

**Preliminary Ecological Appraisal and
Internal/External Bat**

**10 South Road
Felpham, West Sussex**

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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 Regent Properties to undertake a preliminary ecological appraisal and internal/external bat inspection at 10 South Road, Flepham, West Sussex.
- 1.2 This report presents the results of The Ecology Partnership's surveys in and around the site, which aims specifically to assess the sites potential to support protected species and protected habitats that may be affected by the proposed development.
- 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 off South Road which is situated within the town of Felpham, just north east of Bognor Regis. The site covers approximately 0.2ha, which includes areas of residential garden and existing buildings. The site is surrounded by moderate-density housing to the north and east, a school and recreational field to the west and an allotment and arable field to the south. The A259 stretches east to west, just south of the site.
- 1.5 The approximate red line boundary of the site is shown in Figure 1. This was also the approximate survey boundary.



Figure 1: Approximate location of the red line boundary

Description of Proposed Development

- 1.6 The proposal plans to develop five dwellings and garages within the western end of the site.

Planning Policies

- 1.7 National and local planning policies may have an affect on the proposed development. The following paragraphs identify relevant planning policies and discuss these in the context of the site.

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- 1.8 Under the 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;*
 - Preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*
 - Remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate’*

- 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 development site comes under the jurisdiction of Arun District Council. The Local Plan was adopted in 2003. The 2011-2031 Local Plan is still emerging and therefore holds limited weight. The following policies from the adopted Local Plan (2003) have been identified as being relevant to development of the site and conservation of protected species:

- 1.13 *POLICY GEN29 Nature Conservation Across the District*

Development will only be permitted on sites which contain semi-natural habitats, features of nature conservation interest, or within wildlife corridors, where these can be largely retained and sympathetically incorporated into the scheme. Legal agreements may be used to offset the loss of, or impact on, any nature conservation resource present on the site prior to development.

- 1.14 *POLICY AREA14 Sites of National Importance for Nature Conservation*

Proposals for development in, or likely to affect (directly or indirectly) Sites of Special Scientific Interest will be subject to special scrutiny. Where such development is likely to have an adverse effect, it will not be permitted unless the reasons for the development clearly outweigh the nature conservation value of the site itself and the national policy to safeguard the national network of such sites.

Where the site concerned is a National Nature Reserve, a site identified by the Nature Conservation Review or Geological Conservation Review, particular regard will be paid to the national importance of that site.

Where development is permitted, harm to the nature conservation interest must be minimised. The use of conditions or planning agreements will be considered to ensure the protection and enhancement of the nature conservation interest, and to provide appropriate compensatory or mitigation measures and site management.

1.15 *POLICY AREA15 Sites of Local Importance for Nature Conservation*

Proposals for development in, or likely to have an adverse effect (directly or indirectly) on a Local Nature Reserve, Site of Nature Conservation Importance (including ancient woodlands or wildlife corridors) or Regionally Important Geological/Geomorphological Site will not be permitted unless it can be demonstrated that reasons for the proposal outweigh the need to safeguard the nature conservation value of the site/feature. Where development is permitted which would damage the nature conservation value of the site/feature, such damage should be kept to a minimum.

Conditions or planning obligations will be used to secure necessary compensatory or mitigation measures, enhancement and site management.

Where appropriate, the Authority will consider the use of legal agreements to provide appropriate compensatory measures, enhancement and site management.

- 1.16 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 2013) and in accordance with BS 42020:2013 Biodiversity – Code of Practice for Planning and Development.

2.0 Methodology

Desk Top Study

- 2.1 A desk top study search was completed using an internet-based mapping service (www.magic.gov.uk) for statutory designated sites and two internet-based aerial mapping services (maps.google.co.uk) were used to understand the habitats present in and around the survey area and habitat linkages and features (ponds, woodlands etc.) within the wider landscape.

Preliminary Ecological Appraisal

- 2.2 An extended preliminary ecological appraisal was undertaken on the 21st July 2016 by ecologists George Rockell BSc (Hons) and Emma Bagguley BSc (Hons) MSc. 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.

Internal and External Bat Surveys

- 2.3 An internal and external examination of the dwelling within the red line boundary was undertaken. Buildings that are considered to have a high potential to support roosting bats would include the following:
- Agricultural buildings (e.g. farmhouses, barns and out buildings) of traditional brick or stone construction and/or with exposed beams;
 - Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;
 - Pre 1960s detached buildings and structures within 200m of woodland and/or water;
 - Pre 1914 buildings within 400m of woodland and/or water;
 - Pre 1914 buildings with gable ends or slate roofs regardless of location;
 - Buildings which are located within or immediately adjacent to woodland and/or immediately adjacent to water;
 - Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if, following a preliminary roost assessment the site, appear to be particularly suited to bats.
- 2.4 The surveyors assessed the buildings visually and searched for evidence such as:
- Staining beneath or around a hole caused by natural oils in bat fur.
 - Bat droppings beneath a hole, roost or resting area.
 - Audible squeaking from within a hole.

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- Insects (especially flies) around a hole.
 - Dead bats.

2.5 The building was accessed during the day. An external investigation assessed the tiles, any weatherboarding and structural timber joints of the building. This was undertaken in order to see if there were access points readily available for bats to utilise or crevices that bats could be roosting in.

Badger Survey

2.6 A badger survey was undertaken at the site to assess if badgers were using the area and if any setts were located on the site and 30m away from the site that might 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 (pawprints), dung piles with latrines, badger hairs and feeding signs such as snuffle holes.

2.7 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.

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- Footprints: easily distinguishable from other large mammal species. Often found along paths and runs or in spoil outside sett entrances.

Habitat Suitability for Reptiles

2.9 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.

Limitations

2.10 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.

2.11 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 Two statutory designated sites were identified within a 2km radius of the red line boundary:
- Felpham Site of Special Scientific Interest (SSSI) is located approximately 0.8km to the south of the site.
 - The Brooks Local Nature Reserve (LNR) is located approximately 1.5km to the north west of the site.
- 3.2 No notable habitats were identified within close proximity to the red line boundary.
- 3.3 Satellite imagery did not reveal any water bodies within a 250m radius of the site.

Habitat Phase 1 Survey

- 3.4 Short's Farm is comprised largely of managed semi-improved grassland. Sections to the south and north were inaccessible due to limitations with permissive access. The site is private and not accessible to the public.

Semi-improved grassland

- 3.5 The majority of the site was dominated by semi-improved grassland. The grassland appeared to have undergone recent management, which resulted in a short sward height. The dominant species consisted of: perennial rye-grass (*Lolium perenne*), creeping buttercup (*Ranunculus repens*), catsear (*Hypochaeris radicata*), dandelion (*Taraxacum agg.*), white clover (*Trifolium repens*), Yorkshire fog (*Holcus lanatus*), ribwort plantain (*Plantago lanceolata*), wall barley (*Hordeum murinum*), daisy (*Belis perenis*), scartlett pimpernell (*Anagallis arvensis*) and selfheal (*Prunella vulgaris*).

Hedgerow

- 3.6 The northern boundary of the semi-improved grassland located on-site consisted of a species poor, intact hedgerow, which was dominated by garden privet (*Ligustrum ovalifolium*) and bush honeysuckle (*Lonicera nitida* agg.).

Tree line

- 3.7 A tree line of *cypress* sp. and elder was identified on the western and south east corner of the semi-improved grassland on-site.

Pond/Swimming pool

- 3.8 In the centre of the semi-improved grassland was a swimming pool, which appeared to have not been used for a considerable amount of time. The lack of management and use resulted in a 100% covering of duckweed (*Lemna minor*).

Building

- 3.9 Two buildings were identified on site. The main building (10 South Road), a two storey dwelling, was located in the eastern section of the site. A small shed was located in close proximity to the western boundary of the site.

Fence line

- 3.10 A wooden fence line bordered the grassland, separating the privately owned gardens.

Limited Access Areas

- 3.11 The areas which were not accessible during the walkover survey appeared to consist of well manicured gardens. The gardens appeared to contain mainly ornamental species.

Tree, Habitat and Building Assessment for Bats***Internal survey***

- 3.12 The two buildings located within the red line boundary were assessed for evidence of roosting bats and their potential to support roosting bats internally and externally.
- 3.13 The main building was a two storey dwelling which contained one loft void space. The void was approximately 1.5m high, 2m wide and 4m in length. The ceiling was formed of plywood sarking and was clear of cobwebs. The void was warm, with little draft, and without any potential access points. No bat droppings were identified within the void.
- 3.14 The small shed was locked, however due to its size was assessed through the window. The building contained gardening equipment and did not appear to any potential access points. The building is likely very hot internally and was well illuminated. Such buildings offer limited potential in terms of suitable roosting opportunities for bats.

External survey

- 3.15 The main building's roof tiles were well fitted, flush and were not considered loose and as such there were no cracks or crevices to be utilised by roosting bats. No other potential roost features were identified externally on either building within the red line boundary.

Badger Survey

- 3.16 No badger setts were located on or within 30m of site. No latrines, snuffle holes or mammal pathways were identified. A small mammal hole was identified within the tree line on the eastern border of the site. However, this hole did not appear in use and was likely previously occupied by rabbits.

Habitat Suitability for Reptiles

- 3.17 Semi-improved grassland provides good habitat for foraging reptiles as it offers a wide range of invertebrates as a food source. However, during the survey the sward height was short and not considered suitable for reptiles.

- 3.18 Three log piles were target noted during the survey. The log piles were isolated and not considered to be large or dense enough to offer hibernating habitats for reptiles.

Dormice

- 3.19 Dormice prefer a layered habitat of scrubland with a vast canopy cover for moving through. This habitat type was not present on-site. No dormice nests or evidence were identified within the hedgerow habitat. There are limited opportunities for nesting or foraging dormice within the redline boundary.

Great Crested Newts

- 3.20 An existing swimming pool was identified on-site (Figure 2). No ponds were identified within a 250m radius of the red line boundary. The swimming on-site appeared to have not been used for a considerable amount of time and was dominated with a 100% covering of duck weed. The swimming pool had steep bordering walls.



Figure 2: Blue pond identified as potential GCN habitat on-site.

- 3.21 The existing swimming pool was accessible and was surveyed for its potential to support great crested newts using the Habitat Suitability Index criteria. The habitat suitability was quantified using 10 variables (table 2), which are then analysed to obtain the geometric mean or HSI score of the ten suitability indices.

$$\text{HSI} = (\text{SI}_1 \times \text{SI}_2 \times \text{SI}_3 \times \text{SI}_4 \times \text{SI}_5 \times \text{SI}_6 \times \text{SI}_7 \times \text{SI}_8 \times \text{SI}_9 \times \text{SI}_{10})^{1/10}$$

- 3.22 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: 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

Table 2. HSI Scores for the on-site pond.

Suitability Indices No.	Feature	Pond Score
1.	Location	1
2.	Area	0.2
3.	Permanence	0.9
4.	Water quality	0.01
5.	Shading	1
6.	Presence of waterfowl	1
7.	Presence of fish	1
8.	Pond density	0.1
9.	Suitable newt habitat within 500m	0.33
10.	Macrophyte content	0.3
10 th root		0.34
Pond Suitability		Poor

- 3.23 The pond on-site was considered to contain 'poor' great crested newt habitat suitability.

Other Species

- 3.24 No bird nests were identified during the walkover survey. However, the tree lines within the western section of the site do offer potential nesting opportunities, which may be occupied over different times of the year.

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- 3.25 Owing to a lack of suitable habitat, no potential for any other protected species was identified within the site and no invasive non-native species, such as Japanese knotweed (*Fallopia japonica*) were observed.
- 3.26 The habitats present within the redline boundary were not considered suitable to support a range of species such as water voles, dormice or otters.

4.0 Discussion

Ecological Value of the Site

- 4.1 The site is not located within or adjacent to any statutory designated sites nor any areas of ancient woodland.
- 4.2 The re-development of the site should not adversely affect the wider landscape with regard to ecology and would not alter the ecological functionality of the local landscape.
- 4.3 With regards to local policies, the Arun District Council's local policy - 'GEN29' should be considered as part of the master planning. The development should be designed to retain as many hedgerows and individual trees as possible to ensure the local planning authority is confident the site's biodiversity will not suffer a net loss in biodiversity. A planting scheme, which includes the planting of native assemblages of floral species, should be proposed to demonstrate the developments aim to enhance biodiversity for the district.
- 4.4 Policies 'AREA14 and AREA15' should not have to be considered, as the site does not lie within, close to or connected to any designated sites.

Habitat

- 4.5 The habitats present on-site are largely common and widespread. The site contains an area of semi-improved grassland and tree lines, which are considered the most ecological valuable habitat on-site, albeit considered to be of ecological value at site level only. The northern and southern sections of land within the adjacent gardens were inaccessible due to limitations with permissive access.

Protected Species***Bats***

- 4.6 No evidence of bats, such as staining, droppings or feeding remains were identified in the two building located within the red line boundary.
- 4.7 The internal void within the main building on-site was tightly sealed with wooden sarking. The void was considered unlikely to accommodate bats, as it was warm, with limited/no access points and without any draft. It was considered unlikely that bats are found roosting within the cavity between the wooden sarking and roof tiles, as the tiles all appeared tightly sealed and intact and as such no crevices or cracks were recorded. This would also reduce the likelihood of any bats being able to roost beneath the tiles on the roof.
- 4.8 The small shed on the western border of the site was constructed from glass and metal, which would likely create a hot environment within the void during daylight hours. The structure did not offer any suitable roosting opportunities.
- 4.9 No further bat surveys are recommended on the main building or small shed on-site.
- 4.10 It is considered that the redevelopment of the site does not impact upon significant foraging habitats or commuting corridors. The development does not isolate or fragment the local landscape. The redevelopment of this site does not significantly alter the land use of the site and therefore impacts are considered to be minimal. Further transect survey are therefore not recommended on site.

Badgers

- 4.11 No evidence of badger use was identified at the time of the survey. No active or inactive badger setts were identified on-site. A small, inactive mammal hole was identified within the western tree line habitat, however was considered likely to have been historically occupied by rabbits. Badgers may reside in the surrounding habitats and may visit part of the development site to forage. Foraging and commuting habitat is not legally protected, however safety measures can be taken to ensure no badgers are harmed during the development process.

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- 4.12 It is always recommended that badger update surveys are undertaken across the site prior to any development works or if there is a lapse in time between the survey and development as badgers may move onto the site in the intervening period.

Reptiles

- 4.13 Semi-improved grassland is good habitat for foraging reptiles, however the sward height at the time of the survey was relatively short. Reptiles prefer tussocky grassland with longer sward heights for foraging and cover from predators. Therefore, it is recommended that the grassland be kept short to avoid providing suitable habitat for such species. If the grassland is allowed to develop and grow, then further surveys maybe required.
- 4.14 The log piles were considered unlikely hibernating habitats due to their isolation within the local landscape. However to reduce the likelihood of causing any harm to reptile individuals the clearance of the piles should be undertaken during the summer months by hand. If any reptiles are identified works should stop and an ecologist should be contacted.

Breeding Birds

- 4.15 No bird nests were identified during the walkover survey, however there is always the potential for birds to occupy the trees on-site in the future. To reduce the likelihood of disturbing nesting birds the removal or pruning of any tree within the red line boundary should be undertaken outside of breeding bird season (March – September).
- 4.16 If work needs to be carried out on the trees during the breeding season, then the nests would need to be checked by a trained ecologist 24 hours prior to work commencing to ensure they are not in use. Any nesting birds found should be left until the young have fledged and all works halted until this time.
- 4.17 Nest boxes should be installed in order to provide new nesting opportunities for birds and to achieve ecological enhancements. These can be hung on the buildings or surrounding mature trees post development. Recommended boxes include:
- Schwegler Swallow Nest 10 – A specially designed nest box system to attract swallows and house martins

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- Schwegler 1N Deep Nest Box – give added nest protection from predators
 - Schwegler 1B Bird Box – general purpose bird box, suitable for many species
 - Schwegler Bird House – This is suitable for all common garden birds and may be attached to a building or wall so is suitable for siting behind climbing plant.

Great Crested Newts

- 4.18 The surveyors identified one permanent water body within the red line boundary, which was assessed for its potential for supporting GCNs. The swimming pool was assessed using the HSI method and was considered to contain 'poor' suitability for great crested newts. This was largely due to the small size of the pond and the poor water quality the lack of surrounding ponds is also a consideration.
- 4.19 The majority of terrestrial habitats on-site were considered to contain un-suitable habitat for great crested newts. Considering the lack of habitats present within the red line boundary and that the alteration of habitats being minimal in terms of potential impact, no further surveys are recommended.

Other species

- 4.20 The site did not support habitats which are considered suitable to support dormice, otters or water voles.

Ecological Enhancements

- 4.21 A number of enhancements can be made to the final development to help reduce potential ecological impacts. It is important to utilise native species of local provenance in landscaping schemes to enhance the ecological value of the site, post development.
- 4.23 Installation of bat boxes will also enhance the number of roosting opportunities for bats in the local area. Boxes should be hung on mature trees and have clear flight paths.
- Recommended boxes include:
- Schwegler 2F – This box simulates crevices inside to allow suitable habitats for crevice-dwellers
 - Schwegler 1FD – This box is a larger version of the 2F

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- 4.24 All trees on site should be retained. However, any trees that need to be removed should be replaced elsewhere on site with native species such as oak, ash, hazel, beech, cherry (*Prunus avium*), hornbeam (*Carpinus betulus*) and rowan (*Sorbus aucuparia*). This will mitigate against the loss of habitat that could be considered important under local planning policies.
- 4.25 Enhancing the existing hedgerows on site would provide a layering of different habitats that can be utilised by a wide variety of species. Species that can be planted include blackthorn, hawthorn, hazel, holly, elder, alder buckthorn (*Frangula alnus*), guelder rose (*Viburnum opulus*), dog rose (*Rosa canina*) and dogwood (*Cornus sanguinea*).
- 4.26 Planting the bases and edges of the hedgerows with herbaceous plants and bulbs attracts bees, butterflies and other insects as well as providing ground cover for smaller animals. Seeds that are tolerant of semi-shade and are suitable for sowing beneath newly planted or established hedges should be used. As a guide, the following species can be included in the mix; however, appropriate seed mixes may be purchased from native species stockists:
- Yarrow (*Achillea millefolium*)
 - Agrimony (*Agrimonia eupatoria*)
 - Garlic mustard (*Alliaria petiolata*)
 - Common knapweed (*Centurea nigra*)
 - Wild basil (*Clinopodium vulgare*)
 - Hedge bedstraw (*Galium album*)
 - Wood avens (*Gerum urbanum*)
 - Oxeye daisy (*Leucanthemum vulgare*)
 - Ribwort plantain (*Plantago lanceolata*)
 - Cowslip (*Primula veris*)
 - Selfheal (*Prunella vulgaris*)
 - Red campion (*Silene dioica*)
 - Hedge woundwort (*Stachus sylvatica*)
 - Upright hedge parsley (*Torilis japonica*)
 - Tufted vetch (*Vicia cracca*)

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- 4.27 Log and rubble piles can be placed in suitable areas on site to provide hibernacula for common amphibian and reptile species as well as refugia for small mammals and invertebrates.
- 4.28 Additional habitat may be provided for species including birds and insects in the form of green walls. Green walls can be created by planting climbing plants in the ground and training these either directly onto the external walls of the buildings or on to trellis. Alternatively, it is possible to create an instant green wall using establishing climbing plants rooted in containers and grown onto frames. Species should include:
- Honeysuckle (*Lonicera japonica*, *L. fragrantissima*, *L. standishii*)
 - Clematis spp. (*Clematis vitalba*, *C. armandii*, *C. alpina*, *C. montana*, *C. tangutica*)
 - Ivy (*Hedera helix*)
 - Climbing hydrangea (*Hydrangea petiolaris*)
 - Dog rose (*Rosa canina*)

5.0 Conclusions

- 5.1. Moderate density housing, a school, recreational fields, allotments and arable fields surround the site. A SSSI and LNR is located within a 2km radius of the site.
- 5.2 The development is not considered to cause adverse effects to the surrounding landscape and will not fragment green habitats, green corridors and the redevelopment is not considered to impact upon the ecological functionality of the local landscape.
- 5.3 The main building and small shed identified within the red line boundary were considered to contain negligible potential for roosting bats. No further bat surveys are recommended.
- 5.4 Currently the site is considered to be sub-optimal for reptiles. It is recommended that the grassland habitats are kept short to ensure that these habitats remain unsuitable for this species. However, if the grassland habitats are left unmanaged then further surveys may be necessary.

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- 5.5 Works on any tree on-site should not be carried out during breeding bird season (March-September). If nesting birds are identified work will have to cease until the young have fledged.
- 5.6 No badger evidence was found in or around the site. However, badgers may use the local area and so should be considered during construction works. A small mammal hole was identified on-site, however was not active and considered to be historically occupied by rabbits.
- 5.7 The site does not appear constrained by protected species such as dormice and great crested newts. It is not considered that any further survey work for these species is required.
- 5.8 Recommendations for enhancements have been made within this report, aimed at improving the ecological value of the site post development.

6.0 References

Bat Conservation Trust (2016). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

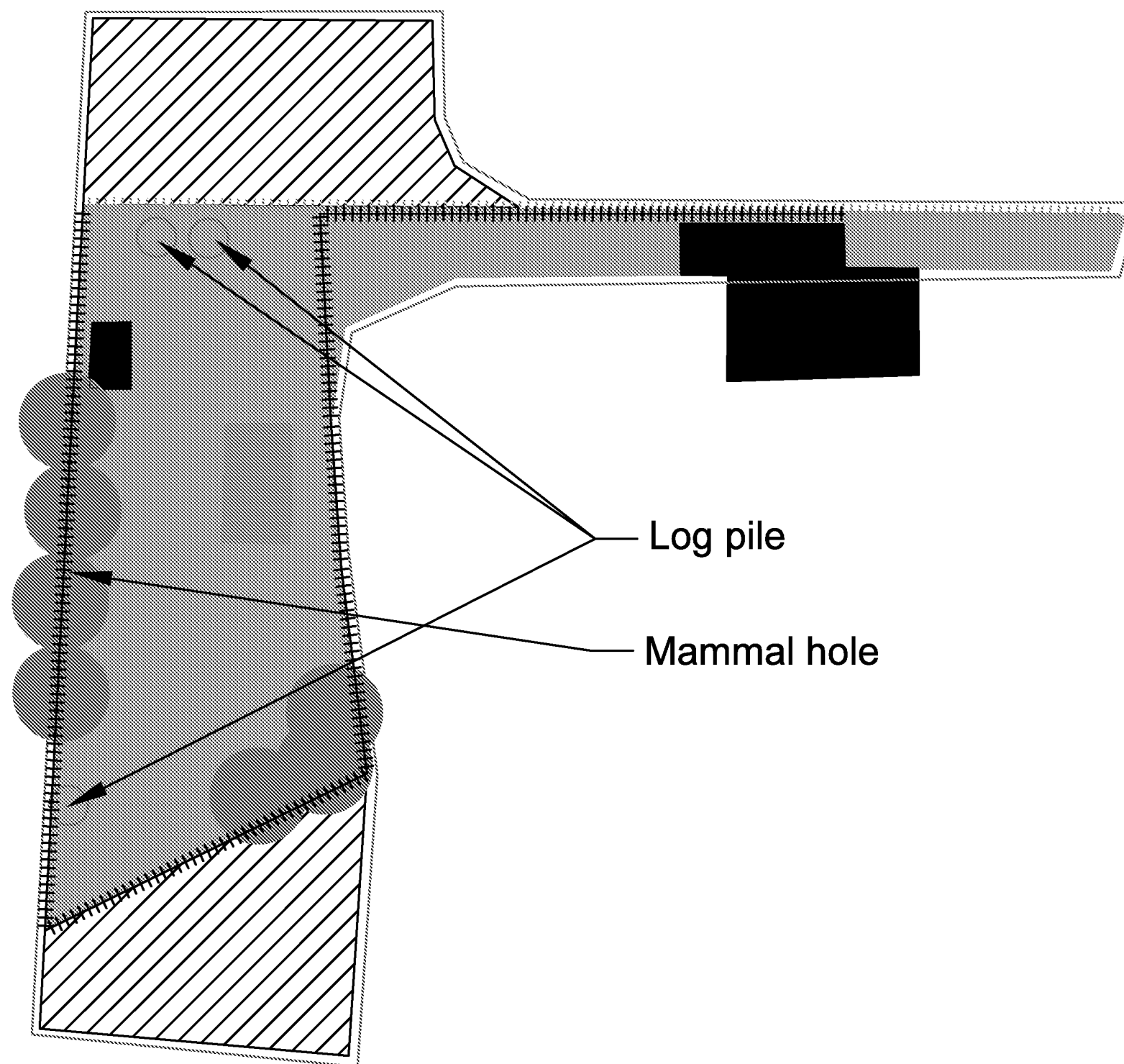
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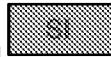
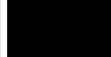
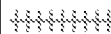
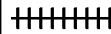
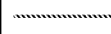
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Magic Interactive Map: www.magic.gov.uk

Appendix 1. Phase 1 Habitat Map



Key

-  Limited access areas
-  Semi-improved grassland
-  Building
-  Tree line
-  Pond / swimming pool
-  Hedgerow
-  Fenceline
-  Red line boundary
-  Target note

Site: 10 South Road, Felpham

Client: Regent Properties

Surveyor: G. Rockell and E. Bagguley

Survey Date: 26th July 2016

Drawing Title: Habitat Map

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Appendix 2: Photos

Appendix 2: Photographs

Photo 1: The pond/swimming pool identified on-site. The pond was considered as containing 'poor' great crested newt habitat suitability.



Photo 2: The semi-improved grassland and coniferous tree line identified on-site.



Appendix 2: Photographs

Photo 3: The small shed on the western boundary of the site. Considered to contain negligible bat roost potential.



Photo 4: The hedgerow spreading east to west through the centre of the site.



Appendix 2: Photographs

Photo 5: The semi-improved grassland, building and fence line planned to be removed in order to create an access road.



Photo 6: Western aspect - The tight/intact roof tiles, which offer negligible bat roost potential.

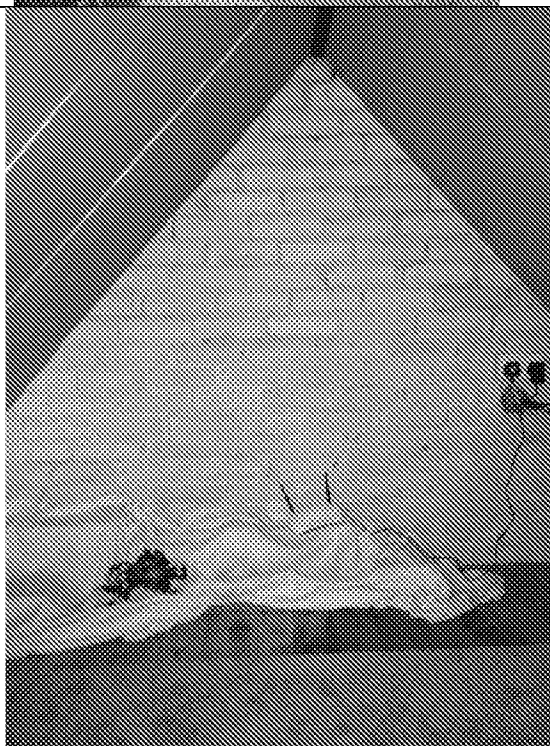


Appendix 2: Photographs

Photo 7: The eastern aspect of the building also contained intact/tightly fitted roof tiles.



Photo 8: The internal roof void, which contained well sealed wooden sarking. The void was warm with little/no draft. No evidence of roosting bats within the building.



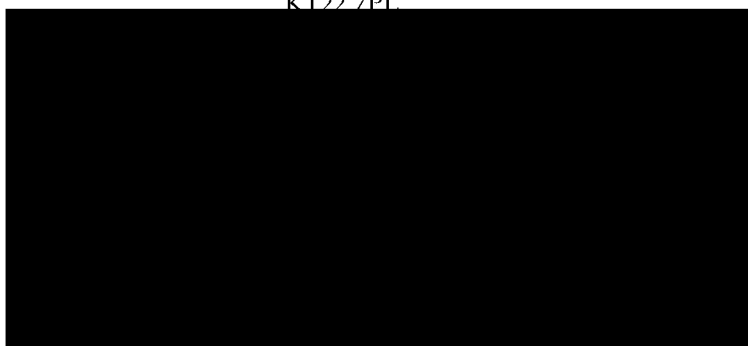
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Date: 03/08/2016