ecosupport

Kingscroft Farm, Havant

BEMP

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Client:
Foreman Homes

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Report	Biodiversity Enhancement & Management Strategy (BEMS)
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1.0 INTRODUCTION

1.1 Brief

An outline planning application APP/22/00669 was submitted to Havant Borough council for the development of up to 120 residential dwellings (C3 Use), with access from Meyrick Road, the provision of open space, landscaping and other associated works including demolition of existing buildings on site. As part of the planning permission, the following ecology comment was received from Tristan Norton (Principle ecologist Havant Borough Council):

'In summary, I consider that clarification is required in respect to both ecological impacts and mitigation, compensation and enhancement measures. I would recommend that an outline ecological mitigation, compensation and enhancement strategy is provided. This should set out in particular how the identified impacts to semi-natural grassland habitat are to be mitigated/compensated and how fields to the west of the site are to be managed.'

This document has therefore been produced to respond to the concerns raised in the comments.

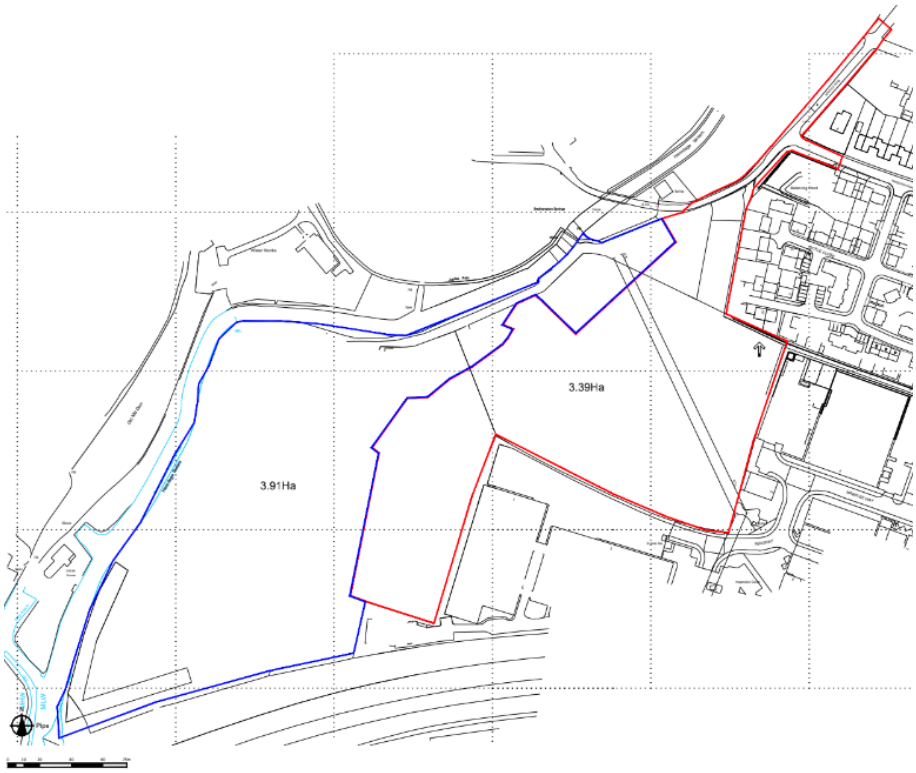
1.2 Aim

The aim of this report is to bring together all relevant sections of the ecological reports associated with the above application to devise a site wide BEMS. This will ensure all features of ecological value and all legally protected species are protected, their presence on site retained in perpetuity and targeted and proportionate recommendations for enhancements made.

1.3 Site Description

The site comprises of a series of land parcels (some of which are used as horse pasture) located to the north of the A27, Havant, PO9 1QJ (centred on OS grid reference SU 704 061) (**Fig 1**). The north and west of the site are bounded by Hermitage Stream, the east by an industrial estate and the south by the A27. The immediate surrounding environ is predominantly urbanised although the site is located within 0.4 km of the intertidal habitats associated within the Solent area SPA, SAC and Ramsar.

Figure 1. Redline location plan of the site (provided by HGP Architects).



2.0 RELEVANT LEGISLATION & POLICY

2.1 Legislation

2.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended)
The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The Conservation of Habitats and Species Regulations 2019 (EU Exit) makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue. The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

2.1.2 The Wildlife and Countryside Act (1981) (as amended)
This is the primary piece of legislation by which biodiversity if protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 art II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrots Feather (*Myriophyllum aquaticum*).

2.1.3 The Countryside and Rights of Way Act (2000)
This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being

present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies must have due regard to the conservation of biodiversity with a particular regard to species and habitats considered to be of greatest conservation importance. This means that Planning authorities must consider biodiversity and the list of species and habitats of importance when planning or undertaking activities.

Section 41 of the Act lists species and habitats found in England which are considered to be priority species and were identified as requiring action under the UK Biodiversity Action Plan. The latest update to the list of Section 41 habitats of principal importance under the *UK Post – 2010 Biodiversity Framework* includes 56 listed habitats including arable field margins, traditional orchards, hedgerows and several specific habitats within the categories of coastal, grassland, freshwater, inland rock, marine, wetland and woodland. The latest update to the list of Section 41 species of principal importance was in May 2014 and now includes a list of 943 species covering a range of species including vertebrates, terrestrial and marine invertebrates, plants and fungi.

2.1.5 Protection of Badgers Act

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.1.6 The Environment Act (2021)

The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues.

Part 6 of The Environment Act relates to nature and biodiversity. This section makes provision for biodiversity net gain to be a condition of planning permission in England and a requirement

for nationally significant infrastructure projects. Biodiversity net gain will require maintenance for a period of at least 30 years after the completion of enhancement works to be achieved.

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and includes a requirement for local, or relevant, authorities to publish biodiversity reports. Further, The Environment Act places a requirement on responsible authorities to prepare local nature recovery strategies, which will outline nature conservation sites and priorities and opportunities for recovering or enhancing biodiversity within the local area. Within England, the legislation also provides Natural England with the power to publish 'species conservation strategies' and 'protected site strategies' to identify activities that may affect a species or site's status and outline their opinions on measures that would be appropriate to avoid, mitigate or compensate any adverse impacts.

2.2 Local Planning Policy – Havant Borough Council Draft Local Plan 2036

Policy E15 Ecological Conservation

Development on any site in the Borough should conserve and enhance the natural environment wherever possible. Planning permission on any site in the Borough will be permitted where:

a) The applicant has identified and assessed the level of ecological value of the site through appropriate assessment(s) and any matters arising have been addressed through the development proposal at the earliest stage possible;
b) The development results in a net gain in biodiversity wherever possible;
c) Development avoids the fragmentation and isolation of habitats and wildlife corridors within or close to the development site;
d) The development is informed and influenced by the presence of woodlands, trees and hedgerows on site, particularly those protected by a Tree Preservation Order (TPO) or within a conservation area. If the removal of any tree is unavoidable because it would be in best arboricultural practice a replacement tree of at least equal value to that lost should be planted on site unless it is shown to be impractical to do so; and
e) Any necessary mitigation plan includes provision for ongoing management and maintenance.

In addition to the above, priority habitats in the Borough have been identified and afforded protection by a network of designated sites. Development proposals which could affect a designated site will need to consider the impact and respond appropriately:

*For **international nature conservation designations**, planning permission will be refused where:*
f) There is likely to be a significant effect on the SPA, SAC or Ramsar designation and the proposal is not directly connected with or necessary to the management of that site; and
g) The development proposal is not in compliance with the relevant regulations and national policy regarding the assessment of implication for SPAs, SACs or Ramsar sites.

*For **national nature conservation designations**, planning permission will only be permitted where:*
h) Development does not have an adverse effect on a SSSI, either individually or in combination with other developments.
*For **local nature conservation designations**, planning permission will be permitted where either:*
i) The value of the designation is retained or enhanced in line with its original criteria for designation through avoidance or mitigation measures; or
j) The benefit of the development can be shown to clearly outweigh the substantive nature conservation value of the site and the impact cannot be avoided or mitigated.

Policy E16 Solent Special Protection Areas
Planning permission will be granted for residential development resulting in a net increase in population that mitigates a likely significant effect on the Solent SPAs. This mitigation can be provided through either:
a) A financial contribution; or
b) A developer provided package of measures associated with the proposed development designed to avoid or mitigate any likely significant effect on the SPAs; or
c) A combination of measures in (a) and (b) above. Where these measures cannot be provided development proposals will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be a likely significant effect on the Solent SPAs.

Policy E18 Protected Species
Development proposals which are likely to affect protected species and/or their supporting habitats will only be permitted where:
a) Appropriate surveys are undertaken to establish the presence/likely absence of protected species. If protected species are likely to be present, planning permission will only be granted where either:
b) A Mitigation Plan is provided which is based upon appropriate ecological assessments to the satisfaction of the Local Planning Authority; or
c) A Compensation Plan is provided if it is not possible to mitigate the impact; and d. Review and monitoring plans are put in place, where appropriate.

*For sites that contain or are **adjacent to sites likely to contain Bechstein's bat**, planning permission will only be granted where:*

e) Survey methods appropriate to Bechstein's bat are used and undertaken by a suitably-qualified ecologist. If the presence of Bechstein's bat is established, planning permission would only be granted where:
f) The net loss of woodland (including groups of trees) is avoided;
g) Impacts on Bechstein's bat breeding habitat (i.e. net loss of/excessive disturbance to woodland or trees containing maternity roosts) are avoided;
h) Proposals include appropriate buffers to woodlands, hedgerows and other flight corridors, taking into account the location of roosts and foraging/commuting habitats; and

i) Review and monitoring plans are put in place, where appropriate.

Where the above measures cannot be met planning permission will be refused, unless the applicant can show, subject to meeting the tests of the Habitats Regulations, that there would not be an adverse effect on the population of the relevant protected species.

3.0 BASELINE DATA

A series of reports / surveys were carried out for the outline application by Ecosupport Ltd. As part of this work, the following reports were produced (with the results of these summarised in the below sections):

- Preliminary Ecological Assessment (2023)
- Bat Activity report (2023)
- Reptile Mitigation Strategy (2023)
- Dormouse Survey report (2023)
- Breeding bird survey report (2022)

3.1 Habitats

The updated field survey work which forms the basis of the findings of this report was carried out by Ashley James BSc (Hons) ACIEEM (project ecologist with Ecosupport) on the 2nd May 2022. Weather conditions during the survey comprised temperatures of 14 °C, light winds and sunny spells. In summary, this had found the following habitat types.

- Semi improved grassland (g3c)(**Fig 2**)
- Coastal and floodplain grazing marsh & Ruderal (g3) (25) + (17) (**Fig 3**)
- Blackthorn Scrub (h3a)(**Fig 4**)
- Hedgerows (h2a)(**Fig 5**)
- Buildings (u1b)(**Fig 6**)

Figure 2. View of the unmanaged semi improved grassland which is the dominant habitat type on site (taken May, 2022).

Figure 3. View of the Coastal and floodplain grazing marsh (taken May, 2022).

Figure 4. View of the linear blackthorn scrub (taken May, 2022).

Figure 5. View of the hedgerow (taken May, 2022).

Figure 6. View of one of several horse stable/shelter structures present on-site (taken May, 2022).

3.2 Bats

A number of surveys were undertaken on site to establish the usage of the site by foraging and commuting bats. The results of these surveys are summarised below.

3.2.1 Activity Surveys

Walked transects and static detector deployments were undertaken between April and September 2022. A summary from the Bat Surveys (Ecosupport, 2022) outlined below:

'Overall the bat activity levels on site were considered to be moderate and largely dominated by Soprano and Common Pipistrelle (considered to be common species within the UK) along with low - moderate levels of Noctule and Myotis spp (rarer species as per Wray et al 2010) and occasional activity from Serotine, Leisler's (rarer) and Plecotus spp (common). Activity levels were relatively even across the site with a slightly higher amount of activity and species diversity associated with the existing boundary features (hedgerows).

Guidance on valuing bat foraging and commuting habitat is provided by Wray et al (2010), which uses a points-based system. Using this system, as it stands using the data so far collected, the site scores 23 points for commuting bats and 17 points for foraging bats (see Table 3) and is correspondingly considered to be of ***Local value*** *for foraging and commuting bats.'*

3.3 Reptiles

A suite of reptile surveys was carried out by Ecosupport during April and May 2022 which identified a maximum count of 2 adult Slow Worms. Based on the numbers observed the Reptile Mitigation Report (Ecosupport, 2022) made the following evaluation:

'Given the size of the suitable areas of habitat, the number of refugia deployed and the maximum count of adults (which was 2), a 'Low' population of Slow Worms (as defined by the Froglife guidance 1999) is present. Slow Worms are however relatively widespread in within Hampshire and as such the site it is considered to be ***Local Value*** *for reptiles.'*

3.4 Dormice

The Preliminary Ecological Appraisal (Ecosupport 2022) identified suitable habitat for Dormouse (Muscardinus avellanarius) on the site and consequently recommended a survey should be undertaken to determine their presence or likely absence. A total of 50 tubes were deployed on site in March 2022 however, due to some gaps in the hedgerow/scrub it was not always possible to spread these out at 20m intervals. The surveys were carried out between April and September 2022 to ensure that all key parts of the season were covered, and sufficient survey effort was achieved. The tubes were checked by Ashley James of Ecosupport Ltd (Dormouse licence number 2018-35528-CLS-CLS) and Chris Drake.

No evidence of Dormice was identified during the surveys and therefore no further mitigation or enhancement is required.

3.5 Breeding Birds

Surveys were undertaken between early April and June 2022 during favourable weather conditions. Surveys were carried out Ashley James BSc (Hons) ACIEEM, an experienced ornithologist (5 years' experience).

A total of 3 Red-listed and 5 Amber-listed Birds of Conservation Concern were recorded as using the site as a resource, or likely using the site. Of these, 6 species were found to be nesting/breeding or likely to be nesting/breeding within the entire site (**Table 1**).

Table 1. Protected bird species, BoCC Red and Amber listed species and Species of Principle Importance recorded on site.

Species	Legal / Conservation Status	Number of Pairs, Nest Locations, Males Holding Territory on site
Starling (*Sturnus vulgaris*)	BoCC **Red**	One suspected nest site just off site. Maximum of 26 seen foraging within the field.
Grey Wagtail (*Motacilla cinerea*)	BoCC Amber	A minimum of 1 territory identified along the hermitage stream.
Dunnock (*Prunella modularis*)	BoCC Amber	A minimum of 4 territories identified.
Wren (*Troglodytes troglodytes*)	BoCC Amber	A minimum of 5 territories identified.
Greenfinch *(Carduelis Chloris)*	BoCC Red	A minimum of 1 territory identified within the hedgerow running through the centre of site.
Whitethroat (*Sylvia communis*)	BoCC Amber	A minimum of 2 territory identified within the scrub .
Gadwall (*Anas strepera*)	BoCC Amber	A couple of males seen roosting within the river no evidence of breeding on site.
House Sparrow (*Passer domesticus*)	BoCC Red	Maximum of seven seen foraging within the hedgerows adjacent to industrial yard. Likely nesting within the nearby industrial site/nearby houses.

Due to the considered low number of BoCC Red & Amber listed nesting pairs/territories present on site and the very common, common and moderately common categorisation of the species using the site as a nesting and foraging resource during the nesting season, the site is considered to be of ***Low ecological value*** to breeding and nesting birds and it is not considered that the loss of bird populations and the communities present would be significantly detrimental on a County level.

A number of the Red & Amber listed species recorded on site are likely to be adaptive to the proposed housing scheme and associated landscaping and open space creation, these include House Sparrow, Starling, Dunnock, Wren and Greenfinches. These species will adapt fairly readily to semi urban landscapes. With appropriate retention of habitats, linear features and the inclusion of suitable nesting features it would be considered reasonable that the housing proposal can provide suitable environments for these species to re-establish territories in the future.

River species such as Gadwall and Wagtail are not however adaptive to semi-urban environments without a network of suitable open countryside and a network of riverine habitats. It is proposed however that this area is to be retained, suitable buffer zones are recommended around hermitage stream as this will help provide a safe zone from cats/dogs

and human disturbance, and that will in turn provide foraging and sheltering opportunities for both species.

4.0 MITIGATION & ENHANCEMENTS

This section details the measures that will be implemented to mitigate against the impacts to the species identified on site and provide targeted and proportionate ecological enhancements (further details of the enhancements recommended can be found in **Plan 1** appended).

4.1 Bats

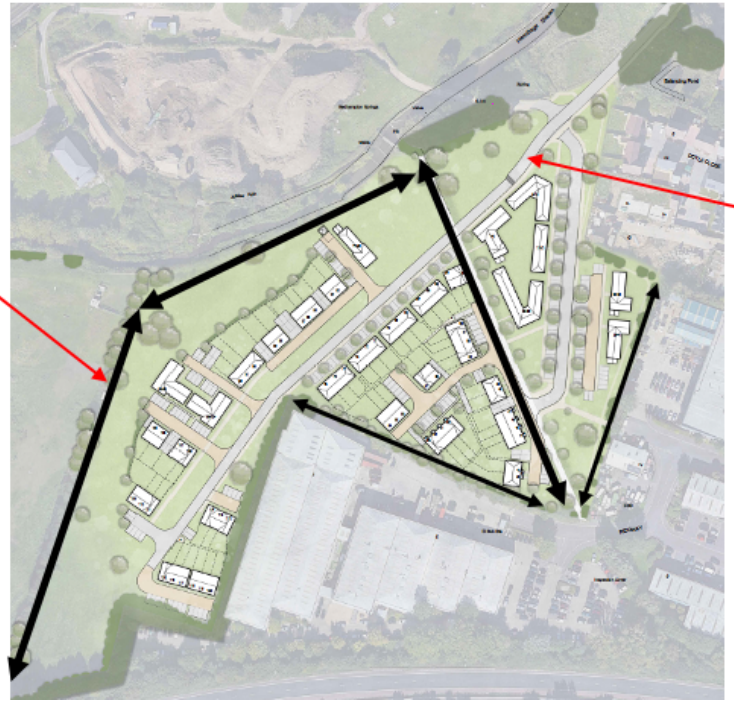
4.1.1 Lighting Strategy

At this stage it is understood that a lighting plan (with spill contours) for the scheme has not yet been carried out although when it is created, it will be informed by information provided within Guidance Note 08/23 Bats and Artificial Lighting at night (ILP / BCT 2023) in collaboration with the ecologist. Public spaces have been designed with lighting in mind and encourage the use of low-level and / or eco-friendly lighting. Some of the key principles to provide mitigation for the impacts of additional lighting upon bats as outlined within that document (and areas on site that would be more sensitive and thus require more targeted lighting mitigation) are outlined below.

As the application is outline, details on the landscape proposals are not yet available although broad measures based on the indicative layout are shown in **Fig 7** below.

Figure 7. Indicative layout of the scheme with measures that can be provided to mitigate for impacts upon foraging / commuting bats. The existing and new commuting routes are indicated by the arrows (which will in effect be dark corridors).

3 – 5 m minimum width 'dark corridors' maintaining buffers to existing linear features. These areas will be enhanced through planting of a number of new shrubs, trees and shade tolerant herbaceous species to generate an understorey (as well as areas of unmanaged grassland for reptiles). Should any lighting for the adjacent car spaces / roads be required, use of low-level bollard lighting will be necessary to minimise light spill. Any external security lighting will be set on motion-sensors and short (1min) timers.



Street lighting along roads to be spaced as far apart as possible to reduce light intensity. Lights will be directed/placed away from new planting and the central dividing hedgerow between the two fields and will not spill over the horizontal plain (so as not to impact high-flying bats such as Noctules) Warm white LED lights are recommended as they produce a "Warm" light and have reduced impacts on foraging and commuting bats.

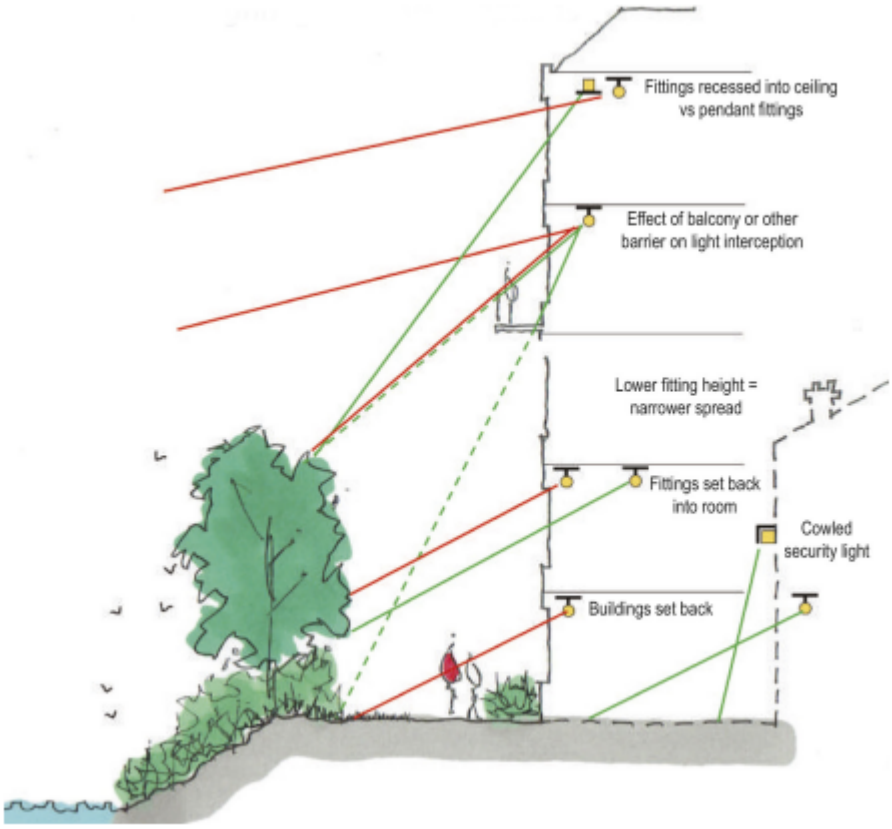
A Document (*Guidance Note 08/23 Bats and Artificial Lighting at night*) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented as far as is practicable.

'Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Internal luminaires can be recessed (as opposed to using a pendant fitting - See* ***Fig 8****) where installed in proximity to windows to reduce glare and light spill*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*
- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*
- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues. See Case Study 6*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern*

LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'

Figure 8. Internal lighting mitigation options (ILP 2023)



4.1.2 Enhancements

4.1.2.1 Planting

It is understood that most of the trees on site will be retained and only a few trees will be required to be removed to accommodate the development, all of which are low value trees. If a landscape masterplan is not available / been prepared, high-level recommendations should be made for replacement and new tree planting where this is possible on the layout provided. The landscape design of the scheme will have to allow for the creation of a 3 - 5m buffer running along all the outer hedgerows and Hermitage Stream, which will create valuable dark corridors for sensitive foraging and commuting bats. The detailed landscape proposals should include a mixture of native trees and specimen trees within the landscape margins and green open space. Specimen trees of landscape and amenity value should be incorporated into new street scenes where possible, which would be in-line with Sections 12 and 15 of the National Planning Policy's aspirations for new residential development to include tree-lined streets.

4.1.2.2 Bat Bricks

To act as a biodiversity enhancement and in the interests of promoting net gain principles (in line with National and Local planning policy), it is proposed that 50% of the new dwellings (so 70 mimum) will have an Ibstock (**Fig 9**) (https://ibstockbrick.co.uk/kevington/eco-

products/)(or similar) bat box integrated into the gable ends of the dwellings. These features are entirely self-contained and available in a variety of different colours to match different construction materials. Ideally these boxes should be located away from windows and positioned in order to benefit from some degree of sunlight exposure.

Figure 9. Ibstock bat brick 'B' which will be integrated into the gable walls of 70 of the new dwellings on site.

In addition to the integrated bat bricks, the following wood concrete models (available from NHBS) will also be erected within tree lines / hedgerows present across the application site:

- 4 'General Purpose Bat Boxes'
- 1 'CJ Wildlife - Large Multi Chamber Woodstone Bat Box'
- 1 'CJ Wildlife - Large Multi Chamber Woodstone Bat Box' with wooden insert removed

All are manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box. These boxes will be erected by or under the supervision of an ecologist to ensure they are erected in an appropriate location (see **Plan 1** for suggested locations)

4.2 Reptiles

4.2.1 Passive dispersal

As only a small number of reptiles were found all within the boundary habitats on-site (which are largely being retained), a passive dispersal methodology is considered proportionate (NB this strategy will remain valid provided the grassland areas are maintained as grazed / with a short sward height within the main body of site). Any potentially suitable habitat that needs to be cut will be done so using a 2-stage strim under supervision of a suitably qualified ecologist. During the first stage, the vegetation will be cut down to a height no lower than 15cm. Cutting will occur directionally, starting from the outside of the suitable areas towards the boundaries (that are to be retained) to encourage reptiles into the most suitable area of

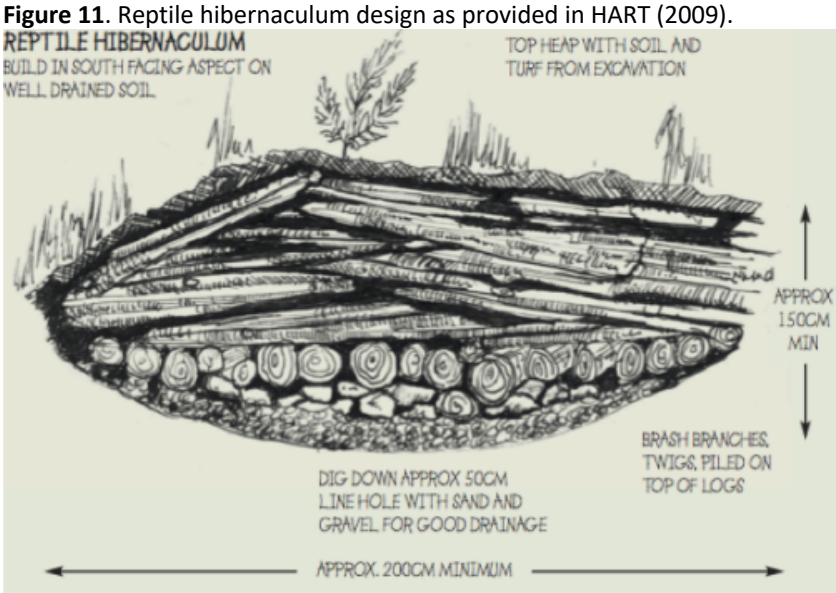
habitat, with the purpose to minimise the area requiring fencing as per **Fig 10**. A second cut (the following day) will take it right down to ground level. These works will be done prior to the installation of reptile fencing and will be undertaken during the active reptile period (April – September) when temperatures are above 12ºC with sunshine.

Figure 10. Indicative site layout with direction of passive dispersal (red arrows) clearance that will be undertaken. The approximate location of the 4 No hibernacula are shown by the yellow stars.

4.2.2 Habitat Enhancement

Based on the nature of the existing habitats within the boundary habitats (i.e. areas of bordering scrub/hedgerows), the only potential enhancement anticipated would be the creation of 4 No wood-based hibernacula to provide reptiles with a suitable area to hibernate within (approximate locations shown in **Fig 10**). This will be created following the specification outlined within Reptile Habitat Management: Guidelines for Landowners (HART, 2009) (**Fig 11**).

Figure 11. Reptile hibernaculum design as provided in HART (2009).



It is not considered any other specific habitat enhancements measures will be necessary as the site already supports suitable habitat borders within which reptiles are present (with boundary hedgerows scrub and ruderal vegetation already present).

4.2.3 Protection of Ecology Area

Once the passive dispersal has been completed and the site is due to commence building works, the edge of the retained areas will have a line of Heras fence or similar placed in front of it. Signage will be placed on this fence with phrases such as:

Protected Reptile Habitat, Do Not Disturb

This level of protection will remain in place for the duration of the construction works and the ecologist will make quarterly visits to the site to check on the integrity of the reptile fence and ensure any repairs are made as necessary.

4.3 Breeding Birds

4.3.1 Mitigation

In order to avoid disturbance of nesting birds or damage to their nests, clearance of any vegetation (to include buildings) will be undertaken outside of the bird nesting season (typically March – September dependent on weather). If this is not possible, sections to be cleared should be thoroughly checked by an SQE immediately prior to clearance. If any active nests are found they should be left undisturbed with a suitable buffer of vegetation (5m) until the nestlings have fledged.

4.3.2 Compensation and Enhancement

As a general enhancement, any landscape planting will aim for a 70:30 ratio in favour of native species over non-natives and ornamentals (in line with the CIEEM guidance outlined within Smith & Day (2017). This should include nectar, nut and berry producing species that will benefit birds using the site for feeding. Species that can be considered within any planting

include: Rowan (*Sorbus aucuparia*), Hawthorn (*Crataegus monogyna*), Dog rose (*Rosa canina*) Blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), Holly (*Illex aquifolium*), Elder (*Sambucus nigra*) and Beech (*Fagus sylvatica*). Non-natives and ornamentals will only be given a bias in formal locations where aesthetics are a priority.

In terms of the individual Red and Amber listed species recorded using the site survey but also opportunities for other listed species that were recorded the following compensation and enhancement measures will be provided within the proposed scheme.

Starling

A total of Five purpose-built Starling boxes (**Fig 12**) will be erected in suitable retained hedgerow trees. These will be placed at height and out of sight. Habitats that will be created include gardens and open spaces will still provide suitable habitats for this species to forage.

Figure 12. Example Starling Nest box available from NHBS (NHBS 2023).

Whitethroat

The majority of hedgerows and associated scrub will remain around the boundaries. New planting will include berry producing shrubby species that whitethroats will readily feed on during the summer months and will be included within the planting scheme.

Dunnock

Again, the majority of hedgerows will remain on site with further planting proposed that will include native species that this species prefers for optimal nesting habitat and foraging.

House Sparrow

Five specifically designed terrace nest boxes (**Fig 13**) will be erected to provide nesting opportunities for this species on site. These will be located in suitable areas. With the addition of planting of native trees and scrub that will provide additional future suitable nesting and foraging opportunities.

Figure 13. Example Sparrow Terrace Nest box available from NHBS (NHBS 2023).

Greenfinch

At least one pair were active within the site and likely to have been nesting within the vicinity of the scrub. Greenfinch forage on seeds often found in fleshy fruit. The landscape scheme will have the inclusion of significant number of fruit baring trees and shrubs and these will incorporate Wild Hawthorn (*Crataegus monogyna)* and Dog rose *(Rosa canina).* Along with significant planting of native scrub which will assist this species.

Wren

Again, the majority of hedgerows will remain on site with further planting proposed that will include native species that this species prefers for optimal nesting habitat and foraging.

Additional Nesting Boxes

In addition to the above, 20 bird boxes will be erected in suitable locations within the proposed development site. These will be of half open fronted (**Fig 14**) and half circular fronted nest boxes (**Fig 14**). Positions of these will be decided by a suitably experienced ecologist at time of installation.

Figure 14. Example Nest boxes available from NHBS (NHBS 2023).

4.4 Hedgehogs

4.4.1 Enhancements

In order to enhance the site for hedgehogs, 1 Hedgehog home (such as the Igloo Hedgehog home or Hogitat Hedgehog housewill be included on site. It will be provided within or adjacent to areas of planted / retained trees / shrubs and will provide a rapidly declining species with a place to shelter / hibernate. In addition to this, any garden fences of the properties backing onto buffer vegetation will also ensure at least 2 gaps are present within the gravel boards / bases of each fence line to allow for movement of Hedgehogs between gardens and into the wider area. The gaps should be at least 15 cm high by 15 cm wide with permeability for small mammals.

Small signage could be installed at these points to ensure they remain open upon completion of the development. The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts (**Fig 15**).

Figure 15. Example of Hedgehog Highway signage to be placed above fence gaps provided to allow movements between gardens.

4.5 Invertebrates

4.5.1 Bee Homes

To provide a further ecological enhancement, 5 no bee homes will be installed onto southern elevations of the new buildings. The homes available from the RSPB [1] (**Fig 16**) can be used as their purchase contributes towards charitable works. The approximate locations of where these boxes will be placed is indicated in **Plan 1.**

Figure 16. Solitary Bee homes available from the RPSB that will be erected onto southern facing walls.

[1] https://shopping.rspb.org.uk/wildlife-friendly-garden/wildlife-habitats/bee-houses/solitary-bee-home.html

5.0 HABITAT MANAGEMENT

5.1 Retained Grassland Areas

Several areas of other neutral grassland are being retained on site around the boundaries of the site. This will be managed to ensure favourable reptile habitat is maintained on site. This will be achieved through adopting the following prescriptions:

- Hay Cut to a depth of no less than 100mm (this should be done on rotation in different areas year to year. The relatively early cut will help to reduce vigour of the sward, allowing flowering species to persist).
- Cuts to take place twice yearly in late July and again in October.
- Arisings from the hay cut will be left for a few days for seed to fall before being removed from site and composted. Location to be agreed with client and ecologist if kept on site.
- The proposed cutting regime is likely to be sufficient to control invasive broad-leaved species. However, if undesirable species such as invasive Canadian Goldenrod (*Solidago canadensis*), Thistles (*Cirsium* spp.) and Docks (*Rumex* spp.) reach more than approximately 5% cover then they should be spot treated with a non-residual herbicide.
- During each management visits, any rubbish and tipped garden waste (from residents) will be removed.

NB all management works will be as outlined in this section this will be need to be funded through an appropriate mechanism. The exact nature / type of this should be secured through an appropriate condition of planning.

5.2 Coastal and Floodplain Grazing Marsh

An area of priority habitat coastal and floodplain grazing marsh was identified to the west of the site during the PEA. To ensure there are no impacts of the development upon the habitat, the following mitigation will occur:

- During construction the boundary of the site will be fenced with Heras fencing or similar, ensuring no access to the area of priority habitat to construction personnel and that the area cannot be used for storage of materials during the works.
- Post development the area of priority habitat should be appropriately fenced/blocked off from the development to restrict any public access. Stock proof fencing will be required when the habitat is being grazed, but when not grazed the site needs to remain inaccessible.

To ensure the habitat is maintained to a high quality, the following is recommended for the management of the habitat:

- Continue use of low-level pony grazing (summer is optimum). Otherwise, a mowing regime where an initial cut occurs for driers areas in the spring, with a second and third cut in summer and autumn for the while area.
- Any channel clearance (to remove buildup of silt or vegetation) should be staggered so a section is cleared each year or clear one side at a time.

- Allowing access of stock to channel edges to create areas of bare ground of benefit to invertebrates.
- Avoid eutrophication of the channel by feeding livestock away from the habitat and not improving the grassland with fertilizer.
- Maintaining salinity levels by avoiding any flushing of the channel by freshwater and maintaining access of tidal waters into the channel
- Scrub management so no dense areas develop. Succession of woodland should be prevented.
- Removal of any invasive or non-desirable species

6.0 MAINTENANCE AND MONITORING

6.1 Monitoring

A compliance visit will be completed by a suitably qualified ecologist once the construction phase of the development has bene completed. The ecologist will check that all ecological enhancements set out in Section 5 have been completed as described.

6.2 Safeguarding

The developer and project manager will be responsible for briefing all site personnel of the ecological sensitivities of the site and implementing the mitigation measures outlined within this report. If any protected species are encountered during the construction works, it will be the responsibility of the project manager to cease works and immediately contact an ecologist for advice.

The safeguarding of the integrated bat features will be included within the deeds of the relevant dwellings to inform any new owners of their ecological sensitivity and protect them in perpetuity.

6.3 Maintenance

Habitat management must be undertaken to ensure the successful maintenance of retained habitats. ***The responsibility of the management of the on-site enhancements will be placed with a management company following the completion of the development. Until that point the responsibility will remain with the developer.***

7.0 CONCLUSION

This document has been prepared to bring together all the existing ecological information for the Kingscroft, Havant site with the aim of providing a means to address all of the ecological constraints identified and provide opportunities for enhancement that are consistent with the aims of national and local planning policy. The key constraint identified included the presence of common reptile species on site. Mitigation measures will include following a passive dispersal methodology and enhancing retained areas of grassland on-site. Recommendations are also made within this document to provide enhancements for bats, nesting birds, reptiles invertebrates and Hedgehogs as well as the longer term management of the retained grassland areas.

8.0 REFERENCES

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(IEEM) Wray, S., Wells, D., Long, E., & Mitchell-Jones, T., (2010) Valuing Bats in Ecological Impact Assessment, IEEM in Practice.

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Plan 1. Enhancements plan outlining suggested locations for enhancement features.

Legend:

- Bat bricks (groups of 2)
- General Purpose Bat Boxes
- CJ Wildlife - Large Multi Chamber Woodstone Bat Box
- CJ Wildlife - Large Multi Chamber Woodstone Bat Box with wooden insert removed
- Reptile hibernacula
- Starling boxes
- Sparrow terraces
- Bird Nest boxes (groups of 2)
- Hedgehog home
- Bee homes
- Grassland management
- Coastal and floodplain grazing marsh management