

# HEYFORD PARK, BICESTER, PARCEL 6

## LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

### 4 ACRE ECOLOGY REPORT

October 2018

---

MITIGATION IMPLEMENTATION REPORT

IMPLEMENTATION AND MONITORING SCHEDULE FOR BATS (EXTRACT)

PHASE 6 BAT BOX AND ROOST LOCATIONS



**Heyford Park,  
Settlement Area  
Mitigation Implementation  
Programme**

On Behalf of:  
The Dorchester Group

Issue No.	1
Issue Date	27/11/2012
Written By:	Mark Satinet
Checked By:	Paula Matthews

4 Acre Ecology Limited



# Contents

1. Executive Summary .....	2
2. Introduction.....	3
Background .....	3
Aims and Objectives .....	4
3. Legislation and Planning Policy .....	5
4. Discussion.....	7
Bats .....	7
Great Crested Newts .....	8
Nesting Birds .....	9
Hedges .....	9
Trees.....	9
5. Recommendations.....	10
Bats .....	10
Great Crested Newts .....	10
Nesting Birds .....	12
Hedges .....	12
Trees.....	13
6. Implementation Programme .....	14
Demolition and Construction.....	14
Monitoring .....	16
7. Figures .....	17
8. References.....	21



## 1. Executive Summary

- 1.1 Heyford Park is a former military base with the first buildings built in 1926 (Central Grid Reference SP 51432577), with various additions since then, especially when it was used as an American Air Base. This was decommissioned in 1994 and many of the buildings have been unoccupied since.
- 1.2 'Hybrid' planning permission (ref: 10/01642/OUT) was granted by Cherwell District Council on 22 December 2011 for the comprehensive redevelopment of a new settlement at Upper Heyford. The permission was accompanied by an S106 Agreement. Conservation Area Consent (ref: 10/01619/CAC) was also granted on 14th February 2011, which consented to the demolition of 120 buildings and structures across the new settlement development site.
- 1.3 Previous surveys between 2001 and 2010 culminated in an Environmental Statement, produced by Waterman in 2010. The Ecology Chapter of this (Chapter 12) included mitigation measures to minimise the impact and enhance the site post-development. In the consented planning permission Condition 48 required a Programme of Implementation of mitigation and enhancement to be produced before development of the site could start.
- 1.4 The Environmental Statement identified hedgerows and trees, Great Crested Newts, Bats and nesting birds as requiring on-site mitigation, with further enhancement to these and water bodies across the Settlement Site.
- 1.5 Additional surveys were carried out by Thomson for bats in 2011 and for bats and Great Crested Newts by 4 Acre Ecology in 2012. A European Protected Species Licence for bats, with a full mitigation package, is required for the demolition of buildings containing roosts, while a method statement only is required for Great Crested Newts.
- 1.6 This report sets out the programme for implementing the European Protected Species Licence for bats, the method statements for Great Crested Newts and the on-going work for trees, hedges, ponds and nesting birds during the phased development, including a comprehensive monitoring programme.





## 2. Introduction

### *Background*

- 2.1 Heyford Park is the former RAF Base of Upper Heyford, Oxfordshire (Central Grid Reference SP 51432577). The base was originally built in 1926 and has had many additional buildings constructed up until the 1980s. The base was decommissioned in 1994 and many of the buildings have been empty since. However, the park has been increasingly used as a light industrial area around the former flying field, with occupied housing centrally to the south of Camp Road.
- 2.2 For the last ten years there have been plans to redevelop the site into mixed business and residential uses, divided roughly north and south of Camp Road, the majority of the housing to the south and most of the business areas to the north.
- 2.3 'Hybrid' planning permission (ref: 10/01642/OUT) was granted by Cherwell District Council on 22 December 2011 for the comprehensive redevelopment of a new settlement at Upper Heyford. Given the complexity of the scheme, a hybrid permission was approved which contains elements of full planning permission and outline planning permission for differing parts of the development. The permission was accompanied by 57 planning conditions. Pre-commencement conditions are in the process of being discharged and this document forms Condition 48.
- 2.4 In addition, as the entire site lies within a Conservation Area, Conservation Area Consent (ref: 10/01619/CAC) was also granted on 14th February 2011, which consented to the demolition of some 120 buildings and structures across the new settlement development site. This consent was subject to 5 conditions which are also in the process of being discharged.
- 2.5 A separate Ecological Mitigation and Management Plan has been written for the Flying Field area at Heyford Park (Thomson, 2010). This report deals exclusively with the Settlement Area of the Park.
- 2.6 The current plans for the Settlement Area are to demolish most of the buildings in Area 1 to the south of Camp Road and selected buildings and structures in areas 2, 3, 4, 6 and 7. New housing is planned for Area 1 and business units in 6 and 7.
- 2.7 An Extended Phase I Survey of the Settlement Area was carried out by Thomson Ecology in 2010 for the Waterman Environmental Statement (Waterman, 2010).
- 2.8 There have been previous surveys of the whole site for bats since 2001, including daytime surveys of hangers, the occupied housing and the empty office and barrack buildings. This has been followed up with transect surveys of the Settlement Area and emergence surveys of many of the buildings there in 2011 and 2012 (Thomson, 2011; Satinet, 2012).



- 2.9 There have been previous surveys of the site for Great Crested Newts (GCNs) in 2005, 2007 and 2010 (EPR 2005 & 2007; Thomson 2010) where 3 water bodies on the settlement area and 2 ponds just over 200m to the north-east have had GCNs present, although not all of these were confirmed as breeding water bodies. The 2012 surveys (Satinet, 2012) found no GCNs present on the 10 water bodies on the Settlement Area and reduced numbers in the two off site water bodies in the Flying Field.
- 2.10 The Dorchester Group commissioned 4 Acre Ecology Limited on 23rd November 2012 to produce a Programme of Mitigation Implementation for the settlement area of the site.

### *Aims and Objectives*

- 2.11 The aim of the report was to produce a Programme of Implementation for the mitigation and enhancement of the ecology of the site. The objective was to discharge Condition 48 of the planning permission and therefore maintain and enhance the conservation status of the Settlement Area at Heyford Park.



### 3. Legislation and Planning Policy

3.1 There are a number of tiers of legislation protecting wildlife in England and Wales. The highest tier is for those species protected by European Legislation, such as the Dormouse, Great Crested Newt, Otter and all species of bat. These are known as European Protected Species (EPS), which gain their protection from the Conservation of Habitats and Species Regulations (Habitat Regulations) 2010, whereby under section 41 it is an offence to

- deliberately capture, injure or kill an EPS
- deliberately disturb or take/destroy the eggs of an EPS
- damage or destroy a breeding site or resting place of an EPS

3.2 Nationally protected species are either fully protected (e.g. Water Vole) or partially protected (e.g. Adder or Smooth Newt) under the Wildlife and Countryside Act (WCA) 1981 and amendments, including the Countryside and Rights of Way Act (CRoW) 2000. Under the WCA it is an offence to:

- intentionally kill, injure or take any wild bird, take or destroy any wild bird egg or take, damage or destroy any nest while it is in use or being built
- intentionally or recklessly disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or disturb dependent young of such a bird
- intentionally or recklessly at any other time take, damage, destroy or otherwise interfere with any nest habitually used by any wild bird included in Schedule A1
- intentionally or recklessly kill, injure or take from the wild or possess all or any part of a Schedule 5 species
- intentionally or recklessly damage or destroy any structure or place which a schedule 5 species uses for shelter or protection, or disturb a schedule 5 species while it is occupying such a place
- obstruct access to any structure or place which a schedule 5 species uses for shelter or protection
- intentionally pick, uproot or destroy any wild plant included in Schedule 8

3.3 The CRoW Act 2000 added the term recklessly after intentionally in the Wildlife and Countryside Act 1981 and introduced a maximum custodial sentence of 6 months for offences.



- 3.4 The Natural Environment and Rural Communities Act 2006 (NERC) made provision about bodies concerned with the natural environment and rural communities and in connection with wildlife, sites of special scientific interest, National Parks and the Broads. Section 41 established a list of the living organisms and types of habitat which in the Secretary of State's opinion are of principal importance for the purpose of conserving biodiversity. This is known as the UK Biodiversity Action Plan (BAP) list.
- 3.5 Under the Protection of Badgers Act 1992 it is an offence to wilfully kill, injure or take a Badger and damage, destroy or obstruct a badger sett, cause a dog to enter a Badger sett or disturb a badger while it is occupying a sett.
- 3.6 The National Planning Policy Framework (NPPF) published in March 2012 states that "in assessing and determining development proposals, local planning authorities should apply the presumption in favour of sustainable development" and "opportunities to incorporate biodiversity in and around developments should be encouraged".
- 3.7 In general terms the NPPF states that the planning system should contribute to and enhance the natural and local environment by:
- protecting and enhancing valued landscapes, geological conservation interests and soils;
  - recognising the wider benefits of ecosystem services;
  - minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
  - 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", but "development proposals where the primary objective is to conserve or enhance biodiversity should be permitted".





## 4. Discussion

### *Bats*

- 4.1 Surveys prior to 2012 identified 21 minor roosts, particularly in the residential area to the west of the main demolition area, that are to be retained. The previous surveys identified nine buildings with summer or transitory roosts that are due to be demolished, all but one being Common Pipistrelle roosts.
- 4.2 The most recent surveys have confirmed the presence of roosting bats in seven of these and identified a further three buildings with summer roosts in them.
- 4.3 Therefore, of the buildings to be demolished, there are bat roosts in Buildings 114, 146, 445, 446, 459, 466, 467, 474, 480, 483, 596 and 598.
- 4.4 All the buildings identified as having roosting bats had Common Pipistrelle bats roosting in them. Six of the buildings also had Brown Long-eared bats entering/exiting them (Buildings 445, 446 and 474), had bats present during the internal surveys (Buildings 445 and 459) or their droppings were found in the loft spaces (Building 596 and 598). A *Myotis* bat, thought to be a Natterer's bat, was observed emerging from Building 467 during one of the activity surveys.
- 4.5 The only building with a previously known maternity roost is Building 133. The building has now been refurbished under a working method statement in early 2012.
- 4.6 The recommended mitigation for minor roosts of commonly occurring species is the "provision of new roost facilities where possible. (This) Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements (are recommended)" (NE, 2004).
- 4.7 Given the large scale of the site and the identified use of only minor roosts, it is likely that throughout the year a number of other buildings could be used as occasional minor roosts, using features such as barge boards and slipped/raised tiles. Therefore the mitigation should reflect this dispersed level of use. In the Environmental Statement (Roger Evans Associates Ltd, 2007) it was recommended that 25 bat boxes of various types be erected around the site as temporary mitigation whilst the demolition of all the buildings is undertaken. It also recommended that twenty loft spaces in the new builds were to be designed for use by bats.
- 4.8 The current plan is to retain all but one (Building 712) of the bungalows and houses currently in use (Area 2), refurbishing 314 existing residential units and building 762 new housing units in the other areas. This means that 13 buildings that contained minor roosts (Buildings 532, 533, 554, 562, 657, 684, 685, 686, 700, 720, 736, 768 and 770) will be retained in this area in the new plans (See Figure 1), when at the time of the Environmental Statement all the roosts were to be lost.



- 4.9 In addition there are six other buildings with minor roosts in them that have been identified in areas 1, 6 and 7 (Buildings 74, 125, 133, 455, 457 and 485) that are to be retained and refurbished at a later point (See Figure 1). Surveys of these buildings will be carried out at a later point and the need for licences to undertake these works determined when the scale of the works and the use by bats at that time has been determined.
- 4.10 Therefore, only a total of twelve buildings with minor roosts in them will now be lost, ten of which are in Area 1 and two in Area 7.

### *Great Crested Newts*

- 4.11 The main housing area of the Settlement Site is situated to the south of Camp Road, over 800m south-west of Water Bodies 1 and B and therefore there is virtually no likelihood of GCNs being present in this area dominated by hard standing, buildings and amenity grassland, as this is of negligible value for GCNs and no GCNs have been identified in the water bodies on or within 500m of it.
- 4.12 To the north of Camp Road the main habitat on site is hard standing, in the form of roads, paths and car parks, followed by buildings. Both these habitats have no value for GCNs and would have a negligible impact if removed. The amenity grassland, forming the greater part of the remaining habitat, also offers poor habitat for GCNs, although during surveys there it was noted that there were a large number of fungi present, indicating that the grassland has not been enriched by fertiliser. It would be ideal if some of this grassland was to be retained and continue to be managed without fertiliser, but its value to GCNs is minimal.
- 4.13 Only the areas of trees and dense scrub provide potential habitat for GCNs, and this is very sparse and isolated by the buildings, hard-standing and amenity grassland. Following completion of the development of the Settlement Area, with increased green areas through landscaping and provision of private gardens the general habitat will be improved for GCNs, creating a minor positive impact in the long-term.
- 4.14 Surveys in 2007 (EPS, 2007) found GCNs present in Water Bodies 2 (1 GCN), 3 (2 GCNs) and C (1 GCN). The 2010 survey (Thompson, 2010) found no GCNs in 3 and C and again only one individual in water Body 2 (See figure 2 for location of Water Bodies).
- 4.15 The GCN found in 2007 in C is likely to have been washed there rather than trying to breed in it. The extremely low numbers found in 2 and 3 in the past with no evidence of breeding (except by smooth newts) indicates that these were passing GCNs.
- 4.16 With no evidence of use in 2012 there is no need for a European Protected Species licence to conduct the works as an offence is highly unlikely (NE, 2012). However, as GCNs have been shown to travel across the site in low numbers in the past, a precautionary approach should be taken to the works.



- 4.17 Therefore, the works will be conducted under a working method statement to minimise the likelihood of harming GCNs if present in the sub-optimal habitat at the north-eastern end on the settlement site. This is particularly relevant for the removal of the seven EWS tanks across the site.

### *Nesting Birds*

- 4.18 Nesting habitat on the Settlement Area is restricted to the limited number of hedges, lines and individual trees and the buildings themselves.
- 4.19 In 2006 a breeding bird survey was carried out, finding 6 species nesting (Starling, House Martin, Song Thrush, House Sparrow, Wheatear and Yellow Wagtail). At the same time non-breeding birds included Corn Bunting, Yellow Hammer, Red-legged Partridge, Linnet, Green Woodpecker, Wood Warbler, Whitethroat and Grey Wagtail.
- 4.20 During the 2010 Extended Phase I Survey Blackbird, Chaffinch, Great Tit, Jay, Pied Wagtail and Robin were noted as incidental records. During the 2012 bat and GCN surveys Magpie, Wren, Blackbird, Robin and Pied Wagtail were noted as incidental records, while active House Martin and Woodpigeon nests were found.

### *Hedges*

- 4.21 The majority of the hedges on site are well maintained species poor hedges or species poor hedges with trees. The only one that is species rich is on the southern boundary of Area 2, now due to be retained.
- 4.22 The hedges are located along camp road, adjacent to the roads in the housing area of Area 6 and the southern boundary of Area 1. One of the hedges along Camp Road is formed of Cotoneaster, an invasive alien plant on Schedule 9 of the Wildlife and Countryside Act. It would be advantageous to remove this hedge, burning any cuttings, and replace it with a native species rich hedge.

### *Trees*

- 4.23 There are many trees scattered around the site, some associated with hedges, some individual standards, but many in avenues lining roads or adjacent to buildings. Most of these trees are 50-100 years old. With mown amenity grass or hard-standing below and around them there is limited connectivity with other habitats for individual trees, but the avenues provide more extensive linear features for nesting birds and foraging/commuting bats.
- 4.24 The tree line along the south and south-east of Area 1 has been shown to be of particular importance for foraging and commuting bats, as were the tree avenues in Area 7.



## 5. Recommendations

### *Bats*

- 5.1 The demolition of the buildings will be carried out under a working method statement, as part of a European Protected Species Licence (EPSM 2012-5157A). This will help to ensure that bats are not injured or killed during the demolition process, while bat boxes will provide temporary roosting opportunities until the new buildings are constructed, which will be over a number of phases.
- 5.2 All boundary trees and as many as possible of trees within the site will be retained, as they have been identified as important for foraging and commuting bats.
- 5.3 12 Schwegler 1FF and 8 Schwegler 2FN bat boxes will be put up on trees in pairs around the site, at a height of around 5m. The paired boxes will face different directions to provide differing conditions for bats to choose between. A further 3 Schwegler 1FH bat boxes and 2 Schwegler 1FW Hibernation boxes will be erected on five separate perimeter trees.
- 5.4 A bat brick or integrated bat box will be fitted into each of the new housing blocks, when constructed. Examples of these are shown in Figure 3.
- 5.5 20 loft spaces will be created with access for light-testing bats, specifically Brown Long-eared bats. These loft spaces will also have features for crevice dwelling bats. The roosts are to be located in the following phased areas, as noted on the phasing plan (Figure 4); D1 one roost, D2 three roosts, D3 one roost, D4 four roosts, D6 four roosts, D7 three roosts, D9 two roosts and D10 two roosts. The roosts will be set in units next to the site boundary, or in the case of D3 and D9 adjacent to the avenue of trees, away from direct lighting.
- 5.6 All 25 bat boxes will be erected in suitable trees before any demolition work begins. As a precaution, to avoid the maternity season, demolition of buildings with identified bat roosts will be carried out from January to mid-May 2013.
- 5.7 A tool-box talk will be carried out by a qualified ecologist named on the licence. This will inform the contractors of the method statement, the protection afforded bats, how to recognise bats and what course of action they will need to follow if a bat is found during the demolition.

### *Great Crested Newts*

- 5.8 The development to the south of Camp Road and the western section to the north of Camp Road beyond 500m from Water Body 1 can proceed without regard to GCNs, as they are likely absent from this area. However, in the north-eastern area that is within 500m of Water Body 1 (See Figure 2) the demolition and construction works should be carried out under a precautionary method statement, which is detailed below.





### Method Statement

- 5.9 The footprint of the development should be maintained in its current condition, of hard standing interspersed by small areas of tightly mown amenity grassland until the development is started. This will prevent habitat developing for GCNs, which would then encourage them into the development footprint.
- 5.10 The contractors will be given a tool-box talk before works commence. This will describe the legal protection for GCNs, what they look like, what action should be taken if any are found and have the method statement explained to them clearly.
- 5.11 The seven EMS tanks (Water Bodies 2, 3, 4, 5, 19, 20 and 21) will be removed in winter from December to February, when GCNs are least likely to be in them.
- 5.12 The EWS tanks will be drained under the supervision of a GCN licenced ecologist as a precautionary approach. After they are drained and the tanks checked for GCNs, if none are present they can then be removed by machine or in-filled. If GCNs are found then work will stop and the ecologist will ensure that no harm comes to any GCNs and that the work can continue within the law.
- 5.13 Ground-works will only take place in daylight hours when Great Crested Newts will not be moving around, as GCNs are nocturnal.
- 5.14 Excavation works to areas of scrub and any extensive coarse grass will not be undertaken between November and mid-March, unless greater than 500m from Water Bodies 1 and B.
- 5.15 Stock-piled earth will be stored beyond 500m of the potential breeding ponds (Water Body 1), either in the south-western area of the site north of Camp Road or south of Camp road. If this is not possible stock piles will be fenced off using one way amphibian fencing during the GCN active period of March to October.
- 5.16 Materials will be stored on pallets or tarpaulin sheeting to prevent the creation of habitat suitable for GCNs to shelter in within 500m of Water Body 1.
- 5.17 All construction vehicles will access the site via the existing road system and remain on the hard standing and working footprint when they are within 500m of Water Body 1.
- 5.18 Excavations will be filled in as soon as possible after they are made. Excavations will be made when required, in a phased order, rather than all at the start of the development, to minimise the time holes are exposed for.
- 5.19 Any trenches, if left open, will have ramps placed in them to allow GCNs and other wildlife to climb out of the trench if they fall into it.



5.20 Any excavated holes will be checked for GCNs if left open overnight. Any GCNs found will be moved to the nearest suitable habitat by a licensed ecologist.

### *Nesting Birds*

5.21 To mitigate for the adverse impacts on birds mitigation measures could include:

- removing trees and shrubs outside of the breeding bird season (October to February, inclusive) or checking for nesting birds outside this period and leaving 5m of habitat around nests until the birds have fledged, if found;
- planting of native trees to replace those to be lost;
- planting of native species-rich hedgerows to replace those to be lost;
- creation of species-rich native wildflower areas to provide foraging habitat
- providing native-planted ponds throughout the Site;
- providing 40 assorted bird nest boxes on mature trees to be retained in order to provide further nesting opportunities;
- providing 10 bird boxes on new buildings suitable for House Martins.

### *Hedges*

5.22 Habitats at the Site such as hedgerows are predominantly proposed for retention, although some boundary hedges are to be removed during the demolition and construction phase. The following mitigation for hedgerows is recommended:

- Any hedgerows to be removed should be replaced with new hedgerows of the same or greater length;
- Nut, berry-bearing and flowering native species to attract butterflies, moths and breeding birds should be used;
- Where possible, hedgerows should connect with other ecological features to provide extra benefit to biodiversity i.e. other hedgerow, woodland, ponds or scrub which may be used for commuting and foraging by bats and birds;
- Where access gaps are created in hedgerows enhancement should take place for 20m either side of the gap;
- Infill existing hedgerows with native species to provide a continuous habitat.



## *Trees*

5.23 Habitats and trees at the Site, such as scattered broadleaved trees and scrub, are predominantly proposed for retention. The majority of the conifers are to be gradually replaced. The following mitigation for scattered trees is recommended:

- If trees or groups of trees are to be removed they should be replaced with native trees of a similar or greater number;
- Nut, berry-bearing and flowering native species to attract butterflies, moths and breeding birds should be used;
- Where possible, trees should be associated with other ecological features to provide extra benefit to biodiversity i.e. hedgerow, woodland, ponds or scrub;
- The avenue nature of many of the trees on Site should be retained and enhanced to aid bats and birds in commuting and foraging; and
- Trees to be removed with bat potential should be surveyed for bats; The European Protected Species Licence for bats will be modified to include any additional roost(s) found.



## 6. Implementation Programme

### *Demolition and Construction*

Activity	Dates	Detail
<b>Start demolition of 120 buildings.</b>	January 2013	Erect 12 Schwegler 1FF, 8 Schwegler 2FN, 3 Schwegler FH and 2 Schwegler FW bat boxes in mature boundary trees before demolition begins. Give contractors tool box talk on bats and GCNs
<b>Demolition of 120 buildings including 7 EWS Tanks</b>  <b>Removal of trees and shrubs that will not be retained</b>	January to October 2013  January to February 2013	The ecologist is to oversee removal of features that may contain bats, such as the ridge tiles, roof timbers and joints within the buildings where roosts have been identified.  Ecologist licenced to handle GCNs to supervise draining of EWS Tanks.  Erect 40 assorted bird boxes on retained trees around the site.  If more trees/shrubs/ hedges require removal this will be during October to February or the habitat checked for nesting birds out-with these dates.
<b>Construct new buildings Phase D1 &amp; B1</b>	February 2013 to May 2013	Build loft space designed for roosting bats in 1 of the 4 units constructed in D1  Construct Ponds in landscaping areas with adjacent hibernacula
<b>Construct new buildings Phase D2 &amp; B2</b>	April 2013 to September 2013	Build loft spaces designed for roosting bats in 3 of the 29 units constructed in D2  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D3 &amp; B3</b>	September 2013 to April 2014  November 2013 to March 2014	Build loft spaces designed for roosting bats in 1 of the 26 units constructed in D3  Construct Ponds in landscaping areas with adjacent hibernacula  Tree and hedge planting in landscaping areas





*Demolition & Construction Continued*

<b>Activity</b>	<b>Dates</b>	<b>Detail</b>
<b>Construct new buildings Phase D4, B3, B4, B5 &amp; B6</b>	March 2014 to December 2014	Build loft spaces designed for roosting bats in 4 of the 41 units constructed in D4
<b>Construct new buildings Phase D6, B4, B5 &amp; B6</b>	January 2015 to September 2015  January to March 2015	Build loft spaces designed for roosting bats in 4 of the 38 units constructed in D6  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D7 &amp; B5</b>	September 2015 to November 2016  November 2015 to March 2016	Build loft spaces designed for roosting bats in 3 of the 55 units constructed in D7  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D9</b>	November 2016 to June 2017  November 2016 to March 2017	Build loft spaces designed for roosting bats in 2 of the 58 units constructed  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D10</b>	June 2017 to May 2018	Build loft spaces designed for roosting bats in 2 of the 45 units constructed



## Monitoring

Year	2013	2014	2015	2016
<b>Details</b>	Bat Box checks in August/September	Bat Box checks in August/September	Bat Box checks in August/September  First monitoring of 5 roosts constructed in Phase D1, D2 & D3 May to August  GCN Survey of new ponds and existing water bodies March-June	Bat Box checks in August/September  First set of three activity survey across former demolition site May to August  First Monitoring of 4 roosts constructed in Phase D4 May to August
Year	2017	2018	2019	2020
<b>Details</b>	Bat Box checks in August/September  First monitoring of 4 roosts constructed in Phase D6 May to August  GCN Survey of new ponds and existing water bodies March-June  Breeding Bird Survey	Bat Box checks in August/September  First monitoring of 3 roosts constructed in Phase D7 May to August  Final monitoring of 5 roosts constructed in Phase D1, D2 & D3 May to August	First monitoring of 4 roosts constructed in Phase D9 & D10 May to August  Final monitoring of 4 roosts constructed in Phase D4 May to August  GCN Survey of new ponds and existing water bodies March-June	Final monitoring of 4 roosts constructed in Phase D6 May to August
Year	2021	2022		
<b>Details</b>	Final monitoring of 3 roosts constructed in Phase D7 May to August  Final set of three activity surveys across former demolition site May to August  GCN Survey of new ponds and existing water bodies March-June	Final monitoring of 4 roosts constructed in Phase D9 & D10 May to August  Breeding Bird Survey		



## 7. Figures

Figure 1: Areas Plan and Roost Locations

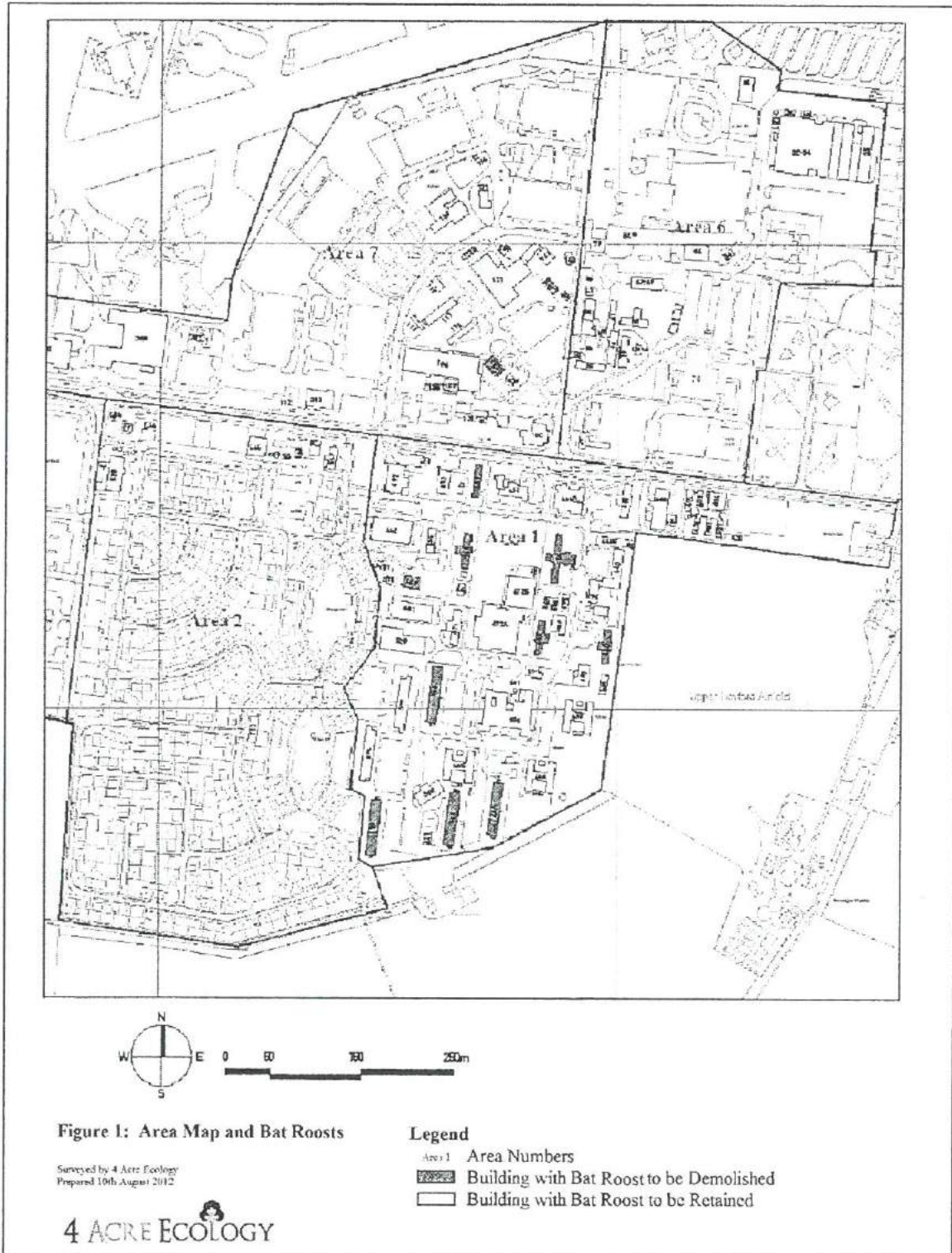




Figure 2: Locations of Water Bodies

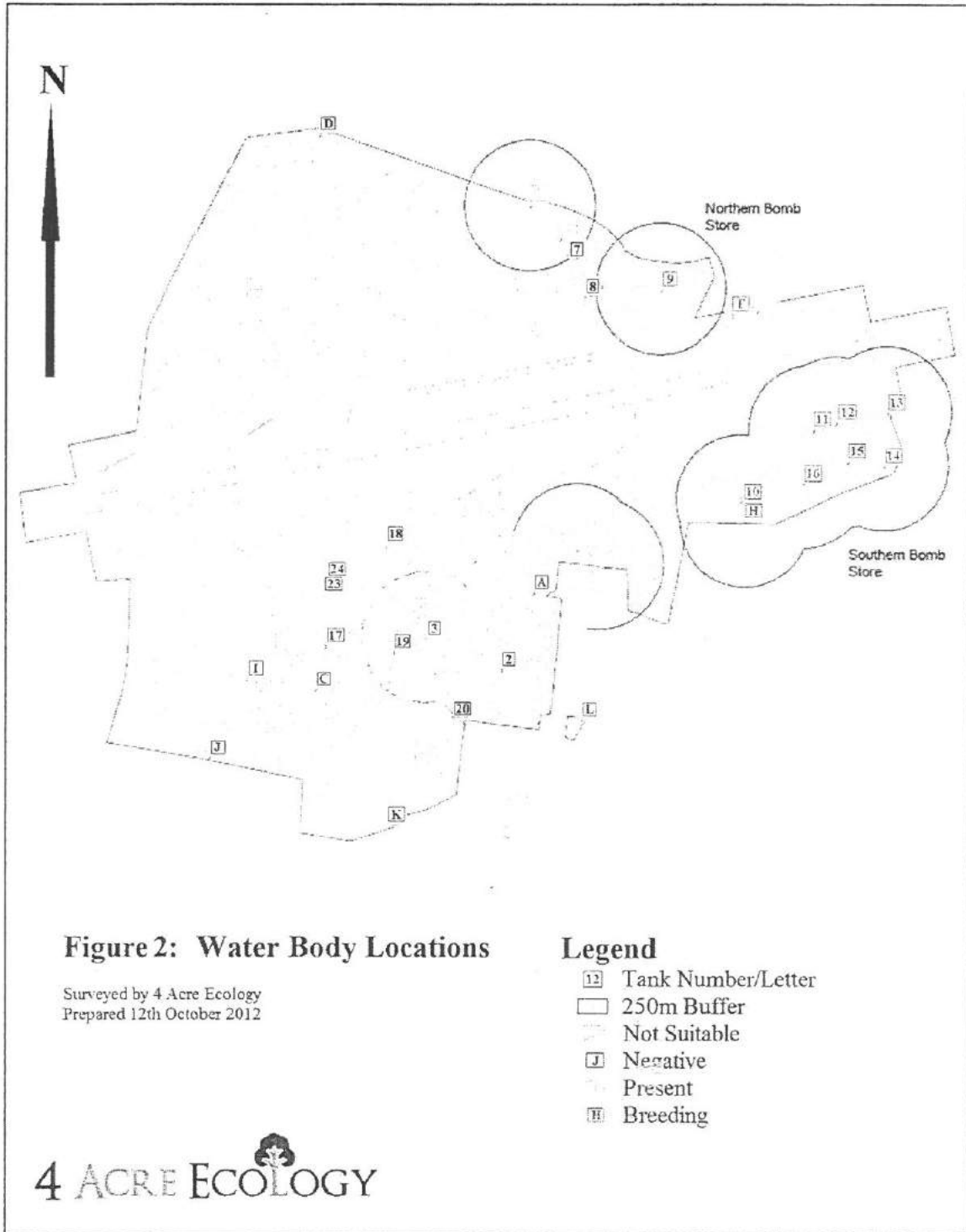
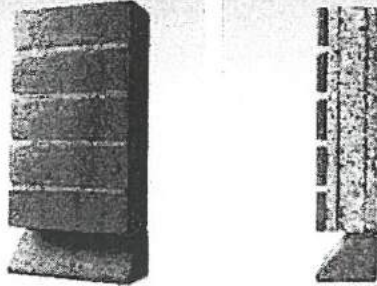


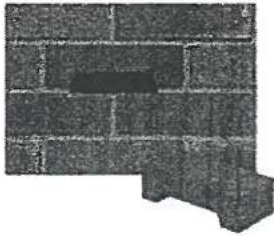
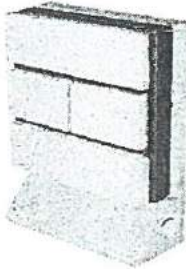
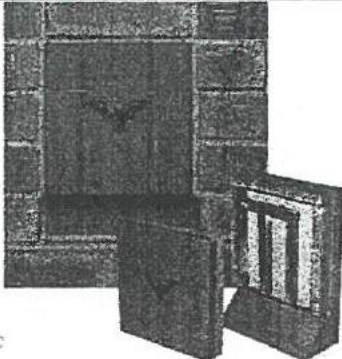




Figure 3: Integrated Bat Boxes

<p>Michelmersh Brick Holdings Plc.          Freshfield Lane, Danehill          Haywards Heath, Sussex          RH17 7HH          Tel: 0844 931 0022  <a href="http://www.mbhplc.co.uk">www.mbhplc.co.uk</a></p>	
---	--

Ibstock Brick Limited  
 Head Office  
 Leicester Road, Ibstock, Leicestershire, LE67 6HS  
 t: 01530 261999 f: 01530 257457 [www.ibstock.com](http://www.ibstock.com)

<p>Free Access Bat Box A</p> <ul style="list-style-type: none"> <li>• Available in all brick types</li> <li>• Discrete single bat brick</li> <li>• Easy to install</li> <li>• Allows bats to create a natural home habitat within the cavity of the building</li> </ul>	 <p>A</p>
<p>Enclosed Bat Box B</p> <ul style="list-style-type: none"> <li>• Designed specifically for the pipistrelle bat</li> <li>• Available in all brick types</li> <li>• Discrete home for bats</li> <li>• Various sizes</li> <li>• Several roosting zones are created inside the box</li> <li>• Bats are contained within the bat box itself</li> <li>• Maintenance free with entrance at the base</li> <li>• Ideal for new build &amp; conservation work</li> </ul>	 <p>B</p>
<p>Enclosed Bat Box C with engraved motif</p> <ul style="list-style-type: none"> <li>• Designed specifically for the pipistrelle bat</li> <li>• Available in smooth blue, smooth gold &amp; smooth red</li> <li>• Discrete home for bats</li> <li>• Various sizes</li> <li>• Several roosting zones are created inside the box</li> <li>• Bats are contained within the bat box itself</li> <li>• Maintenance free with entrance at the base</li> <li>• Ideal for new build &amp; conservation work</li> </ul>	 <p>C</p>









## 8. References

- Bat Conservation Trust, 2012: *Bat Surveys: Good Practice Guidelines 2<sup>nd</sup> Edition*. Bat Conservation Trust, London
- BCT, 2010: Bat Fact Sheets. Available at <http://www.bats.org.uk/pages/>. Accessed 10/8/12.
- Countryside and Rights of Way Act 2000*. Available on-line at: <http://www.legislation.gov.uk/ukpga/2000/37/contents> accessed 14/11/10
- EPR, 2005: Upper Heyford GCN Surveys 2005. EPR, Winchester.
- EPR, 2007: Upper Heyford Bat Surveys 2007. EPR, Winchester.
- Entwistle A.C. & Swift S.M. 2008: *Brown Long-eared Bats*. Pp 364-370 of; *Mammals of the British Isles Handbook, 4<sup>th</sup> edition*. Mammal Society, Southampton
- Habitat Regulation 2010*. Available on-line at: <http://www.legislation.gov.uk/uksi/2010/490/contents/made>. Accessed on 14/11/10
- Jones G. & Racey P.A., 2008: *Common and Soprano Pipitrelles*. Pp 343-351 of; *Mammals of the British Isles Handbook, 4<sup>th</sup> edition*. Mammal Society, Southampton.
- JNCC, 2004: *Bat Workers Manual 3<sup>rd</sup> Edition*. JNCC, Peterborough.
- MAGIC, 2011. Available on-line at: <http://magic.defra.gov.uk/website/magic/>. Accessed on 30/7/12
- National Biodiversity Network Gateway-NBN (2012) NBN Data Available Online at: <http://data.nbn.org.uk/>. Accessed 30<sup>th</sup> July 2012. Based on the following data sets: BCT: *Colony Count Survey*; *Daubenton's Waterway Survey*. Thames Valley Environmental Records Centre: *Natural England Bat Records for Berkshire and Oxfordshire*.
- Roger Evans Associates Ltd, 2007: *Heyford Park Environmental Statement*. Roger Evans Associates Ltd., Kidlington.
- Satinet, M., 2011: *Preliminary Bat Survey: Unit 133, Heyford Park*. 4 Acre Ecology, Minster Lovell
- Smith P.G. & Rivers N.M., 2008: *Natterer's Bats*. Pp 323-328 of; *Mammals of the British Isles Handbook, 4<sup>th</sup> edition*. Mammal Society, Southampton
- Thomson Ecology, 2010: *Upper Heyford, Oxfordshire: Bat Surveys*. Thomson Ecology, Guildford.
- Thomson Ecology, 2010: *Upper Heyford, Oxfordshire: GCN Surveys*. Thomson Ecology, Guildford.
- Thomson Ecology, 2011: *Upper Heyford, Oxfordshire: Bat Surveys*. Thomson Ecology, Guildford.



Waterman, 2010: *Heyford Park: Environmental Statement*. Waterman, Cirencester

*Wildlife and Countryside Act 1981 (and amendments)*. Available on-line at:  
<http://www.legislation.gov.uk/ukpga/1981/69/contents>. Accessed on 14/11/10





## 6. Implementation Programme

### *Demolition and Construction*

Activity	Dates	Detail
<b>Start demolition of 120 buildings.</b>	January 2013	Erect 12 Schwegler 1FF, 8 Schwegler 2FN, 3 Schwegler FH and 2 Schwegler FW bat boxes in mature boundary trees before demolition begins. Give contractors tool box talk on bats and GCNs
<b>Demolition of 120 buildings including 7 EWS Tanks</b>  <b>Removal of trees and shrubs that will not be retained</b>	January to October 2013  January to February 2013	The ecologist is to oversee removal of features that may contain bats, such as the ridge tiles, roof timbers and joints within the buildings where roosts have been identified.  Ecologist licenced to handle GCNs to supervise draining of EWS Tanks.  Erect 40 assorted bird boxes on retained trees around the site.  If more trees/shrubs/ hedges require removal this will be during October to February or the habitat checked for nesting birds out-with these dates.
<b>Construct new buildings Phase D1 &amp; B1</b>	February 2013 to May 2013	Build loft space designed for roosting bats in 1 of the 4 units constructed in D1  Construct Ponds in landscaping areas with adjacent hibernacula
<b>Construct new buildings Phase D2 &amp; B2</b>	April 2013 to September 2013	Build loft spaces designed for roosting bats in 3 of the 29 units constructed in D2  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D3 &amp; B3</b>	September 2013 to April 2014  November 2013 to March 2014	Build loft spaces designed for roosting bats in 1 of the 26 units constructed in D3  Construct Ponds in landscaping areas with adjacent hibernacula  Tree and hedge planting in landscaping areas

*Demolition & Construction Continued*

<b>Activity</b>	<b>Dates</b>	<b>Detail</b>
<b>Construct new buildings Phase D4, B3, B4, B5 &amp; B6</b>	March 2014 to December 2014	Build loft spaces designed for roosting bats in 4 of the 41 units constructed in D4
<b>Construct new buildings Phase D6, B4, B5 &amp; B6</b>	January 2015 to September 2015  January to March 2015	Build loft spaces designed for roosting bats in 4 of the 38 units constructed in D6  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D7 &amp; B5</b>	September 2015 to November 2016  November 2015 to March 2016	Build loft spaces designed for roosting bats in 3 of the 55 units constructed in D7  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D9</b>	November 2016 to June 2017  November 2016 to March 2017	Build loft spaces designed for roosting bats in 2 of the 58 units constructed  Tree and Hedge planting in landscaping areas
<b>Construct new buildings Phase D10</b>	June 2017 to May 2018	Build loft spaces designed for roosting bats in 2 of the 45 units constructed

## Monitoring

Year	2013	2014	2015	2016
<b>Details</b>	Bat Box checks in August/September	Bat Box checks in August/September	Bat Box checks in August/September  First monitoring of 5 roosts constructed in Phase D1, D2 & D3 May to August  GCN Survey of new ponds and existing water bodies March-June	Bat Box checks in August/September  First set of three activity survey across former demolition site May to August  First Monitoring of 4 roosts constructed in Phase D4 May to August
Year	2017	2018	2019	2020
<b>Details</b>	Bat Box checks in August/September  First monitoring of 4 roosts constructed in Phase D6 May to August  GCN Survey of new ponds and existing water bodies March-June  Breeding Bird Survey	Bat Box checks in August/September  First monitoring of 3 roosts constructed in Phase D7 May to August  Final monitoring of 5 roosts constructed in Phase D1, D2 & D3 May to August	First monitoring of 4 roosts constructed in Phase D9 & D10 May to August  Final monitoring of 4 roosts constructed in Phase D4 May to August  GCN Survey of new ponds and existing water bodies March-June	Final monitoring of 4 roosts constructed in Phase D6 May to August
Year	2021	2022		
<b>Details</b>	Final monitoring of 3 roosts constructed in Phase D7 May to August  Final set of three activity surveys across former demolition site May to August  GCN Survey of new ponds and existing water bodies March-June	Final monitoring of 4 roosts constructed in Phase D9 & D10 May to August  Breeding Bird Survey		





## Bat Mitigation for Phase 6

### Legend

- Integrated Bat Box
- ▭ Bat Roost



**Stansted:**  
Unit 1, The Exchange,  
9 Station Road,  
Stansted, CM24 8BE

t +44 (0)1279 647044  
e office@lizlake.com  
www.lizlake.com

**Bristol:**  
1 Host Street,  
Bristol, BS1 5BU

t +44 (0)117 927 1786  
e office@lizlake.com  
www.lizlake.com

**Nottingham:**  
Suite 201,  
20 Fletcher Gate,  
Nottingham NG1 2FZ

t +44 (0)115 784 3566  
e office@lizlake.com  
www.lizlake.com

**LIZ LAKE**  
**ASSOCIATES**  
LANDSCAPE ARCHITECTS

- Landscape Design
- Urban Design
- Residential
- Public Realm
- Masterplanning
- Landscape Planning
- Heritage Landscapes
- Gardens and Estates
- Restoration and Conversion
- Places of Worship
- Expert Witness
- Hospitality
- Education
- Retail / Office
- Community
- Ecology
- Arboriculture
- 3D / Graphic Design