



ECOLOGICAL IMPACT ASSESSMENT

LAND EAST OF CHANTRY MEAD, DOWNVIEW ROAD BARNHAM, BOGNOR REGIS

- On behalf of: Stonehurst Properties Ltd

Planning Issue

Prepared by	GS
Checked by	CO
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SUMMARY

Lizard Landscape Design and Ecology has been commissioned by Stonehurst properties Ltd to undertake an Ecological Impact Assessment (EcIA) of the proposed development at land east of Chantry Mead, Downview road, Barnham, Bognor Regis (*Grid Reference: SU 954 052– hereafter referred to as ‘the site’*).

A Preliminary Ecological Appraisal (*PEA*) was undertaken on 3rd January 2020, to appraise the existing ecological resource within the land and the surrounding area. A full EcIA was then undertaken using this baseline data.

The existing site is formed of amenity grassland lawns, small areas of introduced shrubs, intact, species-poor hedges and scattered trees. No habitats of interest or rare species were noted. No protected or notable species would be impacted by the proposals; therefore, no further surveys for protected species were recommended.

Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible, non-significant** with proposed ecological enhancements resulting **no net loss** of biodiversity.

1.0 INTRODUCTION

- 1.1 Lizard Landscape Design and Ecology has been commissioned by Stonehurst Properties Ltd to undertake an Ecological Impact Assessment (EclA) of the proposed development at land east of Chantry Mead, Downview road, Barnham, Bognor Regis (*Grid Reference: SU 954 052– hereafter referred to as ‘the site’*).
- 1.2 A Preliminary Ecological Appraisal (*PEA*) was undertaken on 3rd January 2020, to appraise the existing ecological resource within the land and the surrounding area. The *PEA* comprised a baseline survey conforming broadly to the *JNCC Ecology Phase 1 Habitat Survey* protocol, to identify the existing habitats. In addition, a protected species assessment was undertaken to identify the potential for European and nationally protected species within and adjacent to the land. A full EclA was then undertaken using the baseline data.
- 1.3 A summary of the results and potential impacts of the proposals, and details of avoidance, mitigation and compensation measures have been detailed within this report. This report has been prepared by George Sayer (*Project Ecologist; Lizard Landscape Design and Ecology*). The report has been reviewed by Catherine O’Reilly (*Senior Ecologist; MCIEEM; Lizard Landscape Design and Ecology*).

Site Information

- 1.4 The site consists of the rear gardens of 4 no. properties along Chantry Mead and Downview Road. The gardens are well-maintained and dominated by lawns with small patches of shrubs and scattered trees. All gardens are lined by garden hedges and fences. The site area is bounded by further gardens and residential properties, and the road Chantry Mead.
- 1.5 The site is located c.10.0 metres above sea level. Soils on site are described as *freely draining slightly acid loamy soil*.

Surrounding Landscape

- 1.6 The site is situated directly to the east of Eastergate and to the north of Barnham village, within the county of West Sussex and the district of Arun. It is set in a semi-rural landscape with arable fields and woodland, as well as small linear villages.
- 1.7 There are two waterbodies located within 500m. One is a widened section of ditch, 475.0 m south-west of the site. Previous amphibian surveys in the local area by Lizard Landscape Design and Ecology in 2011 did not discover any newt species within the ditch. The second is a fishing pond, 500.0 m north-west of the site.
- 1.8 Both water bodies are located over 450m away from the site and both are to the south. Both of these ponds are south of the B2233 this would make distribution of Great Crested Newts unlikely. Although no other permanent waterbodies haven been noted. Temporary waterbodies in particular around suitable habitats (Woodlands and Scrubs) may be suitable. These have been searched for wherever possible.

Development Proposals

- 1.9 It is understood that the proposals include the development of four new dwellings
- 1.10 The aim of this ecological appraisal survey has been:
- *To identify habitats and protected species present, and any other features of ecological value;*
 - *Identify any potential ecological constraints;*
 - *Identify impacts of the proposed development and set out appropriate avoidance, mitigation and compensation measures.*
 - *To provide suggestions for enhancements to be incorporated into the scheme.*

2.0 PLANNING POLICY AND LEGISLATION

Legislation

2.1 Legislation relating to wildlife and biodiversity of particular relevance to this EclA includes:

- *The Conservation of Habitats and Species Regulations 2017;*
- *The Wildlife and Countryside Act 1981 (as amended);*
- *The Natural Environment and Rural Communities (NERC) Act 2006;*

2.2 This above legislation has been addressed, as appropriate, in the production of this report.

National Planning Policy

2.3 The National Planning Policy Framework (NPPF) 2019 sets out the government planning policies for England and how they should be applied. '*Chapter 15: Conserving and Enhancing the Natural Environment*' states that development should be '*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*'

2.4 The Government Circular 06/2005, which is referred to by the NPPF, provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

Local Planning Policy

2.5 Arun District Local Plan 2011 – 2031, the Arun District Planning Framework Policy SP1 & DM5 (*Natural Environment*) states:

- *Arun District Council will encourage and promote the preservation, restoration and enhancement of biodiversity and the natural environment through the development process and particularly through policies for the protection of both designated and non-designated sites;*
- *Where possible it shall also promote the creation of new areas for habitats and species;*
- *In relation to designated sites, development will be permitted where it protects sites that are recognised for the species and habitats contained within them;*
- *Development schemes shall, in the first instance, seek to achieve a net gain in biodiversity and protect existing habitats on site. They shall also however incorporate elements of biodiversity including green walls, roofs, bat and bird boxes as well as landscape features minimising adverse impacts on existing habitats (whether designated or not);*
- *Development schemes shall also be appropriately designed to facilitate the emergence of new habitats through the creation of links between habitat areas and open spaces. Together, these provide a network of green spaces which serve to reconnect isolated sites and facilitate species movement.*

3.0 METHODOLOGY**3.1 Desk Study**

3.1.1 The Multi-Agency Geographic Information for the Countryside (*MAGIC*) was consulted for all designated sites, priority habitats and protected species licence records within 2.0km of the site. The desk search was conducted on 18th December 2019. Due to the small scale of the proposals a full data search was not considered proportionate.

3.2 Field Survey

- 3.2.1 A preliminary ecological appraisal was undertaken on 3rd January 2020, and the site subjected to an ecology survey using guidelines set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit (JNCC, 2003)*.
- 3.2.2 Habitats within the land were classified and the presence, or potential presence, of certain protected and / or notable species of flora and fauna were identified. A summary description of the habitat within the site following the *Phase 1 Habitat Survey Methodology* is presented in Section 4.0. This involved identifying features that may be used by protected species, potential foraging areas and other signs of use. Water bodies were recorded wherever possible, within 500 metres of the proposed development site.
- 3.2.3 The results are summarised and accompanied in large part by photographic evidence contained in *Appendix A – Site Photographs*. Recommendations for further investigation and survey are made in the following report.

3.3 Preliminary Bat Roost Assessment

- 3.3.1 A Preliminary Bat Roost Assessment was undertaken on 03rd January 2020 by an experienced, licenced bat surveyor who undertook an internal and external assessment of all buildings and ground-level assessment of trees within the proposed construction zone.
- 3.3.2 The fabric of the buildings was assessed for features which could be used by bats including:
- *Lifted / missing roof tiles;*
 - *Lifted / missing hanging tiles;*
 - *Lifted flashing;*
 - *Gaps at Soffits, Fascia's or bargeboards;*
 - *Damaged or missing mortar;*
 - *Gaps around lintels or window frames.*

3.3.3 Trees were visually identified from the ground, using binoculars where necessary, for features that could be used by bats such as:

- *Woodpecker Holes;*
- *Knot Holes;*
- *Tear-outs;*
- *Flush Cuts;*
- *Double Leaders.*

3.3.4 Once features had been assessed the trees and buildings were then categorised in accordance with *Table 4.1 of the Bat Conservation Trust's Good Survey Guidelines (2016) (shown below):*

Table No. 01 – Bat Roost Suitability Guidelines (BCT, 2016)

Category	Buildings	Trees
Negligible	No suitable features identified.	No suitable features identified.
Low	A structure which could be used opportunistically, however, are not likely to be used on a regular basis / by a large number of bats.	Tree of sufficient size / age to support bat roost features; but with none identified from the ground.
Moderate	A building with features which, could be used regularly by a small number of bats.	Tree with features which, may support a bat roost of low conservation status.
High	A building with features suitable for use by a large number of bats on a regular basis.	A tree with several potential bat roost sites that are suitable for use by a large number of bats.
Confirmed	Building contains evidence which would suggest a bat roost being present e.g. bat droppings.	Tree displays evidence which would suggest a bat roost being present e.g. bat droppings.

3.4 Ecological Impact Assessment

3.4.1 The methodology for Ecological Impact Assessment (EcIA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and subsequently rating the potential effects of the development based on the sensitivity and value of the resource affected, combined with the magnitude, duration and scale of the impact (or change). This is initially assessed without mitigation measures, and then assessed again after allowing for the proposed mitigation measures; this provides the residual effects. The assessment is divided into construction effects and longer-term operational effects.

3.4.2 Each ecological feature within the site has been considered within a defined Geographic context such as:

- *International and European*
- *National*
- *Regional*
- *County*
- *District*
- *Local*
- *Site Level*
- *Negligible*

3.4.3 Based upon CIEEM guidance, value was determined with reference to the following factors:

- *Its inclusion as a Designated Site or other protected area;*
- *The presence of habitat types of conservation significance, e.g. Habitats of Principal Importance (NERC 2006);*
- *The presence (or potential presence) of species of conservation significance e.g. Species of Principal Importance (NERC 2006);*
- *The presence of other protected species e.g. those protected under The Wildlife and Countryside Act 1981;*
- *The sites social and economic value.*

- 3.4.4 The ecological impacts resulting from the proposals were then described according to a defined set of characteristics as defined within '*Guidelines for Ecological Impact Assessment in the UK and Ireland*' (CIEEM, 2018). This assessment considers residual impacts (once all mitigation has been taken into account), with any significant effects highlighted. A significant effect is defined as "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*".
- 3.4.5 The confidence that a certain activity will result in a significant adverse effect has been ranked as follows:
- *Highly probable;*
 - *Probable;*
 - *Unlikely;*
 - *Highly unlikely;*
- 3.4.6 Where initial impacts have been identified as significant, avoidance, mitigation and compensation measures have been proposed to avoid, prevent or offset such effects. Enhancement has been proposed to ensure that the development represents a net gain in biodiversity in accordance with National Policy.

4.0 BASELINE ECOLOGICAL CONDITIONS

4.1 Designated Sites

Statutory Protected Sites

- 4.1.1 MAGIC was consulted for details of ecologically sensitive statutory protected sites within the Zone of Influence of the proposed development (SSSI's / LNR's within 2.0km, SAC's / SPA's within 10km). No Statutory sites were found within 2.0km, the closest is listed below.

Table No. 02 – Statutory Protected Sites

Site	Description	Location
<i>Fairmile Bottom SSSI</i>	Site contains Yew Woodland and Scrub, along with unimproved chalk grasslands. Both of which are considered nationally rare.	4.3km NNE
<i>Duncton to Bignor Escarpment SAC</i>	An example of mature beech <i>Fagus sylvatica</i> woodland located on the steep scarp face of the South Downs. All stages in the ecological succession from chalk grassland through scrub to woodland are represented here and this range of habitats accounts for the interest of the site. Designated for presence of <i>Asperulo-Fagetum</i> beech forests	7.8 km N
<i>Pagham Harbour SPA/RAMSAR</i>	Estuarine basin that comprises an extensive central area of saltmarsh and intertidal mud-flats, surrounded by lagoons, shingle, open water, reed swamp and wet permanent grassland. The mud-flats are rich in invertebrates and algae, and provide important feeding areas for birds. The area supports breeding Little Tern <i>Sterna albifrons</i> in summer, as well as wintering concentrations of Ruff <i>Philomachus pugnax</i> and Pintail <i>Anas acuta</i> .	9.9 km SW

- 4.1.2 The site is located within the *Impact Risk Zone of Fairmile bottom & Eartham Pit Boxgrove Sites of Special Scientific Interest*. The development proposals do not require further consultation with *Natural England* due to the nature of the proposals.

Non-Statutory Protected Areas

- 4.1.3 *Sites of Nature Conservation Importance (SNCIs)* are designations applied to the most important non-statutory nature conservation sites. They are recognised by the *National Planning Policy Framework (2019)* and as such are material considerations when assessing planning applications. The following SNCIs were identified within 2.0 km of the site:

Table No. 03 – Non-Statutory Protected Sites

SINC	Locations
<i>Fontwell Park Racecourse</i>	<i>1.73km NNW</i>
<i>Slindon Bottom</i>	<i>2.0 km N</i>

4.2 Habitats

- 4.2.1 Within 2.0 km of the site there are *Priority Habitats of Ancient Woodland (Semi Natural), Deciduous Woodland, Traditional Orchard, Wood Pasture & Parkland, Coastal & Floodplain Grazing Marsh, Lowland Meadows and Lowland Ferns*
- 4.2.2 Habitats within and adjacent to the land include:
- *Amenity Grassland;*
 - *Scattered Trees;*
 - *Hardstanding;*
 - *Intact, Species-poor Hedge;*
 - *Introduced Shrubs.*

Amenity Grassland

- 4.2.3 The site area is predominantly formed of amenity grassland which is dominated by perennial rye grass (*Lolium perenne*) with abundant daisies (*Bellis perennis*) and frequent common forbs such as dovesfoot cranebill (*Geranium molle*) and herb Robert (*Geranium robertianum*). Planted herbaceous plants are noted such as bluebell (*Hyacinthoides non-scripta*) and primrose (*Primula vulgaris*). The sward height varies by garden, but all are maintained to a short height. One garden contains a small vegetable patch within the grassland, with plants such as strawberry (*Fragaria sp.*) noted. This habitat is assessed as being of **site value**.

Scattered Trees

- 4.2.4 There are a number of scattered trees within the gardens. Several large specimens are noted including introduced species such as spruce (*Picea sp.*) and boxelder (*Acer negundo*) with native trees such as hornbeam (*Carpinus betulus*) and field maple (*Acer campestre*). The trees are largely of ornamental value. This habitat is assessed as being of **site value** only.

Hardstanding

- 4.2.5 Paved paths run through some of the gardens. This habitat is assessed as being of **negligible value**.

Intact, Species-poor Hedge

- 4.2.6 The gardens are largely bounded by hedges formed of cherry laurel (*Prunus laurocerasus*) and garden privet (*Ligustrum ovalifolium*) with occasional native species such as holly (*Ilex aquifolium*) and hazel (*Corylus avellana*). The hedges form garden boundaries and as such are not considered important or protected as defined by *The Hedgerow Regulations 1997*. This habitat is assessed as being of **site value** only.

Introduced Shrubs

- 4.2.7 The gardens contain a variety of introduced shrubs and perennials. The largest patches of this habitat are several stands of large bamboo (*Fargesia sp.*). Other species include *Camellia sp.*; *Rhododendron sp.*; *Rosa sp.*; and *Buxus sempervirens*. This habitat is assessed as being of **site value**.

4.3 Protected Species Assessment

Amphibians

Desk Study

- 4.3.1 There is a single record of Great Crested Newt (*Triturus cristatus*) recorded from previous surveys c.2.0 km from the site. Great Crested Newts are protected under *The Conservation of Habitats and Species Regulations 2017*. It is an offence for anyone to intentionally kill, injure or disturb a Great Crested Newt or to damage, destroy or block access to areas of suitable habitat.

Site Assessment

- 4.3.2 There are no ponds within 250m of the site and no suitable terrestrial habitat on site. Therefore, habitats onsite are considered to be of **negligible value** to amphibians.

Reptiles*Desk Study*

- 4.3.3 There are limited records of reptiles within 2km of the site, with Slow Worm (*Anguis fragilis*) and Grass Snake (*Natrix helvetica*) recorded. All species of UK reptile are protected against reckless or intentional killing or injuring under *The Wildlife and Countryside Act 1981 (as amended)*.

Site Assessment

- 4.3.4 There is very limited suitable habitat for reptiles on site with grassland being well maintained. Several small compost and brash piles are noted but these are isolated from suitable habitat and appear recent. Therefore, habitats onsite are considered to be of **negligible value** to reptiles.

Bats*Desk Study*

- 4.3.5 Ten bat species have been recorded within 5km of the site including: Common (*Pipistrellus pipistrellus*), Soprano (*Pipistrellus pygmaeus*) and Nathusius' (*Pipistrellus nathusii*) Pipistrelle, Western Barbastelle (*Barbastella barbastella*), Serotine (*Eptesicus serotinus*), Natterer's bat (*Myotis nattereri*), Whiskered/Brandt's bat (*Myotis mystacinus/brandtii*), Daubenton's bat (*Myotis daubentonii*), Brown Long-eared bat (*Plecotus auratus*) and Noctule bat (*Nyctalus noctula*).

Site Assessment

- 4.3.6 No trees were identified on site as offering bat roost suitability. The gardens lack significant botanical diversity or structure and provide very limited foraging or commuting potential for bats. Two garden sheds (B1, B2) and a summerhouse (B3) are present within the gardens. The sheds are small timber structures with felt roofs and windows. The summerhouse is a timber structure with large wooden windows. B1-B3 are all considered to offer 'negligible' bat roost potential. The site is of **site value** for bats.

Dormouse*Desk Study*

- 4.3.7 There are numerous records of Common Dormouse (*Muscardinus avellanarius*) within 2.0km of the site, mainly focussed within woodland around Eastergate and Walberton.

Site Assessment

- 4.3.8 The hedges are largely ornamental and lacking in significant forage plant species. The site is not connected to suitable dormouse habitat. Consequently, the site itself is of **negligible value** to dormice.

Badger*Desk Study*

- 4.3.9 There are multiple records of badger being present within 2km of the site.

Site Assessment

- 4.3.10 No evidence of badger was recorded within the site. The fences and hedges would likely prevent badgers from accessing the gardens, which offer very limited foraging potential. The area is considered to be of **negligible value** for commuting badgers.

Other Mammals

- 4.3.11 The gardens are likely to be used by hedgehogs.

Birds*Desk Study*

- 4.3.12 A total of 132 no. bird species have been recorded within 2.0km of the site.

Site Assessment

- 4.3.13 The trees and hedges provide good nesting habitat for garden birds. The grassland is too well maintained to offer potential for farmland or ground nesting birds. The habitats offer little potential for foraging birds. The area overall is likely to be of **site value** to breeding / foraging birds.

Invertebrates*Desk Study*

- 4.3.14 The data search returned records of numerous species of invertebrates within 2.0km.

Site Assessment

- 4.3.15 Suitable habitat for invertebrates is limited within the site. The site in general lacks the floral diversity to support a good range of invertebrates and is likely to be of value within the **site area only**.

Others

- 4.3.16 No suitable habitat for any other protected species was recorded on site.

4.4 Survey Constraints / Considerations

- 4.4.1 No major constraints which would cast doubt on these results were encountered, full access was available to all areas of the site.

5.0 ASSESSMENT OF EFFECTS AND MITIGATION MEASURES**5.1 Designated Sites***Potential Impacts*

- 5.1.1 The site is located within the *Impact Risk Zone of Fairmile bottom & Eartham Pit Boxgrove Sites of Special Scientific Interest*. The site is of such small scale and distance from the SSSIs that any impacts would be minimal. Recreational disturbance increases upon the SSSIs will be minimal.

Mitigation and Compensation

- 5.1.2 The proposals may need to contribute to a Community Infrastructure Levy (CIL) if this comes into force within Arun District prior to application.

Residual Impacts

- 5.1.3 **No likely significant effect** upon surrounding European designated sites will arise from the proposed development.

5.2 Habitats

Potential Impacts

- 5.2.1 Development proposals will result in the loss of amenity grassland and a small number of garden trees, intact, species-poor hedge and introduced shrubs. Given the scale of the development the potential impacts would be of minor impact magnitude and likely to occur.

Mitigation and Compensation

- 5.2.2 All construction will be undertaken in accordance with best practise guidelines with regards to control of dust, noise and emissions. All light spill onto surrounding hedge lines will be avoided. Storage of fuel etc will be avoided adjacent to hedgerows. All trees are to be protected in accordance with BS5837:2012 'Trees in Relation to Design, Demolition and Construction'.
- 5.2.3 Habitats lost on the site will be replaced like-for-like wherever possible. The proposed scheme will include habitat enhancements such as native planting to include fruit and nut producing species to provide a foraging resource for birds and mammals.

Residual Impacts

- 5.2.4 Once mitigation is taken into account, the impacts will be **negligible**.

5.3 Amphibians

Potential Impacts

- 5.3.1 None predicted, the site is of negligible value to amphibians.

Mitigation and Compensation

- 5.3.2 None required. In the highly unlikely event that GCN are found on site, all works will cease until a suitably qualified ecologist has been contacted for advice. Compost heaps will be manually cleared to allow common amphibians to disperse.

Residual Impacts

- 5.3.3 The impacts will be negligible and **non-significant**.

5.4 Reptiles*Potential Impacts*

- 5.4.1 None predicted, the site is of negligible value to reptiles.

Mitigation and Compensation

- 5.4.2 None required. In the highly unlikely event that reptiles are found on site, all works will cease until a suitably qualified ecologist has been contacted for advice.

Residual Impacts

- 5.4.3 The impacts will be negligible and **non-significant**.

5.5 Bats*Potential Impacts*

- 5.5.1 In the absence of mitigation impacts may include loss of foraging areas, increased predation and killing or injuring of individual bats. Impacts would be of minor impact magnitude and likely to occur.

Mitigation and Compensation

- 5.5.2 Light spill onto the hedgerows will be avoided. Sections of hedge lost will be replaced within the scheme. The proposed scheme will include habitat enhancements such as native planting to include fruit and nut producing species to provide a foraging resource for invertebrates and therefore bats.

Residual Impacts

- 5.5.3 The overall impact of the scheme will be **negligible**.

5.6 Dormouse

Potential Impacts

- 5.6.1 None predicted, the site is of negligible value to dormice.

Mitigation and Compensation

- 5.6.2 None required.

Residual Impacts

- 5.6.3 No impacts predicted.

5.7 Badgers

Potential Impacts

- 5.7.1 In the absence of mitigation, impacts would include the trapping of badgers in footings/trenches, fragmentation of habitat and disruption of commuting corridors. Impacts would be of low impact magnitude and unlikely to occur.

Mitigation and Compensation

- 5.7.2 Any trenches will be covered or have a ramp installed overnight to prevent any mammals becoming trapped. Commuting corridors around the margins of the site will be retained.

Residual Impacts

- 5.7.3 The overall impact of the scheme will be **negligible, non-significant**.

5.8 Breeding Birds

Potential Impacts

- 5.8.1 In the absence of avoidance / mitigation, the development could result in the damage / destruction of a bird nest. Impacts would be of minor impact magnitude and unlikely to occur.

Mitigation and Compensation

- 5.8.2 Clearance of any hedges or trees will be undertaken outside the bird nesting season (*season: March-August inclusive*). Should this not be possible, vegetation / buildings will be checked prior to removal by a Suitably Qualified Ecologist to ensure no active nests are present.

Residual Impacts

- 5.8.3 The overall impact of the scheme will be **negligible, non-significant**.

5.10 Invertebrates*Potential Impacts*

- 5.9.1 None predicted, current land-use is unsuitable for a diverse invertebrate assemblage. Common invertebrates may utilise the scrub and woodland, however these are being retained within the proposals.

Mitigation and Compensation

- 5.9.2 The proposed scheme will include habitat enhancements such as native planting to include fruit and nut producing species to provide a foraging resource for invertebrates

Residual Impacts

- 5.9.3 The overall impact of the scheme will be **negligible, non-significant**.

6.0 ECOLOGICAL ENHANCEMENTS

6.1 The design of any proposed development should consider ecological enhancements for the benefit of wildlife in line with the *National Planning Policy Framework* and *Local Planning Policy*. Ecological enhancements which will be included as part of development proposals include

- The use of night-scented species and pale flowers to increase bat foraging potential across site, such as evening primrose (*Oenothera fruticosa*); cornflower (*Centaurea cyanus*); knapweed (*Centaurea nigra*); yarrow (*Achillea millefolium*); honeysuckle (*Lonicera*); and lavenders (*Lavandula*);
- The provision of nesting boxes for a variety of bird species within new buildings;
- Bat roost opportunities will be provided through the installation of bat boxes to the southern aspect of new buildings or mature trees;
- Use of a sympathetic lighting scheme across the site, with lighting angled down and away from surrounding trees and hedgerows;
- Native fruit and nut producing species will be utilised within the scheme to increase the foraging resource for birds and mammals;

7.0 CONCLUSIONS

7.1 The existing site is formed of amenity grassland and scattered trees surrounded by hardstanding, intact species-poor hedges and introduced shrubs. The site itself is of **low ecological value** with no habitats of interest noted.

7.2 Once avoidance and mitigation measures have been taken into account, the impacts of the planned development upon biodiversity will be **negligible, non-significant** with proposed ecological enhancements resulting in no net loss in biodiversity in line with national planning policy guidance.

8.0 REFERENCES

JNCC: Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit; (2003);

Collins J (ed): Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd ed.) The Bat Conservation Trust (2016);

Mitchell-Jones and McLeish: Bat Workers Manual; JNCC, 3rd Edition (2004);

Streeter, D.: The Most Complete Guide to the Flowers of Britain and Ireland; Harper Collins, London (2010);

www.magic.gov.uk.

Table No. 03 – Species Lists**Trees and Hedges**

Common Name	Scientific Name	DAFOR
Alder	<i>Alnus glutinosa</i>	O
Apple	<i>Malus sp.</i>	O
Ash	<i>Fraxinus excelsior</i>	R
Boxelder	<i>Acer negundo</i>	R
Cherry Laurel	<i>Prunus laurocerasus</i>	LD
Eucalyptus	<i>Eucalyptus sp.</i>	R
Field Maple	<i>Acer campestre</i>	LF
Fir	<i>Abies sp.</i>	R
Garden Privet	<i>Ligustrum ovalifolium</i>	LD
Hawthorn	<i>Crataegus monogyna</i>	LF
Hazel	<i>Corylus avellana</i>	O
Holly	<i>Ilex aquifolium</i>	LF
Hornbeam	<i>Carpinus betulus</i>	R
Pedunculate Oak	<i>Quercus robur</i>	O
Spruce	<i>Picea sp.</i>	LF
Yew	<i>Taxus baccata</i>	O

Amenity Grassland

Common Name	Scientific Name	DAFOR
Bluebell	<i>Hyacinthoides non-scripta</i>	O
Broadleaf Plantain	<i>Plantago major</i>	R
Cocksfoot	<i>Dactylis glomerata</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	LF
Daffodil	<i>Narcissus sp.</i>	O
Daisy	<i>Bellis perennis</i>	LA
Dandelion	<i>Taraxacum officinale</i>	O
Dock	<i>Rumex obtusifolius</i>	R
Dovesfoot Cranesbill	<i>Geranium mole</i>	F
Fescue	<i>Festuca sp.</i>	O
Ground Elder	<i>Aegopodium podagraria</i>	O
Ground Ivy	<i>Glechoma hederacea</i>	O
Herb Robert	<i>Geranium robertianum</i>	F
Moss	<i>Moss sp.</i>	LF
Pendulous Sedge	<i>Carex pendula</i>	O
Perennial Rye Grass	<i>Lolium perenne</i>	D
Primrose	<i>Primula vulgaris</i>	LF
White Clover	<i>Trifolium repens</i>	O

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Introduced Shrubs

Common Name	Scientific Name	DAFOR
Bamboo	<i>Fargesia sp.</i>	LD
Bay Laurel	<i>Laurus nobilis</i>	O
Box	<i>Buxus sempervirens</i>	O
Butterfly Bush	<i>Buddleia davidii</i>	R
California Lilac	<i>Ceanothus sp.</i>	O
Camellia	<i>Camellia japonica</i>	LF
Cheesewood	<i>Pittosporum tenuifolium</i>	R
Clematis	<i>Clematis sp.</i>	O
Cotoneaster	<i>Cotoneaster sp.</i>	R
Elder	<i>Sambucus sp.</i>	R
Elwood Cypress	<i>Chamaecyparis lawsoniana</i> 'Ellwoodii'	O
Hibiscus	<i>Hibiscus sp.</i>	R
Japanese Laurel	<i>Aucuba japonica</i>	R
Japanese Spindle	<i>Euonymus japonicus</i>	R
Magnolia	<i>Magnolia sp.</i>	R
Mexican Orange Blossom	<i>Choisya ternata</i>	R
Pampas Grass	<i>Cortaderia selloana</i>	R
Rhododendron	<i>Rhododendron sp.</i>	LF
Rose	<i>Rosa sp.</i>	F
Skimmia	<i>Skimmia japonica</i>	R

D – Dominant; A – Abundant; F – Frequent; O – Occasional; R – Rare; L – Locally

Appendix A – Site Photographs