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# Code for Sustainable Homes Compliant Ecological Assessment for Development at Bicester Eco Town (Phase 2) Areas 1-8, Bicester, Oxfordshire.

On behalf of:

**Hill Partnerships Ltd.**
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# Figures, Photographs & Tables

# 0 SUMMARY

0.1 Skilled Ecology Consultancy Ltd. was commissioned by Hill Partnerships Ltd. to undertake a Code for Sustainable Homes compliant Ecological Assessment at Bicester Eco Village (Phase 2), Bicester, Oxfordshire. The report is required to assess for protected species issues and credit achievement under Eco 1 – 4.

0.2 The initial ecological survey was conducted on the 9th March 2016 by experienced ecologist Roger Spring BSc MCIEEM (licensed to survey for bats and great crested newts *Triturus cristatus*) and consisted of an inspection for preferred habitat types and signs and evidence of protected, priority and other notable species, such as for bats and nesting birds following Natural England (English Nature) Guidelines. A full reptile survey was also undertaken between March and April 2016. A local biological record search was undertaken to support the report. The surrounding habitat was noted to enable findings to be placed into ecological context.

0.3 The site was separated into eight areas. Areas 1, 2 and 3 were largely recently disturbed bare ground with a few patches of ruderal herbaceous plants and grass. Area 4 was recently disturbed and dominated by ruderal herbaceous plants and grasses. Areas 6, 7 and 8 were also heavily disturbed with bare ground, though also sections of tall, species poor improved grassland. Area 5 was mostly tall, species poor improved grassland with a small section of bare/disturbed ground. Hedgerows were present on the western boundary of Area 5, northern boundaries of Areas 6, 7 and 8 and the south western boundary of Area 1. A river/stream ran through the site. The river corridor included a main badger sett and was already separated from the site by heras fencing and would not be impacted by development. No reptiles were found during the full reptile survey.

0.4 The construction zone was considered low in ecological value with common and widespread habitats and minimal potential for notable or protected species.

*Key Recommendations:*

- Protection of boundary hedgerows and continued protection of boundary river corridor;
- Native species planting;
- Lighting minimisation for nocturnal wildlife (bats & badgers etc.).

*Additional Recommendations:*

- Bird boxes, bat boxes, invertebrate boxes and green roof, as already included in the landscaping design;

0.5 With all of the key recommendations and 30% of the additional recommendations followed, the development would succeed in minimising impact to biodiversity and the ecological value of the site would increase. Credits achieved for Eco1 – Eco4 would be six.

# 1 INTRODUCTION

## 1.1 Background

1.1.1 Skilled Ecology Consultancy Ltd. was commissioned by Hill Partnerships Ltd. to undertake a Code for Sustainable Homes compliant Ecological Assessment at Bicester Eco Village (Phase 2), Bicester, Oxfordshire.

1.1.2 The report is required to assess for protected species issues and credit achievement under Eco 1 – 4.

1.1.3 This assessment is informed by a full ecological survey by Skilled Ecology Consultancy Ltd. on the 9th March 2016 following the Charted Institute for Ecology & Environmental Management (CIEEM) Guidelines, as well as a full reptile survey by Skilled Ecology Consultancy Ltd. in March and April 2016 following Natural England and Froglife Guidelines.

1.1.4 The assessment is also informed by past ecological surveys of the site including an Initial Ecological Assessment and further invertebrate, reptile, badger and bat surveys at the site by Hyder Consulting (UK) Limited in 2012.

1.1.5 The assessment was also informed by current development plans, including landscaping plans and the planting schedule by PRP Architects LLP.

1.1.6 Wildlife such as bats and nesting birds are protected by law. Any protected or priority species are also a material consideration for individual planning decisions under National Planning Policy Framework, 2012 (NPPF) (ODPM, 2005).

# 2 METHODOLOGY

## 2.1 Desk Study

2.1.1 A local record search was undertaken through the Thames Valley Environmental Records Centre to check for any local records of protected, priority or rare species.

2.1.2 A search of the Multi-agency Geographical Information for the Countryside (MAGIC) was also conducted to check for statutory nature conservation sites.

2.1.3 These results were then combined with the findings of the site survey in order to assess the risk of ecology issues, relevant to planning, occurring on the site.

## 2.2 Study Limitations

2.2.1 The site and surrounds were assessed based on their condition at the time of the survey visit.

2.2.2 March is a suitable time of year for botanical assessment, though some annuals and early flower species many not be visible or identifiable to species level.

## 2.3 Initial Site Survey

*Habitats and Surroundings*

2.3.1 The site was visited on the 9th March 2016 to survey for ecology issues. This included the following:

- Noting the suitability of habitats present on site with regard to protected, priority and other notable species, such as for bats, great crested newts, reptiles, badgers, nesting birds and Birds of Conservation Concern (BoCC);
- Assessing the habitats surrounding the site and in the local area;
- Direct survey for evidence of protected species as far as possible, e.g. for bats and badgers *Meles meles*;
- Checking for invasive species such as Japanese Knotweed *Fallopia japonica* and Giant Hogweed *Heracleum mantegazzianum*;
- Assessing the potential of the site to achieve credits for Eco1 – Eco 4 under the Code for Sustainable Homes Technical Guidance.

*Bat Check*

2.3.2 The assessment for bats was conducted by an experienced ecologist, licensed by Natural England to disturb and take bats for science and education. The survey was undertaken in daylight, using a high powered torch, ladder and digital camera, to look over trees externally. The survey methods followed English Nature Bat Mitigation Guidelines (English Nature, 2004) and Bat Conservation Trust Best Practice Guidelines, therefore considerations were:

- the availability of access to roosts for bats;
- the presence and suitability of cracks, crevices, gaps and other places as roosts;
- signs of bat activity or presence such as; the bats themselves, droppings, grease marks, scratch marks, urine spatter and prey remains.

2.3.3 The availability of access to roosts was assessed based upon the presence of holes large enough to allow entry to bats and lack of cobwebs and dirt.

2.3.4 The outside of trees were inspected for gaps, cavities, access points and crevices, and any signs of bats (droppings, staining, urine spatter), in accordance with Natural England (English Nature) guidelines (English Nature, 2004).

*Reptiles & Amphibians*

2.3.5 The site was inspected for potentially suitable terrestrial habitats for foraging, sheltering or dispersing amphibians and foraging, sheltering, breeding and basking habitat for reptiles. High quality terrestrial refuges searched for, included:

- Log piles & rockeries,
- Thick leaf litter,
- Compost & manure heaps,
- Mammal burrows,
- Deep ground cracks;
- Refuse suitable for shelter;
- Tussock grassland;
- Hedgerows and any other potential habitats.

*Badgers & Other Mammals*

2.3.6 Signs and evidence of badgers and other protected, priority and rare mammal activity searched for included the following:

- Setts, holes and burrows;
- Foraging holes and other diggings;
- Latrines, droppings, spraints and scats;
- Mammal hairs;
- Paw prints and other tracks;
- Feeding remains;
- Scratch marks, bedding material and other signs.

## 2.4 Further Reptile Survey

*Reptiles*

2.4.1 The initial ecological assessment on the 9th March 2016 discovered potentially suitable reptile habitat in the form of tall grassland with tussocks and mammal holes with hedgerow boundaries, particularly notable in Areas 5, 6, 7 and 8. It was also noted that common lizards had been recorded in Bicester. Therefore, a full presence/absence reptile survey was undertaken following Natural England and Froglife guidelines between March and April 2016. The survey involved laying reptile mats (squares of roofing felt) across Areas 5, 6, 7 and 8 and inspecting the site and mats for reptiles during suitable weather conditions on seven occasions.

# 3 RESULTS AND RISK

## 3.1 Site Description & Location

3.1.1 The site was separated into eight areas. Areas 1, 2 and 3 were largely recently disturbed bare ground with a few patches of ruderal herbaceous plants and grass. Area 4 was recently disturbed and dominated by ruderal herbaceous plants and grasses. Areas 6, 7 and 8 were also heavily disturbed with bare ground, though also section of tall, species poor improved grassland. Area 5 was mostly tall, species poor improved grassland with a small section of bare/disturbed ground. Hedgerows were present on the western boundary of Area 5, northern boundaries of Areas 6, 7 and 8 and the south western boundary of Area 1.

3.1.2 A river/stream ran through the site. The river corridor included a main badger sett and was already separated from the site by heras fencing and would not be impacted by development.

3.1.3 The site was positioned in a rural location close to the village of Bicester surrounded by cattle grazed fields with hedgerow boundaries.

## 3.2 Nature Conservation Sites

3.2.1 Statutory nature conservation sites within 2km include:

- Bure Park Local Nature Reserve (LNR) located approximately 1.1 km south and designated for its grassland, woodland and scrub habitats, as well as pond supporting great crested newts (MAGIC, 2016).

- Ardley Cutting & Quarry Site of Special Scientific Interest (SSSI) located approximately 1.9km west and designated for its limestone grassland, woodland, scrub and ponds (MAGIC, 2016).

## 3.3 Data Search

3.3.1 Summary of local biological records for Bicester provided by the Thames Valley Environmental Records Centre (TVERC).

**Table 1: Summary data search for Bicester.**

| Species | Approximate Location & Year |
|---|---|
| Grizzled skipper butterfly (UK priority species) | Bicester 1997. |
| Small heath butterfly (UK priority) | Ardley Cutting & Quarry SSSI 1983. |
| Great crested newt (EU & UK protected) | Harebell Way Bicester. |
| Grey partridge (red-listed & priority species) | Ardley Cutting & Quarry SSSI 1983. |
| Common lizard (UK protected) | Barry Avenue Bicester, 2002. |
| Badger (UK protected) | Bicester, 2010. |
| Hedgehog (UK priority species) | Bicester, 2014. |
| Barn owl (schedule 1 protected) | Ardley Cutting & Quarry SSSI 1983. |

## 3.4 Protected, Priority & Rare Species

*Vegetation & Habitats*

3.4.1 Areas 1, 2 and 3 supported disturbed ground with ruderal herbaceous plants including; annual meadow grass *Poa annua*, cleavers *Galium aparine*, red deadnettle *Lamium purpureum*, groundsel *Senecio vulgaris*, common mouse-ear *Cerastium fontanum*, sowthistle *Sonchus oleraceus*, cut-leaved cranesbill *Geranium dissectum*, chickweed *Stellaria media*, spear thistle *Cirsium vulgare*, cocksfoot *Dactylis glomerata*, field speedwell *Veronica persica*, daisy *Bellis perennis*, nettle *Urtica dioica*, cow parsley *Anthriscus sylvestris*, broad-leaved dock *Rumex obtusifolius* and hedgerow cranesbill *Geranium pyrenaicum*. A hedgerow boundary was present south west of Area1. A river was present on the north eastern boundary. Neither feature is proposed for impact.

3.4.2 Area 4 was disturbed ground habitats with short ruderal herbaceous plants and grass including; annual meadow grass Poa annua, cleavers *Galium aparine*, daisy *Bellis perennis*, red deadnettle *Lamium purpureum*, ground ivy *Glechoma hederacea*, chickweed *Stellaria media*, creeping thistle *Cirsium arvense*, weld *Reseda luteola*, spear thistle *Cirsium vulgare*, sowthistle *Sonchus oleraceus*, field speedwell *Veronica persica*, herb Robert *Geranium robertianum*, couch grass *Elymus repens*, field pennycress *Thlaspi arvense* and cocksfoot *Dactylis glomerata*.

3.4.3 Area 5 supported mostly tall, species poor, improved grassland and small sections of disturbed ground include; cocksfoot *Dactylis glomerata*, broad-leaved dock *Rumex obtusifolius*, creeping thistle *Cirsium arvense*, spear thistle *Cirsium vulgare*, nettle Urtica dioica, cut-leaved cranesbill Geranium dissectum, ground ivy *Glechoma hederacea* and perennial rye grass *Lolium*

*perenne*. A hedgerow was present on the western boundary. The hedgerow is proposed for retention.

3.4.4 Areas 6, 7 & 8 included sections of disturbed ground, as well as areas of tall, improved species poor grassland, as above. A hedgerow is present on the north western boundary. The hedgerow is proposed for retention.

3.4.5 Please note that before habitats were disturbed the site was entirely species poor, improved grassland as found in sections of Areas 5, 6,7,8.

3.4.6 No Schedule 9 invasive plants, protected, rare or priority plants were present on the site. No priority habitats were proposed for impact.

*Bats*

3.4.7 No trees or buildings potentially suitable for roosting bats were present on the site or proposed for impact as part of the development.

3.4.8 The construction zone was low in suitability for foraging or commuting bats, though boundary habitats, including hedgerows and the river/stream (not proposed for impact), were highly suitable for foraging and commuting bats.

*Badgers*

3.4.9 The construction zone was low in suitability for badgers. However, immediately adjacent to the site is a main badger sett which has been separated from the construction zone by heras fencing at a designated safe distance from construction activities (detailed in previous ecology reports by Hyder Consulting (UK) Limited). A small quantity of badger foraging activity was observed within the construction zone in Area 5 close to the stream adjacent to the badger sett. No badger latrines or trails were observed on the construction zone indicating the construction is not the primary foraging or commuting resource for badgers.

*Other Protected or Priority Mammals*

3.4.10 Habitats on the site were low in suitability for any other protected or priority mammals such as water voles, otters and hedgehogs etc.

3.4.11 Signs or evidence of any such species were not observed on the site or nearby.

*Reptiles*

3.4.12 Sections of habitats present in Areas 5, 6, 7 and 8 (tall grassland) were potentially suitable for widespread reptiles such as common lizards and grass snakes. Common lizards have been recorded in Bicester (TVERC, 2016). A reptile survey was undertaken on the site in September 2012 which failed to find reptiles. However, the September 2012 survey is out-of-date, therefore, it was considered necessary to re-survey the site for the presence or absence of reptiles to, if necessary, inform mitigation.

3.4.13 The full reptile survey undertaken in March and April followed standard survey guidelines and failed to find reptiles on the site (see Table 2 below).

**Table 2: Reptile survey results for the site near Bicester, Oxon. March & April 2016.**

| Visit number | Date & Time | Weather | Temperature | Findings | Surveyor | Notes |
|---|---|---|---|---|---|---|
| 0 | 15/03/16 | *Dry, 70% cloud, cool. Wind 1-2* | 9 | 0 | RS, TR | 40 mats laid |
| 1 | 22/03/16 at 11:50 | Dry, sunny intervals (Hazy), cloud 95%, wind: 1 | 9 | 0 | TR | Mats warm |
| 2 | 02/04/16 at 11:15 | Dry, sunny, cloud 10%, wind: 1.5 | 13 | 0 | TR | |
| 3 | 05/04/16 at 12:30 | Dry, sunny intervals, cloud 60%, wind: 1 | 12 | 0 | TR | |
| 4 | 11/04/16 at 12:30 | Mainly dry occasional light rain, sunny intervals, cloud 100%, wind: 0 | 13 | 0 | TR | |
| 5 | 12/04/16 at 13:00 | No rain, hazy sunshine, cloud 90% (light), wind: 1.5 | 12 | 0 | TR | Wet grass, dry under mats. Brown hare observed crossing the site. |
| 6 | 13/04/16 at 12:00 | No rain, sunny, cloud 50%, wind: 0.5 | 16 | 0 | TR | Damp grass, dry under mats. |
| 7 | 11/04/16 at 13:20 | No rain, hazy sunshine, cloud 75%, wind: 1 | 14 | 0 | TR | |

**Note:**
**RS – Roger Spring**
**TR – Tommy Root**
**Wind - Beaufort scale**

*Great Crested Newts & Other Amphibians*

3.4.14 Sections of Areas 5, 6, 7 and 8 were potentially suitable as terrestrial habitat for great crested newts and other amphibians. Great created newts have been recorded approximately 1.1km south of the site (TVERC, 2016).

3.4.15 However, no ponds (essential for breeding habitat) were identified within 500m of the site that were not separated by significant dispersal obstacles such as main roads (Ordnance Survey Map, 2015).

*Birds*

3.4.1 Birds observed or heard from the site included; pheasant *Phasianus colchicus*, goldfinch *Carduelis carduelis*, great tit *Parus major*, wren *Troglodytes troglodytes*, mallard *Anas platyrhynchos*, carrion crow *Corvus corone*, blue tit *Cyanistes caeruleus*.

3.4.2 No protected or priority birds were observed or heard from the site. All birds were common and widespread species and green-listed Birds of Conservation Concern (BoCC), with the exception of mallard which is an amber-listed BoCC species.

3.4.3 The BoCC ratings are summarised as follows:

- Red-listed - highest conservation concern;
- Amber-listed - moderate conservation concern;
- Green-listed - least conservation concern.

3.4.4 Nesting bird activity was not observed on the site.

3.4.5 Habitats proposed for impact were common and widespread, low in structural diversity and low in botanical diversity. Consequently, the habitats were low in suitability for nesting and foraging birds. The boundary hedgerows and river corridor were far more suitable for birds and these features are proposed for retention and protection.

*Invertebrates*

3.4.6 Invertebrate surveys have been undertaken at the site, particularly concentrating on aquatic invertebrates in 2012.

3.4.7 Phase 2 of the development (primary focus of this report) involved construction works within grassland and disturbed habitats which are common and widespread habitats with low structural and botanical diversity. Consequently, these habitats are low in suitability for rare, notable and protected invertebrates. No rare, notable or protected invertebrates were observed during the surveys in March and April.

*Other Protected & Priority Species*

3.4.8 No signs or evidence of any other protected, priority or notable species were observed on the site, nor were there any particularly suitable habitats present for such species.

# 4 DISCUSSION OF RISK AND LEGISLATION

## 4.1 Protected & Priority Species

*Bats*

4.1.1 Bats are protected under the Wildlife and Countryside Act 1981 as amended by the Countryside Rights of Way Act 2000 and under the Conservation of Habitats and Species Regulations 2010. Some bats are also UK priority species. A summary of the offences likely to be relevant to development are:

- Intentionally or deliberately kill, injure or take a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection, whether bats are present or not;
- Damage or destroy a breeding site or resting place of any bat;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection;
- Deliberately disturb a bat anywhere.

4.1.2 The site was absent in potential roosting habitat and habitats proposed for impact were low in suitability for foraging or commuting bats. Habitats adjacent to the site (hedgerows and the river corridor) were highly suitable for foraging and commuting bats.

4.1.3 The risk of significant impact to bats, bat roosts or local bat conservation was very low. Therefore, further bat surveys or mitigation were considered unnecessary.

4.1.4 However, to minimise any residual risk of impact to foraging and commuting bats using adjacent habitats, precautionary measures, detailed later in the report, should be followed.

*Badgers*

4.1.5 A main badger sett is positioned within [redacted]The sett has already been the subject of surveys and mitigation for protection (Hyder Consulting (UK) Limited, 2012). Heras fencing is in place to protect the sett and foraging grounds. The sett did not appear to have increased in size or moved closer to the proposed development of Phase 2.

4.1.6 Therefore, additional mitigation or further surveys were considered unnecessary. However, precautionary measures, detailed later in the report, should be followed to minimise any residual risk of impact to badgers.

*Other Proposed & Priority Mammals*

4.1.7 Habitats on the site were low in suitability for other protected or priority mammal species such as water voles, otters and hedgehogs etc.. No signs or evidence of such species were observed.

4.1.8 Therefore, further surveys or mitigation for other protected or priority mammals were considered unnecessary.

*Reptiles & Amphibians*

4.1.9 Widespread reptile species including, grass snake, adder, slow worm and common lizard, are protected from intentional killing and injuring under the Wildlife and Countryside Act 1981. They are also UK priority species.

4.1.10 Sections of the site in Areas 5,6,7 and 8 were potentially suitable for reptiles, reptiles have been recorded locally. However, surveys on the site in 2012 failed to find reptiles and survey by Skilled Ecology Consultancy Ltd. in March and April 2016 also failed to find reptiles.

4.1.11 Therefore, the risk of presence and potential for impact to reptiles was very low.

4.1.12 Reptiles mitigation was considered unnecessary.

*Great Crested Newts & Other Amphibians*

4.1.13 Great crested newts are protected under the Wildlife and Countryside Act 1981 as amended by the Countryside Rights of Way Act 2000, and the Conservation of Habitats and Species Regulations 2010. Great crested newts are also UK priority species. A summary of the offences likely to be relevant to development are:

- Intentionally or deliberately capture or kill;
- Intentionally injure;
- Deliberately disturb, or intentionally or recklessly disturb in a place of shelter or protection;
- Damage or destroy a breeding site or resting place;
- Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.

4.1.14 Common toads are UK priority species and as such are, in principle a material consideration for individual planning applications.

4.1.15 The site was potentially suitable, though not optimal as terrestrial habitat for great crested newts and other amphibians in Areas 5, 6, 7 and 8 and great crested newts have been recorded approximately 1.1km south of the site.

However, the distance of the local record is significant and it is highly unlikely that amphibians would travel that distance for terrestrial habitat. Furthermore, no local ponds were present within 500m of the site that were not separated by significant dispersal obstacles such as roads and housing.

4.1.16 Therefore, the risk of presence of great crested newts or a significant population of any other amphibian species on the site and the risk of such species being impacted by the proposed development was very low.

4.1.17 Further great crested newt or other amphibian surveys and mitigation were considered unnecessary.

*Birds*

4.1.18 Wild birds are protected under the Wildlife and Countryside Act 1981 and, with certain exceptions (e.g. pest species) in certain situations, it is an offence to intentionally:

- Kill or injure any wild bird;
- Take, damage or destroy the nest of any wild bird while it is in use or being built;
- Take or destroy the egg of any wild bird.

4.1.19 Some bird species (such as black redstarts) are also specially protected under Schedule 1 of the Wildlife and Countryside Act 1981 and others are y UK priority species.

4.1.20 Given the rural location it was considered possible that the occasional protected or priority bird may visit the site. However, given the common and widespread habitats present and relatively low suitability of this habitat for foraging or nesting by birds, the risk of significant use by protected, priority or other notable bird populations was very low.

4.1.21 Therefore, further bird surveys or mitigation were considered unnecessary. However, to minimise any residual risk of impact to birds, precautionary measures, detailed later in the report, should be followed.

*Invertebrates*

4.1.22 Habitats proposed for impact were low in suitability for an assemblage of invertebrates of conservation concern. The proposal to retain hedgerows and the river corridor would retain the highest value habitats for invertebrates locally. The proposal for new soft landscaping in the development would add botanical diversity and structural diversity to the site which could increase local invertebrate diversity over time.

*Other Protected & Priority species*

4.1.23 It was considered that there was negligible risk of other protected, priority or notable species occurring on the site or being impacted by the proposed development.

## 4.2 Other Issues

*Sensitive Habitats*

4.2.1 The proposed construction zone (excluding boundary habitats) was low in ecological value and located a significant distance from any designated nature conservation sites. This combined with the proposed protection for sensitive habitats on the site boundary (river corridor and hedgerows) meant the risk of significant impact to designated sites or sensitive habitats was very low.

4.2.2 Further ecological recommendations above those already detailed were considered unnecessary.

*Invasive Non-native Plants*

4.2.3 No Schedule 9 invasive plants were observed on the site. Therefore, it was considered unlikely that the development would cause a Schedule 9 invasive plant to spread and infringe the relevant legislation.

# 5 RECOMMENDATIONS

## 5.1 Key Recommendations

5.1.1 To minimise the risk of disturbance to nocturnal wildlife such as bats, badgers, hedgehogs etc. new external lighting on the site should be minimised and LED lamps should be used. Lighting should be directed downward to avoid illumination of boundary features such as hedgerows and the river corridor. Where possible movement sensors should be used to minimise the length of time the site is illuminated.

5.1.2 To prevent unnecessary impact on hedgerows and the river corridor these features should be protected with heras fencing throughout development and then they should be fenced off from new gardens to prevent future homeowners from reducing the hedgerows or impacting vegetation in the river corridor.

5.1.3 It is understood that hedgerows would not be removed. However, if reduction is required then to prevent harm to nesting birds, reduction should occur outside of the main bird nesting season (March until the end of August).

5.1.4 For the benefit of local wildlife native and/or wildlife attracting shrubs and trees should be used in the soft landscaping (as detailed by PRP Architects LLP).

## 5.2 Additional Recommendations

5.2.1 Hyder Consulting (UK) Limited has already drafted a wildlife enhancement plan including 50 invertebrate boxes, 40 bat boxes, 20 swift boxes, 10 swallow boxes, 10 house sparrow boxes, 10 house martin boxes and 4 starling boxes.

5.2.2 In addition, wildflower meadow green roofs have also been included in the design resulting in an additional 274m2 of wildflower meadow on the site.

5.2.3 The above enhancements are considered sufficient for the purposes of Code for Sustainable Homes and have already been included in the design plans. No additional enhancement recommendations were considered necessary

## 5.3 Eco 1 Ecological Value of Site

5.3.1 The proposed construction zone was low in ecological value based on the limited diversity of habitats and limited botanical diversity of habitats present (species poor grassland and disturbed land) with no hedgerows, ponds, trees or other high value habitats present or proposed for impact. In addition, the construction zone has been found to be of minimal value for protected, priority or rare species.

5.3.2 Therefore, one credit could be awarded for this category.

## 5.4 Eco 2 Ecological Enhancement

5.4.1 Ecological enhancements have been recommended and if all of the key recommendations and 30% of the additional recommendations are followed, as detailed in plans one credit could be awarded for this category.

## 5.5 Eco 3 Protection of Ecological Features

5.5.1 No features of ecological value (trees, hedgerows ponds etc.) were present within the construction zone. Features of ecological value including hedgerows and a river corridor were present on the site boundary. These features are proposed for protection by following standard tree guidance provided within BS5837:2012 and heras fencing which is already present and creating a buffer between the construction zone and the river corridor.

5.5.2 With continued protection undertaken throughout the development one credit could be awarded for this category.

## 5.6 Eco 4 Change in Ecological Value

5.6.1 The ecological value of the site at the time of the survey was 8. By following the proposed development design the development would incur a slight increase in ecological value so that post development the ecological value of the site should be 11.65. Please see calculations supplied in the Ecological Report Template accompanying this document.

5.6.2 Therefore, three credits could be awarded for this category.

# 6 CONCLUSION

6.1 The ecological value of the site was low with common, widespread habitats and minimal potential for protected, priority or rare species. Protection of boundary features have been recommended and precautionary measures for protected species are also including in this report.

6.2 With all of the key recommendations and 30% of the additional recommendations followed as described, it was considered likely that the proposed development could proceed with minimal risk of harm to protected, priority or notable species.

6.3 By following the existing development proposal, landscaping scheme and this ecology report the development would achieve a slight increase in ecological value and five credits could be awarded for Eco 1 – Eco 4 (see Table 3 below).

**Table 3: Ecological credits for the CfSH development at Bicester Eco Village (Phase 2).**

| Category Description | Credit Reference | Possible Credits Achieved |
|---|---|---|
| Ecological Value of Site | Eco 1 | 1 |
| Ecological Enhancement | Eco 2 | 1 |
| Protection of Ecological Features | Eco 3 | 1 |
| Change in Ecological Value | Eco 4 | 3 |
| **Total credits with current design** | | **6** |

# 7 REFERENCES

Bat Conservation Trust (2007) *Bat surveys- Good Practise Guidelines*. Bat Conservation Trust, London.

Department for Communities and Local Government (2012). *National Planning Policy Framework, March 2012.* Bressenden Place, London.

English Nature (2004). *Bat Mitigation Guidelines Version 2004*. English Nature, Peterborough.

Hyder Consulting (UK) Limited (2012). *Ecological Assessments at Bicester Eco Village*. Hyder Consulting (UK) Limited, London.

Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000). *Evaluating the Suitability of Habitat for the Great Crested Newt* (*Triturus cristatus*). Herpetological Journal Vol. 10 pp. 143-155.

Office of the Deputy Prime Minister (2005). *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System*. Office of the Deputy Prime Minister, London.

Thames Valley Environmental Records Centre (2016). *2km Radius Local Record Search for Protected & Priority Species*. TVERC, Eynsham.

Internet reference- *www.magic.defra.gov.uk* (accessed in 2016).

# 8 APPENDICES

## 8.1 Appendix 1: Figures

**Figure 1: Proposed development at Bicester Eco Village (Phase 2).**

## 8.2 Appendix 2: Photographs

**Photograph 1: Area 1 on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 2: Area 2 on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 3: Area 3 including adjacent stream on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 4: Area 4 on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 5: Area 5 including boundary hedgerow on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 6: Area 6 & 7 on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 7: Area 7 & 8 on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 8: Reptile mats in position during the reptile survey in March and April on the site at Bicester Eco Village (Phase 2). 9th March 2016.**

**Photograph 9: Badger sett off site in the river corridor at Bicester Eco Village (Phase 2). 9th March 2016.**