



Land at Lane End,
Penley, Wrexham

Ecological Scoping Report

for Cass Associates

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This report is based on survey data gathered in January 2014 at this site at land off Lane End, Penley, Wrexham, LL13 0LN.

1.0 Summary

- 1.1 Solum Environmental was commissioned in January 2014 by Cass Associates, on behalf of Geraint Edwards of Greenspace Architects Ltd, to undertake an ecological scoping survey of land off Lane End, Penley, Wrexham, LL13 0LN. Survey was commissioned to support a planning application to redevelop the site as a seven-plot residential development.
- 1.2 Desktop and field survey of the area within the red-line boundary was conducted by Laura Holmes (Ecologist at Solum Environmental) on 13th January 2014 during daylight hours. Joe Dance (Ecological assistant at Solum Environmental) assisted with this survey.
- 1.3 Taking both desktop and field survey combined, the following results were recorded at this site:

Site Characteristics and Surroundings	
Protected habitats present on site	No
Protected sites within 1km	Yes: 4 local wildlife sites
Buildings on site	Yes
Waterbodies on site	No
Waterbodies within 500m	Yes: 10 waterbodies, 3 watercourses

Protected Species Recorded		
	Desktop survey (within 1 km)	Field survey
Great crested newt	Yes	No but potential
Bats	Yes	No but potential
Badger	Yes	Yes
Otter	Yes	No
Water vole	No	No
Breeding birds	No	No but potential
Barn owl	Yes	No
Reptiles	No	No but potential

- 1.4 Subsequently the following further ecological survey, licensing or mitigation is recommended:

Further Actions Required	
Great crested newt	Survey: HSI survey of nearest ponds, then full presence/absence GCN survey if required March to May 2014
Bats	Survey: full internal and external building assessment of Building 2 and emergence survey(s) if required May to June 2014
Badger	Yes – badger survey to determine whether active setts present within 30m March to April 2014
Otter	None
Water vole	None
Breeding birds	None
Barn owl	None
Reptiles	Survey: 7 reptile surveys April to June 2014

- 1.5 For further information on this survey report contact:
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2.0 Introduction

2.1 Background and Commission

2.1.1 Solum Environmental was commissioned in January 2014 by Cass Associates, on behalf of Geraint Edwards of Greenspace Architects Ltd, to undertake an ecological scoping survey of land off Lane End, Penley, LL13 0LN. Survey was commissioned to support a planning application to re-develop the site for residential use.

2.1.2 Our understanding is that the proposed development project will include:

- removal of some or all trees;
- erection of a seven-plot residential estate;
- creation of an access road off Lane End; and
- landscaping of the site.

2.1.3 Outline plans were supplied by Greenspace Architects Ltd to inform ecological surveyors of the extent of proposed re-development works.

2.2 Aims of the Survey

2.2.1 This ecological scoping aimed to:

- identify and evaluate the site's current ecological value;
- identify any protected habitats or species within or adjacent to this site;
- assess the site's general potential to support protected species;
- highlight any potential ecological constraints to the proposed development of this site; and
- advise on any further ecological survey, mitigation or licensing requirements, where development is likely to impact on either protected species or habitats.

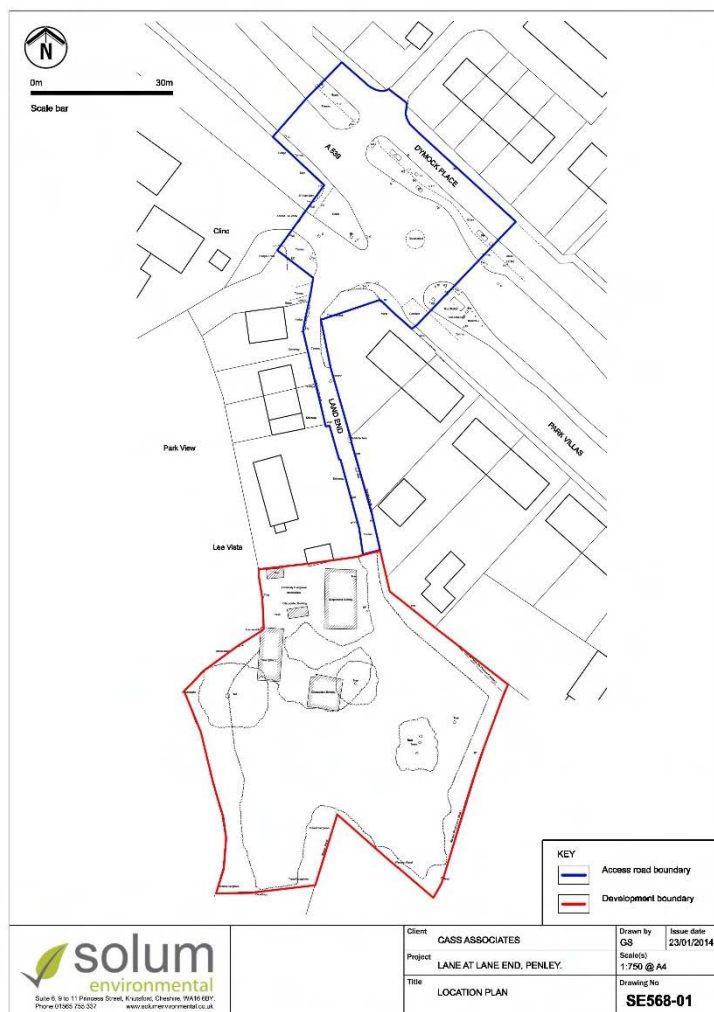
2.3 Site Context

2.3.1 The survey area for this survey is illustrated as a red-line boundary at Plan 1 below. The blue line boundary shows the planned location of the access road. The site's wider location is given at Plan 2 below.

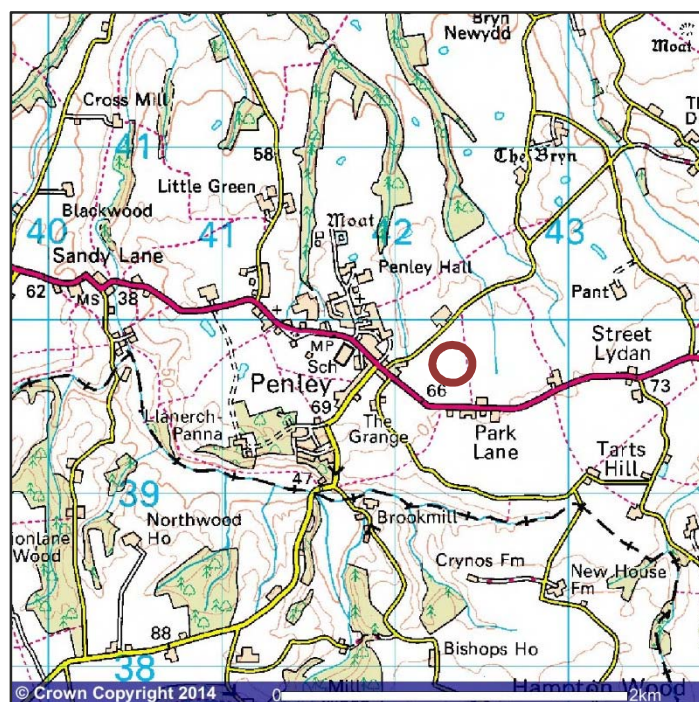
2.3.2 The site comprises an area of land of approximately 0.73 acres, situated at the end of Lane End in the centre of the small town of Penley. The site is bounded by Three Lane End to the north, by the rear of houses along Ellesmere Lane to the east and south east, by an overgrown field to the south and by farmland fields to the west. The surrounding area is residential or farmland, with a school lying to the north west of the site across a pasture field.

2.3.3 The grid reference for the approximate centre of the survey area is SJ 41811 39735.

Plan 1: Survey Site Boundary



Plan 2: Survey Site Location



3.0 Ecological Survey Methodology

3.1 Desktop Survey Methodology

- 3.1.1 Desk study was carried out to identify any nearby national and local nature conservation designations, and any protected species records which already exist for this area. The *MagiC* website was interrogated to determine whether any statutory or non-statutory conservation sites lay within 1km of the survey area within the red-line boundary. The data supplied was subsequently assimilated and reviewed.
- 3.1.2 A thorough examination of Ordnance Survey base maps and Google Earth aerial photographs was conducted to locate any waterbodies (including temporary pools) and watercourses (streams, brooks, rivers, canals, ditches, etc.) lying within 500m of the red-line survey boundary that could provide potential habitat for aquatic and semi-aquatic species, eg GCN, water vole, otter, etc.
- 3.1.3 Ecological records were requested from the local ecological records centre (Cofnod). Details were obtained of all protected species recorded within a 1km radius of the site. The National (UK) and local (Wrexham) Biodiversity Action Plans (BAPs) were also interrogated for protected habitats and species relevant to this site.

3.2 Field Survey Methodology

- 3.2.1 Field survey of the area within the red-line boundary was conducted by Laura Holmes (Ecologist) on 13th January 2014 during daylight hours. Joe Dance (Ecological Assistant) assisted with this survey. Weather was dry and still with an air temperature of 4°C and no cloud cover.
- 3.2.2 **Extended Phase 1 Habitat Survey** was conducted following best practice methodology (JNCC, 1993, as amended 2010). This survey work included visual inspection of the site and adjacent habitat. Broad habitat compartments around the site were noted in order to establish the potential for movement of fauna between habitats. The presence (or potential to support) protected species was noted, and particular note was made of any invasive species present. Target notes were recorded of any points of ecological value and photographs were taken throughout this survey.
- 3.2.3 **Great crested newts (GCNs):** The potential of all waterbodies lying within the survey boundaries to support GCNs is assessed using selected indices of the Habitat Suitability Index (HSI). Although HSI is not a substitute for optimal-season full protected species survey, it provides an objective score for each pond, which can then inform a decision as to whether or not further detailed survey should be undertaken. In addition terrestrial habitats on site are assessed for their potential to support GCNs and other amphibians, and any suitable refugae that can be lifted are examined for GCNs and other amphibians. Throughout this survey best-practice methodologies set out by Froglife and Natural England are employed.
- 3.2.4 **Bats:** The survey followed best practice guidance for early-stage bat survey as set out by the Bat Conservation Trust and Natural England. This includes an external inspection of all accessible buildings and mature trees on site to identify any potential roost sites (such as cracks or holes in brickwork or trees, loose roofing tiles, gaps between the eaves, soffit board and outside walls, etc.) and any suitable entry points into internal voids around the eaves (including soffits, fascia and barge boarding and under tiles). Any walls, windows (and ledges) beneath these features were examined for the presence of bat droppings. The interior of buildings are not usually accessed at this scoping stage. In addition, a general assessment is usually made of the habitat available for foraging bats within the survey area.
- 3.2.5 **Badgers:** A walkover of the site and all of its boundaries is conducted in an attempt to identify any evidence of badger activity following best-practice guidelines as described by Natural England, the Badger Trust and Harris, Creswell & Jeffries (1989). Specifically surveyors checked for setts, latrines, pathways and fence/hedge crossing points and any associated trapped hairs, scratching posts and ground disturbed by foraging.
- 3.2.6 **Otters:** The accessible banks of any waterbodies and watercourses within the survey area are examined for spraints (droppings), slides (areas of worn bank at favoured entry points into the water), feeding remains and paw prints.
- 3.2.7 **Water voles:** Any accessible banks bordering static or slow-flowing water are examined for burrow entrances, terrestrial nests, latrines, feeding platforms and prints that would suggest evidence of water vole activity.
- 3.2.8 **Breeding birds:** The survey area is assessed, based on habitat, for its potential to support breeding bird species.

- 3.2.9 **Reptiles:** Both the habitat within the survey area and that of the immediately surrounding landscape is assessed for its potential to support reptile species.

3.3 Timing of Field Surveys in Relation to Optimal Seasons

- 3.3.1 January is considered sub-optimal for extended phase one habitat surveys, upon which this survey is based. However most plants can be identified in their senescent or dormant states although some annual plant species will inevitably be missed.
- 3.3.2 Species such as GCN, reptiles and bats are inactive in January, so any signs of presence would be less visible. However, an assessment of the habitat to support these species can still be made.

3.4 Survey Team Members

- 3.4.1 Laura Holmes BSc GCIEEM is an Ecologist at Solum Environmental. She has a first-class honours degree in Biological Sciences and has worked in the ecological sector for six years for Cheshire Wildlife Trust, the NBN and rECOrd, the Cheshire local biodiversity records centre. She is experienced in the field identification of plants, amphibians and small mammals and is registered to use Natural England Class 1 licences to survey for bats and GCNs. Laura is a member of the Cheshire Bat Group, South Lancashire Bat Group and is a volunteer surveyor for PondNet.
- 3.4.2 Joe Dance is an Ecological Assistant at Solum Environmental. He has a first-class honours degree in Biology and Psychology and is experienced in habitat and small mammal surveys.

3.5 Survey Constraints

- 3.5.1 An assessment of the buildings on site for bats was constrained by both ivy covering building exteriors and by safety concerns which prevented internal access to the buildings. Where internal access was not possible survey was carried out visually through windows or gaps in brickwork, if present.
- 3.5.2 There were no other constraints to the ecological scoping survey other than the seasonal timing as discussed above.

4.0 Ecological Survey Results

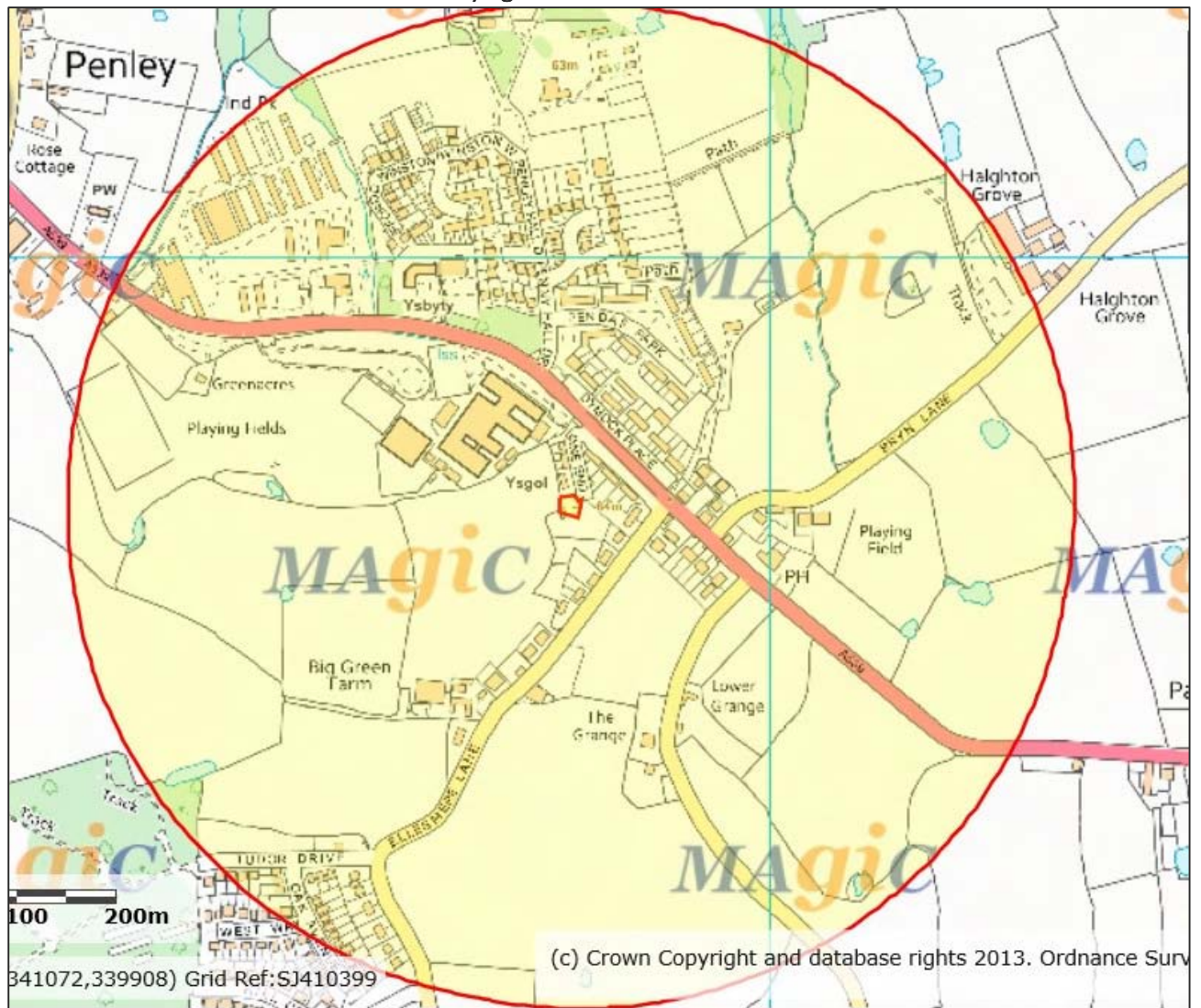
4.1 Desktop Survey Results

4.1.1 The MagiC site check returned no sites of local, national or international protected status within 2km of the survey site. Cofnod highlighted four local wildlife sites within 1km of the survey site:

- Penley Wood & Lees Wood; and
- New Gorse Covert both lie to the north;
- Llanerch Panna & Penley Bank; and
- Brook Mill Grassland both lie to the south of the survey area.

4.1.2 Desk study of local maps found no waterbodies within the survey area boundaries but ten waterbodies and three watercourses within 500m of the site's boundaries. The nearest of these is approximately 265m from the survey area boundaries. Their locations are given at Plan 3 below.

Plan 3: All Waterbodies and Watercourses Lying Within 500 m of Site Boundaries



4.1.3 Relevant local records for this area were obtained from Cofnod. Table 1 shows protected species recorded within 1km of this survey area over the past ten years.

Table 1: LER Records of Protected Species within 1km of Site over Past Ten Years

Scientific Name	Common Name	Recorded	Protection (see Appendix 1)
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	2012	All UK bat species protected under Conservation of Habitats and Species Regulations 2010 (as amended)
<i>Triturus cristatus</i>	Great crested newt	2004 - 2012	Conservation of Habitats and Species Regulations 2010 (as amended)
<i>Lutra lutra</i>	Otter	2006 - 2012	Conservation of Habitats and Species Regulations 2010 (as amended)
<i>Meles meles</i>	Eurasian badger	2011 - 2012	Protection of Badgers Act 1992
<i>Tyto alba</i>	Barn owl	2005	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)

4.2 Surveyors, Dates and Weather Conditions

4.2.1 Table 2 below sets out dates, times and weather conditions for each survey conducted, along with names of surveyors present.

Table 2: Field Surveys: Surveyors, Dates and Weather Conditions

Survey Type	Survey Date + Start Time	Surveyors	Weather Conditions
Ecological scoping survey	13 th January 2014, 09:30	Laura Holmes (Lead surveyor), Joe Dance	4°C, no wind, dry with no cloud cover.

4.3 Habitats, Vegetation, Hedgerows, Trees

4.3.1 This site for redevelopment (shown in the red line boundary in Plan 1 above) comprises a 0.73 acre parcel of land containing five derelict buildings set within uneven ground with patchy vegetation cover and moss-covered rubble. The site is edged with fencing and scattered broadleaved and conifer trees with a bramble *Rubus fruticosus agg* and bamboo *Bambusa vulgaris* understorey. The central portion of land contains areas of overgrown amenity grassland (predominantly annual meadow grass *Poa annua* with occasional Yorkshire fog *Holcus lanatus*) around the former house (Building 2). To the south lie trimmed areas of bracken *Pteridium aquilinum*, hard rush *Juncus inflexus* and tall herb (predominantly willowherb *Epilobium* species) while the remainder of the site has patches of ephemeral/ short perennials and areas of damp bare ground with moss cover and patchy grass. Vegetation clearance and tree felling has taken place across the site and the remains have been piled into mounds, along with mounds of bricks and slates. Seven mature trees with tree preservation orders (TPOs) have been retained, although these also have been pruned or had limbs removed in the past. The redeveloped site will be accessed via Lane End, off the A539 (shown by the blue-line boundary in Plan 1 above). This area is currently all hardstanding with a small amount of amenity grassland at the edges. There is evidence of human disturbance including dumping of small amounts of rubbish across the site.

4.3.2 The following habitats were recorded within the survey area (these habitats are mapped at Section 5.0):

Table 3: Habitat Types Recorded on Site

JNCC Code	Habitat Type
J5	Bare ground with patchy grass and moss cover
A3.3	Scattered mixed trees
A2.2	Scattered scrub (mainly bramble)
C1.2	Scattered bracken (trimmed)
C3.1	Tall ruderal (mainly willowherb, trimmed)
J1.3	Ephemeral / short perennial
J1.2	Amenity grassland
J2.4	Fence
J2.5	Wall
J3.6	Buildings
J4	Hardstanding

- 4.3.3 Five buildings lie within the survey boundary and one lies on the boundary (this latter building is also considered within this report as any bats or birds within could be disturbed by works within the survey area boundary). These buildings are mapped at Section 5.0:

Table 4: Buildings on Site

Building No	Building Description
Building 1	Derelict building
Building 2	Derelict house
Building 3	Outbuilding 1
Building 4	Outbuilding 2
Building 5	Wooden shed
Building 6	Offsite outbuilding

- 4.3.4 Buildings 1 and 6 lie along the northern site boundary, with Building 5 in the north west corner. Building 2 lies near the centre of the site. Building 3 lies by the western boundary with Building 4 lying to the north east.
- 4.3.5 No waterbodies lies within the survey boundaries.
- 4.3.6 There are no hedgerows within or along the boundary of the survey area.
- 4.3.7 Seven mature trees were recorded with TPO tags. The numbering (520, 521, 522, 524, 525, 526 and 527) suggests one tree has either been removed or the tag was no longer visible to surveyors. Species noted were monterey cypress *Cupressus macrocarpa*, ash *Fraxinus excelsior*, goat willow *Salix caprea* and weeping willow *Salix babylonica*.
- 4.3.8 Table 5 below lists significant¹ plant and tree species recorded at this site.

Table 5: Significant Plant and Tree Species Recorded On Site

Latin Name	Common Name	Protection
<i>Rumex obtusifolius</i>	Broad leaved dock	Injurious weed

4.4 All Target Notes (including photographs)

- 4.4.1 Table 6 below presents all relevant target notes recorded at this site, in relation to both habitats and species:

Table 6: All Target Notes

Target Note No.	Description	Photographs
1	<i>Badger path</i>	

¹ Species are designated as significant if they are: invasive weeds; rare or unusual plants; highly protected; Biodiversity Action Plan species; present in high numbers; or exceptional specimens.

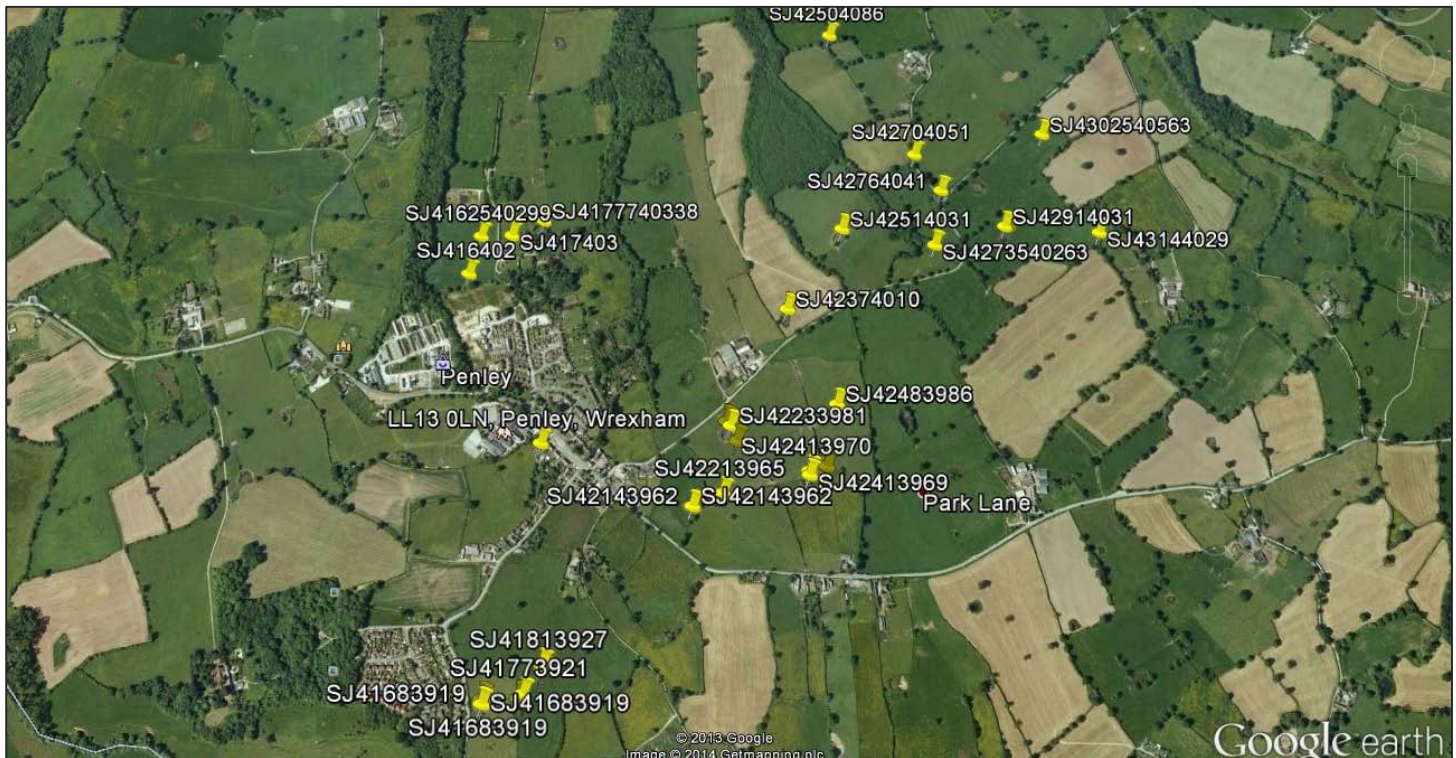
2	<i>Badger latrine</i>	
3	<i>Badger exit under fence into adjacent improved grassland field</i>	
4	<i>Potential amphibian and reptile refugia in stacked bricks, stacked slates and brash piles</i>	
5	<i>Gap in mortar of ridge tile on adjacent outbuilding (Building 6)</i>	

6	<i>Piles of cleared vegetation</i>	
7	<i>Bare ground with patchy grass and moss cover (habitat code J5)</i>	
8	<i>Tree stumps from recent vegetation clearance</i>	

4.5 Great Crested Newts *Triturus cristatus*

- 4.5.1 No GCNs or evidence of GCNs was found during this initial scoping survey. However the mounds of brick rubble, slate tiles and brash on site all provide potential refugae for GCNs. The remaining terrestrial habitat is less suitable for GCNs now vegetation clearance has occurred. However prior to this the site would have been highly suitable for amphibians including GCNs.
- 4.5.2 Desktop survey revealed ten waterbodies within 500m of the site, of which the nearest lies 265m to the west. Plan 4 shows records of GCNs in ponds within 1km of the survey area boundaries between 2006 and 2012. The nearest GCN pond to the survey area is a breeding pond located approximately 310m to the south east, across the A539. There are no survey records for any of the ponds to the west of the site (near Big Green Farm). All of these ponds lie within improved grassland fields bounded by hedgerows which could offer potential GCN commuting routes to the survey area.

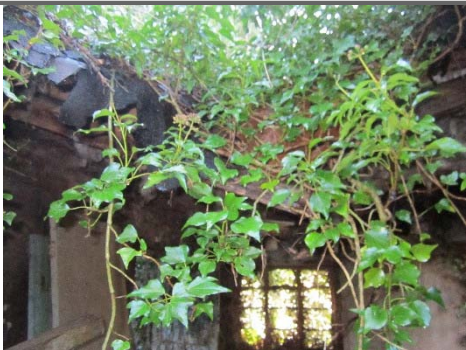
Plan 4 GCN Records within 1km of Site Boundaries



4.6 Bats *Chiroptera*

- 4.6.1 This site generally shows low potential to support roosting bats as the majority of the buildings are in a poor state of repair and do not offer features which could be suitable for use by roosting bats. The remaining trees on site do not contain features such as cracks, crevices, hollows or woodpecker holes, which could be suitable for use by roosting bats. There are no underground structures on site.
- 4.6.2 Table 7 below provides photographs and descriptions of each building and sets out an assessment of each building's potential to support bats:

Table 7: Assessment of Buildings On Site for Bat Roost Potential (inc Photographs)

Bldg No.	Building Name	Photographs	Description	Bat Roost Potential
1	Derelict building		Derelict one storey redbrick building. The roof has been totally removed at the northern half of the building. The southern half has a collapsing roof with parts of the ceiling remaining and insulation material hanging free where joists have rotted. The exterior of the walls are densely covered in ivy. No evidence of bats internally or externally.	Very low
2	Derelict house		One storey former residential brick building with a pitched tiled roof, chimney and internal loft void. The gable ends are densely covered in ivy. No evidence of bats externally but much of the roof and gable ends were obscured by ivy. Internal access was not possible but assessment could be made visually through the windows.	Low (potential for void dwelling bats although the height of the loft void is less than optimum, potential for crevice dwelling bats if there are cracks in tiles or brickwork under the ivy)
3	Outbuilding 1		One storey building with two sections accessed by double doors on the southern gable end. The northern section is constructed of corrugated metal and the southern is wood with corrugated metal panels on the walls and roof. The roof is pitched and constructed of corrugated asbestos in the southern section and corrugated metal to the north. The building is unheated and used for	Very low

Bldg No.	Building Name	Photographs	Description	Bat Roost Potential
			storage. There are gaps in the walls and under the roof leaving the building damp and draughty with ivy growing through the holes. The wooden walls are showing signs of water damage. No evidence of bats externally. Internal access was not possible but assessment could be made visually though the windows.	
4	Outbuilding 2		Derelict one storey redbrick building with a pitched roof densely covered in ivy making it impossible to ascertain what the roof was constructed of. No evidence of bats found externally. Internal access was not possible.	Very low
5	Wooden shed	Photograph unavailable	Derelict wooden shed with a pitched felted roof used for storage. The wood is rotting inside as there are many large cracks and gaps allowing rain to get in. No evidence of bats externally or internally.	Very low

Bldg No.	Building Name	Photographs	Description	Bat Roost Potential
6	Offsite outbuilding		One storey redbrick building with plaster to the exterior and holes in the brickwork and above the door. The roof is corrugated metal supported by wooden beams and has no internal void. There is a gap in the mortar of one ridge tile through which light can be seen internally. Cobwebs were noted throughout the building and in particular around the roof beams around the base of the roof. No evidence of bats found externally. Full internal access was not possible but assessment was made visually through the holes in the brickwork.	Very low

4.7 Badger *Meles meles*

4.7.1 Badgers paths were found at stretches along the site boundaries. These paths exited into neighbouring gardens to the east and the pasture field to the west. Two badger latrines were found.

4.7.2 No setts were found within the site boundaries. Habitat within the survey boundaries is generally unsuitable for sett building as it is very damp, with rubble strewn across the site (subject to both human disturbance and rubbish dumping). However setts may be present within the overgrown parcel of land to the south of the site. This is separated from the survey area by a lightweight wire and post fence which would not present a barrier to badgers. There are paths into and out of the site from the western field. These paths run along parts of the boundary towards the area of land to the south, however surveyors were unable to ascertain the final destination of these paths due to vegetation cover and lack of access.

4.8 Otter *Lutra lutra*

4.8.1 No evidence of otters was found and there is no habitat suitable to support this species on site. Desktop records of otter were found along the watercourse approximately 800m to the south of the site, however there is no good connecting habitat between the watercourse and the survey area. A further record of a dead otter along the A539 was noted, however this is close to the watercourse running through Penley Wood to the north so is likely to have come from this area. Again there is no suitable habitat connecting this watercourse to the survey area.

4.9 Water Vole *Arvicola amphibius*

4.9.1 No evidence of water voles was found and there is no suitable habitat to support this species on site.

4.10 Breeding Birds

4.10.1 The remaining trees and hedgerows on site all offer potential to support some nesting birds.

4.11 Barn Owl *Tyto alba*

4.11.1 No evidence of barn owls was found and there is no suitable habitat to support this species roosting on site. Barn owls have been noted within 1km, however they would be unlikely to use this site.

4.12 Reptiles

4.12.1 No evidence of reptiles was recorded at the site during this initial scoping survey, however it should be noted that reptile species are inactive at this time of year. The rubble mounds, slate piles and brash on site all offer suitable refugia. The lack of covering vegetation across the majority of the site makes the site currently unsuitable, however once the vegetation cover is re-established then the site will offer potential to support reptiles. This site would be particularly suited to grass snake *Natrix natrix* due to the areas of damp ground and adjacent gardens.

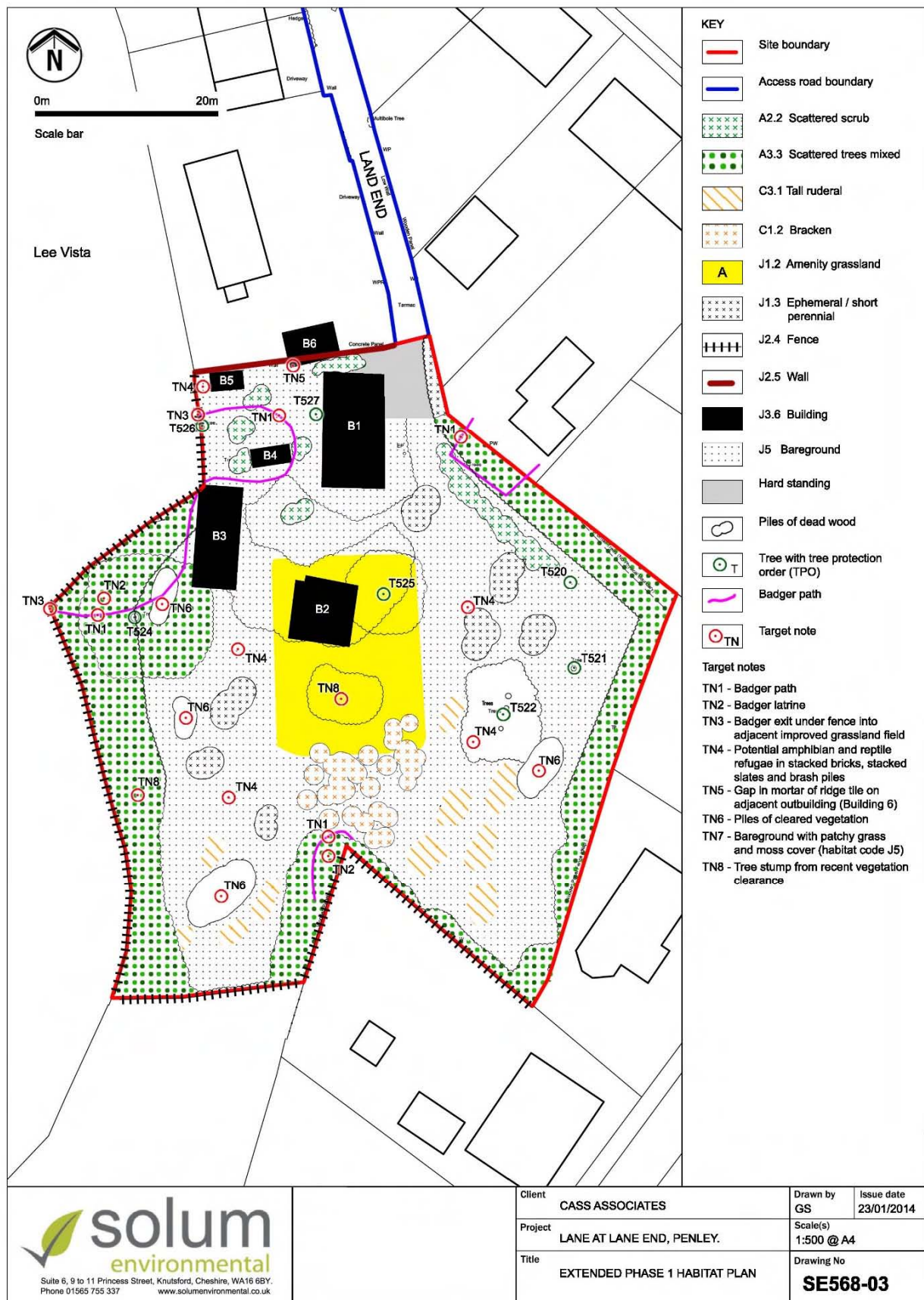
4.13 Other Species Observed

4.13.1 The following species were observed on or immediately offsite during survey:

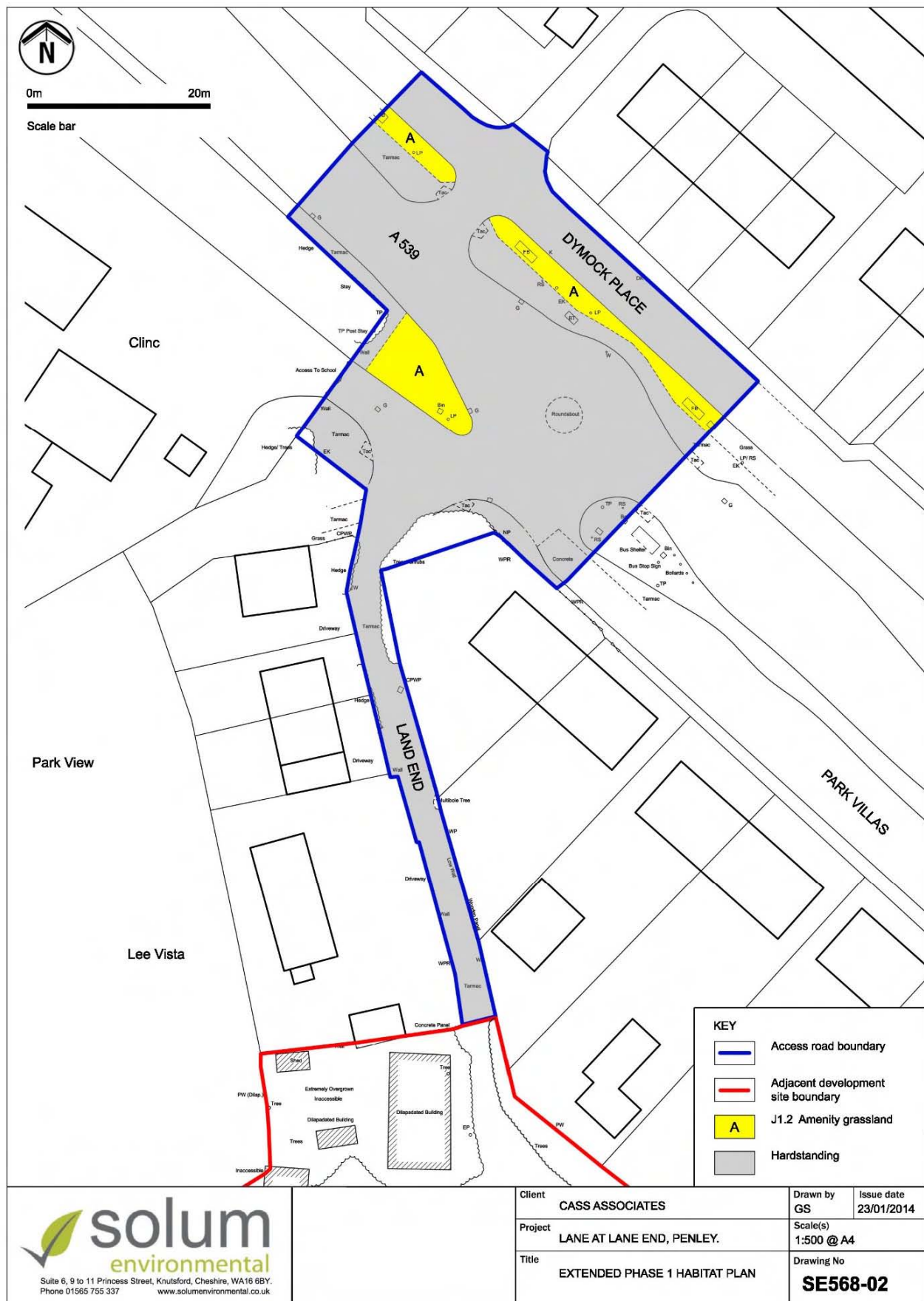
Blackbird	<i>Turdus merula</i>
Coal Tit	<i>Periparus ater</i>
Robin	<i>Erithacus rubecula</i>
Rabbit	<i>Oryctolagus cuniculus</i> (holes)

5.0 Ecological Plans

5.1 Extended Phase One Habitat Map of Survey Area



5.2 Extended Phase One Habitat Map of Access Road Area



6.0 Ecological Conclusions

6.1 Assessment of Site's Current Ecological Value

- 6.1.1 In its current state, this site has low to medium ecological value. The majority of the site has been subjected to vegetation clearance however both remaining trees along site boundaries and scattered mature trees with TPOs across the site offer habitat for nesting birds and foraging for bats. The buildings are derelict however one offers bat roost potential. The mounds of bricks, slates and brash all offer potential refugae for reptiles and GCNs, the latter of which are known to be present within 1km of the site.

6.2 Habitats, Hedgerows, Vegetation, Trees

- 6.2.1 Seven trees with TPO tags were noted on the site. The numbering of these tags indicates that one tree may have been removed or the tag become lost or obscured. A tree survey of the entire site is recommended prior to submission of a planning application to re-develop.
- 6.2.2 Wherever possible the remaining trees should be retained during the proposed re-development.
- 6.2.3 Detailed landscape plans for the completed development should feature native species to enhance the overall biodiversity value of the site.

6.3 Great Crested Newts

- 6.3.1 This site represents potential refugae for GCNs in the rubble mounds, slate piles and brash, but otherwise average quality terrestrial habitat for this species due to the vegetation clearance. However, if the site continues in its present derelict state and vegetation cover is re-established, then the habitat present will become highly suitable for GCNs.
- 6.3.2 A number of waterbodies and watercourses lie within 500m of this site. Desktop records exist for GCNs in ponds within 1km of the north, south and east of the site, some of which are within 500m of the site boundaries, albeit beyond roads and residential estates. There are no records of GCNs in the nearest ponds which lie 265m+ to the west, near Big Green Farm.
- 6.3.3 There is less than 500m between the nearest pond with GCNs present in the south and the ponds to the west of the site, with only a minor road acting as a barrier to dispersal. It is therefore possible that GCNs could also be present in these ponds. It is recommended that these ponds should initially undergo an Habitat Suitability Indices (HSI) assessment survey. Should positive results be obtained full optimal-season GCN survey may be required of these ponds.
- 6.3.4 Until these ponds have been assessed it is recommended that potential refugae on site are not disturbed or demolished. Should the presence of newts be later confirmed within the Big Green Farm ponds, then these refugae could only be cleared after a destructive search by a licensed GCN ecologist.

6.4 Bats

- 6.4.1 This site offers low potential for roosting bats and no evidence of bats or recent bat use was found during the survey. However accurate assessment of building roost potential could not be made of the former house (Building 2) due to ivy cover and lack of internal access to this building. A full external and internal building assessment for bats is recommended for this building, as it is known to contain a loft void (again the presence of gaps allowing bat access points could not be confirmed due to ivy cover). If the current assessment that this building has low bat roost potential is confirmed then a single dusk emergence or dawn re-entry bat survey is recommended.
- 6.4.2 The majority of the site offers generally low potential to support foraging bats due to the vegetation clearance, however the lines of trees along the boundaries and the scattered mature trees would attract insects, so feeding activity by bats is probable in these areas.
- 6.4.3 Desktop survey found common pipistrelle records in rural areas within 1km of the site. These bats are crevice-dwellers that are not as light-sensitive as other species, so could well be roosting close to the survey area. It is probable that the site is along a commuting route as well as being used as a foraging ground.
- 6.4.4 It would be best practice to enhance the potential of this site to support bats. These measures should include specifically:

- incorporating bat-friendly external lighting throughout the proposed re-development (suitable guidance is provided by the Bat Conservation Trust at http://www.bats.org.uk/pages/bats_and_lighting.html);
- including in the detailed planting scheme a number of native, insect-attracting shrubs, which will in turn enhance foraging areas for bats at this site (NB: a list of suitable species is provided at Appendix 3); and
- erection of a minimum of two summer bat boxes on new buildings or mature trees at a suitable height and aspect to encourage bat species, such as common pipistrelles known to be in the area, to roost at this site (NB: examples of suitable boxes are provided at Appendix 4).

6.5 Badgers

6.5.1 Evidence of badgers was found across the site. Badgers are entering the site to forage and exiting into neighbouring gardens to the east and the pasture field to the west. No setts were found within the site itself, which is generally unsuitable for sett building.

6.5.2 Desktop survey shows records of badgers within woods less than 1km to the south of the site. The levels of badger activity seen suggest there are setts in the area and therefore further survey is recommended to ensure that no active setts are located within 30m of the survey area, which would place them at risk of destruction or disturbance when works begin.

6.5.3 The site could be enhanced for foraging badgers by the planting of native fruit-bearing trees within the landscaping scheme. A list of suitable species is provided in Appendix 5.

6.6 Otters

6.6.1 There is no habitat on site suitable for this species therefore no further survey or mitigation is required prior to re-development.

6.7 Water Voles

6.7.1 There is no habitat on site suitable for this species therefore no further survey or mitigation is required prior to re-development.

6.8 Breeding Birds

6.8.1 The remaining trees, areas of scrub and buildings at this site all provide some potential for nesting birds and this potential will increase as the vegetation cover re-establishes. Wherever possible any vegetation removal, tree clearance and building demolition works should be timetabled to occur outside the core bird nesting season (March to September inclusive). Where this is not possible, all vegetation and buildings to be cleared or removed should be checked for active nests by a suitably qualified and experienced bird ecologist immediately prior to works beginning. Clearance or removal should only proceed on confirmation from this ecologist that no active nests are present.

6.9 Reptiles

6.9.1 No evidence of reptiles was recorded at the site during this initial scoping survey, however the rubble mounds, slate piles and brash on site all offer suitable refugia. Once the vegetation cover on site has had chance to re-establish (likely to be later in 2014) then the site will offer potential to support reptiles. The surrounding area offers a mix of residential, arable, woodland and pasture within 500m and there is good connectivity to the survey area along adjacent hedgerows. Although there are no desktop records for reptiles, these species are known to be generally under-recorded. For these reasons further survey is recommended for reptiles in summer 2014 and potential refugia on site should not be disturbed prior to survey.

6.10 Biodiversity Enhancement Measures

6.10.1 As set out above, a net gain in biodiversity could be achieved through the enhancement of this site for badgers and bat species and through the use of native plant species in the landscaping of the completed development.

7.0 Ecological Recommendations

- R1 In general landscape proposals for this re-development should include the planting of native species to further develop biodiversity throughout the site.
- R2 The proposed re-development should aim to retain as much natural habitat as possible, including the remaining trees.
- R3 A tree survey of the entire site is recommended prior to submission of a planning application to re-develop.
- R4 Ponds lying to the west of the site should initially undergo an HSI assessment for GCNs
- R5 Should positive results be obtained from the HSI assessment, ponds lying to the west of the site should undergo full GCN presence/ absence surveys in March/ April prior to submission of a planning application to re-develop (see Appendix 2 for seasonal survey constraints). To confirm presence or absence four surveys should be undertaken, each using three survey methods. Survey should only be carried out by a licensed GCN ecologist during optimum season (mid-March to mid-June with at least two visits between mid-April and mid-May). Each evening survey visit should be followed by a visit the following morning to release any GCNs trapped overnight. Should GCNs be confirmed as present in these ponds then no works likely to risk death or injury to GCNs should be carried out within the survey area until a licence to derogate from the Conservation of Habitats and Species Regulations 2010 (as amended) is obtained from Natural Resources Wales.
- R6 Until the presence or absence of GCNs is confirmed (see R4 and R5 above), potential refugia on site including stacked bricks, slates and brash piles, should not be disturbed. If GCNs are confirmed as present at the ponds then a destructive search of these refugia by a licensed GCN ecologist, as well as acceptable mitigation, will be required as part of the licence to derogate (see R5 above).
- R7 A full external and internal building assessment for bats should be undertaken of the former house (Building 2) by a licensed bat ecologist (see Appendix 2 for seasonal survey constraints). If the current assessment (that this building has low bat roost potential) is confirmed then, in line with BCT guidelines, a single dusk emergence or dawn re-entry bat survey is recommended. This survey should be led by a licensed bat ecologist with sufficient surveyors to cover all sightlines of the building. The survey should last two and a half hours, a dusk survey beginning half an hour before sunset and a dawn survey finishing half an hour after sunrise. Should a bat roost be confirmed then the building becomes legally protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and no works that would disturb or destroy the roost or bats within it can be carried out without first obtaining a licence to derogate from Natural Resources Wales.
- R8 Biodiversity enhancement measures for bats should be incorporated in the proposed re-development. These should include sensitive external lighting, inclusion of bat-friendly plant species and erection of a minimum of two summer bat boxes on new buildings or retained mature trees.
- R9 Any further planned vegetation removal/ tree clearance/ demolition works to buildings should be timetabled to occur outside the core bird nesting season (March – September inclusive). A cautionary approach should be undertaken to such works at other times of year, including a check for active nests by an experienced bird ecologist immediately before any works begin.
- R10 Full reptile survey should be carried out during optimum season (March to June, with April to June being a period of peak activity) prior to submission of a planning application (again see Appendix 2 for seasonal survey constraints). Surveys should be carried out on seven occasions in suitable weather conditions (dry and still with an air temperature between 9 and 18°C) using reptile tiles to act as refugia. Surveys should be carried out between 08:30-11:00 or 16:00-18:30 and led by an experienced reptile ecologist.

NON SITE-SPECIFIC APPENDICES

APPENDIX 1: UK Legal Protection and Planning Guidance

A1 Planning Policy Wales (PPW)

Planning Policy Wales sets out the Government's planning policies for Wales and how these are expected to be applied. It is supplemented by twenty one topic based Technical Advice Notes (TANs) circulars. These may be material to decisions on individual planning applications and will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals. Technical Advice Note 5 was issued in September 2009. TAN5 provides advice about how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation.

A2 Biodiversity Action Plans

UK Biodiversity Action Plans: The **UK Biodiversity Action Plan (UKBAP)** was established in response to the **Convention on Biological Diversity 1992**, signed by 150 members at the Rio Earth Summit, which aimed to promote sustainable development amongst all signatories. Specific action plans have been prepared for highly protected species. As well as a national Biodiversity Action Plan, local Biodiversity Action Plans identify species of note at local level throughout the UK. The survey site is covered by the Conwy Biodiversity Action Plan.

A3 Priority Habitats and Species

Under the terms of the Natural Environment and Rural Communities Act 2006, all public bodies are required to have regard to the conservation of biodiversity when carrying out their activities. This means that efforts must be made to consider priority and protected species and habitats in particular. There would be a presumption in the land-use planning process against any development that would result in loss to an area of priority habitat or harm to the population of any priority species.

A4 Vegetation

The Wildlife and Countryside Act 1981 (as amended) lists plants which are statutorily protected. In relation to development these plants are rare and are not often encountered. The bluebell is scheduled, with commercial bulb-picking from the wild being prohibited. There is also a category of plants which it is an offence to introduce to the wild. This category includes Japanese knotweed, which is often found on brownfield sites. Care is needed to avoid spreading the species around the site during earthworks, and to ensure that any removal of infested soils off-site is to a licensed tip. Giant hogweed and Himalayan balsam are also listed in this category of invasive alien plant species. In addition the Ragwort Control Act came into force on 20 February 2004 and enables the Secretary of State to make a Code of practice to prevent the spread of common ragwort.

A5 Hedgerows

As a priority habitat for conservation concern, hedgerows also receive further protection under the Hedgerow Regulations 1997. Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Local planning authority permission is normally required before removing hedges that are at least 20 metres (66 feet) in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The local planning authority is also the enforcement body for offences created by the Regulations. If a hedgerow is removed without permission, there may be an unlimited fine and the hedgerow may have to be replaced.

A6 Great Crested Newt *Triturus cristatus*

A European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- *Intentionally or deliberately capture, kill or injure great crested newts (GCNs).*
- *Intentionally or recklessly disturb them in a place used for shelter or protection.*
- *Damage or destroy a breeding site or resting place.*
- *Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.*
- *Possess a great crested newt, or any part of it, unless acquired legally.*
- *Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.*

Where Great crested newts (GCNs) are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural

Resources Wales. The licence application process can be complex and can only be conducted by a suitably qualified GCN-specialist ecologist. Each licence application must be supported by:

- full optimal-season great crested newt survey results and analysis;
- a suitable mitigation strategy that ensures that the favourable conservation status of the GCN population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural Resources Wales; and
- a method statement explaining how GCNs will be accommodated legally if found during the development process.

A7 **Bats *Chiroptera***

All species of bats are European Protected Species and their breeding and nesting sites (roosts) are given a high degree of legal protection under the terms of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. In addition, all bats are the subject of a UK-wide Biodiversity Action Plan (BAP). This combined legislation offers bats, their roost sites and resting places strict protection from intentional or reckless disturbance (see wording of GCN legislation above). It should be noted that, under the legislation, a bat roost is defined as any structure or place which is used by bats to shelter, breed or perch whilst feeding. As bats tend to reuse the same roosts, the roost is legally protected, whether the bats are present at the time or not.

Where bats are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural Resources Wales. The licence application process can be complex and can only be conducted by a suitably qualified bat-specialist ecologist. Each licence application must be supported by:

- full optimal-season bat survey results and analysis;
- a suitable mitigation strategy that ensures that the favourable conservation status of the bat population will be maintained (this usually involves the provision by the developer of replacement permanent bat roosts, additional bat boxes and both bat-friendly planting and lighting within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural Resources Wales; and
- a method statement explaining how bats will be accommodated legally if found during the development process.

A8 **Badger *Meles meles***

All badgers are protected from harm under the Protection of Badgers Act (1992). Under this act it is an offence:

- to kill, injure or take a badger, or to attempt to do so;
- to use badger tongs in the course of killing or taking, or attempting to kill or take, any badger;
- to kill or take a badger with a firearm which does not fall within the specifications laid down in the Act;
- to dig for a badger;
- to cruelly ill-treat a badger;
- to possess or control a live badger;
- to sell or offer for sale a live badger;
- to mark, or attach any ring, tag or marking device to a badger;
- to possess or control any dead badger, any part of one, or anything derived from one;
- to interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to or any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

Where badgers are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural Resources Wales. A licence is always required to shut down a badger sett or for works within 30m of a badger sett. The licence application process can be complex and can only be conducted by a suitably qualified badger-specialist ecologist. Each licence application must be supported by:

- full optimal-season badger survey results and analysis;
- a suitable mitigation strategy that ensures that the favourable conservation status of the badger population will be maintained (this usually involves the provision by the developer of replacement artificial setts, planting of suitable fruit-bearing shrubs, erection of badger gates and underpasses within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural Resources Wales; and
- a method statement explaining how badgers will be accommodated legally if found during the development process.

A9 **Otter *Lutra lutra***

Otters are a European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Otters and their resting places are fully

protected, it is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It is also an offence to disturb otters in their breeding or resting places.

Where otters are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural Resources Wales. The licence application process can be complex and can only be conducted by a suitably qualified otter-specialist ecologist. Each licence application must be supported by:

- full optimal-season otter survey results and analysis;
- a suitable mitigation strategy that ensures that the favourable conservation status of the otter population will be maintained (this usually involves the provision by the developer of replacement waterbodies and holts within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural Resources Wales; and
- a method statement explaining how otters will be accommodated legally if found during the development process.

A10 Water Vole *Arvicola amphibius*

From 6th April 2008, water voles and their resting places gained full protection under the Wildlife and Countryside Act (1981). It is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It continues to be an offence to disturb them in their breeding or resting places.

Where water voles are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural Resources Wales. The licence application process can be complex and can only be conducted by a suitably qualified water vole-specialist ecologist. Each licence application must be supported by:

- full optimal-season water vole survey results and analysis;
- a suitable mitigation strategy that ensures that the favourable conservation status of the water vole population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural Resources Wales; and
- a method statement explaining how water voles will be accommodated legally if found during the development process.

A11 Breeding Birds

All wild birds, their nests and their eggs are protected by the Wildlife & Countryside Act 1981 (as amended). It is an offence (with certain exceptions), to intentionally or recklessly kill, injure or take any wild bird (this includes chicks); to take, damage or destroy any wild bird's nest while it is use or being built; and to take or destroy the egg of any wild bird. The definition of a wild bird is 'any bird of a kind which is resident in or a visitor to Great Britain in a wild state'.

Species named in Schedule 1 of the Act are given special protection and it is an offence to disturb these species at the nest or while they are caring for dependant young. The RSPB and the UK's leading bird conservation organisations work together to regularly review the status of birds within the UK. A total of 246 species are assessed against a set of objective criteria to place each on one of three lists - green, amber and red – indicating an increasing level of conservation concern. These lists provide a tool for guiding conservation actions for birds in the UK and for setting priorities for action on individual species. The last review of these lists was completed in May 2009.

For certain species, e.g. feral pigeon, general licences are available for an authorised person to lawfully carry out the actions outlined above providing that it is in the overriding interest of public health or air safety and that all other attempts to prevent the problem caused by the species have failed.

A12 Barn Owl *Tyto alba*

The Barn owl has seen significant declines in recent history primarily due to habitat loss and the destruction, removal or renovation of traditional nesting sites. It is currently included in the amber-list of species of medium conservation concern, having been classified as a Species of European Conservation Concern (SPEC). In Great Britain it is listed on Schedule 1 of the Wildlife & Countryside Act (1981) as amended. It is an offence to disturb any wild bird included in Schedule 1 while it is building a nest or is at, on or near a nest containing eggs or young; or disturbs dependent young of such a bird. Note that if any of the above resulted from a person being reckless, even if they had no intention of committing the offence, their action would still be considered an offence. A person is not guilty of an offence if it can be shown that the act was 'the incidental result of a lawful operation and could not have been reasonably avoided'; only a court can decide what is 'reasonable' in any set of circumstances.

A13 Reptiles

The four widespread species of reptile in the UK (i.e. common lizard, slow-worm, grass snake and adder) are all protected under the terms of the Wildlife and Countryside Act 1981 (as amended), however they are not fully protected under European law. This level of protection prohibits the intentional killing and injuring and trade of these reptiles. Where a survey identifies potential habitat for reptiles at a development site, a reptile survey may be needed prior to submission of a planning application and mitigation may be required by Natural Resources Wales for any loss of reptile habitat as a result of a site's re-development.

APPENDIX 2: Seasonal Survey Constraints

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Habitats / Vegetation	Phase 1 + NVC (sub-optimal)			Phase 1 + NVC						Phase 1 + NVC (sub-optimal)		
Badgers	Limited sett/ bait surveys	Bait marking + sett surveys			Limited bait marking + sett surveys				Sett surveys		Limited sett/ bait surveys	
Bats	Hibernation roost inspections		Limited activity	Summer roost emergence + activity surveys					Limited activity	Hibernation roost inspections		
	Possible to survey potential roost sites + carry out internal building inspections all year round, trees are best surveyed in winter											
Birds	Winter species	Breeding birds/ migrants		Breeding birds		Low activity		Migrant species		Winter species		
	Survey for Barn Owl (Schedule 1 species) possible all year round, although may be limited by weather											
Dormice				Nest tube survey								
	Gnawed hazelnut search (sub-optimal)									Gnawed hazelnut search (optimal)		
Great crested newts	Newts hibernating	Adults: ponds + terrestrial survey; Eggs: April to mid-June; Larvae: from mid-May			Habitat + larvae survey		Habitat survey		Newts hibernating			
Otters	Limited only by vegetation cover + weather conditions											
Reptiles	Reptiles hibernating	Peak survey: May + June				Sub-optimal (reduced basking)		Peak survey	Limited activity	Reptiles hibernating		
Water voles	Limited activity	Initial habitat survey	Habitat + activity surveys (can be limited by vegetation cover + weather)							Initial habitat survey	Limited activity	
White-clawed crayfish	Limited activity		Search, torches, traps	Breeding: torches only		Substrate hand search, torches, traps				Limited activity		
Optimal surveys			Sub-optimal surveys			Surveys not possible						

APPENDIX 3: Planting List to Encourage Bat Foraging

Planting to enhance a site for bats should aim to provide a habitat rich in insects, and with the potential for alternative roosting sites. The following are examples of plant species, which can be used where appropriate, to enhance a landscape for bats.

Night-scented flowers

As bats usually feed at dusk and dawn it is advantageous to use night-scented flowers which will attract moths and other night-flying insects.

Re-seeding

Where re-seeding is to take place the choice of a 'conservation mix' of grass seed would be preferential. The management of grassland areas as hay meadows, without use of herbicides/fertilisers and allowing the grass to go to seed prior to cutting is beneficial in allowing larval stages of the insects to develop.

English Name	Latin Name
Trees and Shrubs (of local provenance where possible)	
Oak	<i>Quercus robur</i>
Ash	<i>Fraxinus excelsior</i>
Silver Birch	<i>Betula pendula</i>
Field Maple	<i>Acer campestre</i>
Hawthorn	<i>Crataegus monogyna</i>
Alder	<i>Alnus glutinosa</i>
Goat Willow	<i>Salix caprea</i>
Guelder Rose	<i>Viburnum opulus</i>
Hazel	<i>Coryllus avellana</i>
Blackthorn	<i>Prunus spinosa</i>
Elder	<i>Sambucus nigra</i>
Night-scented flowers	
Nottingham Catchfly	<i>Silene nutans</i>
Night -flowering Catchfly	<i>S. noctiflora</i>
Bladder Campion	<i>S. vulgaris</i>
Night-scented Stock	<i>Matthiola bicornis</i>
Dame's-violet	<i>Hesperis matronalis</i>
Common Evening-primrose	<i>Oenothera biennis</i>
Soapwort	<i>Saponaria officinalis</i>
Scented herbs	
Chives	<i>Allium schoenoprasum</i>
Sage	<i>Salvia officinalis</i>
Marjoram	<i>Origanum vulgare</i>
Borage	<i>Borago officinalis</i>
Mint	<i>Mentha sp.</i>
Climbers	
Honeysuckle (native)	<i>Lonicera periclymenum</i>
Traveller's-joys	<i>Clematis vitalba</i>
Dog-rose	<i>Rosa canina</i>
Sweet-briar	<i>R. rubiginosa</i>
Field-rose	<i>R. arvensis</i>
Ivy	<i>Hedera helix</i>
Bramble	<i>Rubus fruticosus agg</i>

APPENDIX 4: Example Summer Roost Bat Boxes

Woodcrete bat boxes for fixing to external walls:

Schwegler 1FQ
(suitable for summer roosting)



Integrated bat boxes:

Schwegler 2FR bat tube

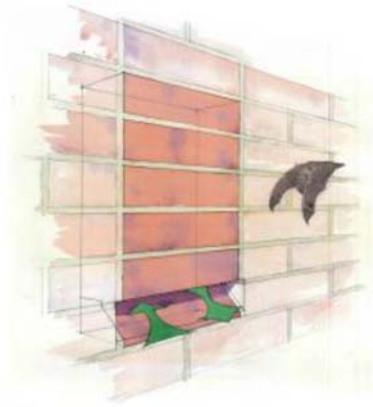


Ibstock enclosed bat box



Integrated bat boxes (cont):
'Habibat' bat box

HABIBAT ACCESS BOX
001



Tudor bat access tile set



Bat access tiles:

Ibstock bat roost entrance arch brick



APPENDIX 5: Planting List to Encourage Badger Foraging

English Name	Latin Name
Blackberry	<i>Rubus fruticosus</i>
Elder	<i>Sambucus nigra</i>
Apple	<i>Pyrus malus</i>
Pear	<i>Pyrus communis</i>
Oak	<i>Quercus robur</i>
Blackthorn (sloe)	<i>Prunus spinosa</i>
Bird cherry	<i>Prunus padus</i>
Wild cherry	<i>Prunus avium</i>
Crab apple (wild)	<i>Malus sylvestris</i>
Guelder rose	<i>Viburnum opulus</i>
Hazel	<i>Corylus avellana</i>
Holly	<i>Ilex aquifolium</i>
Mountain ash (rowan)	<i>Sorbus aucuparia</i>
Plum (Myrobalan)	<i>Prunus cerasifera</i>
Hawthorn	<i>Crataegus monogyna</i>
Dog rose	<i>Rosa canina</i>
Other native roses	<i>Rosa spp</i>
Wayfaring tree	<i>Viburnum lantana</i>

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