



ETIVE ECOLOGY Ltd

**Proposed Residential Development
The Bryn, Hanmer, Wrexham
Protected Species Report**

Produced for:



June 2016

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CONTENTS

1	INTRODUCTION	1
1.1	The Scheme	1
1.2	Previous Study	1
1.3	Scope of this Report	2
2	METHODOLOGY	3
2.1	GCN Habitat Suitability Index	3
2.2	GCN Surveys	3
2.3	Bat Detector Survey	4
2.4	Nesting Birds	4
2.5	Limitations	4
3	RESULTS	6
3.1	Habitat Suitability Index	6
3.2	GCN Survey	7
3.3	Bat Survey	8
3.4	Nesting Birds	11
4	IMPACT ASSESSMENT	12
4.1	The Proposed Scheme	12
4.2	Likely Impacts	12
4.3	Derogation Licences	14
5	MITIGATION STRATEGY	16
5.1	GCN	16
5.2	Bats	17
5.3	Nesting Birds	19
6	THE “THREE TESTS”	20
6.1	The NEED	20
6.2	No SUITABLE ALTERNATIVE	20
6.3	No Impact on FAVOURABLE CONSERVATION STATUS	20
7	CONCLUSION	21
8	REFERENCES	23

APPENDIX A

Figures

Quality Assessment Record

Report Version	Written by	Date	Reviewed by	Date
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1 INTRODUCTION

1.1 The Scheme

- 1.1.1 Etive Ecology Ltd was commissioned by Strutt & Parker LLP on behalf of the landowner in April 2016 to undertake a suite of protected species in relation to the proposed development of The Bryn, Hanmer, Wrexham. The site is centred on National Grid Reference SJ 4295 4107.
- 1.1.2 The site currently an active farmyard and comprises a number of farm buildings surrounded by hard-standing and small pockets of scattered scrub, tall ruderal and various piles of detritus. The site is surrounded by improved grassland pasture with scattered broadleaved trees and fence-line boundaries.
- 1.1.3 There is an existing planning permission for the site to develop it for residential use (P/2010/0493), given planning permission in August 2011. This consent expires on 12th August 2016 and this report has been produced to support the extension of this consent.

1.2 Previous Study

- 1.2.1 A protected species appraisal of the site was undertaken in December 2009, to identify the likely constraints and mitigation requirements for the proposed redevelopment of the site (TEP, 2010). The resulting report identified bat roost potential in Buildings 1 and 4, evidence of nesting swallows in Buildings 1 and 4, and a number of likely GCN breeding ponds within 250m of the site. Outline avoidance, mitigation and compensatory measures were given and further survey in relation to bats was also recommended. Bat compensation measures included the retention of bat roosting features within the refurbished Buildings 1 and 4, as well as the creation of bat lofts above newly built garages.
- 1.2.2 Bat detector surveys were subsequently undertaken in August 2010 to determine presence/absence of roosting bats (Solum Environmental, 2010). The survey effort comprised of one dusk survey, on Buildings 1 and 4. The survey identified two whiskered/Brandt's bats (*Myotis mystacinus*/*M. brandii*) emerging from Building 1, and three common pipistrelle bats (*Pipistrelle pipistrelle*) and two brown long-eared bats (*Plecotus auritus*) emerging from Building 4. The resulting report recommended that a derogation licence would need to be obtained from Natural Resources Wales (NRW) in order for the scheme to progress. Details of compensatory roosting habitat to be provided as part of the proposed scheme were also included within the report (Approved Drawings P/382/14/A and P/382/13), relating to the newly built garages. However, no detail of any retained roosting features within Buildings 1 or 4 were specified.
- 1.2.3 The 2011 consented scheme included the two approved drawings referenced above, i.e. new bat lofts built above two new garage blocks, located in the northwest and southeast corners of the site, with access provided for bats via slatted timber panels in the eaves. Planning Condition 13 of the planning permission states that bat roosting measures detailed in both of the submitted ecology reports should be implemented, i.e. the provision of bat lofts above two garages and the retention of roosting opportunities within Buildings 1 and 4. Approved Drawings P/382/13 and P/382/14/A are included as **Figure 2a and 2b** in **Appendix A**.

1.2.4 A Preliminary Ecological Appraisal (PEA) of the site was undertaken by Etive Ecology in March 2016, to update the ecological baseline. The appraisal comprised of an extended Phase 1 Habitat Survey of the site and surrounding land and identified the following key ecological features;

- Eight ponds within 250m of the site; seven of which have the potential to support great crested newts (GCN).
- Two large and one small traditional red-brick farm buildings with the potential to support roosting bats (Buildings 1, 4 and 6).
- Suitable bird nesting habitat in Buildings 1 and 4.

1.3 Scope of this Report

1.3.1 The report documents the findings of GCN presence/absence surveys of six ponds and a bat detector survey of the buildings. The survey methodologies are detailed in **Section 2** and the results are presented in **Section 3**.

1.3.2 A brief impact assessment is provided in **Section 4**, identifying the likely impacts posed to GCN, bats and nesting birds by the scheme and assessing the likely scale and magnitude of these impacts. Details of the proposed scheme are presented and key risk areas and activities are identified.

1.3.3 **Section 5** presents a summary of the mitigation strategy for GCN, bats and nesting birds. The details of the mitigation strategy for these species would need to be provided prior to the commencement of any development works, to ensure that all relevant licences were obtained.

1.3.4 A short section on the 'three tests' is provided in **Section 6**. This provides a summary of the key issues which is given to assist the LPA in determining whether the scheme satisfactorily passes these tests.

2 METHODOLOGY

2.1 GCN Habitat Suitability Index

- 2.1.1 The Habitat Suitability Index (HSI) is a ten score system used to rapidly assess the suitability of ponds for GCN based on ten environmental parameters that can be scored objectively. The criteria include pond size, water quality, pond shading and the area of suitable adjacent terrestrial habitat (Oldham et al, 2000).
- 2.1.2 The HSI was initially used to score all ponds within 250m of the site as part of the PEA, to assist in determining the need for GCN surveys. Other factors that were considered include habitat connectivity, barriers to GCN movements and sources of disturbance. The HSI results are presented again here to show how their calculated suitability compared to the survey findings.

2.2 GCN Surveys

- 2.2.1 GCN surveys were undertaken in full accordance with the guidance set out in the *GCN Mitigation Guidelines*. The recommended survey protocol is to undertake survey work to determine presence/absence (4 survey visits) and/or population estimate surveys (6 survey visits) during the period mid-March to mid-June. Half of all survey visits should be undertaken within the 'peak' breeding period of mid-April to mid-May. On each survey visits three techniques should be employed to show reasonable survey effort – the relevant techniques used are described below.
- 2.2.2 GCN surveys may only be undertaken by suitably licensed ecologists. Licenses are issued by NRW and recognise the surveyor's skills and experience in amphibian ecology and survey.

Bottle Trapping

- 2.2.3 Bottle-trapping involves the setting of funnel-traps made from plastic bottles around the pond margins. The traps are set approximately one every two metres of suitable habitat and are left overnight. The surveyor returns to site the following morning, retrieves the bottles, records all amphibians captured and releases them.

Egg Search

- 2.2.4 Egg searches are carried out by checking aquatic vegetation, both alive and dead, for GCN eggs. Newts wrap their eggs inside such vegetation and the relative whiteness of the egg is used to determine whether it is from a GCN or a smooth or palmate newt. When GCN breeding has been confirmed, the egg search should cease for that pond to avoid unnecessary disturbance and impacts to breeding success.

Torch Survey

- 2.2.5 The torch survey involves the use of a high-powered torch (500,000 to 1,000,000 candle-power) to detect amphibians activity during darkness. The torch is used to systematically search the pond margins – and deeper areas where it is appropriate and feasible to do so – for amphibians. Counts of species and sex of all amphibians observed should be recorded.

2.3 Bat Detector Survey

- 2.3.1 An external appraisal and an internal inspection of the farm buildings on site were undertaken as part of the 2016 PEA. During the 2016 inspection, the roof spaces within the various buildings on site were inspected as thoroughly as possible but could not be inspected throughout due to safety concerns with the upper level flooring. The external appraisal found Buildings 1 and 4 have high potential to support roosting bats, offering numerous access points and large open and uncomplicated roof spaces. Building 6 was also found to have low bat roost potential due to its traditional construction, building materials and good connectivity to Building 4.
- 2.3.2 Bat surveys were undertaken in general accordance with the guidance set out by the Bat Conservation Trust guidelines (2016). The level of survey effort was based upon the aim of the survey work; to confirm the continued presence of roosting bats such that it would be possible for the LPA to extend the existing planning consent. Therefore a single dusk bat detector survey was undertaken.
- 2.3.3 The locations of surveyors during the bat survey are shown in Plate 3.3.

Dusk Survey

- 2.3.4 The single dusk emergence survey was undertaken on the 5th May 2016.
- 2.3.5 The dusk survey commenced 15 minutes prior to sunset and ceased approximately 90 minutes following sunset, when survey conditions were too dark for the surveyor to accurately and definitively identify bat emergence and flight.
- 2.3.6 The surveyors were using a number of different detection devices during the survey, including an SM2+, EM3, and EMTouch and a BatScanner. Bat activity was recorded and subsequently analysed using Analook software.

2.4 Nesting Birds

- 2.4.1 During the bat detector survey, all surveyors recorded any bird activity associated with the various buildings on site, noting any nesting or breeding behaviour.

2.5 Limitations

- 2.5.1 Access was made available to all of the ponds within 250m of the site to undertake the GCN surveys, with the exception of Pond 2 which is located within the rear garden of the residential property at The Bryn. The owner/occupier of the property confirmed that GCN were indeed present within the pond and that they were regularly found within the garden and frequently also within the property.
- 2.5.2 Access was also made available into all of the buildings on site; however, the structural condition of the first floor level of Buildings 1 and 4 was such that it was not deemed safe for the surveyor to conduct a full internal inspection of these spaces.
- 2.5.3 Dense bramble scrub and steep banks made accessing the full perimeter of Ponds 3 and 4 impossible and therefore restricted the number of bottle-traps that could be deployed and the perimeter of pond that could be surveyed by torchlight. Otherwise, all three survey techniques were employed in full on the remaining ponds.

- 2.5.4 Weather conditions for all bat and GCN surveys were considered to be suitable. Temperatures were not less than 5°C for GCN surveys or 10°C for the bat survey. During bat survey there was no significant wind and no rainfall. Weather conditions are not therefore considered to pose any limitation to the validity of the survey findings
- 2.5.5 It is acknowledged that, although the survey methods were in line with the published guidelines, only four GCN surveys and one bat detector survey were undertaken, rather than six and three respectively. However, the level of survey effort is deemed to be sufficient in order for the baseline ecological conditions to be confirmed and for the likely impacts on these species to be adequately predicted. It is acknowledged that both GCN and bat surveys will need to be repeated at a later date in order for relevant licences to be obtained from Natural Resources Wales (NRW).
- 2.5.6 All of the survey effort was led by Russell Grey (BSc, MCIEEM, CEnv), a licenced GCN surveyor and bat surveyor with has extensive experience in relation to development projects such as the one proposed at The Bryn. Russell also has experience in dealing with European Protected Species licensing, mitigation and compensation.
- 2.5.7 There are considered to be no significant limitations to the undertaking or accuracy of the bat, GCN or bird surveys.

3 RESULTS

3.1 Habitat Suitability Index

3.1.1 A total of 8 No. ponds are shown on Plate 3.1.1 below within 250m of the site. All of these ponds were subject to HSI assessment with the exception of Pond 1, which was found to be a receptor pond for surface water runoff from the farm yard, i.e. a slurry pit, and wholly unsuitable to support GCN.

Plate 3.1.1 Ponds within 250m



3.1.2 The findings of these HSI assessments are presented in Table 3.2.1 below.

Table 3.2.1 HSI Assessment Summary

Pond	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	HSI
2	1	0.5	0.9	0.67	1	1	1	1	0.67	0.8	0.83
3	1	0.6	1	0.33	0.5	1	1	1	0.67	0.6	0.72
4	1	0.6	1	0.33	1	1	1	1	0.67	0.6	0.78
5	1	0.4	1	0.33	1	0.67	1	1	0.67	0.4	0.69
6	1	0.97	1	0.67	1	0.67	1	1	0.33	0.4	0.75
7	1	0.85	0.9	0.67	1	1	1	1	0.33	1	0.84
8	1	0.88	1	0.33	1	0.67	1	1	0.33	0.4	0.67

3.1.3 As a result of the HSI assessment, and considering the close proximity of the ponds to one another and to the site, five of the seven ponds were included in the survey effort. As noted above, access to survey Pond 2 was denied by the owner/occupier. Pond 8 was also excluded as the lowest scoring pond and as it is relatively isolated from the site.

3.2 GCN Survey

3.2.1 All surveys were undertaken under suitable weather conditions for GCN activity. Details of survey conditions are detailed in Table 3.2.1 below.

Table 3.2.1 Weather Conditions during surveys

Survey No.	Date	Conditions
1	14/04/16	12-5°C, still, dry and clear
2	21/04/16	12-6°C, still, dry, 40% cloud
3	28/04/16	11-5°C, breezy, dry, clear
4	11/05/16	14-8°C, breezy, light rain, overcast

3.2.3 The results of the six GCN surveys are summarised in Table 3.2.2 below.

Table 3.2.2 GCN Survey Results

Survey No.	Pond 3	Pond 4	Pond 5	Pond 6	Pond 7	Total Count
1	2 x ♀ (Torch) 3 x ♂, 2 x ♀ (Bottles)	1 x ♂ (Torch)	5 x ♂, 16 x ♀ (Torch) 3 x ♂, 23 x ♀ (Bottles)	3 x ♂, 2 x ♀ (Bottles)	4 x ♂, 9 x ♀ (Bottles)	52
2	1 x ♀ (Torch) 2 x ♂ (Bottles)	-	10 x ♂, 18 x ♀ (Torch) 6 x ♂, 28 x ♀ (Bottles)	1 x ♂, 1 x ♀ (Bottles) 1 x ♀ (Torch)	8 x ♂, 15 x ♀ (Bottles)	66
3	1 x ♀ (Torch) 1 x ♂, 1 x ♀ (Bottles)	-	3 x ♂, 12 x ♀ (Torch) 4 x ♂, 17 x ♀ (Bottles)	1 x ♀ (Bottles)	5 x ♂, 7 x ♀ (Bottles)	37
4	2 x ♂ (Bottles)	1 x ♂ (Torch)	6 x ♂, 15 x ♀ (Torch) 6 x ♂, 19 x ♀ (Bottles)	-	7 x ♂, 12 x ♀ (Bottles)	57
Peak Count	5	1	38	5	23	

3.2.4 GCN eggs were found during the very first survey visit in Ponds 3, 5 and 7, confirming breeding populations in these ponds. Pond 6 is also a potential breeding pond, with both male and female GCN found during the surveys, although the pond lacks an abundance of suitable egg-laying material. Pond 2 could not be surveyed due to access restrictions, but is likely to offer excellent habitat, similar to that present in pond 5, i.e. capable of supporting large numbers of breeding GCN. It is also noted that the field adjacent to the south of the site was extensively water-logged for the first two surveys and the northern boundary was water-logged for the final two visits as well.

3.2.5 It is very difficult to establish the true size of a GCN population, without at least six survey visits, on all suitable ponds (including Pond 2) and ideally with an extensive capture-recapture effort. Survey techniques such as bottle-trapping and torching have been shown to identify between 2% and 30% of an actual population. However, an approximation of a populations' size is useful in determining the necessary mitigation effort and other licensing requirements. The following three size classes are broadly recognised:

- Small (maximum count of up to 10)
- Medium (maximum counts between 11 and 100)
- Large (maximum counts for over 100)

3.2.6 Therefore, using the total counts shown in Table 3.2.2, the size class population for ponds within 250m of Home Farm is Medium. Given that Pond 2 were not included in the surveys, it is possible that this is an under-estimation of population size, although given the size of Pond 2 it is unlikely that the size class would increase to the Large category. The cluster of ponds surveyed are considered close enough and sufficiently well connected for the GCN numbers to form a meta-population, i.e. there is an interchange of amphibians from one pond to the next over time.

3.2.7 It should also be noted that other amphibians were recorded during the survey effort. These are shown in Table 3.3.3 below.

Table 3.3.3 Other Amphibians Survey Results (Peak counts per pond)

Pond	Smooth Newts	Palmate Newts	Common Frog	Common Toad
3	-	-	-	-
4	1 x ♀	-	-	1 x ♂
5	-	-	-	-
6	1 x ♀	-	-	Spawn
7	7 x ♂, 3 x ♀	-	-	-

3.2.8 The overall survey data indicates a small GCN population in Ponds 3, 4 and 6, and a medium sized GCN population in Ponds 5 and 7, resulting in a medium sized GCN breeding population across all of these ponds. Amphibian activity was relatively constant throughout the survey effort, despite relatively dry conditions and falling water levels in all ponds. It is noted that Pond 6 is open to grazing impacts from sheep around its full perimeter and that ~10% of Pond 7's marginal habitat is also open to grazing impacts (cattle), although this has actually created a good micro-topography for marginal vegetation to establish and for GCN egg-laying to occur.

3.3 Bat Survey

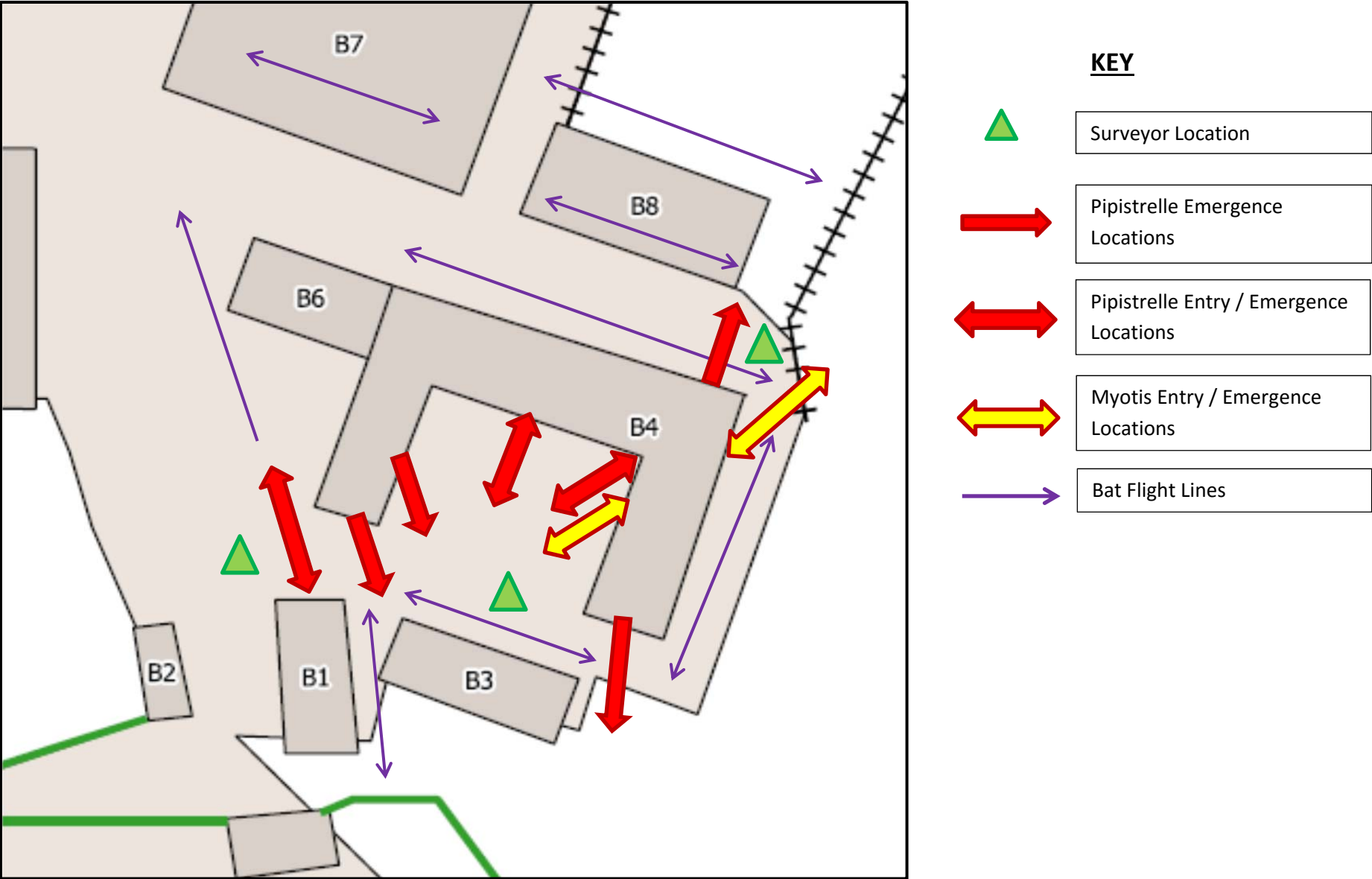
3.3.1 The dusk bat survey was undertaken under suitable weather conditions for bat activity, comprising 20% cloud cover, no precipitation, a light breeze (<5mph) and a temperature of 10-12°C.

Dusk Survey (Sunset @ 20.46)

3.3.2 The first bats recorded were **two common pipistrelles seen to emerge from the northern gable end of Building 1** at 20.48. Both emerged from the open loft hatch on the first floor of the building and flew to the northern side of the site where they were observed foraging beneath the open-fronted storage barns of Buildings 7 and 8, as well as the lean-to shed on the rear of Building 4. **Two soprano pipistrelles were then seen to emerge from the north-facing gable end of Building 4** at 21.03, followed by a **Myotis bat (likely Whiskered/Brandt's)** emerging from the lean-to shed on the eastern elevation of Building 4 at 21.06.

- 3.3.3 Between 21.05 and 21.08, **at least one common pipistrelle bat was seen to flying in and out of the northern gable end of Building 1**. It is unclear whether this was one or a number of bats emerging or using the building for foraging. This activity occurred on at least six occasions throughout the survey period, indicating likely feeding activity within the building. At 21.09 until 21.17, **Myotis bat activity was recorded within the lean-to shed on the eastern elevation of Building4**, with up to three bats seen at any one time. No bats were seen to enter the buildings, but there were countless bat flights in and out of the sheds, therefore **this activity is concluded to be emergence from a roost. At least two Myotis bats were seen emerging from the eastern wing of Building 4 into the farmyard** from 20.14 to 20.15.
- 3.3.4 From 21.17 onwards, for the duration of the dusk survey, bats were frequently observed entering and emerging from numerous features on Building 4, all on the farmyard side. All elevations and gable end were seen to be used as access points into and out of the building. This activity is likely to be primarily feeding by a small number of bats which had been roosting within Building 4 and potentially also within Building 1. Owing to the numerous and simultaneous bat emergence and re-entry events, it is not possible to confirm numbers of bats. Three Myotis bat registrations were recorded at 21.49, 21.51 and 22.01, believed to be from a **Natterer's bat** and consistent with the species documented emergence time, suggesting **likely emergence from the eastern elevation of Building4**.
- 3.3.5 In addition to the extensive bat activity around Buildings 1, 4, 7 and 8 as described above, two Noctule bat passes were recorded over the site, at 21.18 and 22.08.

Plate 3.3 Bat Survey Results



Summary of Findings

3.3.6 In summary, the bat activity associated with the farm buildings at The Bryn can be characterised as follows:

- Building 1; a summer / day roost for a small number common pipistrelle bats. A feeding / night roost for a small number of common pipistrelle bats.
- Building 4; a summer / day roost for 2 x soprano pipistrelles and a small number of two species of Myotis bats (likely Whiskered/Brandt's and Natterer's). A feeding / night roost for individual common and soprano pipistrelles and at least one species of Myotis bats.
- Foraging/commuting pipistrelles, Noctule and Myotis sp. all recorded feeding or flying on or over the site.

3.3.7 It is concluded that Building 1 is used as a summer/day roost and a feeding/night roost by a small number of individual (male) common pipistrelles. It is concluded that Building 4 is used as a summer / day roost by a small number of individual (male) Myotis sp. and soprano pipistrelle bats. Building 4 is also used as a feeding/night roost by a number of common pipistrelles, soprano pipistrelles and at least one species of Myotis bat. This roost is assessed to be of Local value. The site is also used as a foraging resource for Noctules, pipistrelles and Myotis species. Overall, the site is considered to be of importance at the Local level on the basis of its functionality as a roost site for a small number of bats, and its value as a foraging resource.

3.4 Nesting Birds

3.4.1 Numerous species of breeding bird were noted in and around many of the buildings on site. Of these birds, the likely nesting species included swallow, pied wagtail and house sparrow.

4 IMPACT ASSESSMENT

4.1 The Proposed Scheme

4.1.1 The scheme is illustrated on **Figure 1** and will include the following activities:

- Conversion of Buildings 1, 4 and 5 to residential units.
- Conversion of Building 2 for ancillary use attached to one of the residential plots.
- Demolition of Buildings 3, 7 and 8.
- Reduction in the footprint of Building 5.
- Upgrade works to the existing northern site access off Pigeon Lane, to make this the sole access point post-development. The existing site access into the southwest corner of the site will continue to be used for access to The Bryn cottage but will not provide access into the developed area.
- Landscaping works around the northern and eastern sides of Building 4 to create new garden areas. Construction of two new garages located to the north of Building 6 and to the southeast of Building 4.
- Creation of new grazing pasture in the northern portion of the site, currently occupied by farmyard detritus and semi-natural vegetation.
- Construction of a new reclaimed red-brick wall along the eastern boundary and creation of a new hedgerow boundary around northern and eastern sides of the development

4.1.2 **Figure 1** illustrates the proposed layout of the developed site. The anticipated impacts - *before mitigation* - on GCN, bats and nesting birds are detailed below.

4.2 Likely Impacts

GCN

- 4.2.1 The construction of the scheme will result in short-term disturbance to a total area of 1.1ha, of which 0.5ha comprises terrestrial habitat with potential to be used by GCN, i.e. rough grassland, scrub, tall ruderal vegetation and farmyard detritus and material piles. Any GCN present within these habitats will also be subject to disturbance and the risk of harm. Indirect short term impacts on GCN will include a reduced area for foraging, disturbance to dispersing/commuting corridors and a loss of refugia during construction works. There will be no short-term impacts posed to any of the ponds.
- 4.2.2 Post-development, the site will continue to be actively occupied and disturbed by human activities. There will be only minor changes to the layout of the site as the existing areas of hard-standing and the building footprints will largely remain the same. There will be an increase in the area of semi-natural habitat present within the development boundary, with new gardens created and the northern portion of the site converted for grazing use. The result will be a neutral change in the value of the site for GCN, as there will be fewer refugia and places of shelter, but less farming disturbance and more opportunities for dispersal across the site. There will be no long-term modification impacts posed to any of the ponds.
- 4.2.3 There will be no direct impacts posed to any of the ponds located within 250m of the site and therefore no risk of loss of any breeding sites. The clearance of the farmyard will result in the permanent loss of numerous potential refugia and hibernaculum which are likely to provide key places of shelter and over-wintering sites for GCN.

- 4.2.4 No fragmentation impacts are anticipated as the site does not lie between any recorded GCN breeding ponds and therefore site development would not create any new or more significant barrier to movement. It is likely that the revised layout and use of the site will result in dispersal across the site in a northward direction becoming easier for GCN and a less risky activity due to the creation of a new hedgerow boundary and the removal of farmyard disturbance and risk factors, e.g. heavy machinery and cattle.
- 4.2.5 There will be a minor enhancement in the level of interference to GCN post-development. The majority of the site will no longer be used for livestock farming, therefore there will be a reduction in the use of heavy machinery and vehicles and a reduction in the areas disturbed by cattle. There will continue to be regular human activity and the use of vehicles across the site, but all within the core of the site and of a lesser magnitude of impact.
- 4.2.6 At the site level, the impact on GCN without any mitigation works is anticipated to be of a high magnitude. This is because of the close proximity of the development works to a number of GCN ponds and the high likelihood of GCN dispersing onto the site. During construction works, a potentially large number of GCN would therefore be at significant risk of harm. Long-term, the use of the site is anticipated to pose no significant risk to GCN, but it would take the population a significant period of time to recover from the impacts caused during construction. At the 2km level, the impact on the local GCN population could be moderate as it is likely that Ponds 2 and 5 (those closest to the site) are key breeding sites within the local meta-population. Therefore without mitigation, the likely impacts are significant and would cause a detrimental effect on the Favourable Conservation Status (FCS) of the species.

Bats

- 4.2.7 The proposed scheme will result in the permanent loss of the large open roof spaces found throughout the various wings of Building 4. There would also be the permanent loss of the roof spaces within Building 1 and significant structural and cosmetic external works to all of the buildings on site to make them suitable for residential occupancy. Buildings 1 and 4 currently support roosts of two *Myotis* species, common pipistrelle and soprano pipistrelle bats.
- 4.2.8 The re-development of the site will also result in permanent changes to the layout and composition of the site, which currently supports a high level of foraging activity by at least five species of bat. Currently the buildings are largely unoccupied and rarely used, whilst the wider site is still subject to frequent farming use and disturbance. The site also provides a low-light environment after dusk, with only occasional artificial lighting from the residential property adjacent to the south of the site. The presence of livestock and the numerous open-sheds offer sheltered habitats for invertebrates and therefore a relative abundance of prey items for bats.
- 4.2.9 Post-development interference effects associated with the scheme will comprise an increased level of human activity around the buildings (disturbance) and an increase in artificial lighting. In addition, residential land-use is likely to comprise well-kempt and well-managed ornamental/amenity habitats and outdoor areas, which may support fewer insect prey items than the current farmyard areas.
- 4.2.10 The scale of the impacts presented above is dependent to a large extent by the programme

of works for the proposed scheme. For example, summer/day roosts may only be occupied through the active period (April to September inclusive), therefore disturbance impacts only occur if works take place during the occupied period. Careful timing of the works may be used to avoid impacts where feasible and to otherwise minimise impacts wherever possible.

- 4.2.11 The anticipated scale of site level impacts are summarised in **Table 4.2.2** below. These give the scale of the impacts prior to mitigation. It is noted that although the scale of some of the individual impacts is Low, the overall **cumulative impact on bats prior to mitigation is assessed to be Medium**.

Table 4.2.2 Summary of Main Impacts on the Bat Populations on Site

Bat Feature	Development Effect	Scale of Impact		
		Low	Medium	High
Summer / Day Roost (Myotis sp., common pipistrelles, soprano pipistrelles)	Destruction		X	
	Isolation caused by fragmentation	X		
	Post-development interference	X		
Feeding / Night Roost (Pipistrelle sp. Myotis sp.)	Destruction		X	
	Isolation caused by fragmentation	X		
	Post-development interference	X		
Foraging / Commuting Habitat	Partial destruction / modification		X	
	Temporary disturbance	X		
	Post-development disturbance		X	

Nesting Birds

- 4.2.12 The scheme will result in the loss of numerous open-sided barns and open roof spaces used by nesting birds including swallow and house sparrow. The scheme will also result in the change in use of the site, from pastoral farming to residential, with an adverse impact on the availability of prey items for foraging birds. These impacts has the potential to affect the local conservation status of nesting birds through reduced nesting activity and a reduction in annual recruitment to the local populations.

4.3 Derogation Licences

- 4.3.1 As discussed above, the proposed scheme poses potentially significant adverse impacts on both the local population of GCN and at least four species of bats. These impacts mean that the proposed development will require Derogation Licences to be obtained for both GCN and bats prior to the commencement of works.
- 4.3.2 Individual GCN, GCN breeding habitat, all species of bat and all places of shelter for bats, i.e. bat roosts, are legally protected under the *Conservation of Habitats and Species Regulations*

2010 (the Habitat Regulations). These Regulations protect GCN and bats from being captured, killed, injured or disturbed and protect their habitat and places of shelter (any breeding site or resting place) from being damaged, destroyed, disturbed or obstructed. Provision is made within the Regulations for the derogation of this protection, providing certain conditions are met and this process is managed through a licensing process administered by Natural Resources Wales (NRW). To attain a license for an otherwise unlawful activity the applicant must satisfy three tests, relating to the **NEED** for the activity, the lack of any **SUITABLE ALTERNATIVES** and the **FAVOURABLE CONSERVATION STATUS** (FCS) of the species.

5 MITIGATION STRATEGY

5.1 GCN

Capture and Exclusion

- 5.1.1 The GCN mitigation strategy is based upon the goal of excluding all GCN from the footprint of all development-related activities. To achieve that goal, a line of perimeter fencing will be installed, according to best practise standards, around the perimeter of the red-line application site. Pitfall traps will be installed every 10m along the inside of this fence line and will be used to capture GCN, and any other amphibian species, for a period of at least 30 consecutive days. Once the trapping period has been completed and no GCN are caught for a minimum of 5 consecutive days, the area will be deemed clear of GCN.
- 5.1.2 To improve the trapping efficiency, a number of drift fences are also proposed, to increase the chances of amphibians encountering a pitfall trap. Drift fencing will be positioned around areas of semi-natural vegetation, primarily in the northern and eastern portions of the site. The detailed layout of fencing and pitfall traps will be provided within any subsequent GCN licence application.
- 5.1.3 Once the construction zone has been cleared of GCN, the perimeter fence will remain in situ for the duration of development works. The fence will only be removed upon full completion of the development. To facilitate construction access across the site, crossing points through the perimeter fence line will be established at the northern and south-western edges of the site, where existing access points exist. The design of the crossing point will be confirmed within the licence application, but will be such that it will allow access for construction during the day whilst still posing a barrier to GCN movement overnight.
- 5.1.4 All industry standard GCN pitfall trapping protocols as described in the GCN Mitigation Guidelines will be fully adhered to. These include the checking of traps by GCN licenced ecologists, trapping only during suitable weather conditions and ensuring that the traps are set-up to provide shelter for amphibians and a means of egress for small mammals.

Receptor Site

- 5.1.5 To minimise disturbance impacts on GCN movement and dispersal across and around the site, no single Receptor Site is allocated. Instead, it is proposed that any GCN caught in pitfall traps across the site will be placed outside of the exclusion zone and released into suitable terrestrial habitat, i.e. offering adequate shelter and connectivity away from the site.

Enhancements, Monitoring, Management and Maintenance

- 5.1.6 The new hedgerow boundary created around the northern and eastern edges of the site will be created to provide a high quality habitat corridor for GCN. The hedgerow will be a minimum of two wide and will be protected from grazing impacts by way of a stock-proof fence. The hedgerow will be planted using a mix of at least six native hedgerow species, e.g. hawthorn, blackthorn, hazel, privet, holly and guelder rose.
- 5.1.7 Ponds 3, 4 and 6 will be subject to enhancement works to improve the quality of breeding habitat available to GCN. The works will comprise the removal of over-hanging and over-shading bankside vegetation around Ponds 3 and 4 and the re-alignment of stock-proof

fencing around these two ponds to increase the area of immediate terrestrial habitat to a minimum of 3m around the perimeter. At Pond 6, stock-proof fencing will be installed to protect the pond from livestock poaching, which is having a significant impact on the existing quality of the pond. Stock fencing will be installed at a distance of 3m from the top of the pond bank and a 4m wide access for livestock to drink from the pond will be provided at the western end.

- 5.1.8 As part of the licencing requirements, there will need to be a schedule of monitoring put in place to assess the GCN population in all of the ponds surveyed in 2016. This should comprise a minimum of four GCN surveys in each of the two years following the completion of the scheme. A review of the habitat enhancements will also be undertaken during these visits and any necessary alterations to the management regime will be made.

Timing of Works

- 5.1.9 With regards to the timing of works, it is not possible to give definitive dates as it is unknown at the time of writing when development activities may commence. However, the following outline programme is recommended:

- March – June; undertake full GCN population surveys of all ponds
- June/July; prepare and submit GCN Derogation Licence application to NRW
- August/September; install GCN fencing and commence trapping effort on site
- October; complete trapping effort, remove drift fencing, commence construction works
- November – February; undertake enhancement works to nearby ponds
- During construction works; audit the condition of the perimeter fence and make repairs as necessary
- Two years post-construction; undertake GCN monitoring surveys of all ponds

5.2 Bats

Mitigation Summary

- 5.2.1 Mitigation comprises two elements i) minimising the impacts of the scheme and ii) compensating for impacts that cannot otherwise be mitigated. The key targets of the mitigation strategy for the proposed development are as follows:

- Avoid the deliberate or accidental killing, injuring or disturbance of any bats through seasonal working.
- Retain/provide roosting opportunities within the retained buildings, i.e. for summer / day roosting bats.
- Recreate a suitable open roof space in the proposed new garages, i.e. for feeding / night roosting Pipistrelle and Myotis species of bat.
- Design the site layout so that it continues to offer suitable foraging habitat, suitable flight corridors for commuting bats and suitable flight lines to the compensatory roosting features.
- Minimise the use of artificial lighting such that there are no permanent lighting columns, carefully positioned low level lighting and only movement sensor activated security lighting.
- Undertake post-development population monitoring to assess the success of the scheme and to inform any remedial actions.

Avoidance of Killing / Injuring / Disturbing Bat

- 5.2.2 Development works to Buildings 1 and 4 will only be undertaken when the building block is unoccupied by roosting bats. It is anticipated that this will be from the start of October onwards until early April. An inspection by a suitably licensed ecologist will be required (with further bat detector surveys if deemed necessary) to confirm the absence of roosting bats before the start of works. Work must start during this period and must be suitably advanced that by the time bats return to the site the buildings are inaccessible (see 5.2.4 below) and/or wholly unsuitable for roosting.
- 5.2.3 Where the licensed ecologist is uncertain as to whether bats are indeed absent, it may be necessary for them to supervise works within the roosts / roof spaces, to ensure that refurbishment works are undertaken carefully and that any bats found are carefully removed from the roost and released as is appropriate.
- 5.2.4 Once the existing buildings have been confirmed to be clear of roosting bats, it may be necessary to block all potential access points which will remain during construction with exclusion devices, to ensure no bats may return to roost during the construction period.

Retention / Creation of Roosting Opportunities

- 5.2.5 Whilst it is acknowledged that it is not possible to retain the existing open roof spaces for use by roosting bats, it is important to retain some roosting opportunities within the approximate locations of existing roosts. Therefore it is proposed that four Schwegler 1FR bat tubes (<http://www.nhbs.com/title/161276/1fr-schwegler-bat-tube>) are installed on site; one into the northern gable end on the eastern wing of Building 4, one into the eastern elevation of the eastern wing of Building 4, one into the northern elevation of the central wing of Building 4 and one into the south facing gable end of Building 1. These tubes should be installed such that they sit flush with the brickwork and so that the access slot is open and unobstructed. The locations of these integrated bat boxes will be specified on any subsequent bat licence application.

Providing a Replacement Roost

- 5.2.6 As part of the original application for the development of the site in 2010 (approved in 2011), it was agreed that two new garage blocks would be constructed to provide compensatory roosting habitat for bats. The proposed garage designs, shown in **Figures 2a and 2b**, include access via timber panels along the elevations of these garages. It is also proposed herein that the decorative recessed brickwork shown on these drawings at either gable end is replaced with genuine brickwork ventilation gaps in the same diamond format, to allow direct access into the loft spaces at the gable ends. Internally, roosting crevices will be created by installing a top batten ~20mm below the ridge beam of the lofts, and the roof tiles will be lined by traditional hessian or bitumen under-felting and a number of ribs will be made to allow bats access into the gap between felt and tiles. A selection of floorboards, roof timbers and roof tiles from the existing buildings will be retained and re-used inside the garages to encourage bat occupation.
- 5.2.7 The construction of this garage roosts will commence immediately upon the start of construction. No internal or external works, or alterations to any of the existing buildings, will take place until the compensatory roost within the garage has been fully completed. This is to ensure that there is suitable alternative roosting available for bats to use when they

return to use the site in the following early spring (March/April onwards). By this time, conversion works on the buildings are likely to be well underway, or if not, exclusion devices will still be in place, rendering these roosts inaccessible.

- 5.2.8 Suitable flight paths will be provided for bats to approach the replacement roosts, comprising vegetated and/or fully darkened corridors across the site. Flight paths and darkened corridors will be specified and detailed in any subsequent bat licence application.

Designing the Site Layout

- 5.2.9 There will be new amenity planting throughout the central portion of the site, including a number of ornamental broadleaved trees, garden lawns and ornamental shrubs. The key enhancement feature will be the new hedgerow around the northern end eastern boundary of the site, which will offer a new foraging and commuting corridor for bats. All trees and hedgerows will be of native species and will comprise stock of local provenance. This should ensure that both the layout and the functionality of the site will remain the same in terms of foraging and commuting.

Lighting Scheme

- 5.2.10 Artificial lighting has the potential to render excellent artificial roosts as unusable if positioned inappropriately, or if excessive lighting levels are used. As a result, only low level lighting will be used around the site entrance, access road, buildings and parking area, to minimise impacts on bat flight across the site. No artificial lighting will be installed at either gable end of either garage block, to ensure fully dark conditions for bat flight. Motion sensor activated security lighting will be used on the rear of the properties, provided they are directional and are positioned such that they do not splash light onto the aforementioned flight paths.

Post-development Monitoring

- 5.2.11 It is good practise to include post-development monitoring for works which include the permanent loss of existing roosts and the provision of custom-built alternative roosts. It is therefore proposed that monitoring will take place for two years following the completion of the scheme. Survey techniques will be similar to those methods used to determine roost characteristics pre-development and will comprise of a daytime inspection of boxes and bat lofts (where feasible) and a dusk survey undertaken within the period mid-May to Mid-August each year. Automated monitoring may also be used within the bat lofts.

5.3 Nesting Birds

- 5.3.1 In order to mitigate for the permanent loss of nesting bird habitat, additional artificial nesting opportunities should be provided on site. It is acknowledged that the bat lofts provided above the garages will offer open barn nesting for swallows, but it does not provide nesting habitat for traditional nesting species. It is therefore proposed that two 1SP Schwegler Sparrow Terrace boxes be installed in the northern façade of Building 4, one into the eastern façade of Building 4 and one into the western façade of Building 1. In addition, Schwegler Type 26 Brick Nest Boxes should be installed near the eaves within the brickwork on the north façade of Building 4, the south facing façade of Building 6 and the east and west facing façades of Building 1.

6 THE “THREE TESTS”

6.1 The NEED

- 6.1.1 The NEED for the scheme is to refurbish and convert an existing agricultural site and associated buildings as part of the redevelopment of the site in order to make it economically viable. The farming operation at The Bryn is no longer a financially viable agricultural entity, with the majority of the buildings either standing unoccupied and unused, or else performing a function that could easily be replicated elsewhere. Without the necessary financial motivation, the site would continue to sit unoccupied and unused until the buildings became unsafe and unsightly.
- 6.1.2 There is also a national shortage of residential properties and a local need for desirable properties such as those proposed. Therefore the proposed scheme meets the need for housing stock whilst developing an agricultural site which is no longer financially advantageous and would otherwise be left vacant with no mechanism or driver for redevelopment.

6.2 No SUITABLE ALTERNATIVE

- 6.2.1 The redevelopment as proposed is the most cost-desirable way of developing the site whilst retaining the existing red brick barns and their architectural style and aesthetic value.
- 6.2.2 Potential alternatives include the retention of the bat roosts within Buildings 1 and 4, which would result in no development of the upper levels of the buildings. However this would significantly impact the economic driver and financial viability of redevelopment and would still result in significant disturbance to the roost caused by construction works on-site.
- 6.2.3 Another alternative is to ‘do nothing’, which would result in the site being left undeveloped and with no financial driver for the upkeep or maintenance of the site and no economically viable alternative for the use of the site as an agricultural business. This scenario would ultimately result in the continued degradation of the buildings until they became too far dilapidated for occupation by bats.
- 6.2.4 It is therefore considered that there are NO SUITABLE ALTERNATIVES to the proposed redevelopment scheme.

6.3 No Impact on FAVOURABLE CONSERVATION STATUS

- 6.3.1 The FAVOURABLE CONSERVATION STATUS (FCS) of the local GCN and bat populations present on site will not be adversely affected as the proposed mitigation ensures no harm and minimal disturbance to these species during construction. There is also the provision of adequate replacement terrestrial habitat for GCN and roosting opportunities and suitable flight lines and foraging habitat for bats. Provided the habitat enhancements for GCN and the replacement bat roosts are delivered as per the proposed designs and maintained as per the requirements of any subsequent derogation licenses, then there will be no long-term adverse impacts on the FCS of these species.

7 CONCLUSION

- 7.1 Etive Ecology Ltd was commissioned by Strutt & Parker LLP on behalf of the landowner to undertake a suite of protected species surveys in relation to the proposed development of The Bryn, Hanmer, Wrexham. The site already has an existing consent for residential redevelopment which expires in August 2016. An application has been made to extend the duration of the consent.
- 7.2 The need for protected species surveys was identified following a preliminary ecological appraisal of the site earlier in 2016 (Etive Ecology, 2016a). A total of eight ponds were found within 250m of the site, two of the buildings on site were found to be potentially suitable for roosting bats and there were numerous opportunities for nesting bird. The survey methodologies employed followed industry standard guidelines and included four GCN survey visits to all ponds and one dusk emergence bat survey on the relevant buildings.
- 7.3 Five of the surveyed ponds (Ponds 3, 4, 5, 6 and 7) were found to support GCN. Ponds 3, 5 and 7 were confirmed to support breeding activity, with GCN eggs found during the survey effort. Ponds 3, 4 and 6 each supported small GCN populations, Ponds 5 and 7 supported medium sized GCN populations. Together, these ponds formed a medium sized meta-population (a peak count of 66 individuals).
- 7.4 Buildings 1 and 4 were found to support small numbers of roosting bats from at least four different species of bat. A peak count of two common pipistrelle bats, two soprano pipistrelle bats and an unconfirmed number of Myotis bats (likely to be a small number of Whiskered / Brandt's and Natterer's bats). The buildings are considered to provide summer/day roosting as well as feeding/night roosting functions. Foraging Noctules, Myotis sp. and both pipistrelle species were also recorded across the site.
- 7.5 The proposed scheme is to retain all of the red-brick buildings on site and to convert them into residential units. A number of the modern agricultural barns/sheds are to be demolished. Two new purpose-built garages are to be constructed and the site will be re-landscaped and furnished with new parking bays and ornamental areas. The main impacts identified from the proposed scheme are the risk of disturbing, injuring and killing GCN during the site clearance and construction phases, the permanent loss of buildings used by roosting bats and the risk posed to disturbing, injuring and killing roosting bats during the construction phase. Long-term post-construction impacts such as the change in use and layout of the site are anticipated to be minor. Impacts on nesting birds included habitat loss.
- 7.6 Derogation Licenses will need to be obtained from Natural Resources Wales (NRW) with regards to the impacts of the scheme on both GCN and roosting bats, in order for the scheme to progress. As part of these licenses it will be necessary to implement the scheme of mitigation and compensation measures detailed herein in order to minimise short and long-term risks and impacts on both GCN and roosting bats.
- 7.7 Compensation measures to offset the impacts posed by the scheme on GCN and bats include the fencing and trapping out of the site for GCN, the protection of immediate habitat surrounding Ponds 3, 4 and 6 from grazing impacts and the construction of dedicated purpose-built bat lofts above the two new garages on site. As part of the derogation licenses relating to both GCN and bats, there will need to be post-development maintenance and

monitoring put in place to ensure the long-term success of the mitigation and compensation measures detailed.

- 7.8 Artificial nesting habitat is also to be provided to offset the impacts of habitat loss and construction-related disturbance to nesting birds.
- 7.9 It is concluded that, provided the proposed mitigation, licensing, enhancement and management measures are implemented in full, the scheme will pose no long term significant adverse effects to the Favourable Conservation Status of GCN or bats in the local area.

8 REFERENCES

Bat Workers Manual – 3rd edition. Edited by A. J. Mitchell-Jones & A. P. McLeish. Joint Nature Conservation Committee, 2004.

Collins. J., (ed.) (2016), *Bat Surveys for Professional Ecologists; Good Practice Guidelines – 3rd edition*. The Bat Conservation Trust.

English Nature (2001), *The Great Crested Newt Mitigation Guidelines*. August 2001, Peterborough.

English Nature (2001), *Bat Mitigation Guidelines*. August 2001, Peterborough.

Etive Ecology (2016), *Proposed Redevelopment of Existing Farm Buildings; The Bryn, Hanmer, Wrexham – Ecology Report*. April 2016.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000), *Evaluating the suitability of habitat for the Great Crested Newt* (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155.

Appendix A – Figures

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Figure 1 – Proposed Site Layout

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NOTES

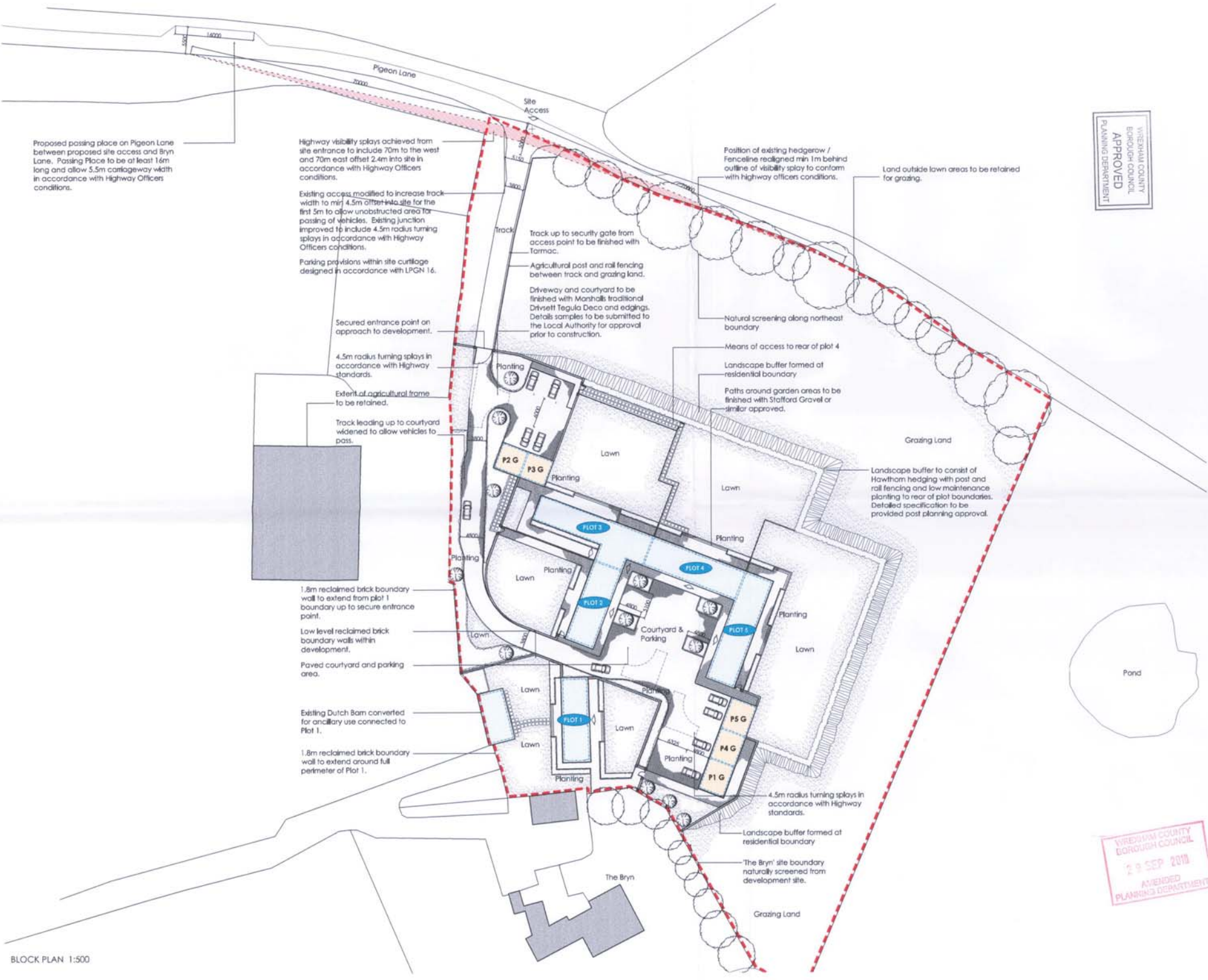
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WHERE APPLICABLE, CONSTRUCTION OF THE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE BRITISH STANDARDS.

ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE BUILDING REGULATIONS TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING REGULATIONS AND THE BUILDING REGULATIONS.

WREGHAM COUNTY
BOROUGH COUNCIL
APPROVED
PLANNING DEPARTMENT



Proposed passing place on Pigeon Lane between proposed site access and Bryn Lane. Passing Place to be at least 16m long and allow 5.5m cartage width in accordance with Highway Officers conditions.

Highway visibility splays achieved from site entrance to include 70m to the west and 70m east offset 2.4m into the site in accordance with Highway Officers conditions.

Existing access modified to increase track width to min 4.5m offset 2.4m into the site for the first 5m to allow unobstructed area for passing of vehicles. Existing junction improved to include 4.5m radius turning splays in accordance with Highway Officers conditions.

Parking provisions within site curtilage designed in accordance with LGPN 1.6.

Secured entrance point on approach to development.

4.5m radius turning splays in accordance with Highway standards.

Extent of agricultural frame to be retained.

Track leading up to courtyard widened to allow vehicles to pass.

1.8m reclaimed brick boundary wall to extend from plot 1 boundary up to secure entrance point.

Low level reclaimed brick boundary walls within development.

Paved courtyard and parking area.

Existing Dutch Barn converted for ancillary use connected to Plot 1.

1.8m reclaimed brick boundary wall to extend around full perimeter of Plot 1.

Position of existing hedgerow / Fenceline realigned min 1m behind outline of visibility splay to conform with highway officers conditions.

Land outside lawn areas to be retained for grazing.

Track up to security gate from access point to be finished with Tarmac.

Agricultural post and rail fencing between track and grazing land.

Driveway and courtyard to be finished with Monhall's traditional Drivett Tegula Deco and edgings. Details samples to be submitted to the Local Authority for approval prior to construction.

Natural screening along northeast boundary.

Means of access to rear of plot 4

Landscape buffer formed at residential boundary

Paths around garden areas to be finished with Stafford Gravel or similar approved.

Grazing Land

Landscape buffer to consist of Hawthorn hedging with post and rail fencing and low maintenance planting to rear of plot boundaries. Detailed specification to be provided post planning approval.

4.5m radius turning splays in accordance with Highway standards.

Landscape buffer formed at residential boundary

The Bryn site boundary naturally screened from development site.

Grazing Land



Total area of site outlined in red 13,241m²

KEY

- SITE DEVELOPMENT BOUNDARY
- SITE BOUNDARY WITHIN APPLICANTS OWNERSHIP
- SURROUNDING BUILDINGS
- ROADS AND BOUNDARIES

Boundary note: original Plot 1 removed	2010/01	B
Original proposal: planning consent withdrawn	2010/01	B
Current proposal: planning consent withdrawn	2010/01	B

STRUTT & PARKER LLP
Client

Change of use of former agricultural barns to form residential accommodation.

Block / Site Plan as proposed

1:500 @ A2

July 2010

Dwg. P 382 08 B

Gredington Estate
Bryn Farm
Hanmer
Whitchurch
Shropshire
SY13 3DS

THE OLD COURTHOUSE
CHURCH ROAD
NORTHOP
SHROPSHIRE
CH7 6RS

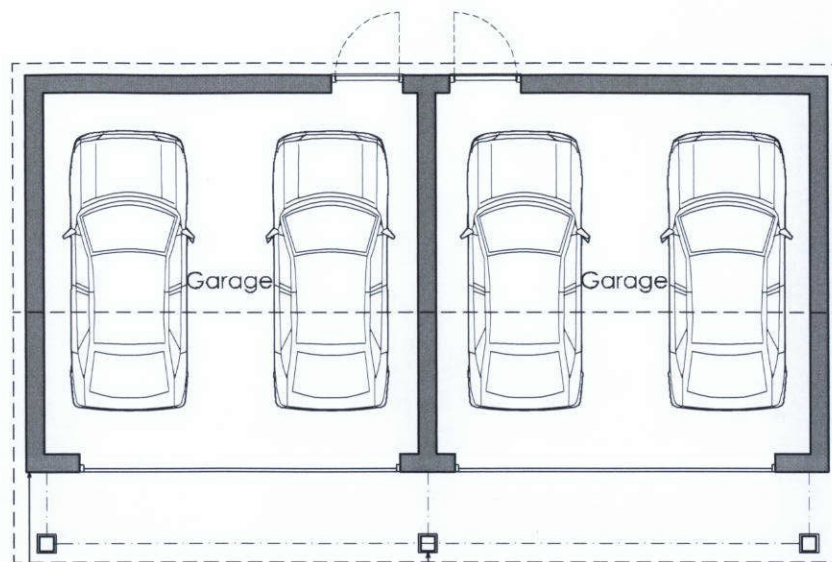
TEL +44 (0)1352 840 265
FAX +44 (0)1352 840 266
WEB www.quadproject.co.uk

WREGHAM COUNTY
BOROUGH COUNCIL
29 SEP 2010
AMENDED
PLANNING DEPARTMENT

Figure 2a – Bat Mitigation Plan (Plot 2 & 3 Garages)

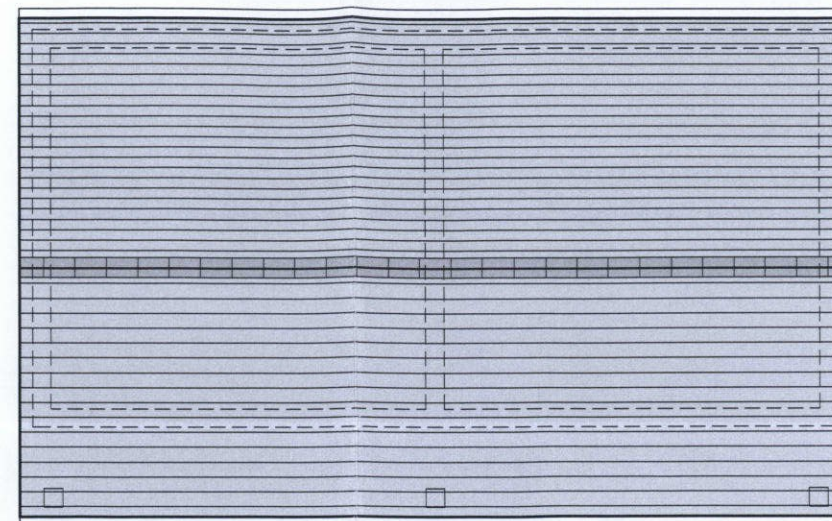
Approved Drawing P/382/13

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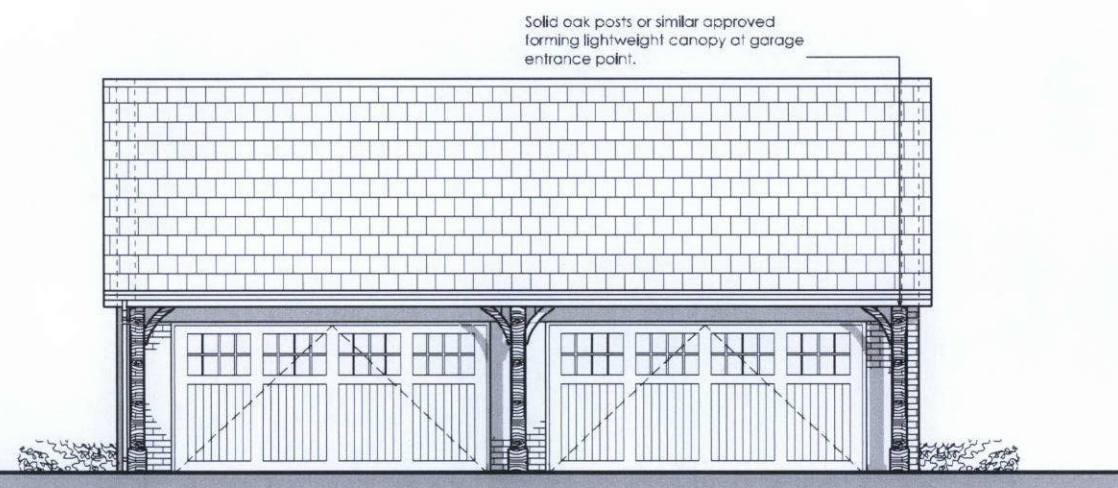


Solid oak posts or similar approved forming lightweight canopy at garage entrance point.
Slatted timber panels below canopy to provide access into contained roof void for bat roosting in accordance with consultants mitigation report.

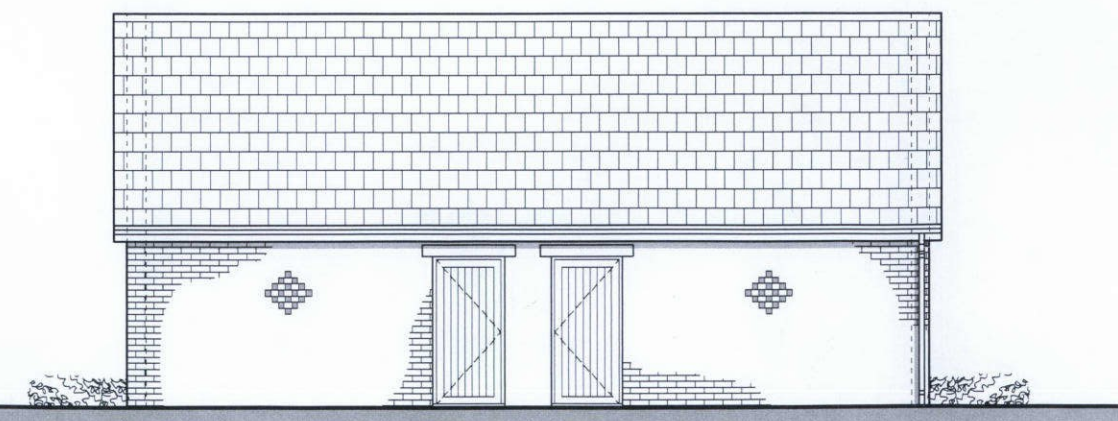
GROUND FLOOR PLAN 1:100



ROOF PLAN 1:100



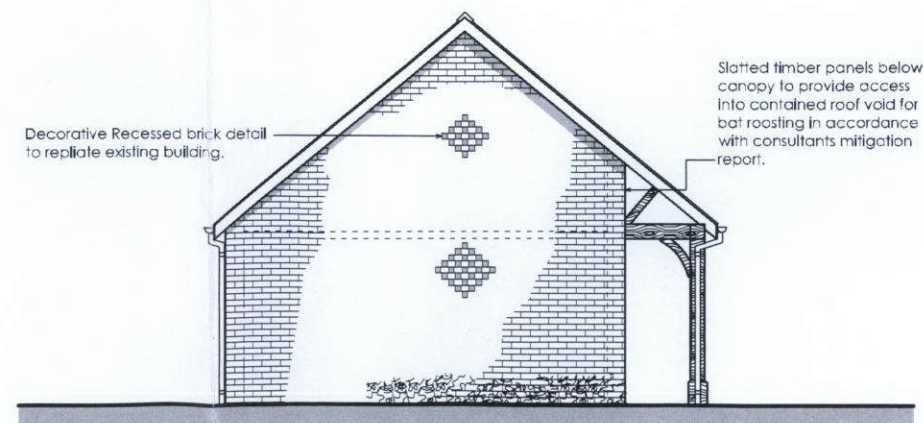
FRONT ELEVATION - NORTH EAST FACING 1:100



REAR ELEVATION - SOUTH WEST FACING 1:100



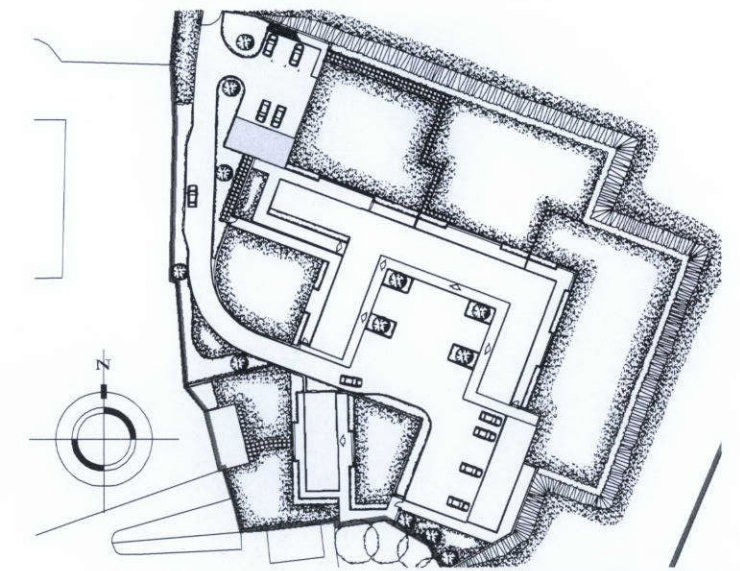
SIDE ELEVATION - NORTH WEST FACING 1:100



SIDE ELEVATION - SOUTH EAST FACING 1:100

Material Specification.
Roof: Natural Slate roof to match existing building. Timber weather vane to be painted or stained. Painted timber fascia and soffit boards. Colour to be agreed with planning officer.
Walls: Reclaimed bricks to match existing building. Colour profiles to be agreed with planning officer. Feature brick detailing to side gables and rear elevation to replicate main building.
Windows / Doors: Painted timber windows and doors. Colour profile to be agreed with planning officer.
Rainwater goods: Cast aluminum half round gutters and downpipes.
Other: Canopy over garage entrance point to be constructed in solid oak or similar approved.

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SITE LOCATION KEY: NTS

Plot 2 & 3 garages linked to form one block.	22.07.10	A
details	date	rev

STRUTT & PARKER LLP

Client

Change of use of former agricultural barns to form residential accommodation.

Plot 2 & 3 Garages-Plans & Elevations as proposed

1:100 @ A3

July 2010

Dwg. P 382 14 A

Gredington Estate
Bryn Farm
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QUAD

Figure 2b – Bat Mitigation Plan (Plots 1, 4 & 5 Garages)

Approved Drawing P/382/14/A

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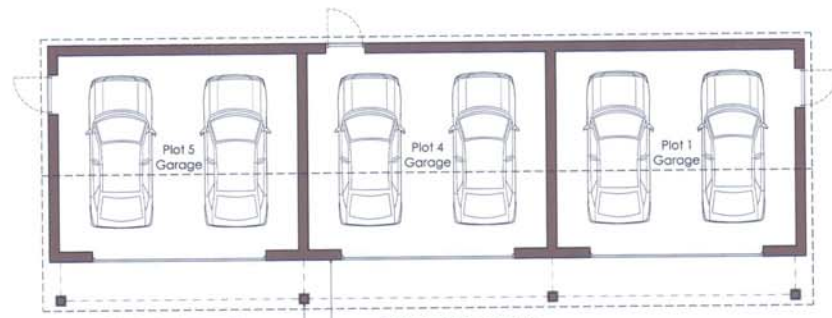
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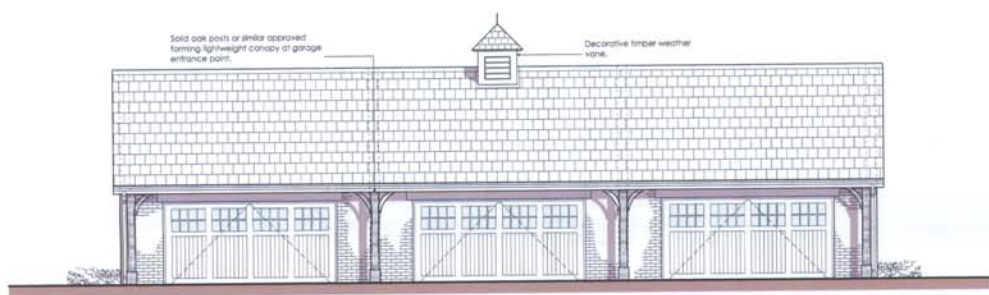
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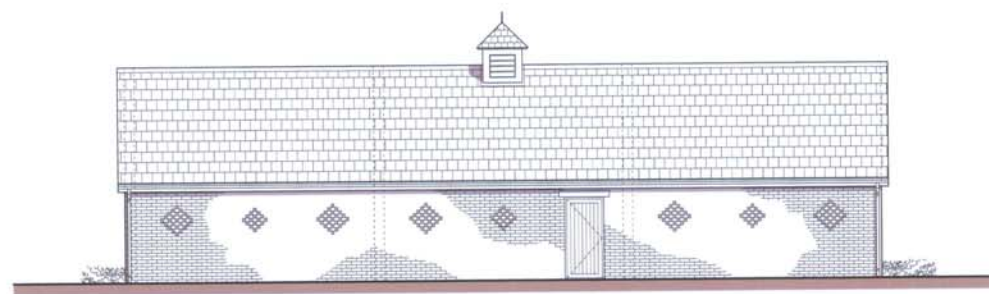
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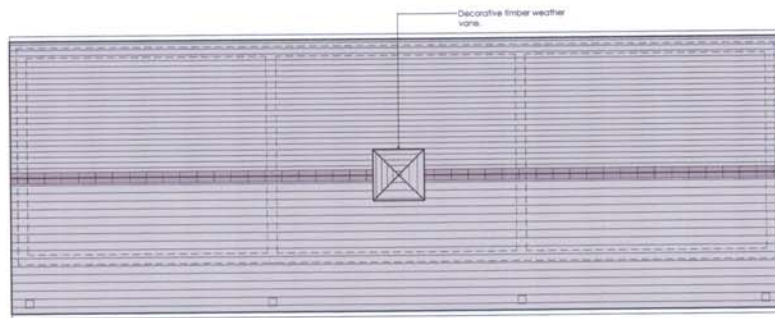
GROUND FLOOR PLAN 1:100



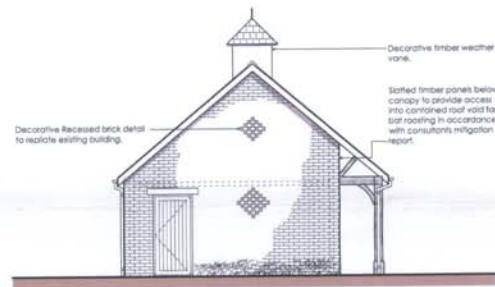
FRONT ELEVATION - NORTH WEST FACING 1:100



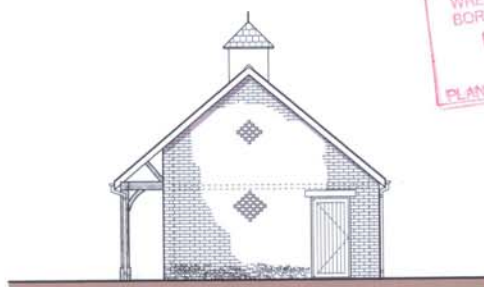
REAR ELEVATION - SOUTH EAST FACING 1:100



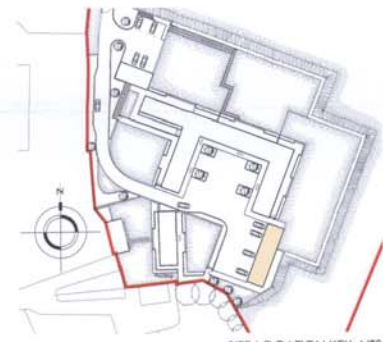
ROOF PLAN 1:100



SIDE ELEVATION - NORTH EAST FACING 1:100



SIDE ELEVATION - SOUTH WEST FACING 1:100



WREXHAM COUNTY BOROUGH COUNCIL
17 AUG 2010
AMENDED
PLANNING DEPARTMENT

WREXHAM COUNTY BOROUGH COUNCIL
APPROVED
PLANNING DEPARTMENT

STRUTT & PARKER LLP
Client

Change of use of former agricultural barns to form residential accommodation.
Plot 1, 4 & 5 Garages - Plans & Elevations as proposed
1:100 @ A2
April 2010
Dwg. P.382.13

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