Landscape & Ecological Management Plan for Parcels B4A & B4B, Heyford Park, Camp Lane, Upper Heyford, Bicester

Cotswold Wildlife Surveys

January 2019

Planning Reference No. 17/00983/REM – Condition Nos. 15 & 16

CONTENTS

SUMMARY

On 7th August 2018, for Parcels B4A & B4B at Heyford Park on Camp Road in Upper Heyford near Bicester (Fig. 1), a Reserved Matters application was approved by Cherwell District Council (North Oxfordshire), for a residential development of 29 open market and 71 affordable dwellings (Ref. 17/00983/REM).

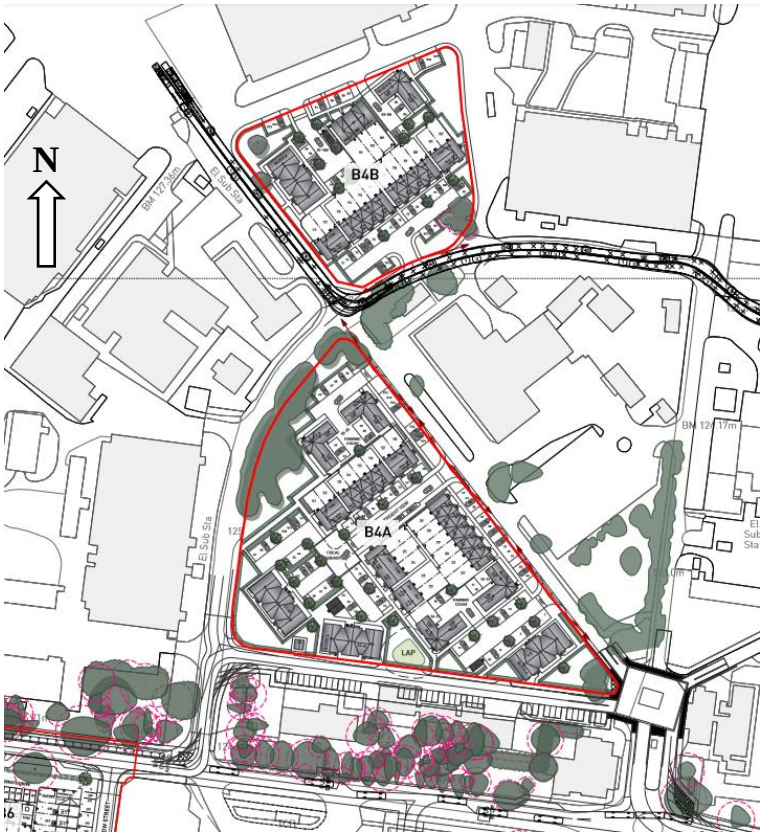


Fig. 1 Parcels B4A & B4B, Heyford Park

One of the conditions (No. 15) of the permission, is for the production of a Landscape and Ecological Management Plan (LEMP).

The condition states:

Prior to the first occupation of the development hereby approved, a Landscape and Ecology Management Plan (LEMP) shall be submitted to and approved in writing by the Local Planning Authority. Thereafter, the LEMP shall be carried out in accordance with the approved details.

Reason – To protect habitats of importance to biodiversity conservation from any loss or damage in accordance with Policy C2 of the adopted Cherwell Local Plan and Government guidance contained within the National Planning Policy Framework

A second condition (No. 16) of the permission refers to the provision of nest/roost boxes, as follows:

Prior to the commencement of any phase of the development hereby approved, full details of a scheme for the location of swift bricks, bat, bird, owl and invertebrate boxes on that phase of development shall be submitted to and approved in writing by the Local Planning Authority. Thereafter and prior to the occupation of any building [on that phase of the development], the bat, bird, owl and invertebrate boxes shall be installed on the site in accordance with the approved details.

Reason – To protect habitats of importance to biodiversity conservation from any loss or damage in accordance with Policy C2 of the adopted Cherwell Local Plan and Government guidance contained within the National Planning Policy Framework.

This report provides details of the ecological and landscape enhancement measures that will be undertaken, along with the types and locations of boxes, to allow the above conditions to be discharged.

1. INTRODUCTION

In April 1997 the first of a series of ecological surveys was carried out at Heyford Park near Bicester in north Oxfordshire. Over the next 14 years the following suite of surveys were undertaken by various ecological consultancies:

- Grassland Vegetation Survey (EPR, April 1997);
- Breeding Bird Survey (EPR, June 1998);
- Skylark and Vegetation Survey (EPR, June 1999);
- Bat Survey (EPR, May 2001);
- Badger Survey (EPR, May 2002);
- Bat Survey (EPR, May 2002);
- Breeding Bird Survey (EPR, May 2002);
- Breeding Bird Survey (Ecoscope, May 2002);
- Vegetation and Habitat Survey (Ecoscope, May 2002);
- Great Crested Newt Survey (EPR, May 2002);
- Great Crested Newt Survey (Bioscan, April 2005);
- Updating Vegetation Survey (EPR, Oct 2006);
- Bat Survey (EPR, Oct 2006 and July 2007);
- Updating Bird Survey (EPR, Oct 2006);
- Updating Badger Survey (EPR, Jan 2007);
- Updating Great Crested Newt Survey (EPR, May 2007);
- Invertebrate Survey (EPR, June/July 2007);
- Extended Phase 1 Habitat Survey (Thompson Ecology Ltd, April 2010);
- Great Crested Newt Survey (Thompson Ecology Ltd, June to September 2010);
- Reptile Survey (Thompson Ecology Ltd, June to September 2010);
- Bat Survey (Thompson Ecology Ltd, June to September 2010).

These surveys were undertaken to determine the presence of any important habitats or species which might be impacted on by proposed re-development of the site.

An ecological data search identified two statutory designated sites within 2.0 km of the Heyford Park boundary; Ardley Trackways Site of Special Scientific Interest (SSSI) which is designated solely for geological features, and Ardley Cutting and Quarry SSSI which is designated for calcareous grassland.

Two non-statutory sites also lie within 2.0 km of the site perimeter; RAF Upper Heyford Airfield County Wildlife Site (CWS), and Rush Spinney CWS, both with designations for nature conservation.

None of the designated sites will be affected by the proposed re-development on Parcels B4A & B4B.

The following European Protected Species, UK Biodiversity Action Plan (UKBAP) and Local Biodiversity Action Plan (LBAP) species have been recorded at the Park, but not necessarily within the two Parcel's site boundary.

A medium population of Great Crested Newts *Triturus cristatus* is present across the wider site, but not on the two Parcels.

A number of buildings on the wider site support roosting bats, with several species recorded as foraging and commuting on-site; Common Pipistrelle *Pipistrellus pipistrellus,* Soprano Pipistrelle *P. pygmaeus,* Brown Long-eared *Plecotus auritus,* Noctule *Nyctalus noctula,* Leisler's *N. leisleri*, and Serotine *Eptesicus serotinus*.

An active Badger *Meles meles* sett was noted off Chilgrove Drive east of the site, and Badgers were seen crossing the site at night during surveys.

There were a number of bird records, including a variety of Species of High and Medium Conservation Concern (RSPB Red and Amber lists). Nesting species across the wider site, but not on the Parcels, included Song Thrush *Turdus philomelos*, Starling *Sturnus vulgaris* and House Sparrow *Passer domesticus* (all Red listed species.)

1.1 Habitat features

The two Parcels originally consisted of buildings and hardstanding interspersed with patches of close mown amenity grassland and a few scattered trees. Most of the buildings have since be removed, and the majority of the site currently comprises the hardstanding and bare ground, with several spoil heaps. Area of unmown grassland and the trees are still present.

1.2 Species features

No rare vascular plants have been found, and all species recorded are common and widespread.

The scattered trees provide potential nest sites for common birds, but no bat roost features have been noted. However, pipistrelle bats have been detected flying around the site boundaries as they forage at night, in particular around the trees.

2. PROTECTION OF EXISTING FEATURES

2.1 Bats

Indeed, in order to comply with paragraph 125 of the National Planning Policy Framework, the development should aim to limit the impact of light pollution on bats by maintaining dark routes for commuting and foraging where possible.

As such, the existing trees will be retained, whilst lighting installed will follow as far as possible, the guidance provided by the Bat Conservation Trust and the Institute of Lighting Engineers.

Latest research from the Netherlands has shown that spectral composition does impact biodiversity.

As such it is recommended to:

- Use narrow spectrum light sources to lower the range of species affected by lighting;
- Use light sources that emit minimal ultra-violet light;
- Lights should peak higher than 550 nm;
- Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm/neutral colour temperature <4,200 kelvin.

All of the above recommendations make LED luminaires the only source that meet the majority of the guidance, as emit no UV, can peak high than 550nm and can easily be <4200k in colour temperature. Hoods or cowls may have to be used on the road lamps.

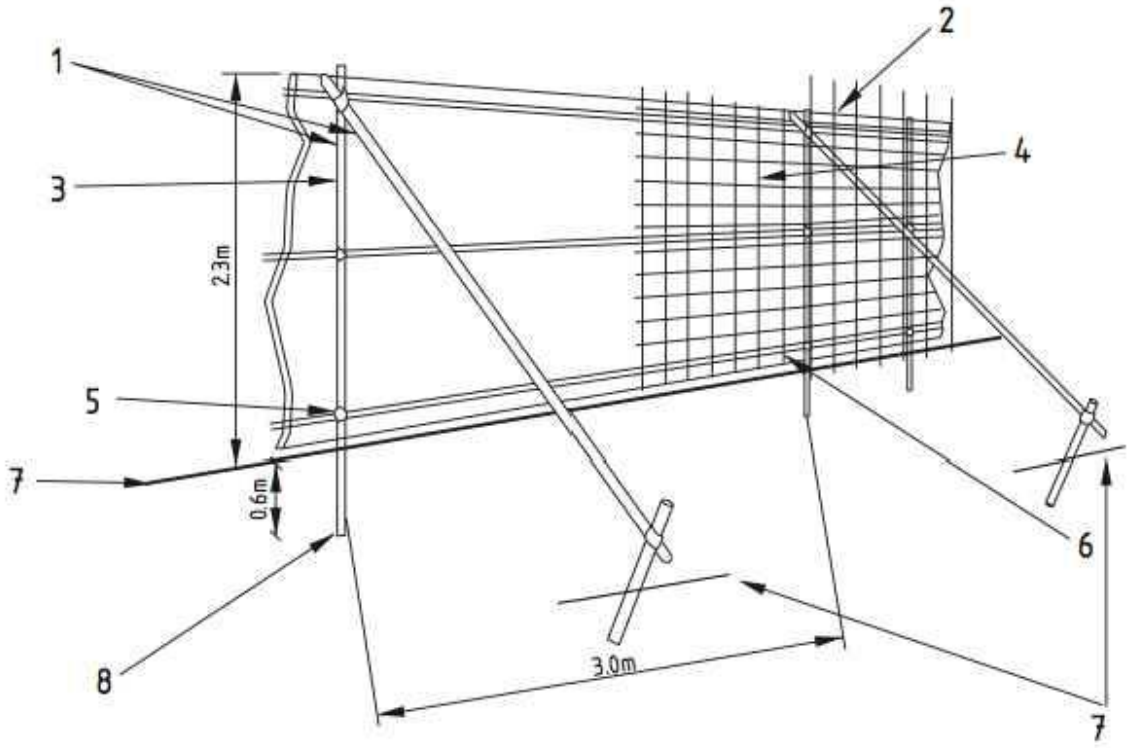
2.2 Trees

Following the completion of any tree works, Protective Barrier Fencing (PBF) is to be installed as per the guidelines in *BS5837:2012 Trees in relation to design, demolition and construction – recommendations*. The PBF is to remain in situ for the entire duration of the construction and landscaping phase, unless otherwise agreed in writing by the Local Authority.

The PBF, due to the degree and proximity of work taking place around the trees, is to consist of *"a vertical and horizontal* (scaffold) *framework, well braced to resist impacts, with the vertical tubes spaced at a maximum of 3m.*

Onto this, weld mesh panels should be securely fixed with wire or scaffold clamps. Weldmesh panels on rubber or concrete feet are not resistant to impact and ideally should not be used, unless they are firmly fixed.

The type of fence to be used is shown in Fig. 2 overleaf.



1 Standard scaffold poles
2 Uprights to be driven into the ground
3 Panels secured to uprights with wire ties and where necessary andard scaffold clamps
4 Weldmesh wired to the uprights and horizontals
5 Standard clamps
6 Wire twisted and secured on inside face of fencing to avoid easy dismantling
7 Ground level
8 Approx. 0.6 m driven into the ground

Fig. 2 Protective Barrier Fencing

Tree protection signage denoting the words *"TREE PROTECTION ZONE – KEEP OUT"* is to be fixed onto panels of the PBF (Fig. 3).

Fig. 3 Example of signage

2.3 Birds

The retention of the existing trees will ensure that potential nesting sites are maintained.

However, as a precaution, it should be noted that since all in-use bird's nests and their contents are protected from damage or destruction, any tree or shrub removal or works which may affect a nest should be undertaken outside the period 1st March to 31st August inclusive.

If this time frame cannot be avoided, a close inspection of the trees, shrubs or structures to be removed should be undertaken prior to clearance. Work should not be carried out within a minimum of 5.0 metres of any in-use nest, although this distance could be more depending on the sensitivity of the species.

3. LANDSCAPING DETAILS

3.1 Planting scheme

As noted, the site comprises mainly hardstanding and bare ground, with areas of unmown grass and a few scattered trees.

The approved development is for 29 open market and 71 affordable dwellings in two Parcels. These are shown in Figs. 4 and 5 below and overleaf, along with the proposed landscaping.

The landscape strategy consists of the following elements:

- Tree and shrub planting;
- Gassed areas;
- Herbaceous areas;
- Bulb planting;
- Hedge planting.

Fig. 4 Parcel B4A

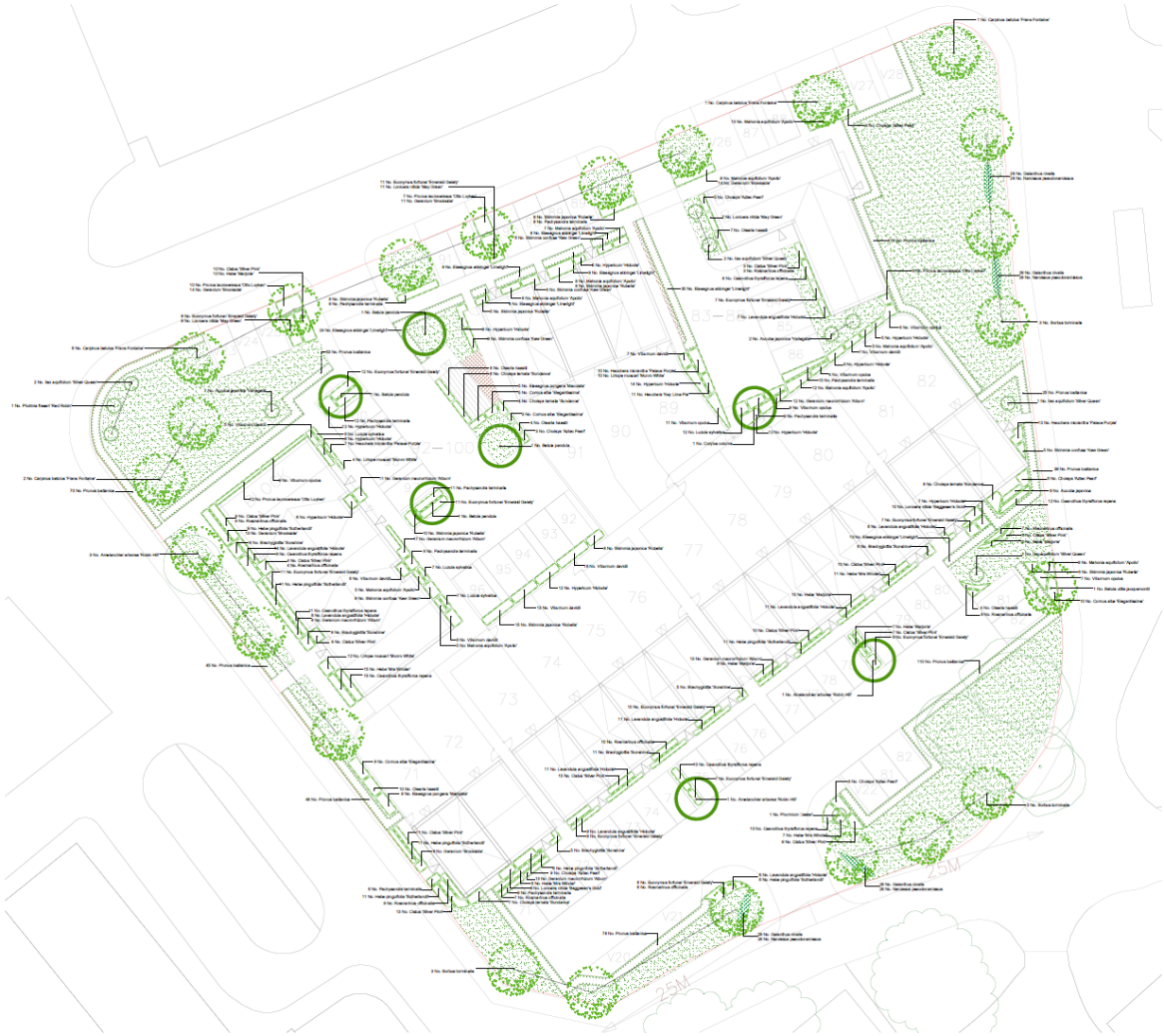


Fig. 5 Parcel B4B

Although full details and specifications are included in the landscaping layout drawings and the planting schedule, these can be summarised as follows:

Trees will include the following broadleaved species – Silver Birch *Betula pendula*, Himalayan Birch *B. utilis jacquemontii*, Hornbeam *Carpinus betulus*, Wild Service-tree *Sorbus torminalis*, Erect Crab Apple *Malus trilobata*, Turkish Hazel *Corylus colurna* and Snowy Mespil *Amelanchier arborea*.

A total of 40 shrub species and varieties are proposed, these mainly non-native species including, *Hebes, Loniceras, Pittosporums, Mahonia, Cornus, Cistus* and *Viburnums*, amongst others.

An amenity grass seed mix will be used, such as Tillers 'Arena' or similar, with grasses represented by Perennial Ryegrass *Lolium perenne*, Creeping (Red) Fescue *Festuca rubra*, Chewings Fescue *Festuca sp*, and Browntop Bent *Agrostis sp*.

The new hedge planting will use native and non-native species, whilst bulbs will include Snowdrops *Galanthus nivalis* and Daffodils *Narcissus pseudonarcissus*.

Herbaceous areas will consist of *Geraniums*, Great Wood-rush *Luzula sylvatica*, Lily Turf *Liriope muscari*, and Coral Bells *Heucheras.*

This combination of native and non-native species will provide opportunities for insects such as butterflies and moths, bees and hoverflies, as well as numerous other invertebrate species. These in turn will attract birds and small mammals.

When the gardens mature, the trees and hedgerow will provide cover for nesting birds, the latter capable of supporting nests within 10 years.

It will be important to ensure that the non-native species do not spread into the adjacent landscape, so one of the duties for the Management Company, who will maintain the site post completion, will be to check that non-natives are not establishing outside the gardens or public open space. Any non-native plants discovered will be removed from site and disposed appropriately.

3.2 Planting Specification

3.2.1 Soils

Subgrade/subsoil to be prepared in accordance with BS4428 and scarified or ripped to 300 mm depth prior to spreading topsoil to alleviate compaction and promote drainage. Imported and as saved topsoil to be in accordance with BS3882:2007 'Multipurpose Grade' with minimum soil organic matter contents 1% greater than the minima value (or as approved). Imported topsoil (and 'as saved' if requested) is to be laboratory tested to BS3882: 2007 and ameliorated as required to meet the required characteristics as detailed within Table 1 of BS3882: 2007 specification. Grass areas to be a minimum depth of 150mm. Shrub beds 450 mm depth and forestry/transplants 300 mm depth. Any weed/grass growth to be sprayed out with appropriate herbicide at least 10 days prior to cultivation. Incorporate proprietary non peat compost to BSI PAS 100 to 50mm depth evenly worked into soil.

N.B Proposed services (electric, water, gas etc) in landscape areas should be installed as a minimum below the required topsoil depths and clearly identified in accordance with service/utility requirements.

For grassed areas the soil depth should be a minimum of 250 mm, with sub-soil used rather than topsoil, as the latter contains a high percentage of 'weed' seeds.

3.2.2 Existing trees

As noted, where trees are to be retained they should be subject to a full arboricultural inspection to assess condition and safety. Retained trees shall be protected from damage by erection of 2.3 m weld mesh fencing on a scaffold framework in accordance BS5837:2012.

These barriers shall be maintained in position and in good condition until works are complete. Fencing to be located at a radius of 12 times the stem diameter (single stem trees) or 10 times the basal diameter (trees with more than one stem arising below 1.5 m above ground level). Further precautions are to be taken as detailed within BS5837:2012.

3.2.3 Tree planting

Each new tree's location should be properly prepared with adequate drainage and room for future development. For larger specimens:

All trees to be in accordance with BS3936:4043. Trees to be planted in accordance with BS4428 and to have a non-intrusive and adjustable supportive system installed in the form of either staking or above/underground guying. If the former, trees to be securely staked and tied in piles 1000 x 1000 x 750 mm backfilled with topsoil mixed with 40L of tree planting compost, ensuring tree pits are a minimum of 75 mm deeper and 150 mm wider than the tree roots. Base of pits to be broken up to a depth of 150 mm. Root balls to be encircled by Root Rain Metro or similar irrigation pipe. Well-water after planting. The base of trees to be planted in grass are to be covered with 75mm depth bark mulch to 1.0 metre diameter and kept weed free.

Suitable foundations are to be provided to accommodate proposed tree planting and retained trees in accordance with the NHBC standards. The NHBC radii are illustrated as a guide only; based on an assumed medium soil type and minimum foundation depths and should not be relied upon or construction purposes.

In locations close to footpaths and roadways linear root barriers Greenleaf, ReFoot or similar are to be installed in accordance with manufacturer's instructions. Where proposed tree locations conflict with services, trees are to be relocated in accordance with the appropriate utilities guidance notes subject to client/local authority approval. Proprietary root barrier Greenleaf, ReRoot or similar to be installed in accordance with manufacturer's instructions where relocation is not considered appropriate.

3.2.4 Shrub, hedge & herbaceous planting

Plants to be in accordance with BS3936 and handled in accordance with CPSE guidelines and planted in accordance with BS4428.

Before planting the shrubs, any non-perishable containers should be removed, with careful pruning of any badly damaged roots.

- The planting pit is to be excavated to a sufficient width and depth to accommodate the root-ball, allowing a minimum of 0.5 m clearance, with the additional breaking up of the planting pit's sides and base;
- The shrubs are to be planted to the same depth as existing, i.e. not above the root collar, and each specimen should be planted upright or well balanced, with the best side facing the front;

- The displaced soil should be returned and packed evenly around the roots and firmed in;
- Immediately after planting, all shrubs should be watered with a fine rose;
- Any damaged, dead or diseased branches should be removed, along with any thin, weak or malformed growth;
- The soil between specimens should be raked to a fine tilth, with no hollows;
- The whole surface should then be mulched to a depth of 75 mm with bark chippings.

3.2.5 Turfing

Topsoil to be rotorvated and levelled as required and any debris or stones greater than 50 mm diameter removed. Pre-turfing fertiliser to be applied in accordance with manufacturer's instructions. Turf to be laid from planks with broken joints well butted up, pegged to slopes where required. Well-water after laying to avoid shrinkage

Cutting should take place when the grass is approximately 50 mm high. Prior to cutting, all debris, litter, stones and clay balls larger than 25 mm in any dimension should be removed, followed by a roll with a light roller.

About 48 hours later, when the sward is dry, it should be cut to 25 mm with a cylinder mower and all arisings removed. Thereafter the grass can be cut as frequently as required.

A suitable aftercare and maintenance programme, i.e. additional watering and weed control is essential to ensure the tree establishes successfully. As such the aftercare programme will continue for five years and will include the replacement of any dead, dying, damaged or diseased specimens.

4. ECOLOGICAL ENHANCEMENTS

In order to discharge condition 16, the scheme should incorporate Swift *Apus apus* bricks, bat, bird, owl and invertebrate boxes. Some of these can be erected on retained trees, e.g. a Tawny Owl *Strix aluco* box, and in existing vegetation in the public open space areas, e.g. the bird and invertebrate boxes, but 10% of houses will have a Swift brick and 10% a bat tube (20 houses in total).

4.1 Bats

For bats there will be a Schwegler 1FR bat tube incorporated in the western gable end of plot 3, the eastern gable end of the garage in plot 6, and the northern gable end of the garage in plot 13.

The Schwegler 1FR bat tube (Fig. 9) is a long box that can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits. This box is maintenance free as the entrance slit is at the bottom.

The dimensions are 47.5 cm high x 20 cm wide x 12.5 cm deep, with an entrance 15 cm wide x 2 cm deep. The weight is 13 kg. No painting is required, but if necessary a natural breathable paint can be used. An example of a fitted bat tube is in Fig. 10.

Fig. 6 Schwegler 1 FR bat tube

Fig. 7 Bat tube installed in gable end

4.2 Birds

For Swifts a Type 25 Schwegler box will be used (Fig. 8). This is a wide box with a removable entrance hole at the right-hand side. With an entrance hole measuring 55 x 33 mm this is the ideal box for attracting Swifts. Dimensions: height 18 cm, width 26.5 cm, depth 22 cm. Weight = approx. 8.8 kg. The boxes will be incorporated into the eaves, just under the roof overhangs or guttering.

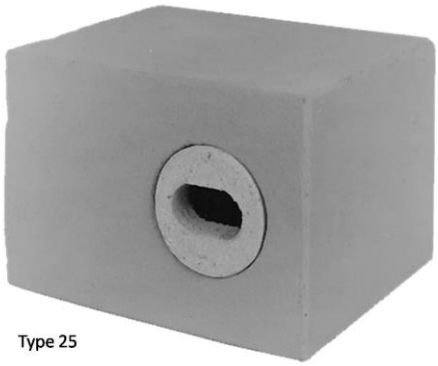


Fig. 8 Schwegler Type 25 Swift nest brick

A Tawny Owl box (Fig. 9) will be attached to a suitable limb on one of the retained trees.

Fig. 9 Tawny Owl box

For small birds there will be two each of Schwegler boxes 1B 26 mm, 1B 32 mm and 2H (Fig. 10) attached to trees and larger shrubs around the site boundaries.

Fig. 10 Schwegler bird nest boxes 1B (26 mm), 2H and 1B (32 mm)

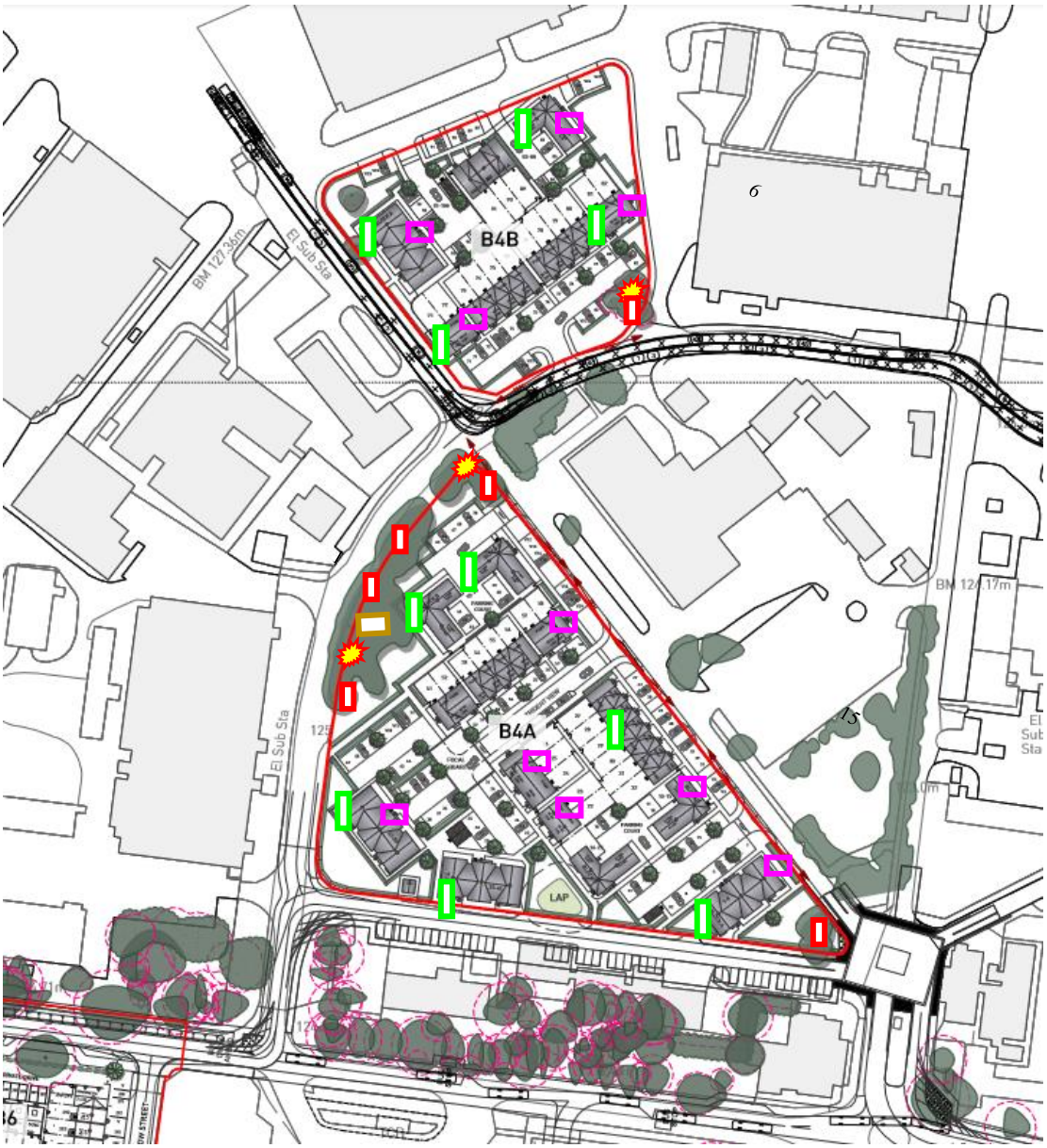
The 1B is available with a 26 mm hole for the tit *Parus spp* family and a 32 mm hole suitable for sparrows *Passer spp*. The 2H is open-fronted for a variety of species such as Robin *Erithacus rubecula*, Wren *Troglodytes troglodytes*, Spotted Flycatcher *Muscicapa striolatum* and Pied Wagtail *Motacilla alba*. These will face east to southeast, at varying heights to suit the different species.

4.3 Invertebrate boxes

Additional features will include the provision of three insect boxes (examples in Figs. 11 and 12) attached to retained trees.

Figs. 11 & 12 Examples of invertebrate boxes

The approximate locations of all the boxes and bat tubes are shown in Fig. 13 overleaf.



Not to scale

Fig. 13 Locations of Tawny Owl box Swift boxes bird boxes bat tubes and invertebrate boxes

5. MAINTENANCE AND MONITORING

In the long term, maintenance of the site will be carried out by a management company, whose duties will include the upkeep of the open spaces, removing litter and debris, keeping a check on non-native species spread, mowing grass, and maintaining the hibernacula.

Features within the private properties will be maintained by the respective residents, and the presence of these features, and the requirement to maintain them, will be included in the householder documentation when the dwellings are sold.

If necessary, monitoring of the habitat and species enhancements will be undertaken by an ecological consultant after the establishment and aftercare period.

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Parcels B4A and B4B, Heyford Park, Upper Heyford – Landscape & Ecological Management Plan

To: Bovis Homes

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