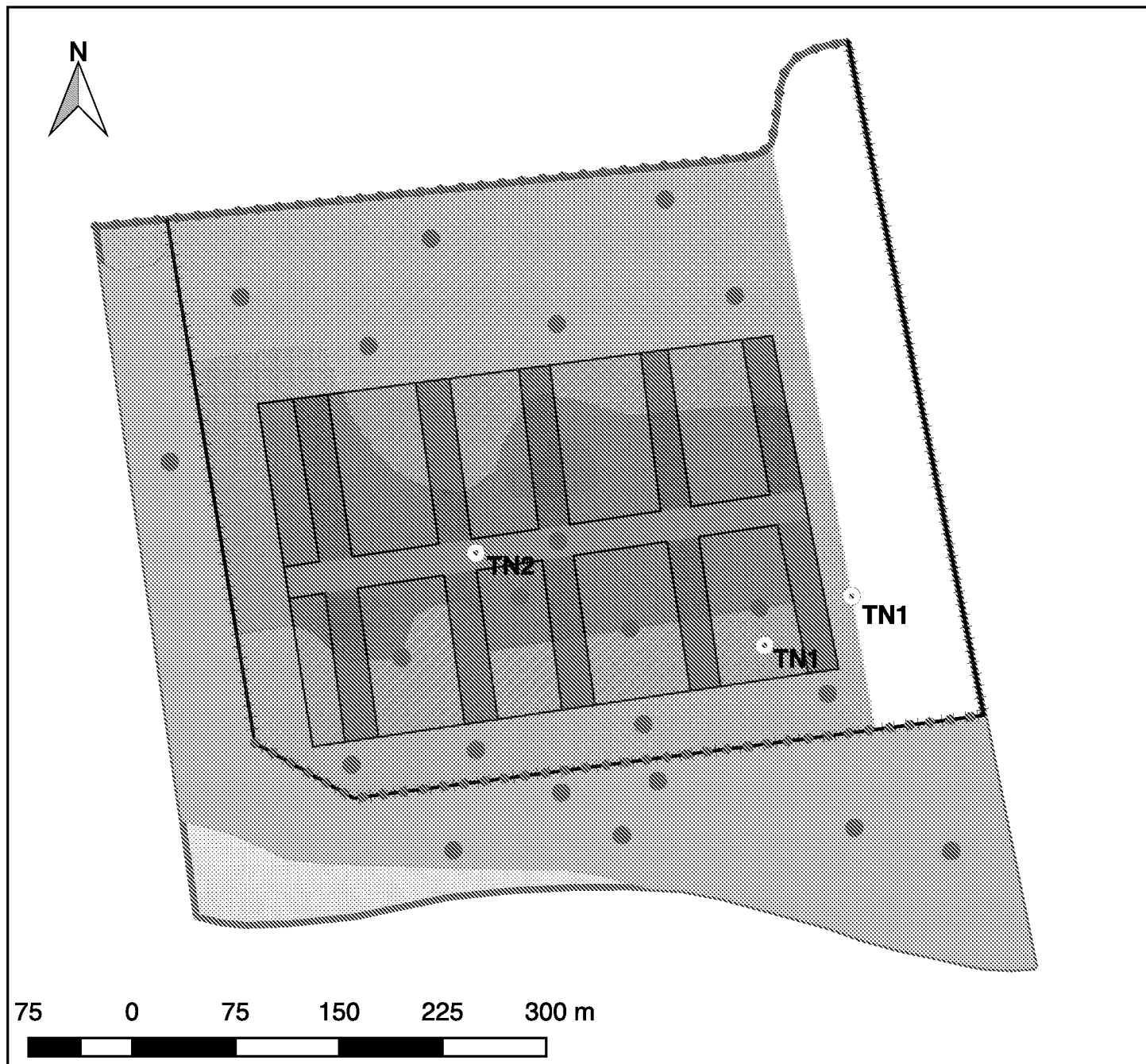
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Internet resources:

Google Maps: www.google.co.uk/maps

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Phase 1 Habitat Map



Key

- • • Scattered Trees
- Bare Earth
- Ephemerals/ Short Perennials
- Dense and Scattered Scrub
- Fence
- Neutral Semi-Improved Grassland
- Hard-standing
- Lined Gravel Substrate
- RLB
- Target Note 1: Store Piles
- Target Note 2: Rabbit Droppings

Site: Land North of Roundstone-By-Pass

Client: Strutt & Parker

Surveyors: C.Jennings; J. Brennan

Survey Date: 24th July 2018

Drawing Title: Habitat Map

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Appendix 2: Photos

Photograph 1: A section of the storage pile on site at Target Note 1 and scrub on site.



Photograph 2: The strip of bare earth along the eastern site boundary.



Photograph 3: Ephemerals/ short perennials on the lined gravel substrate.	
Photograph 4: Scattered trees along the northern site boundary.	
Photograph 5: A section of the degraded hard- standing running through the centre of the site.	

Photograph 6: Rabbit droppings on a section of the degraded hard- standing.	
Photograph 7: Bare earth, neutral semi- improved grassland and scattered trees along the southern site boundary.	
Photograph 8: Neutral semi- improved grassland along the western site boundary.	

Photograph 9:
Fence-line along
the southern site
boundary.



Appendix 3: Biodiversity Records

Ecological Data Search SxBRC/18/313 - Summary Report

An ecological data search was carried out for land at Caffyns, Angmering on behalf of Jade Brennan (The Ecology Partnership) on 30/07/2018.

The following datasets were consulted for this report:

	Requested	Radius/buffer size
Designated sites, habitats & ownership maps	Yes	2km
Protected, designated and invasive species	Yes	2km

Summary of results

Sites and habitats

Statutory sites	1 National Park
Non-statutory sites	2 LWS
Section 41 habitats	8 habitats
Ancient and/or ghyll woodland	Present

Protected and designated species

International designations	44 species	394 records
National designations	137 species	1,805 records
Other designations	255 species	3,374 records
Total	277 species	3,604 records
Invasive non-native	27 species	145 records

The report is compiled using data held by Sussex Biodiversity Record Centre (SxBRC) at the time of the request. SxBRC does not hold comprehensive species data for all areas. Even where data are held, a lack of records for a species in a defined geographical area does not necessarily mean that the species does not occur there – the area may simply not have been surveyed.

This summary page may be published.
The full report and maps may not be published or otherwise shared.

The data search report is valid until 30/07/2019 for the site named above.

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[REDACTED]

Approved: Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS

Date: 02/08/2018

Re-issued Date: 06/12/2018