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2<sup>nd</sup> September 2014

Land at Higgins  
Brook, Longridge,  
Ribble Valley

Bat Survey Report

Report Number: 2001\_R11a\_JM\_SH\_AS

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Tyler Grange

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# Section 1: Introduction

- 1.1 Tyler Grange LLP (TG) has been appointed by Barratt Homes Manchester to provide ecological surveys in connection with two planning applications for residential development schemes located on land off Chipping Lane, Longridge.
- 1.2 The site comprises land off Chipping Lane located to the immediate north of the settlement of Longridge. The site is approximately 24.8 ha and is centred on Ordnance Survey (OS) grid reference SD 6038 3811.
- 1.3 A detailed application for the first 106 homes / 7.07 ha (known as Bowland Meadows Ref: 3/2014/0227) has already been submitted by the developer and is subject to a separate Ecological Assessment (see report TG Ref: 2001\_R06).
- 1.4 A further outline planning application for new residential development (up to 520 dwellings) has also been submitted and includes: affordable housing and housing for the elderly; relocation of Longridge Cricket Club to provide a new cricket ground, pavilion, car park and associated facilities; a new primary school; and vehicular and pedestrian accesses. Landscaping and public open space is proposed on the northern outskirts of Longridge. An ecological Assessment (see report TG Ref: 2001/R08) has been submitted to inform this planning application
- 1.5 Due to seasonal constraints, neither of the ecological assessments (submitted in connection with the detailed or outline applications) provides information in connection with relation to bats or great crested newts (GCN). These species are dealt with in separate reports
- 1.6 The A GCN survey report (TG Ref 2001/R07 was submitted to Ribble Valley Borough Council on the 25<sup>th</sup> June 2014).
- 1.7 This bat survey report provides details of surveys undertaken to inform both applications and will be submitted during the validation process for the outline application.
- 1.8 It also addresses comments made in connection with bats in the consultation letter provided by the Lancashire County Council Ecologist Rebecca Stevens (letter reference 03/14/0438/ASM/ASP/RS) provided to Ribble Valley Borough Council in relation to the detailed application.
- 1.9 The aims of bat surveys undertaken were to:
  - Assess the potential value of habitats within the site to bats;
  - Assess structures (trees and a building) within the site for their potential to support roosting bats; and
  - Determine bats' use of the site – species present and relative abundance



## Section 2: Methodology

2.1. The surveys followed standard methodologies set out in the Bat Mitigation Guidelines<sup>1</sup>, the Bat Workers Manual<sup>2</sup> and Bat Surveys - Good Practice Guidelines<sup>3</sup> (Hundt, L. 2012) and comprised:

- Daytime ground based assessment of the trees on site for potential to support roosting bats;
- Detailed climbing inspection of trees assessed as having potential to support roosting bats;
- An initial inspection survey of the cricket club building (see **plan 2001/P46**) to assess potential to support roosting bats;
- Emergence survey of the cricket club building to assess whether roosting bats are present;
- Activity surveys - three dusk walked transects to assess bat activity across the site; and
- Automated activity surveys – deployment of static bat detectors (SM2+) left to record for several nights in different locations across the site.

2.2. Surveyor details are listed below in Table 2.1.

Name	Licence number	Bat survey experience	Surveys
Simon Holden MCIEEM	WML CL18 (level 2); CLS registration CLS00773	7 years	Tree assessment, building inspection and emergence survey
John Moorcroft MCIEEM CEnv	N/A	8 years	Tree assessment and climbing inspection
Hayley Care MCIEEM	N/A	4 years	Evening activity surveys
Paul Moody MCIEEM	N/A	4 years	Tree assessment, tree climbing inspection and Emergence survey
Laura Dennis Grad CIEEM	N/A	First season	Evening activity surveys
Samantha Pritchard Grad CIEEM	N/A	First season	Evening activity survey

**Table 2.1: Surveyor information**

<sup>1</sup> Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

<sup>2</sup> Mitchell-Jones, A.J. and McLeish, A.P. 2004 – *Bat Workers Manual – 3rd Edition* JNCC

<sup>3</sup> Hundt, L. (ed) (2012) *Bat Surveys Good Practice Guidelines – 2nd Edition*, Bat Conservation Trust, London.



## Survey Methods

### Daytime Tree Assessment and Inspection

- 2.3. Daytime inspections of the trees on site were made on 30<sup>th</sup> January and 13<sup>th</sup> August 2014. The purpose of the surveys was to assess trees for their potential to support roosting bats. This ground based survey was aided by the use of binoculars, an endoscope and a high-powered torch.
- 2.4. Tables 2.2 and 2.3 show the tree features assessed and inspected during the surveys and the categorisation of trees regarding their potential to be used by roosting bats.

Features of Trees Used As Bat Roosts	Signs Indicating Possible Use by Bats
Natural holes	Tiny scratches around entry points.
Woodpecker holes	Staining around entry points.
Cracks/splits in major limbs	Flies around entry points.
Loose bark	Smoothing of surfaces around cavity.
Behind dense, thick stemmed ivy	Bat droppings in/around/below entrance.
Hollows/cavities	Audible squeaking at dusk or in warm weather.
Within dense epicormic growth	Distinctive smell of bats.
Bird & bat boxes	

**Table 2.2: Common features used by bats for roosting and fields signs that may indicate use by bats**

Tree Category	Description
Category 1*	Trees with multiple highly suitable features capable of supporting larger roosts.
Category 1	Trees with definite bat potential but supporting fewer features than 1*.
Category 2	Trees with no obvious potential but are of an age and size that may mean that there are cracks and cavities that could be used that are not visible from ground level.
Category 3	Trees with negligible potential to support bat roosts.

**Table 2.3: Classification of trees (taken from BCT Guidelines 2012)**

- 2.5. Trees assessed as offering roost potential of moderate or higher (category 2 +) were subject to detailed inspections. Climbing inspections undertaken on the 30<sup>th</sup> January were used to refine initial ground based assessments.
- 2.6. Further climbing inspections were undertaken on the 28<sup>th</sup> August 2014 of category 2+ trees affected by development, together with several category 3 trees (where further information has been requested by the Lancashire County Council Ecologist Rebecca Stevens).
- 2.7. Suitable trees were climbed by a qualified tree climber using rope and harness techniques. Potential roost features were inspected using an endoscope to identify signs indicating use by, or high suitability for roosting bats. Signs may include:
- Cavities extending upwards with smooth sides;
  - Cavities extending more than 70mm;
  - Presence of bat droppings; or
  - Presence of live or dead bats.



- 2.8. The purpose of the detailed inspection was to investigate potential roost features up close and to determine whether bats may be using them as roost sites.

### Building Inspection Survey

- 2.9. An inspection survey of the cricket club building was undertaken on the 13<sup>th</sup> August 2014. The potential of the building to support roosting bats was assessed using professional judgement and the criteria shown in Table A2.4 below.

Main Category	Sub Category	Category Description	Indicators
1 (Roost)	n/a	Evidence of use by bats.	<ul style="list-style-type: none"> <li>• Sighting/hearing of bats (including emergence). Droppings, staining, smoothing and/or scratch marks. OR</li> <li>• Anecdotal record of bat roost e.g. from land owner.</li> </ul>
2 (Potential Roost)	A	High potential to support bat roost(s)	<ul style="list-style-type: none"> <li>• Numerous or high potential roosting features that are not exposed to the elements: e.g. crevices deeper than 100mm, width 15-70mm.</li> <li>• Unobstructed flyways.</li> <li>• Low disturbance levels.</li> <li>• Situated within or near to woodland, parkland or next to water bodies, buildings (i.e. potential foraging and roosting habitat).</li> <li>• Well connected to wider landscape through presence of continuous linear features such as hedgerows, watercourses, farm tracks etc.</li> </ul>
	B	Moderate potential to support bat roost(s)	Some of the above features but considered to be less suitable on account of age, location and disturbance levels.
3 (Low Roost Potential)	n/a	Low potential to support bat roost(s)	<ul style="list-style-type: none"> <li>• Limited suitable roosting features: Trees – dense ivy cover or superficial loose bark.</li> <li>• Exposed roosting features e.g. open to wind/rain.</li> <li>• High levels of regular disturbance e.g. from lighting or noise.</li> <li>• Exposed roosting features e.g. open to wind/rain; Isolated from suitable foraging habitat &amp; commuting features.</li> </ul>
Negligible	n/a	Negligible potential to support bat roost(s)	<ul style="list-style-type: none"> <li>• No features suitable for use by roosting bats.</li> </ul> Features offering some roosting potential but considered unlikely to be used due to access restrictions or disturbance levels.

**Table 2.4: Bat roost assessment categories – adapted from Hundt (2012)**

- 2.10. Externally the building was carefully examined and a visual inspection undertaken of structures such as brickwork, lead flashing, fascia boards and tiles for evidence of bat use, including droppings and staining from fur-oil or urine. Internally the building is fitted with a suspended ceiling and no access to a roof void was possible.

- 2.11. The inspection was aided by the use of binoculars, a high powered torch and an endoscope.

### Dusk Emergence Survey

- 2.12. One dusk emergence survey of the cricket club building was undertaken on 13<sup>th</sup> August 2014. Two surveyors were positioned around the building to allow clear observation of all features offering potential to be used by roosting bats. Surveyors used a combination of visual observation and



echolocation detection techniques (BatBox Duet detectors) to identify any bats emerging from the building. The survey started 10 minutes before sunset and ended around 1.5 hours after sunset.



2.13. Details of the timings and the weather conditions during the dusk emergence survey are shown in Table A2.5 below.

Survey	Date	Sunset Time	Weather Conditions		Temp. (0 <sup>c</sup> )		Start time	End time
			At start	At end	Start	End		
Dusk Emergence	13.08.14	20:45	66% - 100% cloud, breezy and dry but rain earlier in day	33% - 66% cloud, breezy and dry but rain earlier in day	15	14	20:30	22:00

**Table 2.5: Survey Date and Weather Conditions**

### Activity Surveys

2.14. Three dusk activity surveys were undertaken on 24<sup>th</sup> June, 17<sup>th</sup> July and 13<sup>th</sup> August 2014. Surveyors used a combination of visual observation and echolocation detection techniques to identify any bat activity on the site. BatScan® software was used to analyse sonograms of any calls which could not be identified in the field. The surveys started approximately at sunset and ended approximately two hours after sunset.

2.15. One transect route was walked per survey by a pair of surveyors, which covered all field boundaries and potential features of interest such on the site such as mature trees, hedgerows and ponds (see bat activity survey summary plan **2001/P46**). Regular stop points of three minutes were conducted along the transect route to record the number of passes, activity and species of bats present. Bat passes recorded in transit between stop points were also noted.

2.16. A 'bat pass' was defined as a registration (as heard on bat detector) lasting up to 10 seconds, i.e. a single bat heard for 11 seconds was counted as two passes.

2.17. Batbox Duet detectors connected to Zoom H2 digital recorders were used during the dusk activity surveys. The detectors record in both heterodyne and frequency division formats. Recordings were analysed using BatSound® software to examine any unidentified or queried calls.

2.18. Details on the timings and the weather conditions for the activity surveys are shown in Table 2.6 below.

Survey	Date	Sunset Time	Weather Conditions		Temp. (0 <sup>c</sup> )		Start time	End time
			At start	At end	Start	End		
Evening Activity 1	24.06.14	21:46	66% - 100% cloud, light wind and dry.	66% - 100% cloud, light wind and dry.	15	15	22:22	00:24
Evening Activity 2	17.07.14	21:31	0% - 33% cloud, light wind and dry.	0% - 33% cloud, breezy and dry	19	17	21:40	23:35





Survey	Date	Sunset Time	Weather Conditions		Temp. (0 <sup>c</sup> )		Start time	End time
			At start	At end	Start	End		
Evening Activity 3	13.08.14	20:48	66% - 100% cloud, breezy and dry but rain earlier in day	33% - 66% cloud, breezy and dry but rain earlier in day	15	14	20:59	22:46

**Table 2.6: Weather conditions and timings of the bat activity surveys**

### Automated Activity Surveys

- 2.19. To supplement the transect activity survey data, automated surveys of the site were also conducted. One SM2+ static detector was placed on the site at three separate locations for a minimum of four consecutive nights. SM2 locations are shown on plan **2001/P46**.
- 2.20. The SM2s were set to begin recording half an hour before sunset and to continue until half an hour after sunrise. The dates and weather conditions for the automated survey are shown in table A2.7 below.

SM2 Location	Date	Temperature Max (C)	Temperature Min (C)	Humidity	Wind Speed Avg (KMH)	Gust Speed Max (KMH)	Precipitation (CM)
A	24/06/2014	19	13	84	8	-	0
	25/06/2014	20	10	69	5	-	0
	26/06/2014	19	13	64	11	33	0
	27/06/2014	15	11	84	13	-	0
	28/06/2014	15	11	83	12	-	0
B	17/07/2014	26	11	68	6	-	0
	18/07/2014	24	17	75	18	-	0
	19/07/2014	22	17	90	8	-	0
	20/07/2014	23	16	85	9	39	0
	21/07/2014	23	14	72	7	28	0
C	13/08/2014	17	11	88	15	41	0
	14/08/2014	18	10	87	10	-	0
	15/08/2014	20	11	78	7	39	0
	16/08/2014	17	10	76	14	54	0
	17/08/2014	16	12	76	23	61	0

**Table 2.7: Dates and weather conditions for the automated bat surveys – sourced from [www.wunderground.com](http://www.wunderground.com) (Weather Station: Manchester).**

### Survey Limitations

- 2.21. Bat surveys are subject to numerous variables. The echolocation calls of species such as brown long-eared bats *Plecotus auritus* are of low amplitude and may not always be picked up on bat detectors. Survey results represent a sample of bat activity during the surveys. It is possible that bats may use the site at other times. However, no evidence of roosting bats was identified during any of the surveys and a high degree of confidence is placed on the results.



- 2.22. Bats use a variety of roosts, ranging from maternity, mating or swarming and hibernation roosts, containing a large number of individuals, to mating or night-time feeding roosts containing few individuals or single animals. Bats also tend to be nomadic (although are faithful to certain favoured roosting sites), spending variable lengths of time in a variety of roosts. As a result, even with the considerable survey effort it is possible that small transient roosts of bats may have been missed, although these tend to be less important to bats and so this should not affect the evaluation and recommendations made.
- 2.23. As the cricket building had a suspended ceiling an internal inspection was not possible. However, the building had low potential for roosting bats. A dusk emergence survey was undertaken and a high degree of confidence is placed on the results.
- 2.24. The SM2 at location A stopped working during the 4<sup>th</sup> night it was placed out.

### **Quality Control**

- 2.25. All ecologists at Tyler Grange LLP are members of CIEEM and abide by the Institute's Code of Professional Conduct.



# Section 3: Survey Results

## Previous Records

3.1 Two records of bats recorded within 2km of the site in the last 10 years were provided by Lancashire Environmental Records Centre LERN. These are :

- Common pipistrelle;
- Unidentified bat species.

## Daytime Inspection Surveys

### Tree Assessment and Tree Climbing Inspection

3.2 Forty two were identified as requiring assessment for bat roosts. Tree locations are shown on plan **2001/P47a**, no other mature trees were identified that required further assessment. The results of the tree assessment are provided in table 3.1 below. Those subject to detailed climbing or ladder inspections are highlighted in grey.

3.3 The consultation from Lancashire County Council ecologist letter identifies two trees (scheduled for removal) in Hedgerow 8 that not shown as individual trees on plan **2001/P47a**. They are also referenced in tree group G2 of the Tree survey report (TG ref: 2001/ R05). These were checked and found to be part of the hedge H8 and are not individual trees. They did not possess features that would enable them to support bat roosts and therefore did not require any further assessment.

Tree Reference	Species	Description	Bat Roost Assessment Category
T1	Alder	Semi-mature alder no obvious potential roost features (PRFs) but with ivy cover.	3
T2	Alder	Mature alder with a damaged stem and possible bat access hole (tree climbed 30 <sup>th</sup> January 2014). Suitability of potential roost feature confirmed but no evidence of use by bats found.	2
T3	Ash	Double stemmed mature ash knot holes present but appear blind	3



Tree Reference	Species	Description	Bat Roost Assessment Category
T4	Ash	Mature ash, no obvious PRFs	3
T5	Alder	Mature alder with three knot holes. These were found to be exposed with remains of starling nests inside.	3
T6	Ash	Mature ash with knot holes and a damaged stem; however these are blind and exposed.	3
T7	Willow species	Group of four mature willows with no obvious PRFs.	3
T8	Alder	Mature alder, no obvious PRFs, some blind knot holes on main stem.	3
T9	Alder	Mature alder with knot hole about 1.5m high, facing south. Inside is shallow and full of debris.	3
T10	Alder	Mature alder with split stem, however open and exposed from above.	3
T11	Alder	Mature alder with split limb to the south, however this appears blind (climbed 30 <sup>th</sup> January 2014). Knot hole confirmed not to lead to a cavity capable of providing bat roost.	3
T12	Alder	Alder with knot hole; however this appears blind (climbed 30 <sup>th</sup> January 2014). Knot hole confirmed not to lead to a cavity capable of providing bat roost.	3
T13	Alder	Mature alder with good knot hole approximately 3m up main stem to the south. This opens into a dry, smooth sided cavity extending up into the main stem (climbed 30 <sup>th</sup> January 2014). Suitability of potential roost feature confirmed but no signs indicating previous occupation by bats was found).	1
T14	Alder	Mature alder with long frost crack extending up main stem (Inspected from ladder 30 <sup>th</sup> January 2014) Suitability of potential roost feature confirmed but no evidence of use by bats found.	2
T15	Alder	Two stemmed alder with two knot holes to south and west. Cavities are damp inside. One stem has butt rot and the top of the stem is open to the elements.	3
T16	Alder	Mature alder with no obvious PRFs.	3
T17	Ash	Mature ash, no obvious PRFs.	3
T18	Sycamore	Mature sycamore, some old ivy cover (ivy has been cut) one knot hole is present to the west but appears blind (climbed 28 <sup>th</sup> August 2014). Ivy was dead and falling off and contained no suitable roost features.. Rot hole was inspected found not	3



Tree Reference	Species	Description	Bat Roost Assessment Category
		lead to a cavity capable of supporting bat roosts. Ivy was falling off and contained no suitable roost features.	
T19	Ash	Mature ash with old dead ivy cover and a damaged limb, however this appears to be exposed and not lead to a cavity (climbed 28 <sup>th</sup> August 2014).  Damaged limb was inspected; cracks were full of rotting tree matter and did not lead to cavities capable of supporting roosting bats. A rot hole was found at 4m on the western side. This was inspected with an endoscope. No bats were present and no signs of previous occupation were found. Cavity was damp inside many slugs, not much room inside. Ivy was falling off and contained no suitable roost features.	3
T20	Ash	Semi-mature ash with no obvious PRFs.	3
T21	Ash	Mature multi-stemmed ash, no obvious PRFs.	3
T22	Ash	Mature ash with three shallow knot holes.	3
T23	Alder	Alder with single woodpecker hole which extends upwards into the stem. (Inspected from ladder 30 <sup>th</sup> Janu 2014)  Suitability of potential roost feature confirmed but no evidence of use by bats found.	2
T24	Sycamore	Mature sycamore, no obvious PRFs.	3
T25	Alder	Multi stemmed alder, no obvious PRFs.	3
T26	Alder	Multi stemmed alder, no obvious PRFs.	3
T27	Ash	Mature ash, no obvious PRFs.	3
T28	Oak	Mature oak with a long split along a limb. This extends into a dry cavity (tree climbed 30 <sup>th</sup> January 2014).  Suitability of potential roost feature confirmed but no evidence of use by bats found. (Inspected from ladder 30 <sup>th</sup> January 2014)	2
T29	Willow species	Willow at edge of Pond 2, no obvious PRFs.	3
T30	Willow species	Willow at edge of Pond 2, no obvious PRF's.	3
T31	Willow species	Willow at edge of Pond 2, no obvious PRF's.	3
T32	Willow species	Willow at edge of Pond 2. Three knot holes on main stem plus a hazard beam. One of knot holes extends upwards towards the pond. (1 hole inspected from ladder).  Suitability of potential roost feature confirmed but no signs indicating previous occupation by bats was found).	1



Tree Reference	Species	Description	Bat Roost Assessment Category
T33	Willow species	Willow at edge of Pond 2, no obvious PRFs.	3
T34	Willow species	Willow at edge of Pond 2, no obvious PFs.	3
T35	Willow species	Willow at edge of Pond 2, no obvious PRFs.	3
T36	Oak	Several splits in main stem but these are open and exposed.	3
T37	Oak	Several splits in main stem but these are open and exposed trunk is very exposed from above.	3
T38	Oak	Multiple splits along limbs. Large cavity which is dry but open at the top. May be suitable for owls (tree climbed 30 <sup>th</sup> January 2014). Suitability of potential roost feature confirmed but no evidence of use by bats found.	2
T39	Oak	No obvious PRFs.	3
T40	Oak	Mature oak with snag end on broken limb. Cavity is shallow and exposed.	3
T41	Ash	Dead oak with numerous areas of lifted bark (Climbed 28 <sup>th</sup> August 2014). All areas of lifted bark examined and no evidence of occupation by bats was found. Conditions in cracks / under lifted bark were generally very damp, many cracks were filled with decaying vegetation or covered in cobwebs.	2
T42	Ash	Semi-mature ash with no obvious PRFs.	3

**Table 3.1: Results of tree assessment and inspection**



### Daytime Building Inspection Survey

- 3.4 The results of the inspection of the cricket club building are detailed in Table A2.9 below and potential related to the categories listed in Table 3.2. **Plan 2001/P47a** shows the location of the building.
- 3.5 Plate 3.1 shows the exterior construction.



**Plate 3.1 showing the exterior construction of the cricket pavilion**

Building	Description	Assessment
Cricket Club	Single- storey stone building with flat steel/ iron roof.  Occasional gaps behind steel fascia boards and wooden soffits which may offer some potential access point for bats.	<b>Low Potential – Category 3</b>

**Table 3.2 Results of building inspection.**

### *Dusk Emergence Survey*

- 3.6 The results of the one dusk emergence survey are summarised in Table 3.3 below. The raw survey data forms can be found in appendix 1.

Survey Date	Surveyor Position	Species	Number of Bats	Bat Activity	Time
13 August 2014	1 (North Western corner)	Common pipistrelle	Max 2	First bat pass recorded but was not seen (32 mins after sunset)  Bat commuting east to west past building.  Bat passes recorded but bat was not seen.  <b>No bats emerged from surveyed building.</b>	21:17    21:20

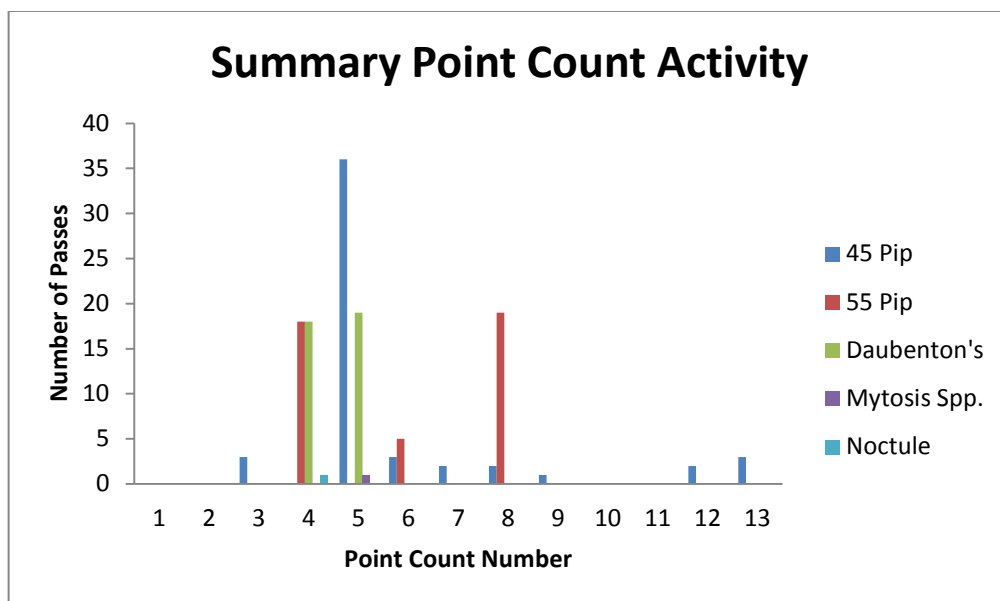


					21:27 - 21:45
	2 (South Eastern Corner)	Common pipistrelle and Soprano pipistrelle	Max 2	First bat (common pipistrelle) pass recorded but not seen (42 mins after sunset).  Soprano pipistrelle passing across field behind building.  <b>No bats emerged from surveyed building.</b>	21:27          21:32

**Table 3.2 Dusk Emergence Survey Results Summary**

### Activity Surveys

- 3.7 Five bat species were recorded during the dusk activity surveys; common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P. pygmaeus*, Daubenton's *Myotis daubentonii*, an unidentified *Myotis* sp. and noctule *Nyctalus noctula*.
- 3.8 Common pipistrelle was recorded across the site, although the majority of the activity was concentrated around Pond 2, where at least 3 individuals were recorded foraging on the second and third survey visits. Constant foraging activity by soprano pipistrelles was also recorded around Pond 1 (at least 5 individuals) and along H3 (2 individuals).
- 3.9 One noctule pass was recorded on the third survey by Pond 1.
- 3.10 Daubenton's were recorded on the first and second surveys foraging over both Ponds 1 and 2.
- 3.11 One *Myotis* sp. pass was recorded on the third survey by Pond 2.
- 3.12 A summary of bat activity recorded across the site is shown on plan 2001/ P46. Raw survey data is provided in **Appendix 1**.





**Figure 3.1: Bat species and number of bat passes recorded at stop point counts during the dusk activity surveys**

*Automated Activity Surveys*

- 3.13 SM2 locations (A, B and C) are shown on **plan 2001/P46**. The SM2s recorded activity by common and soprano pipistrelles and an unidentified Myotis species of bat.

**Assessment**

*Tree Assessment and Inspection*

- 3.14 All trees identified with possible roost potential that are affected by proposed development have been climbed and inspected for bat roosts. None of the trees were found to contain any evidence of roosting by bats.

*Building Inspection*

- 3.15 The cricket pavilion was found to have low potential to support roosting bats due to the limited presence of suitable features. No evidence of use by bats was recorded during the building inspection.

*Dusk Emergence*

- 3.16 To provide greater confidence in the negative result of the building inspection, a single dusk emergence survey was undertaken. No evidence of roosting bats was recorded. It is concluded that there are currently no bat roosts within the building.

*Activity Survey*

- 3.17 A minimum of four and a maximum of five bat species were recorded: common pipistrelle, soprano pipistrelle, Daubentons, Myotis spp. and noctule (one pass by a bat flying over the site). The majority of the Daubentons activity was concentrated around Ponds 1 and 2. The majority of pipistrelle activity was also focused around these two ponds as well as along Hedgerows H3 and H4.

*Automated Activity Survey*

- 3.18 Common pipistrelle, soprano pipistrelle and an unidentified Myotis sp. were recorded by the static detectors.



# Section 4: Conclusion

## Conclusion

- 4.1 No evidence of roosting bats was recorded during any of the surveys undertaken. However, bats' use of trees is often transitional, with individual trees often being used for a few days at a time. Consequently, in order to avoid any potential impacts to roosting bats it is recommended that prior to felling any of the trees identified as offering roosting potential (add tree numbers), a further climbing inspection is undertaken and, if necessary, soft-felling techniques are used as a precaution. If trees with suitable features are to be lost then bat boxes should be installed on retained trees, under the supervision of a suitably qualified ecologist.
- 4.2 Surveys of the cricket club building identified no evidence of use by bats and therefore any works to this building, including demolition, are very unlikely to result in any impacts to bats.
- 4.3 Habitats within the site, notably Ponds 1 and 2 and the hedgerow network, notably H3, are used by relatively low numbers of common species of bats for foraging and commuting. These habitats should be retained within the proposed development and an ecological management plan (EcMP).



# Appendix 1: Raw Bat Survey Data

## Dusk Emergence Survey Forms

### BAT ROOST/DAWN - RECORDING FORM

Project Number: 2001

Project Name: Bowlands Meadows and Higgins Brook, Land East of Chipping Lane, Longridge

Date: 13.08.14

Survey: Dusk Emergence survey		Surveyor: S. Holden		
Sunset/sunrise time: 20:45		Start time: 20:30	End time: 22:00	
Equip. Used (incl. Zoom no.): -		Location of surveyor: North Western Corner		
Weather		At start:	At end:	
Cloud Cover (%):		66% - 100%	66% - 100%	
Wind (Beaufort Scale):		2	2	
Temperature (°C):		15°C	14°C	
Precipitation (dry/dry but rain earlier in day/ rain/persistent drizzle/rain/heavy rain):		Dry	Dry	
Notes: No Bats Emerged, Only 4 passes recorded.				
Real Time	Track No.	Time on Recorder	Bat Species (& number)	Activity (emerging, pass, foraging, "socializing", swarming)
21:17	-	-	Ppi (1)	Pass (Not seen)
21:20	-	-	Ppi (2)	Passed behind building moving east to west
21:27	-	-	Ppi (1)	Pass (Not seen)
21:45	-	-	Ppi (1)	Pass (not seen)

Surveyor: P. Moody				
Equip. Used (incl. Zoom no.): -		Location of surveyor: South Eastern Corner		
Notes: No bats seen entering the building. One common and one soprano pipistrelle recorded.				
Real Time	Track No.	Time on Recorder	Bat Species (& number)	Activity (emerging, pass, foraging, "socializing", swarming)
21:27	-	-	Ppi (1)	Pass (not Seen)
21:32	-	-	Ppy (1)	Passed south to north in field behind cricket pavilion

KEY: (peak frequency)

Pipistrelle	Myotis	Nyctalus	
Ppi – 45 Pipistrelle	My – Myotis sp	Nn – Noctule (25)	LHS – Lesser Horseshoe (110)
Ppy - 55 Pipistrelle	Mbe – Bechstein's (50)	Ni – Leisler's (25)	GHS Greater Horseshoe (82)
Pip – Unid. pipistrelle	Mbr – Whiskered/Brandt's (45)		Bb – Barbastelle (32)
	Md – Daubenton's (45-50)		Pa – Brown Long-Eared (35)
Unid – Unidentified bat	Mn – Natterer's (50)		Ep – Serotine (25-30)

**Dusk Summary:** No bats emerged from the building.



## Bat Activity Survey Forms

### Activity Survey Visit 1 (24/06/14)

Survey: Dusk Activity V1	Transect No: 1	Surveyors: H. Care and Pritchard
Sunset/sunrise time: 21:46	Start time: 22:22	End time: 24:24
Equip. Used (incl. Zoom no.): Batbox and Zoom (Z1)	Location of surveyor: Whole site – see <b>2001/P46</b> for transect route.	
<b>Weather</b>	<b>At start:</b>	<b>At end:</b>
Cloud Cover (%):	2/3 – 3/3	2/3 – 3/3
Wind (Beaufort Scale):	1	1
Temperature (°C):	15	15
Precipitation (dry/dry but rain earlier in day/light rain/persistent drizzle/rain/heavy rain):	Dry	Dry
Notes:		

### POINT COUNTS – 3 MINUTES

Point Count Number	Real Time	Bat Species (and number)	No. of passes.	Activity (pass, commuting, foraging)
Start – 11	10:22	Ppi (1)	-	Foraging
10-9	10:37	Ppy (1)	-	Foraging
9-8	10:46	Ppi (1)	-	Pass
8	22:53	Ppi (1)	1	Pass
8	22:53	Ppy (1)	1	Pass
6-3	23:14	Ppi (1)	-	Pass
6-3	23:20	Ppi (1)	-	Pass
6-3	23:24	Ppi (1)	-	Pass
6-3	23:26	Ppi (1)	-	Pass
3-2	23:34	Ppi (1)	2	Pass
3-2	23:42	Ppi (1)	-	Pass
2-1	23:51	Ppi (1)	1	Pass
2-1	23:52	Ppi (1)	1	Pass



2-1	23:55	Ppi (1)	1	Pass
5	23:56	Md (1)	1	Pass
5-4	24:01	Ppi (1)	1	Pass
5-4	24:03	Ppi (1)	1	Pass
5-4	24:05	Ppi (1)	1	Pass
13	24:18	Ppi (1)	1	Pass

KEY: (peak frequency)

Pipistrelle	Myotis	Nyctalus	
Ppi – 45 Pipistrelle	My – Myotis sp	Nn – Noctule (25)	LHS – Lesser Horseshoe (110)
Ppy - 55 Pipistrelle	Mbe – Bechstein's (50)	Ni – Leisler's (25)	GHS - Greater Horseshoe (82)
Pip – Unid. pipistrelle	Mbr – Whiskered/Brandt's (45)		Bb – Barbastelle (32)
	Md – Daubenton's (45-50)		Pa – Brown Long-Eared (35)
Unid – Unidentified bat	Mn – Natterer's (50)		Ep – Serotine (25-30)

### Activity Survey Visit 2 (17/07/14)

Survey: Dusk Activity V2	Transect No: 1	Surveyors: H.Care and Dennis
Sunset/sunrise time: 21:31	Start time: 21:40	End time: 23:35
Equip. Used (incl. Zoom no.): Batbox and Z (Z00530701)	Location of surveyor: Whole site – see <b>2001/P46</b> for transect route	
<b>Weather</b>	<b>At start:</b>	<b>At end:</b>
Cloud Cover (%):	0-1/3	0-1/3
Wind (Beaufort Scale):	1	1
Temperature (°C):	19	17
Precipitation (dry/dry but rain earlier in day/light rain/persistent drizzle/rain/heavy rain):	Dry	Dry
Notes: Low levels of bat activity. Pip, Ppi, Ppy and MD recorded. Most activity around ponds early Bats seen flying around dead tree and defunct hedge at around emergence time.		

### POINT COUNTS – 3 MINUTES

Point Count Number	Real Time	Bat Species (and number)	No. of passes.	Activity (pass, commuting, foraging)
2-3	22:04	Ppi (1)	-	Pass



3	22:05	Ppi (1)	3	Bats flying around defunct hedge and old tree
3-4		Ppy (1)	1	Pass
3-4	22:10	Ppi (1)	-	Foraging
3-4	22:12	Ppi (1)	-	Foraging
4	22:14	Md (2)	18 x 2	Foraging around pond
5	22:22	Md (2)	18	Two cont. MD and Ppi being joined sporadically by up to 4 more bats
5	22:22	Ppi (3)	18	
6	22:30	Ppi (1)	3	Pass
7-8	22:46	Ppi (1)	-	Pass
8	22:47	Ppi (1)	1	Pass
8-9	22:52	Ppi (1)	-	Pass
8-9	22:53	Ppi (1)	-	Foraging
9	22:58	Ppi (1)	1	Pass
9-10	23:02	Ppi (1)	3	Passes along hedge HNS
10-11	23:14	Ppi (1)	-	Pass
12	23:23	Ppi (1)	2	
12-13	25:28	Ppi (1)	-	Pass
13	23:29	Ppi (1)	4	Pass
13- End	23:34	Ppi (1)	-	Pass / Foraging

KEY: (peak frequency)

Pipistrelle	Myotis	Nyctalus	
Ppi – 45 Pipistrelle	My – Myotis sp	Nn – Noctule (25)	LHS – Lesser Horseshoe (110)
Ppy - 55 Pipistrelle	Mbe – Bechstein's (50)	Ni – Leisler's (25)	GHS - Greater Horseshoe (82)
Pip – Unid. pipistrelle	Mbr – Whiskered/Brandt's (45)		Bb – Barbastelle (32)
	Md – Daubenton's (45-50)		Pa – Brown Long-Eared (35)
Unid – Unidentified bat	Mn – Natterer's (50)		Ep – Serotine (25-30)



### Activity Survey Visit 3 (13/08/14)

Survey: Dusk Activity V3	Transect No: 1	Surveyor: H.Care and Dennis
Sunset/sunrise time: 20:48	Start time: 20:59	End time: 22:46
Equip. Used (incl. Zoom no.): Batbox and Z (Z00530701)	Location of surveyor: Whole site – see <b>2001/P46</b> for transect route	
<b>Weather</b>	<b>At start:</b>	<b>At end:</b>
Cloud Cover (%):	2/3-3/3	1/3- 2/3
Wind (Beaufort Scale):	3	2
Temperature (°C):	14	14
Precipitation (dry/dry but rain earlier in day/light rain/persistent drizzle/rain/heavy rain):	Dry but rain earlier in d	Dry
Notes: Cows were an obstacle forced to miss point count 3.		

### POINT COUNTS – 3 MINUTES

Point Count Number	Real Time	Bat Species (and number)	No. of passes.	Activity (pass, commuting, foraging)
2-4	21:18	Ppy (1)	-	Pass (faint)
2-4	21:18	Ppy (1)	-	Foraging
2-4	21:18	Ppy (2)	-	Foraging
4	21:24	Ppy (5)	18	Constant foraging activity
4	21:24	Nn (1)	1	Pass
4-5	21:30	Ppi (1)	1	
5	21:33	Ppi (2)	18	Foraging
5	21:33	My (1)	1	Pass
5-6	21:43	Ppi (1)	1	Repassing stop 4 lots of bats
12-13	21:51	Ppi (1)	1	Pass
13	21:52	Ppi (1)	2	Pass
6	22:17	Ppy (1)	5	



<b>Point Count Number</b>	<b>Real Time</b>	<b>Bat Species (and number)</b>	<b>No. of passes.</b>	<b>Activity (pass, commuting, foraging)</b>
6-7a	22:22	Ppi (1)	-	Foraging
7a	22:25	Ppi (1)	2	Pass
7-8	22:29	Ppy (2)	-	Foraging
8	22:31	Ppy (2)	18	Foraging along hedgerow
8-9	22:35	Ppy (2)	-	Foraging further along hedge
8-9	22:39	Ppi (1)	-	Foraging near pub

KEY: (peak frequency)

<b>Pipistrelle</b>	<b>Myotis</b>	<b>Nyctalus</b>	
Ppi – 45 Pipistrelle	My – Myotis sp	Nn – Noctule (25)	LHS – Lesser Horseshoe (110)
Ppy - 55 Pipistrelle	Mbe – Bechstein's (50)	Ni – Leisler's (25)	GHS - Greater Horseshoe (82)
Pip – Unid. pipistrelle	Mbr – Whiskered/Brandt's (45)		Bb – Barbastelle (32)
	Md – Daubenton's (45-50)		Pa – Brown Long-Eared (35)
Unid – Unidentified bat	Mn – Natterer's (50)		Ep – Serotine (25-30)



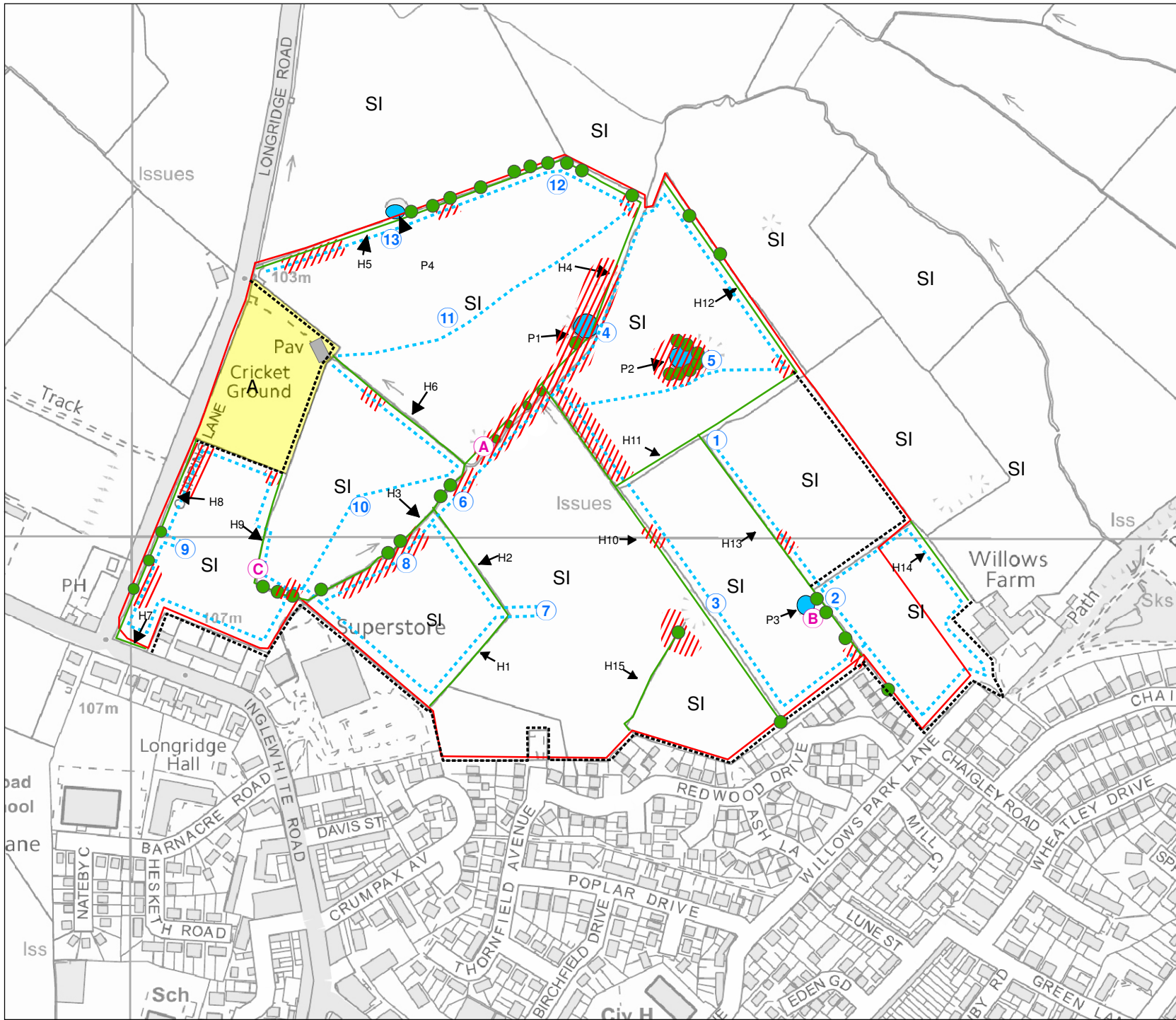

















## Plans

2001/ P46 – Bat Activity Summary

2001/ P47a – Assessment of Trees for Bat Roosts





-  Red Line Boundary
-  Building
-  Species Poor  
Semi-improved Grassland
-  Amenity Grassland
-  Pond
-  Mature Hedgerow Trees
-  Hedge
-  Dry Stone Wall
-  Fence
-  Hedge Number
-  Pond Number
-  Static Detector Locations
-  Transect Route
-  3 Minute Point Counts
-  Recorded Activity



Project Bowlands Meadow and Higgins Brook,  
 Land East of Chipping Lane, Longridge

Drawing Title Bat Activity Summary

Scale As Shown (Approximate)

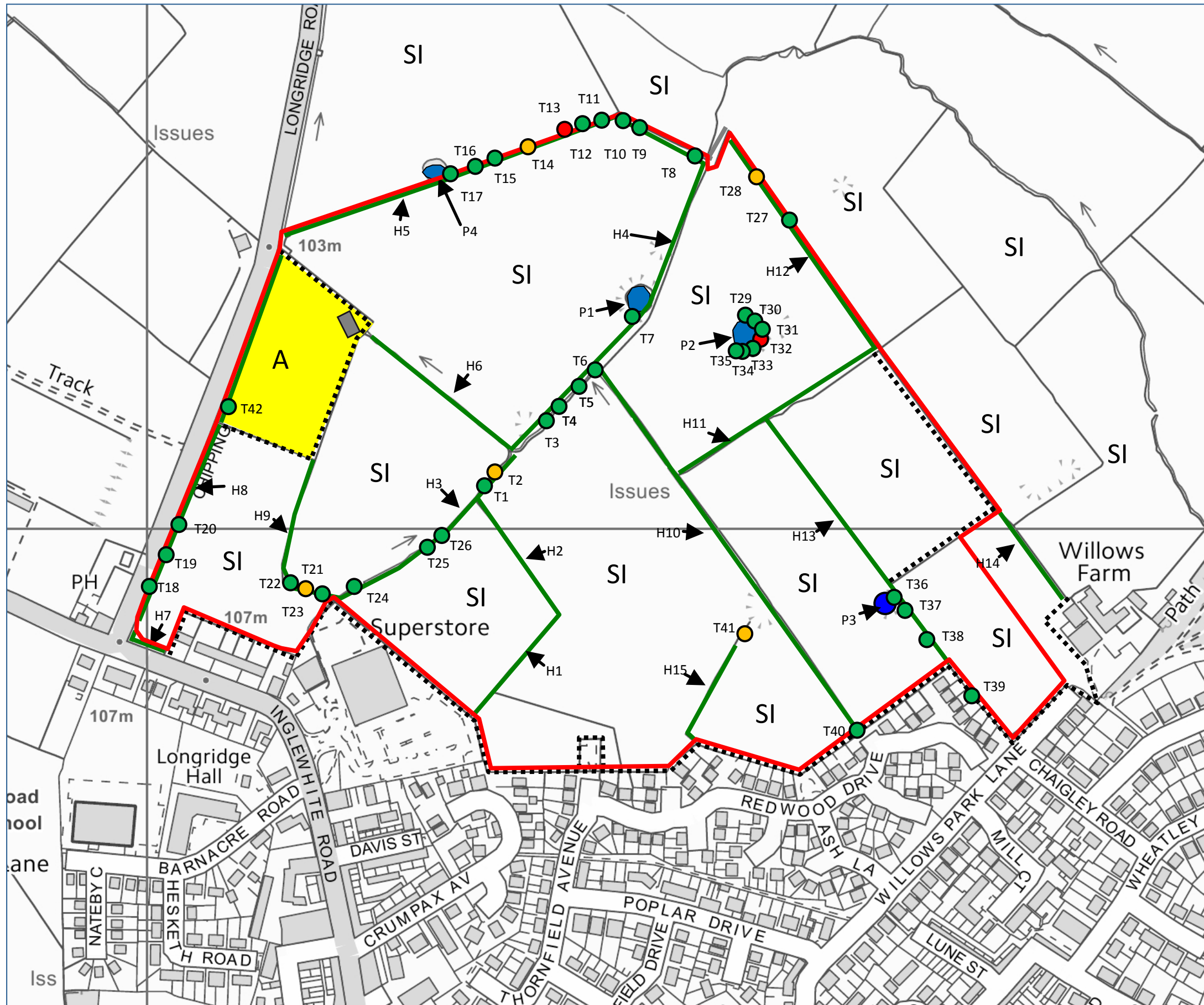
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




Date August 2014

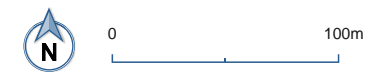
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-  Building
-  SI Species Pool  
Semi-improved Grassland
-  A Amenity Grassland
-  Pond
-  Hedgerow
-  Dry stone wall
-  Fence
-  Site boundary
-  H1 Hedge number
-  P1 Pond number
-  Category 1 tree
-  Category 2 Tree
-  Category 3 Tree



Project | Bowland Meadows and Higgins Brook, Land East of Chipping Lane, Longridge

Drawing Title | **Assessment of Trees for Bat Roosts**

Scale | As Shown (Approximate)

Drawing No. | 2001/P47a

Date | September 2014

Checked | JM/JE



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