

PRELIMINARY ECOLOGICAL APPRAISAL (PEA) & PRELIMINARY ROOST APPRAISAL (PRA) REPORT

28th July 2020

Land at 33 Hill Lane, Barnham,
Bognor Regis, West Sussex

On behalf of: Mr & Mrs Billingham

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Report version: Final version 1.0

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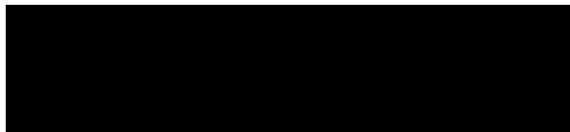
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SURVEY DATA VALIDITY

Information and data provided within this report is

considered accurate at the time of writing. Survey data is considered

valid for 18 months from the survey date, although more up-to-date survey

data may be required for a planning application dependent on conditions and impacts.

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Summary

- ABR Ecology Ltd were commissioned by Mr & Mrs Billingham to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Appraisal (PRA) at land at 33 Hill Lane, Barnham, Bognor Regis, West Sussex to advise on the presence/absence of bats and identify any other ecological constraints associated with the prospective development of the site. This report was requested to support a planning application for the demolition of the existing outbuilding and erection of a two-storey detached dwelling with associated parking and landscaping.
- The PEA was conducted on the 21st July 2020 by ecologists Russell Hoyle and Becci Smith. The application site consists of a single-storey outbuilding, a single-storey modern log cabin, improved grassland, ornamental planting, two species-poor native hedgerows, ephemeral/short perennial and two fruit trees. The site formerly comprised a part of 33 Hill Lanes rear garden and was segregated recently by a close boarded fence.
- No evidence of badgers was recorded on site and no further action has been recommended for this species.
- The species-poor native hedgerows on site are not considered important under the Hedgerow Regulations 1997 but are UK BAP habitats as they comprise 80% native woody species. These hedges will be protected by heras fencing during the construction as detailed in Section 5.
- The PRA was undertaken on the 21st July 2020 by Natural England Class 2 licensed bat ecologists Russell Hoyle and Becci Smith. The single-storey outbuilding and the modern log cabin were assessed for their potential to support roosting bats and was deemed to hold 'negligible potential' due to a lack of suitable roosting provisions, in addition, the modern log cabin is to be retained onsite. A sensitive 'bat-friendly' lighting strategy has been detailed in Section 5 to ensure there are no adverse impacts from lighting on commuting and foraging bats as two native hedgerows are present on site and the site is adjacent to good bat commuting and foraging habitats.
- Dormice are not considered to be impacted by the works and no further action has been recommended.
- Great crested newts are not considered to be impacted by the proposals and no further action has been recommended for this species.

- In its current state, the site does provide some nesting opportunities for birds due to the presence of two native hedgerows and two fruit trees. However, the hedges/trees will be retained as part of the works and will be subject to protection during the works as detailed in Section 5.
- In its current condition, the site is not considered to be suitable for common reptiles and this is due to the vegetation being of a short height. Although the habitat in the wider landscape is suitable for reptiles, should reptiles be present within the site it is considered that they would be isolated to the fringes, near the hedgerow bases as a place of shelter. As the hedgerows will not be impacted upon no further action has been recommended.
- To ensure the proposed development is compliant with the National Planning Policy Framework (NPPF) and local planning policy, ecological enhancements will be required as part of the development. Enhancements will include provisions for swifts, hedgehogs, solitary bees and roosting bats.

1. Introduction

ABR Ecology Ltd were commissioned by Mr & Mrs Billingham to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Appraisal (PRA) of land and building at 33 Hill Lane, Barnham, Bognor Regis, West Sussex (central grid reference: SU 96403 03691) to advise on the presence/absence of bats and identify any other ecological constraints associated with the prospective development of the site. This report was requested to support a planning application for demolition of the existing single-storey outbuilding and erect a two-storey detached dwelling with associated parking and landscaping.

The Preliminary Ecological Appraisal (PEA) and Preliminary Roost Appraisal (PRA) were conducted on the 21st July 2020 by ecologists Russell Hoyle and Becci Smith. A location plan and existing layout are provided in Appendix 1 and the proposed scheme is provided as Appendix 2.

Site context

The application site is situated in Barnham, West Sussex. The site comprises a single-storey outbuilding which served as a workshop and store, set within a segregated small garden with areas of bare ground, ephemeral/short perennial, two fruit trees, improved grassland, two native species-poor hedgerows and modern log cabin which is not part of the development. The surrounding landscape comprises farm units, arable and grazed fields, and the wider area features farmland with hedgerows. The habitats within the site are considered to be sub-optimal, while the wider area offers suitable opportunities for local wildlife.

Aims and scope of this report

This report is based on the results of the Preliminary Ecological Appraisal (PEA) and data search from the Local Records Centre (which has not currently been received), which were principally aimed at determining the ecological value of the site and any constraints associated with the development. This report is also based on the results of the Preliminary Roost Appraisal (PRA) which aimed to determine if a bat roost is present within any of the buildings/trees or whether the building(s)/trees had 'potential' to support roosting bats in line with The BCT Good Practice Survey Guidelines (Collins, 2016).

This report aims to establish whether the proposed works will impact on any protected or vulnerable species and/or habitats and identifies whether there is a requirement for further detailed surveys, which may inform the need for a European Protected Species (EPS) licence to allow the works to proceed lawfully.

2. Legislation and policy

Legislation and UK BAP priority habitats/species

Legislation

In England, bats, dormice (*Muscardinus avellanarius*), otters (*Lutra lutra*), great crested newts (*Triturus cristatus*), smooth snakes (*Coronella austriaca*) and sand lizards (*Lacerta agilis*) are legally protected under Annex IV of the EC Habitats and Species Directive (1992), which is transposed into domestic law via the Conservation of Habitats and Species Regulations (2017). Nightjars (*Caprimulgus europaeus*) are protected under the above Regulations under Annex I (as originated from the EC Birds Directive). Badgers (*Meles meles*) are protected under The Protection of Badgers (1992).

Some species are also listed under Annex II of the EC Habitats and Species Directive (1992), including barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), greater horseshoe (*Rhinolophus ferrumequinum*), lesser horseshoe (*Rhinolophus hipposideros*), great crested newt, stag beetle (*Lucanus cervus*) and otter.

The above named species and adders (*Vipera berus*), slow worms (*Anguis fragilis*), grass snakes (*Natrix natrix*), common lizards (*Zootoca vivipara*), common frog (*Rana temporaria*), palmate newt (*Lissotriton helveticus*), smooth newt (*Lissotriton vulgaris*), water voles (*Arvicola amphibius*) and several invertebrate species are also protected under Schedule 5 of The Wildlife and Countryside Act (WCA) (1981) (as amended). Barn owls (*Tyto alba*) are protected under Schedule 1 of the WCA (1981). Schedule 9 of the WCA (1981) includes non-native, invasive species including (but not limited to) Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*).

Some sites that have been designated for nature conservation are legally protected due to being of European importance. These include Special Areas of Conservation (SACs) (protected under the EC Habitats and Species Directive (1992), Special Protection Areas (SPAs) for birds (protected under the EC Birds Directive) and Ramsar (Ramsar Convention, 1975). Other protected sites include Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) Local Nature Reserves (LNRs) and Protected Road Verges.

Hedgerows that qualify as 'important' under The Hedgerows Regulations (1997) are legally protected under the Regulations.

UK BAP

Several species and habitats are listed under the UK Biodiversity Action Plan (UK BAP) (JNCC, 2016) as priority habitats/species due to their vulnerability or rarity as listed under Section 40 of the Natural Environment and Rural Communities (2006) and a duty to conserve biodiversity has been placed on all public authorities.

These include several terrestrial and freshwater habitats, including some hedgerows and streams, and several species such as hedgehogs (*Erinaceus europaeus*), barbastelle, Bechstein's bat, both species of horseshoe bat, brown long-eared bat (*Plecotus auritus*), soprano pipistrelle (*Pipistrellus pygmaeus*), noctule (*Nyctalus noctula*) and otter.

National and local policy

NPPF – The National Planning Policy Framework

The National Planning Policy Framework (NPPF) (Ministry of Housing, Communities & Local Government, 2019) sets out the Government's planning policies for England and how these should be applied. In the context of this report, Policy 15 of NPPF is relevant and applicable, Policy 15 states:

'Planning policies and decisions should contribute to and enhance the natural environment by, minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.'

New developments and projects are supported where plans promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue measurable net gains for biodiversity.

To ensure this application is compliant with Policy 15 of NPPF, wildlife/habitat enhancements will be required to demonstrate a biodiversity net gain as an outcome of the project/development.

Policy 15 of NPPF also gives consideration to sites with potential to impact on irreplaceable habitats, and states:

'Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists'

To ensure this application is compliant with Policy 15, this application should be accompanied by a suitable arboricultural report to assess the presence of potential ancient or veteran trees.

The Arun Local Plan 2011-2031

Arun's Local Plan strategic objective for the Natural Environment is:

"To plan for climate change and work in harmony with the environment to conserve natural resources and increase biodiversity."

17.1.1 states- *'The NPPF states that to minimise the impacts on biodiversity and geodiversity local planning authorities must identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and steppingstones that connect them, along with areas identified by local partnerships for habitat restoration or creation'.*

17.4.1 states *'All development should enhance the biodiversity of the site and the surrounding area by creating new habitats or improving existing ones. In certain circumstances, a new resource should be provided which is of at least equivalent value, where possible, to a site or feature which is lost as a result of development. This could include the creation of a new habitat on the site or elsewhere if this is more appropriate. However, in general, the loss of habitats should be strongly resisted'.*

It is the developer/landowner's responsibility to ensure that the proposed development proceeds in full compliance with this report and/or any update version report thereafter, that works are undertaken lawfully, in compliance with national and local policy, and in accordance with all conditions of the obtained planning consent.

3. Methodology

Desktop data search

Internationally, nationally and locally protected sites including Ramsar, SPAs, SACs, SSSIs, NNRs and LNRs were identified within a 5-kilometre (km) radius of the application site using the Multi-Agency Geographical Information for the Countryside (MAGIC) website. Sussex Biodiversity Record Centre (SBRC) were contacted to provide records of any protected, vulnerable and notable species and any locally designated sites such as Local Wildlife Sites (LWSs) within a 1km radius of the application site.

This information was used to inform the assessment of the site and its potential to support protected/vulnerable species and habitats and to assess whether the proposed works hold potential to impact on protected sites designated for nature conservation.

Phase 1 habitat survey

The phase 1 habitat survey was conducted on the 21st July 2020 by experienced ecologists Russell Hoyle and Becci Smith.

The survey was conducted in accordance with the 'Handbook for Phase 1 habitat survey – a technique for environmental audit' (JNCC, 2010) methodology. The survey involved the mapping of broad habitat types within the application site boundary using colour codes alongside a comprehensive species list, categorising flora species in order of abundance under the DAFOR scale. 'Target notes' were made where ecological features of interest were identified.

Badgers

A direct search was conducted looking for signs of badgers and their setts. Any setts encountered were classed as main, annexe, subsidiary or outlier, dependent upon the number of holes and apparent extent of their use. A search was also conducted for any other evidence of badger including faeces or latrines, pathways, scratching posts at the base of trees, snuffle holes, day nests, hair or footprints.

Hedgerows Regulations Assessment

An assessment was conducted on any hedgerows within or adjacent to the application site boundary, using the criteria set out under The Hedgerows Regulations (1997). Any hedgerow was classified as 'important' under the Regulations where it was identified that the hedgerow was at least 30 years in age, was within a rural setting and comprised at least one of the following criteria:

- Has at least 7 woody species and is at least 30m in length.

- Has at least 6 woody species, is at least 30m in length and has at least 3 features.
- Has at least 6 woody species, is at least 30m in length and has any one tree of *Populus nigra ssp betulifolia*, *tilia platyphyllos*, *tilia cordata* or *sorbus torminalis*.
- Has at least 5 woody species and has at least 4 features.
- Or if adjacent to a footpath/bridleway, has at least 4 woody species and has at least 2 features.

Bats

Preliminary Roost Appraisal (PRA)

Natural England Class 2 licensed bat ecologists Russell Hoyle and Becci Smith undertook the PRA of the outbuilding and trees to be impacted upon. Timing and weather conditions are provided in the table below:

Survey date	Time of survey	Surveyor(s)	Equipment used	Weather conditions		
21/07/2020	11:00AM	Russell Hoyle, Becci Smith	High-powered torch and binoculars	Temp:	Oktas cloud cover:	Beaufort wind force:
				18°C	1/8	1/12

The survey was undertaken in accordance with the Bat Conservation Trust (BCT) Good Practice Survey Guidelines (Collins, 2016). A thorough search for evidence of bats was undertaken in the buildings including any internal loft spaces or voids and on any external features, notably any windowsills, walls, floors and flat surfaces. Where possible, evidence for bats was searched for around trees, and Potential Roosting Features (PRFs) were identified where visible such as knot holes, tear outs, woodpecker holes and limb breaks. Evidence of roosting bats include:

- The presence of live/dead bats;
- Bat droppings – distinguished from rat/mouse droppings by their crumbly texture;
- Staining from oily fur around access points; and
- The presence of feeding remains, such as insect wings and casings.

The building or tree was identified as a 'confirmed' bat roost if evidence of roosting bats was recorded. To confirm the species of bat present, a sample of any bat droppings recorded was made and sent to Swift Ecology Ltd for DNA analysis.

Most native bats in the UK are crevice-dwelling species, with bats roosting in remote areas such as between tiles and membrane, behind cladding, at wall tops, in cavities, soffits and

behind lead flashing, to name a few examples in buildings. In trees, bats will roost behind lifted bark, in woodpecker holes, in cavities and rotted areas and broken limbs/stems.

Evidence of these species is often concealed and/or inaccessible due to the remote nature of the roost. Therefore, where no evidence of roosting bats was recorded, an assessment on the availability of potential roosting areas and bat access points around the building or tree, as well as the quality/availability of surrounding bat habitat, was conducted. The building or tree was then assigned a category based on a sliding scale of negligible to high, in accordance with the BCT Guidelines (Collins, 2016):

Bat roosting potential	Description
High potential	A building/tree with one or more potential roosting sites that are highly suitable for use by many bats on a regular basis and for a longer period of time.
Moderate potential	A building/tree with one or more potential roosting features that could be used by bats due to appropriate conditions but are unlikely to support a bat roost of important conservation status (roost type only, not species).
Low potential	The building/tree features one or more potential roosting features that could be used by bats opportunistically. These features do not provide the appropriate conditions to be used on a regular basis by large numbers of roosting bats. A tree of sufficient age or size to contain roosting features but none of which can be observed from the ground.
Negligible potential	The features of the building/tree are negligible and are highly unlikely to be used by roosting bats.

Dormice

Dormice are small, nocturnal mammals which occupy habitats such as hedgerows, woodland and scrub. The dormouse requires good arboreal connectivity with a good range of food sources such as fruit, nuts, flowers or insects. Plant species such as hazel, oak, bramble and honeysuckle are favoured in particular, as well as hornbeam, blackthorn, sweet chestnut and sycamore supporting dormice within woody connective habitat. The habitats on site and immediately adjacent to the site was assessed for the potential to support dormice.

Great crested newts

Great crested newts occupy both aquatic and terrestrial habitats throughout their life cycle, spending a short period of the year breeding and egg-laying in waterbodies such as ponds, standing water and ditches. Throughout the remainder of the year, newts will spend their time foraging and commuting within terrestrial habitats such as longer

grassland, woodland, hedgerow bases and scrub. Newts will hibernate within features such as log piles, tree roots and rubble piles. Great crested newts are known to forage up to 500 metres (m) from their breeding sites.

An aerial assessment was made prior to the site visit to determine if any waterbodies such as ponds were present within 250m of the site. Any accessible waterbodies were assessed under the Habitat Suitability Index (HSI) (Oldham et al, 2000, 2008) to determine the suitability of the waterbody to support great crested newts.

Nesting birds

A search for evidence of nesting birds was conducted during the initial site visit. Birds will nest in buildings, hedgerows, scattered trees, scrub and planting to nest and forage among these habitats.

Reptiles

An assessment was undertaken on the suitability of the habitats on site for supporting reptiles. Reptiles are found in habitats with a varied vegetative structure, offering opportunities for foraging and basking, such as areas of unmanaged grassland with shorter vegetation margins, heathland and woodland. An assessment was also made of potential sites suitable for hibernation such as log and brash piles, rubble, rockery or tree roots.

Survey limitations

The site visit provides a 'snapshot' of the site and does not take into account seasonal variation. Species and habitats may have been overlooked due to the constraints of the season and time in which the survey was undertaken. A lack of evidence of a species does not confirm its absence from site, rather there was no indication of its presence at the time of survey, with botanical species likely to be restricted to the time of year.

Potential evidence of crevice-dwelling bats may have been missed due to the nature and remote location of potential roosting areas within trees. However, binoculars were used to identify any potential bat droppings on the exterior features of the tree/building, where possible.

A ground-based inspection of trees for their potential to support roosting bats is constrained by the cover of the foliage and limbs within the summer season. Whilst every effort was made to ensure adequate coverage during the inspection, it is not always possible to rule out the presence of bats based on a ground inspection alone.

Survey data within this report is considered valid for 18 months. If 18 months pass and no works have been undertaken and/or if conditions on-site change such as the condition

of the buildings and vegetation, an update site visit with appropriate surveys must be conducted to re-evaluate the potential of the site to support protected/vulnerable species and habitats.

4. Results

Desktop data search

Statutory (internationally, nationally and regionally protected) sites

MAGIC was used to identify any statutory sites located within 5km of the application site and the results of which are provided in the table below:

Site name	Distance from site	Designation	Size (ha)	Site description
The Brooks	3.5km southwest	LNR	19.11	Site comprises meadows, reedbeds and ponds.
Felpham	4.7km south	SSSI	0.97	The site is known for its geological interest.

Sussex Biodiversity Record Centre (SBRC) was contacted to request a 1km data search which will comprise information on all non-statutory designated sites and all protected and vulnerable species and relevant records are supplied below.

Species	Number of records	Most recent record	Closest record to site
Mammals (incl. bats)			
Brown hare	1	2003	629m southeast
Brown long-eared bat	1	2017	420m north
Common pipistrelle bat	3	2015	423m north
European water vole	4	2014	820m southwest
Long-eared bat sp.	2	2015	420m north
Nathusius pipistrelle bat	1	2015	423m north
Noctule bat	1	2013	950m northwest
Serotine bat	1	2007	899m west
Soprano pipistrelle bat	1	2015	420m north
West European hedgehog	18	2017	405m north
Western barbastelle bat	6	2015	Within 1km
Birds			
Bullfinch	1	2010	Within 1km
Dunnock	8	2011	Within 1km
House martin	2	2010	Within 1km
House sparrow	9	2011	Within 1km
Linnet	4	2011	865m southwest
Redstart	5	2017	Within 1km
Song thrush	6	2015	Within 1km
Starling	8	2011	Within 1km
Swallow	10	2017	700m west

Swift	2	2010	Within 1km
Yellowhammer	12	2013	544m northwest
Insects			
Stag beetle	3	2015	457m northwest
Reptiles & Amphibians			
Adder	1	1998	150m northwest
Common frog	3	1996	Within 1km
Common lizard	39	2019	368m northwest
Common toad	3	2019	369m northwest
Grass snake	8	2015	150m northwest
Great crested newt	1	2012	911m north
Slow worm	44	2019	150m northwest
Smooth newt	1	1992	Within 1km

Phase 1 habitat survey

The site comprises a single-storey outbuilding, a single storey modern log cabin (not part of the planning application), improved grassland in the south, bare ground in the north, two native species poor hedgerows at the south and east boundaries, ornamental planting, ephemeral/short perennial vegetation and two fruit trees in the south. A phase 1 habitat map has been provided in Appendix 3 and photographs in Appendix 4, whilst descriptions of these habitats and features are provided below:

Improved grassland

Grassland is present in the south of the site which is regularly cut to a short sward height. A list of the species encountered within the ruderal vegetation has been detailed below:

Species	Abundance
Barren strawberry	Rare
Bristly ox-tongue	Locally occasional
Broad-leaved dock	Locally frequent
Comfrey	Locally occasional
Common nettle	Occasional
Cow parsley	Rare
Creeping buttercup	Locally occasional
Creeping thistle	Locally occasional
Curled dock	Locally occasional
Daisy	Locally occasional
Dandelion	Frequent
Field bindweed	Occasional
Germander speedwell	Locally occasional
Greater plantain	Locally occasional
Ground ivy	Locally occasional- locally abundant
Herb-Robert	Occasional
Knotgrass	Locally occasional
Mallow	Occasional

Perennial rye-grass	Abundant
Pineapple weed	Locally occasional
Red fescue	Locally occasional
Redshank	Locally occasional
Ribwort plantain	Locally occasional
Smooth-sow thistle	Locally occasional
Sycamore sapling	Rare
White clover	Locally occasional
White-dead nettle	Rare
Yarrow	Occasional
Yorkshire fog	Locally frequent

Scattered trees

One apple and one pear tree are present in the south of the site. The trees will be fully retained and protected as part of the works.

Ornamental planting

A small area of ornamental planting is present in the west. A list of the species encountered within the sward is provided below:

Species	Bristly Abundance
Acanthus	Frequent
Cherry laurel	Occasional
Fuchsia	Frequent
Geranium	Rare
Lilac	Rare
Monterey cypress	Occasional
Wisteria	Frequent

Ephemeral/short perennial

An area of ephemeral vegetation is present in the south and north of the site, alongside the bare ground forming the entrance to the site. Species present include:

Species	Bristly Abundance
Annual-meadow grass	Locally occasional
Bristly ox-tongue	Rare
Comfrey	Locally frequent
Common mouse-ear	Rare
Common nettle	Locally occasional
Creeping buttercup	Locally occasional
Curled dock	Locally occasional
Dandelion	Locally frequent- locally occasional
Herb-Robert	Locally occasional
Hogweed	Locally occasional
Hornbeam sapling	Rare
Knotgrass	Locally occasional

Pineapple weed	Locally occasional
Ribwort plantain	Locally frequent
Silver birch sapling	Rare

H1 species-poor native hedgerow in south

A species poor native hedgerow is present in the south of the site. Species present include:

Species	Abundance
Comfrey	Locally frequent
Common nettle	Locally frequent
Creeping buttercup	Rare
Curled dock	Locally occasional
Dandelion	Rare
English oak	Rare
Ground ivy	Locally occasional
Herb-Robert	Rare
Hogweed	Locally occasional
Hornbeam	Dominant
Ivy	Locally frequent
Ornamental rose sp.	Rare
Perennial rye-grass	Locally abundant

H2 species-poor native hedgerow in east

A species poor native hedgerow is present at the eastern boundary that runs from north to south. Species present include dominant box, frequent field bindweed, ivy, bramble, occasional rough meadow-grass, locally frequent smooth sow-thistle and hogweed.

Hedgerow regulations assessment

Criteria	H1 south	H2 east
Bridleway/footpath	Yes	Yes
No of woody species per 30m stretch	2	1
+/- 30m	No	No
3 ground flora spp	No	No
Trees	Yes	No
Rare trees (Pn, Sot, Tic and Tip)	No	No
Bank/wall	Yes	No
Intact	Yes	Yes
Ditch	No	No
Parallel hedge	No	No
+ 4 connection points	No	No

Result =	Not important	Not important
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Although neither of the hedgerows qualifies as 'important' under the Hedgerow Regulations (1997), they both support 80% native woody species, and are therefore both UK BAP habitats. Both hedgerows will be fully retained as part of the scheme and the hedgerows will be subject to hedgerow mitigation as detailed in Section 5.

Badgers

No evidence of badgers was recorded on site or along the site boundaries such as badger hair, latrines, 'snuffle' marks or setts. No further action is recommended as badgers are not considered to be impacted by the proposed development.

Bats

Roosting bats: Buildings

A direct search for evidence of bats and an assessment of the single-storey outbuilding and cabin to support roosting bats was made. Photographs of the building are provided in Appendix 4 and building descriptions are provided below:

Building name	Description
Outbuilding	- The single storey detached outbuilding has a brick base with wooden elevations. - The roof is slating and covered with wooden boarding with felt overlain. - No roof void is present. - Windows and door frames are of wooden construction.
Modern cabin	- The 2 year old prefab-cabin is constructed upon a concrete base. - The cabin is wooden clad with wooden window and door frames. - The eaves are closed. - The roof is pitched with a false slate covering.

PRA results

No evidence of bats was recorded within or around the buildings on site, despite a thorough inspection of the internal and external features.

Assessment of bat roosting potential and potential bat access points

An inspection of the buildings revealed the outbuilding and cabin were of negligible value for roosting bats; this was largely due to the roofs and elevations being constructed of felt and timber which (upon inspection) was not deemed to offer any crevices for roosting bats. The roof is likely to cause unstable internal conditions for bats due to fluctuating temperatures. A torch was utilised to survey any gaps in the wooden cladding, and this did not reveal any evidence of bats such as droppings. For these reasons, no further action

has been recommended in relation to roosting bats and the demolition works while the cabin will be retained.

Roosting bats: Trees

The ground-based inspection of the apple and pear trees did not identify any Potential Roosting Features (PRF) for bats as they are both relatively immature. The trees were in good condition and healthy with no cavities that may be utilized by bats. Furthermore, the trees will be retained as part of the scheme and therefore no impacts are anticipated as part of the works.

Commuting and foraging bats

The habitats within the area provide limited opportunities for foraging and commuting bats; it is likely the hedges are utilized by local bats for foraging. There is potential for an increase in lighting to adversely impact on local bats, through illumination of adjacent habitats; bats are highly light-sensitive and will actively avoid lit areas, and an increase in lighting levels will actively deter bats from using the site and adjacent features. A sensitive lighting strategy has been detailed in Section 5 to ensure local bats are not deterred from the site and immediate surrounding areas.

Dormice

The site was assessed for its potential to support dormice. Whilst there is some habitat for dormice in the wider landscape, there are limited potential features within the site that are considered to be utilized by this species.

The southern hedgerow is connected to hedges leading both east and west from the site and while there is no extensive habitat to the west the hedge leading eastwards does end in a small wooded patch on the north of Yapton Road. The habitats within the site are noted to be sub-optimal as they are of a mono-species structure and offer limited food sources. As no data search has been received at the time of writing MAGIC, 2020 was accessed to determine the closest dormouse licence, this was noted 3.1km northwest making the possibility of dormice within the locale more likely. It is considered that where the hedgerows will be fully retained and protected it is considered highly unlikely dormice would be impacted by the proposals and no further action has been recommended in relation to this species.

Great crested newts

The site was assessed for its potential to support great crested newts. The site does not feature areas of suitable habitat due to the intensively managed nature of the site. The site does not offer features suitable for hibernacula and the grassland is regularly mown to a short sward not providing any suitable foraging habitat.

An aerial assessment did not reveal any waterbodies within 250m of the site however as the data search was not received at the time of writing the information could be incomplete. MAGIC (2020) revealed the closest record is noted to be 4km southeast of the site and so they are known to be present within the wider landscape. The predominantly arable landscape nearby limits the movement of newts and limits the number of ponds. As the site is predominantly short sward, bare ground and is considered to be of a poor quality for foraging or sheltering newts, it is not considered likely that newts would be utilizing the terrestrial habitats on site. For these reasons, it is considered unlikely great crested newts would be impacted by the proposals and no further action has been recommended for this species.

European water vole

A Georgian culvert is present underneath the western boundary of the site in which the local authority wishes to arrange a modern culvert/drain install adjacent to the existing culvert (see design & access statement, Helyer Davis Architects Ltd May 2020). There are 4 records with the nearest 820m southwest dated from 2014, as it stands the works on site to erect a new dwelling will not impact the existing culvert but if the local authority wish to carry out extensive drain works then further surveying for water voles may be required.

Nesting birds

No signs of active nesting were noted during the site visit however the presence of the hedgerows provides suitable habitat for many species of garden birds. As the hedgerows will be protected during construction these features will remain on site and will limit the disturbance.

Reptiles

In its current state, the application site is considered unsuitable for common reptiles due to the short/managed nature of the vegetation on site. Although the habitat in the wider landscape is suitable for reptiles, should reptiles be present within the site it is considered that they would be isolated to the fringes, near the hedgerow bases as a place of shelter. As the hedgerows will not be impacted upon no further action has been recommended.

5. Mitigation, compensation and enhancement strategy

Hedgerow protection

To ensure the two hedgerows are protected during construction works a heras fence must be installed at the eastern and southern boundaries which will ensure no interference with the hedges or their roots. Nesting birds will also benefit from the fencing being left to nest along with the UK BAP hedgerows both remaining unaffected.

Commuting and foraging bats

The surrounding area is considered likely to provide foraging opportunities and commuting corridors for bats due to the site being sited at the edge of a development facing into open fields. Bats are highly light-sensitive and will actively avoid lit areas, therefore a permanent change in site lighting may result in the loss of foraging opportunities on site. The following lighting strategy based on current national guidance (BCT & ILP, 2018) will be implemented:

- Preferably, no external lighting will be permitted. However, if lighting is required this will be for health and safety purposes only and will be kept to an absolute minimum.
- Any new external light fixtures will be hooded/cowled to avoid upward light spill and will be on a motion-sensor with short (1 min) timers. These will be faced into the site and aimed away from the eastern and southern boundaries.
- Any luminaires must lack UV elements, when manufactured. Metal halide, florescent sources must not be used.
- LED luminaries only will be used, due to their sharp cut-off and lower intensity and any light fixtures will be on bollards or at a maximum head-height to ensure bats and other nocturnal wildlife are not deterred from using the site.

Ecological enhancements

To ensure the proposed development is compliant with NPPF and local planning policy, the following ecological enhancements will be included as part of the scheme (see Appendix 5 for locations, specifications and design – nest boxes/bat tubes/bricks may be purchased from websites such as www.nhbs.com or www.wildcare.co.uk):

- One 'Model S Bricks' will be installed within the new dwelling. The brick must be erected as close to eaves level as possible; the brick is designed to be integrated into the masonry of the build, ensuring health and safety and to limit human disturbance.
- One bat roosting tube will be installed at the southern elevation and will be erected as close to the eaves level as possible. The tube is completely self-contained and maintenance free once installed.
- Two bee bricks for solitary bees will be installed on the western elevation of the new building at a height of approximately 0.5m from ground level. The bricks are designed to accommodate solitary bees (non-stinging/swarming types).
- Any new fencing proposed as part of the scheme will be 'hedgehog-friendly'. Gravel boards/holes will be installed every 5m of any new fencing and will measure a minimum of 13cm x 13cm.
- Any other landscaping/ tree planting will comprise native British species only and sourced from British-grown stock to benefit local biodiversity. Species such as blackthorn, hawthorn, dogwood, hazel and buckthorn will be used as part of the scheme to provide foraging opportunities for birds and to support invertebrates.

6. References

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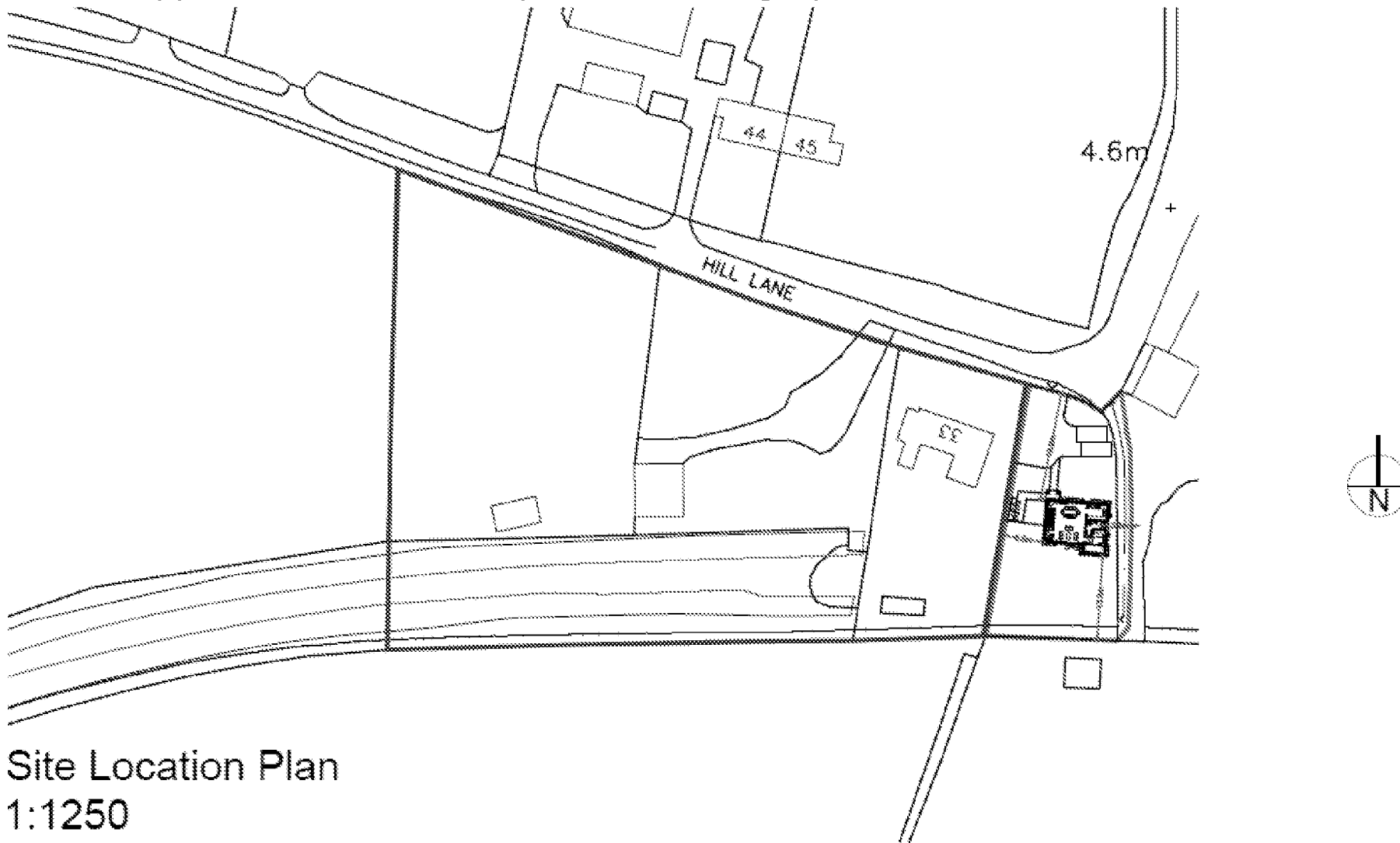
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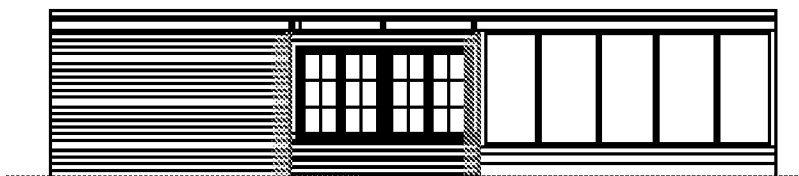
Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). *Herpetological Journal* 10 (4), 143-155.

Appendix 1: Site location plan and existing layout

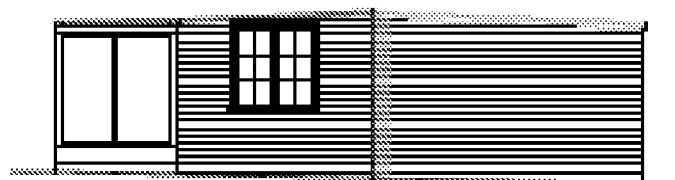


Site Location Plan
1:1250

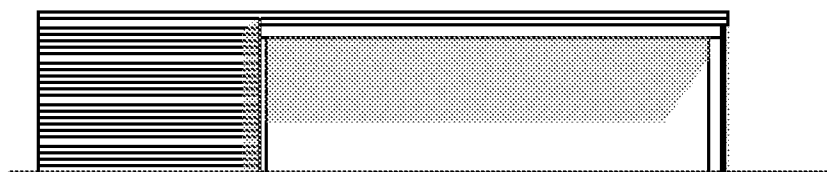
Ordnance Survey (c) Crown Copyright 2020.
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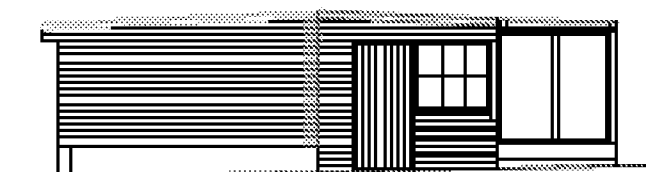
Existing South Elevation @ 1:100



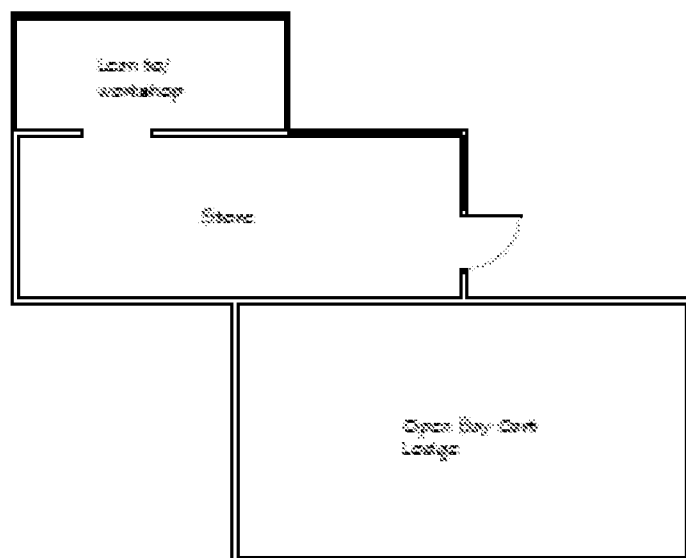
Existing East Elevation @ 1:100



Existing North Elevation @ 1:100

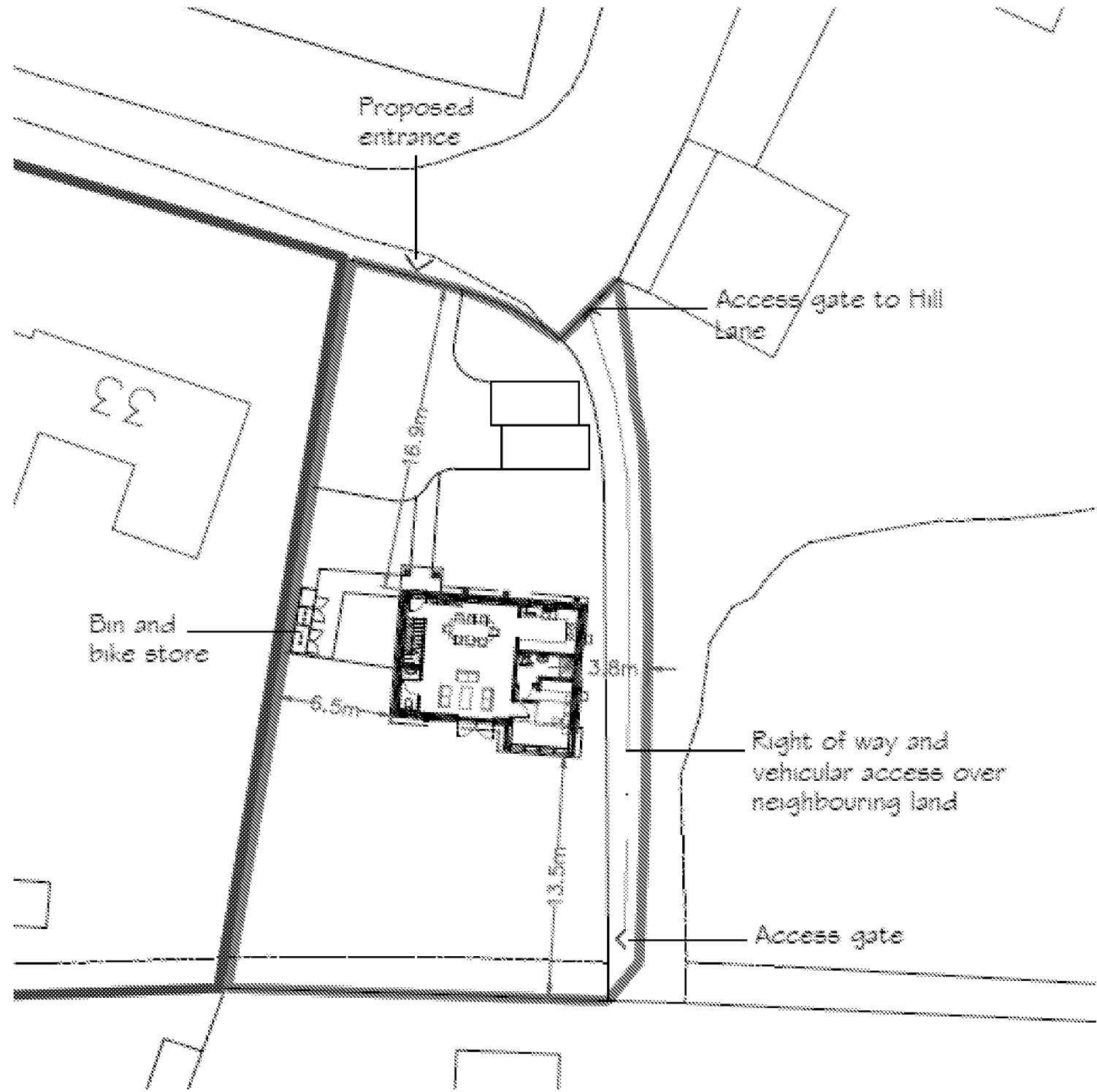


Existing West Elevation @ 1:100



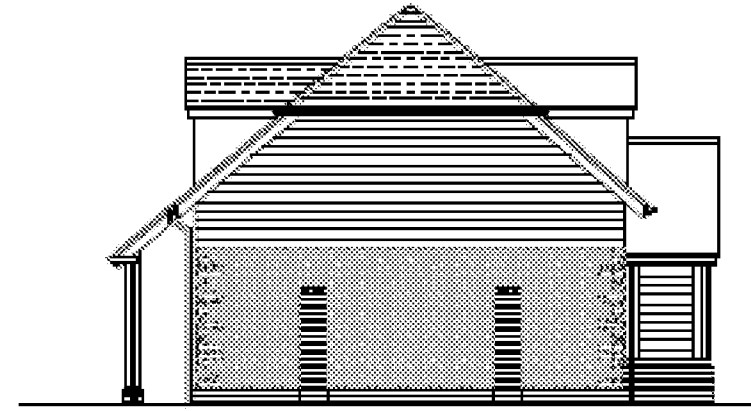
Existing Floor Plan @ 1:100

Appendix 2: Proposals





Proposed South Elevation @ 1:100



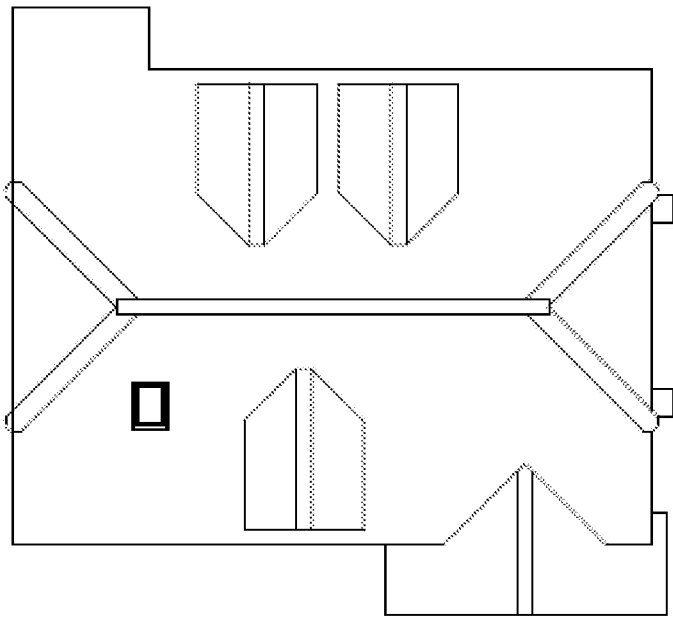
Proposed West Elevation @ 1:100



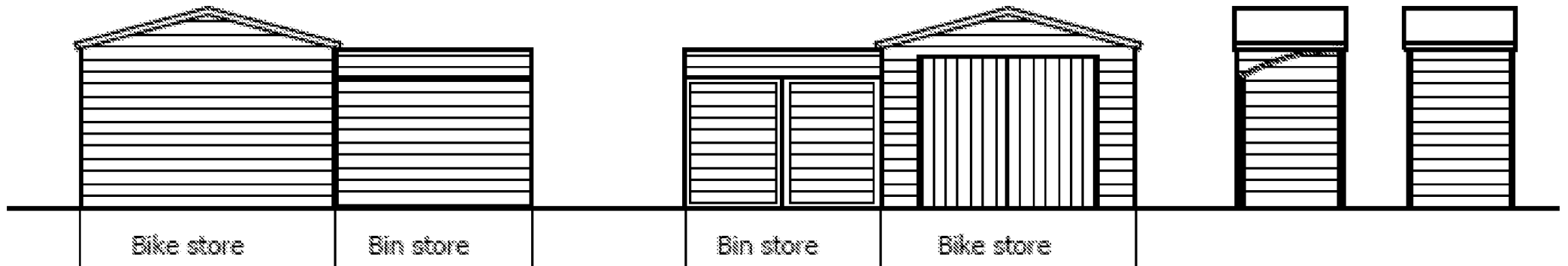
Proposed East Elevation @ 1:100



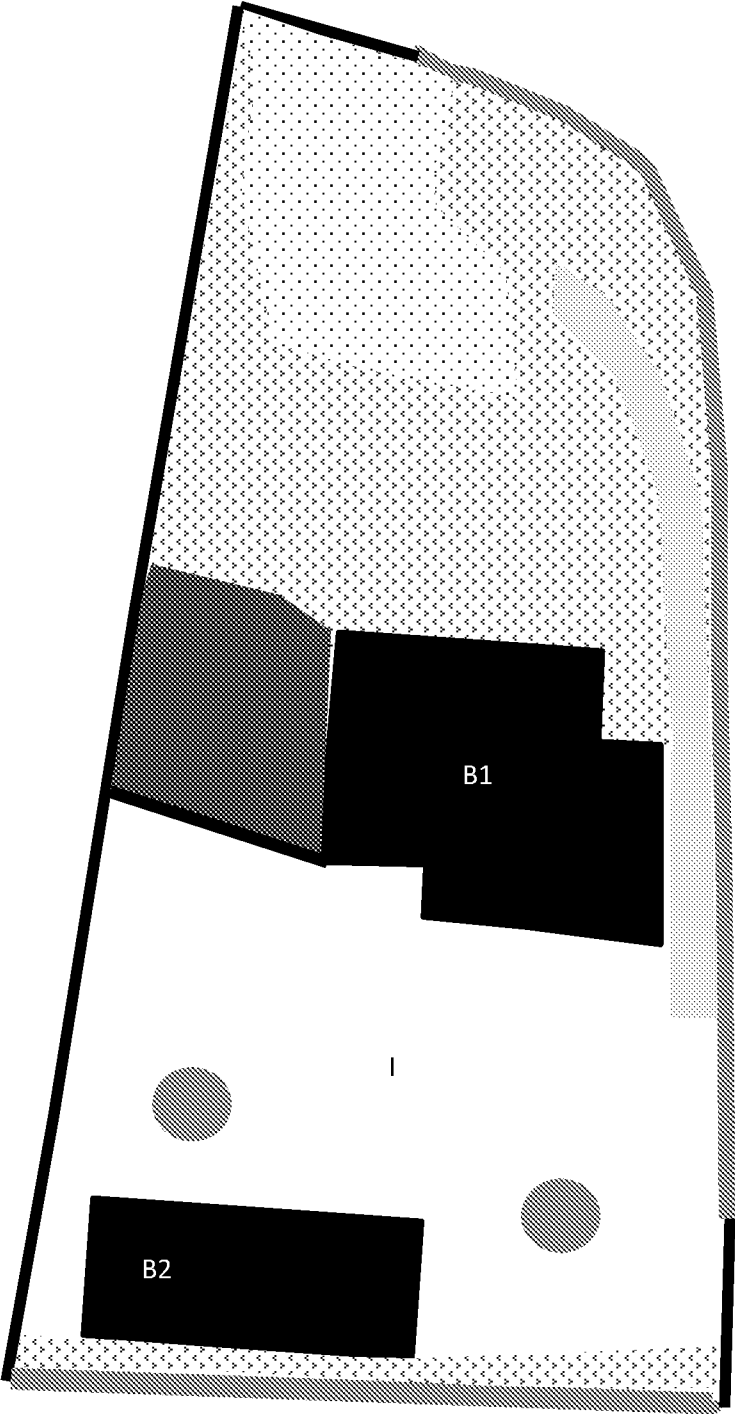
Proposed North Elevation @ 1:100



Proposed Roof Plan @ 1:100



Appendix 3: Phase 1 habitat map



Phase 1 habitat map key

Habitat code	Description
	Bare ground
	Buildings
	Improved grassland
	Hardstanding (patio slabs)
	Ephemeral
	Scattered trees
	Fencing
B1	Outbuilding
B2	Modern cabin

Appendix 4: Photographs



Photo 1: Internal of outbuilding

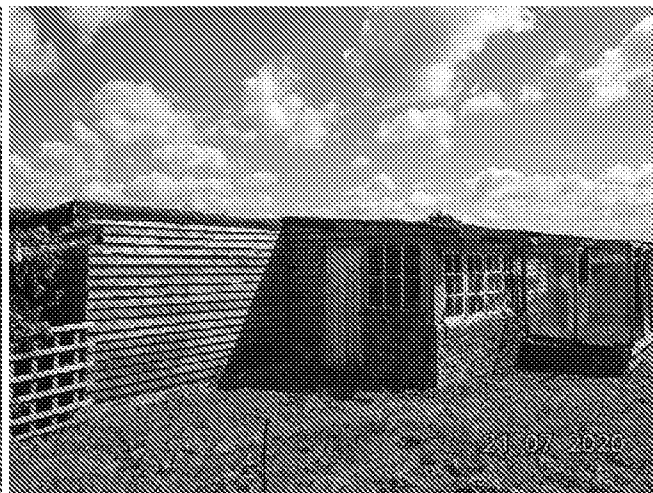


Photo 2: South elevation of outbuilding



Photo 3: East elevation of outbuilding



Photo 4: North elevation of outbuilding



Photo 5: Northern site entrance

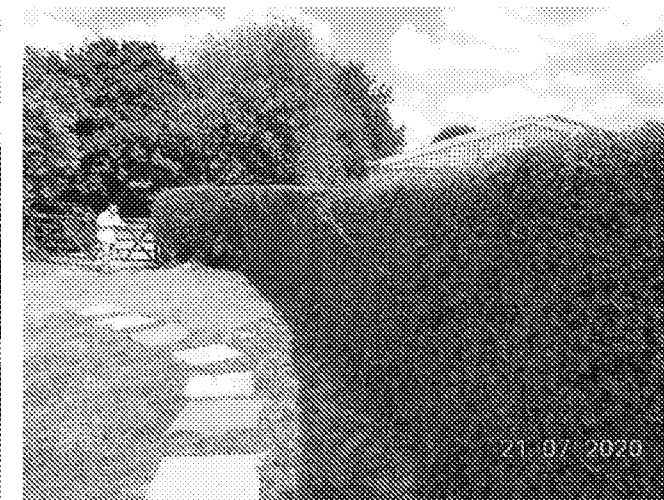


Photo 6: Eastern native species-poor hedge



Photo 7: Bare ground and ephemeral/short perennial



Photo 8: Southern native species-poor hedge

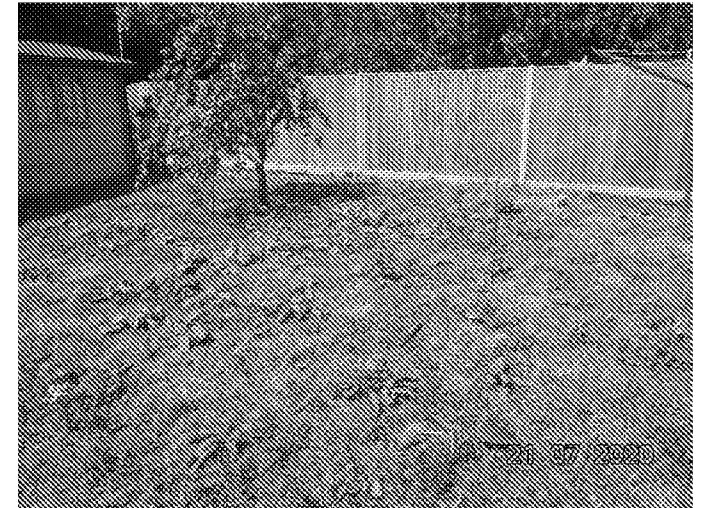


Photo 9: Improved grassland and fruit tree

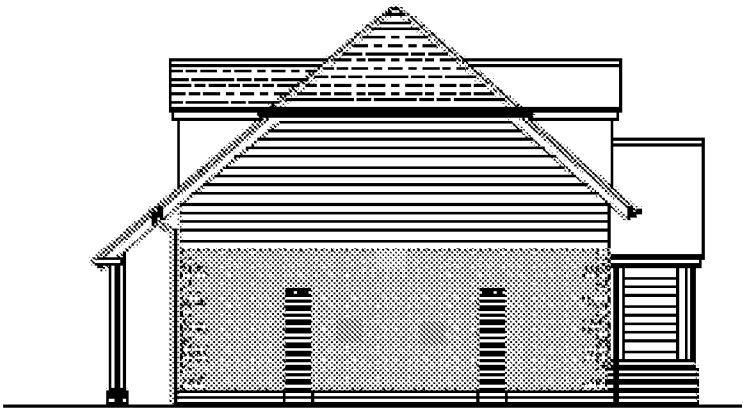


Photo 10: Modern cabin to be retained

Appendix 5: Ecological enhancements



Proposed South Elevation @ 1:100

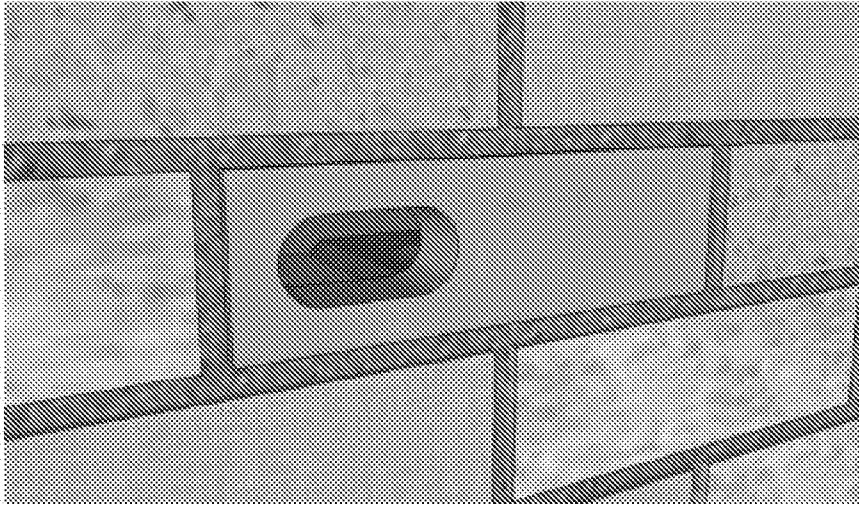


Proposed West Elevation @ 1:100

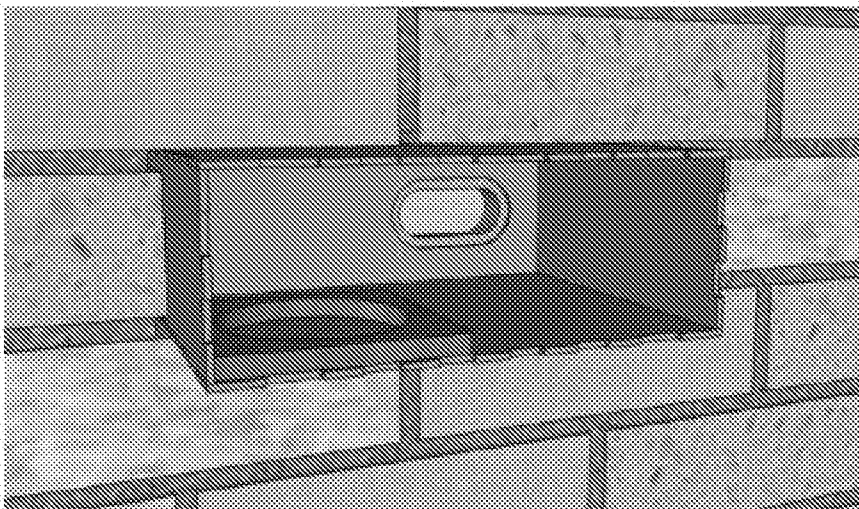
KEY

- 'Model-S swift brick'
- Solitary bee bricks
- Bat roosting tube

Model-S Swift Brick design:

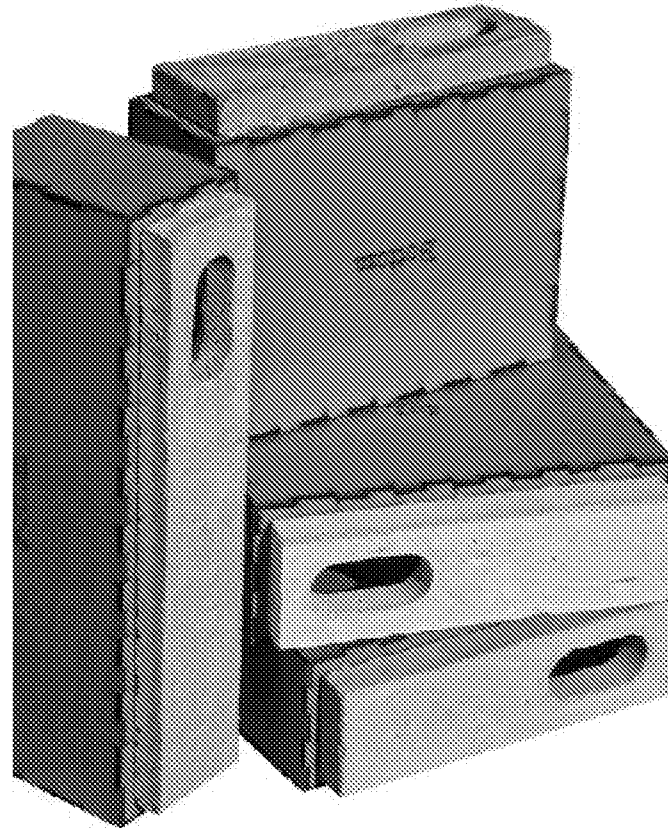


Occupies the space of one course of bricks.

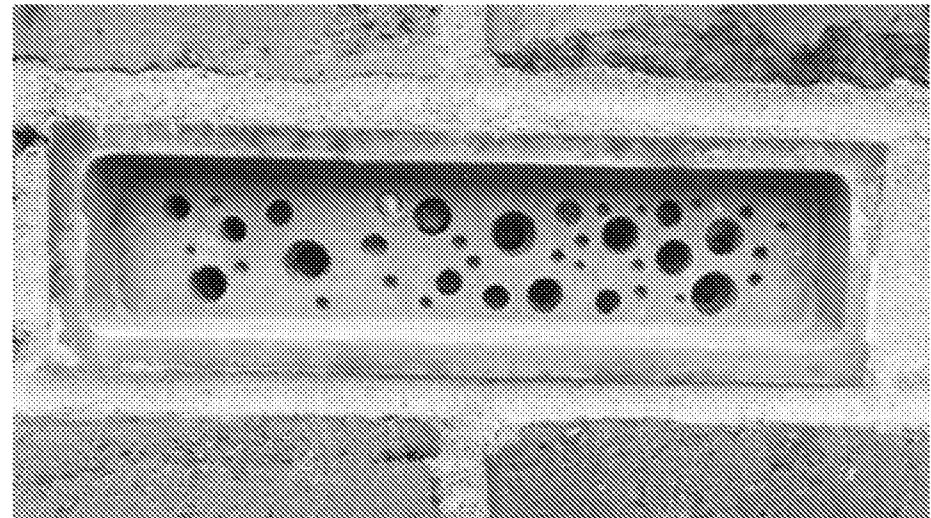
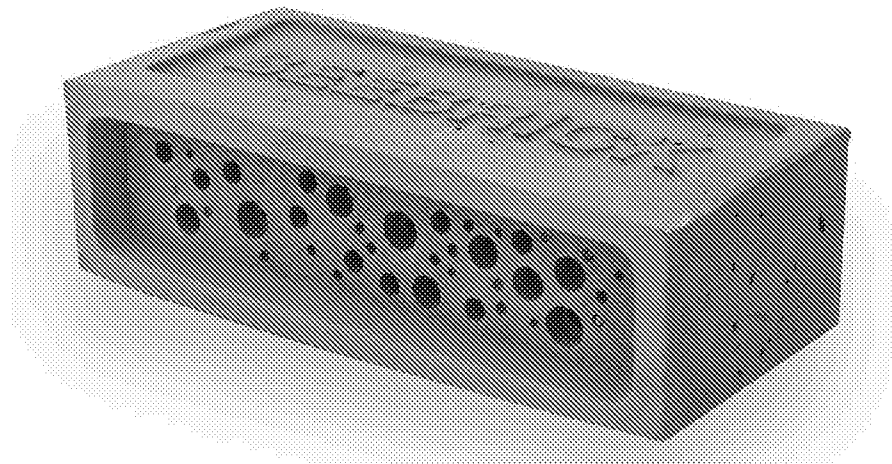


Cavity side with the back removed, showing the built-in nest form.

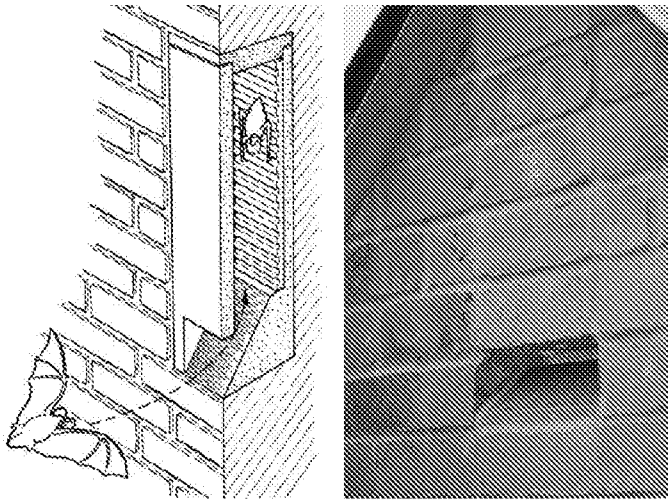
Model S Swift Brick



Solitary bee brick design:



Bat roosting tube design:



Appendix 6: UK BAP hedgerow protection

