



ecosupport

**Mayflower Way,  
Angmering**

BEMP

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**Client:**  
Crayfern Homes

9/12/2020

|                      |                                                                             |
|----------------------|-----------------------------------------------------------------------------|
| <b>Report</b>        | Biodiversity Enhancement & Mitigation Plan (BEMP)                           |
| <b>Site Name</b>     | Mayflower Way, Angmering                                                    |
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| <b>Client</b>        | Crayfern Homes                                                              |
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## 1.0 INTRODUCTION

### 1.1 Brief

Outline planning permission has been granted for the construction of 24 dwellings on a parcel of land to the north of Mayflower Way, Angmering (under planning application reference A/46/19/PL). This report is to address condition 13 included within the planning approval, which states:

*'Prior to commencement of development details of how the hedgerows on site, which are used by bats for commuting and foraging, are to be retained and enhanced for bats shall be submitted to and approved by the Local Planning Authority. These shall include a buffer strip around the hedgerows (5m) and fencing during construction to be used to ensure this area is undisturbed. Any gaps should also be filled in using native hedge species to improve connectivity. The development shall proceed in accordance with the details so approved.'*

The plans agreed as part of the planning permission granted involve the removal of all hedgerows and scattered trees on-site (see landscape and tree strategy plan L01). Therefore, this report focuses on the enhancement of the agreed reptile receptor and provides additional enhancement suggestions for the built environment elsewhere on-site.

This report should be read in conjunction with the Preliminary Ecological Appraisal (The Ecology Co-op, 2017).

### 1.2 Aim

The aim of this report is to devise a site wide Biodiversity Enhancements and Mitigation Plan to contribute towards a net gain for biodiversity post-development. This will ensure all features of ecological value and all legally protected species are protected, that their presence on site is retained in perpetuity, and to address the comments received from the council.

### 1.3 Site Description

The site consists of a 0.89-hectare parcel of land to the north of Mayflower Way, Angmering, West Sussex, BN16 4AY (centred on OS grid reference TQ 072033 (**Fig 1**)). The site is bounded to the north and east by industrial buildings with associated parking, the south by Mayflower Way and a parcel of grassland, and the west by a skate park. The wider environment is semi-urban with the site situated within the centre of the village of Angmering.

**Figure 1.** Redline location of the site (Google Maps, 2020).



## 2.0 LEGISLATION

### 2.1 Local Planning Policy

Adopted in July 2018 the Local Plan 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 these sites and the species and habitats contained within them.

Proposed development likely to have an adverse effect on land with the designated features of any Site of Biodiversity or Geological Importance as designated in the Arun Local Plan or any subsequently designated sites (either individually or in combination with other developments), will not normally be permitted. Development on wildlife sites with the highest value will only be permitted exceptionally where the following can be demonstrated:

- There is no alternative solution (which shall be adequately demonstrated by the developer).
- There are reasons of public health or public safety or
- There are benefits of primary importance to the environment or iv. There are imperative reasons of overriding public interest.

Aside from the above however, the presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined. In determining any planning application affecting Sites of Biodiversity or Geological Importance the Council will ensure that the intrinsic natural features of particular interest are safeguarded or enhanced having regard to;

- The European, National or Local status and designation of the site;
- The nature and quality of the site's features, including its rarity value;
- The extent of any adverse impacts on the notified features of interest;
- The need for compensatory measures in order to re-create remaining features of habitats on or off the site.

Where appropriate the Council will ensure the effective management of designated sites through the imposition of planning conditions or Section 106 agreements as appropriate.

Policy ENV DM3 states that any development will retain and incorporate important ecological habitats, wildlife corridors and stepping stones as well as be designed to minimise any disturbance to these habitats. Developments that fail to do so will have their proposal rejected. Where a development scheme would result in a habitat loss, mitigation measures will be proposed as part of the proposed scheme and such measures agreed with the Local Planning Authority prior to the determination of any planning application. Within Biodiversity Opportunity Areas (BOAs) identified within the local plan or where likely to have an impact on species or habitats within the BOAs, any application for planning permission shall include a

properly conducted survey of the presence of that species and habitat and impact(s) that development may have on the BOA.

Development and biodiversity 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. Where there is evidence of a protected species on a proposed development site, planning applications shall include a detailed survey of the subject species, with details of measures to be incorporated into the development scheme to avoid loss of the species. This involves consideration of any impacts that will affect the species directly or indirectly, whether within the application site or in an area outside of the site, which may be indirectly affected by the proposals. All surveys shall be carried out at an appropriate time of year and shall be undertaken by a qualified and, where appropriate, suitably licensed person. All developments shall have regard to Natural England's standing advice for protected species.

## **2.2 National Planning Policy**

### *2.2.1 National Planning Policy Framework (NPPF)*

The revised National Planning Policy and Framework (NPPF) (last updated February 2019) replaces the previous NPPF (published 2012, revised July 2018) and sets out the Government's vision for biodiversity in England in line with the country's 25 Year Environment Plan. The revised NPPF is supported by the National Planning Practice Guidance (NPPG) (published January 2016, last updated July 2019). The relevant section of the Guidance concerning biodiversity is 'Natural Environment: Biodiversity, Geodiversity and Ecosystems'. Under this Guidance, Local Authorities' duty to have due regard to the conservation of biodiversity under the NERC Act (2006) is highlighted.

Chapter 15 of the revised NPPF, 'Conserving and Enhancing the Natural Environment', together with associated guidance within the NPPG, outlines key principles related to the natural environment.

Development plans should contribute to and enhance the natural environment. Plans should take both an individual and strategic approach to minimising biodiversity impacts, creating, conserving, restoring, and enhancing priority habitats and habitat networks, protecting and aiding in the recovery of priority species and their populations, and providing measurable biodiversity net gains. Individual developments must consider how they can contribute to habitat networks in the wider area (including as part of the Nature Recovery Network), thereby increasing their resilience to current and future pressures.

### 3.0 ECOLOGICAL BASELINE SUMMARY

A walkover of the site was completed by The Ecology Co-op in August 2017 to assess the site's suitability to support protected species. The following details the habitats noted and the identified potential for protected species on-site.

#### 3.1 Habitats

##### 3.1.1 Cultivated/Disturbed Ground/Ephemeral/Short Perennial

This was the dominant habitat on-site with the majority of the site covered by pioneering ruderal/herbaceous species. Species noted include Bristly Ox-tongue (*Helminthotheca echinoides*), Thistles (*Asteraceae* spp), *Buddleja*, Sea Mayweed (*Tripleurospermum maritimum*), Willherb (*Epilobium* spp), Common Fleabane (*Pulicaria dysenterica*), Common Nettle (*Urtica dioica*), Field Bindweed (*Convolvulus arvensis*), Smooth Cat's Ear (*Hypochaeris glabra*), Common Ragwort (*Jacobaea vulgaris*), Spearmint (*Mentha spicata*), Bird's Foot Trefoil (*Lotus corniculatus*), Lesser Burdock (*Arctium minus*), Hogweed (*Heracleum sphondylium*), Early Forget-me-not (*Myosotis ramosissima*), Creeping Cinquefoil (*Potentilla reptans*), Verbena (*Verbena bonariensis*), Teasel (*Dipsacus* spp), Ribwort Plantain (*Plantago lanceolata*) and Cowslip (*Primula veris*).

##### 3.1.2 Mixed Parkland/Scattered Trees

Lining the south of the site are several Cypress trees and three Poplar (*Populus* spp). The trees have large gaps between them and commence approximately a third of the way across the southern boundary from the east.

##### 3.1.3 Hedgerow

An intact, species poor Hawthorn (*Crataegus monogyna*) hedgerow borders the west of the site and connects to the scattered trees to the south. A managed Beech hedgerow (H12 & H14) falls beyond the redline boundary of the site on the northern boundary but encroaches in places (see **Plan 2**).

##### 3.1.4 Bare Ground/Hardstanding

Extending west from the access gate on the east boundary, the area is park hardstanding, part bare earth and is surrounded by rubble piles to the north and south.

#### 3.2 Protected Species

##### 3.2.1 Reptiles

The ephemeral/short perennial habitat was considered to be of low potential for reptiles. The rubble piles and hedgerow were also considered to provide sheltering opportunities for reptiles.

Subsequent presence/absence surveys completed by The Ecology Co-op in August-October 2017 (Ecology Co-op, 2017) identified a **low population of Slow Worms** (*Anguis fragilis*) in the south west corner of the site.

##### 3.2.2 Foraging and Commuting Bats

The boundary habitats, including the hedgerow and scattered trees to the south, were considered to hold **low potential** for local foraging and commuting bats.

### 3.2.3 Nesting and Breeding Birds

The hedgerow and trees were considered to **hold potential** to support nesting and breeding birds. The ground vegetation was not well-developed enough to be used by ground nesting birds.

### 3.2.4 Great Crested Newts

The pond 40m to the west of the site was considered to be of 'below average' suitability for Great Crested Newts based upon the Habitat Suitability Index (HSI) assessment of the pond completed by The Ecology Co-op (2017). In addition, no records of local Great Crested Newts were returned by Sussex Biodiversity Records Centre. The site was, therefore, considered to hold **negligible potential** for Great Crested Newts.

### 3.2.5 Dormice

The on-site hedgerows were species poor and unconnected from any pockets of woodland or mature hedgerows in the wider landscape. As such, the site was considered to hold **negligible potential** for Dormice.

## 3.3 Desk Based Search/Designated Sites

A desk study was completed in August 2017 including a 1km radius data request of protected and notable species, and information regarding statutory and non-statutory designated sites, to SxBRC.

No designated sites were noted within 1km of the development.

## 4.0 MITIGATION, COMPENSATION AND ENHANCEMENTS

This chapter deals with mitigation, compensation and enhancement. Mitigation refers to measures that can be undertaken to avoid or reduce ecological impacts. Compensation refers to measures taken in order to offset potential significant impacts and finally enhancements contributes towards a net gain for ecology.

### 4.1 Commuting and Foraging Bats

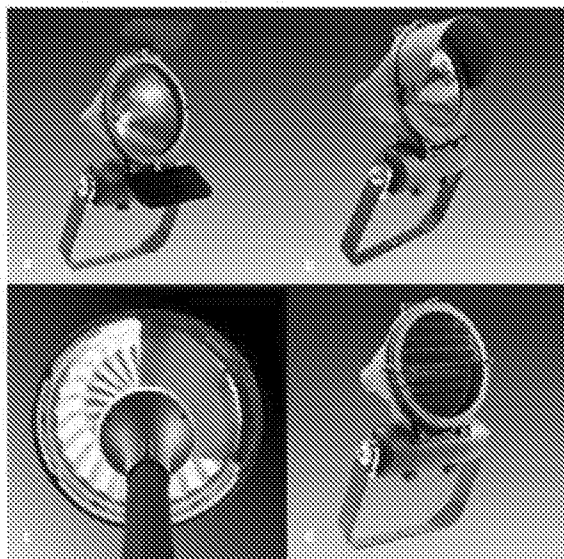
#### 4.1.1 Sensitive Lighting Strategy

A sensitive lighting scheme will be adopted to reduce the impacts of lighting to bats to a minimum. A document (*Guidance Note 08/18 Bats and Artificial Lighting in the UK*) 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 to seek to ensure light spill onto the retained hedgerows is kept at or below 1 Lux (indicative 'dark corridors' shown in **Plan 1** appended).

*'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:*

- *All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.*
- *A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.*
- *Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).*
- *Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.*
- *The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.*
- *Column heights should be carefully considered to minimise light spill.*
- *Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.*
- *Luminaires should always be mounted on the horizontal, i.e. no upward tilt.*
- *Any external security lighting should be set on motion-sensors and short (1min) timers.*
- *As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed' (and directed away from nearby woodland) (Fig 2).*

**Figure 2.** (a) Shield 'barn doors' (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2011).



In addition, increasing the spacing between light units will reduce the intensity and spread of the light to minimize the area illuminated and give bats an opportunity to fly in relatively dark areas between lights. Reducing the height of light units will keep the light as close to the ground as possible, reducing the volume of illuminated space. This will also give bats a chance to fly over the light units in the dark area above the light (as long as the light does not spill above the vertical plane).

#### **4.2 Nesting and Breeding Birds**

In order to avoid disturbance of nesting birds or damage to their nests, clearance of any vegetation will be undertaken outside of the bird nesting season (typically March – August 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 Reptiles**

##### *4.3.1 Preparation of On-site Receptor*

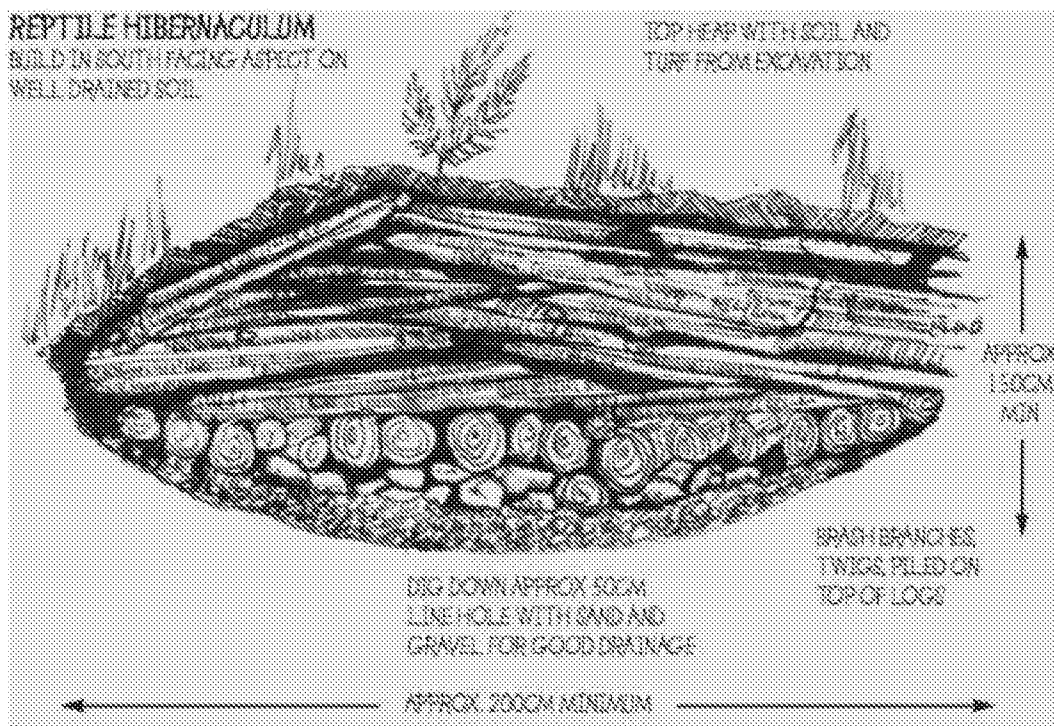
An on-site reptile receptor area will be created as per the agreed Reptile Mitigation Strategy (The Ecology Co-op, 2017) (see **Plan 1**). The following steps must be followed:

- Destructive search of the on-site receptor under the supervision of an ecologist to remove rubble materials down to ground level. Any reptiles found will be moved to the south west corner of the site where reptiles have been previously identified.
- The receptor area will then be fenced off with semi-permanent reptile fencing to prevent the movement of translocated reptiles back into the site (**Plan 1**).
- The soil of the receptor area will then be rotavated and seeded with the EM10 Emorsgate seed mixture for the creation of tussocky grassland. This grassland, once established, requires little to no maintenance.

#### 4.3.2 Hibernaculum

One wood-based hibernaculum will also be constructed within the receptor area to enhance the carrying capacity of the area (location shown in **Plan 1**). It is recommended this is sited in a sunny position within suitable habitat furthest away from the development. This will provide shelter and hibernation opportunities as well as providing a significant habitat resource for invertebrates (a food resource for reptiles). **Fig 3** illustrates hibernacula design that follows best practice guidelines (HART, 2009). The size of the hibernaculum will be at least 5m<sup>2</sup>.

**Figure 3.** Reptile hibernaculum design as provided in HART (2009).



#### 4.3.3 Reptile Translocation

Prior to the commencement of works, the development area will undergo at least 30 catches by an experienced ecologist during suitable weather conditions (between 10°C-18°C with no strong winds or rain) with any reptiles encountered transported into the on-site receptor. The suitable period for completing the translocation is mid-March- October. Once at least 30 catches have been completed and 10 nil catches have been achieved, a supervised destructive search of the development area will be completed.

All translocation data will be presented within a report that is provided to both the council and Crayfern Homes.

#### 4.3.4 Construction Phase Maintenance and Monitoring of Reptile Receptor

##### 4.3.4.1 Monitoring of Reptile Fencing and Hibernaculum

During the construction works, the reptile fencing and hibernaculum will be checked for damage by the Project Manager once a fortnight. If any damage is noted, appropriate repairs

will be completed immediately. The reptile fencing will remain in place and intact until the end of the construction works.

#### *4.3.5 Operational Phase Maintenance and Monitoring of Reptile Receptor*

##### *4.3.5.1 Maintenance of Grassland Habitat*

The reptile receptor will be regularly monitored and managed by an appointed management company post-development. At least twice a year the grassland will be inspected for patches of undesirable perennial weeds (Nettles, Thistles, Dock, Bramble), these will be spot treated with a glyphosate-based weed killer. The grassland itself will be sensitively strimmed to a height no lower than 15cm every 2-3 years. These cuts should be completed on a rotational basis and include no more than 50% of the receptor area strimmed in the same year, leaving part as an undisturbed refuge.

##### *4.3.5.2 Maintenance of Hibernaculum*

As per the construction phase of the development, the reptile hibernaculum will be regularly monitored to check for signs of damage. If damage to the hibernaculum is noted, this will be immediately repaired.

#### *4.3.6 Safeguard*

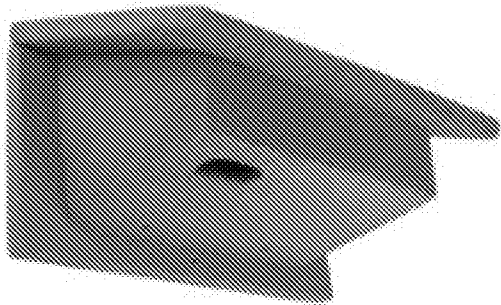
The reptile receptor site will be protected in-perpetuity from any works that could reduce its suitability to support reptiles and/or pose any risk to the reptiles present, including but not limited to, development. It will be continuously managed by a management company ensuring the habitat remains favourable for reptiles.

### **4.3 Enhancements**

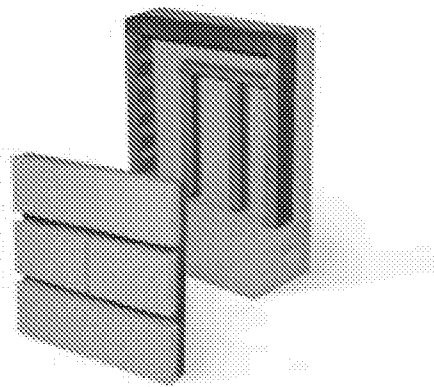
#### *4.3.1 Bat and Bird Boxes*

To act as biodiversity enhancement, half (so 12) of the newly built dwellings will incorporate a Swift box and a bat box. The Woodstone Swift nest box will be installed (**Fig 4**) as they are a long-lasting box that can be easily cleaned, making it ideal for domestic settings. The boxes should be installed under the eaves or on high walls at least 5m from ground level in shaded areas out of direct sunlight and away from windows. The bat boxes used will be the Ibstock bat box B (**Fig 5**) as they are both long-lasting and discreet. Both types of boxes should be positioned as close to the eaves as possible, away from windows and away from sources of artificial light. The bat bricks should be specifically located on the southern elevations (see **Plan 1** for recommended locations).

**Figure 4.** Woodstone Swift box that will be incorporated under the eaves of 12 the newly built block of dwellings.



**Figure 5.** The Istock bat box B that will be incorporated into the external of 12 of the new dwellings.



Bat Box B

#### 4.3.2 Hedgerow Planting

To enhance the east-west connection between the site and the adjacent habitats to the west for bats, and to increase sheltering opportunities for reptiles, some additional hedgerow planting will be completed within the reptile receptor (**Plan 1**). Species composition that will provide the greatest benefit to local bats are outlined in **Fig 6** below. This will also include 'gapping up' of the hedgerow as necessary and the tree protection plan is appended to this report demonstrating how the retained hedgerow will be protected during works.

***NB although the condition asks for a buffer to the retained hedgerows, as the area adjacent to the hedge on the northern boundary forms the on-site reptile receptor, this will be managed as a semi natural habitat and as such is considered to provide the required buffer.***

**Figure 6.** Screenshot from appendix within Gunnell et al., (2012) indicating plant species of known benefit to bats that will form the basis of on-site planting.

| Plant species                    | Common name         | Native | Type | Benefit | Soil                    | Light                 | Extensive Green Roofs | Living walls | Rain gardens | Hedges / Trees | Beds / Borders |
|----------------------------------|---------------------|--------|------|---------|-------------------------|-----------------------|-----------------------|--------------|--------------|----------------|----------------|
| <i>Acer campestre</i>            | Field maple         | N      | T/S  | C       | Any                     | Sun/shade             |                       |              |              | Y              |                |
| <i>Acer platanoides</i>          | Norway maple        |        | T    | S       | Well drained / alkaline | Sun/shade             |                       |              |              | Y              |                |
| <i>Acer pseudoplatanus</i>       | Sugar maple         |        | T    | S       | Any                     | Sun/shade             |                       |              |              | Y              |                |
| <i>Achillea millefolium</i>      | Yarrow              | N      | HP   | C,F     | Well drained            | Sun                   | Y                     |              |              |                |                |
| <i>Adonis vernalis</i>           | Pulsatilla          | N      | HP   | C,F     | Any                     | Sun/shade             | Y                     |              | Y            |                |                |
| <i>Anthyllus vulneraria</i>      | Knock-out rose      | N      | HP   | F       | Well drained            | Sun                   | Y                     |              |              |                |                |
| <i>Antennaria dioica</i>         | Antennaria          |        | H    | F       | Well drained            | Sun/shade             |                       | Y            |              |                |                |
| <i>Betula pendula</i>            | Silver birch        | N      | T    | C       | Sandy/acid              | Sun                   |                       |              |              | Y              |                |
| <i>Cardamine pratensis</i>       | Cuckoo flower       | N      | HP   | F       | Moist                   | Sun/shade             |                       |              | Y            |                | Y              |
| <i>Carpinus betulus</i>          | Hornbeam            | N      | T    | C       | Clay                    | Sun                   |                       |              |              | Y              |                |
| <i>Centaurea nigra</i>           | Common knapweed     | N      | HP   | C,F     | Dry, not acid           | Sun                   | Y                     |              |              |                | Y              |
| <i>Centranthus ruber</i>         | Red valerian        |        | HP   | F       | Well drained / alkaline | Sun                   | Y                     |              |              |                | Y              |
| <i>Clematis vitalba</i>          | Old man's beard     | N      | C    | F       | Well drained / alkaline | Sun                   |                       |              |              | Y              |                |
| <i>Corylus avellana</i>          | Hazel               | N      | S    | C       | Any dry                 | Sun/shade             |                       | Y            |              | Y              |                |
| <i>Crataegus monogyna</i>        | Hawthorn            | N      | S    | S,C     | Any                     | Sun/shade             |                       |              |              | Y              |                |
| <i>Daucus carota</i>             | Wild carrot         | N      | Sl   | S,C,F   | Any                     | Sun                   | Y                     |              |              |                | Y              |
| <i>Dianthus spp.</i>             | Phlox               | N      | A-B  | F       | Well drained            | Sun                   | Y                     | Y            |              |                | Y              |
| <i>Digitalis purpurea</i>        | Foxglove            | N      | Sl   | C       | Well drained            | Shade / partial shade |                       |              |              | Y              | Y              |
| <i>Erica cinerea</i>             | Heath heather       | N      | S    | F       | Sandy                   | Full sun              |                       |              |              |                | Y              |
| <i>Erysimum cheiri</i>           | Wallflower          |        | B-P  | F       | Well drained            | Sun                   |                       | Y            |              |                |                |
| <i>Eupatorium cannabinum</i>     | Hemp agrimony       | N      | H    | F       | Moist                   | Sun/shade             |                       |              | Y            |                | Y              |
| <i>Fagus sylvatica</i>           | Beech               | N      | T    | C,R     | Well drained / alkaline | Sun/shade             |                       |              |              | Y              |                |
| <i>Forficula auricularia</i>     | Earwig              |        | H    | F       | Well drained            | Sun                   |                       |              |              |                | Y              |
| <i>Fraxinus excelsior</i>        | Common ash          | N      | T    | C,R     | Any                     | Sun/shade             |                       |              |              | Y              |                |
| <i>Hebe spp.</i>                 | Hebe species        |        | S    | F       | Well drained            | Sun/shade             |                       |              |              | Y              | Y              |
| <i>Hedera helix</i>              | Ivy                 | N      | C    | S,C     | Any                     | Sun/shade             |                       | Y            | Y            | Y              | Y              |
| <i>Hesperis matronalis</i>       | Sweet rocket        |        | H    | F       | Well drained / dry      | Sun/shade             |                       |              |              |                | Y              |
| <i>Hyacinthoides non-scripta</i> | Bluebell            | N      | S    | F       | Loam                    | Shade / partial shade |                       | Y            |              | Y              | Y              |
| <i>Ilex aquifolium</i>           | Holly               | N      | T    | C       | Any                     | Sun/shade             |                       |              |              | Y              |                |
| <i>Jasminum officinale</i>       | Common jasmine      |        | C    | F       | Well drained            | Sun                   |                       | Y            |              |                | Y              |
| <i>Lavandula spp.</i>            | Lavender species    |        | S    | F       | Well drained / sandy    | Sun                   |                       | Y            |              |                | Y              |
| <i>Linaria vulgaris</i>          | Toadflax            | N      | HP   | C       | Well drained / alkaline | Sun                   | Y                     |              |              |                | Y              |
| <i>Lonicera periclymenum</i>     | Honeysuckle         | N      | C    | F       | Well drained            | Sun                   |                       | Y            |              | Y              |                |
| <i>Lotus corniculatus</i>        | Bird's foot trefoil | N      | HP   | F       | Well drained / dry      | Sun                   | Y                     |              |              |                | Y              |

| Plant species                    | Common name              | Native Type (N) | Benefit | Soil | Light                    | Extensive Green Roofs  | Living walls | Rain gardens | Hedges / Trees | Beds / Borders |
|----------------------------------|--------------------------|-----------------|---------|------|--------------------------|------------------------|--------------|--------------|----------------|----------------|
| <i>Lunaria annua</i>             | Honesty                  |                 | B       | F    | Any                      | Sun<br>partial shade   | Y            |              |                | Y              |
| <i>Malus</i> spp.                | Apple                    |                 | T       | C    | Any                      | Sun                    |              |              | Y              | Y              |
| <i>Mathiola longipetala</i>      | High-scrambled stock     |                 | A       | F    | Well drained<br>moist    | Sun                    |              | Y            |                | Y              |
| <i>Myosotis</i> spp.             | Forget-me-not species    | N               | A       | F    | Any                      | Sun                    | Y            |              |                | Y              |
| <i>Nicotiana glauca</i>          | Ornamental tobacco       |                 | A       | F    | Well drained<br>moist    | Sun<br>partial shade   |              | Y            |                | Y              |
| <i>Oenothera</i> spp.            | Evening primrose species |                 | B       | F    | Well drained<br>dry      | Sun                    | Y            |              |                | Y              |
| <i>Origanum vulgare</i>          | Marjoram                 | N               | HP      | F    | Well drained<br>dry      | Sun                    | Y            | Y            |                | Y              |
| <i>Populus alba</i>              | White poplar             | N               | T       | C    | Clay loam                | Sun                    |              |              | Y              |                |
| <i>Primula vera</i>              | Cowslip                  | N               | HP      | F    | Well drained<br>moist    | Sun<br>partial shade   | Y            |              |                | Y              |
| <i>Primula vulgaris</i>          | Primrose                 | N               | HP      | F    | Moist                    | Partial shade          | Y            | Y            | Y              | Y              |
| <i>Prunus avium</i>              | Wild cherry              | N               | T       | C    | Any                      | Sun                    |              |              | Y              | Y              |
| <i>Prunus domestica</i>          | Plum                     |                 | T       | C    | Well drained<br>moist    | Sun                    |              |              | Y              | Y              |
| <i>Prunus spinosa</i>            | Blackthorn               | N               | S       | C    | Any                      | Sun<br>partial shade   |              |              | Y              |                |
| <i>Quercus petraea</i>           | sessile oak              | N               | T       | C/R  | Sandy loam               | Sun/shade              |              |              | Y              |                |
| <i>Quercus robur</i>             | Common oak               | N               | T       | C/R  | Clay loam                | Sun/shade              |              |              | Y              |                |
| <i>Rosa canina</i>               | Dog rose                 | N               | S       | C    | Any                      | Sun                    |              | Y            | Y              | Y              |
| <i>Salix</i> spp.                | Willow species           | N               | S       | S/C  | Moist                    | Sun/shade              |              | Y            | Y              |                |
| <i>Sambucus nigra</i>            | Elder                    | N               | T       | C    | Clay loam                | Sun                    |              |              | Y              |                |
| <i>Saponaria officinalis</i>     | Soapwort                 | N               | HP      | F    | Any                      | Sun                    |              |              |                | Y              |
| <i>Scutellaria oppositifolia</i> | Scutellaria              | N               | HP      | C    | Well drained             | Sun                    | Y            | Y            |                | Y              |
| <i>Scabiosa columbata</i>        | Small scabiosa           | N               | HP      | F    | Well drained<br>alkaline | Sun                    | Y            |              |                | Y              |
| <i>Sedum spectabile</i>          | Ice plant                |                 | HP      | F    | Well drained<br>dry      | Sun                    | Y            |              |                | Y              |
| <i>Stemodia dioica</i>           | Red campion              | N               | HP      | F    | Any                      | Shade<br>partial shade |              | Y            | Y              | Y              |
| <i>Sorbus aucuparia</i>          | Rosale                   | N               | T       | C    | Well drained             | Sun                    |              |              | Y              |                |
| <i>Stachys lanata</i>            | Lamb's ears              |                 | HP      | F    | Well drained<br>dry      | Sun                    | Y            |              |                | Y              |
| <i>Symphoricarpos</i> spp.       | Michaelmas daisy         |                 | HP      | F    | Any                      | Sun                    |              |              |                | Y              |
| <i>Tagetes patula</i>            | French marigold          |                 | A       | F    | Well drained<br>moist    | Sun                    |              |              |                | Y              |
| <i>Thymus serpyllum</i>          | Creeping thyme           | N               | HP/B    | F    | Well drained<br>dry      | Sun                    | Y            | Y            |                | Y              |
| <i>Trifolium europaeum</i>       | Common clover            |                 | T       | C    | Any                      | Sun/shade              |              |              | Y              |                |
| <i>Trifolium</i> spp.            | Clover species           | N               | H       | F    | Any                      | Sun                    | Y            |              |                | Y              |
| <i>Veronica</i> spp.             | Veronica species         | N               | HP      | F    | Moist                    | Sun<br>partial shade   |              | Y            |                | Y              |
| <i>Veronica</i> spp.             | Mitlenia                 | N               | B/HP    | C    | Well drained             | Sun                    | Y            |              |                | Y              |
| <i>Veronica bonariensis</i>      | Verbena                  |                 | HP      | F    | Well drained<br>moist    | Sun                    |              |              |                | Y              |
| <i>Viburnum lantana</i>          | Wayfaring tree           | N               | S       | C    | Any                      | Sun/shade              |              |              | Y              | Y              |
| <i>Viburnum opulus</i>           | Guelder rose             | N               | S       | C    | Moist                    | Sun/shade              |              | Y            | Y              |                |
| <i>Viola incana</i>              | Pansy                    | N               | A       | F    | Well drained<br>moist    |                        | Y            | Y            |                | Y              |

## Type

HP - Herbaceous perennial  
B - Biennial  
B/P - Biennial perennial

T - Tree  
S - Shrub  
H - Herb

A - Annual  
B - Bulb  
C - Creeper/ climber

## Benefit

C - Moth caterpillar food plant  
S - Sap sucking insects (eg whiteflies)  
F - Flowers attract adult moths  
R - Good root potential

## **5.0 CONCLUSION**

This document has been prepared to bring together all the existing ecological information for Mayflower Way, Angmering with the aim of addressing all of the ecological constraints identified and to provide opportunities for enhancement that are consistent with the aims of national and local planning policy. It is considered that should all aspects of this document be implemented, adequate mitigation can be achieved to minimise impacts to existing population of protected and notable species, and a net gain in the site's biodiversity value will be achieved.

## 6.0 REFERENCES

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| Tree schedule               |                  |          |            |                                                                 |
|-----------------------------|------------------|----------|------------|-----------------------------------------------------------------|
| Tree No                     | Species          | Category | RPA Radius | Tree Works                                                      |
| All retained trees & hedges |                  |          |            | Carry out safety check and lift over site to 3-4m as necessary. |
| G1                          | Monterey cypress | C        | 7.8        | Fell                                                            |
| T2                          | Monterey cypress | C        | 9.0        | Fell                                                            |
| G3                          | Monterey cypress | C        | 7.2        | Fell                                                            |
| T4                          | Monterey cypress | C        | 8.4        | Fell                                                            |
| T5                          | Poplar           | C        | 6.6        | Fell                                                            |
| G6                          | Monterey cypress | C        | 3.6        | Fell                                                            |
| T7                          | Poplar           | U        | 7.8        | Fell                                                            |
| T8                          | Poplar           | U        | 6.6        | Fell                                                            |
| T9                          | Poplar           | U        | 9.6        | Fell                                                            |
| T10                         | Poplar           | U        | 8.4        | Fell                                                            |
| G11                         | Hawthorn         | C        | 3.6        | Fell                                                            |
| H12                         | Beech            | C        | 2.4        | -                                                               |
| T13                         | Whitebeam        | C        | 3.6        | -                                                               |
| H14                         | Beech            | C        | 2.4        | -                                                               |

- TX

BS category C

Trees of low quality
- TX

BS category U

Trees unsuitable for retention
- TX

Trees to be removed
- Proposed layout
- Adjusted crown spreads not included on original land survey
- Protective barrier/fencing
- Construction exclusion zone (CEZ)
- Proposed location of new heavy standard trees
- Root protection area (RPA) boundaries for category C trees

**Tree protection plan**  
Location of trees, categorisation & protection/management proposals at Mayflower Way, Angmering, Littlehampton

Barrell Plan Ref: 18044-BT2

Provided Plan Refs: ENC-060217-0Y4-Topo & 1701 2.10

