

Document Title	Biodiversity Enhancement plan
Prepared for	Taylor Wimpey
Prepared by	TEP - Warrington
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DRAWINGS

Drawing 1 – D6987.02.001 Bird and Bat Box Location Plan

Drawing 2 - Planning Layout - PLA-01-L - Fox Wood Garden Village (FULL) 17.09.21

1.0 Introduction

1.1 The Environment Partnership (TEP) Ltd was commissioned by Taylor Wimpey (hereafter referred to as 'the client') in October 2021 to produce an ecological enhancement plan in association with the residential development and its associated works to be carried out at the Halsnead Park site in South Whiston (hereafter referred to as 'the site').

1.2 Full planning consent has been granted for residential development for up to 656 dwellings, recreational open space and landscape together with ecological mitigation area, attenuation features and access connections for cyclists and pedestrians and vehicles - *Planning Application ref: 20/00417/FUL*

1.3 Consent was awarded for this development with certain conditions, and this report has been created to discharge an element of Condition 23 which states that:

Prior to first occupation of any of the dwellings hereby permitted, a Landscape and Ecological Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. The LEMP shall include timing/implementation details of each phase and shall include, but not be limited to the following:

- (i) Submission of a breeding bird mitigation scheme which shall include details of the siting and type of bird boxes to be erected;*
- (ii) Submission of the bat mitigation scheme which shall include details of the siting and type of bat boxes to be erected;*
- (iii) Hedgerow planting;*
- (iv) Management proposals for Fox Clump and other retained habitats such as ponds, hedgerow and small woodland areas;*
- (v) SUDS and wildflower meadow management details;*
- (vi) Hibernacula for amphibians and measures for invertebrates and measures for invertebrates such as bug hotels;*
- (vii) Barn owl box to be erected on a suitable tree in Fox Clump, details of which shall be submitted to and approved in writing by the Local Planning Authority;*
- (viii) Hedgehog highways to be installed in boundary fences.*

The LEMP shall also include the following:

- (ix) Description and evaluation of the features to be managed;*
- (x) Ecological trends and constraints on site which may influence management;*
- (xi) Aims and objectives of management;*
- (xii) Appropriate management options for achieving aims and objectives;*
- (xiii) Prescriptions for management actions;*

(xiv) *Preparation of a work schedule (including an annual work plan and the means by which the plan will be rolled forward annually);*

(xv) *Personnel responsible for implementation of the plan;*

(xvi) *Confirmation of funding and ownership; and*

(xvii) *Details of a programme of monitoring and remedial measures triggered by monitoring.*

Reason: To protect and preserve the green space areas, in the interests of visual amenity and in the interests of promoting biodiversity and sustainable developments. This condition has been imposed having regard to policies CS2, SUE2 and CS21 of the Knowsley Local Plan Core Strategy 2016."

- 1.4 The site is located north of the M62, adjacent to Fox's Bank Lane in Whiston, Liverpool. The covers an area of approximately 12.5ha.
- 1.5 The majority of the site currently consists of agricultural grassland fields as well as area of woodland known as Fox's clump in the centre of the site. These areas have high potential for roosting bats and some potential for foraging and commuting bats, as well as potential for nesting birds.
- 1.6 This report outlines ecological enhancement measures to take place within the planning application boundary and wider ownership boundary as part of the planning conditions outlined above. Measures include a breeding bird mitigation scheme, including the use of a barn owl box; bat mitigation scheme; the installation of wildlife refugia such as brash piles, log piles and hibernacula; insect hotel information and a hedgehog highways scheme.
- 1.7 The Landscape and Ecological Management Plan (LEMP) (Document ref: 6987.02.003) outlines the other elements of the planning condition requirements outlined above including hedgerow planting, habitat management strategies and details, work schedules and monitoring proposals.
- 1.8 This report is based upon the development proposals for the site, within Drawing 2 - [Planning Layout - PLA-01-L - Fox Wood Garden Village \(FULL\) 17.09.21](#).
- 1.9 The potential of the new buildings and retained trees to be used by bats and birds can be enhanced by incorporating roosting and nesting features into the residential landscape design.
- 1.10 To compensate for the loss of habitat features it is proposed that 10% of all new dwellings will have either a bat or bird box installed on external elevations. There will be 66 bat and bird boxes within this mitigation scheme. 33 will be bird boxes and 33 will be bat boxes.
- 1.11 Examples of suppliers that stock the boxes recommended below include:
 - <https://www.nhbs.com/>
 - <https://www.wildcare.co.uk/>
 - <https://shopping.rspb.org.uk/>

- 1.12 Chapter 2 provides a specification for bat boxes. Chapter 3 specifies bird boxes. Chapter 4 provides installation information for bird and bat boxes. Drawing G6987.02.001 shows the proposed installation locations.

2.0 Bat Box Specifications

- 2.1 A variety of bat boxes have been chosen to suit the assemblage of bats identified as present within/near to the site during the surveys undertaken by TEP in 2018. The built-in boxes sit externally on the property and do not increase the risk of bats entering the property. These will suit small bat species such as Pipistrelle species whilst the tree boxes will suit most species including larger species such as noctule and long eared bats. Referring to drawing D6987.02.001 we have proposed for 20 bat boxes for buildings and 13 for trees.

Bat boxes for buildings	
Ibstock Enclosed Bat Box C This box is ideal for new builds as it can be integrated directly into the brickwork to produce a discrete but attractive home for bats. The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats such as the pipistrelle. The bottom entrance means that no maintenance is required as droppings simply fall out the bottom.	
Bat boxes for trees	
1FD Schwegler Bat Box This box has been developed specifically for smaller bats as both the interior and the type and size of the entrance hole match the requirements of smaller species. It features a special layout inside the domed roof, an increased interior height, and two grooved internal wooden front panels with spacing between them. This model has proved highly effective as a nursing area. This box has proved successful with brown long eared bats and pipistrelles. 2FN Schwegler Bat Box A larger box with both a wide access slit at the base and an access hole on the underside. Suitable for the larger British bat species. Particularly successful in attracting noctule and Bechstein's bats.	

3.0 Bird Box Specifications

- 3.1 Condition 23 calls for a "*Barn owl box to be erected on a suitable tree in Fox Clump, details of which shall be submitted to and approved in writing by the Local Planning Authority*".
- 3.2 Barn Owl nest boxes in the UK and Ireland should be placed:
- In open countryside in isolated trees or trees that overlook open habitat
 - Away from urban and suburban areas, dense forests, and high mountain areas
 - Away from sites within 1km of a motorway or other fast, unscreened main roads due to the risk of road-deaths
- 3.3 Nest boxes, however, do not need to be placed within rough grassland as the birds are perfectly capable of commuting across unsuitable habitats before starting to hunt. They have very large home ranges,
- 3.4 Referring to Condition 23, Fox Clump, as outlined above, is an unsuitable area for a barn owl box. A barn owl box is better suited to the north-east of the site, near to the pond, where open habitat adjacent to the site, over Fox's Bank Lane, can be accessed for hunting. This also situates the box further from the M62 to the south of the site.
- 3.5 Specifications of the barn owl nest box to be used for installation on a tree within the proposed development are provided below. Referring to drawing G6987.02.001 we have proposed for 1 barn owl nest box.
- 3.6 Barn owl boxes should be placed on large mature trees or on a sturdy pole due to their weight and size.

Barn Owl Box

This barn owl nest box has been designed with the Barn Owl Trust and constructed from FSC certified exterior grade plywood making it suitable for use both inside buildings, such as barns, or outside.

The nest box has a sturdy front platform for owlets to exercise on and a generous front canopy to protect the entrance and platform from bad weather.

The nest box is a generous size offering a full 44cm depth from entrance to floor. The double inspection hatch allows full access to the whole floor area for cleaning or inspection and is designed to prevent rain coming in with simple, secure fastenings. The specially drilled backplate provides fixings above and below the nest box to ensure it is secure and there are oversized holes to accommodate ropes for hauling the nest box up the tree and locating it.

This nest box will be delivered fully assembled with the exception of the platform which can be easily fixed in place without tools, before or after the nest box is fixed into position.

Dimensions: H 74 cm; W 59 cm; D 50 cm.



- 3.7 A variety of other general use bird boxes have been chosen to suit the assemblage of birds identified within the site during the 2018 surveys undertaken by TEP and described within TEP Report 6987.005. Referring to drawing D6987.02.001 we have proposed for 20 bird boxes for buildings and 9 for trees as well as 4 sparrow terraces.

Schwegler 1SP Sparrow Terrace

The Sparrow Terrace has been designed to help redress the balance of falling house sparrow numbers. Sparrows are social birds and like to nest in company. This terrace provides ideal nesting opportunities for three families.

Made of Schwegler's revolutionary wood-concrete mix, this terrace is durable, breathable and will last many decades. It may also occasionally attract tits, redstarts and spotted flycatchers. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. Cleaning is advisable but not necessary.



Bird boxes for buildings

Schwegler Type 25 Nest Box

Designed to be built into a brick wall and rendered over if required. The dimensions correspond to those of standard bricks used in European house construction, allowing for a 1cm layer of mortar.

The box comes with removable grey front panel. This box is suitable for many small birds including great, blue, coal tits, redstarts, nuthatch, tree and house sparrows.



Bird boxes for trees

1B Schwegler Nest Box

These Woodcrete nest boxes are famous for their durability - lasting for at least 20-25 years. Woodcrete is a breathable blend of wood, concrete and clay which will not rot, leak, crack or warp, whilst preventing condensation and maintaining more constant temperatures inside than wooden boxes. They are carefully designed to provide a stable environment and to mimic natural nest and roost sites with internal brood chamber dimensions that are similar to natural woodpecker cavities. Schwegler have a patented method of installation on trees that prevents the tree trunk from growing over the hanger from which the box is suspended.



4.0 Siting and Installation of Bat and Bird Boxes

- 4.1 The bat and bird boxes should be sited in accordance with the attached drawing G6987.02.001. Failure to do so may result in boxes being sited in sub-optimal positions that could lead to a lower take-up by bats and birds. Bird boxes should be sited with the hole facing between north and east and bat boxes should face between south and west. Proximity to suitable commuting and foraging habitat for bats and birds has also been considered during the siting process.
- 4.2 Where possible, both bat and bird boxes should be placed on retained mature trees to increase chances of usage. Wind affects young trees more and so boxes placed on these are less likely to be taken up by nesting birds or roosting bats.
- 4.3 The siting of either bat or bird boxes must not conflict with door and/or window locations for health and safety reasons.
- 4.4 It is recommended that new bat and bird boxes are installed during autumn and winter to ensure they are ready for use the following breeding season.

Bat Boxes

- 4.5 Bat boxes must be installed at heights of 3m and above. Bat boxes (for summer roosting) should be sited on south and west facing walls where no direct artificial light will shine on the box.
- 4.6 It must be ensured that there is unobstructed access for bats entering and leaving the bat box.

Bird Boxes

- 4.7 Bird boxes must be installed 2 metres or more above ground level.
- 4.8 It must be ensured that there is unobstructed access for birds entering and leaving the bird box.
- 4.9 Bird boxes should be placed on north and east facing walls. In order to avoid the prevailing wind, no bird boxes should be sited on the west of buildings.

Installation of Bat and Bird Boxes

- 4.10 All bat and bird boxes must be installed in line with the manufacturer's specifications to ensure no hazard is posed to occupants of the building or members of the public.
- 4.11 Should the recommended bird/bat boxes not be available, similar products are likely to be available from alternative suppliers. Any substitutions should be agreed with the Local Planning Authority.
- 4.12 Should the trees recommended in Drawing D6987.02.001 not be suitable for installation of any boxes, an ecologist must be consulted, and an alternative tree may be used or it must be substituted for a bird or bat box for buildings as described above.

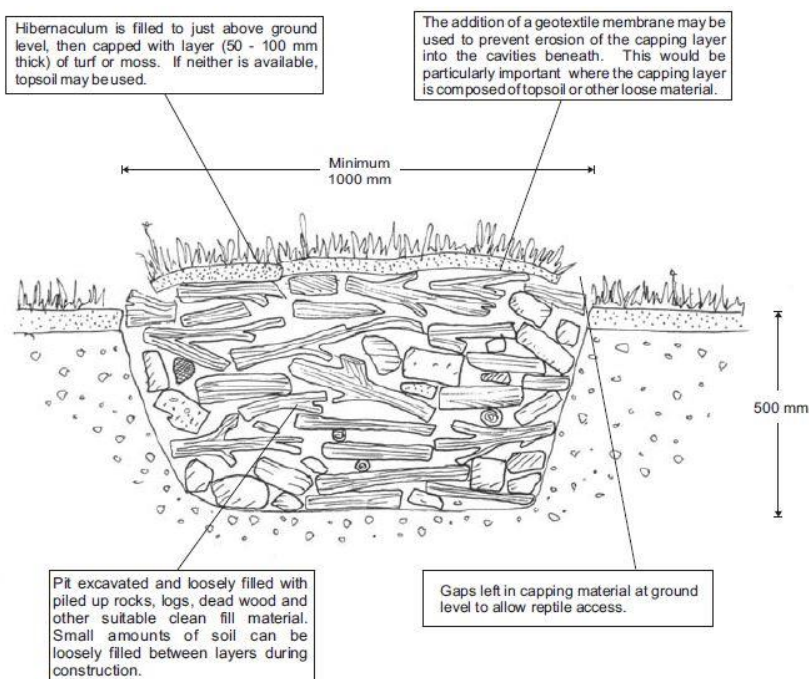
5.0 Further Ecological Enhancements

Habitat Creation Measures for Fauna

- 5.1 The planting strategy (outlined in TEP document 6987.02.003) will enhance nesting and foraging habitat within the site for birds; foraging and sheltering habitat for hedgehog, reptiles and amphibians; and foraging habitat for bats and invertebrates. Installation of wildlife boxes and refugia within the planning application site boundary and wider ownership site boundary will provide further habitat on site for these species.
- 5.2 The shrub, hedgerow, tree, whip, wildflower and bulb planting proposed within the planting schedule will create habitat within the planning application site boundary for foraging and commuting bats and birds. The retained pond, woodland and adjacent scrub habitats provide additional potential habitat for foraging and commuting bats and nesting birds.
- 5.3 Rowan, hawthorn, blackthorn, elder and dog rose are good examples of fruiting species which will provide a good food source for foraging birds.
- 5.4 Reptile and amphibian hibernacula should be installed within the site to enhance opportunities on site for hibernating reptiles and amphibians. These should be installed adjacent to the ponds on site. An ecologist or suitably qualified contractor can assess the ground conditions prior to installation and advice which design of hibernacula should be implemented. Further details are provided below.
- 5.5 Brash piles and log piles should also be created within the areas of woodland and scrub to be retained on site. This will further enhance hibernation opportunities for amphibians and reptiles.
- 5.6 Gaps will be left under fences in the back gardens of the residential properties to allow connectivity for hedgehogs across the site and to the wider area. The brash piles, mentioned above, will also be utilised by hedgehogs and enhance sheltering and hibernation opportunities for them on site.
- 5.7 Invertebrate hotels can be created within woodland areas and adjacent to the ponds. These can be purchased or can be handmade using material found on site. The MiniBeast HQ is recommended, although any large invertebrate hotel with a similar specification will be suitable. This features different sized chambers some of which are filled with various materials to attract solitary bees, ladybirds, lacewings, spiders and woodlice. Materials include drilled logs, small drilled canes, large canes, pine cones, latte balls and bark. The bottom chambers are left empty so to be filled with materials of choice (e.g. twigs, straw, hay, leaf litter). At the very bottom of the Minibeast HQ is a mini mammal house which will provide a refuge for shrews, field mice and even frogs or toads. Further details are provided below.

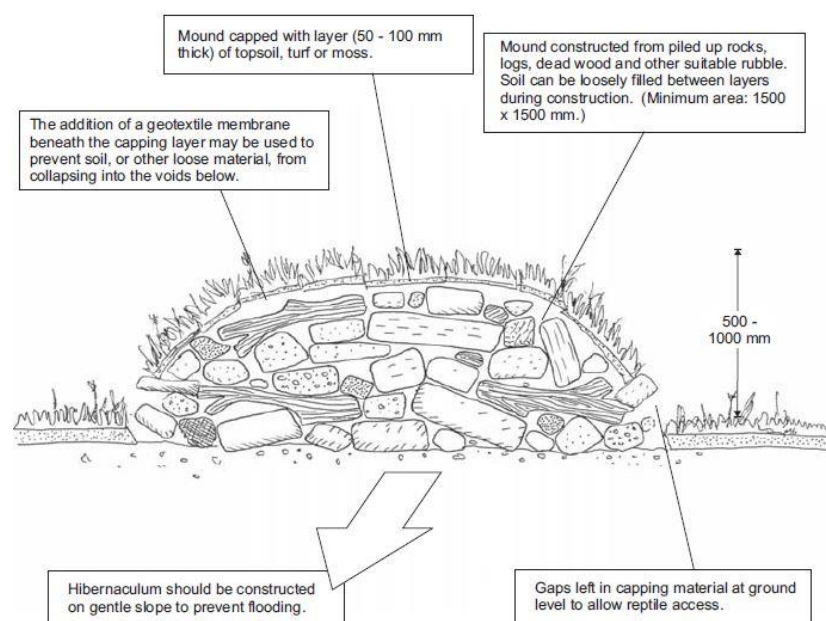
Amphibian and Reptile Hibernacula

Amphibian and Reptile Hibernaculum on free-draining ground



Reptile Hibernaculum on impermeable ground

Amphibian and Reptile Hibernacula



Where ground conditions are impermeable, then an 'above-ground' or mounded design should be utilised in order to prevent the hibernaculum from flooding. This design should also be used if it is not possible to excavate a pit for any reason.

Invertebrate Hotel

Minibeast HQ

Designed to provide habitat for invertebrates including solitary bees, ladybirds, lacewings, spiders and woodlice.

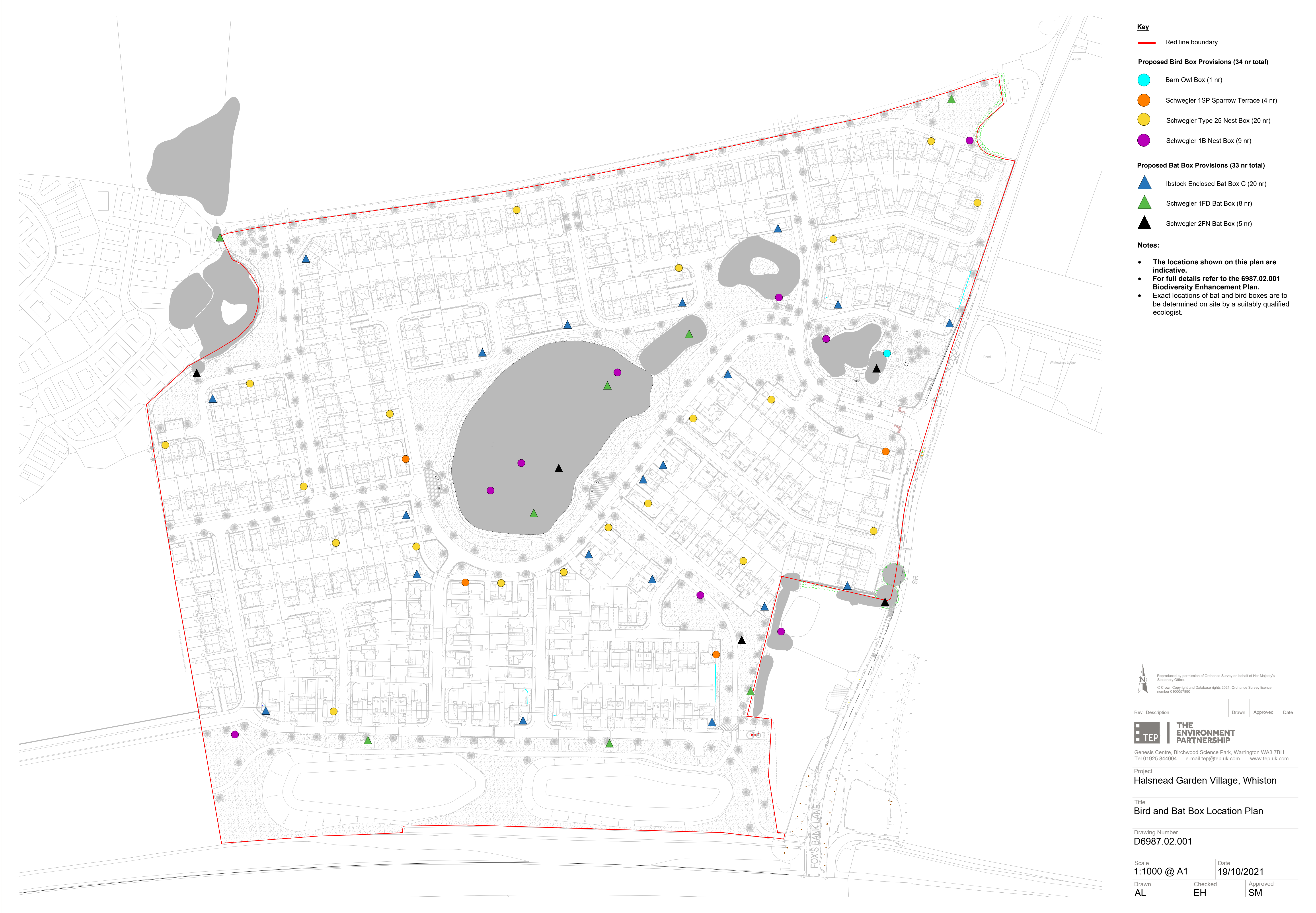
Dimensions: 102cm height x 96cm width x 40cm depth.

Weight 40kg.



DRAWINGS

Drawing 1 – D6987.02.001 Bird and Bat Box Location Plan
Drawing 2 - Planning Layout - PLA-01-L - Fox Wood Garden Village (FULL)
17.09.21



- Key**
- Red line boundary
- Proposed Bird Box Provisions (34 nr total)**
- Barn Owl Box (1 nr)
 - Schwegler 1SP Sparrow Terrace (4 nr)
 - Schwegler Type 25 Nest Box (20 nr)
 - Schwegler 1B Nest Box (9 nr)
- Proposed Bat Box Provisions (33 nr total)**
- Ibstock Enclosed Bat Box C (20 nr)
 - Schwegler 1FD Bat Box (8 nr)
 - Schwegler 2FN Bat Box (5 nr)
- Notes:**
- The locations shown on this plan are indicative.
 - For full details refer to the 6987.02.001 Biodiversity Enhancement Plan.
 - Exact locations of bat and bird boxes are to be determined on site by a suitably qualified ecologist.

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Halsnead Garden Village, Whiston

Title
Bird and Bat Box Location Plan

Drawing Number
D6987.02.001

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Drawn	Checked	Approved
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