

Strutt & Parker

Bat Emergence and Activity Survey

Bryn Farm,
Hanmer,
Whitchurch,
Shropshire

10th August 2010
SE285/01/DH

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This report is based on survey data gathered in July 2010 in relation to protected species at Bryn Farm, Hanmer, Whitchurch, Shropshire. This data will be relevant until early Spring 2011, after which further survey will be required to establish the position and possible changes in status of protected species, in order to ensure that all development activities comply with UK and European legislation.

1.0 Summary

- 1.1 Solum Environmental Ltd was commissioned on 27th July by Strutt & Parker of Chester, to undertake a dusk bat emergence/ activity surveys of two buildings at Bryn Farm, Hanmer, Whitchurch, Shropshire SY13 3DS (Grid Ref: SJ 429 410).
- 1.2 Survey was commissioned to inform planned re-development of this site. The proposals (application number: P/2010/0493). Include conversion of the buildings and erection of new buildings as part of the creation of residential development. It is understood that no trees are to be felled or hedgerows removed as part of this re-development.
- 1.3 The postal address of the site is Bryn Farm, Whitchurch. However, we understand that the site is, in fact, within the Welsh border. The site comprises a cluster of farm buildings surrounded by grazing fields, with small lanes immediately to the north (Pigeon Lanes) and west (Bryn Lane) of the site. The existing farm house (not part of these proposals) is located to the south-west, off the access track. There is a detached (listed) house, The Bryn, immediately to the south of the site.
- 1.4 The site was subject to detailed ecological investigation by TEP, environmental consultants in March 2010 and the following survey should be read in conjunction with their report. While they found limited evidence for hibernating bats, they recommended that an emergence survey was carried out to establish the use by bats of 'buildings 1 and 4' during the summer months.
- 1.6 A dusk emergence/ activity survey for bats was conducted on Tuesday 2nd August. Survey followed best-practice guidelines as set out by the Bat Conservation Trust, Natural England and JNCC. During this dusk survey, both surveyors used dual-mode, tuneable heterodyne and frequency bat detectors (Batbox Duets) and powerful torches. In line with BCT recommendations this dusk survey began half an hour before dusk and continued for two hours after dusk. Surveyors were located on initially to cover the majority of the site lines.
- 1.7 The survey recorded 2 no whiskered/Brandts in building 1, 2 no. brown long-eared bats 3 + pipistrelles in building 4.
- 1.9 This site represents good feeding habitat for bats, especially around the slurry lagoon.
- 1.10 **The proposed re-development of this site will disturb existing bat roosts. However, extensive mitigation proposals (Appendices 3 and 4) have been provided which, if carefully detailed and implemented, should provide alternative permanent roosting structures for bats, and *there should be no net detrimental impact on the species at this location as a result of these works.* It is recommended, however, that landscape proposals for this re-development include species which attract insects, in order to enhance feeding habitat for bats at this site (see Appendix 5). In addition any outdoor lighting provided by this re-development should be low-level and bat-friendly (see Appendix 6). BLE bats generally prefer emergence from roosts sites under tree cover, which should be considered in any landscape proposals for the site.**
- 1.11 It is understood that no trees are to be felled (or to undergo surgery) or any hedgerows to be removed during this re-development
- 1.12 **Because the buildings surveyed are known to contain bats roosts, any work to these buildings will need to be carried out under licence provided by the Countryside Council for Wales (CCW) at a time to be agreed. On no account should the bats be disturbed in their roosts or handled by anyone other than a licensed bat ecologist. Emergency contact details for a licensed bat surveyor should be provided to all demolition and construction professionals working at this site. The survey information gathered will only be valid for one season as roost locations and roosting-bat numbers may change with time.**

- 1.13 Provided the above recommendations are followed it is considered that the proposed re-development at this site will not result in a negative impact on biodiversity at this site and will not be detrimental to any protected species.

2.0 Introduction

2.1 Background and Commission

- 2.1.1 Solum Environmental Ltd was commissioned on 27th July 2010 by Strutt & Parker of Chester, to undertake an extended phase one habitat and dusk bat emergence/ activity surveys of Bryn Farm, Hanmer, Whitchurch, Shropshire SY13 3DS (Grid Ref: SJ 429 410).
- 2.1.2 Survey was commissioned to inform future re-development of a number of farm buildings for residential purposes. It is understood that no trees are to be felled or hedgerows removed as part of this re-development.
- 2.1.3 The site was subject to detailed internal inspection for evidence of bats by The Environment Partnership (TEP) in March 2010, who recommended that emergence survey be carried out for two buildings (building 1 and 4) where there was potential for bat roosting. The following report should be read in conjunction with this report, *'The Bryn – Bat, Bird Survey and Amphibian Assessment'*, TEP March 2010.

2.2 Aims of the Survey

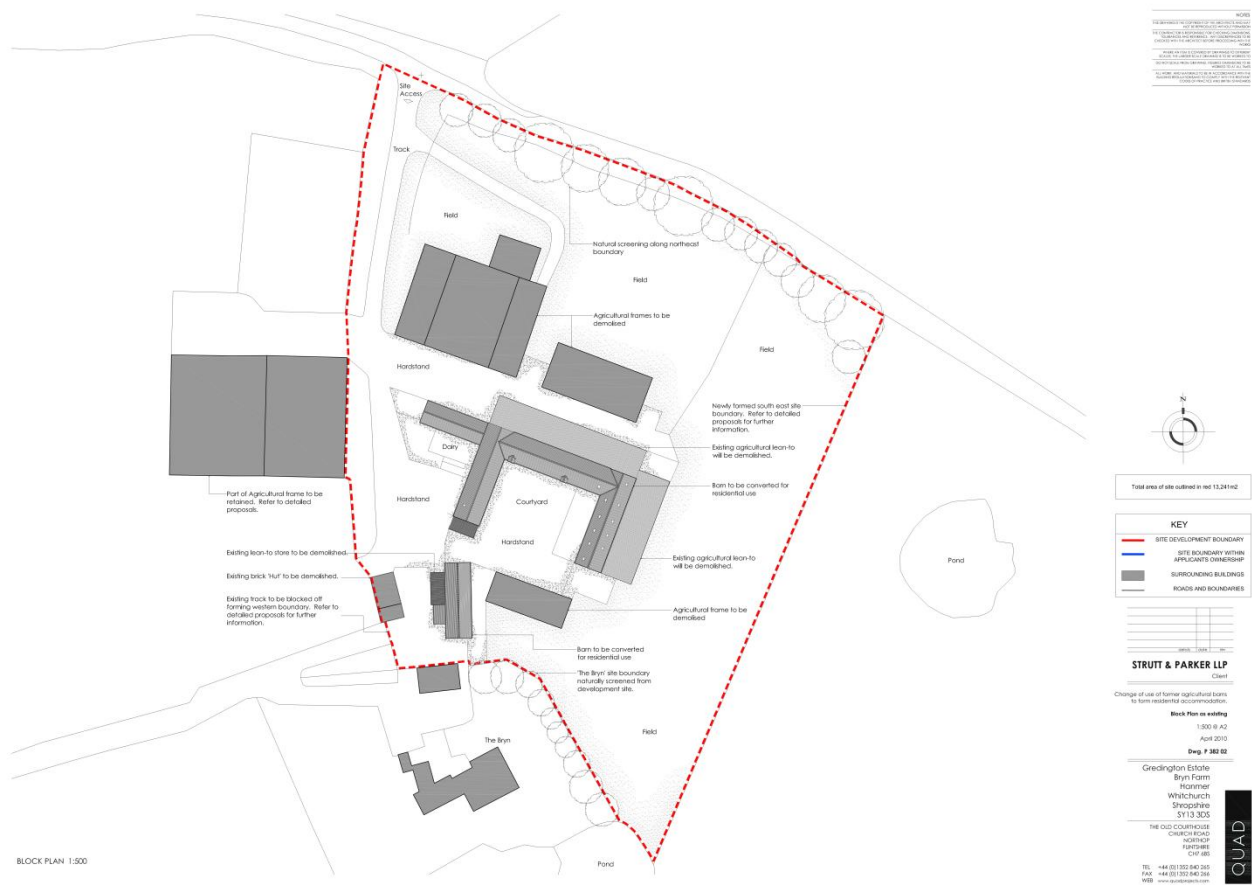
Specific aims of these surveys were to:

- assess the buildings' potential to support bat roosts;
- highlight any potential ecological constraints that the presence of bats may present to re-development of this site; and
- support submission of a planning application (planning application number: P/2010/0493) by Strutt & Parker of Chester.

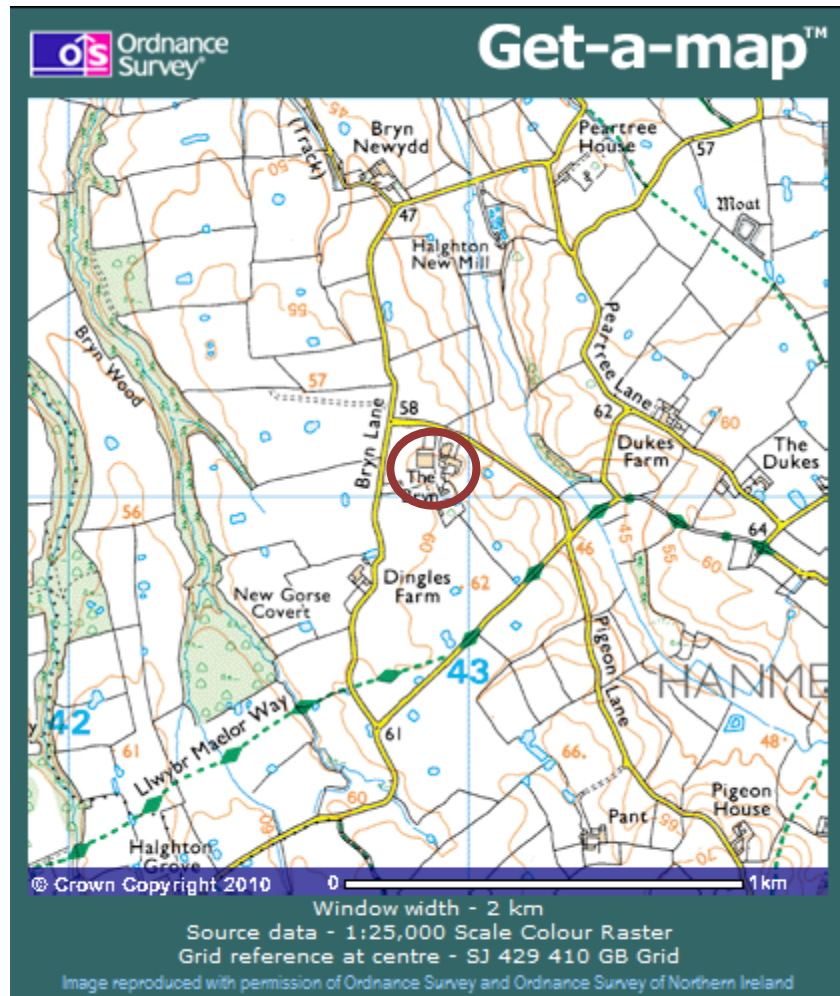
2.3 Site Context

- 2.3.1 The specific planning application boundary for this survey is shown in Plan 1 below. The site's wider location is illustrated at Plan 2 below.
- 2.3.2 The buildings surveyed lie within a cluster of active dairy-farm buildings at Hanmer, Whitchurch. .
- 2.3.3 Immediately beyond this boundary lie two semi-detached houses to the west, and a large detached house to the east. The site is surrounded more widely by farmed fields to the north, with the land falling away to a road and fields to the south.

Plan 1 : Planning Application Boundary



Plan 2 : Site Location



3.0 Relevant Nature Conservation Legislation and Planning Policy

- 3.1 **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 conserve, in particular, areas of priority habitat and populations of priority species. 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.
- 3.2 **Bats:** All species of bats are European Protected Species and their roosts are given a high degree of legal protection under the terms of the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats &c) Regulations 1994. In addition all bats are the subject of a UK-wide Biodiversity Action Plan (BAP). This combined legislation gives bats, their breeding sites and resting places a high level of strict protection. In summary, this makes it illegal to recklessly or deliberately, kill, injure, capture or disturb bats or obstruct access to, damage or destroy bat roosts. It should be noted that, under this 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.

The presence of bats at a development site should be identified as early as possible and, where bat roosts are present, a mitigation scheme needs to be developed prior to the start of works on site, following liaison with the local Countryside Council for Wales (CCW) team, in order to minimise direct threats to bats and to compensate for their loss of habitat. A licence issued by CCW in order to re-locate bats in advance of development, following the agreement of satisfactory mitigation measures and provided that the following three tests are met:

- that the licence application must demonstrably relate to one of the purposes specified in Regulation 44(2) – in the case of development, the purpose is defined as:
“Preserving public health or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”;
- that there is no satisfactory alternative; and
- that the development will not be detrimental to maintaining the populations of bat species at a favourable conservation status in their natural range.

- 3.3 **Technical Advice Note (Wales) 5 : Nature Conservation and Planning** In addition to Planning Policy Wales, TAN 5 provides a policy framework in relation to nature conservation in Wales. In particular, it provides advice about how the land-use planning system should contribute to protecting and enhancing biodiversity and geological conservation.

- The TAN provides advice for local planning authorities on:
- The key principles of positive planning for nature conservation;
- Nature conservation and Local Development Plans;
- Nature conservation in development management procedures;
- Development affecting protected internationally and nationally designated sites and habitats
- Development affecting protected and priority habitats and species

- 3.4 **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

4.0 Methodology

4.1 Field Survey Methodology : Bat Emergence/ Activity Survey

- 4.1.1 A dusk emergence/ activity survey for bats was conducted on Tuesday 2nd August 2010. Survey followed best-practice guidelines as set out by the Bat Conservation Trust, Natural England and JNCC. The survey team consisted of Dr David Hackett and Mr Tim Kirwin, an experienced bat surveyor and professional ecologist (see Section 4.3 below).
- 4.1.2 During this dusk survey, both surveyors used dual-mode, tuneable heterodyne and frequency bat detectors (Batbox Duets) and powerful torches. A PV-300 endoscope was taken but was not needed during survey.
- 4.1.3 In line with BCT recommendations this dusk survey began half an hour before dusk and continued for two hours after dusk. Surveyors were located to maximise observation of the roof-lines of the buildings.

4.2 Timing of Field Surveys in Relation to Optimal Seasons

- 4.2.1 Early August represent optimum maternity-season bat survey.

4.3 Survey Team Members

- 4.3.1 Dr David Hackett BSc MLD PhD MIEEM CMLI CEnv is Director and Senior Ecological Project Manager of Solum Environmental. David Hackett is a highly experienced ecological project manager and surveyor with over 15 years of professional experience of project managing and conducting ecological survey, with particular specialisms in plant, bat and GCN ecology. David is a full member of the Institute of Ecology and Environmental Management and a Chartered Environmentalist, a member of Cheshire Bat Group and the Cheshire Wildlife Trust.
- 4.3.2 Tim Kirwin is an experienced bat surveyor, ecological project manager and registered Bat Conservation Trust (BCT) surveyor.

4.4 Survey Constraints

- 4.4.1 This survey was only able to represent a snapshot of ecological activity at this site over one day and evening in August.
- 4.4.2 There was only limited visual inspection made within the buildings. The upper floor within building 1 was unsafe and some of the floor joists were collapsing. Building 4 provided good roosting opportunities and offered large internal loft voids, of a type that would be particularly attractive to brown long-eared bats. Building 4 was particularly large and complex in layout, so that some sight-lines were limited.

5.0 Field Survey Results

5.1. Site Description

Building 1 is a brick building with a pitched, slate roof and gable ends. The ground floor was being used as stables and the upper floor as a hay loft. Some of the beams supporting this upper floor were rotten and unsafe.

Building 4 wraps around three side of a courtyard. It is a two-storey structure, with a pitched roof and gable ends. The upper floor is open to the roof, exposing the wooden beams, and provides a continuous open space around the three sides of the building. The ground floor is used as stables and the upper as a hay loft. There are a number of skylights, some of which are broken and there are holes in the brickwork and motor missing.

The courtyard is hard-surfaced, with little vegetation growing around the edges.

The site sits within an active dairy farm and is surrounded by grazed fields. The land falls off sharply to the east across a pond and grazed fields. The landscape is broken by hedgerows with trees along field boundaries, along the edge of streams and lanes.

5.2 Bat Findings

5.2.1 The emergence survey shows that the site is being used by three species of bat, albeit recorded in small numbers. The buildings and surrounding habitat offer both a number and range of potential roost sites and good feeding habitat.

5.2.2 Conditions for the subsequent bat emergence survey were favourable (see Table 1 below).

5.2.3 In total three bat species was observed/ detected during survey: whiskered/Brandt's (*Myotis mystacinus* or *M. brandtii*), common pipistrelle (*Pipistrellus pipistrellus*) and brown long-eared bat (*Plecotus auritus*). The former were observed to emerge from building 1 and the pipistrelles and brown-long eared bats emerged from building 4.

Table 1 : Dusk Emergence/ Activity Bat Survey Results, 2nd August 2010

Weather Conditions During Survey					
	Time	Temperature	Wind	Cloud Cover	Precipitation
Start	20.35	16.5°C	Nil	80%	Dry
End	23.00	15.5°C	Nil	80%	Dry
Sunset:		21.05			
Bat Contacts Observed During Survey					
Surveyor 1 : Tim Kirwin Located adjacent to building 1			Surveyor 2 : David Hackett Located to the rear of building 4		
Time	Species	Activity	Time	Species	Activity
21.15	Whiskered/ Brandt's x 2	Flew out of open door of building 1 across courtyard	21.10	Common pipistrelle x1	Social calling

21.25 – 21.45	Common pipistrelle x 2	Feeding over courtyard	21.15 - 21.25	Common pipistrelle x 1	Flying within outbuilding to rear of building 4
21.25	BLE x 2	Emerged from middle section of building 4	21.25	Common pipistrelle x 1	Flew out of outbuilding to rear of building 4, heading west
21.50	Common pipistrelle	Feeding over courtyard	21.50 – 22.15	Common pipistrelle	Constant feeding activity, in the vicinity of the slurry lagoons.
22.15	Common pipistrelle	Feeding over courtyard	22.30	Common pipistrelle	Commuting from slurry lagoons
22.45	Common pipistrelle	Heard but not seen			

5.2.4 The location of bat flight paths in relation to this site is illustrated at Appendix 1.

6.0 Evaluation and Recommendations

- 6.1 This site generally has ecological significance in providing roosting habitat to three species of bat and in the provision of good feeding habitat for bats. The numbers present and believed to be roosting, where, however, low. The low numbers of bats encountered may be related to the continuing use of the buildings. The upper floors of both buildings are being used to store straw and the lower floors are used to stable cattle.
- 6.2 **The proposed re-development of this site will disturb existing bat roosts. However, extensive mitigation proposals (Appendices 3 and 4) have been provided which, if carefully detailed and implemented, should provide alternative permanent roosting structures for bats, and *there should be no net detrimental impact on the species at this location as a result of these works.* It is recommended, however, that landscape proposals for this re-development include species which attract insects, in order to enhance feeding habitat for bats at this site (see Appendix 5). In addition any outdoor lighting provided by this re-development should be low-level and bat-friendly (see Appendix 6). BLE bats generally prefer emergence from roosts sites under tree cover, which should be considered in any landscape proposals for the site.**
- 6.4 It is understood that no trees are to be felled (or to undergo surgery) or any hedgerows to be removed during this re-development.
- 6.5 **Because the buildings surveyed are known to contain bats roosts, any work to these buildings will need to be carried out under licence provided by the Countryside Council for Wales (CCW) at a time to be agreed. On no account should the bats be disturbed in their roosts or handled by anyone other than a licensed bat ecologist. Emergency contact details for a licensed bat surveyor should be provided to all demolition and construction professionals working at this site. The survey information gathered will only be valid for one season as roost locations and roosting-bat numbers may change with time.**
- 6.6 Provided the above recommendations are followed it is considered that the proposed re-development at this site will result in a positive impact on biodiversity at this site and will not be detrimental to any protected species.

7.0 References and Bibliography

Wildlife and Countryside Act, (1981), As amended. HMSO, London.

Bat Conservation Trust (2008) *Bats and Lighting in the UK*, version 2.

Shirley Thompson (1989) *Bats in the Garden*. School Garden Company. Spalding Lincs

The Conservation (Natural Habitats, &c.) Regulations 1994. HMSO, London.

Natural England (English Nature 2004) *Bat Mitigation Guidelines*

JNCC (2004) *Bat Workers Manual* Third Edition

BCT (2007) *Bat Surveys Good Practice Guidelines*

Natural England (English Nature IN175) *Badgers and Development*

Bat Conservation Trust leaflet 'Garden for Bats'

The Badger Trust website: www.badger.org.uk

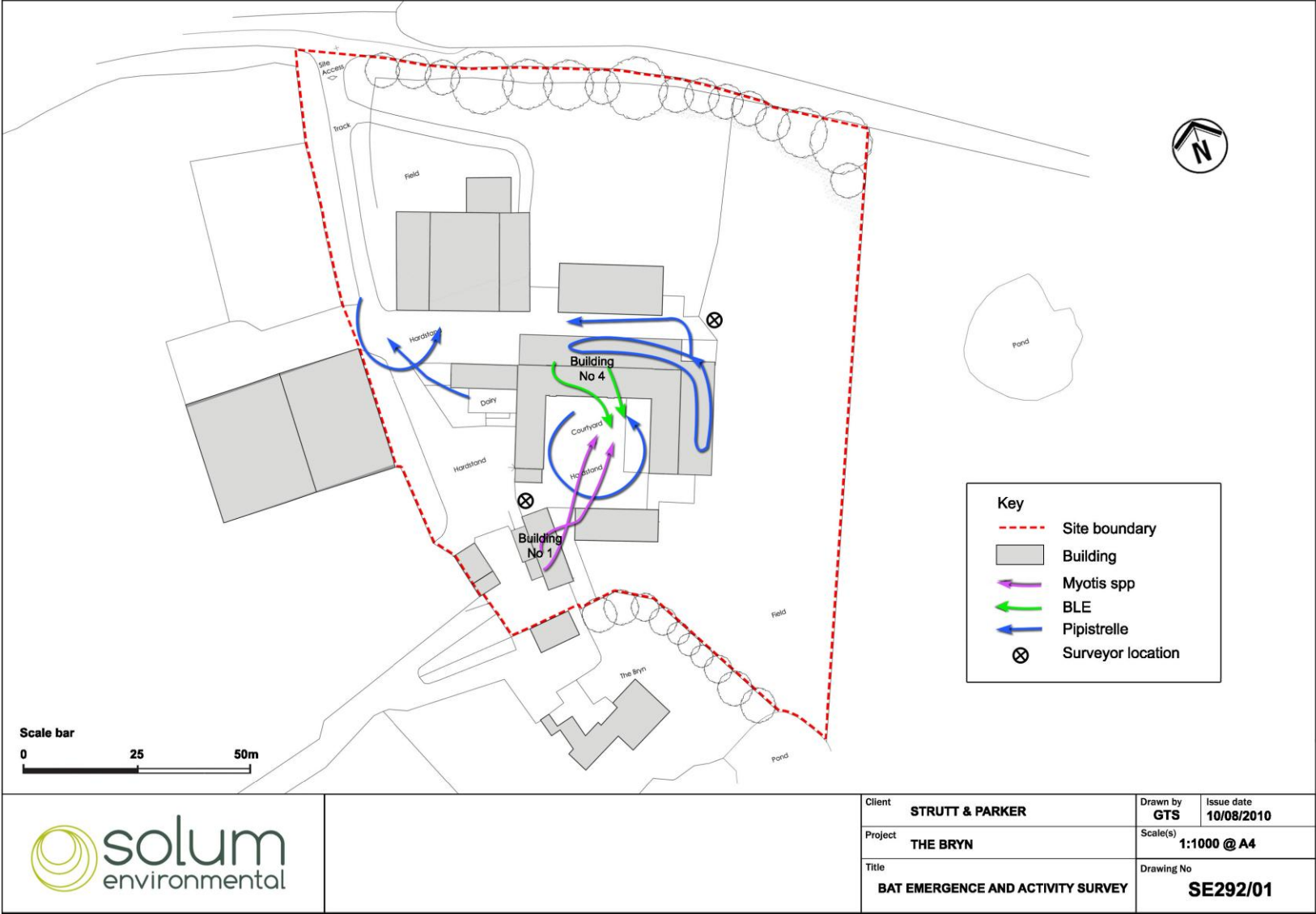
UK BAP website: www.ukbap.org.uk

Denbighshire BAP website: www.denbighshire.gov.uk

CCW website: www.ccw.gov.uk

Appendices

Appendix 1 : Bat Emergence and Activity Plan



Appendix 2 : Site Photographs

Photo 1:

View of western-wing of building 4

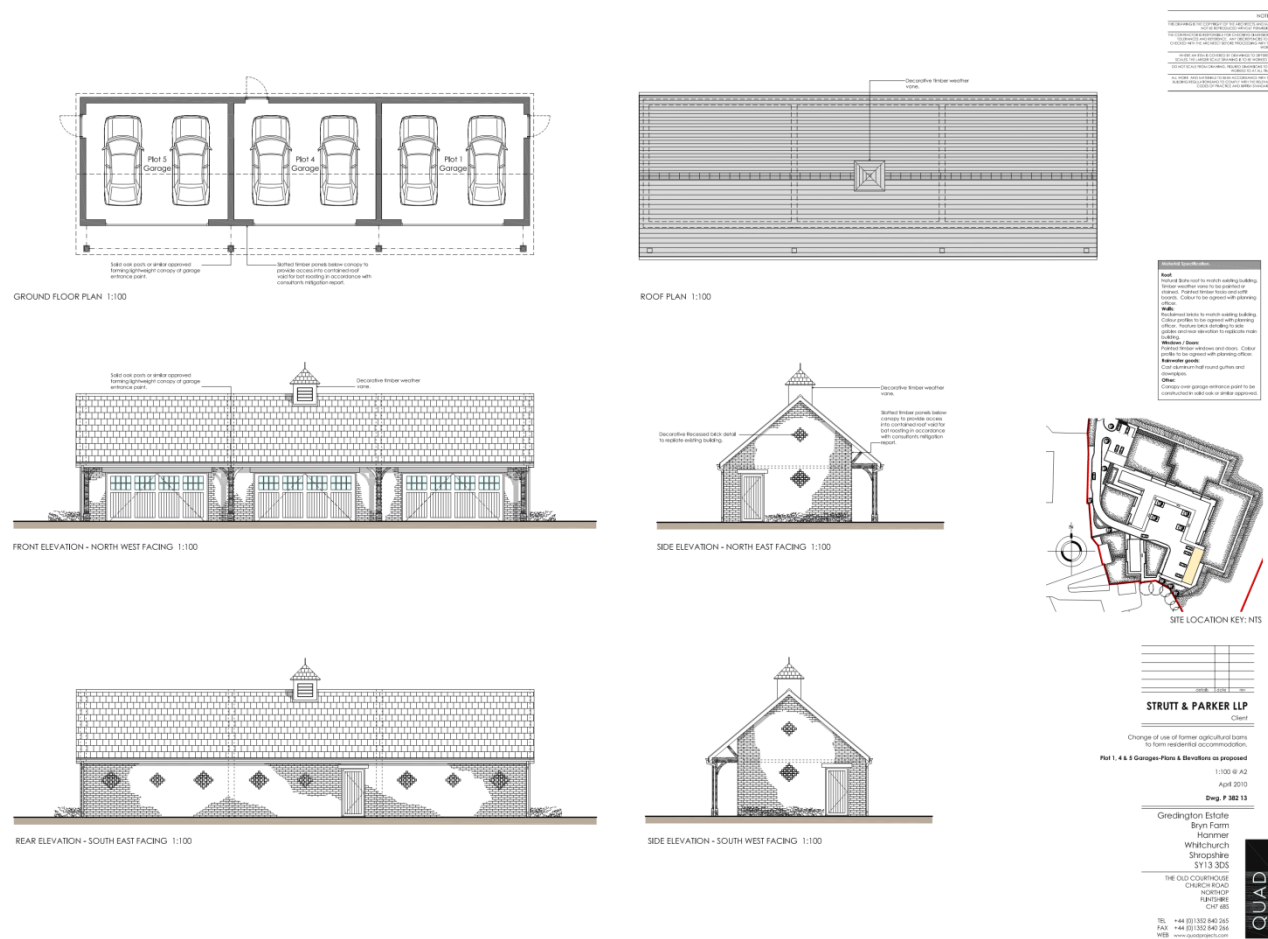


Photo 2:

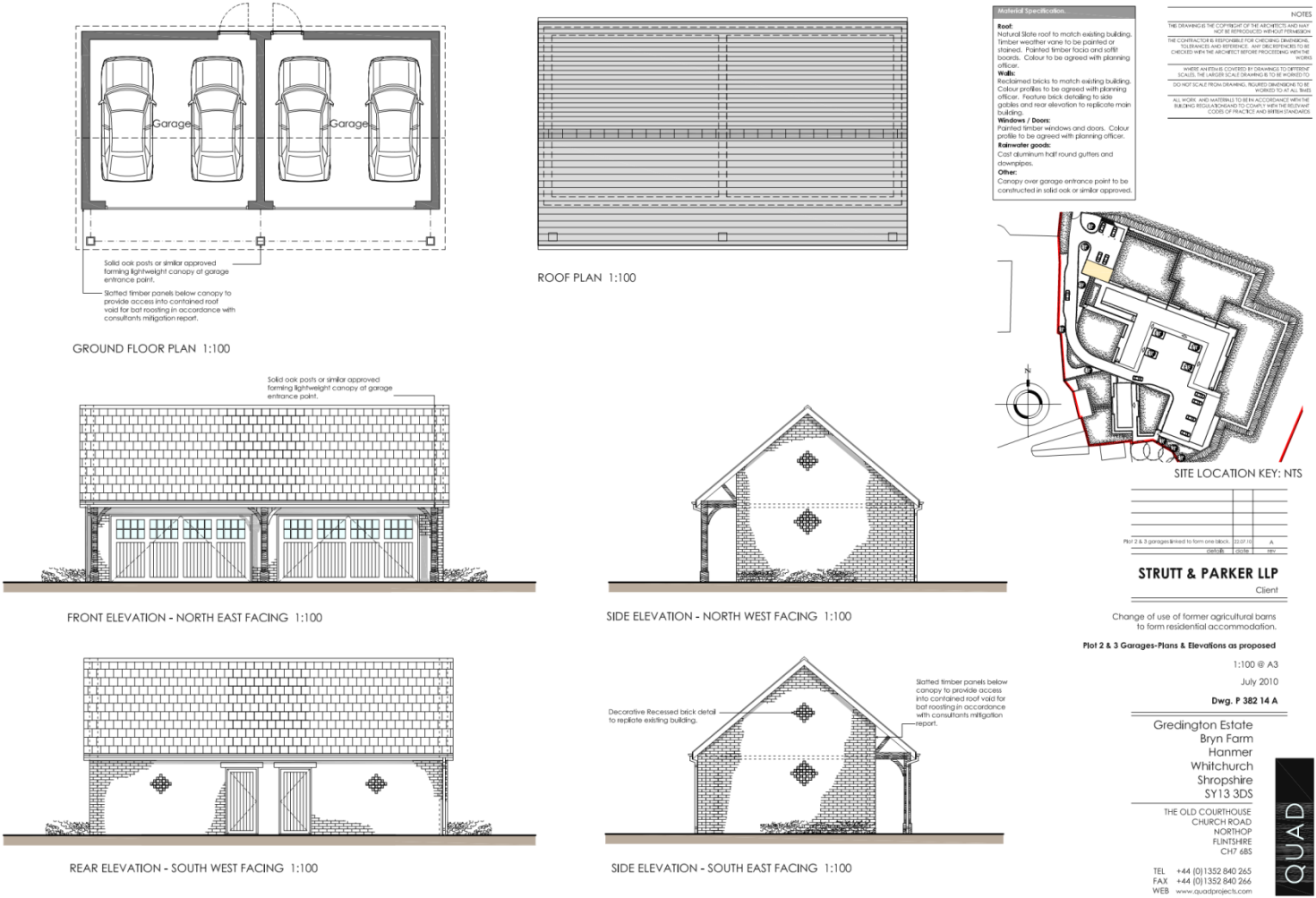
View of building 1



Appendix 3 : Roost Mitigation Structure 1



Appendix 4 : Roost Mitigation Structure 2



Appendix 5 : Planting Lists for Enhancing Feeding Habitat for Bats

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.

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

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.

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</i> sp.

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</i> agg.

Where re-seeding is to take place the choice of a 'conservation mix' of grass seed is 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.

Appendix 6 : Bat-friendly Lighting

See BCT's (2008) publication '*Bat and Lighting in the UK*'. Bats and the Environment Series. The following is a summary of the main points for mitigation.

BAT ROOSTS

No bat roost (including access points) should be directly illuminated. If it is considered necessary to illuminate a building known to be used by roosting bats, the lights should be positioned to avoid the Sensitive areas. Close offset accent lighting causes less light pollution; it is more specific and can be designed to avoid bat sensitive areas, and better highlights the features of the subject of the Illumination.

FORAGING AND COMMUTING

Type of lamp (light source) The impact on bats can be minimised by the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its uv filtration characteristics.

Luminaire and light spill accessories Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Lighting column The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.

Predicting where the light cone and light spill will occur There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels The light should be as low as guidelines permit. If lighting is not needed, don't light.

Timing of lighting The times during which the lighting is on should be limited to provide some dark periods. Roads or trackways in areas important for foraging bats should contain stretches left unlit to avoid isolation of bat colonies. These unlit stretches should be 10 metres in length either side of commuting route.

SECURITY LIGHTING

Power It is rarely necessary to use a lamp of greater than 2000 lumens (150 W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.

Movement sensors Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed.

Timers If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.

Aim of light The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any bats' roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

Alternatives

It may be a better solution for security lighting on domestic properties to use a porch light.