



PLAS MOSTYN BACH, MINERA:

CONSERVATION PLAN

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
08/02/2022	Keymar Wake	Lucy Boyett	1	

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1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by homeowner Katy Davies, to prepare a Conservation Plan to be implemented alongside the proposed development at Plas Mostyn Bach, Minera (Grid Ref: SJ 280 527). Planning permission was granted for the Barn conversion in 2017 on the conditions shown below. The site changed ownership in 2021 with the intended planning works to be carried out in 2022; this Conservation Plan is designed to cover Conditions 1-3.

Summary of conditions:

Condition 1: EPS: Bat avoidance, mitigation and compensation measures, including those set out in the recommendations of the applicant's bat emergence survey.

Condition 2: EPS: The submission and implementation of an external and internal light spillage scheme.

Condition 3: EPS: The submission and implementation of a post construction bat monitoring and surveillance scheme.

Condition 4: EPS: Before commencement of development, the applicant must submit a protected species licence issued by NRW to the Local Planning Authority.

- 1.2 This conservation plan builds upon the results and recommendations made following a Preliminary Roost Assessment (PRA) and activity surveys carried out by Marches Ecology (Marches, 2017). As the initial bat surveys were carried out in 2017, Enfys Ecology carried out an update PRA in January 2022 to determine if the situation was still the same within the site and whether there was evidence of any change of use by bats.
- 1.3 The original surveys by Marches Ecology (2017) found the barn proposed for development was a hibernation roost for brown long eared (BLE) bats, and considered to be of low/moderate potential for other roosting purposes; such as transitional and day/night roosting by crevice dwelling bats as well as BLE and lesser horseshoe (LHS). The barn was not considered suitable for maternity roosting. An individual BLE was observed hibernating in a hole above a door frame during the initial PRA in March 2017, with droppings characteristic of BLE scattered within one 'compartment' of the barn. There were many available access points into the barn; however, the interior of the building was considered light and draughty with '*relatively few internal crevices where bats could ... seek refuge*' (Marches, 2017); the surrounding habitat was considered highly suitable for foraging and commuting bats with areas of woodland, pasture, tree and hedge lines and scattered residential dwellings. No bats were observed emerging from the barn during the emergence surveys in May and June 2017 (Marches, 2017) but common and soprano pipistrelle activity was recorded within the site.
- 1.4 The proposed works comprise renovating and converting the existing barn to form a residential dwelling. This will include removing the roof and first floors and building up to extend the height of the building; the stone walls will be repointed where necessary. The existing corrugated metal roof will be replaced with a slate roof that will be lined with

breathable membrane, and the interior areas will be converted to rooms. Therefore, the known BLE hibernation roost will be lost as part of the works, as well as other suitable roosting areas for crevice dwelling bats that use the site. The works also comprise the demolition of the adjoining remains of a milking parlour, the potential demolition of the tin shed, as well as the potential increase in length of an existing dormer extension on the current barn building.

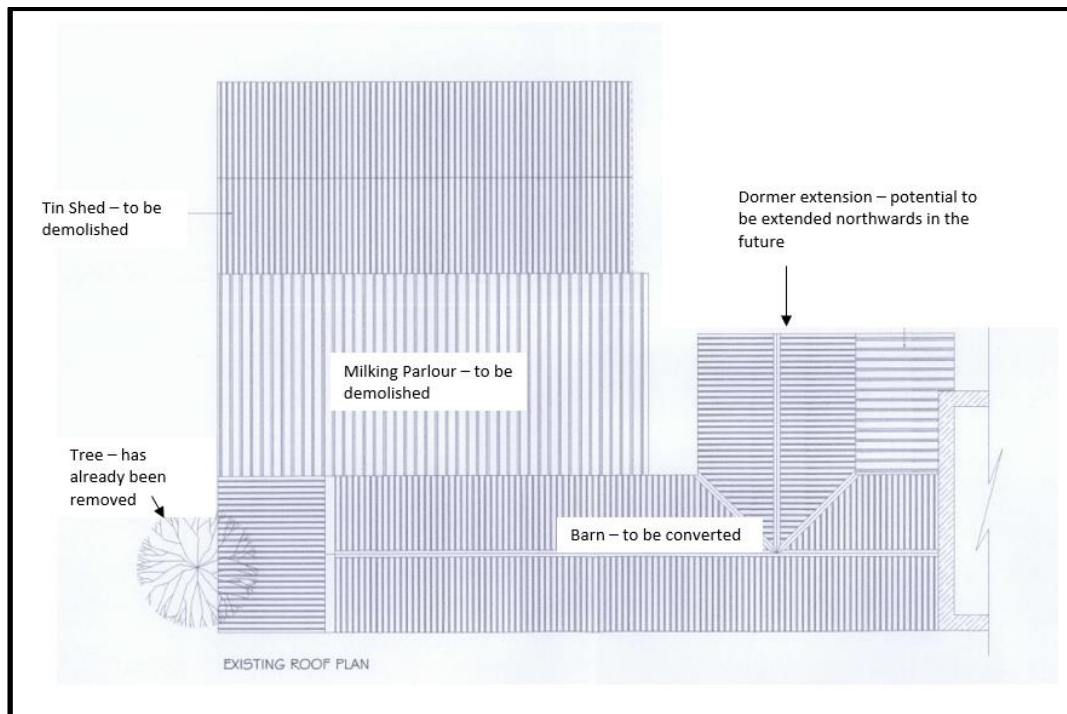


FIGURE 2.1: EXISTING SITE PLAN FROM 2017.

- 1.5 To reduce the scale of impact, mitigation, compensation and enhancement measures will need to be in place, as well as specific working methods. These will be provided in detail within the licence method statement but are also included in Section 3.
- 1.6 In line with Planning Policy Wales, and following the Environment Wales Act and guidance provided in the recent letter by the Chief Planner in Wales, there is a requirement to ensure that a **net benefit for biodiversity** is also provided in all application for planning in Wales.

2.0 Preliminary Roost Assessment Update

2.1 *Survey Details*

- 2.1.1 The PRA update was carried out to determine if the barn was in the same/ similar condition to how it was described in 2017, and whether there was any evidence or changes to suggest that bats might be using the building differently to the conclusions drawn in the previous reports by Marches Ecology (2017). The milking parlour and the tin shed that are proposed for demolition were also surveyed. The buildings were assessed for any signs of bats; these include droppings, feeding remains, and other indicative marks, plus features of potential use to bats such as crevices, cracks and other holes, and any potential access points into the building. High powered torches were used to inspect any identified features, and an endoscope was used to investigate any gaps or crevices, where appropriate. Both the exterior and interior of the buildings were examined.
- 2.1.2 The external and internal building inspections were carried out on the 27th January 2022 by Keymar Wake (accredited agent on Bat Licence No. licence S090407/1). Potential roost assessments were carried out following the guidelines set by the Bat Conservation Trust, 'Bat Surveys – Good Practice Guidelines' (Collins, J. 2016). Photographic evidence was taken where necessary.
- 2.1.3 The building descriptions and Potential Roosting Features (PRF's) were provided in the initial report and will not be repeated in this document where they are the same; these results are intended to be read alongside the previous survey reports (Marches 2017).

2.2 *Results*

- 2.2.1 The barn to be converted was as described in the initial survey report (Marches 2017), with no apparent changes in condition or structural integrity. The walls and roof were intact but there were still many available access points for bats through open doorways, broken windows and at the eaves of the corrugated metal roof. The interior was damp, light, cold and draughty with relatively few internal crevices available; as described in the initial PRA.
- 2.2.2 There were no bats observed within the barn at the time of survey, including the area where the BLE was previously found hibernating. There were no droppings apparent within the building; some areas of the ground floor appeared to have been swept since the last survey, and other areas had hay and debris covering the floors so no droppings would be visible in these areas.
- 2.2.3 The adjoining milking parlour and the adjacent tin shed were not considered suitable for bats. There was no roof on the milking parlour and only well sealed walls remained; the tin shed was open at the gable ends with well-sealed breezeblock and corrugated metal walls and roof. There were no available features for crevice dwellings bats to roost within and the tin shed was considered unsuitable for free hanging bats to use as a day or night roost as it

was extremely exposed to light, airflow and temperature changes. There was no evidence of bats found anywhere within either of these buildings. As these buildings were considered negligible for bats, no further surveys on either of these buildings are required.



PHOTOS 2.1: A) THE MILKING PARLOUR; B) TIN SHED

2.2.3 It is considered that the results of the previous surveys are still valid and that the barn is likely still in use by bats in the same way. The internal areas have not improved to provide suitable areas for maternity roosts or day roosts for free-hanging bats; nor are there large enough crevices available for large numbers of bats. Therefore, the barn is still considered to be a roost for individual/ small numbers of BLE's as a temporary hibernation or transitional roost; it also has the potential to be used as an occasional roost by small numbers of crevice dwelling bats (common and soprano pipistrelle) that use the site. As there was no further evidence of bats using the barn differently or in higher numbers, and the conditions within the building are the same as described by Marches (2017), no further surveys are required on the building and the results of the previous surveys are considered sufficient to inform the licence application.

3.0 Mitigation, Compensation and Enhancement

3.1 **As the Barn is a known bat roost, no works to the building must commence until a licence has been obtained from NRW. A licence can only be applied for following the granting of planning permission and the discharge of any ecology related conditions. Once submitted the licence application takes up 40 working days to be processed.**

3.2 Mitigation, compensation and enhancement measures will be included in the licence application and are also included below.

3.3 *Mitigation - Destructive Works*

- Any destructive works that would interfere with potential bat roosting areas, including the removal of the roofs, door frames, first floors, dismantling or demolition of the walls and re-pointing of the walls, will be carried out between March and November to avoid any hibernating bats. The destructive works are due to be undertaken over the spring/summer period of 2022, and it is therefore possible that bats may be present in small numbers during this time.
- Prior to the start of works, a toolbox talk will be given to everyone involved in the project and a log of this will be kept.
- There may be bats active and present in small numbers in the areas of works during periods of warmer temperatures. To reduce the impact of disturbance on the bats (if present), the works to all of the following structures will be carried out by hand and inspected prior to works by/ supervised by a suitably qualified and licenced ecologist.
 - Removal of the sheet roofs and wooden roof frames where they attach to the stone walls
 - Removal of the wooden first floors
 - Removal of the door frames and lintels
 - Any dismantling or demolition of the walls
 - Re-pointing of the stone walls
- The ecologist will carry out an inspection of the potential roosting areas prior to the start of any works using an endoscope and high-powered torch where necessary. If it can be determined that no bats are present then works can continue in these areas without supervision. If there are any areas that cannot be inspected fully then works to these areas will be carried out under supervision.
- Any walls that need to be dismantled or demolished as part of the works will be fully inspected by an ecologist prior to works starting. If it can be confirmed that there are no bats present within the walls the works can be carried out with machinery. If there are features that cannot be inspected fully that show potential for bats, these areas

will either be dismantled by hand under the supervision of the ecologist, or following an emergence survey to ensure any bats have left the feature and blocked up prior to demolition with machinery.

- All cracks and holes in the walls will be inspected prior to re-pointing. If there are any that are too deep to full inspect with an endoscope and that are considered suitable for bats to use, an emergence survey may need to be carried out the evening prior to works to ensure all bats have left the features and then the features blocked to prevent bats returning to them; the necessity of this will be determined by the on-site ecologist.
- As the new roof will be lined with breathable membrane, the roof and loft space will be completely sealed and inaccessible to bats; this includes through the eaves, soffits, and underneath any slates or ridge tiles.
- A bat box (such as a woodstone/ woodcrete multi-chamber bat box (that is suitable for both summer and winter roosting bats), will be made available on site prior to the start of works (it will be erected onto one of the mature trees to the north of the site along the driveway; this has been agreed with the landowner - exact location of installation to be agreed with the licenced ecologist), so if a crevice dwelling bat is found during works, it can be placed within it. If a bat is found and accessible it should be captured and placed in the bat box, bats will only be moved by a licenced ecologist.
- If an active bat is found and is not accessible, works will start from the furthest point from the bat and continue in a directional manner to encourage the bat to leave of its own accord. If this is not possible without the possibility of causing harm, work will stop until the bat has left the building and the roost will be blocked. If this is the case a visit in the evening may be needed and the roost blocked once the bat has emerged and once the ecologist is confident no other bats remain in the roost. A check will be carried out the following day and if the bat is gone, the works can then proceed under supervision.
- If, in the unlikely event, a hibernating bat is found then individual bats can be moved into the bat box suitable for hibernating bats; as long as it is safe to do so and there is minimal risk of waking the bat up.
- If, when carrying out the pre-works checks and supervision works, it becomes apparent that more bats or different species of bats are to be affected by the works than first thought, works will be stopped until the working method and type/scale of compensation measures can be reviewed and agreed with NRW.

- Sufficient compensatory roosting opportunities and enhancements will be provided for bats within the site to contribute to biodiversity net gain (see Section 3.4). These will comprise inbuilt bat boxes for crevice dwelling bats, that will be integrated in the upwards extension of the barn.

3.4 *Compensation & Enhancement – Roost Replacement*

3.4.1 The bat mitigation guidelines state that the status for a day/ hibernation roost for a small number of common bats (not a maternity site), is considered to be of low - medium conservation significance (Mitchell-Jones. A.J, 2004). Provision of new roost facilities must be provided based on species requirements (Mitchell-Jones. A.J, 2004).

3.4.2 The current BLE hibernation roost, and potential roosting areas for common and soprano pipistrelles will be lost as part of the works. There will be no available loft space within the proposed conversion and the roof will be lined with breathable membrane to comply with building regulations and increased insulation; therefore, the new roof will be sealed off completely from the bats so they are not at risk from entrapment within the breathable membrane fibres. New roosting opportunities will be created via external and in-built bat boxes, that will not only compensate for the loss of roosting areas but will provide improved conditions for roosting within the barn.

- A woodstone/ woodcrete multi-chamber bat box will be erected onto a mature tree to the north of site, within the connecting hedgerow along the drive, prior to works commencing (Figure 3.1). It will be erected at least 2.5m above the ground and facing a southerly/ south westerly direction. The ecologist will agree the specific model of bat box and advise on the specific siting location (example shown in Figure 3.2).
- Two in-built bat boxes will be integrated into the converted barn as suggested in the previous bat survey report (Marches 2017); however, the location of these boxes will differ to what the previous report proposed (both on the northern elevation). One box will be installed on the northern elevation; on the main part of the building as opposed to the dormer extension so any potential future works to the extension will not impact the bat mitigation; and one on the south west corner of the southern elevation, to offer varying environments in terms of sun exposure, for different roosting requirements (See Figure 3.1 for locations). The boxes will be woodstone/ woodcrete so they are more durable and require less maintenance (Figure 3.2 for examples); as well as providing excellent insulation and consistent temperatures for roosting bats (including hibernating bats); they will be integrated into the tops of the walls as the building is extended upwards and will sit as close as possible to the eaves.
- **The bat boxes will be accessed for monitoring purposes by licenced persons only.**

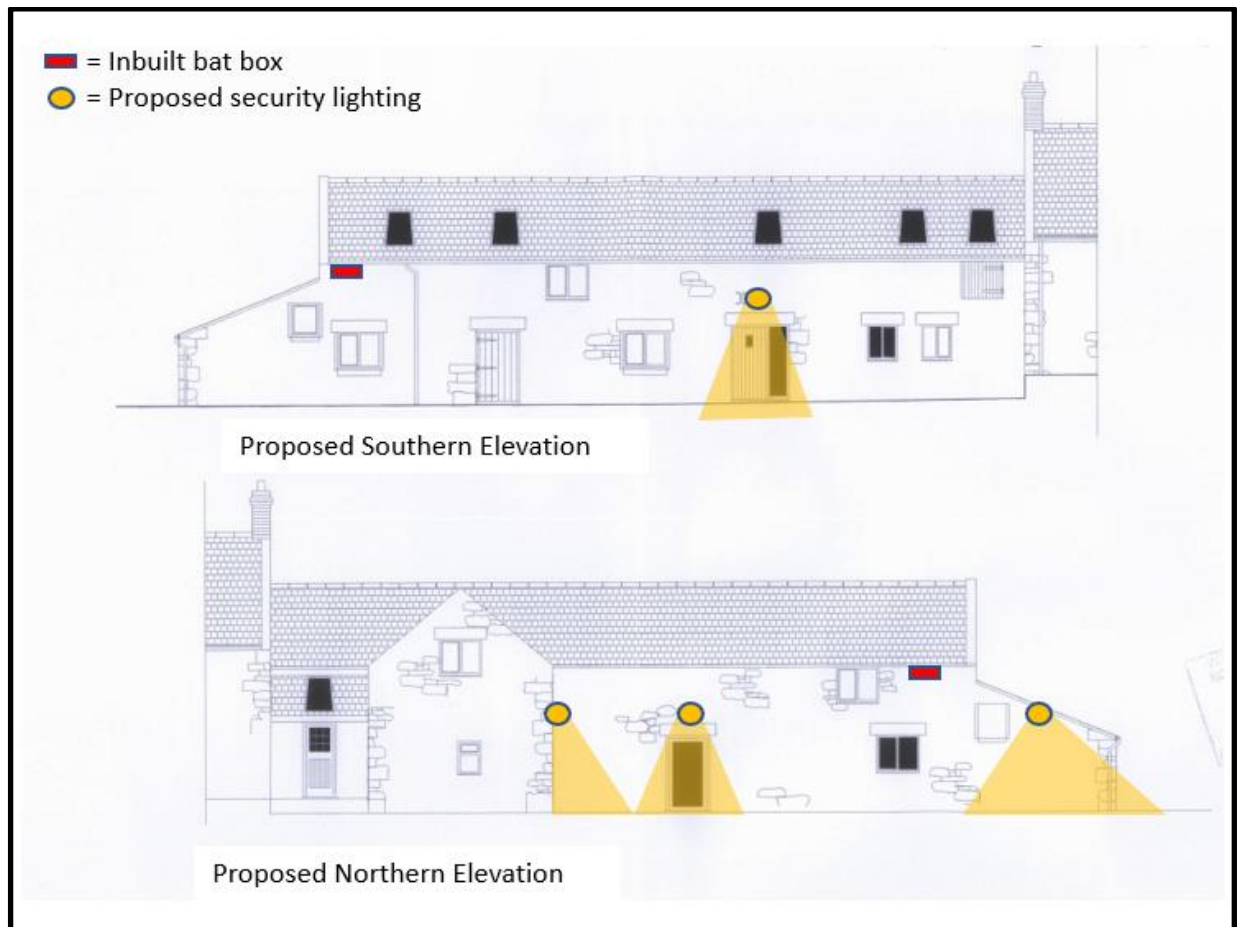


FIGURE 3.1: PROPOSED ELEVATIONS OF THE BARN CONVERSION SHOWING LOCATIONS OF BAT MITIGATION AND SECURITY LIGHTING.



FIGURE 3.2: A) EXAMPLE OF MULTI-CHAMBER EXTERNAL BAT BOX; B-D) EXAMPLES OF BUILT IN BAT BOXES

3.5 *Lighting*

- 3.5.1 The proposed external and security lighting for the site will comprise four low level LED, motion activated, lights above the main entrances and the north western corner of the building (Figure 3.1).
- 3.5.2 The immediate surrounding habitats of the site are suitable for bats and the emergence survey showed bats using these areas to commute and forage. Therefore, any lighting associated with the building during and after the works has the potential to impact bats and nocturnal birds. To reduce the potential impact of any light spillage on commuting bats during the construction and post construction phases of the development, lighting design for the site (both during the works and of the completed building) should seek to minimise the levels of light along any areas used by bats. The following recommendations should be used when forming the lighting plan for the proposed development (Bat Conservation Trust (20018) and Stone, E.L. (2013)):

General Lighting Guidance

- There must be no lights focused on the hedge-lined drive to the west or any of the surrounding mature trees, during or after the works. There will be a dark 'buffer zone' to the west of the site; which will include the proposed bat mitigation and connecting flight lines to it from the surrounding habitat; that will not be subject to light spillage (Figure 3.3). There will be no illumination of the recommended bat mitigation once the works are complete.
- As the conversion of the barn proposes roof lights on the roof pitches, internal luminaires should be recessed in these rooms to minimise light spill and glare via the windows.
- Construction should start at least one hour after dawn and finish at least hour before dusk during the summer months (May – August) to prevent light and noise levels disturbing the bats using the site.
- The proposed external and security lighting will be limited to provide some dark periods during the night. The lighting will be directional, and focussed on the doorways and adjacent paths at a downwards pointing angle. The lighting will be motion activated and on a short timer (not stay on longer than one minute), in order to provide maximum darkness when not needed as well as providing safe lighting conditions of residents when required.

The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for the proposed development.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.



FIGURE 3.3 – PROPOSED SITE PLAN SHOWING DARK BUFFER ZONE (BLUE) FROM THE MITIGATION ACCESS POINT AND THE SURROUNDING FORAGING HABITAT (NOT TO SCALE)

3.6 Monitoring

- 3.6.1 Ongoing monitoring of bat activity and their usage of the site will be required for three years following the works. Monitoring should take place the winter after the works have been completed (Winter 2023/2024 - year one), and should then be repeated in year three. This will be through an internal check of the bat boxes using an endoscope to determine if bats are hibernating within them. Monitoring will also be carried out during October of Year 2 (2024) to determine if the bat boxes are used by bats during the summer months. The surveys showed BLE were present in March of 2017 but not present in January 2022, or during the summer months (at the time of survey) suggesting bats were only using the site on an occasional basis and that there are other roosting areas available close by.
- 3.6.2 Mitigation will be considered a success if monitoring finds bats using the bat boxes. If monitoring results are unfavourable then a static detector will be left around the site to record any bats present within the area that are potentially still using the site on a continued occasional basis. Liaisons with NRW and Katy Davies will be carried out if roosting provisions need to be improved or decreased.
- 3.6.3 All records will be submitted to Cofnod, the Local Environmental Records Centre and reported to NRW as a condition of the bat licence.

3.7 *Timetable of works*

- 3.7.1 Table 3.1 details the timing, phasing and duration of the construction activities and monitoring of the bat mitigation.

TABLE 3.1 TIMETABLE OF WORKS AND MONITORING SCHEDULE

	March 2022	April - November 2022	April 2022 – December 2023	Winter 2023 + 2025/2026; September/October 2024
Erection of bat box onto mature tree on site				
All destructive works that will affect potential roosting areas to be carried out				
Conversion of the barn and installation of inbuilt bat boxes				
Monitoring – internal checks and emergence survey				

3.8 *Mitigation contingencies*

3.8.1 If, when carrying out the pre-works checks and supervision works, it becomes apparent that more bats or different species of bats are to be affected by the works than first thought, works will be stopped until the working method and type/scale of compensation measures can be reviewed and agreed with NRW and Denbighshire County Council. If a **large** roost, or evidence there-of, is discovered, then the works will be postponed until mitigation can be re-assessed and the roost will be retained where possible.

3.9 *Persons responsible for implementing the works*

3.9.1 During the construction phase, Katy Davies will be responsible for implementing the works as detailed in the bat licence with Keymar Wake, Enfys Ecology as the named ecologist.

3.10 *Mitigation Site/Compensation Ownership post construction*

3.10.1 The building will remain in the ownership of Katy Davies for the foreseeable future, who will be responsible for the upkeep of the buildings and maintenance of any bat mitigation and habitat creation on site. As the building will contain designated areas for bats, these areas will then be protected by the current bat legislation and will be retained and remain undisturbed. Any potential works to the site in the future that may directly or indirectly impact the designated bat areas, including any future proposed lighting schemes, will be subject to further licencing requirements and all proposals for the site will need to be discussed with an ecologist and NRW. The legal responsibilities which accompany these works will be written into the deeds of the property and will be the responsibility of the new owners to ensure they are adhered to if the site ever changes ownership.

3.11 *Auditing*

3.11.1 Work will be supervised where appropriate throughout the project by a licenced worker. All mitigation measures will be inspected by an ecologist to ensure compliance with measures detailed in the licence method statement.

3.11.2 The licensed ecologist will be available throughout the project to provide advice on more detailed points as the project progresses.

3.11.3 A record of visits will be kept and a toolbox talk will be given to all those who will be involved in the project.

3.11.4 All documentation relating to the presence of bats and the compensation measures will be given to the site owner so they are aware of his legal obligations.

3.11.5 The works will be audited through the formal bat licencing process to include the submission of the development licence report form, with evidence of the implementation of the detailed mitigation and compensation measures, within four weeks of the licence expiry and subsequent licence monitoring report forms will also be submitted. The NRW ecological

compliance audit form will also be completed and submitted with the bat licence return form.

4.0 Legislation

4.1 *Bats*

The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species in the UK. All UK bat species are fully protected under the 1981 Act through inclusion on schedule 5. All bats are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 which transcribes the EC Habitats Directive into UK law. In combination, this legislation makes it an offence to:

- Deliberately or recklessly take, injure or kill a bat;
- Deliberately or recklessly damage or destroy a place or structure used by bats for shelter or protection;
- Deliberately or recklessly obstruct access to a bat roost; or
- Deliberately or recklessly disturb bats while occupying a roost.

Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Under both laws the Welsh Government and D.E.F.R.A. are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

In addition, under the Wildlife and Countryside Act all birds, their nests and eggs are protected during the breeding season (typically March to August inclusive) from killing/destruction, damage and disturbance.

4.2 *Biodiversity Net Gain – Relevant sections of legislation*

Section 6 of the Environment (Wales) Act 2016:

Biodiversity and resilience of ecosystems duty

(1) A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.

(2) In complying with subsection (1), a public authority must take account of the resilience of ecosystems, in particular the following aspects—

(a) diversity between and within ecosystems;

- (b)the connections between and within ecosystems;
- (c)the scale of ecosystems;
- (d)the condition of ecosystems (including their structure and functioning);
- (e)the adaptability of ecosystems.

.... (5) In complying with subsection (1), a public authority other than a Minister of the Crown or government department must have regard to—

- (a)the list published under section 7;
- Section 7 of the Environment (Wales) Act 2016:

Biodiversity lists and duty to take steps to maintain and enhance biodiversity

(1)The Welsh Ministers must prepare and publish a list of the living organisms and types of habitat which in their opinion are of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales.

(2)Before publishing a list under this section the Welsh Ministers must consult the Natural Resources Body for Wales (“NRW”) as to the living organisms or types of habitat to be included in the list.

(3)Without prejudice to section 6, the Welsh Ministers must—

- (a)take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and
- (b)encourage others to take such steps.

5.0 References and Useful Information Sources

Bat Conservation Trust (2018) *Bats and artificial lighting in the UK- bats and the built environment series* www.bats.org.uk

Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd Edition). Bat Conservation Trust, London.

Marches Ecology (2017) Proposed Barn Conversion, Plas Mostyn Bach, Minera – Preliminary Roost Assessment.

Marches Ecology (2017) Proposed Barn Conversion, Plas Mostyn Bach, Minera – Bat Emergence Survey.

Mitchell-Jones (2004) *Bat Mitigation Guidelines*.

Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation guidance*.