BRYMBO IRON AND STEELWORKS, HERITAGE CENTRE

CONSERVATION PLAN FOR BATS

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
07/05/2024	Joe Franklin	Richard Cutts	V1	
24/10/2024	Richard Cutts	Joe Franklin	V2	Expanded mitigation/roost protection requirements, ongoing management recommendations, and audit KPIs, following comments from NRW

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1.0 Introduction

1.1 Enfys Ecology Limited were commissioned by TACP Architects on behalf of Brymbo Heritage Trust to produce a Conservation Plan for bats with regards to works in the steelworks area of Brymbo Heritage Area (Wrexham County Council planning application P/2023/0674). Enfys Ecology have previously carried out ecological surveys relating to bats of Brymbo Heritage Area, including preliminary roost assessments and emergence surveys (Hughes, 2020; Cutts, 2022, 2023).

1.2 The proposed works involve repairs and refurbishments to several buildings and structures within the steelworks area of the site, some of which will be used as visitor and volunteer facilities.

1.3 This document includes an ecological risk assessment to assess the potential for disturbance or harming bats during the works, and a suitable Reasonable Avoidance Method Statement (RAMS) to be implemented during the works to mitigate for any potential harm identified.

1.4 The Method Statement in Section 5 sets out specific working methods and measures to be put in place to reduce the likelihood of disturbing or harming bats during the proposed works.

2.0 Bat Legislation

2.1 *International Law*

2.1.1 The UK is a contracting party to the 1979 Convention of the Conservation of European Wildlife and Natural Habitats (commonly referred to as the Bern Convention). The Bern convention has been described as the "European Treaty for the conservation of nature". Its provisions with regards to bats are transposed into law as follows:

- In England and Wales via the Conservation of Habitats and Species Regulations 2017 (as amended) (the England and Wales Habitat Regulations) and the Wildlife and Countryside Act 1981 (as amended) (the W&CA)

2.2 *Legislation in England and Wales*

2.2.1 All species of bat, their breeding sites and their resting places in England and Wales are protected through a 'dual' system of protection, under the England and Wales Habitats Regulations and W&CA. Because two regimes give legal protection to bats, the implications of both regimes must be fully understood.

2.2.2 Regulation (Reg.) 43 of the England and Wales Habitats Regulations makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats (which includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong);
- damage or destroy a breeding site or resting place of a bat; or
- possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead bat or part of a bat or anything derived from a bat or any part of a bat

2.2.3 Under Section 9 of the W&CA (s.9(4)(b), 9(4)(c) and 9(5) only), it is an offence (in relation to bats) to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place of shelter or protection;
- intentionally or recklessly obstruct access to any structure or place used by a bat for shelter or protection; or
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead bat or any part of, or anything derived from a bat (or be responsible for adverts suggesting the intention to do this).

2.3 The key UK legislation protecting bats is summarised in Section 7.

3.0 Site

3.1 *Site Description*

3.1.1 The development area is centred on the former steelworks area of the Brymbo Heritage Area, which is predominantly hardstanding and ephemeral/short perennial habitat, and includes several industrial buildings in various states of disrepair (Figure 3.1). The wider Brymbo Heritage Area extends to the west of the steelworks, and to the south to Brymbo Fossil Forest area.

3.1.2 The site is located in a rural area on the southern outskirts of Brymbo village (Figure 3.2). To the south and west of the site is a large area of fields bounded by scattered trees and hedges. Part of the former steelworks lies to the east of the survey area, beyond a trunk road, and consists of a mixture of bare ground with patchy vegetation, semi-improved grassland and scattered scrub.

3.13 Key buildings and features referred to in this report are shown in Figure 3.3.



FIGURE 3.1: SITE LOCATION – THE APPROXIMATE SITE BOUNDARY IS SHOWN IN RED.
BACKGROUND IMAGE ©GOOGLE MAPS 2024



FIGURE 3.2: WIDER SITE LOCATION – THE APPROXIMATE SITE BOUNDARY IS SHOWN BY THE RED STAR.
BACKGROUND IMAGE ©GOOGLE MAPS 2024

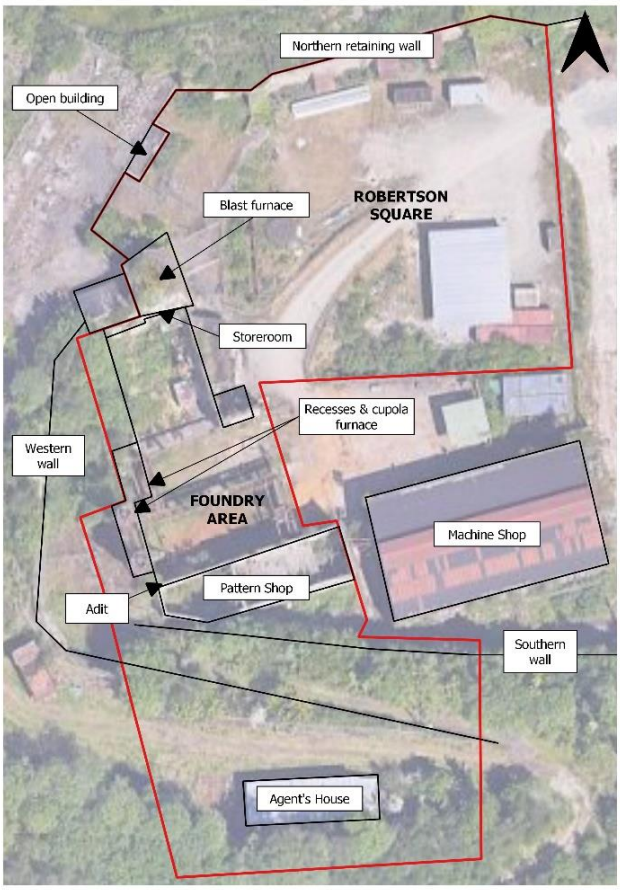


FIGURE 3.3: BUILDINGS AND FEATURES IN THE STEELWORKS AREA AT BRYMBO HERITAGE AREA.
BACKGROUND IMAGE ©GOOGLE MAPS 2024

4.0 Impact of Proposed Works on Bats

4.1 *Known Roosts*

4.1.1 Bats were recorded in the northern and western regions of the site during the surveys undertaken between 2020 and 2023. The following buildings are known to support the following bat roosts (numbers refer to the roosts in Figure 4.1 below):

- Brown long-eared roost in the open building in the north-western corner of Robertson Square [1]
- Lesser horseshoe day roost in the Blast Furnace [2]
- Lesser horseshoe roost in the store to the north of the Foundry Area [3]
- Lesser horseshoe day roosts in recesses in the Foundry Area (western side) [4]
- Likely lesser horseshoe roost in the Mine Adit (NW corner of the Pattern Shop) [5]
- Likely common pipistrelle roost in the external south-western wall of the Foundry Area [6]

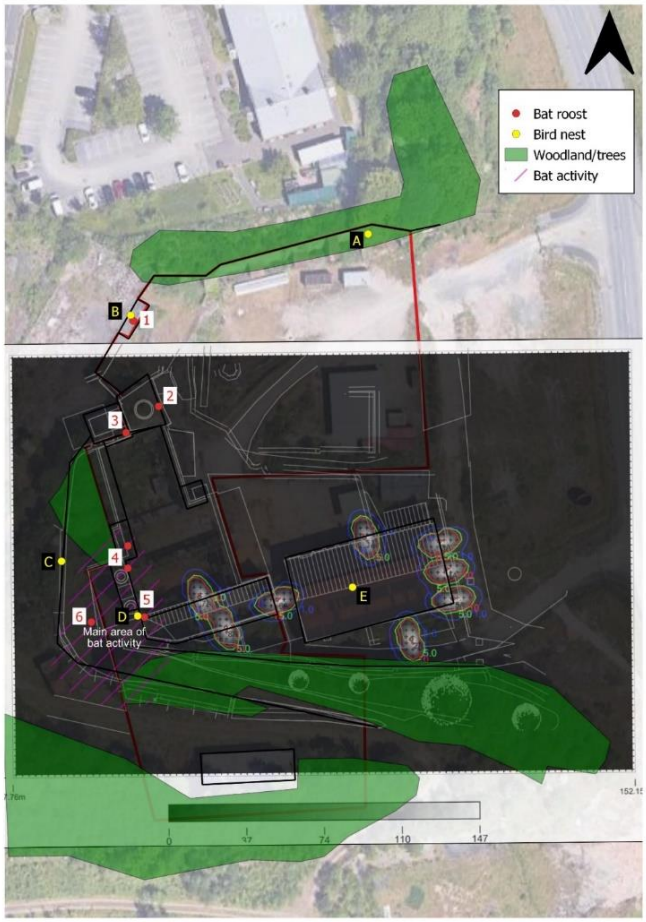


Figure 4.1: Modelled horizontal luminance (Lux) for the proposed lighting plan with locations of bat roosts, bird nests, and habitat features (see Section 3.3 for details of roosts)

Lighting plan © Carpenter Davies Partnership 2023

Background image ©Google Maps 2024

4.2 *Proposed Works Timetable*

4.2.1 Table 4.1 below provides information provided by the client as to the proposed timetable for works.

TABLE 4.1 PROPOSED WORKS TIMETABLE

	Year 1 (2024)												Year 2 (2025)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Bat ecology																								
Hibernation																								
Active																								
Construction phase																								
Machine Shop																								
Agents House																								
Pattern Shop																								
Foundry																								
No. 1 Furnace																								
Cupolas																								
Charging Wall North																								
Charging Wall West																								
Landscaping																								
Interpretation & Exhibition fit-out																								

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4.3 *Impacts of Proposed Works*

4.3.1 The impacts on each of the known or likely roosts in relation to the plans provided at the time of writing will be discussed in Table 4.2 below.

4.3.2 All roosts are currently planned to be retained and left unmodified; **no changes will be made to any bat roosts (either currently known, or identified during the program of works) without consultation with the site ecologist and until an appropriate licence from NRW is in place**. Details of proposed mitigation and enhancement measures for bat roosts in the site are provided in Section 6.

TABLE 4.2 IMPACTS OF LIGHTING AND PROPOSED WORKS ON BAT ROOSTS

Impacts		
Roost	**Lighting**	**Proposed Works**
1	No direct impact	No direct impact
2	No direct impact	Works to the furnace have been proposed during March of 2025. This could pose an issue to bats using the area to roost if bats are active early in the season. The proposed works were unknown at the time of writing so potential roosting features may be lost as a result of the works.
3	No direct impact	No direct impact
4	No direct impact	Works to the Foundry Area have been proposed between July to September which is when bats are known to be present in the recess of the foundry. The proposed works were unknown at the time of writing so potential roosting features may be lost as a result of the works.
5	No direct impact	Works to the Pattern Shop area have been proposed between July to September which is when bats are known to be present in the recesses of the foundry.
6	No direct impact	No direct impact

4.3.2 The lighting plan provided at the time of writing shows that the roosts will not be affected by the exterior lights. A review of the proposed lighting plan with regards to protected species has been provided in a separate report (Cutts, 2024).

4.3.3 Internal lighting for some of the buildings (Pattern Shop and Machine Shop) has been included in the planned works but no light spillage calculations are available. It is thought that the extent of light spillage from the internal lights will be no greater than that modelled for the additional the external lighting.

4.3.4 The land to the south and west would provide bats with high quality habitat for foraging. The area immediately to the south would be subject to a small degree of light spillage.

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4.4 *Risk Assessment*

4.4.1 The known roosts are only for an individual/ small number of bats. The surveys identified the area to the west of the site was the focus of bat activity, with the central regions, north, east, and south all being relatively quiet due to these habitats being primarily hardstanding and ephemeral/short perennial which do not provide bats with high quality foraging opportunities.

4.4.2 The proposed lighting is not thought to impact these roosts and therefore are considered to be a **low risk** to bats.

4.4.3 The proposed timetable for works do include works to areas where bats are known to roost, and will likely be present at the time of works. These works pose a **high risk** to bats. With rescheduling of works the risk could be reduced to **low risk**. Further information on this can be seen in Section 5.

4.4.4 As bats are highly mobile, and can roost in numerous features within a site, there is a chance that bats may be present on site during the works. A Reasonable Avoidance Method Statement (RAMS) must be followed at all times by all staff and contractors on site for the duration of the works period (see Section 5).

5.0 Bat Method Statement and Reasonable Avoidance Measures

5.1 *Prior to Works*

5.1.1 Immediately before works commence a tool box talk (TBT) will be provided for all contractors involved with any groundworks, by the site ecologist; this will outline the species of concern, how to identify them and how to proceed if they are found. It will also outline the working method that is detailed in this document. A log will be signed by all contractors who attend the TBT.

5.1.2 The ecologist will carry out an inspection of all internal areas of the buildings, and (where possible) of any PRF's on the roof/building exterior, for bats, prior to the start of any works.

5.1.3 A minimum of three bat boxes (one per crevice dwelling species present on site) will be mounted onto a southern, south-western, or western facing building elevation, or tree, not subject to any works for the duration of the project. These boxes could be mounted in the woodland to the south of the site. Other areas could be used following consultation with the ecologist.

5.2 *Construction Phase*

5.2.1 All cracks and holes in the walls will be inspected with an endoscope prior to re-pointing. If there are any that are too deep to fully inspect with an endoscope and that are considered suitable for bats to use an emergence survey will need to be carried out the evening prior to re-pointing 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.

5.2.2 Any works to areas where bats are known to roost will be supervised by a suitability qualified and licenced ecologist to ensure that no bats are present during the works.

5.2.3 To reduce the impact of disturbance to the bats (if present), the removal of all roof structures (including the slates, ridge tiles and vaulted ceilings, along with slate capping and fascias) will be carried out by hand and supervised by a suitably qualified and licenced ecologist.

5.2.4 A copy of the TBT and this bat method statement will be included in an induction for site workers who did not attend the initial TBT. All site workers will sign the attendee log confirming they have received and understood the TBT prior to starting any works.

5.2.5 No works are to be undertaken in the site between an hour before dusk and an hour after dawn during the main bat activity season (March to October, inclusive).

5.2.6 Lights will only be focused on areas that need to be illuminated, and no light should be focussed on any trees, hedgerow, or grassland during the works.

5.2.7 Any works in the vicinity of roosts (Agent's House, Blast Furnace and recesses in the foundry area) should avoid the months of March to September wherever possible in order to reduce the risk of disturbing bats. Should any works need to be carried out in these areas during this

period, the site ecologist must be consulted in order to assess any potential disturbance, and a licence may be required for the works.

5.2.8 No works in the vicinity of roosts in the foundry area or Agent's House should be undertaken between the months of May to September to reduce the likelihood of encountering bats.

5.2.9 Destruction or modification of known bat roosts, including altering access routes, must be avoided wherever possible; advice must be sought from the site ecologist. If a roost cannot be retained, or has to be modified, **a licence from NRW will be required**.

5.2.10 If a roost is removed, an appropriate bat box will be erected as close as possible to the original roost, or a suitable alternative roost created.

5.3 *Post-construction Phase*

5.3.1 Monitoring will be required and it will be in the form of bat emergence surveys and physical inspections of the roosts as detailed in Section 6.

5.3.2 No bat boxes will be illuminated or in an area subject to light spillage.

5.4 *Discovery of bats*

5.4.1 If at any point in the works bats are encountered in any working area, **all works must immediately cease**. If the ecologist is not already present they should be called immediately.

5.4.2 In the unlikely event roosting bats are encountered during the works, a **European Protected Species licence will need to be applied for and granted by NRW before any works can recommence.**

5.4.3 If previously unrecorded species are discovered, surveys will be required to establish roost location(s) and the number of bats likely to be present; works must not continue in the area until the site ecologist is satisfied that sufficient information has been collected and the bats are not at risk, and a licence is in place if required.

5.5 *Changes to site plans*

5.5.1 If there are any further changes in the plans for the site, including, but not limited to intended use, locations of lighting, proposed works to each building, or timings of works, further work will be required to assess whether they will have an impact on bats and an EPS licence from NRW may be required.

5.5 *Persons Responsible for Implementing the Works*

5.5.1 Brymbo Heritage Trust will be responsible for implementing the works and will be overseeing all contractors working on the development.

5.5.2 Should an EPS licence (or licences) be needed for any of the works, the licence and associated method statement will include details of the individuals responsible for all actions required for fulfilment of the licence conditions.

6.0 Mitigation, Enhancement and Ongoing Management

6.1 The bat surveys that have been undertaken have shown variations in the areas being used for roosting within the Foundry Area. There is therefore some uncertainty in how bats will continue to use the site, which should be taken into account. However, even with this uncertainty, several recommendations can be made to protect the roosts and ensure ongoing success of bat populations within the Foundry Area.

6.2 The Blast Furnace (Figure 4.1, number 2) appears to be fairly consistently used as a day roost by low numbers of lesser horseshoe bats, apparently utilising voids between the inner and outer furnace walls. Confirmed access is through the front of the furnace, but access is also possible through the chimney. This roost will be preserved by:

- Ensuring continued access into the Blast Furnace, keeping the front open and free of obstructions.
- Fencing or grilles could be used to restrict access to interior of the Blast Furnace. Any modifications to the entrance **will require a European Protected Species Licence**.
- Maintaining access points into the wall void from within the furnace; any structural work on the Blast Furnace will need to take this into account, and works on the interior of the furnace **will require a European Protected Species Licence** to ensure that the roost integrity is not compromised.

6.3 Lesser horseshoe roosts have been identified in the store to the north of the Foundry Area and in recesses in the western side of the Foundry Area (Figure 4.1, numbers 3 and 4). The use of these areas appears to be inconsistent, and they may have been abandoned as roosts at some point since the 2020 surveys. However, there have been no significant material changes to these areas and they are still considered to be potential roosts (day roost in the recesses, day and/or night roost in the store), which will be preserved by:

- Ensuring continued access into these areas, keeping them open and the entrances free of obstructions.
- Internal lighting **must not be installed** in these areas without further ecological survey and advice.
- If future surveys confirm the presence of active roosts in these areas, the installation of doors with suitable access points for bats is strongly recommended; as this would modify the roost entrance, a **European Protected Species Licence would be required**.

6.4 The Mine Adit (Figure 4.1, number 5) is likely being used as a hibernation roost by lesser horseshoe bats (and potentially other species). A lack of data on the adit means that it is not possible to fully assess the importance of this roost, but there is the potential for a significant hibernation roost to be present.

- Installing a grille or gate to restrict access to the adit would be beneficial both in terms of health and safety, and to prevent disturbance to hibernating, and therefore vulnerable, bats. As this will constitute a modification to a roost entrance, **a European Protected Species Licence will be required**.

- Gathering baseline data to understand the conditions within the adit and carrying out surveys for hibernating bats would be useful to assess the importance of the roost and would help to inform any further recommendations.

6.5 A brown long-eared roost was identified in the open building in the north-western corner of Robertson Square (Figure 4.1, number 1). This is likely used as an occasional night roost/feeding perch, but more frequent use or the presence of a day roost cannot be ruled out. This roost will be preserved by:

- Ensuring continued access into this building, keeping the front open and the entrance free of obstructions.

6.6 Common pipistrelle are potentially roosting in crevices in the external south-western wall of the Foundry Area (Figure 4.1, number 6); these crevices could also be used by other crevice-dwelling bat species (including *Myotis* species, which have been recorded in the Foundry Area) and by nesting birds. Similar suitable gaps are also present on the retaining walls of the Foundry Area, and on the outside of the Blast Furnace.

- Crevices must be checked for bats and birds prior to any pointing.
- To ensure that suitable roosting opportunities for crevice-dwelling bats are retained in the Foundry Area, some cavities will be retained whenever these structures are repaired/repointed; it is recommended that a minimum of 20% of open (i.e. not pointed) features are maintained in the aforementioned walls.

6.7 Enhancements to the Foundry Area for bats will include:

- Installation of bat boxes (a minimum of three boxes prior to the works, with a minimum of four boxes maintained on site following the works).
- Planting of hedges and trees to improve habitat connectivity and foraging opportunities.
- Perches and bat boxes could also be installed in the adit (pending further investigation) and recesses/store rooms.

6.8 In order to maintain the site in a favourable status for bats, ongoing management of the site and roost features will involve:

- Minimising disturbance to known roost areas:
    - Storage of items in these areas will be avoided, particularly during times of the year when bats are most likely to be present i.e. March-October for summer/day roosts and November – March for winter/hibernation roosts.
    - Public access to these areas will be prohibited, and access to these areas by site staff, volunteers and contractors will be restricted. All parties must be made aware of access restrictions; installation of signage may be useful.
    - The installation of grilles or doors may be needed to control access to these areas (a **European Protected Species Licence would be required** if bat access points are modified).
- Ensuring access routes into roost areas (detailed above) remain free from vegetation, refuse, stored material or other restrictions.

- Ensuring that there is no lighting (permanent or temporary) of roost entrances or bat boxes. No additional site lighting will be added without prior consultation with an ecologist.
- Following the works, there will be no repairs or modifications to the roost features detailed above, or any subsequently identified roosts, without prior consultation with an appropriately licensed ecologist.
- Planting areas within the Foundry Area will be regularly checked, and plants replaced as necessary.
- Bat boxes will be checked annually for defects, and any defective boxes repaired or replaced; boxes must only be removed for repairs/replacement by an appropriately licenced ecologist.

6.9 Following on from the monitoring period required by the Ecological Compliance Audit (see Section 7), it is recommended that bat activity surveys continue to be undertaken every year to monitor how bats are continuing to use the site and inform future management decisions; these surveys could be carried out by trained volunteers. *Ad hoc* inspections of roost areas would also be beneficial but, due to the risk of disturbance, must **only** be carried out by appropriately licenced bat workers. Results of any surveys/inspections should be provided to Cofnod, the Local Environmental Records Centre.

7.0 Ecological Compliance Audit and KPIs

7.1 To ensure that the bat conservation plan is followed in a satisfactory manner, an Ecological Compliance Audit (ECA) will be carried during and after the works.

7.2 The ECA must be carried out by a suitably experienced (and, where necessary, licenced) ecologist.

7.3 The ECA will involve an audit visit following completion of the works, which the landowner will be responsible for organising.

7.4 Key Performance Indicators for the ECA are listed in Table 7.1. Copies of all documents will be made available to the auditor and, where specified, should also be available for inspection on site.

7.5 If any of the performance indicators are failed this should be immediately reviewed, and appropriate steps taken if necessary.

TABLE 7.1. KEY PERFORMANCE INDICATORS

Performance Indicator	Evidence
A toolbox talk (TBT) covering bat ecology and this conservation plan will be delivered to contractors prior to the start of works. A copy of the TBT will be included in the induction pack for additional contractors joining the project, and made available for all staff, volunteers and contractors involved in the works.	A copy of the TBT will be kept on site. A record will be kept of all persons who have received the TBT/completed the site induction.
Work will be supervised throughout the project where appropriate by an ecologist (including visits by a suitably licenced ecologist, where appropriate).	Records of site visits and ecological advice will be kept.
Minimum of three bat boxes to be installed during the works.	Inspection of installed bat boxes by project ecologist; boxes suitable and installed in appropriate positions.
Works affecting bat roosts/potential roosts will not commence until the project ecologist has inspected the area and confirmed that work can go ahead (see Sections 5.2.1 and 5.2.2).	Records of site visits and summary reports by the ecologist.
Action taken if bats (including previously unrecorded species) are found during the course of work.	Log of species/numbers found and actions undertaken (including informing the project ecologist).
Access to roost areas is restricted.	Guidance included in TBT and/or site induction. Additional measures in place if necessary and reviewed by project ecologist.
External lighting is compliant with method statement.	Inspection of installed lighting by project ecologist; lighting scheme avoids illumination of bat roosts and flight lines.
Landscaping/planting carried out to improve foraging opportunities and commuting routes.	Inspection of landscaping/planting by project ecologist; suitability of positioning and species confirmed
Bat emergence/activity surveys will be carried out by suitably experienced and licensed ecologists at least twice a year during the main bat activity season (May to September inclusive), for a minimum of five years starting in 2025*. These may be supported by evidence from physical checks of the previously identified roosts. In order to determine that the works have had no impact on the local bat population, the following must be demonstrated: • Records of pipistrelle activity within the Foundry Area on at least two occasions during each bat activity season • Records of lesser horseshoes roosting at least once during each bat activity season * start date is based on the current estimated completion date for the works; the first survey year will be postponed until 2026 if delays mean that there is insufficient time for the surveys in the 2025 bat activity season	A report summarising results of bat activity surveys. Bat records to be sent/uploaded to Cofnod (Local Environmental Records Centre).

8.0 Legislation

8.1 *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.

9.0 References

Cutts, R. (2022). *Brymbo Heritage Area: Preliminary Ecological Appraisal.* Report reference: EE.373.LB rev. 3. Enfys Ecology Ltd.

Cutts, R. (2023). *Brymbo Heritage Site – Machine Shop, Pattern Shop and Foundry Area: Preliminary Roost Assessment, Emergence Surveys and Bird Survey*. Report reference: EE.672b.LB rev. 5. Enfys Ecology Ltd.

Cutts, R. (2024). *Brymbo Iron and Steelworks Heritage Centre Lighting Plan Review*. Report reference: EE672.24e.RC rev. 1. Enfys Ecology Ltd.

Hughes, R. (2020). *Agent's House, Brymbo: Preliminary Bat Roost Assessment and Emergence Survey.* Report reference: EE.672.LB rev. 2. Enfys Ecology Ltd.