

# Protected Species Surveys Thoulstone Park, Chapmanslade

**Client** Crossman Associates

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# 1. Background

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- 1.1. Crossman Associates was commissioned by Mr and Mrs Hughes-Hallett to undertake updated protected species surveys and provide a mitigation strategy to inform the proposed development and future landscape management at Thoulstone Park, Chapmanslade, Wiltshire. Update surveys commenced in March 2018 and are ongoing. Detailed protected species surveys were formerly carried out in 2014 over a larger extent of the park including the proposal site; findings of these previous surveys have been included to augment the findings of this report in lieu of full results from the 2018 season.
- 1.2. The 2018 surveys to date include three, three hour bat transect surveys and automated bat detector surveys (three locations for one week) in April and early May, an updated building and bat roost inspection, checks for signs of badgers, otters and water voles and an April breeding bird survey. Ongoing surveys include a GCN survey, dormouse survey, reptile survey, evening emergence and dawn re-entry surveys of all buildings on site to update the roost surveys and continued bird surveys, bat transect surveys and automated surveys of the wider site.
- 1.3. Surveys in 2014 included bimonthly bat transects and automated detector surveys between May and October, GCN surveys of all ponds on site and several off-site ponds to the east, otter, water vole, badger and dormouse surveys.
- 1.4. Moderate levels of bat activity and a good diversity of species were found on site in 2014 with up to eleven species recorded. Key areas of activity in 2014 were woodland edges, waterbodies and the bridleway to the south of the site.
- 1.5. No evidence of dormice, great crested newts or water voles were found in 2014.
- 1.6. The objectives of the 2014 and 2018 survey work are to;

- Assess the presence/absence and likely distribution of legally protected species
  - Identify any planning policy or legislative constraints relevant to the proposals
  - Provide recommendations for mitigation, compensation or further survey work as appropriate
- 1.7. All survey work has been undertaken by experienced surveyors and licensed personnel representing Crossman Associates.
- 1.8. This work is also informed by an accompanying, updated ecological appraisal of the site (Crossman Associates, 2018).

## Proposals

### *Current proposals*

- 1.9. Thoulstone Park comprises 60 ha of a former golf course with woodland, grazed parkland, ponds, hedgerows and young woodland plantation, as well as former clubhouse buildings and hardstanding. The current application site covers approximately 40 ha, comprising a managed parkland landscape; the developed area covering only around 5 ha of this including the clubhouse, hardstanding and surrounding improved grassland and parkland trees.
- 1.10. The proposed redevelopment includes holiday accommodation; a restaurant, farm shop, spa, conference building with a small pool and community hall, a small amount of staff accommodation, car parking and associated landscaping works and extensive tree planting. Future management of the site will be detailed in an Ecological and Landscape Management Plan and plans to rewild areas of the wider park are being developed.

## Site Description

- 1.11. The accompanying ecological appraisal report (Crossman Associates, 2018) provides a detailed description of the habitats and context of the proposal site.

## 2. Methodology

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### Desktop Study

- 2.1. The MAGIC website was accessed for information on any statutory site designations within 2 km or sites designated for bats that lie within 10 km of the site. Wiltshire and Swindon Biological Record Centre (WSBRC) provided data on non-statutory designated wildlife sites and notable and protected species within 2 km (4 km for bats). Local and national planning policy and legislation was reviewed for policies and wildlife law relevant to the site.

### Bat Surveys

#### *Scoping Survey*

- 2.2. In February 2014, all buildings on site were systematically inspected for the presence and potential for roosting bats. Detailed inspections were made for evidence of roosting including bat droppings, feeding remains, staining and actual bats. Specialist equipment was used where necessary including high luminosity torch, ladder, endoscope and frequency division bat detector. The value of features within the buildings were visually assessed based on presence/absence of any field signs and the bat roosting potential of the buildings, such as presence of access points and crevices. This method aims to provide an indication of the potential value of the structures to bats; however, it cannot definitely state whether bats are using the structures as roost sites or not.
- 2.3. Alex Crossman, Fairbrass Knowles and Jen Weaver, all licenced bat surveyors, undertook survey work across 2014 and 2018.
- 2.4. Results of the bat scoping survey are included in the accompanying Ecological Appraisal Report (Crossman Associates, 2018).

## *Activity Surveys*

### Emergence/re-entry survey

- 2.5. The clubhouse and changing room buildings (which have been confirmed as supporting roosting bats) were subject to two evening emergence surveys and a dawn re-entry survey in 2014. Surveys in 2018 are ongoing. The buildings were surveyed from five survey locations in 2014 (locations S1-S5, Figure 1, Appendix I). The surveys focused on areas identified within the initial scoping survey as having suitability for bats. All survey work was undertaken during suitable weather conditions during dry, warm conditions with a minimum temperature of 10°C. The evening emergence surveys commenced at sunset and continued for two hours. The dawn re-entry survey commenced one and a half hours before sunset and continued until sunrise.
- 2.6. Surveys were led by Alex Crossman, an experienced bat survey and licence holder.

### Transect surveys

- 2.7. Two transect surveys were carried out each month within optimum bat activity season (May-Oct inclusive during 2014 and April and early May to date in 2018) following a pre-determined route (Figure 2) that was selected to cover areas of optimal bat habitat including hedgerows, woodland edge, ponds and the bridleway. The survey was carried out in fine weather conditions and commenced just before sunset and continued for approximately 3 hours (2.5 hours in 2014). Five minute stops were made approximately every 200m or as appropriate to record bat activity adjacent to key habitat features such as hedgerows, woodland and streams.
- 2.8. Surveys were led by Alex Crossman and Jen Weaver, experienced bat surveyors and licence holders.

### Automated surveys

- 2.9. Automated recording devices were placed at three locations on site (Figure 2) and set to record between sunset and sunrise for five consecutive days for each month between May and October 2014. Surveys in 2018 will run from April to September. The data is analysed using dedicated computer software including Analook.

## Great Crested Newt Surveys

### *E-DNA Testing*

- 2.10. Environmental DNA testing kits were obtained from Surescreen Scientifics and tests carried out of all three ponds on site during late April 2018 according to the manufacturers guidelines.

### *Presence/absence surveys (2014)*

### Bottle Trapping

- 2.11. Survey methods followed guidelines from English Nature (2001). Trapping was undertaken over four nights between 8 May to 5 June. A record was made of the minimum overnight temperature and traps were only set when predicted weather conditions were judged to be suitable, i.e. above 5°C. Traps constructed from 2 litre plastic bottles were secured around the pond margins at a density of approximately one bottle every 2 metres where this was physically possible. Traps were set in the evening and retrieved the following morning and left in situ for approximately 10 hours. Bottle trapping was not deemed feasible on pond three due its construction from a butyl liner.

### Torching

- 2.12. Survey methods followed guidelines from English Nature (2001). All ponds included in the survey were torched.

### Egg counts

- 2.13. Vegetation within the ponds were systematically searched for presence of great crested newt eggs.

### Breeding Bird Surveys

- 2.14. The survey methods were informed by guidance set out by Bibby et al. (2000) to be undertaken over three site visits between April and June 2018. The first of three surveys was carried out on 22 April 2018.
- 2.15. Surveys will commence between 6 am and 9 am and avoid cold, wet and windy conditions. The site was walked so that all areas within 100m of every point on each site could be observed.
- 2.16. Bird behaviour and species were recorded along a transect (Figure 3). Timings and weather conditions during each survey are described below:
- Visit 1 (22-04-18): Overcast; 11 degrees; gentle breeze.
  - Visit 2 (pending – May 2018).
  - Visit 3 (pending – June 2018).

### Dormouse Surveys

- 2.17. Areas of suitable dormouse habitat were identified along the perimeter of the northern, southern and part of the western boundaries of the site (Figure 3).
- 2.18. The hazel dormouse survey follows guidance set out within The Dormouse Conservation Handbook (English Nature 2006).

### *Nest tube study*

- 2.19. The survey was previously carried out in 2014 and nest tubes were reinstalled in late April 2018 with 75 dormouse tubes being installed at approximately 20 metre intervals along hedgerows, woodland and scrub. Nest tubes were attached

to the underside of stout branches using wire and where appropriate were marked using high visibility tape.

## Reptile Surveys

- 2.20. Approximately 60 mats were placed on site in mid May 2018 and 7 visits carried out during suitable weather conditions and according to good practice guidelines (Froglife, 1997).

## Otter and Water Vole Surveys

- 2.21. Signs of otter and water vole were recorded during all visits to site and banks were searched for evidence where access allowed. Any inaccessible banks were viewed through powerful binoculars.

## Badger Surveys

- 2.22. The site and where possible, the land immediately adjacent to the proposal site were carefully checked for any evidence of badger activity including the presence of setts and other signs including latrines, foraging remains, snuffle pits and mammal tracks.

## Evaluation

- 2.23. The evaluation for species populations present (where appropriate) is based on published criteria given in CIEEM guidelines for ecological impact assessment. The values are assigned between International Value and Negligible Value for all habitats that are likely to be directly or indirectly affected by the proposed development.

- 2.24. The value categories used in assessment are as follows:

- International – Europe
- National – England

- Regional – South-west
- County – Wiltshire
- District – Warminster
- Local – Thoulstone
- Site – within the immediate zone of influence

2.25. Assessment of the value of a site for bats is based on the following:

- The diversity of the species present
- The occurrence of rarer species
- Numbers of animals present/frequency of use
- Range of habitat features, which provide opportunities e.g. foraging, shelter, breeding, commuting and roosting habitat

## 3. Results

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### Desktop study

#### *Data Search*

3.1. The MAGIC website informed of two local statutory sites within 10km of the site that are designated for bats:

- Bath and Bradford on Avon Special Area of Conservation (SAC) – lies approximately 8.5km north of the site and is designated for an internationally important assemblage of greater horseshoe *Rhinolophus ferrumequinum* bat, small numbers of hibernating Bechstein's bats *Myotis bechsteinii* and hibernating lesser horseshoe bats *Rhinolophus hipposideros*;
- Mells Valley SAC – lies approximately 9km west of the site and is designated for an internationally important assemblage of greater horseshoe *Rhinolophus ferrumequinum* bat;
- Old Ironstone Works Site of Special Scientific Interest (SSSI) – lies approximately 10km west of the site and designated for nationally important assemblages of greater horseshoe bat and lesser horseshoe;

3.2. Relevant results from the Wiltshire and Swindon Biological Records Centre and NBN website are detailed in the sections below.

#### *Legislation*

#### Habitat Regulations

3.3. The Conservation of Habitats and Species Regulations 2011 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately

capture, kill or disturb bats. It is also an offence to damage or destroy a breeding site or resting place of a bat (even if the bat is not present at the time).

- 3.4. Bechstein's bats, greater and lesser horseshoe bats and barbastelle bats *Barbastella barbastellus* are listed under Annex II of the Directive and as such can be the designating features of a Special Area of Conservation.

#### Wildlife & Countryside Act

- 3.5. The Wildlife and Countryside Act 1981, as Amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:
  - 3.6. Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act, which includes bats; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection of a bat; intentionally or recklessly disturb bats while they occupy a place used for shelter or protection;

#### Natural Environment & Rural Communities Act

- 3.7. The NERC Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.
- 3.8. Seven species of bat (barbastelle, Bechstein's, greater and lesser horseshoe, brown long-eared bat, noctule and soprano pipistrelle) are listed as Species of Principle Importance under Sections 41 and 42 of the NERC Act 2006. These species are therefore priority species and government policy is that local planning authorities should consider such species when determining planning applications.

#### *Planning policy*

- 3.9. The planning policy framework (NPPF) contains sections of relevance to nature conservation that include:



- Paragraph 165: planning policy and decision should be based on up-to-date information about the natural environment.
- Paragraph 118: when determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles;
  - If significant harm resulting from development cannot be avoided (through relocating on alternative sites with less harmful impact), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused
  - Proposed development on land within or outside a Site of Special Scientific Interest (SSSI) likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest feature is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSI's
  - Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted
  - Opportunities to incorporate biodiversity in and around developments should be encouraged
  - Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss



## UK Biodiversity Action Plan

- 3.10. The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels; those that may be relevant to the surveyed area include National and Local BAPs.

## Field Survey

### *Trees*

- 3.11. The site contains a large number of trees that form lines and occupy small patches of woodland and boundary features. The majority of trees on site are young or semi-mature but there are a large number of mature native and non-native specimen trees that include oaks *Quercus spp.*, ash *Fraxinus spp.*, beech *Fagus spp.*, *Acer spp.* and *Cedrus spp.*
- 3.12. Trees are not currently subject to maintenance so often contain dead wood, split limbs, loose bark and there are other features including rot holes and woodpecker holes.

### *Roost activity surveys (2018)*

- 3.13. Activity surveys of the buildings on site are pending in May and June 2018. The accompanying Ecological Appraisal report provides details on the building inspections carried out during late April 2018, confirming the presence of roosting bats in the clubhouse and changing rooms.

### *Roost activity surveys (2014)*

- 3.14. The paragraphs below provide a summary of the survey findings.

#### First emergence survey 2014

- 3.15. The survey was undertaken on 7 August 2014 during warm, clear weather conditions with a minimum temperature of 17°C and a slight breeze. The survey commenced at 20.15 and continued until 22.15.
- 3.16. From surveyor position S3, three common pipistrelle were recorded emerging from underneath the wooden cladding on the west-facing gable of the changing room building.
- 3.17. No other definitive bat emergences or re-entries were recorded.
- 3.18. There were frequent incidental recordings of common pipistrelle foraging to the north of the buildings and a soprano pipistrelle regularly foraging over the pond that lies adjacent to the north of the building.

#### Second emergence survey 2014

- 3.19. The survey was undertaken on 16 September 2014 during warm, clear weather conditions with a minimum temperature of 19°C. The survey commenced at 19.50 and continued until 21.50.
- 3.20. Five common pipistrelle were recorded exiting the wooden cladding on the west facing gable of the changing room building and were subsequently recorded foraging for an extended period of time around the building.
- 3.21. A bat, considered to be a long-eared, was recorded exiting from the eaves of the northern aspect of the clubhouse building.
- 3.22. No other bat emergences or re-entries were recorded.
- 3.23. General activity included a brief recording of a lesser horseshoe near the bridleway, which was unseen and a recording of soprano pipistrelle over the adjacent pond.

#### Dawn re-entry survey 2014

- 3.24. The survey was undertaken on 29 August 2014 during cool, clear conditions with a minimum temperature of 13°C. There has been previous rain, but the survey period was dry. The survey commenced at 05.20 and continued until 06.50.
- 3.25. A single common pipistrelle was recorded entering the wooden cladding at the west-facing gable of the changing rooms.
- 3.26. Common pipistrelle and soprano pipistrelle were occasionally recorded throughout the survey period.

#### *Transect surveys (2018)*

- 3.27. Three transect surveys have been undertaken to date on 25 April 2018, 9 May 2018 and 15 May 2018. Each survey included a three hour walked transect of 4 km covered by two surveyors (refer to Figure 2).
- 3.28. Up to twelve species of bat have been recorded during transects to date during 2018, including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, serotine *Eptesicus serotinus*, noctule *Nyctalus noctula* and greater and lesser horseshoe. Possible recordings of small numbers of Nathusias pipistrelle *Pipistrellus nathusii*, Leisler's *Nyctalus leisleri*, Natterer's *Myotis nattereri*, Daubenton's bat, Whiskered/Brandt's bat and barbastelle bats were also made.
- 3.29. The main flightlines are shown on Figure 4. Common and soprano pipistrelle were regularly recorded across the parkland and foraging over waterbodies.
- 3.30. Noctule bats and possibly Leisler's bats were occasionally recorded on every surveys, foraging and commuting high over the site between groups of parkland trees.
- 3.31. Serotine was recorded on two occasions over the southern field close to the lane and foraging close to the treeline on the northern boundary.



- 3.32. Possible *Nathusias pipistrelle* and Natterer's bats were recorded on one occasion commuting over the parkland.
- 3.33. A likely Daubenton's bat was recorded foraging over Pond 2 on 8 and 15 May.
- 3.34. A greater horseshoe and lesser horseshoe were recorded on one occasion commuting along the bridleway.
- 3.35. A possible barbastelle bat was recorded on 15 May 2018 around mature trees by the A3096 on the northern boundary of the site.
- 3.36. Key areas of activity were over the large pond and the bridleway and lane. Occasional commuting passes were recorded from across the parkland, particularly around groups of trees or in more open areas of parkland in the case of the *Nyctalus* (Leisler's and Noctule) bats.

*Transect surveys (2014)*

- 3.37. Bimonthly surveys were undertaken between May and October 2014.
- 3.38. At least seven species of bat were recorded including common pipistrelle, soprano pipistrelle, serotine, noctule, *Myotis sp.*, Daubenton's *Myotis daubentonii*, long-eared bat *Plecotus sp.* and lesser horseshoe.
- 3.39. The main flightlines are shown on Figure 5. Common pipistrelle was regularly recorded particularly along woodland edges, the bridleway and over waterbodies.
- 3.40. Soprano pipistrelle was regularly recorded along treelines and the edge of woodland and over waterbodies, particularly the pond just to the north of the clubhouse and the largest pond at the centre of the site.
- 3.41. Noctule was occasionally recorded on every visit foraging and commuting high over the site.
- 3.42. Serotine was very occasionally recorded toward the north and east of the site, mostly associated with open habitat near to trees.

- 3.43. *Myotis sp.*, most probably Daubenton's were very occasionally recorded commuting and foraging over the large pond in the centre of the site.
- 3.44. Lesser horseshoe was rarely recorded commuting along the bridleway and was also recorded near to the buildings.

*Automated surveys (2018)*

- 3.45. Automated bat surveys have been undertaken from three locations: 1. Upper Parkland, 2. Lower Parkland and 3. Lane/Bridleway (Figure 2). Automated detectors were set to record for at five consecutive days during April 2018 and will be installed on site once a month during May to September 2018.
- 3.46. The bat activity is summarised using the following table, which compares the bat activity index (BAI) between the species. BAI is a measure of bat activity per unit time and is calculated using the following equation;  $BAI = \text{bat passes} / \text{unit time (hours)}$ .
- 3.47. The table below gives the results for the three locations.

Table 3.1: bat activity indices (BAI) for automated activity surveys April 2018

Species	BAI from 1	BAI from 2	BAI from 3
Cumulative recording time (hours)	40	40	40
Common pipistrelle	1.3	1.1	3.05
Soprano pipistrelle	2.35	0.575	1.225
Noctule	0.625	0.375	0.3
Myotis sp.	1.275	-	-
Leislars bat	0.01	0.25	0.15
Serotine	0.04	-	-
Lesser horseshoe	-	-	0.125
Greater horseshoe	-	-	0.05



3.48. The automated detectors recorded eight species of bat from the three locations during the survey period. All of the species were recorded along the bridleway that runs along the southern boundary of the site, six species were recorded in the upper parkland of the site and five species were recorded at the lower parkland site.

*Automated surveys (2014)*

3.49. Automated bat surveys were undertaken at three locations in 2014 (refer to Figure 5). Location A is on the bridleway outside of the current application site boundary to the east. Location B is outside the current application site boundary along the adjacent woodland edge to the north-east. Location C is within the current application site close to the small pockets of woodland along the northern boundary. Automated detectors were set to record for five consecutive days each month during May to October 2014.

3.50. The bat activity is summarised using the following table, which compares the bat activity index (BAI) between the species. BAI is a measure of bat activity per unit time and is calculated using the following equation;  $BAI = \text{bat passes} / \text{unit time (hours)}$ .

3.51. The table below gives the results for the three locations.

Table 3.2: bat activity indices (BAI) for automated activity surveys

Species	BAI at A	BAI at B	BAI at C
Cumulative recording time (hours)	270	270	270
Soprano pipistrelle	0.33	-	0.05
Common pipistrelle	3.8	0.38	0.32
Barbastelle	-	0.08	0.01
Myotis sp.	0.04	0.07	-
Noctule	-	0.05	-
Leislars bat	-	0.01	-



Species	BAI at A	BAI at B	BAI at C
Cumulative recording time (hours)	270	270	270
Serotine	0.04	0.13	-
Long-eared	0.02	0.01	-
Lesser horseshoe	0.13	0.01	-

3.52. The automated detectors recorded nine species of bat from the three locations during the survey period. Six species were recorded along the bridleway that runs along the southern boundary of the site, eight species were recorded along the woodland edge at the north of the site and three species were recorded along the woodland edge at the west of the site.

3.53. Due to a poor signal, it was not possible to determine the *Myotis sp.* recordings to species level.

#### *Great crested newts*

3.54. Results of the 2018 eDNA test results are pending.

3.55. No great crested newts were found during 2014 presence/absence surveys. A record was returned from 2006 of a population of great crested newts at Dilton Marsh approximately 1.5 km north of the proposal site. There are no more recent records of the species within 2 km.

#### *Breeding Birds*

3.56. The breeding bird survey route is shown on Figure 3. Final results of the survey will be provided in June 2018. Findings for the first survey are shown by habitat type below in advance of the final mapped results.



Visit 1 (of 3): 22-04-18

- 3.57. Parkland: Chiff chaff, song thrush, great tit, blue tit carrying food, wren, wood pigeon, jackdaw, raven, carrion crow, swallow, red kite, pair of linnet.
- 3.58. Ponds: Pair of tufted duck, two pairs Canada goose, moorhen, pair of coot, mallard.
- 3.59. Woodland and scrub: chiff chaff, blue tit, great tit, blackbird, wren, robin.

*Dormice*

- 3.60. Results of the 2018 update surveys are pending with the first check to be carried out in late May. No evidence of dormice was found during surveys in 2014.
- 3.61. No records have been returned by WSBRC of dormice within 2 km of the site.

*Reptiles*

- 3.62. Results of the 2018 surveys are pending. The site provides potential for a range of common and widespread reptiles particularly slow-worm and grass snake, in semi-improved grassland and close to ponds and scrub.

## Evaluation

*Bats*

Buildings

- 3.64. Thoulstone Park was previously a golf course; the former clubhouse, changing rooms, driving range shelter and ancillary buildings are still present. The



buildings have suffered some dilapidation over the last ten years although the former changing rooms and driving range shelter have recently been subject to some maintenance. The former changing rooms building is now in use for storage and as a kitchen area for resident site maintenance staff. Several occupied mobile caravans are present on the former driving range. The former driving range shelter is in use as a workshop and is now well-lit at night.

- 3.65. **Clubhouse:** Droppings attributable to at least two bat species were found within the loft space of the building in 2014; small scatterings of droppings from *Pipistrellus sp.* and possible brown long-eared bat were noted, mainly at the base of internal gable walls.
- 3.66. A single common pipstrelle was recorded emerging from the building during one of the evening emergence surveys in 2014. None of the other surveys in 2014 recorded any other activity associated with the building and no brown long-eared bats were recorded entering or exiting the building.
- 3.67. Droppings found in 2018 are consistent with similar usage by small numbers of roosting bats since the surveys in 2014. DNA analysis of droppings is pending and will confirm identification to species level.
- 3.68. The building is likely to support a minor, non-breeding roost for common pipstrelle and possibly for brown long-eared bat. The presence of small numbers of droppings and the lack of consistent recordings of these species in 2014 suggests that the building supports an occasional roost, possibly used by low numbers of males or non-breeding females outside of the hibernation season.
- 3.69. Update emergence and re-entry surveys will be carried out in May and June 2018.
- 3.70. **Changing rooms:** As with the Clubhouse, small scatterings of droppings attributable to at least two species, again *Pipistrellus sp.* and long-eared bat, were noted in the roof space although no bats were recorded emerging or entering this section of the building during the activity surveys. The building



- appears to function as an occasional non-breeding roost for small numbers of bats.
- 3.71. Accumulations of droppings attributable to *Pipistrellus sp.* were recorded under wall cladding on the external walls of the building in 2014; from the activity surveys it was concluded that the species present was common pipistrelle and up to five bats were recorded emerging from the cladding on the west-facing gable of the building. This roost was considered likely to be a minor non-breeding day roost. No similar signs were present during the inspection in April 2018.
  - 3.72. Update emergence and re-entry surveys will be carried out in May and June 2018.
  - 3.73. **Other buildings:** The other buildings on site are simple in structure and lack suitable abiotic features for roosting bats. The former driving range shelter is now lit at night further discouraging bat activity from the area.

#### Habitats

- 3.74. There have been no significant changes to the extent and quality of the habitat at the site since the previous detailed bat surveys in 2014. The current application site covers a smaller area with less hedgerow, woodland and water overall, comprising a relatively greater area of parkland and improved grassland. The majority of the site is sheep-grazed, improved grassland with small, scattered groups of semi-mature and mature trees creating a parkland landscape. Strong linear features on site are provided by the lines of scrub, trees and hedgerows along the boundaries of the site, particularly to the north, south and west. There are no strong linear features crossing the parkland on site. Key foraging areas are around waterbodies and along a bridleway leading to a larger expanse of off-site woodland and ponds to the east.
- 3.75. The busy A36 lies along part of the sites western boundary and the smaller A3096 lies to the north. A junction of the two roads lies immediately to the west of the parkland beyond tall scrub. These roads create minor to moderate barriers

to movement of bats through the landscape but are largely unlit and tree-lined providing commuting corridors and foraging opportunities along their length.

- 3.76. The results available to date inform mitigation and enhancement included in the proposed application designs. Further surveys in 2018 will continue to inform the proposed future management and landscaping of the site and wider grounds. Three activity surveys have been carried out to date in 2018, with a similar assemblage found to that of 2014 but with up to twelve species recorded including low numbers of lesser and greater horseshoe bats. Data from the 2014 activity is useful in providing a good overall picture of the spatial usage, species assemblage and frequency of use of the site by foraging and commuting bats.
- 3.77. Transect surveys have encompassed all habitat on site and automated devices have been set up in parkland and on likely commuting routes. As can be seen from the data in the results section above, up to twelve species of bat have been recorded at the site including common pipistrelle, soprano pipistrelle, serotine, noctule, *Myotis sp.*, Daubentons, long-eared sp., greater and lesser horseshoe as well as possible barbastelle, Nathusias pipistrelle and Leisler's bat. It is not possible to determine the species of long-eared bat from the available data but it is assumed to be brown long-eared, which are common and widespread, rather than grey long-eared that rare and only found in the extreme south and west of the country in low numbers. Similarly it is not possible to determine all *Myotis sp.* recordings to species level, although Daubenton's bat have been recorded during the transect surveys.
- 3.78. **Parkland:** The parkland habitat comprises improved grassland and scattered groups of trees is grazed by sheep, attracting invertebrates and providing large open spaces and a few sheltered areas among groups of trees for foraging bats. The parkland to the north of the former clubhouse is currently unlit. Fewer bats were recorded here although bats would range more widely in this habitat and would be harder to detect than those commuting along a linear feature such as the bridleway to the south or over the small ponds on site. Noctule bats were frequently recorded foraging high above the grassland, consistently throughout the survey period in 2014 with Noctule and Leisler's in April and early May 2018.

Plantation woodland is included within this habitat section as it is still young and dominated by grassland habitat.

- 3.79. **Bridleway and woodland pockets:** The tree-lined bridleway that runs along the southern boundary and into the wider countryside offers a foraging resource and corridor for bats that links to the wider countryside and pockets of woodland off-site to the east. The number of species recorded during the transect and automated surveys reflects the value of these features.
- 3.80. Woodland pockets at the northern and western boundary of the site are smaller less diverse than those off-site to the east with a limited herb layer and understorey. Bat recordings and the number of species recorded in this area were lower but included possible recording of the rare barbastelle bat as well as the horseshoe species.
- 3.81. The bridleway that runs along the southern boundary of the site and extends to the east, is lined with trees and hedgerow plants that form a dark corridor with a sheltered microclimate, which is a popular commuting and foraging route for bats. This feature forms a linear feature that passes the site but also links to on-site habitats including woodland, hedgerows and ponds.
- 3.82. The site supports a large number of mature and semi-mature trees, which include ornamental specimens and native trees. The trees are likely to provide a number of micro niches for a range of invertebrate species, which therefore increases the overall invertebrate resource for bats and in combination with other foraging resources, including the ponds, provide an excellent foraging resource for bats.
- 3.83. **Ponds:** The ponds on site all offer a valuable foraging resource for bats and a number of species were recorded in association with these features. The most frequent bat recorded was soprano pipistrelle, which is a species that prefers to forage over aquatic habitats, were very regularly recorded. The ponds are varied, with the largest being lined and stocked with fish with others having a clay substrate and more naturalistic planting with surrounding scrub and woodland;

species include willow *Salix fragilis*, alder *Alnus glutinosa* and other ornamental and native species. The ponds at the south of the site which adjoined the bridleway are more shaded and have stands of willowherb *Epilobium sp.* and hemlock water-dropwort *Oenanthe crocata*. The ponds offer good egg laying and hatching habitat for invertebrate species, which in turn offer a foraging resource for bats.

### Species

- 3.84. The bat activity and automated survey show that bats are using the vast majority of the site, with obvious difference in the number of species using the automated survey areas at locations A, B and C. The habitat requirements, behaviour, site status and population status of each recorded species is detailed below; the population status uses data from the Bat Conservation Trust Bat Population Monitoring Program (NBMP).
- 3.85. **Soprano pipistrelle:** This species is strongly associated with water and factors affecting the quality of these habitats may also affect populations of soprano pipistrelle.
- 3.86. The species is common and widely distributed across the UK. NBMP results show a mixed record for this species with an increased number of field recordings but a reduced number of recorded roosts. The population of this species is currently considered to be stable.
- 3.87. **Common pipistrelle:** This species was the most commonly recorded species on sites is using most areas of the site with most recorded activity associated with the treeline at the north of the site.
- 3.88. This species uses a wide range of habitats including woodland, watercourses and woodland and is also the most urban-dwelling bat in the UK.
- 3.89. The species is common and widely distributed across the UK. NBMP results show a mixed picture for this species with an increased number of field recordings but

- a reduced number of recorded roosts. The population of this species is currently considered to be stable.
- 3.90. **Leisler's:** This species was one of the least recorded on the site. It prefers to forage at height above open habitats such as pastureland with hedgerows and parkland.
  - 3.91. This species is uncommon in the UK and its population trend is unknown.
  - 3.92. **Noctule:** This species was one of the least recorded on the site. It prefers to forage at height above open habitats such as pastureland with hedgerows and parkland.
  - 3.93. This species is uncommon but widespread. There has been no recent population change.
  - 3.94. **Serotine:** This species was one of the least recorded species; it prefers to feed along treelines or woodland edges and other structural vegetation.
  - 3.95. This species is uncommon and mainly restricted to the south of the UK. Its population has shown a slight decline in recent years.
  - 3.96. **Greater horseshoe:** This species was only recorded along the bridleway on site on a few occasions but is a new species to the site since 2014. This species is rare but the population is increasing; it is confined to the south-west of the UK.
  - 3.97. **Lesser horseshoe:** This species was the least recorded on site in 2014 but has been recorded more frequently in 2018. It prefers to forage close to dense hedgerows in pastureland and deciduous woodland with understorey, which are habitats that are somewhat uncharacteristic of those on site.
  - 3.98. This species is rare but the population is increasing; it is largely confined to the south-west of the UK.

- 3.99. **Daubentons:** This species was recorded foraging over Pond 2 in 2018; it is strongly associated with water and factors affecting the quality of these habitats may also affect populations of soprano pipistrelle.
- 3.100. This species is common and fairly widespread across the UK. Its population is considered to be increasing.
- 3.101. **Long-eared bat:** This species was roosting in the clubhouse and changing room in 2014 but was rarely recorded; however it is very difficult to detect this species due to its very quiet echolocation and habit of foraging in dense undergrowth.
- 3.102. This species is common and widespread so is likely to be under recorded on site. The NBMP show a slow increase in population.
- 3.103. **Barbastelle:** This species was recorded occasionally from all three automated survey locations in 2014 but has only been recorded during transects on the northern boundary of the site in 2018. This species prefers to forage along woodland edges, within woodland and along treelines, which are habitats that are present on site.
- 3.104. This species is rare in the UK and there are no accurate population counts making the current population trend unknown.
- 3.105. The site supports a good diversity of bats and has a number of habitat types of value for foraging and commuting activity as well as a confirmed roost in buildings and potential roost features in mature trees. Activity levels have been moderate overall with most activity concentrated at ponds, woodland edges and the bridleway to the south. The open parkland does provide a good foraging resource that several bat species, including pipistrelles and the *Nyctalus* species in particular appear to range widely across.
- 3.106. Overall the site is of **local** value for foraging and commuting bats.



### Annex II bat species

- 3.107. The three of the four Annex II species of bat have been recorded at the site in low numbers using mainly the bridleway and woodland edges to the north. These species are designating features of the two bat SAC's which lie between 8 and 9 km from the site. Records of Bechstein's bat have been returned within 2 km suggesting this species may also use the site on occasion although the large woodland blocks off-site to the east and west provide far superior habitat for this species. Habitats of particular value to these species on site (bridleway and woodland edges to the north) will be retained and protected with 0 lux light levels.
- 3.108. It is considered likely that the proposals will have **no significant effect** on the status of these Annex II species in the local area or on the populations at the nearby SAC's.

### *Breeding birds*

- 3.109. There were 19 species recorded on site during the initial survey. Two species (linnet and song thrush are red-listed as Birds of Conservation Concern (BoCC).
- 3.110. Great tit were seen carrying food on site and are confirmed breeders. Several other species are considered probable or possible breeders including Canada goose, moorhen, coot, tufted duck (large pond), song thrush, blackbird, robin, wren and blue tit.
- 3.111. Key areas of bird activity are woodland, ponds, scrub and hedgerows; open areas of the parkland were used by foraging swallows (sheltered areas over grazed grassland), crows, jackdaws and woodpigeon.
- 3.112. Overall the site is of **local** value for breeding birds.

## 4. Recommendations

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- 4.1. The recommendations detailed in the paragraphs below should be followed to ensure that bats are protected during the course of works and any potential harm is mitigated where necessary. This section also details relevant wildlife legislation and provides information on how works can proceed within this legislation.
- 4.2. The extent and timings of the future development works are not confirmed so the recommendations below are provision and will be updated when required.

### Licencing, Mitigation and Compensation

#### *Bats*

##### Active Bat Roosts

- 4.3. Bat roosts have been confirmed in the former changing rooms and clubhouse on site. **In order for development works to legally proceed, a European Protected Species licence (EPS licence) will be obtained from Natural England** to allow actions to proceed that would otherwise be prohibited under the above legislation, notably the demolition of the clubhouse and changing room.
- 4.4. The license application can only proceed once full planning permission (or other lawful consent) has been granted and all planning conditions related to bats have been discharged. A license application would be supported by detailed survey information and accompanying detailed mitigation strategies and method statements.
- 4.5. The leisure centre building on site has been identified as the site of a replacement roost suitable for crevice dwelling bats including common pipistrelle and for long eared bats, via provision of a dedicated attic space with access points close to retained mature trees and a dark corridor retained to the wider

landscape. The internal roof void provided for bats will be constructed in the traditional cut and pitch method rather than a modern truss system to provide an uncluttered roof space. The roof will be clad with tiles or slates and will incorporate traditional bituminous underfelt and **not modern breathable membrane, which is hazardous to bats**. The roof space will measure at least 5 m x 3 m with an apex height of 2 m.

- 4.6. New dedicated bat roost features will also include eight Habibat bat tubes that will be installed in the south, west or east facing gable ends of any buildings that will replace the clubhouse and changing room. Bat tubes will be installed close to the gable apex of the buildings and will provide opportunities for crevice dwelling bats. The tubes will be positioned high on the apex approximately 1m below the gable and will not be positioned above any windows or doors.
- 4.7. Installing Kent-style wooden bat boxes throughout the site could provide further roosting opportunities. This bat box is can be purchased or easily constructed from site materials.
- 4.8. Prior to any works commencing on site, the foreman and key site workers will attend a tool box talk, where a licensed bat ecologist will provide information on the status of bat activity of the site and what action to take if a bat is found. The tool box talk will also include basic information bat ecology and behaviour.
- 4.9. Prior to works commencing bat boxes including five Schwegler 1FF and 5 Schwegler 2F bat boxes will be installed on mature trees on site. These bat boxes will be installed on the south-east and south-west aspect of the trees and will be installed at a height of at least 3m, within an uncluttered part of the tree, so they are out of reach of potential predators and there is a clear flight path to and from a potential roost.

#### Foraging and Commuting Bats

- 4.10. Key commuting and foraging areas include the bridleway, pockets of woodland, ponds, wider parkland, boundary features and groups of trees.

- 4.11. The bridleway and connecting habitat to the east will be retained, protected and kept dark with a 0 lux corridor maintained throughout construction and operation. Lighting at the proposed new site entrance will be minimised to provide as dark a corridor as possible along the lane and boundary trees connecting to the bridleway. Where light spill will interrupt the currently unlit corridor along from the proposed site entrance planting along the boundary of the field to the south will be enhanced to block light spill and retain a dark corridor.
- 4.12. All light will be modern LED-type, installed on low columns and fitted with louvers, cowls or shields to deflect light downwards and away from habitat features including trees, hedgerows and ponds. Lights should be fitted with timers and sensors so that lights are only used when they are needed.
- 4.13. Light readings on site taken at 23:00 on 29 July 2014, which was a clear evening, were as follows;
- Pasture, ponds and other open areas – 2 - 0.05 LUX
  - Woodland, tree-lined driveway and footpath (overhung by trees) – 0.001 LUX
- 4.14. The readings clearly show the differences in light levels between different areas of the site. The aim of the lighting scheme will be to ensure that light levels remain at a comparable level (+/-20%) post development. The lighting scheme will also ensure that areas where retained/new bat roosts are installed and connecting habitats remains dark.
- 4.15. The main habitat to be lost as part of the proposals is a relatively small area of improved grassland and parkland to the north and west of the former clubhouse and poor semi-improved grassland on the former driving range. The parkland comprises small groups of semi-mature trees and improved, sheep-grazed grassland. Significant additional tree planting throughout the proposed development and creation of a bund and new plantation woodland will attenuate

light spill onto surrounding parkland from the proposed development maintaining dark corridors around the proposed development suitable for sensitive species such as greater horseshoe bat while maximising on-site opportunities for the species of bats less likely to be discouraged by slight increases in light levels such as the *Pipistrelle* species.

- 4.16. The wider parkland on site, including the proposed sculpture park will remain unlit at night throughout construction and operation with no increase in light levels across the majority of the site.
- 4.17. Continued grazing of the wider parkland with extensive additional tree planting and re-wilding of grasslands and waterbodies will provide continued and enhanced foraging opportunities for bats in the medium term.
- 4.18. An Ecological and Landscape Management Plan will provide detail for the construction and operational stage protection and enhancement of these key features.

#### *Trees*

- 4.19. It is understood that all semi-mature and mature trees will be retained within the proposals. However, if any pruning or felling works are required then each tree should be assessed on an individual basis for the possible presence of bats.

#### *Breeding Birds*

- 4.20. Proposed planting and future management will result in overall enhancement of key features for breeding birds, particularly increased tree planting and rewilding of waterbodies likely to result in more scrub and reedbed habitat, both valuable habitats for nesting birds. Re-wilding of the landscape is likely to result in an overall increase in bird species diversity and abundance.



## 5. Limitations

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- 5.1. Not all parts of the site could be fully accessed or inspected due to dense impenetrable vegetation. Sections of buildings were sometimes deemed unsafe and were not entered on health and safety grounds.
- 5.2. This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any plants or animals that may appear at other times of the year and were therefore not evident at the time of visit.
- 5.3. This report represents a preliminary assessment only. Recommendations and conclusions are subject to change should further findings significantly differ from those collected from the survey efforts to date.
- 5.4. The advice contained in this report relate primarily to factual survey results and general guidance only. On all legal matters you are advised to take legal advice.

## 6. References

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- Bat Conservation Trust (BCT)** *Bats and Lighting in the UK* BCT
- English Nature (2001)** *Great Crested Newt Mitigation Guidelines*. English Nature
- HMSO (1981)** *Wildlife and Countryside Act 1981 (and subsequent amendments)*. HMSO
- HMSO (1995)** *Biodiversity*. The UK Steering Group Report
- Joint Nature Conservation Committee (JNCC)** *Common Standards Monitoring Guidance for Reptiles and Amphibians* (2004) JNCC
- Langton, T., Beckett, C. and Foster, J. (2001)** *Great Crested Newt Conservation Handbook*. Froglife
- Mitchell-Jones, A.J (2004)** *Bat Mitigation Guidelines* English Nature
- Mitchell-Jones, A.J , & McLeish A.P. (2012)** *The Bat Worker's Manual* (4<sup>th</sup> Edition)
- Multi-Agency Geographical Information for the Countryside (MAGIC)**  
**Website** at [www.magic.gov.uk](http://www.magic.gov.uk)
- National Bat Monitoring Programme (2017)**. *The State of the UK's Bats 2017: National Bat Monitoring Programme Population Trends*. **NBMP and JNCC**.
- National Biodiversity Network (NBN) Website** at [www.nbn.org.uk](http://www.nbn.org.uk)
- Stace, C. (1997)** *New Flora of the British Isles 2<sup>nd</sup> Edition*. Cambridge University Press
- TSO (2012)** *National Planning Policy Framework*
- TSO (2006)** *Natural Environment and Rural Communities Act* TSO

## Appendix I – Site Figures



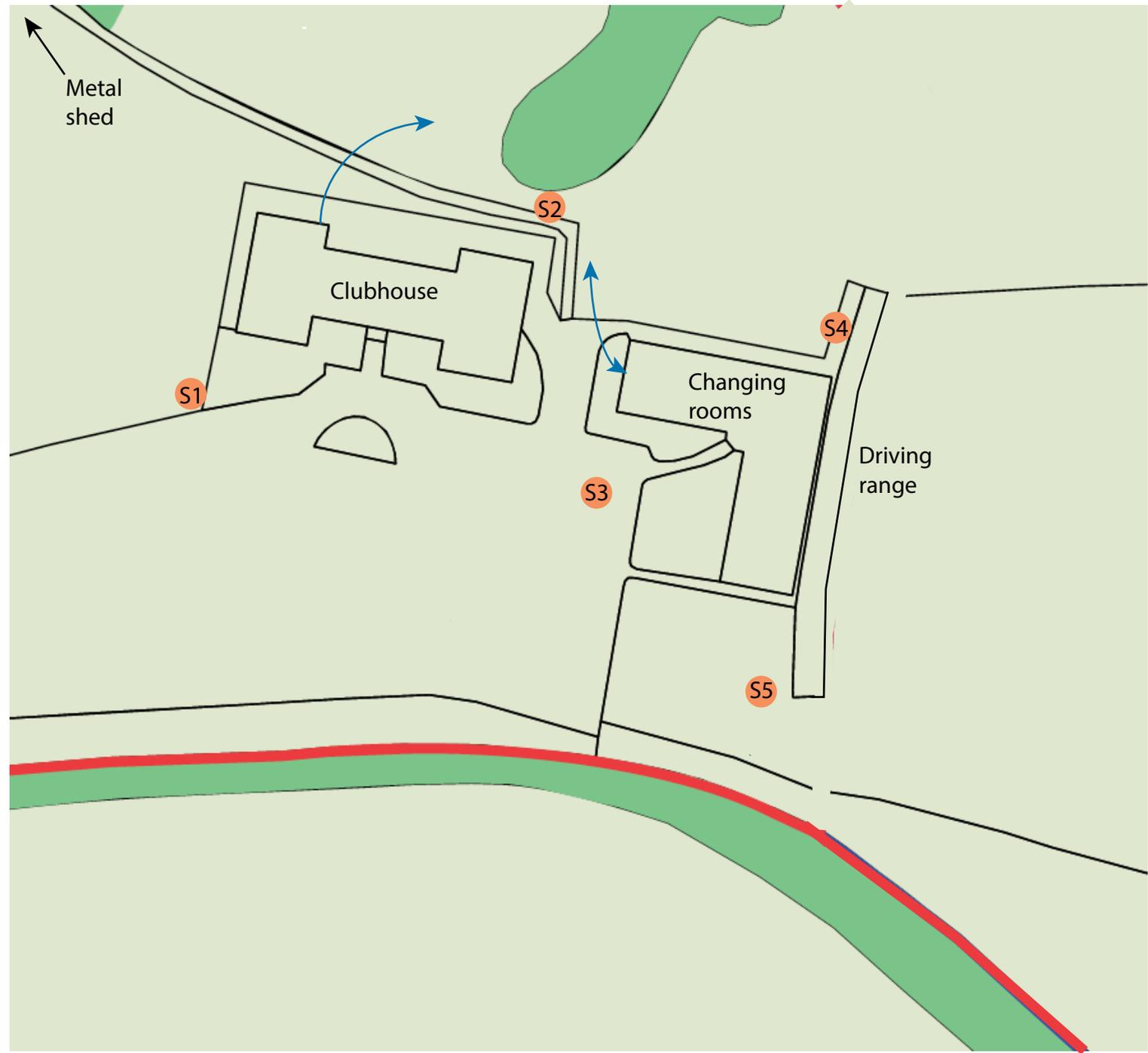


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-  Site Boundary
-  Surveyor locations
-  Emergence/re-entry flightlines



Client Mr and Mrs Hughes-Hallett  
Title Emergence\re-entry 2014  
Site Thoulstone Park  
Figure 1  
Date 25 May 2018  
Scale Not to scale

Figure 3



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-  Site Boundary
-  Automated detector locations
-  Transect route 2014
-  Transect route 2018



**Client** Mr and Mrs Hughes-Hallett

**Title** Transects and automated detector locations 2014/18

**Site** Thoulstone Park

**Figure** 2

**Date** 25 May 2018

**Scale** Not to scale

Figure 3



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-  Site Boundary
-  Woodland
-  Scrub
-  Species-rich hedgerow
-  Dormouse tubes 2014
-  Dormouse tubes 2018
-  Reptile refugia 2018
-  Breeding bird transect 2018

Client Mr and Mrs Hughes-Hallett

Title Protected Species Surveys

Site Thoulstone Park

Figure 3

Date 25 May 2018

Scale Not to scale



Figure 2



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-  Site Boundary
-  Transect routes
-  Popular commuting routes
-  Popular foraging locations

Client Mr and Mrs Hughes-Hallett  
Title Activity survey results 2014  
Site Thoulstone Park  
Figure 5  
Date 25 May 2018  
Scale Not to scale

Figure 4