



ETIVE ECOLOGY Ltd

**Proposed Residential Development
Home Farm, Hanmer, Wrexham
Protected Species Report**

Produced for:



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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 Carter Jonas on behalf of the landowner in July 2022 to undertake a suite of protected species in relation to the proposed development of Home Farm, Hanmer, Wrexham. The site is centred on National Grid Reference SJ 4500 3943.
- 1.1.2 The site currently a redundant farmyard and comprises a number of farm buildings surrounded by hard-standing. There are small pockets of grassland, 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 The site has previously been subject to successful planning applications to develop the site for residential use; P/2008/1146 in 2011, which was extended in 2016 under planning ref P/2016/0424. Etive Ecology undertook a suite of ecology surveys in 2016 to inform the successful application to extend the planning consent. This consent has now expired and the landowner / applicant is seeking a new planning consent for the same scheme.

1.2 Previous Study

- 1.2.1 As noted above, Etive Ecology Ltd undertook a suite of ecology surveys in 2016 of the site and immediately surrounding land. This included:
- Extended Phase 1 Habitat Survey.
 - GCN HSI Appraisal of 4 ponds <250m.
 - GCN presence/absence Surveys of 4 ponds <250m.
 - 2 x Bat Detector Surveys.
 - 30 days of Badger Sett Monitoring.
- 1.2.2 The findings of these surveys are presented in two reports (Etive Ecology 2016a and 2016b). In summary, the site supports no high value habitats. Three of the four ponds were of good suitability to support GCN and all four were included in the presence/absence survey effort. Two of the ponds (Ponds 2 and 3) were found to support small populations of GCN and together form a small meta-population of GCN. The existing buildings were found to support summer / day roosts for small numbers (<5 individuals) of *Myotis* sp., common pipistrelle and soprano pipistrelle bats. Badgers were confirmed to be absent from the mammal hole. Nesting birds including numerous pairs of swallow were recorded on site.
- 1.2.3 It was concluded that the risk posed to GCN was minor and could be managed via the implementation of Reasonable Avoidance Measures (RAMs). A European Protected Species (EPS) License would however be required with regards to the impacts on roosting bats, with all of the roost sites being lost to the scheme. Mitigation measures, as proposed as part of the 2008 application, were still deemed to be appropriate.
- 1.2.4 Bat inspection surveys of the site were originally undertaken by Ecotrack (2008) in relation to proposed residential development. The survey effort comprised one daytime survey to inspect all of the farm buildings, undertaken in June 2008. The survey identified bat droppings in Buildings C and D, thought to be from brown long-eared bats. The resulting recommendation was for the undertaking of bat emergence and activity surveys to determine the nature of bat activity. It was also recommended that a derogation licence

would need to be obtained from Natural Resources Wales (NRW) in order for the scheme to progress.

1.2.5 The 2011 consented scheme included a detailed specification for compensatory bat habitat. This scheme is described by Approved Drawing No. 10, which includes a new bat loft built above the garage block located in the eastern corner of the site, with access provided for bats in the open loft space, the ridge tiles, the roof tiles and the cavity walls. Planning Condition 10 of the 2011 consent also states that this garage block must be completed before works on any other part of the development commences. Approved Drawing No. 10 is included at **Figure 2** in **Appendix A**.

1.2.6 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;

- Four ponds within 250m of the site, all with the potential to support great crested newts (GCN).
- Two large traditional red-brick farm buildings with the potential to support roosting bats (Buildings C and D).
- A single hole badger sett beneath the concrete floor of one of the farm buildings.
- Two statutory designated sites for nature conservation located immediately adjacent to the site.

1.3 Scope of this Report

1.3.1 The report documents the findings of GCN HSI appraisals and a suite of bat detector surveys of the buildings at Home Farm. 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 and bats 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 and bats. 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. GCN surveys were undertaken in 2016 and are therefore now out of date. The HSI Appraisal has been undertaken now to provide an update on the current condition of the ponds and to assess the likelihood as to GCN presence/absence. The HSI results from both 2016 and 2022 are presented here and compared to the 2016 presence/absence survey findings.

2.2 Bat Detector Surveys

- 2.2.1 Buildings C and D were confirmed to support roosting bats in 2008 and 2016. In 2016, two dusk bat detector surveys were undertaken on each of these two buildings, to confirm the survey findings from 2008.
- 2.2.2 In 2022, 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 establish the nature of roosting bat usage of these buildings such that it would be possible for the LPA to approve the new planning application. Therefore, a total of three bat detectors surveys (two dusk and one dawn) were undertaken.
- 2.2.3 Bat detector survey were undertaken on 13th July (dusk), 26th July (dusk) and 8th August (dawn). The locations of surveyors during the bat surveys are shown in Plate 3.3. Additionally, an automated bat detector was placed inside Building C prior to the start of the second survey, and was collected after the third survey.
- 2.2.4 Dusk surveys 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. Dawn surveys commenced 90 minutes prior to sunrise and ceased 15 minutes after sunset.
- 2.2.5 The surveyors were using a variety of different detection devices across the three surveys, including an SM4, EMTouch, a BatScanner and a Batlogger M. Bat activity was recorded on each occasion and analysed using Kaleidoscope software.

2.3 Limitations

- 2.3.1 Access was made available to all of the ponds within 250m of the site, to allow surveys to take place where necessary. Access was also made available into all of the buildings on site, however, the structural condition of the first floor level of Buildings C and D was such that it was not deemed safe for the surveyor to conduct a full internal inspection of these spaces.
- 2.3.2 Weather conditions for all bat surveys were considered to be suitable. Temperatures were not less than 10°C for bat surveys. During bat surveys 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
- 2.3.3 The GCN HSI Appraisals were undertaken following one of the UK's driest and hottest summers on record. As a result water levels within ponds were expected to be significantly lower than a normal summer. Where water was absent from ponds, a judgement was made based on the presence of marginal and aquatic vegetation, to determine whether the pond had recently held water and to what extent.

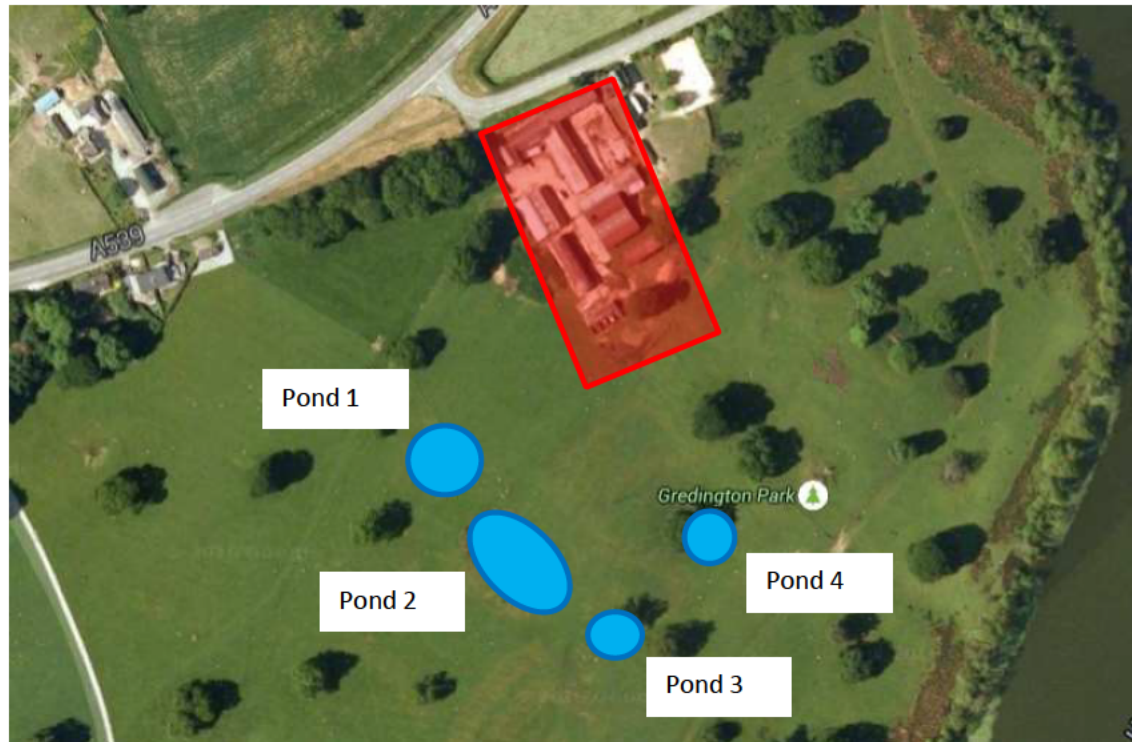
- 2.3.4 All of the survey effort was led by Russell Grey (BSc, MCIEEM, CEnv), a licenced GCN surveyor and bat surveyor.
- 2.3.5 There are considered to be no significant limitations to the undertaking or accuracy of the bat or GCN surveys.

3 RESULTS

3.1 Habitat Suitability Index

3.1.1 A total of 4 No. ponds are shown on Plate 3.1.1 below within 250m of the site. All of these ponds were subject to HSI assessment. The waterbody on the eastern edge of Plate 3.1.1 is Hanmer Mere and is too large to be considered a potentially suitable water-body for GCN.

Plate 3.1.1 Ponds within 250m



3.1.2 The findings of the 2022 HSI assessments are presented in Table 3.2.1 below.

Table 3.2.1 HSI Assessment Summary (2022)

Pond	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	HSI
1	1	0.1	0.5	0.67	1	1	1	1	0.33	1	0.64
2	1	0.3	0.9	0.67	1	1	1	1	0.33	1	0.75
3	1	0.1	0.5	0.67	1	1	1	1	0.33	0.5	0.59
4	1	0.1	0.5	0.67	1	1	1	1	0.33	0.8	0.62

3.1.3 The 2022 HSI appraisal found Pond 2 to be of 'Good' suitability to support breeding GCN, with Ponds 1 and 4 of 'Average' suitability and Pond 3 of 'Below Average' suitability. Table 3.2.2 below compares these findings to the 2016 GCN survey data.

Table 3.2.2 Comparison of GCN Findings

Pond	2016 HSI	2022 HSI	2016 Presence / Absence
1	0.71	0.64 (↓0.07)	Absent
2	0.76	0.75 (↓0.01)	Present
3	0.59	0.59	Present
4	0.73	0.63 (↓0.1)	Absent

- 3.1.4 The survey information appears to indicate a small decline in the suitability of the four ponds <250m of the site to support GCN. However, this apparent trend should be considered within the context of the prevailing summer weather conditions (hot and dry), which meant that Ponds 1, 3 and 4 were virtually dry and had no extensive areas of standing water. The vegetation present within these ponds indicates that all three do still hold water during the Springtime (amphibian breeding season) and that they are likely to hold water during normal summer conditions. The 2016 survey effort also noticed that water levels did fall within all four ponds throughout the survey season.
- 3.2.5 Therefore, it is concluded that the survey findings from 2016 remain valid and provide a reasonably accurate reflection of the GCN status local to Home Farm. The size class population for ponds within 250m of Home Farm is Small. 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.

3.3 Bat Surveys

- 3.3.1 All surveys were undertaken under suitable weather conditions for bat activity. Details of survey conditions are detailed in Table 3.3.1 below.

Table 3.3.1 Weather Conditions during surveys

Survey ID	Date	Conditions
Dusk 1	13/07/22	15°C, 5mph, dry, 0% cloud
Dusk 2	26/07/22	10°C, 3mph, dry, 50% cloud
Dawn	08/08/22	11°C, 2mph, dry, 0% cloud

Dusk Survey 1 (Sunset @ 21.32)

- 3.3.2 The first bat encountered was **a soprano pipistrelle seen to emerge from beneath the ridge tile in the eastern gable end of Building C** at 21.47. The next bat encountered was **a common pipistrelle seen to emerge from the south-facing open window of Building B** at 21.59. This bat was **followed by at least another 4 common pipistrelles**, emerging from the same window but also re-entering and foraging through Buildings A and B. At 22.04 **a soprano pipistrelle emerged from the open window in the eastern gable end of Building C**.
- 3.3.3 General bat activity across the site comprised numerous passes from Noctule bats (peak count of 8 passes) from 21.58 onwards, continuous common pipistrelle activity from 21.59 to the south of Buildings B and C (peak count of 92 passes) and frequent soprano pipistrelle activity from 21.47 (peak count of 30 passes). In addition, there were three passes of Myotis sp. bats (likely whiskered) with the first at 22.11, recorded by the surveyors at the southwest and northeast corners of the site, although none were seen.

Dusk Survey 2 (Sunset @ 21.16)

- 3.3.4 The first bat encountered was **a common pipistrelle emerging from the southern window in Building B at 21.38. A further three common pipistrelles were seen to emerge from this window up to 21.51. At 21.54 a single soprano pipistrelle was seen to emerge from the**

open window in the eastern gable of Building C.

- 3.3.5 General bat activity across the site comprised numerous passes from Noctule bats (peak of 8 passes) and continuous common pipistrelle (peak of 96 passes) and soprano pipistrelle activity (peak of 27). A peak of six Myotis bat passes (likely whiskered) were recorded, although no bats were seen due to the low light conditions at the time. The first Myotis recording was at 22.07 by the surveyor at the southwest corner of the site.
- 3.3.6 A static detector was left inside Building C at the start of the dusk survey. The device recorded predominantly common pipistrelle activity during the dusk period, as well as a single Myotis at 22.36 and occasional Noctule passes (presumably from bats external to the building). The detector was left inside the building until the end of the dawn survey two weeks later.

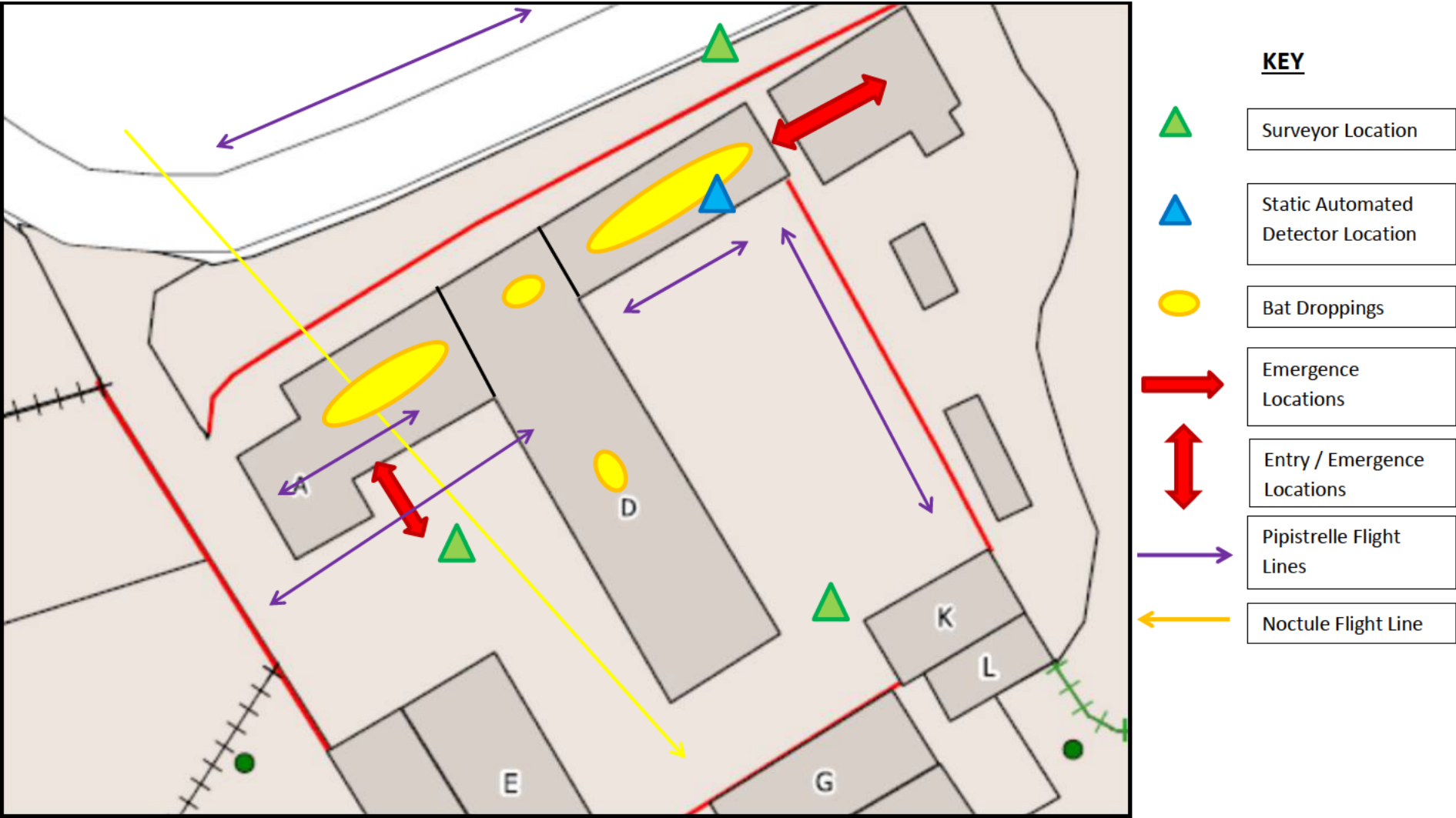
Dawn Survey (Sunrise @ 05.38)

- 3.3.7 At the start of the dawn survey, activity from both Myotis sp (likely whiskered) and brown long-eared bats was recorded but not seen by the surveyors to the south of the buildings. **A single bat was observed to enter the building; a common pipistrelle via the window in the southern elevation of Building B** at 04.37.
- 3.3.8 Overall, the level of activity was low compared to the dusk surveys. Peak counts of bat passes were 14 for common pipistrelle, 14 for soprano pipistrelle, 5 for Noctule, 5 for Myotis sp. and 3 for brown long-eared.

Automated Monitoring

- 3.3.9 A static detector was left inside Building C for a period of two weeks between the second dusk survey the dawn survey. During this period the detector recorded primarily common pipistrelle activity, with occasional Myotis sp (whiskered and Natterer's bats) during the dusk period and rare passes of Noctule and soprano pipistrelle.

Plate 3.3.1 Bat Survey Results



Nesting Birds

- 3.3.10 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.

Summary of Findings

- 3.3.11 In summary, the bat activity associated with the farm buildings at Home Farm can be characterised as follows:
- Dusk Survey 1; a summer / day roost for a small number of common pipistrelles and soprano pipistrelles. Feeding / night roost for a small number of Myotis sp. (likely whiskered).
 - Dusk Survey 2; a summer / day roost for a small number of common pipistrelles and soprano pipistrelles. Feeding / night roost for a small number of Myotis sp. (likely whiskered).
 - Dawn Survey; a summer / day roost for a small number of common pipistrelles. A likely summer / day roost for individual Myotis sp. (likely whiskered) and brown long-eared bats.
 - Automated Monitoring; frequent foraging activity by common pipistrelles within the barn. Likely summer / day roost for individual brown long-eared and Myotis sp. (whiskered and Natterer's bats).
- 3.3.12 It is concluded that Buildings B, C and D are used as a summer / day roost by a small number of individual (male) Myotis sp., brown long-eared, common pipistrelle and soprano pipistrelle bats. The buildings are also used as a feeding / night roost by a small number of common pipistrelle and Myotis sp. bats (whiskered and Natterer's). 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.

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 A, B, C, D and E to residential units.
- Conversion of Building K to garage block.
- Demolition of Buildings F, G, H, I and L.
- Retention of the existing site access for residential use.
- Re-landscaping around the southern side of the buildings to create new garden areas, car parking and vehicle access/turning arrangements.
- Creation of new grazing pasture in the footprint of Buildings G, H, I and L.
- Construction of a new agricultural building to the south of the new grazing pasture, to replace the minor agricultural function of the existing site.
- Retention of existing brick wall boundaries and creation of new boundary features to the south of the site around the new grazing pasture and agricultural building.

4.1.2 **Figure 1** illustrates the proposed layout of the developed site. The anticipated impacts on GCN and bats badgers are detailed below.

4.2 Likely Impacts

GCN

- 4.2.1 There is a risk that GCN may be present within the development footprint, as although the site comprises little semi-natural habitat, there are occasional pockets of suitable refugia and the site is within 100m of the main GCN breeding pond. Development of the site would therefore pose a risk of harming, injuring and disturbing individual GCN during construction works. It is considered that this risk is very low given the small sized GCN population present in Ponds 2 and 3, and the lack of suitable connecting habitat between the ponds and the development footprint.
- 4.2.2 The re-developed site will comprise a more suitable mix of habitats for GCN than the existing. However, there will still be a significant level of disturbance as a result of residential occupancy rather than farming. It is concluded that there will be a neutral long-term impact on GCN as a result of site modification.
- 4.2.3 It is anticipated that the proposed scheme poses no risk of impacting any breeding sites or indeed any key over-wintering site or other key places of shelter.
- 4.2.4 There are no long-term fragmentation or isolation impacts anticipated as a result of the scheme. The development footprint lies between 95m and 125m to the north of the two GCN breeding ponds and is already utilised for occasional agricultural purposes. The busy A539 is located immediately adjacent to the north of the site and is already a significant barrier to GCN dispersal to the north. In addition, there are at least ten ponds located within 750m to the southwest of Ponds 2 and 3, which are well connected via semi-natural habitats. It is therefore anticipated that any GCN dispersal and inter-connectivity is likely to be in a southerly direction, i.e. away from the development footprint.

- 4.2.5 Post-development the site will change from an agricultural site to a residential site. This modification will result in much the same interference impacts on GCN, i.e. the presence of regular vehicle movements, artificial site drainage, hard surfaces and frequent human activity. Therefore, it is anticipated that the proposed scheme will pose no change in interference impacts on GCN.
- 4.2.6 The anticipated scale of the impacts detailed above on GCN, prior to mitigation, is Low. This is because there would be only a short-term risk of harming/disturbing GCN prior to the start of development works, and no significant adverse impacts after this point. This scale of impact will have no 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 open and connected roof spaces found in Buildings B, C and D, and significant structural and cosmetic external works to all of the buildings on site to make them suitable for residential occupancy. Buildings B, C and D currently support roosts of Myotis, 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 moderate level of foraging activity by at least six species of bat. Currently the buildings are largely unoccupied and rarely used, whilst the wider site is still subject to occasional agricultural 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 east of the site. The agricultural use and 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 (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 redundant 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 scale of the majority of the individual impacts is Low, however 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	

Badgers

- 4.2.12 As badgers have been found to be absent from the site and the existing sett found to be inactive and likely abandoned, no likely impacts on this species have identified.

4.3 Derogation Licences

- 4.3.1 As noted in paragraph 4.2.6, the anticipated impacts on GCN are assessed to be minor and do not have the potential to impact the FCS of the species. Furthermore, these potential impacts can be adequately and effectively mitigated through the implementation of Reasonable Avoidance Measures (RAMs). It is therefore concluded that **a Derogation Licence for GCN will not be required** for the scheme, provided the RAMs and mitigation measures detailed in Section 5 are implemented.
- 4.3.2 The proposed scheme will result in the permanent loss of roosting habitat for up to five species of bat as well as short term disturbance to the surrounding site and the modification of the site layout and change in usage. These impacts mean that **the proposed development will require a Derogation Licence for bats to be obtained prior to the works being undertaken.**
- 4.3.3 All bats and bat roosts are legally protected under the *Conservation of Habitats and Species Regulations 2010* (the Habitat Regulations). These Regulations protect bats from being captured, killed, injured or disturbed and protect their roosts (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

Reasonable Avoidance Measures

5.1.1 The low risk posed to disturbing and harming GCN and other amphibians during the site work should be mitigated through the implementation of a scheme of Reasonable Avoidance Measures (RAMs). The RAMs are designed to minimise the risk of GCN being present on site during works, to ensure that the site is thoroughly checked for GCN pre-commencement of the works and to help to prevent GCN becoming at risk of harm for the duration of development works.

5.1.2 The scheme of RAMs is as follows:

- Site clearance works are to commence outside of the hibernation period for GCN, which is taken as October to February inclusive. Outside of this period, there is a low risk that GCN will be present within the development footprint which contains occasional potentially suitable hibernaculum.
- Site clearance works are to be undertaken under the full supervision of a GCN-licensed ecologist. Site clearance is deemed to include the demolition and removal of any existing buildings/structures, the removal of surface vegetation, rubble or other detritus, the breaking or lifting of existing concrete slabs or foundations, and the removal of any fencing or walling.
- For the full duration of construction works, a tidy-site policy should be implemented, including the following measures:
 - All materials are stored off the ground on stillages or pallets.
 - All rubble/spoil arising from works is skipped or removed from site on a daily basis.
 - Any excavations left overnight should either be back-filled and compacted or else covered by plastic sheeting and secured by plywood batons to prevent amphibians from becoming trapped within them.
 - Pre-start checks of working areas should be undertaken each morning.
 - All site workers should be made aware of the potential presence of GCN and an identification sheet should be kept on site in case any amphibians are encountered.
 - **If any GCN are found, work should cease immediately and a suitably experienced GCN-licensed ecologist contacted for advice.**

Mitigation Measures

5.1.3 To ensure that there is no long term impact on the suitability of the site for GCN, it is recommended that the landscaping scheme provides suitable semi-natural habitats for amphibians. All boundaries, including those between ornamental garden areas, should be marked by mixed native hedgerows rather than fence-lines; including the boundaries extending beyond the residential development and around the proposed grazing land and agricultural building to the south. A total of three artificial hibernaculum (brick and other rubble, piled to 1m height, covered in soil and allowed to vegetate) should be created around the southern edge of the site to provide replacement terrestrial refugia for GCN.

- 5.1.4 To offset the minor impacts posed by the development works on the local population of GCN, it is also recommended that the immediate habitat surrounding Pond 2 is protected from grazing impacts through the installation of stock-proof fencing. The fencing should be installed with an offset of 2m from the top of the pond bank and an access point for livestock to drink should be created on the south-eastern side of the pond, where there are existing hawthorn bushes overhanging the pond. This access should be not more than 4m wide and fencing should extend down either side and into the water, such that during times of low water level, livestock will still be unable to access other areas of the bank.

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, Myotis and brown long-eared bats.
- 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 the block of Buildings B, C and D 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 building is 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 roost / roof space, 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 building block has 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 space 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; two into the north-facing elevation of Building B/C and two into the south-facing elevation of Building C. 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 2008 (approved in 2011 and extended in 2017), it was agreed that garage block in the eastern corner of the proposed site (Building K) would be constructed to provide compensatory roosting habitat for bats. The proposed garage design, as shown in **Figure 2**, includes an open roof space accessible via slots in the brickwork at either gable end, two hatch-style openings for bat to enter whilst 'in-flight', and a number of lead access tiles in both sides of the roof. In addition, roosting crevices will be created by installing a top batten ~20mm below the ridge beam of the loft, and the external walls will be constructed to provide a 30mm cavity into which bats will be able to access via purposely located open mortar joints in the external walls. The overall footprint of the garage will be approximately 18.4m x 6m, with the loft space occupying the full footprint, with an apex height of 2.8m from the first-floor level. A selection of floorboards, roof timbers, roof tiles and bat droppings from the existing buildings will be retained and re-used inside the garage to encourage bat occupation.
- 5.2.7 The construction of this garage roost 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 across much of the site, including a number of ornamental broadleaved trees. All of the interior boundaries around the individual garden plots will be marked by native hedgerows rather than fencing, to ensure there are suitable corridors for foraging and commuting bats. All trees 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 within 10m of the garage block which provides the compensatory roost. 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 an existing roost 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 loft (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 loft.

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 loft provided above the garage 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 C and two into the western façade of Building E. In addition, Schwegler Type 26 Brick Nest Boxes should be installed near the eaves within the brickwork on the east gable end of Building C, the west gable end of Building A, the eastern façade of Building D and the western façade of Building D.

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. Home Farm 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 a former agricultural site which 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 B, C and D, which would result in no development of these sections 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 bat populations present on site will not be adversely affected as the proposed mitigation ensures no harm and minimal disturbance to bats during construction. There is also the provision of adequate replacement roosting opportunities and the provision of suitable flight lines and foraging habitat to support bats. Provided the replacement roosts are constructed as per the proposed designs and maintained as per the requirements of any subsequent bat licence, then there will be no long-term adverse impacts on the FCS of the species.

7 CONCLUSION

- 7.1 Etive Ecology Ltd was commissioned by Carter Jonas on behalf of the landowner to undertake a suite of protected species surveys in relation to the proposed development of Home Farm, Hanmer, Wrexham. The site has previously been subject to planning consent for residential redevelopment which recently expired. This report is to inform an application for an identical scheme to that which was previously approved.
- 7.2 The need for protected species surveys was identified as a result of previous surveys in 2008 and 2016 confirming the presence of GCN and roosting bats. A total of four ponds were found within 250m of the site (two of which supported GCN in 2016), two of the buildings on site were found to support roosting bats and a former single-hole badger sett was also found on site. The survey methodologies employed followed industry standard guidelines and included HSI assessments of all four ponds, three bat detector surveys on the relevant buildings and a reinspection of the former badger sett.
- 7.3 Three of the four ponds (Ponds 1, 2 and 4) were found to be of lower suitability to support GCN in 2022 than in 2016, based on HSI assessments. Pond 3 had not changed in terms of its suitability. GCN had previously been recorded in Ponds 2 and 3 in 2016. Based on the HSI findings, it is concluded that GCN are still likely present within these ponds, at a similar population size to that found in 2016; the two ponds each supported small GCN populations and together they formed only a small population (a peak count of <10 individuals).
- 7.4 Building B was found to support a day / summer roost for a small number of common pipistrelle bats. Buildings C and D were found to support day / summer roosts for a small number of soprano pipistrelles, *Myotis* sp. (whiskered and Natterer's) and brown long-eared bats. Foraging Noctules, *Myotis* sp. and pipistrelle bats were also recorded across the site.
- 7.5 The former badger sett was fully inspected and was found to be inactive and no longer suitable to support badger.
- 7.6 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. A new purpose-built garage is to be constructed and the site will be re-landscaped and furnished with new parking bays. The main impacts identified from the proposed scheme are the risk of disturbing, injuring and killing GCN during the site clearance phase, 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.
- 7.7 A scheme of RAMs has been detailed to minimise, manage and mitigate the likely impacts posed to GCN by the proposed scheme. The impacts on GCN are not considered to pose a significant risk to the FCS of the species, thus there should be no requirement for a derogation licence to be obtained. However, a derogation license will need to be obtained from Natural Resources Wales (NRW) with regards to the impacts on roosting bats, in order for the scheme to progress. As part of that license 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 roosting bats.

- 7.8 Compensation measures to offset the impacts posed by the scheme on GCN and bats include the protection of immediate habitat surrounding Pond 2 from grazing impacts and the construction of a dedicated purpose-built bat loft above the new garage on site. As part of the derogation licence relating to 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.
- 7.9 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; Home Farm, Hanmer, Wrexham – Ecology Report*. April 2016.

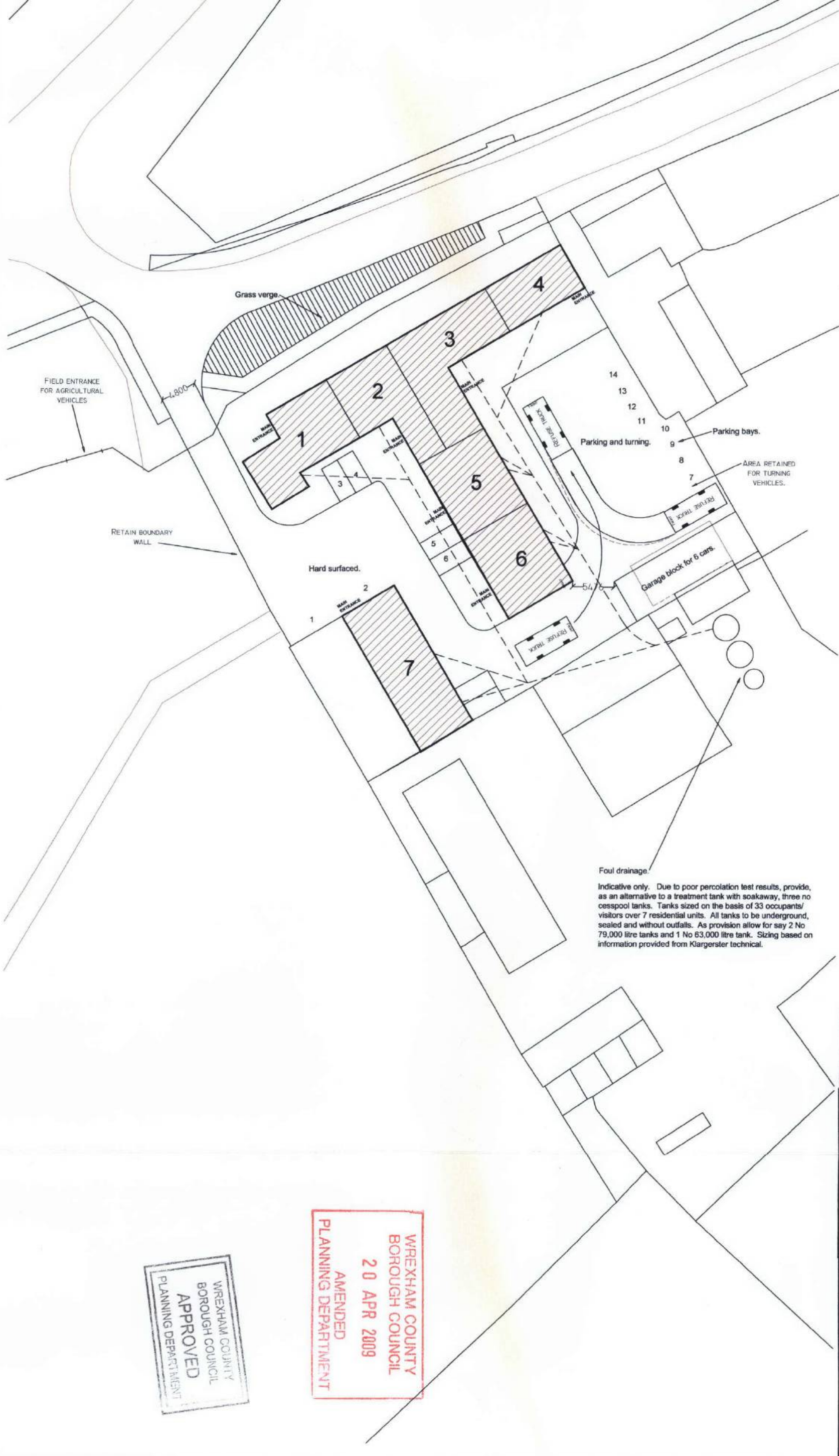
Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000), *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

Appendix A – Figures

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Figure 1 – Proposed Site Layout

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Indicative only. Due to poor percolation test results, provide, as an alternative to a treatment tank with soakaway, three no cesspool tanks. Tanks sized on the basis of 33 occupants/visitors over 7 residential units. All tanks to be underground, sealed and without outfalls. As provision allow for say 2 No 79,000 litre tanks and 1 No 63,000 litre tank. Sizing based on information provided from Klagerster technical.

F	17-4-09	Details of foul drainage provision confirmed and annotated. Indicative drainage runs shown from units.	PRA
E	8-4-09	Auto track placed on drawing as requested by planning.	PRA
D	6-4-09	Minor amendments as requested to main entrance, field access and annotation of turning area within site.	PRA
C	17-3-09	Further amendments to site circulation, access and Autotrack for refuse vehicle depicted.	PRA
B	12-3-09	Site circulation and parking layout amended as suggested layout from Planning.	PRA
Rev	Date	Revision Note	By



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job title: Gredington Home Farm Conversion Scheme		
client: Gredington Estate		
drawing title: Site Plan		
drawn by: mas	date: May	scale @ A3: 1:500
job number: J2586	drawing number: 09	rev: F

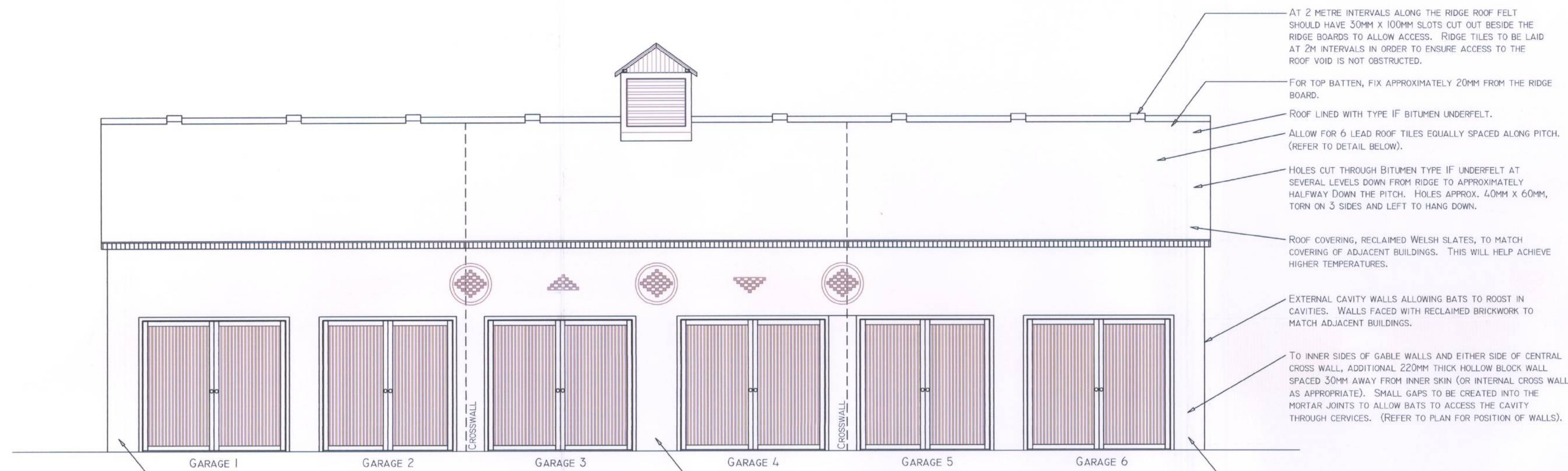
WREXHAM COUNTY
BOROUGH COUNCIL
APPROVED
PLANNING DEPARTMENT

WREXHAM COUNTY
BOROUGH COUNCIL
20 APR 2009
AMENDED
PLANNING DEPARTMENT

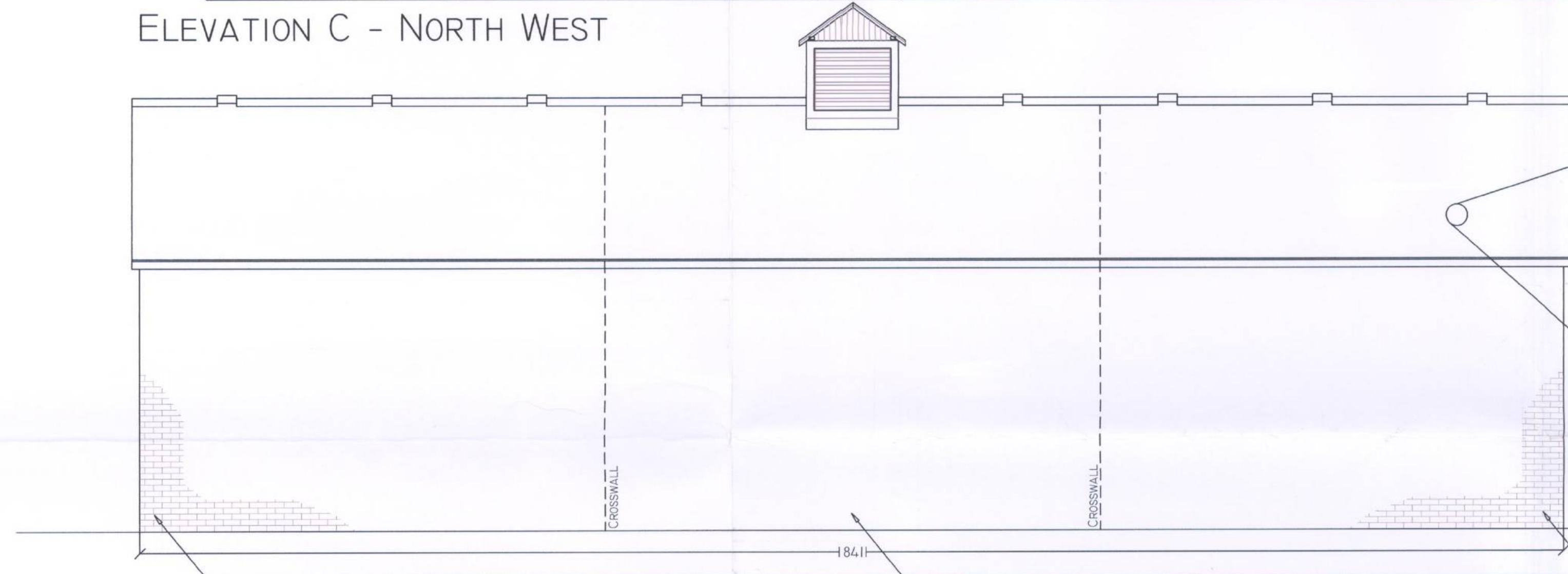
Figure 2 – Existing Bat Mitigation Details

Approved Drawing No. 10

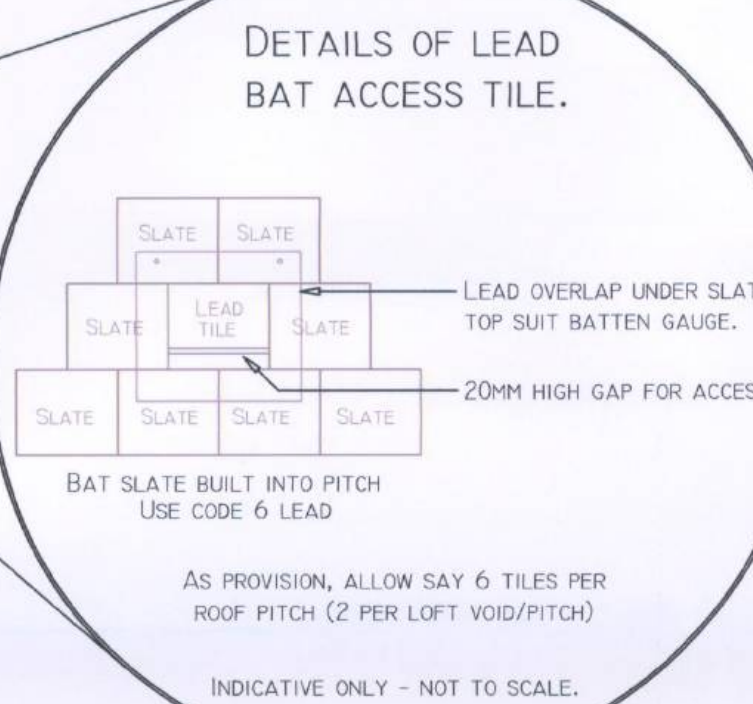
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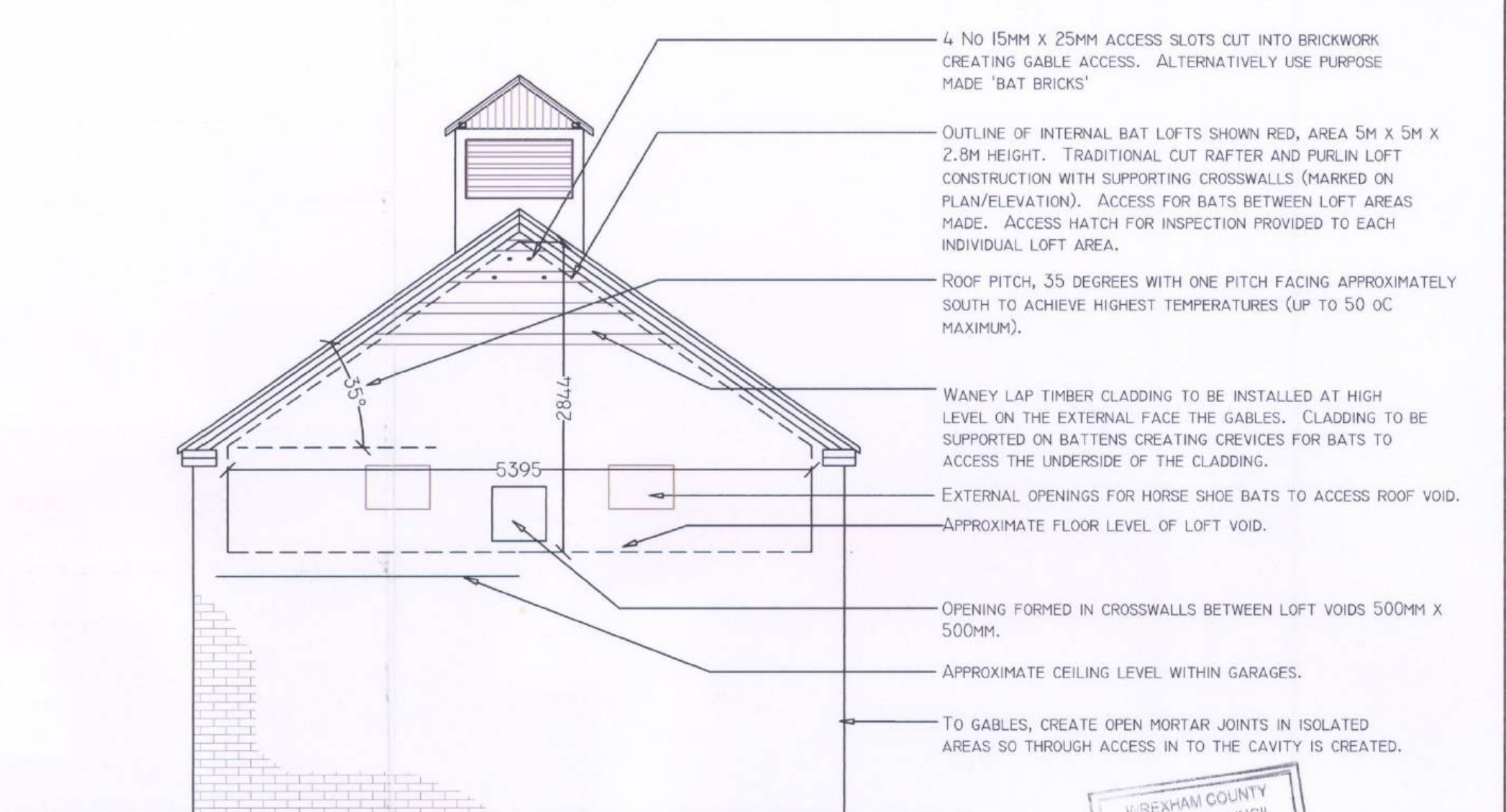
ELEVATION C - NORTH WEST



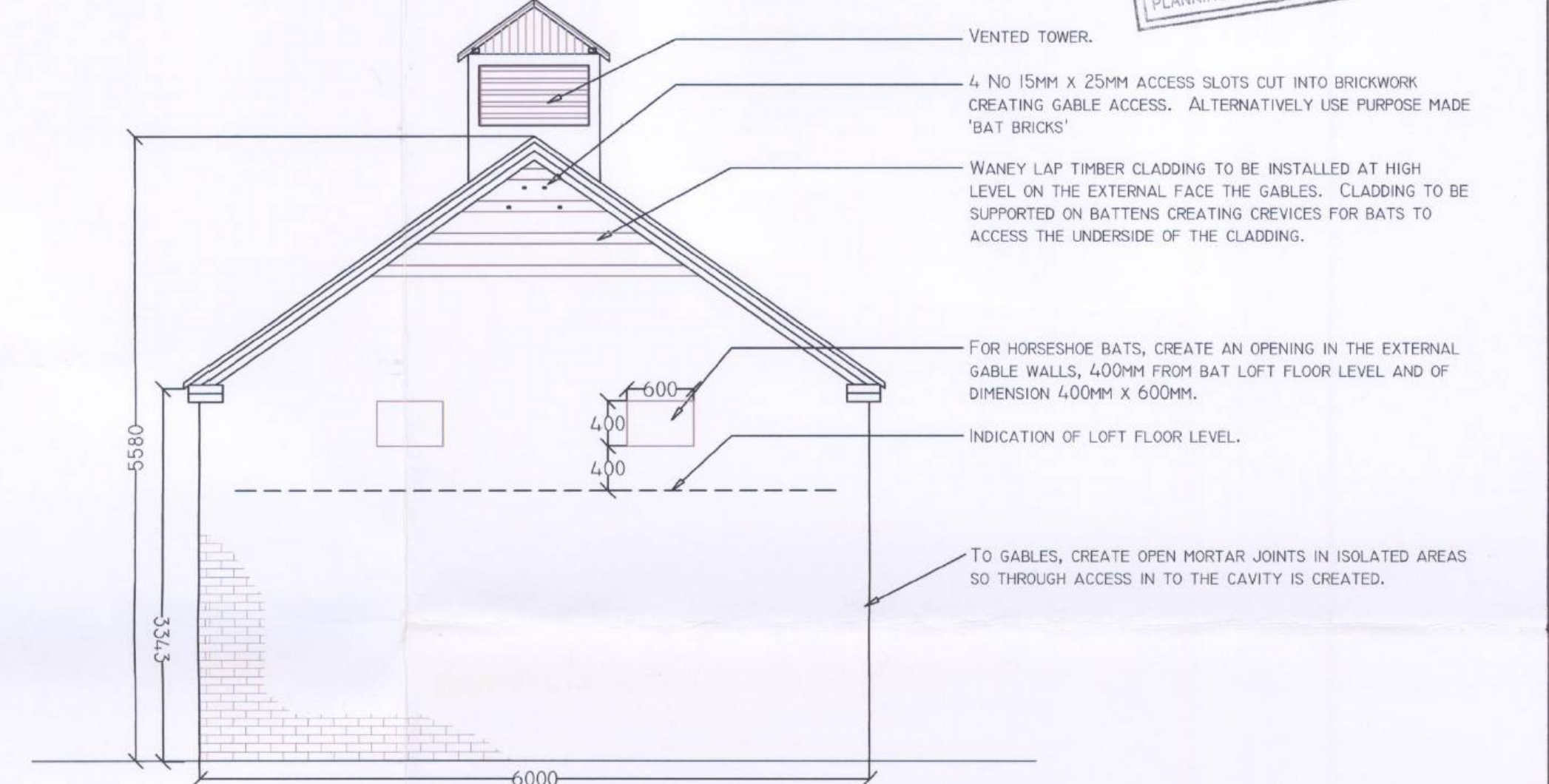
ELEVATION A - SOUTH EAST



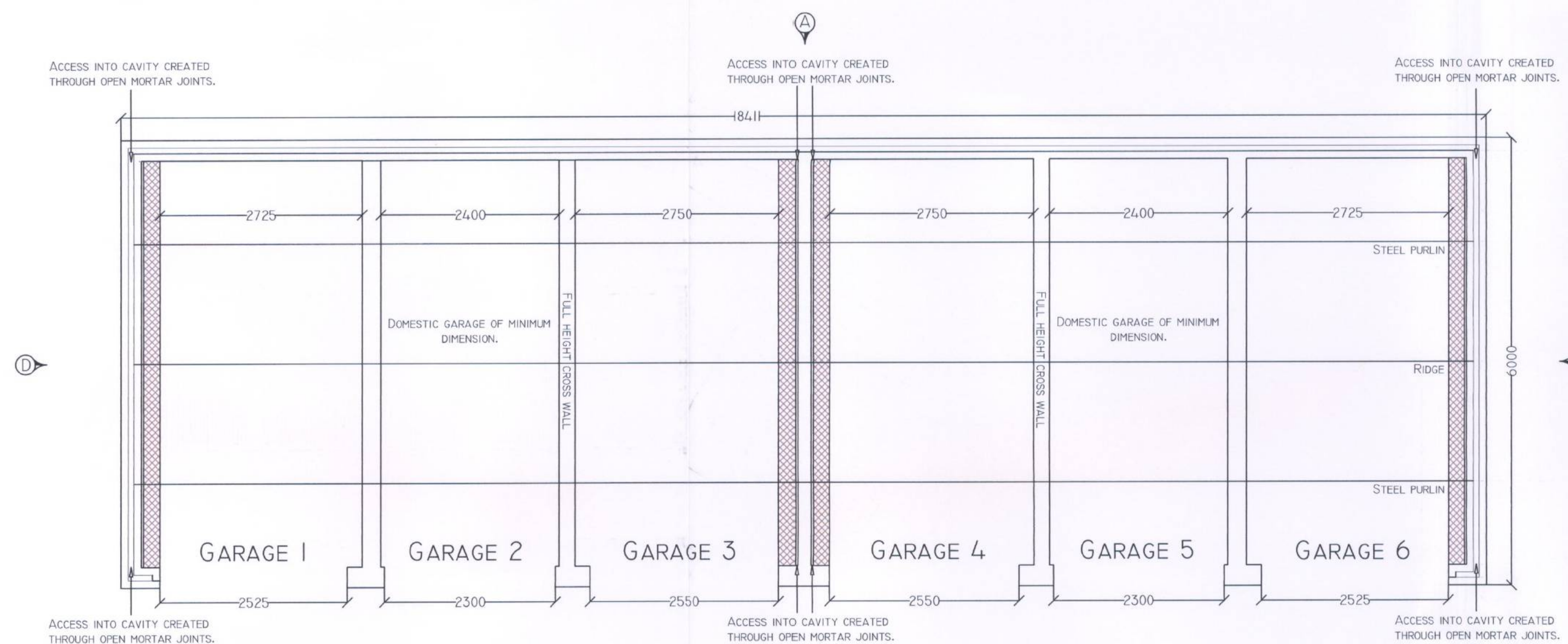
SECTIONS OF MORTAR JOINTS TO BE LEFT OPEN IN ORDER TO PROVIDE ACCESS TO CAVITY CONSTRUCTION AND ADDITIONAL CAVITY OF INNER WALL (220MM BLOCKWORK).



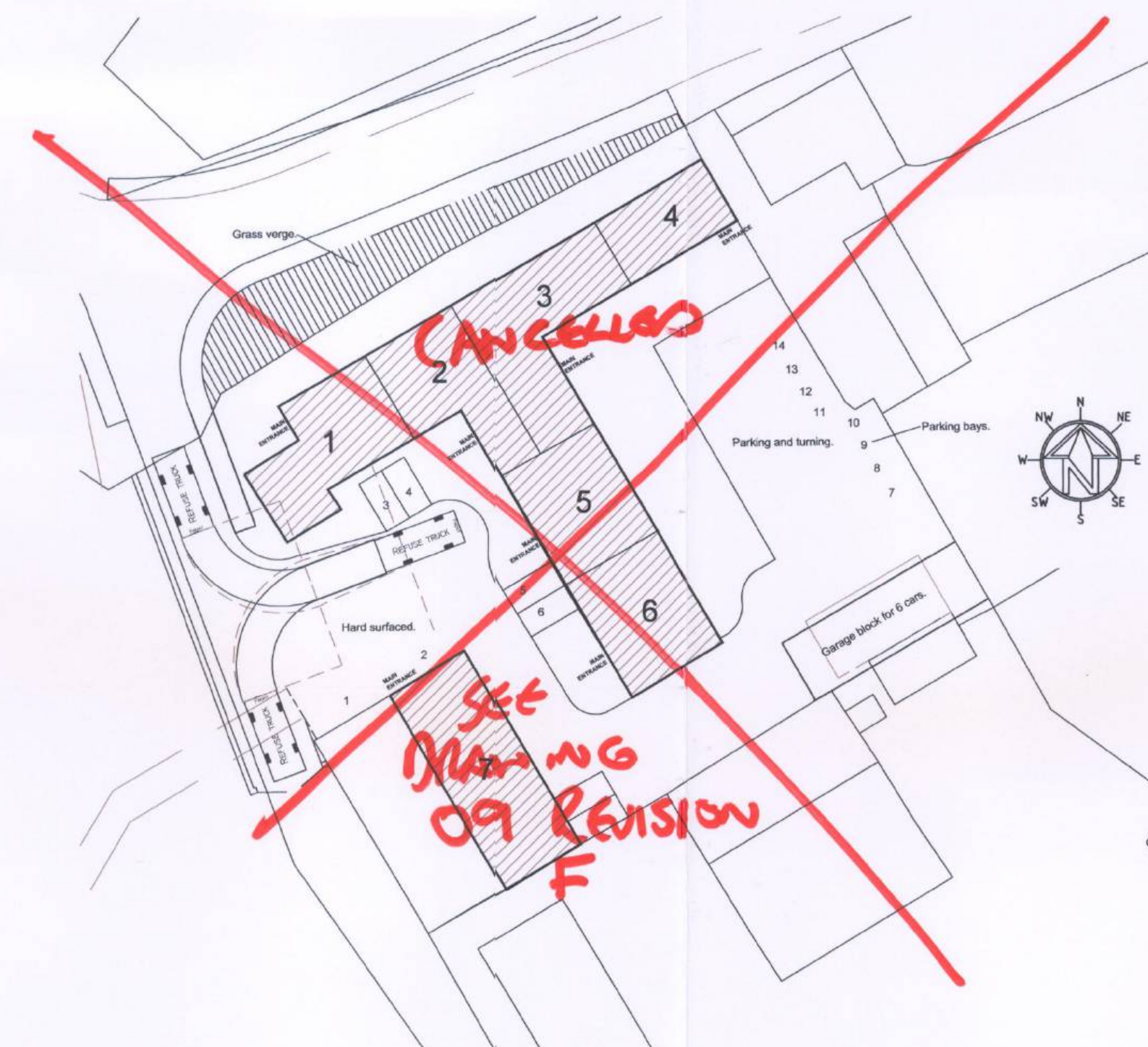
ELEVATION B - NORTH EAST



ELEVATION D - SOUTH WEST



LAYOUT PLAN
ELEVATIONS AND LAYOUT SCALE 1:50



SITE PLAN 1:500

WREXHAM COUNTY
BOROUGH COUNCIL
20 APR 2009
AMENDED
PLANNING DEPARTMENT

D	18-3-09	Further minor amendments to garage, site circulation and parking.	PRA
C	12-3-09	Further minor amendments to garage, site circulation and parking.	PRA
B	6-3-09	Minor amendments discussed with Ecologist incorporated.	PRA
A	2-3-09	Recommended mitigation measures shown.	PRA
Rev	Date	Revision Note	By

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This drawing must not be scaled.
Dimensions are in millimetres unless otherwise specified.
All measurements to be checked on site before work commencing.
All materials to be agreed with Planning Authority prior to work commencing.

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job title: Home Farm, Gredington, Whitchurch, Shropshire, SY13 3DQ.
Conversion of Farm Buildings.

client: RL Hon Lord Kenyon
c/o Strutt and Parker

drawing title: Recommended mitigation measures to garage block.

drawn by:	date:	scale @ A1:	scale @ A3:
PRA	25-2-09	1:50 & 1:500	
job number:	drawing number:	revision:	
2586	10	D	