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**Lodematic Premises, Woone Lane, Clitheroe
(Grid Reference: SD 73714 40751)**

**Inspection and Assessment in Relation to Bats
Including Dusk Survey Results**

Prepared for:

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1.0 Introduction

- 1.1 A proposed planning application at the Lodematic Factory buildings located on Woone Lane in Clitheroe grid reference SD 73714 40751 (Figure 1) proposes the change in land use from manufacturing to residential use. The plans entail the demolition of three buildings and the conversion of the largest building on the plot into residential apartments. The Lodematic factory site is a complex of functional industrial buildings, accompanied by hard standing spanning 0.2 (ha) all located within the outskirts of Clitheroe on the peripherals of the rural environment. To the west and south-west there are undisturbed fields, hedgerows and trees along with the water channels of Pendleton Brook and Mearley Brook to the south-west and north-east respectively, flanked by broadleaf trees and shrubs. Similarly, a tree lined waterbody is present, located immediately to the north-east of the site.
- 1.2 Due to the nature of the works on the site the Local Authority as part of their planning policies requested the submission of a bat survey in order to establish the ecological value of the site relative to bats. Ribble Ecology carried out the initial surveys in 2014 in which numerous opportunities for crevice dwelling bat species were identified on all of the buildings. Subsequently two emergence/re entrance surveys were carried out during mid September during which conclusive evidence of lone roosting by both Common Pipistrelle bats and Soprano Pipistrelle bats was identified. The report went on to recommend that a further survey was carried out in the 2015 active season of bats. During early 2015 the Tyrer Partnership were commissioned to complete the bat surveys at the site; subsequently two surveys were recommended and completed.

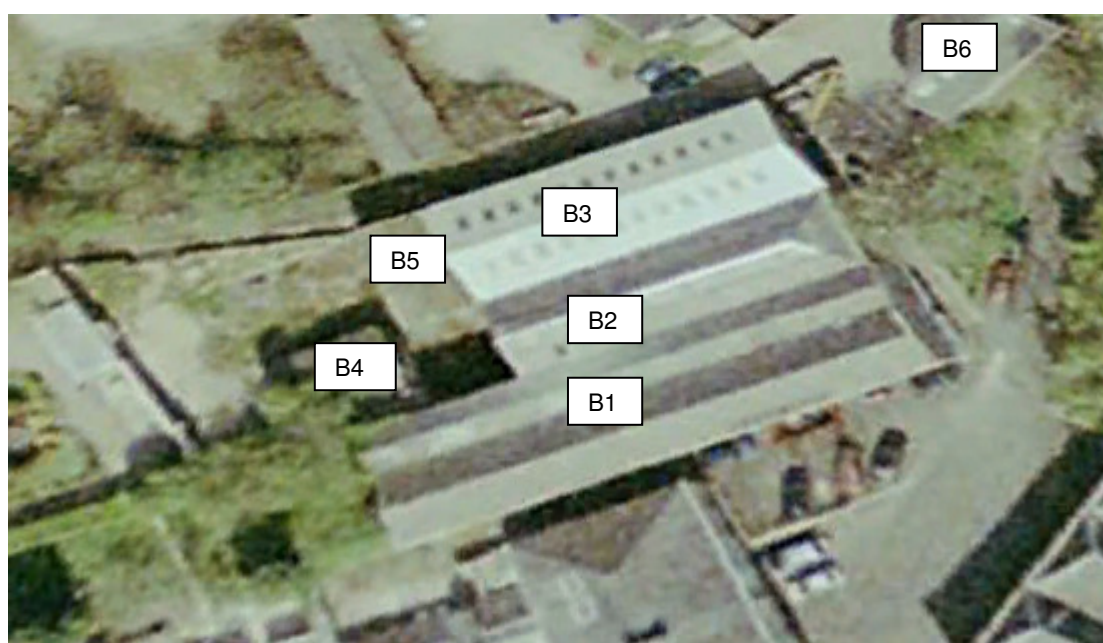


Figure 1: Buildings within the development boundary

- 1.3 Building 1, as shown in Fig 2 will be converted into apartments which will require extensive internal and external works to bring the building into habitable, modern day energy efficient standards. At Building 1 it is proposed to re-roof during time it is probable that a Breathable Roofing Membrane (BRM) will be used. The stonework will also be re-pointed along with the extensive changes internally. Buildings 2, 3, 4 5 and 6 will all be demolished and this is likely to occur prior to the commencement of the conversion. The external stone wall of Building 3 will be retained at a height of 3 metres to form a boundary to the car park which will replace Buildings 2, 3, and 4.



Figure 2: Proposals for the site

2.0 Protected Species and their Requirements

- 2.1 All British bats and their **roosts are afforded protection under the 1981 Wildlife & Countryside Act (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2010 (as amended). When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2010 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.
- 2.2 The National Planning Policy Framework (NPPF) has replaced the existing Planning Policy Guidelines. (PPG's) In relation to wildlife PPG 9 was one of the documents to which Planning Authorities referred to, particularly where a specially protected species is or may be present and will be affected by a development for which a Planning application seeks consent. The aims of the NPPF in relation to species and habitats are that it places a clear responsibility on Local Planning Authorities to conserve and enhance biodiversity and to encourage on the consideration that should be given to Protected Species where they may be affected by development. The Office of the Deputy Prime Minister (ODPM) Circular 06/2005 provides administrative guidance on the application of the law in relation to planning and nature conservation.



This is supported by a guide to good practice entitled 'Planning for Biodiversity and Geological Conservation: Building in Biodiversity' in which paragraphs 5.34 and 5.35 identify that species such as bats are highly dependant upon built structures for survival and that roosts can be easily incorporated into existing and new developments/conversions to benefit these species.

When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

2.3 Use of Buildings by Bats

- a) Summer breeding roost.
- b) Hibernation.
- c) Transitional or temporary roost.

Roost selection is often closely correlated to suitable foraging habitat within a reasonable commuting distance from the roost and different sites are used depending upon insect densities and abundance, climatic conditions can also affect their ability to successfully forage. All British bats are insectivorous.

** The term roost is generically referred to as a place that bat/s use for the any of the above reasons, however it should be noted that under the Conservation of Habitats & Species Regulations 2010 (Regulation 41) the term roost is not used but refers to "a breeding site or resting place of such an animal" and is afforded legal protection. The roost, breeding site or resting place of bats, which ever terminology is used is legally protected whether or not bats are in occupation.

3.0 Dusk Survey Results

- 3.1 The dusk emergence observations undertaken on the 7th of May and the 4th of June 2015. (Figure 3)The surveys were lead by Mr S. Irwin who is holder of a Class 2 Natural England bat licence with over 30 years experience in bat ecology. Additional surveyors were Mr H. Green (who also holds a Class 2 Natural England Bat licence), Ms K Swift and Ms Jenny Taylor (both of whom have over 5 years experience in undertaking bat surveys and hold Class One Bat Licences) and Ms A. Mercer (an experienced surveyor in training with the Tyrer Partnership).
- 3.2 The surveys were aided with Anabat electronic bat detectors, to locate and record the high frequency calls that are emitted by bats. Echolocation calls were then analysed with computer software to verify field observations.

Times of Survey	Date	Weather Conditions
Dusk survey 2035 - 2200	07 th May 2015	Sunset: 2052: Dry, Still 5% Cloud Cover Start temp: 9° C End temp: 6° C
Dusk survey 2110 - 2240	04 th June 2015	Sunset: 2121 : Dry, light breeze 5% Cloud Cover Start temp: 16.5 ° C End temp: 15° C



Survey	Date	Results
Dusk survey	07 th May 2015	Summary- Emergence of 6 Common Pipistrelle bats from B1 during observation period. A single Common Pipistrelle bat emerged from B2 during the observation period. 2109 – 2209 hrs: Emergence points South facing elevation of B1 West gable verge of B1 West gable wall of B2 Wall plate level on B1 Other activity Singular Common/Soprano Pipistrelle bats commuting through the site. Three common Pipistrelle bats foraging immediate to the Building 1 within the courtyard. Single Noctule bat commuted over the site. Unidentified Myotis bat & Pipistrelle foraging activity recorded close to culvert entrance Constant Common/Soprano Pipistrelle commuting/foraging activity within the site notably along the south elevation of B1.
Dusk survey	4 th June 2015	Summary- Emergence of 8 Common Pipistrelle bats from several points at wall plate level and on the roof verge of B1. Two bats emerged simultaneously from the verge of B2. 2141 – 2233 hrs: Emergence points South facing elevation of B1 East facing gable of B2 West gable wall of B Other activity Constant Common/Soprano Pipistrelle commuting/foraging activity within the site notably along the south elevation of B1. Single Noctule bat recorded commuting across the site.

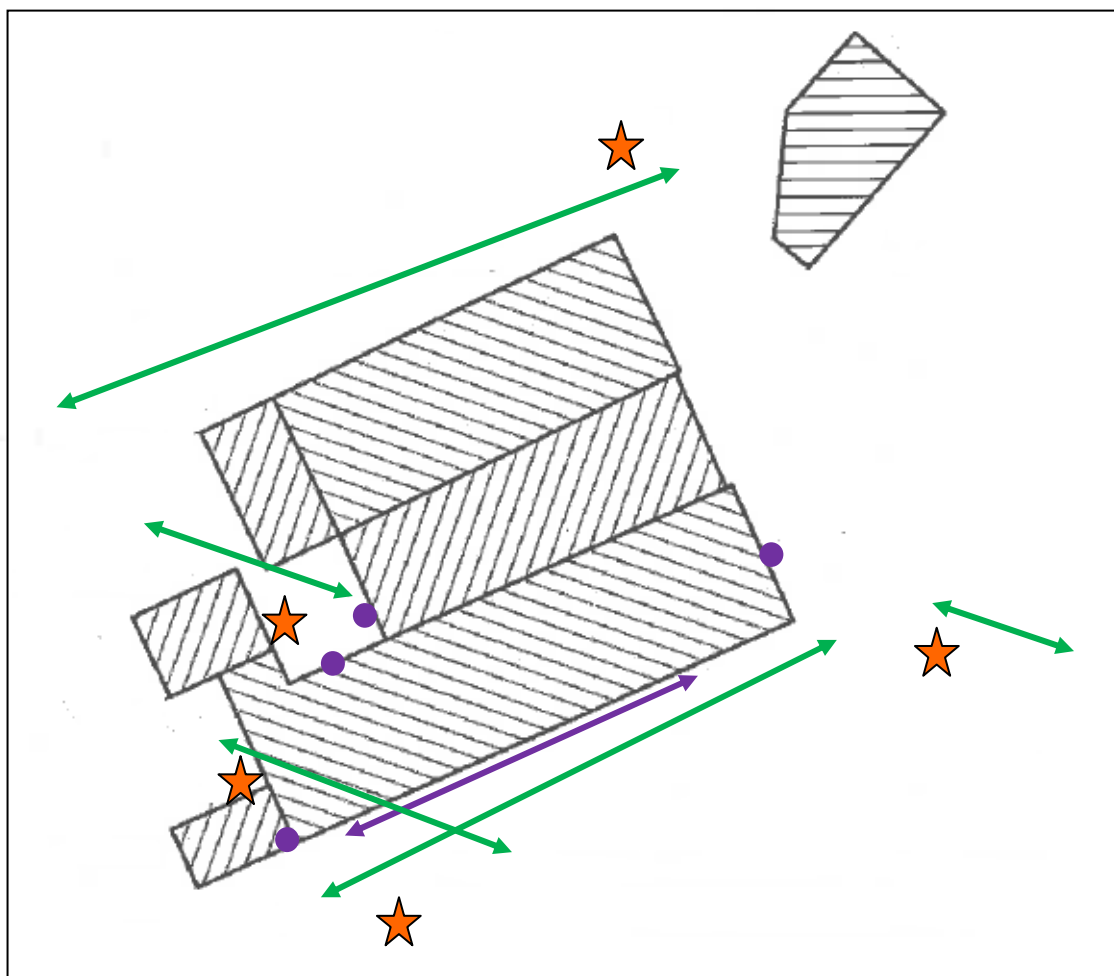
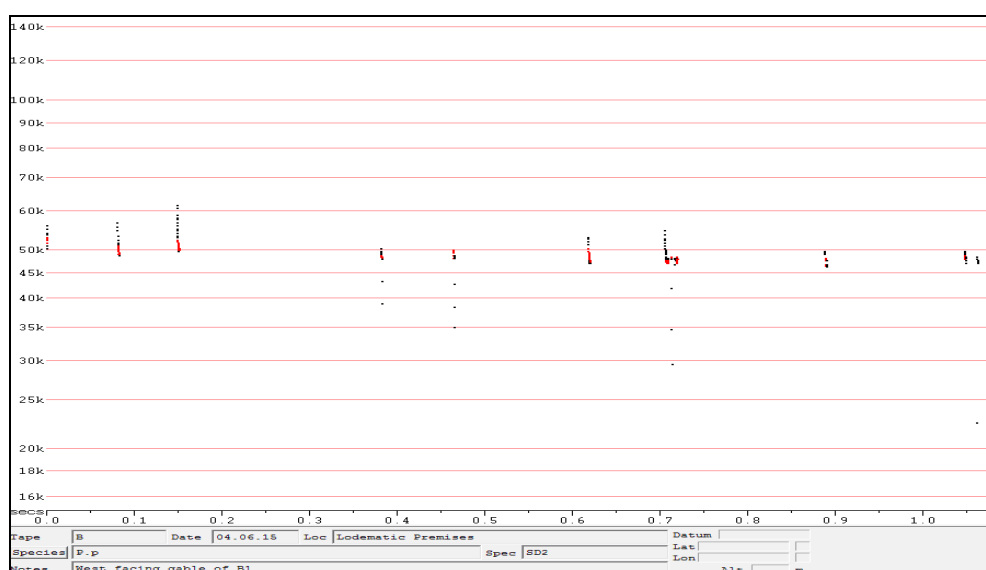


Figure 3

- ★ Approximate location of surveyors
- Approximate emergence locations
- ↔ Foraging/commuting activity



Sonogram from emerging Common Pipistrelle bat on 04.06.15

4.0 Dusk Conclusions & Implications

4.1 From the results of the dusk surveys it can be concluded that Buildings 1 and 2 at The Lodematic premises are being used by Common Pipistrelle bats and Soprano Pipistrelle bats (Figure 1) for lone roosting but based on the survey results a breeding roost is absent. Notwithstanding the absence of a breeding roost the proposed development has the potential to destroy/obstruct bat roosts and a likelihood of disturbing bats, which will need to be addressed from both a conservation and legal perspective along with appropriate mitigation. A European Protected Species Mitigation Licence (EPSML) will be required to legally destroy/obstruct a place that is used for rest or shelter (roost) or disturb bats; however before a licence can be applied for all planning issues need to be resolved.

In order that the LPA can implement its obligations under the Habitat & Species Regulations 2010 (as amended) appropriate and proportionate mitigation will need to accompany the planning application which will demonstrate that the “*favourable conservation*” of the species concerned can be maintained.

In addition to the buildings being used as a roost several areas of the site are frequently used for foraging by bats as denoted on the detailed aerial imagery in section 3.0. As a result of development lighting levels will no doubt increase and as such reduce or remove those foraging opportunities.

5.0 Evaluation & Impact

5.1 Taking into consideration the species and numbers involved the status of the building relative to bats is considered to be a non breeding roost of Common/Soprano Pipistrelle bats and both species are using crevice situations.



- 5.2 Natural England standing advice species sheet: bats states that LPAs must consider whether proposals have attempted to avoid impacts and whether there are satisfactory alternatives to the proposed scheme which would have less of impact on bats; direct impacts to bats and their roosts would include direct harm or disturbance to bats, and loss or damage (roosts), and obstruction of access; indirect impacts also need to be fully considered, including lighting, and loss of foraging and commuting habitat; and all effort should be made to retain the existing roosts and to undertake works at an appropriate time of year to avoid disturbance of the bat population and, where this is not possible, suitable mitigation/ compensation must be in place.

Short-term impacts: Disturbance: Without mitigation/precautionary measures impacts by the work could result in the disturbance/harming of bats; damage and loss of roosts. If the work was undertaken when bats were in hibernation then disturbance and possible direct harm could occur. Without mitigation the impact on bats at a local scale would be Low- Moderate by undertaking the work when bats are unlikely to be in hibernation then the impact can be significantly reduced.

Long term impact: Roost Retention/Modification: Roost retention/modification is possible whereby features that bats are using can be retained or modified.

Long term impact: Roost Destruction: Without mitigation the work will result in the loss of bat roosts, although both species are common & widespread throughout the UK.

Long term impact: Will not occur as the work will not result in the net loss of roost opportunities or access points and therefore adverse impact upon the species at Local, Regional or National levels is not anticipated.

Without mitigation long term or any other impact upon the immediate foraging habitat will result in a slight loss of such habitat by the work. Without provision of additional landscaping there would be a net loss.

Post Development Interference Impact

External lighting is predicted to be greater than what is currently present around the building and nearby foraging places. If maintenance is required at or close to the bat roost provision then owners need to be made aware that they would need to seek advice from a bat ecologist or Natural England.

Predicted Scale of Impact

The work at the building is likely to result in disturbance of bats but such work will be undertaken outside one of the most vulnerable times i.e. hibernation season; the scheme will provide access points for bats and opportunities within the new build and the converted building; all will be permanent and dedicated for bat use. The predicted scale of the impact upon species at site, Local, Regional and National is considered to be neutral – positive.



6.0 Indicative Mitigation

- 6.1 The demolition of Buildings 2,3,4,5 and 6 and conversion of Building 1 are an essential part of the owner's plans for the site but it is acknowledged that the presence of bats needs to be addressed from both a legal and conservation perspective. The mitigation proposals are seen to be the most productive way forward that will retain and enhance opportunities for the crevice dwelling Pipistrelle bat. From the evidence gained during the dusk observations, the use of the building by bats is considered to be low level (Natural England Conservation Guidelines) and the proposed mitigation is proportionate to that use. However; if at anytime that assessment is revised to a higher level then the mitigation will also be accordingly revised.
- 6.2 The following procedures and mitigation are designed to allow the Local Planning Authority in association with their ecological adviser to determine a Planning Application where a European Protected Species has been identified and will be affected by the work for which the Planning Application seeks consent. In addition Local Planning Authorities in accordance with the obligations placed upon them by way of their duties under the Conservation of Habitats & Species Regulations 2010 (as amended) have to take into consideration the presence of a European Protected species before determination of an application where it/they have been identified.
- 6.3 The LPA need to consider the mitigation in relation to the potential success of a Natural England Mitigation licence application and/or if in their opinion the mitigation is considered as being appropriate or if it is over and above what is required; if they determine that the mitigation is appropriate then a Planning Condition should be attached requiring the mitigation to be installed. If the LPA consider that the mitigation is over what is necessary but require "enhancement" as part of Local Biodiversity Policies this should be included in the terms Consent.
- 6.4 Notwithstanding that Planning Consent is granted it does not absolve the applicant, site owner, developer or any other party involved with the work from ensuring that an application is made for a Natural England Mitigation licence to legally undertake work that will affect bat/s or their roost/place of shelter. If work is undertaken without a licence and bat/s or their roost/s is/are affected then a breach of current wildlife legislation will occur for which penalties are high.
- 6.5 Under Regulation 53(1) and 56(3) (a) of the Conservation of Habitats & Species Regulations 2010,(as amended) a licence is required prior to disturbing bats or destroying any place that is used by bats as a breeding site or resting place. The licence is issued by the EPS Licensing Team of Natural England.
- 6.6 At the time of report writing the sequence of work is not known but the following procedures and mitigation are recommended. Prior to any work being undertaken the presence/absence bats will be established by a bat licensed ecologist undertaking a detailed investigation of the buildings which will include endoscopic examinations wherever bats have been identified or opportunities for bats exist.

- 6.7 To ensure that bats are not left without a roost during the demolition/conversion of the buildings it is recommended that two pole mounted bat boxes are located at a location where disturbance during the work is less likely i.e. in the north east corner of the site close to the track where foraging/commuting takes place. Consideration was given to mounting the boxes on a suitable tree but it is understood that all existing trees will be removed to facilitate development. The pole boxes will be used for mitigation whilst the existing roosts are lost by either demolition or conversion; they will also act as a receptor if bats have to be captured during the work schedule but will be permanently retained.
- 6.8 Before any work at the buildings commences two multi chamber bat boxes (Figure 4 - indicative) will be pole mounted within the boundary and in place before any supervision works take place, the boxes will face a northerly and southerly aspect to provide variable conditions



Figure 4 (Indicative)

Building for conversion (B1)

The building for which conversion is proposed is utilised by two bat species at wall plate level whereby the bats are using small gaps within the stonework. Therefore optimum conservation measure would be to retain the existing gaps but prevent bat access further into the building.

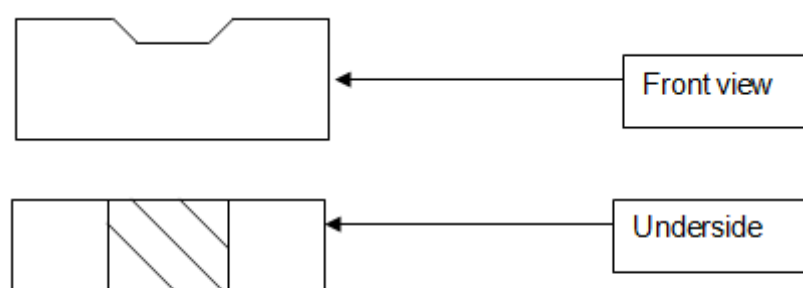
In the event that the gaps cannot be retained, then 10 “bat bricks” will be integrated within the structure on the south facing side elevation at wall plate level. Purpose made “bat bricks” can be obtained or opportunities created into existing or matching stone. (Figure 5 & 6)

In addition to this on the north and south facing gable elevations of the “new build” an integrated bat box as shown in Figure: 7 will be installed

The location of bat boxes is shown in Figure 8



Figure 5



Gap to be 15 -20 mm deep x 75mm wide; take off all rough edges after cutting the brick

Figure: 6



The integrated bat box can be installed to a gable elevation, it is a large, solid construction of insulating concrete with an internal roost space, which can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any existing brick, and it is suitable for crevice dwelling species. The box is made to match the existing brickwork of the building

Figure: 7

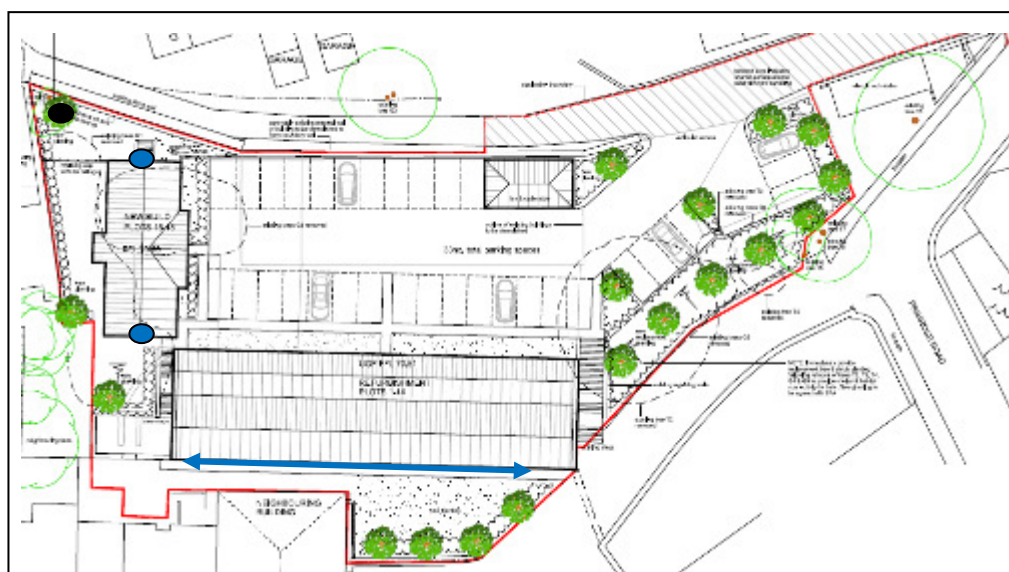


Figure: 8 Location of bat mitigation

- Location of pole mounted bat boxes
- ↔ Location of bat bricks
- Location of integral bat boxes

Natural England will not grant a Mitigation licence where a Breathable Membrane is proposed and bats may come into contact with it, as it has been demonstrated that the fine claws of bats can fray the material, which in turn results in entanglement and bat fatalities. Therefore as it cannot be guaranteed that bats will not be able to access the space between tiles/slates of the new build or converted building therefore traditional bitumen underfelt will be used at both buildings.

Work undertaken by the Ecologist

Capture/Exclusion: Once an EPSML licence is in place the contractor will provide a safe means of access to allow the ecologist to investigate all places where bats have been located or where roost potential for bats exists within the buildings.

Due to the numerous areas of bat roost potential, exclusion is likely to be unproductive but will be implemented if deemed viable; the ecologist will supervise careful and controlled removal of bat roost areas. In the event of bat/s being present it/they will be removed; placed in the secure boxes with soft tissue and immediately transferred into one of the pole mounted bat boxes which will have been previously erected. Once it has been established by the ecologist that bat/s are absent in both building the demolition/conversion will continue to completion.



In the unlikely event that bats are found outside of supervision time then the work will immediately cease and the ecologist contacted for further advice; contractors are not touch, handle bats or cause them to move in anyway. Photographs showing a Pipistrelle bat and droppings are contained in Appendix II.

- The ecologist will supervise careful dismantling of all places ON ALL BUILDINGS identified as offering roost potential where exclusion is unlikely to be successful and cannot be relied upon with strategies for safely removing bat/s.
- Work undertaken when bats are not likely to be in hibernation.
- Ecologist to undertake induction on possible bat presence, License & Method Statement to be kept on site for the duration of the work
- External lighting will not to be greater than what exists and where present is to be directed away from bat roost access points, flight paths and foraging areas – see page 9.
- Mitigation subject to the approval of Natural England
- The roost provision at the buildings will be dedicated and permanent for bats.
- The new roosts be at no further distance from identified areas nor isolated from foraging places

Work to be undertaken by the building contractor-

Receptor Roost:

Two pole mounted boxes will be erected as shown in Figure 8 under the direction of the ecologist; the boxes will represent a receptor roost if during the pre-demolition supervision/inspection if bat/s is/are located by the ecologist; although acting as receptor roost they will also be left in permanent situ.

Under the guidance of the ecologist roost opportunities as shown in Figures: 5, 6 & 7 will be installed during the construction of the new build and the conversion of B1.

Should the scheme be altered in any way or the sequence of work as recommended at 6.0 alter then the mitigation will require a review by a bat ecologist.

The landscape features identified in 1.0 all provide high value foraging habitat for bats and other wildlife that may be present within or close to the site boundaries. As a degree of foraging habitat will be lost it is recommended that the scheme should compensate for loss of trees by way of new planting in areas free from light pollution; none of the existing commuting routes or foraging areas should be illuminated by the proposals; any tree planting at the site should use advanced grown native species.



7.0 Bats & Lighting

As the site is evidently used by a small number of Pipistrelle bats for roosting foraging and/or commuting purposes it is important that any future development should ensure that light spillage does not occur on any retained/created roosts or landscape created features that are or will be of value to bats.

If inappropriate and ill designed lighting is implemented then there is likely to be an adverse impact upon bats; see extract below from Bat Conservation Lighting Guidelines.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of lamps has to a range of insects; the other is the presence of lit conditions.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. In mainland Europe, in areas where there are foraging or 'commuting' bats, stretches of road are left unlit or lighting is designed in such a way as to avoid isolation of bat colonies.

Type of lamp (light source)

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

Luminaire and light spill accessories

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

Lighting column

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

Predicting where the light cone and light spill will occur

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



Light levels

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

Timing of lighting

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

APPENDIX I - Location of emerging bats



Bat emergence at B1



Emergence at Building 2

APPENDIX II – Supplementary Photographs



Plate 1: Pipistrelle droppings



Plate 2: Pipistrelle bat