

Plot 2, Bridge Road, Mepal
Biodiversity Enhancement

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1 Introduction

Planning background

- 1.1 East Cambridgeshire District Council (ECDC) granted outline planning consent (Ref: 19/00799/OUT) in August 2019 for the construction of two detached dwellings on a plot of land (referred to as the 'Horticultural Site') located between 8 and 14 Bridge Road, Mepal, Cambridgeshire, CB6 2AR. Condition 11 of that outline consent was that:

Prior to occupation of any plot, a scheme of biodiversity improvements for that plot shall be submitted to and agreed in writing with the Local Planning Authority. The biodiversity improvements shall be installed prior to the first occupation of the hereby approved dwelling and thereafter maintained in perpetuity.

- 1.2 Plot 1 was brought forward first and a scheme of biodiversity improvements has been prepared by BSG Ecology and was submitted to ECDC in June 2021 (BSG Ecology, 2021).
- 1.3 Plot 2 is now being brought forward and this report details the biodiversity improvements that will be installed on that plot.
- 1.4 In addition to Condition 11, there are associated conditions that also have to be fulfilled. A reserved matters application (RMA) relating to Condition 2 on Scale, Appearance and Landscaping for Plot 2 was submitted in June 2021 (Ref: 21/00969/RMA).
- 1.5 That RMA relating to Condition 2 will interact with the scope for biodiversity enhancement where it has already defined relevant matters such as building materials, boundary treatment and tree and shrub planting. A site plan was submitted with the RMA [drawing (P-)00] that defines the outline of the building, the hard landscaping and soft landscaping with accompanying descriptive text in the Design and Access Statement.
- 1.6 The ECDC Natural Environment Supplementary Planning Document notes within Policy NE6 Biodiversity Net Gain:
- Where space is tight, integrating a variety of measures within the development may be appropriate, such as targeted bird boxes, insect 'hotels', bee blocks, bat boxes, hibernation holes and 'green' roofs.*
- 1.7 Such an approach is considered relevant and proportionate to this single plot development.

2 Proposed Enhancement Measures

- 2.1 In defining the nature and scale of the proposed biodiversity enhancement measures, account has been taken of a series of factors including:
- The size of the plot;
 - the location of the development;
 - the surrounding land uses;
 - the requirements of the ECDC Natural Environment Supplementary Planning Document; and
 - the Cambridgeshire Biodiversity Action Plan priorities.
- 2.2 The following measures have been identified which provide features of benefit to particular species:
- Nesting box for birds
 - Roosting box for bats
 - Hedgehog highway
 - Bee hotel
- 2.3 The following sections provide for each enhancement feature a brief description of the benefit that can be gained, the design of the enhancement feature, its location within Plot 2 (also illustrated on Figure 1), its maintenance and availability of suitable products. The latter is supported by Appendix 1 that illustrates products from manufacturers such as Bird Brick Houses, Habibat, Ibstock Brick, Schwegler and Vivara Pro that are available from UK suppliers including the manufacturers themselves and large stockists such as CJ WildBird Foods Ltd, NHBS and Wildcare.

Bird nesting box

Biodiversity benefit

- 2.4 A nesting box can provide a safe location for birds to nest and which, if they are successful, can increase the local population. A number of bird species occurring on the rural fringe of Mepal have populations that are declining and the type of nesting box detailed is suitable for house sparrow, a bird given Red List status under Birds of Conservation Concern 4 (Eaton *et al.*, 2015) and is listed under the provisions of Section 41 of the NERC Act 2006 as a Species of Principal Importance for the conservation of biodiversity in England.

Box design

- 2.5 Two alternative designs are proposed dependent on whether the box can be built in to an external wall of brick or block structure or attached to the outside of the wall. Building in the nesting box avoids the issue of having to maintain the method of fixture to the wall. Irrespective of fitting, a mineral based box is recommended to give longevity of structure as well as providing a 'thermal mass' that prevents large temperature changes and protects against natural predators. A wooden box is not recommended because of its short life.
- 2.6 The nesting box should have a 32 mm hole which is suitable for access by house sparrow and is also suitable for other bird box using species such as great tit and blue tit.

Location within Plot 2

- 2.7 The nesting box should be sited in a position out of direct sunlight and prevailing winds (i.e. the north or east elevation), at least 2 m above the ground and away from doors and windows.

- 2.8 Given the building design and alignment the northerly facing gable end is recommended and this is illustrated in Figure 1.

Maintenance

- 2.9 A built-in box requires no maintenance beyond that applied to the wall itself, if for instance, it has a rendered and painted finish. A box attached to the outside of the wall should be checked annually to ensure that its method of fixture is still safe and secure.

Availability of suitable products

- 2.10 Examples of bird nesting boxes designed to be built into the brick or block structure of a building or attached to the external structure of a building are illustrated in Appendix 1.

Bat roosting box

Biodiversity benefit

- 2.11 A bat roosting box can provide a safe location for bats both to roost and rear their young and which, if they are successful, can increase the local population. In this rural fringe location a roosting box is most likely to benefit the two more widespread species of pipistrelle bat – common pipistrelle and soprano pipistrelle – the latter species being listed under the provisions of Section 41 of the NERC Act 2006 as a Species of Principal Importance for the conservation of biodiversity in England.

Box design

- 2.12 Two alternative designs are proposed dependent on whether the box can be built into an external wall of brick or block structure or attached to the outside of the wall. Building in the roosting box avoids the issue of having to maintain the method of fixture to the wall. Irrespective of fitting, a mineral based box is recommended to give longevity of structure as well as providing a 'thermal mass' that prevents large temperature changes and protects against natural predators. A wooden box is not recommended because of its short life.
- 2.13 The narrow entrance slit and narrow internal structure is most suited to the pipistrelle species of bat.

Location within Plot 2

- 2.14 The roosting box should be sited in a position sheltered from strong winds but exposed to the sun for part of the day (i.e. the south, east or west elevation), at least 4 m above the ground, above the level of any externally fitted lighting and away from windows.
- 2.15 Given the building design and alignment the southerly facing gable end is recommended and this is illustrated in Figure 1.

Maintenance

- 2.16 A built-in box requires no maintenance beyond that applied to the wall itself, if for instance, it has a rendered and painted finish. A box attached to the outside of the wall should be checked annually to ensure that its method of fixture is still safe and secure. The slit entrance at the bottom of the box removes the need for maintenance as the dry bat droppings will fall out the bottom.

Availability of suitable products

- 2.17 Examples of bat roosting boxes designed to be built into the brick or block structure of a building or attached to the external structure of a building are illustrated in Appendix 1.

Hedgehog 'highway'***Biodiversity benefit***

- 2.18 New housing developments divide up the landscape preventing hedgehogs from moving freely as well as preventing access to individual gardens. Maintaining connectivity allows hedgehogs to forage freely and to meet up to mate. Hedgehog is listed under the provisions of Section 41 of the NERC Act 2006 as a Species of Principal Importance for the conservation of biodiversity in England.

Design

- 2.19 A gap 13 cm by 13 cm in the base of a close boarded fence or fence gravel board is sufficient for any hedgehog to pass through. It should be marked to show that the gap is there for a purpose. Since this is a new build, note that gravel boards can be sourced which already have a suitable hole cut in them to be installed at the fence construction stage. Alternatively templates of the right size and shape area available.

Location within Plot 2

- 2.20 To allow full passage across Plot 2 three hedgehog highway gaps are proposed in the rear garden placed in the boundary fences on the north, south and east boundaries and this is illustrated in Figure 1. Note that the hedgehog highway gap on the northern boundary fence coincides with the hedgehog highway gap on the southern boundary of Plot 1, this being the shared boundary fence.

Maintenance

- 2.21 Any significant blockages should be removed as they occur and if replacing the relevant part(s) of the fence then a gap provided at the same location.

Availability of suitable products

- 2.22 Examples of a fence marker and a pre-cut gravel board are illustrated in Appendix 1.

Bee 'hotel'***Biodiversity benefit***

- 2.23 Bee 'hotels' provide nesting places for solitary, non-aggressive bees such as mason bees and leaf-cutter bees (but not honey bees) that naturally make use of beetle holes in dead wood, earth banks and hollow stems. These habitats and crumbling masonry (also used for nesting) are unlikely to be found in a new development. The bees themselves will pollinate wildflowers, cultivated flowers, fruit and vegetables.

Design

- 2.24 A range of designs are commercially available. A larger, free standing design is proposed in this instance. A design with removable wood blocks and tubes is recommended for ease of replacement and a variety of hole and tube diameters from 6 mm to 10 mm.

Location within Plot 2

- 2.25 The bee hotel should be sited in a warm place sheltered from driving rain and facing between south-east and south to catch some sun. The north-eastern corner of the plot is suitable and this is illustrated in Figure 1.

Maintenance

- 2.26 Used tubes or wood blocks should be replaced after the adult bees have emerged in the spring. Solitary bees will not normally re-use a hole, partly it is thought, to avoid parasites and disease. Protect the external wood surfaces with a wildlife-friendly preservative as necessary.

Availability of suitable products

- 2.27 Examples of commercially available bee hotels are illustrated in Appendix 1.

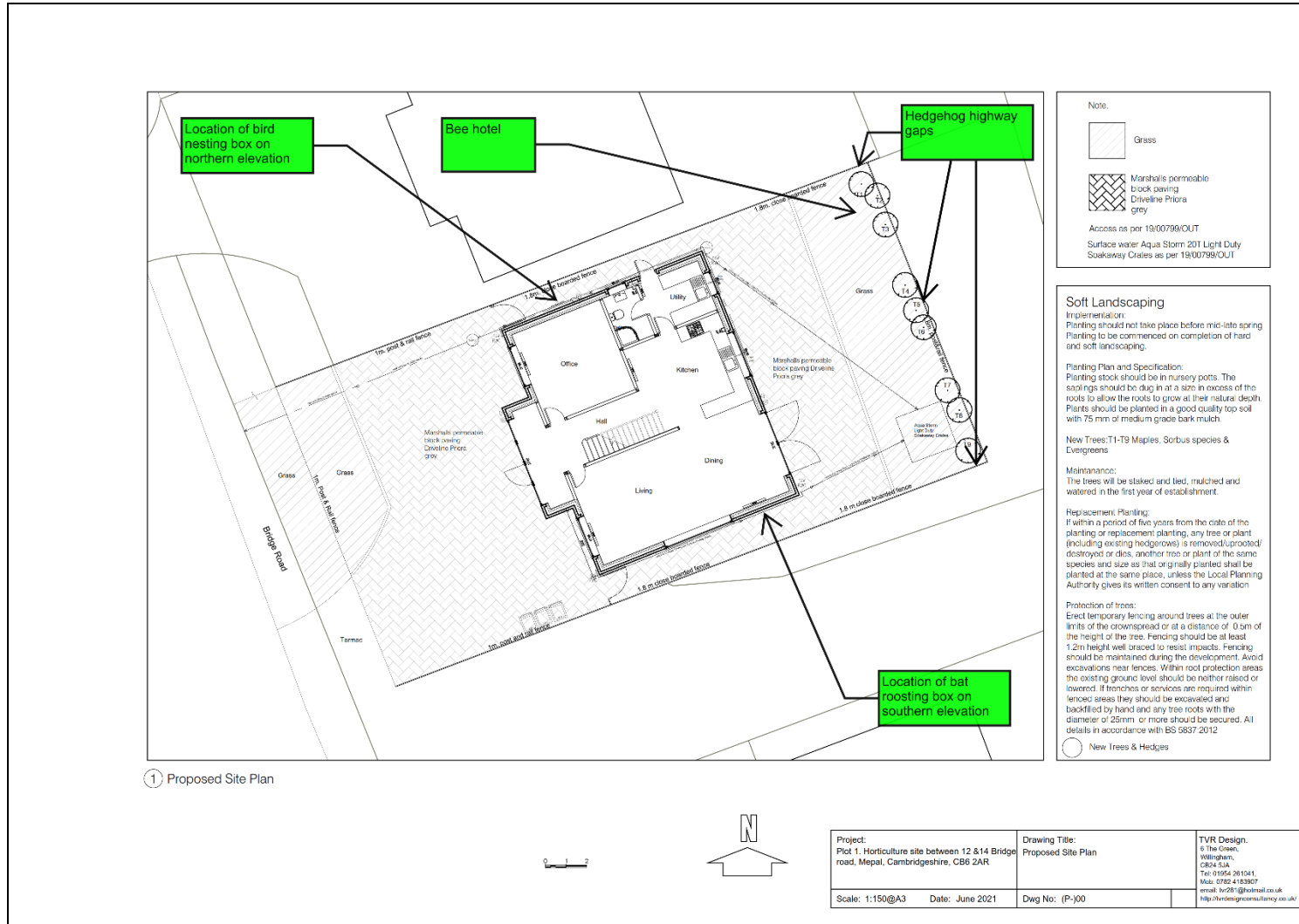
3 References

BSG Ecology (2021). *Bridge Road, Mepal: Biodiversity Enhancement* [dated 07 May 2021]. BSG Ecology, Cambridge.

Eaton, M.A., Aebischer, N.J., Brown, A.F., Hearn, R.D., Lock, L., Musgrove, A.J., Noble, D.G., Stroud, D.A. and Gregory, R.D. (2015). Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 108: 708–746.

4 Figures

Figure 1: Submitted Drawing (P-)00 annotated to show the location for the biodiversity enhancement features.



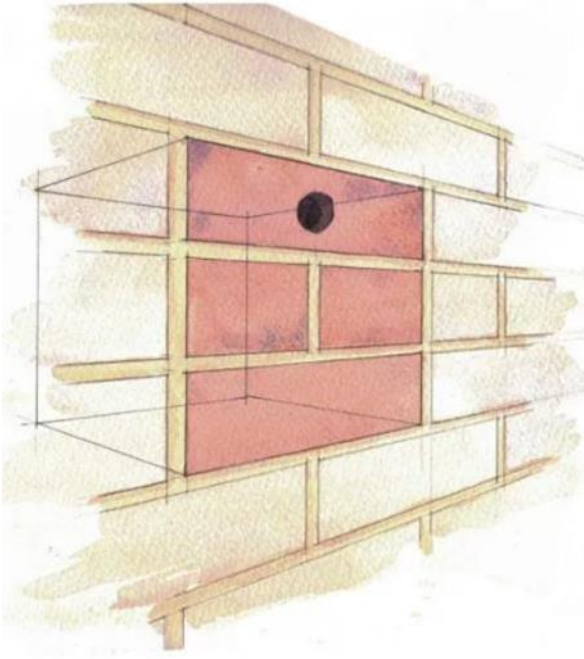



Appendix 1: Images of suitable products taken from the catalogues or websites of UK suppliers

This Appendix provides examples of suitable designs and it does not constitute an exhaustive list or an endorsement of that manufacturer's or supplier's product other than it represents the type of design that is described in this document.

Bird nesting boxes

To be built into the wall of a building





 <p>Type 24</p>	
<p>Schwegler Type 24</p>	<p>Vivaro Pro single chamber house sparrow</p>
	
<p>Habibat sparrow box</p>	<p>Aco Polymer build-in bird box</p>

To be attached to the wall of a building

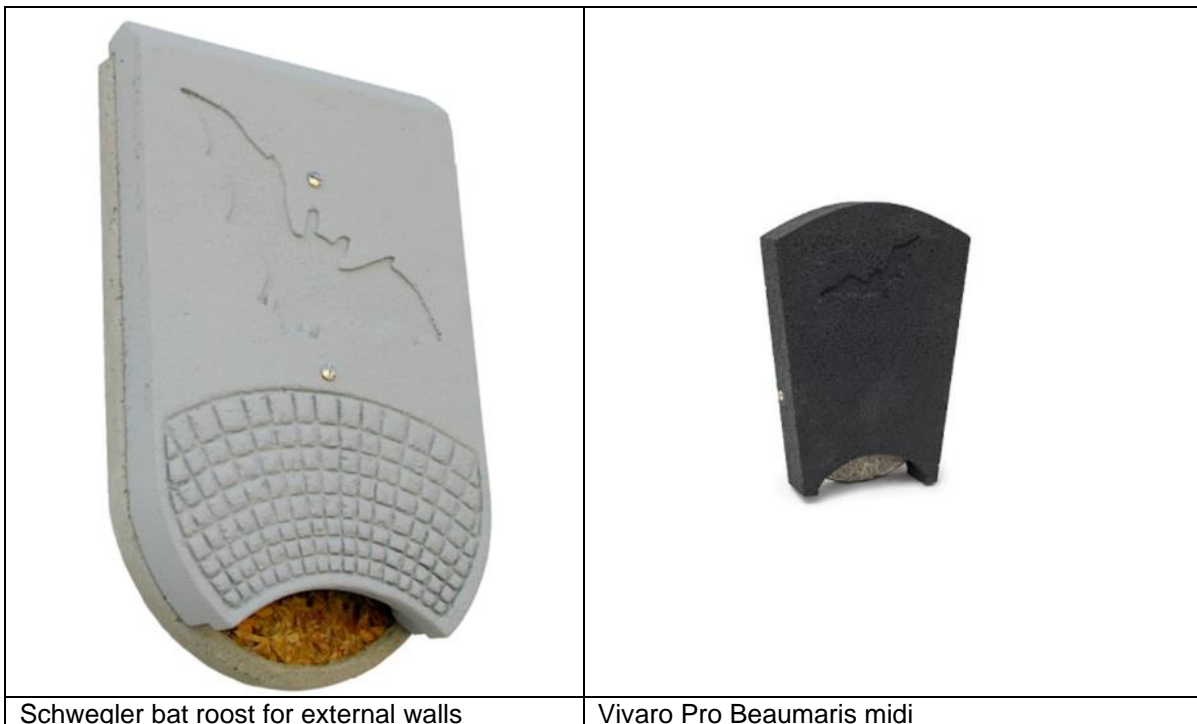
	
<p>Schwegler bird house</p>	<p>Vivaro Pro house sparrow</p>
	
<p>Schwegler Avianex Wall Nest Box</p>	

Bat roosting boxes

To be built into the wall of a building

	
<p>Ibstock Enclosed Bat Box 'C'</p>	<p>Vivaro Pro Segovia</p>
	
<p>Habibat 003 Bat Box</p>	<p>Bird Brick Houses Bat Box</p>

To be attached to the wall of a building



Hedgehog highway markers and gravel boards



Bee 'hotel'

	
<p>Vivara Pro insect hotel</p>	<p>Varya free-standing insect hotel</p>