

Preliminary Ecological Appraisal

Land Toddington Lane,
Littlehampton.

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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. 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

1.1 The Ecology Partnership was commissioned by Dowsett Mayhew to undertake a preliminary ecological appraisal (PEA) of land at Toddington Lane, Littlehampton, BN17 7FS.

1.2 The key objectives of a PEA (CIEEM 2017) are to:

- Identify the likely ecological constraints associated with a project;
- Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
- Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
- Identify the opportunities offered by a project to deliver ecological enhancement.

1.3 This report comprises:

- The legislative and planning context (Section 1);
- Assessment methodologies (Section 2);
- Previous Surveys (Section 3)
- Results (Section 4);
- Implications for development, including an impact assessment (Sections 5 and 6);
- Conclusions (Section 7).

Site Context

1.4 The site is located at Parkside, just south of Toddington Lane, in the town of Littlehampton, within the Arun District of West Sussex (TQ 03371 03825). The site covers approximately 0.1ha and consists of an area of hardstanding which is used as a storage area for construction materials. The wider landscape consists of mainly residential units and construction sites, with a railway line directly south of the site.

1.5 The approximate red line boundary of the site is shown in Figure 1 below in wider context and in Figure 2, a closer view of the site boundary and survey area.

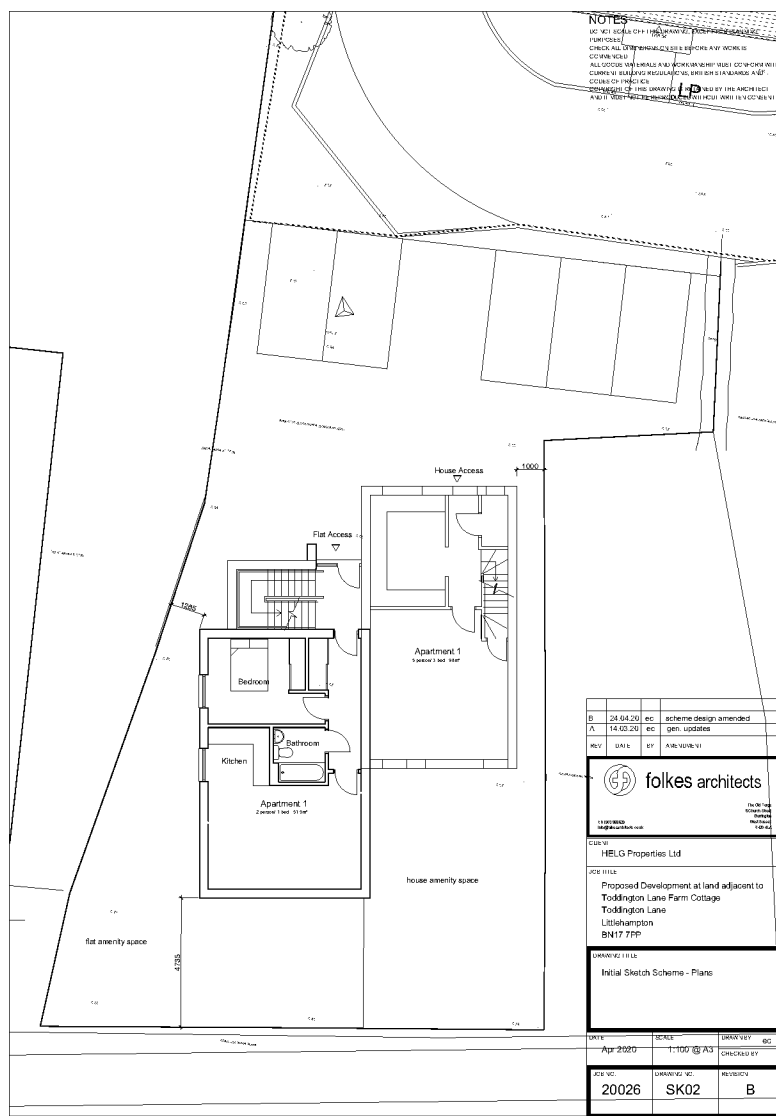


*Figure 1: Approximate location of the red line boundary showing the wider landscape
Taken using Google Earth Pro (15th May 2020)*



*Figure 2: Approximate location of the red line boundary
Taken using Google Earth Pro (15th May 2020)*

- 1.6 The current proposals for the site include the creation of a three-bedroom house as well as two one-bedroom flats, with associated parking and amenity spaces (Figure 3).



- Policy ENV DM1 – Designated Sites of biodiversity or geological importance
- Policy ENV DM4 – Protection of trees
- Policy ENV DM5 – Development and biodiversity

1.8 The new Environment Bill is currently under review but is expected to be adopted in 2020, therefore, the proposals need to be considered the new policies outlined within the proposed submission document. The current draft of the Environment Bill (26th February 2020) has outlined the requirement for granted developments to provide a biodiversity value post-development which exceeds the pre-development biodiversity value of the onsite habitat by at least 10%. Proposals also need to provide a net gain in biodiversity in accordance with the NPPF.

1.9 The assessment also takes into consideration nature conservation and wildlife legislation including, but not limited to, the Wildlife and Countryside Act 1981 (as amended), the Natural Environment and Rural Communities (NERC) Act 2006 and the Conservation of Habitats and Species Regulations 2017.

1.10 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 Practice 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.

Preliminary Ecological Appraisal

- 2.2 A preliminary ecological appraisal (PEA) was undertaken on 18th May 2020 by assistant ecologist Kieran McGranaghan BSc (Hons) PGDip QCIEEM. This included an assessment of both the habitats and protected species potential of the site.

Phase 1 Habitat Survey

- 2.3 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). The dominant plant species in each habitat were recorded, where appropriate.

Protected Species Assessments

- 2.4 Any evidence of protected species was recorded. Standard survey methods for finding evidence and assessing presence or likely absence based on habitat suitability were used for bats in trees and buildings (Collins 2016), breeding birds (BTO 2020), hazel dormice (Bright *et al.* 2006), great crested newts (ARG 2010), reptiles (Froglife 2015), badgers (Creswell *et al.* 1990) and water voles (Strachan *et al.* 2011).

Limitations

- 2.5 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.
- 2.6 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 Previous Surveys

- 3.1 A previously PEA was conducted on the land immediately north of the site (Figure 4) by The Ecology Co-op on the 9th February 2017 (The Ecology Co-op, 2017).



Figure 4: Location of previous PEA (blue line) in relation to the red line boundary of this reports site

Taken using Google Earth Pro (15th May 2020)

- 3.2 The Ecology Co-op concluded that the site did not support potential for badgers, roosting bats, dormice, barn owls, water voles or great crested newts, but the site was identified as suitable for reptiles, as well as offering potential for foraging bats and nesting birds. Due to the site being identified as suitable for reptiles, a reptile presence/absence survey was undertaken between March and April 2017, by The Ecology Co-op.
- 3.3 The reptile survey identified two slow worms over a total of seven visits, as a result the site was identified to be supporting a 'low' population of slow worms. Following on from this a full reptile translocation procedure was undertaken to ensure that no slow worms were harmed in the construction phase of the project.

4.0 Results

Desktop Study

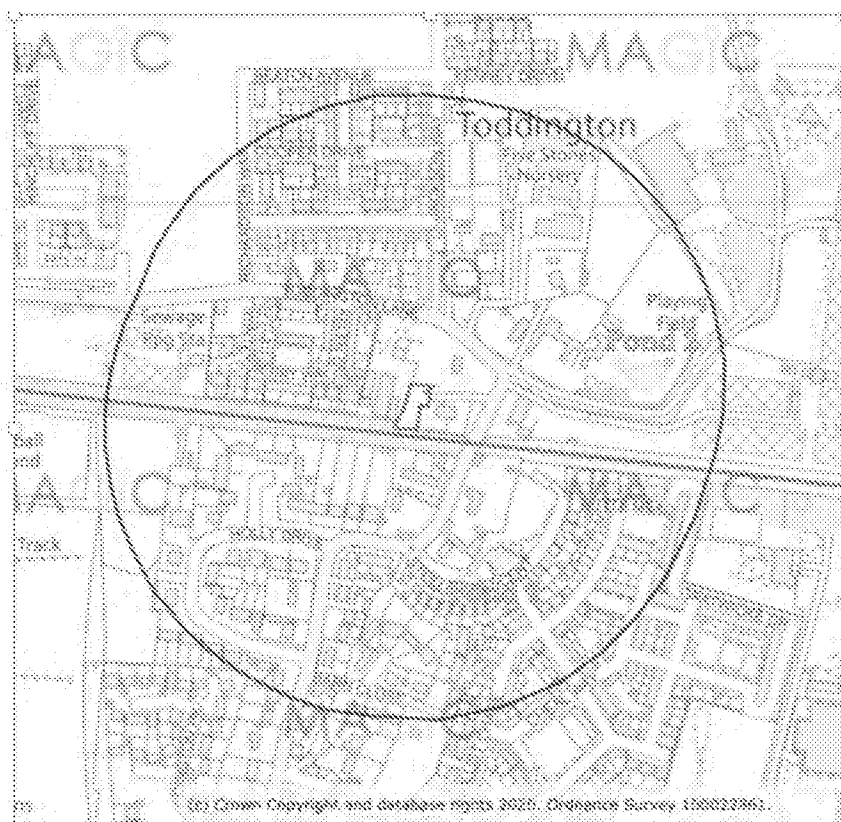
- 4.1 There are three internationally designated areas within 10km of the site, these are:
- Arun Valley Special Area of Conservation, approximately 9.5km north;
 - Designated for its population of Ramshorn snail (*Anisus vorticulus*).
 - Arun Valley Special Protection Area, approximately 9.5km north; and
 - Designated for its population of Bewick's swan (*Cygnus columbianus bewickii*), as well as being used regularly by over 20,000 waterfowl.
 - Arun Valley Ramsar, approximately 9.5km north.
 - Designated for its outstanding ornithological importance for wintering waterfowl and breeding waders. The site also supports seven wetland invertebrate species that are listed as threatened in Britain, one of which is endangered, and there are four nationally rare and four nationally scarce plant species.
- 4.2 Whilst there are no statutory designates areas within 2km of the sites red line boundary, the site does fall within the impact risk zone of Climping Beach Sites of Special Scientific Interest (SSSI), located approximately 2.6km southwest of the site. Climping beach SSSI is designated for its vegetated shingle and sand dune habitats, which support a range of marine invertebrates, which in turn supports a population of wading birds. The impact risk zone is the area surrounding the site where development could have a potential negative impact on the integrity of the designated site.
- 4.3 There are no Sites of Nature Conservation Importance (SNCI) within 2km of the site.
- 4.4 The site is surrounded by a number of priority habitats (Figure 5), the closest of each type are:
- Coastal and floodplain grazing marsh approximately 235m north;
 - Deciduous woodland approximately 410m west;
 - Ancient and semi-natural woodland approximately 1.75km north; and
 - Mudflats approximately 1.9km southwest.



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Figure 5: Coastal and floodplain grazing marsh (blue), deciduous woodland (dull green); ancient and semi-natural woodland (green vertical hatches); and mudflats (brown) within 2km (blue line) around the red line boundary of the site.

- 4.5 OS mapping revealed two ponds within a 250m radius of the site (Figure 6), at 128m southeast (Pond 1) and 150m east (Pond 2) of the red line boundary of the site.

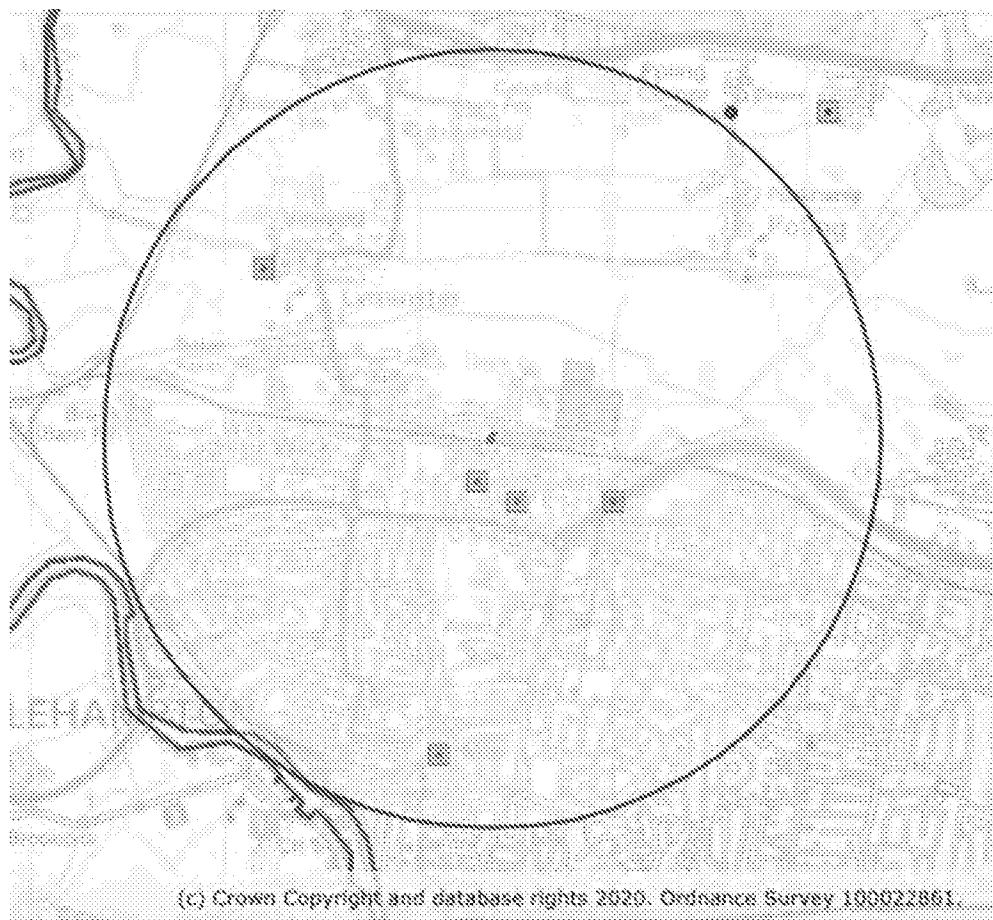


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Figure 6: Freshwater bodies within 250m (blue line) around the red line boundary of the site.

4.6 The search also revealed that five European Protected Species (EPS) licences were needed within a 2km radius around the red line boundary (Figure 7). These were for

- Common pipistrelles (*Pipistrellus pipistrellus*), brown long-eared (*Plecotus auritus*) and natterer's bat (*Myotis nattereri*) in 2012, approximately 225m southwest;
- Common pipistrelles, soprano pipistrelles (*Pipistrellus pygmaeus*) and brown long-eared bats in 2010, approximately 335m southeast;
- Common pipistrelles in 2015, approximately 700m southeast;
- Common pipistrelles and brown long-eared bats in 2017, approximately 1.4km northwest; and
- Common pipistrelles in 2017, approximately 1.6km south.



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Figure 7: Location of EPS licences taken out within a 2km buffer (blue line) around the red line boundary of the site

Phase 1 Habitat Survey

- 4.7 The site consisted of: hardstanding; ephemeral/ short perennial species; dense scrub; tall ruderal species; scattered trees and semi-improved grassland.
- 4.8 Only species of note have been listed within this section, the full species list can be found within **Appendix 3: Species List**.

Hardstanding

- 4.9 The majority of the site consisted of areas of hardstanding in the form of rubble underlaid by concrete.

Ephemeral/ short perennial

- 4.10 Ephemeral/ short perennial species were noted growing through large sections of the rubble/ hardstanding located on site. The most abundant species within this habitat type were ribwort and broad-leaved dock with common hogweed appearing frequently. Spotted medic, ground ivy, wheat, ragwort and red campion appeared abundantly in small areas.

Dense scrub

- 4.11 A strip of dense scrub was located along the western and southern borders of the site. The most abundant species within this habitat type was bramble.

Tall ruderal species

- 4.12 A strip of tall ruderal vegetation was identified along part of the eastern boundary of the site. This habitat was dominated by common nettles.

Scattered trees

- 4.13 One tree was located in the southeast corner of the site, it was deceased at the time of the survey, and as such could not be identified. A mature apple tree was located just east of the sites red line boundary, with many of its branches hanging over onto the site.

Species-poor semi-improved grassland

- 4.14 A small section of semi-improved grassland was identified along the eastern boundary of the site. This habitat was dominated by perennial rye grass.

***Target Notes*¹**

Target Note 1 – Cuttings Pile - A pile of recently cut plant material was identified within the semi-improved grassland habitat along the eastern boundary of the site.

¹ The location of the Target Notes can be seen within the habitat map in Appendix 1.

Protected Species

Roosting Bats

- 4.15 As there were no buildings or trees on site that were considered to offer roosting bat potential, the site was considered to offer negligible roosting bat potential.

Commuting and Foraging Bats

- 4.16 It was considered that the majority of the habitats on site would only offer 'negligible' foraging and commuting potential for bats. However, the dense scrub along the western and southern boundaries of the site, as well as the overhanging apple tree, were considered to offer limited opportunities for commuting and foraging bats. This is especially the case, as the dense scrub is connected to the railway line south of the site, which may be used as a wildlife corridor for a variety of species, of which bats are one.

Badgers

- 4.17 No evidence of badgers, such as setts, latrines or snuffle holes, were identified anywhere on site or in the surrounding area, where access was possible. It is however considered likely that badgers may use the site for commuting and foraging purposes.

Great Crested Newts (GCN)

- 4.18 The majority of the site is considered to be unsuitable for GCNs because of the lack of cover the hardstanding, ephemeral/ short perennial and semi-improved grassland habitats provide. It was considered that the dense scrub habitat on site provided limited foraging and commuting potential over the site, due to the cover and protection this habitat provides, especially as the scrub is connected to the railway line south of the site, which may be used as a wildlife corridor for a variety of species, GCN included.
- 4.19 A Habitat Suitability Index (HSI) assessment was conducted on Pond 1 to assess its suitability for great crested newts (GCN). A HSI could not be conducted on Pond 2 as it was located on private land, and was inaccessible at the time of the survey.

- 4.20 The suitability index is calculated for each of the 10 categories. These are then analysed using the equation below to obtain the geometric mean or HSI score of the ten suitability indices.

$$HSI = (SI_1 \times SI_2 \times SI_3 \times SI_4 \times SI_5 \times SI_6 \times SI_7 \times SI_8 \times SI_9 \times SI_{10})^{1/10}$$

- 4.21 The calculated score should be between 0 and 1 and will fall within one of several bands, which correspond to a given category for the pond (Table 1).

Table 1: HSI scores and pond suitability

HSI	Pond Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

- 4.22 Table 2 below shows the Habitat Suitability Index score for Pond 1. Pond one was a man-made SUDS pond which had been recently made as part of a residential development, with bulrush dominating the aquatic vegetation. Please note that as the pond was dry, neither the 'water quality' or 'macrophyte' factors could be quantified. Therefore, there is no data for this feature and as such it was omitted from the calculation, as per ARG UK Advice the 8th root was used to calculate the overall HSI for each pond.

Table 2: Habitat Suitability index assessment carried out on accessible ponds

Date HSI assessment undertaken	18 th May 2020
Pond ref	Pond1
SI1 - Location	1
SI2 - Pond area	0.2
SI3 - Pond drying	0.1
SI4 - Water quality	N/A
SI4 - Shade	1
SI6 - Fowl	1
SI7 - Fish	1

SI8 - Ponds	0.65
SI9 - Terr'l habitat	0.33
SI10 - Macrophytes	N/A
HSI	0.51
Pond Suitability	Below Average

Reptiles

- 4.23 The site is a mosaic of habitats suitable for reptiles. The proximity of the hardstanding and ephemeral/short perennial habitats to the dense scrub offer great basking and foraging opportunities. Furthermore, as the scrub is connected to the railway line south of the site, which may be used as a wildlife corridor for a variety of species, reptiles included, it is considered possible that reptiles are on site.

Nesting Birds

- 4.24 The dense scrub on site, dead tree and the overhanging apple tree could provide suitable nesting habitat for birds.

Other Species

- 4.25 Due to a lack of suitable habitat and/or connectivity, the site was not considered suitable for other protected species, such as barn owls, dormice, water voles or otters.

5.0 Discussion

- 5.1 The following paragraphs consider the effects of the development on designated sites, priority habitats and protected and priority species. Where the desk study and Phase 1 survey provide sufficient evidence for an assessment of effects on any of these groups to be taken through planning, these are detailed below, the need for additional surveys and when and how these should be completed are summarised, if required.

Effects on Designated Sites

- 5.2 Whilst the site does not fall within or adjacent to any designation, several are present within the local area. The closest internationally designated area is Arun Valley SAC, SPA and Ramsar, approximately 9.5km north of the sites red line boundary. At this distance, and due to the limited nature of the works, it is considered that the development would not have a significant adverse impact on this internationally designated site.
- 5.3 The closest statutory designation is Climping Beach SSSI, located approximately 2.6km southwest of the site, and at this distance, the site falls within the impact risk zone of Climping Beach SSSI. However, at this distance, proposals leading to the increase of residential units do not fall within the listed categories that are likely to have a negative impact on the designated area. Whilst, the proposals are leading to the creation of new dwellings, it is considered that as the proposals are limited to three new units, the increase in recreational activity at the designated site would be minimal.
- 5.4 As such, it is considered that there are no issues with regards to local policies: **ENV SP1: Natural Environment**; and **ENV DM1: Designated Sites of Biodiversity and Geological Importance** by avoiding damage to protected areas, at an international, national or local scale.

Effects on Priority Habitats

- 5.5 Government guidance² requires the protection of ancient woodland, with at least a minimum 15m buffer between the woodland and development. Ancient woodland is located within the wider landscape; however, the closest being a unit of ancient and semi-natural woodland approximately 1.75km north. As such, no impacts to areas of ancient woodland are expected, especially as the proposal only involves the increase of residential units by three, and thus there should be no significant increase in recreational activity on ancient woodlands as a result of this proposal.

² <https://www.gov.uk/guidance/ancient-woodland-and-veteran-trees-protection-surveys-licences>

- 5.6 There are also a number of other priority habitats surrounding the site, which are all habitats of principle importance for the conservation of biodiversity under Section 41 of the NERC Act 2006. This means that development needs to consider impacts on these habitats to prevent their degradation. The closest priority habitat to the site is an area of coastal and floodplain grazing marsh approximately 235m east of the site. However, due to the nature and scale of the proposals, as well as the distance between the site and the protected habitats, no adverse impacts are predicted on these habitats or their ecological functionality. As such, it is considered that the proposals adhere to policy **ENV SP1: Natural Environment** by avoiding harm to any priority habitats.

Effects on on-site Habitat

- 5.7 It is considered that all of the habitats on the site will be impacted by the proposals, with all of the habitats likely to be removed. All of the habitats on site were considered to be species-poor, widespread and common within the local area, and of low ecological importance. The habitats on site were assessed against the criteria for open-mosaic habitat on previously developed land to identify whether the site classifies as a priority habitat. However, as the site is under 0.25ha (at approximately 0.1ha), the site does not qualify. As the habitats on site are considered to be of low ecological importance, the proposals partly adhere to policy **ENV DM5: Development and Biodiversity** by avoiding harm to habitats and features important to biodiversity.
- 5.8 However, to fully adhere to policy **ENV DM5: Development and Biodiversity**, biodiversity net gain must be achieved, as well as creating new habitats which link up to other habitats within the area if possible. To help achieve this, recommendations have been laid out within the ecological enhancements section of this report.

Effects on Protected Species

Bats

- 5.9 As no buildings or trees on site were considered to offer roosting bat potential, it is considered that the site overall, offers 'negligible' roosting bat potential. The dense scrub and overhanging apple tree were identified as offering limited foraging and commuting potential for bats, especially as the dense scrub is connected to the railway line to the

south, which may be used as a wildlife corridor for bats. It is currently understood that the dense scrub would be removed as part of the proposals, and as such replacement habitat such as a hedgerow along the southern border of the site is recommended. It is also recommended that a sensitive lighting scheme is put into place on the site, to minimise the proposals impacts on commuting and foraging bats within the local area, taking extra care to reduce spill over lighting onto the railway track to the south.

5.10 Any proposed lighting scheme as part of the proposals will have to consider 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 considered with a sympathetic lighting scheme. Recommendations include:

- Installing lighting only if there is a significant need;
- Using LED luminaries due to their lower intensity, sharp cut-off and good colour rendition – any lights with UV elements or metal halide lights should not be used;
- Lights with peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone 2012);
- Lights with an upward light ratio of 0% and good optical control;
- Careful consideration of column height to avoid light spill;
- Any external security lights should use motion-sensors and short (1-minute) timers.

5.11 The Bat Conservation Trust survey guidelines (Collins 2016) state 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.

5.12 Considering the above and the small scale of the proposals, it is considered that transect surveys for bats would not be required. It is unlikely that large numbers of bats are using the small site. Furthermore, it is considered that the redevelopment of the site would not impact upon the ecological functionality of the local landscape and will not significantly sever or fragment landscape links or green corridors, especially if the replacement planting of the hedgerow occurs.

Badgers

5.13 Whilst there was no evidence of badgers found within or around the site, it was considered possible that badgers may use the site as a commuting and foraging area. As such, it is advised that certain safety measures be taken to ensure that no badgers or other mammals are harmed during construction. Best practice guidelines recommended that:

- Any excavations and trenches associated with construction are either covered at night or supplemented with a means of escape for any badgers that may fall into the excavation whilst foraging;
- Any open pipes or conduits laid should be blocked off each night to prevent badgers from entering them;
- If possible, construction work should only take place between dawn and dusk with no late evening work to reduce possible disturbance.

5.14 If these methods are followed, no significant residual impacts are predicted on badgers or other small mammals on site or within the local area.

Great Crested Newts

5.15 It is considered that the only suitable optimal great crested newt habitat on site is the dense scrub along the western and southern boundary of the site. The rest of the site is considered to be sub-optimal due to the dominance of hardstanding and ephemeral/ short perennial habitats which offered very limited to no cover from predation.

- 5.16 Furthermore, Pond 1 was identified as having a 'below average' suitability for GCN, which indicates that they are unlikely to be used by GCNs.
- 5.17 A rapid risk assessment for GCN licences shows that developments likelihood to cause an offence in relation to works located around Pond 1 (Table 3). The results of which was "Green: Offence Unlikely".

Table 3: GCN licence rapid risk assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.01
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
	Maximum:	0.01
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

- 5.18 Based on the above, as well as the nature and extent of the proposals, it is considered unlikely that any GCNs will be impacted as a result of the proposals. On top of this, the PEA conducted on the land directly north of the site (The Ecology Co-op, 2017), stated that it was highly unlikely that GCN were within the site for the same reasons. As such, it is considered highly unlikely that GCN are present within the site, and works can commence without further consideration for this species.

Reptiles

- 5.19 The dense scrub on site was considered to offer suitable habitat for reptiles, as it provides cover from predation and can act as a commuting and foraging route. Furthermore, this dense scrub connects the site to the railway line to the south of the site, which could be used as a wildlife corridor for reptiles. Furthermore, reptiles were found directly north of the site by The Ecology Co-op who found a 'low' population of slow worms (The Ecology Co-Op, 2017). Due to the low levels of reptiles found to the north of the site, as well as the small area in which this site covers, it is considered that a sensitive clearance method of

suitable habitat would be sufficient in mitigating harm to any reptiles that may be present on site.

5.20 It is recommended as a precautionary measure works should be undertaken in a sensitive manner using reasonable avoidance measures to ensure that the species are considered during work.

- Vegetation will be strimmed/cut down using the following method in suitable weather conditions (avoiding rain/wet conditions) under ecological supervision:
 - 1 Day 1: Strim to 200mm
 - 2 Day 2: No works to habitats
 - 3 Day 3: Strim to ground level
 - 4 Day 4: No works to habitats
 - 5 Day 5: Clearance of the habitats under ecological watching brief
- Once the vegetation is removed the habitats should be left for one day and one night to allow any reptiles or other small mammals or wildlife to leave the area prior to its removal.
- Where possible, materials and debris should be hand searched prior to destructive searching (see below) by an ecologist. The habitats deemed to have suitability for reptiles can then be removed with a digger with a toothed bucket. This should be undertaken in a linear fashion starting from one end of the habitat and completing at the other end of the habitats. The removal of the suitable habitat must be undertaken under ecological supervision.
- Any reptiles caught during this process should be released within safe habitat on the edges of the site, such as along the railway line to the south, to disperse into adjacent offsite suitable habitat. Area to be kept free of piles of debris such as log piles, leaf piles, brick heaps or loose soil.

5.21 Construction and demolition materials, as well as skips and pallets, should be stored on hardstanding where possible and furthermore, should be elevated off the ground. This so that no features are created that reptiles could potentially use as refuge habitat.

- 5.22 Where trenches and holes are dug, these should not be left open overnight. Reptiles (and amphibians, and small mammals) may get trapped in vertical-sided trenches. Therefore, where there is a risk of this occurring, the holes should be refilled or planks of wood should be placed so that any trapped animals may use these to escape.
- 5.23 if the precautionary methods are followed, the proposals will adhere to policy **ENV DM5 Development and biodiversity**, by including details of measures to be incorporated in the development scheme to avoid loss of the species.

Nesting Birds

- 5.24 The dense scrub, dead tree and the overhanging apple have the potential to support nesting birds. All birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). If any of these features are to be removed, or have work conducted on them, as part of the proposals, this should be undertaken outside of the breeding bird season (March-September inclusive) 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. If this method is followed, no significant residual impacts are predicted on nesting birds within the local area.

Ecological Enhancements

- 5.25 A number of enhancements can be made to the final development to help reduce potential ecological impacts, as well as to try and achieve biological net gain. It is important to utilise native species of local provenance in landscaping schemes to enhance the ecological value of the development.
- 5.26 New tree planting could be undertaken within available sections of the site to help replace any nesting bird potential lost from the removal of the dense scrub, dead tree and the overhanging apple. These should include native species of value to wildlife such as oak (*Quercus robur*), hazel (*Coryllus avellana*), holly (*Ilex aquifolium*), wild cherry (*Prunus avium*) and apple (*Malus sp.*). New hedges should also be planted along the southern border of the site, and should include native species such as hawthorn (*Crataegus monogyna*), beech (*Fagus sylvatica*), privet (*Ligustrum vulgare*) and yew (*Taxus baccata*). This will also help

ensure that the site adheres to policy **ENV DM5 Development and biodiversity** by ensuring that the proposals are creating a link between habitat areas and wildlife corridors.

- 5.27 New shrub and herb planting could be proposed within the newly created garden habitats. Recommended native species include bilberry (*Vaccinium myrtillus*), spindle (*Euonymus europaeus*), buckthorn (*Rhamnus cathartica*), foxglove (*Digitalis purpurea*), wood sage (*Teucrium scorodonia*), betony (*Stachys officinalis*) and sweet woodruff (*Galium odoratum*).
- 5.28 Bat boxes can be integrated into the structure of the new building (Figure 8). These provide good opportunities for crevice-dwelling species such as pipistrelles. The opening of the bat box/tube will be the only section visible and they are designed so that they require little to no maintenance. Several of these tubes can be established in a row together providing a good-sized roost space. The bat tubes should be inserted in the brickwork at least 4m from ground level in a location not illuminated by artificial lighting. Habitat, in association with the Bat Conservation Trust, provide a range of boxes which are unfaced for render or designed to match the brickwork of the building.

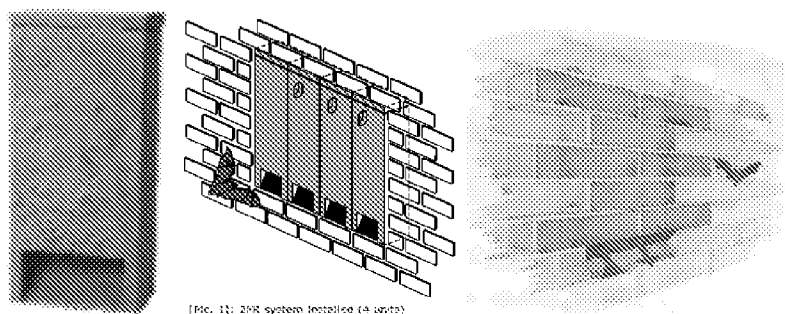


Figure 8: Bat tubes incorporated into the wall of a building to provide roosting space

- 5.29 Nest boxes can be installed in order to provide new nesting opportunities for birds. These can be hung on the new structures. Bird boxes made from woodcrete or similar are recommended due to their longevity. The installation of both bird and bat boxes are recommended within policy **ENV DM5 Development and biodiversity** as enhancements that should be made on site.

- 5.30 It is also recommended that a log pile could be made along the southern boundary of the site (Figure 9). The log pile can be created from any trees that are being removed as part of the proposal. Log piles offer shelter for hibernating small mammals and insects, as well as a foraging area for some birds.

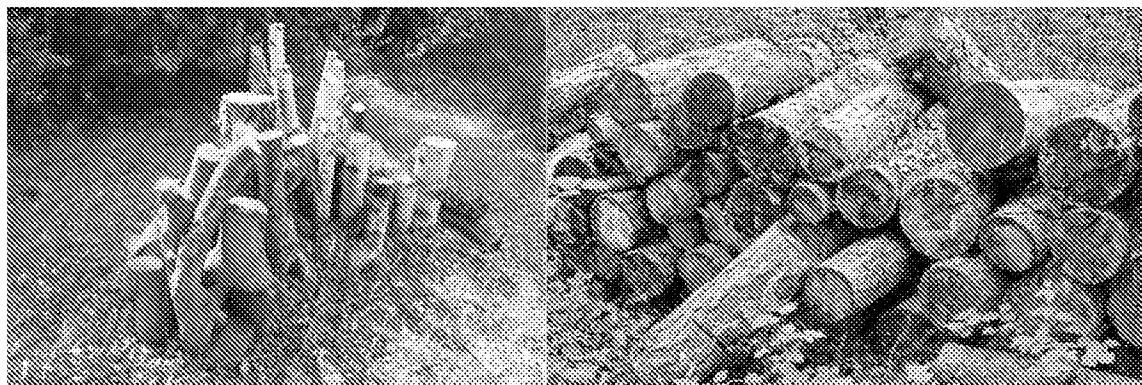


Figure 9: (left): Examples of log piles that can be made on site

- 5.31 Hedgehog (*Erinaceinae europaeus*) homes could also be placed along the southern boundary of the site (Figure 10). These provide areas of shelter for hedgehogs within the site, helping support the local population.

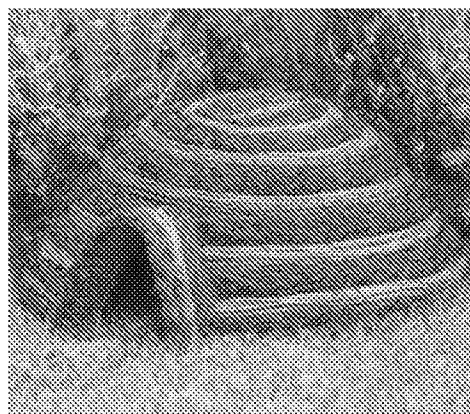


Figure 10: Example of a hedgehog house that can be utilised on site

- 5.32 Where possible, fencing will be made hedgehog-friendly by creating a 13cm x 13cm hole at the base (Figure 11). These simple features allow hedgehogs to travel between gardens and increase habitat connectivity. To ensure these are not blocked, small signs can be painted or erected above the hole.



Figure 11: Hedgehog-friendly fencing and highway signage (hedgehogstreet.org)

6.0 Impact Assessment

- 6.1 This section of the report forms an EcIA (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

- 6.2 The approach to this assessment accords with guidance presented within the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018). In essence, an EcIA assesses the activities associated with a proposed scheme that are likely to generate changes within identified zone of influences, on identified ecological features and receptors. The proposals are subsequently reviewed and mitigation and compensation measures are outlined which help to reduce negative impacts.
- 6.3 The zone of influence for the development is defined as:
- The project red line, for effects on habitats and species;
 - Adjacent habitat, considered by species, for mobile species with territories or foraging ranges that may overlap the site.
- 6.4 The types of features considered in the assessment of effects, to meet legislative and policy requirements, are:
- Designated sites (European, national and local);
 - Protected species;

- Habitats and species of principal importance (Section 41 list);
- Hedgerows and woodland, where not of principal importance; and
- Habitats, where not of principal importance, that may function as wildlife corridors or stepping stones.

Baseline Ecological Conditions

6.5 The site contains the following important ecological features;

- Climping Beach SSSI impact risk zone.

6.6 In addition, the site is considered to have **potential** to support the following important ecological features:

- Bats;
- Nesting birds;
- Badgers ; and
- Reptiles.

Impact Assessment and Mitigation

Table 4: Assessment of effects from the proposal after mitigation and compensation

Feature	Scale of Importance	Mitigation/Compensation Required	Residual Effect
Climping Beach SSSI impact risk zone	National	None required	Not Significant
Commuting and foraging bats	Local	Sensitive lighting and planting of a hedgerow along the southern section of the site.	Not Significant
Nesting Birds	Local	Mitigating direct harm to nests by removal of any trees, or dense scrub outside of nesting bird season or after a check by a suitably qualified ecologist. Compensation in the form of the installation of bird boxes.	Not Significant
Badgers	Local	Precautionary method of works during construction.	Not Significant

Reptiles	Local	Sensitive clearance measures to avoid harming reptiles on site.	Not Significant
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Cumulative impacts

- 6.7 The scheme should also be considered in conjunction with other surrounding proposals in order to determine cumulative impacts on ecological features. There are a few proposals within the local area that result in a net increase in residential units, which includes the creation of ten residential dwellings with associated open space, landscaping, parking and access at land at Toddington Lane directly north of the site (LU/162/17/PL).
- 6.8 However, since the nearby residential development has been granted planning permission, it is assumed that any potential impacts on ecology have been adequately considered and mitigated for in the proposals. As such, it is considered that there will be no significant cumulative impacts as a result of the development.

7.0 Conclusions

- 7.1 The site does not lie within or adjacent to any designated sites, although the site does fall within the impact risk zone of Climping Beach SSSI. At this distance the proposals do not fall within those listed as likely to cause harm, and as such it is considered that the development would not have a significant adverse impact on this internationally designated site or any other designated sites within the local area.
- 7.2 A sensitive lighting scheme should be conditioned if there is to be a change in lighting, with extra care taken to not artificially illuminate the railway line to the south of the site. Enhancements for bats have also been recommended.
- 7.3 Birds may use the trees and dense over the site to nest within. Any works should therefore avoid the bird nesting season (March – September inclusive) or a nesting bird check by a qualified ecologist will be required.
- 7.4 Whilst no evidence of badgers was identified within or around the site where access was possible, it is considered possible that they use the site for commuting and foraging

purposes. As such, precautionary methods of work have been outlined to avoid harming any individuals that may use the site.

7.5 It was considered possible that reptiles may be using the boundary features on the site due to the protection that they provide from predation as well as the records of a low slow worm population previously within the site to the north. As such, sensitive clearance measures of suitable habitat on site have been recommended to ensure the habitats on site are unsuitable for reptiles. This will help ensure that no reptiles are present or harmed on the site when construction begins.

7.6 Owing to a lack of suitable habitat and/or connectivity, the site is not considered to be constrained by other protected/notable species such as dormice, great crested newts, otters and water voles.

8.0 References

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Strachan, R. & Moorhouse, T. (2011) *Water vole conservation handbook. Third Edition* Wildlife Conservation Research Unit, University of Oxford.

Internet resources:

Arun District Council: <https://www.arun.gov.uk/>

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

Magic Interactive Map: www.magic.gov.uk

Appendix 1: Phase 1 Habitat Map

Appendix 1– Toddington Lane Phase 1 Habitat Map

Key

RLB

Target Note 1- Cuttings Pile

Scattered Trees

Hardstanding

Species-poor semi-improved grassland

Ephemeral: short Perennial

Dense Scrub

Tall Ruderals

Site: Toddington Lane

Client: Dowsett Mayhew

Date of Survey: 18th May 2020

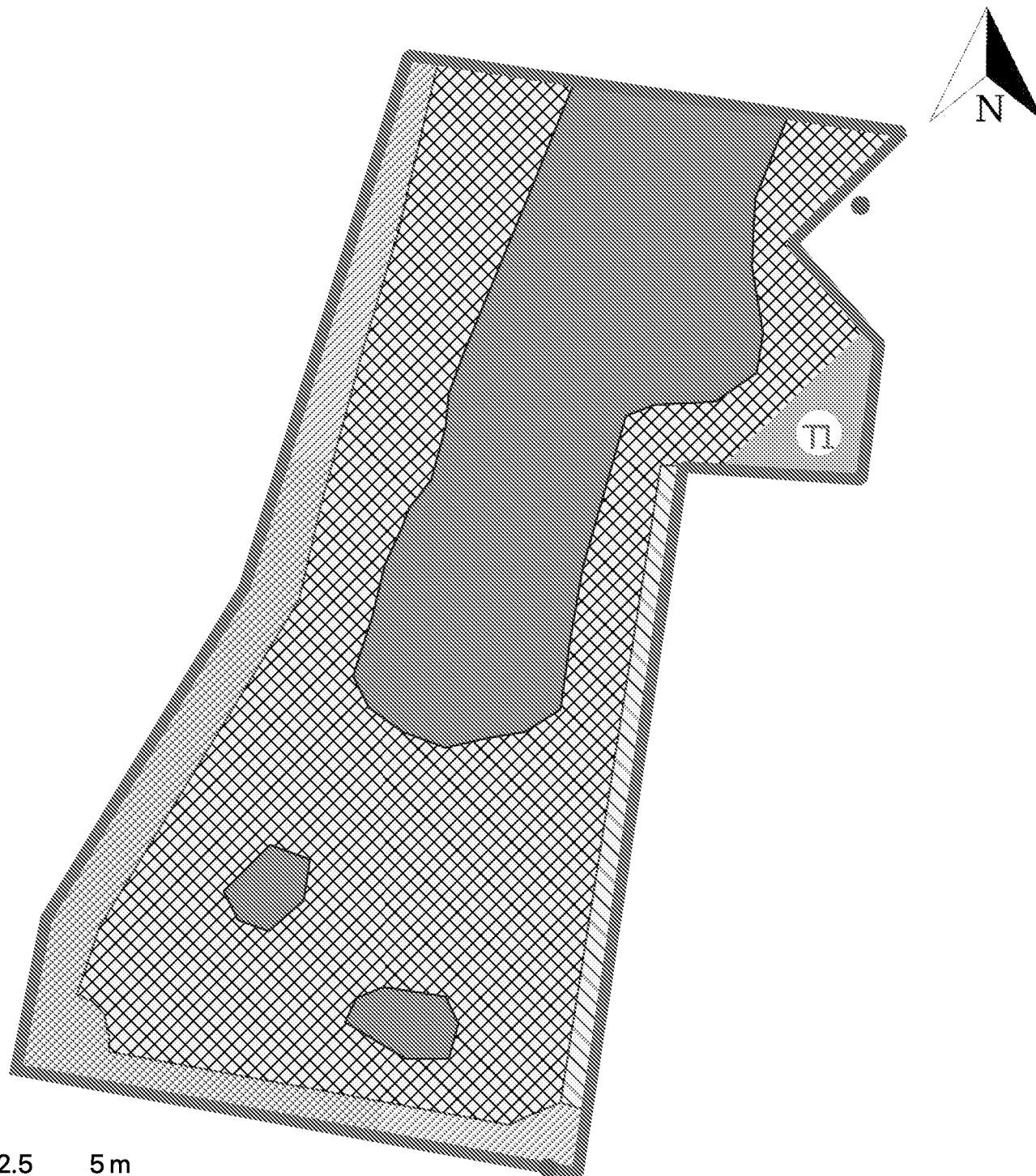
Surveyor: KM

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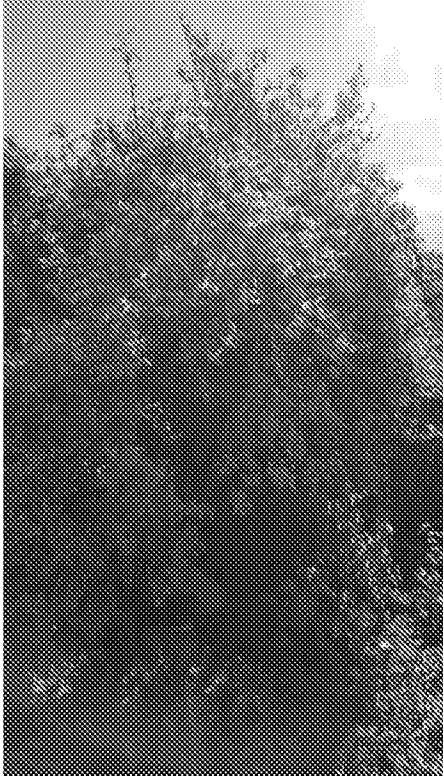
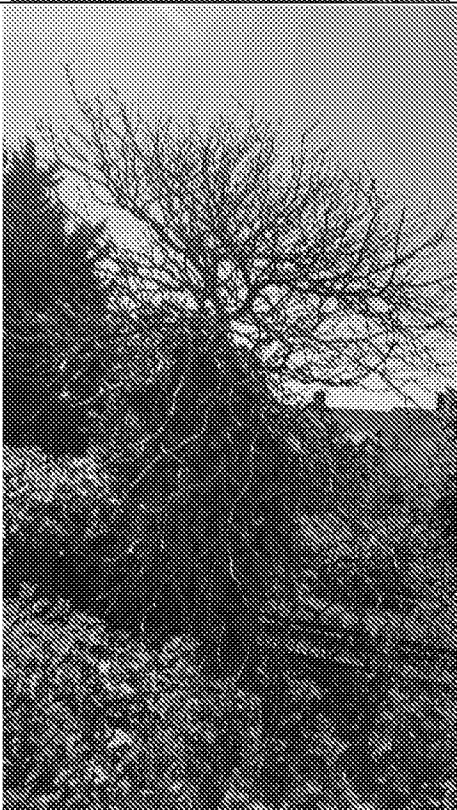
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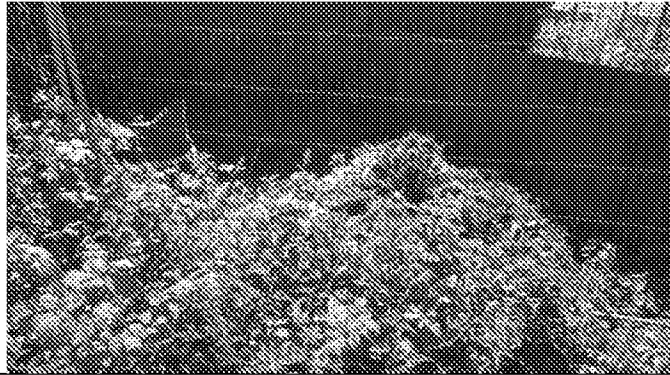
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Appendix 2: Photos

Photograph 1: Overview of the site showing areas of hardstanding, ephemeral/ short perennial and scrub habitats.	 A black and white photograph showing a wide view of a site. In the foreground, there is a mix of low-lying vegetation and patches of bare ground. A fence line runs across the middle ground, with trees and a building visible in the background.
Photograph 2: Photo showing the dense scrub and ephemeral/ short perennial habitats along the southern and western boundary of the site.	 A black and white photograph showing a dense area of scrub and low vegetation. A fence line is visible in the background, and a building is partially obscured by the trees.
Photograph 3: Photo of a section of the tall ruderal vegetation along the eastern boundary of the site.	 A black and white photograph showing a close-up view of tall, dense vegetation, likely ruderal plants, growing along a boundary.

Photograph 4: Photo showing the overhanging apple tree.	
Photograph 5: Photo of the dead tree located in the southeast corner of the site.	

Photograph 6: Photo of the cuttings pile (**Target Note 1- Cuttings Pile**) located near the eastern boundary of the site, surrounded by semi-improved grassland.



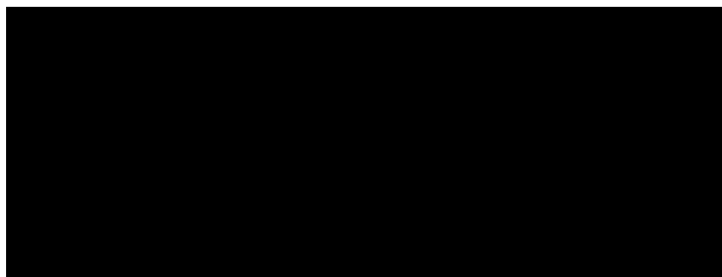
Appendix 3: Species List

DAFOR Scale	Meaning	Percentage Cover of habitat
D	Dominant	51-100%
A	Abundant	31-50%
F	Frequent	16-30%
O	Occasional	6-15%
R	Rare	1-5%
LA	Locally Abundant	31-50% of a specific area

Common name	Latin name	DAFOR score
Scattered trees		
Apple	<i>Malus domestica</i>	Off site
Unknown deceased tree		
Dense Scrub		
Bramble	<i>Rubus fruticosus</i>	D
Common nettles	<i>Urtica dioica</i>	A
Ribwort plantain	<i>Plantago lanceolata</i>	F
Cleavers	<i>Galium aparine</i>	O
Bristly ox-tongue	<i>Helminthotheca echinoides</i>	O
Common vetch	<i>Vicia sativa</i>	O
Greater plantain	<i>Plantago major</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
Spear thistle	<i>Cirsium vulgare</i>	R
Common hogweed	<i>Heracleum sphondylium</i>	R
Dandelion	<i>Taraxacum officinale</i>	R
Ground ivy	<i>Glechoma hederacea</i>	LA
Ephemeral/ short perennial		
Ribwort plantain	<i>Plantago lanceolata</i>	A
Broad-leaved dock	<i>Rumex obtusifolius</i>	A
Common hogweed	<i>Heracleum sphondylium</i>	F
White dead nettle	<i>Lamium album</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O
Dandelion	<i>Taraxacum officinale</i>	O
Curled dock	<i>Rumex crispus</i>	O
Bristly ox-tongue	<i>Helminthotheca echinoides</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
False brome	<i>Brachypodium sylvaticum</i>	O
Common vetch	<i>Vicia sativa</i>	O
Germander speedwell	<i>Veronica chamaedrys</i>	O
Canadian fleabane	<i>Erigeron canadensis</i>	R
Cleavers	<i>Galium aparine</i>	R
Forget-me-not	<i>Myosotis</i> sp.	R
Dove's-foot crane's-bill	<i>Geranium molle</i>	R

Teasel	<i>Dipsacus fullonum</i>	R
Spotted medic	<i>Medicago arabica</i>	LA
Ground ivy	<i>Glechoma hederacea</i>	LA
Wheat	<i>Triticum</i> sp.	LA
Ragwort	<i>Jacobaea vulgaris</i>	LA
Red campion	<i>Silene dioica</i>	LA
Species-poor semi-improved grassland		
Perennial ryegrass	<i>Lolium perennne</i>	A
Creeping buttercup	<i>Ranunculus repens</i>	F
Dandelion	<i>Taraxacum officinale</i>	O
Daisy	<i>Bellis perennis</i>	O
Common vetch	<i>Vicia sativa</i>	R
Dove's-foot crane's-bill	<i>Geranium molle</i>	R
Forget-me-not	<i>Myosotis</i> sp.	R
Tall ruderal species		
Common nettles	<i>Urtica dioica</i>	D
Common vetch	<i>Vicia sativa</i>	O
Spear thistle	<i>Cirsium vulgare</i>	O
Yorkshire fog	<i>Holcus lanatus</i>	O
Greater plantain	<i>Plantago major</i>	LA

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