



BRYMBO IRON AND STEELWORKS, HERITAGE CENTRE

CONSERVATION PLAN FOR BARN OWLS

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
03/05/2024	Richard Cutts	Keymar Wake	V1	

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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 barn owls (*Tyto alba*) 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 of the wider Brymbo Heritage Area, including a Preliminary Ecological Appraisal (Cutts, 2022) and bat/nesting bird surveys (Cutts, 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 Barn owls have previously been observed within the steelworks area, and are thought to nest within some of the structures. All birds are legally protected in the UK, and barn owls are afforded additional protection through the Wildlife and Countryside Act, 1981 (as amended); **a mitigation licence from NRW is required for any activities that may disturb nesting barn owls.**

2.0 Barn Owl Legislation

- 2.1 Under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000, **all wild birds**, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:
- Intentionally kill, injury or take any wild bird.
 - Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
 - Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
 - Take or destroy an egg of any wild bird.
- 2.2 Barn owls are also included in Schedule 1 of the WCA 1981 (as amended), which **additionally** makes it an offence to disturb barn owls while they are building a nest, or in/on/near to a nest containing eggs or young. It is also an offence to disturb dependant young barn owls.
- 2.3 Disturbance could include (but is not limited to) activities such as inspection of known nests, deliberate or incidental lighting/noise/vibration, and blocking or restricting access to a nesting site.
- 2.4 Further detail of the UK legislation protecting barn owls is provided in Section 8.

3.0 Ecological Risk Assessment

3.1 The site has previously been visited on numerous occasions by Enfys Ecology, for various ecological surveys, including checks for nesting birds within the buildings and structures in the steelworks area. No specific barn owl surveys have been carried out, but barn owls have been observed during bat emergence surveys carried out in 2020 (Hughes, 2020; Cutts, 2023). The latest site visit was carried out by Richard Cutts from Enfys Ecology on 8th March 2024, undertaking an ecological survey of the proposed car park (immediately east of the steelworks area) and checks of the on-site amphibian exclusion fencing.

3.2 *Site Description*

3.2.1 The development site comprises 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.

3.2.2 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.

3.2.3 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

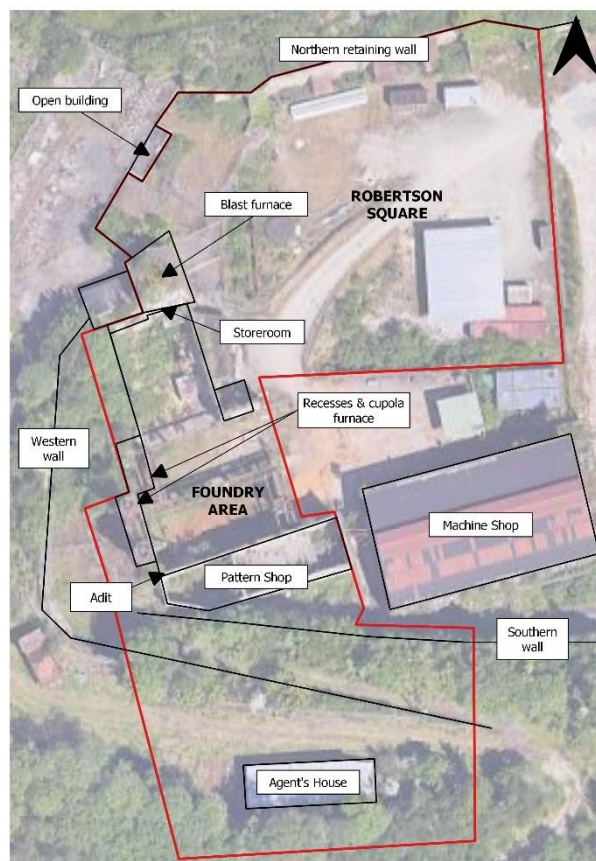


FIGURE 3.3: BUILDINGS AND FEATURES IN THE STEELWORKS AREA AT BRYMBO HERITAGE AREA.
BACKGROUND IMAGE ©GOOGLE MAPS 2024

3.3 Risk Assessment

3.3.1 Barn owls were recorded in the steelworks area site during the surveys undertaken between 2020 and 2023. Barn owls were observed in the following buildings and structures, and may be nesting within them (letters in brackets refer to the locations in figure 3.4 below):

- The northern retaining wall [A]
- The open building in the north-western corner of Robertson Square [B]
- The wall to the west of the Foundry Area [C]

3.3.2 Given the size of the development area (approximately 100m by 130m), it is considered that only one barn owl pair will be nesting within it, but will likely be using a number of nesting sites found in close proximity, including other sites inside the steelworks area.

3.3.3 A pair of barn owls were observed emerging from a hole in the west wall of the Foundry Area [C] during bat surveys in May and June 2020 (Cutts, 2023); the activity and time of year strongly suggests that a nest was present within the wall at the time. As barn owls will typically re-use a suitable nest site in subsequent years it is considered highly likely that, if a nest is or has been present in the west wall, it will continue to be used by barn owls.

- 3.3.4 Barn owls have been observed on the northern retaining wall [A]. Nesting behaviour has not been observed, and it is currently unknown whether barn owls use the wall for nesting, but suitable crevices are thought to be present.
- 3.3.5 A barn owl has been observed flying out of the open building to the north-west of Robertson Square [B]. No evidence of a barn owl nest has been found in this building, which was most recently inspected during bat activity surveys in 2023; the building is most likely used as a perch or resting spot by barn owls.
- 3.3.6 There were several other buildings and structures throughout the steelworks area, that could provide nesting opportunities for barn owls; especially as many of the interior spaces are currently accessible. As barn owls prefer to nest some distance from the ground, the Machine Shop, Pattern Shop and Blast Furnace would be the most likely sites for additional nests.
- 3.3.7 The habitats within the development area are primarily hardstanding and ephemeral/short perennial, which would provide some foraging potential for barn owls. Habitats in the vicinity of the steelworks offer good foraging potential, with a mixture of habitats including ephemeral/short perennial, grassland, and woodland edge.
- 3.3.8 It is therefore considered likely that barn owls will be active, and likely nesting, in the development area during the works:
- There is a **high risk** of a barn owl nest being present in the west wall [C].
 - There is a **moderate risk** of a barn owl nest being present in the north wall [A; exact location not determined].
 - There is a **low to moderate risk** of barn owl nests being present in other buildings and structures within the development area.
 - There is a **high risk** of barn owls being active throughout the development area at all times of the year, including perching, commuting and hunting. Barn owls are most likely to be active in the western/south-western part of the steelworks, and close to the northern boundary.
- 3.3.9 As barn owls are expected to be present and at risk of disturbance, 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 4).
- 3.3.10 A barn owl mitigation licence from NRW will be required for **any activities** that pose a risk of disturbance to nesting barn owls. Barn owls typically breed between March and August, but can nest year-round; breeding is constrained by food availability rather than being restricted to an 'active' breeding season, and several clutches can be raised each year if conditions are right. If there is any doubt as to whether barn owls are currently nesting at a location, a **licence must be sought before any potential disturbance occurs**, including both inspection of known nests and any planned works.



FIGURE 3.4: LOCATIONS OF BARN OWL SIGHTINGS (SEE SECTION 3.3 FOR DETAILS)
BACKGROUND IMAGE ©GOOGLE MAPS 2024

4.0 Barn Owl Method Statement and Reasonable Avoidance Measures

4.1 *Prior to Works*

- 4.1.1 Immediately before works commence a tool box talk (TBT) will be provided for all contractors involved in the 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.
- 4.1.2 All works in areas where it has been identified that there is a moderate or high risk of barn owls nesting (see Section 3.3.8) will be carried out outside of the breeding season (March to August, inclusive) where possible.
- 4.1.2 The site will be checked by an ecologist for signs of barn owl activity or nests (past or present) prior to works commencing. This will involve a thorough search of the structures and buildings for signs of barn owls or their nests; if areas are considered likely to have nesting barn owls, further inspection (e.g. to rule out active nesting) can only be carried out by an appropriately licenced ecologist.
- 4.1.3 If the location of nest sites cannot be determined from a visual inspection of the site, a dusk survey will be carried out, monitoring likely nest sites for emerging barn owls; this will be repeated at least two weeks later if no barn owls are observed on the initial survey. The survey(s) will be carried out in May or June 2024, and will be repeated between March and June 2025.
- 4.1.4 **Once a nest site has been identified it cannot be inspected without a licence from NRW** due to the risk of disturbing nesting owls or their young.
- 4.1.5 A '**no access**' area will be established around any active nests prior to any works; temporary fencing will be erected at a distance of 30m from the nest (the location will be agreed with the site ecologist). The fencing must remain in place until the site ecologist is satisfied that all young owls have fledged and left the nest, or until the end of breeding season if this cannot be confirmed.
- 4.1.6 If it is agreed with the site ecologist that 'no access' fencing can be removed, works in that area must still only be carried out between September and February due to the high risk of barn owls returning to the nest in the following season, and to avoid deterring the barn owls from re-using the nest site. This includes any preparatory works, including the erection of scaffolding.
- 4.1.7 As a precaution, **any fencing that was removed following the fledging of chicks in 2024 will be re-erected no later than the start of March 2025**. Fencing can be removed, pending agreement with the site ecologist, if repeat surveys later in the year (see Section 4.1.3) show that a nest site is inactive; as barn owls could return to a nest site at any time during the breeding season, this may require confirmation of an alternative nest site being in use.

4.1.8 It is recommended that two barn owl boxes are erected within the site (see Section 5); while this can be carried out at any time, it is highly recommended that they are installed prior to, or early in, the construction phase. These will provide alternative nesting areas for the barn owls already within the site, and time to allow the birds to familiarise themselves with the boxes prior to the disturbance commencing.

4.2 *Construction Phase*

4.2.1 **No works** may be carried out in 'no access' areas established around active nests (see Section 4.1.5). It *may* be possible to licence disturbing activities in the immediate vicinity of an active barn owl nests, but this should only be considered as a last resort and reserved for unavoidable emergency works; advice must be sought from the site ecologist for *any* activities that would need to take place in established 'no access' areas.

4.2.2 To further reduce the risk of disturbance, it is recommended that all areas within approximately 50m of active nest are treated as 'quiet zones'; footfall, incidental noise (such as music or phone calls) and works with hand tools should be minimised as far as is practicable. Works involving very high levels of noise or vibration (e.g. the use of heavy plant) must be approved and supervised by an ecologist. The site ecologist will be responsible for defining the extent of 'quiet zones'.

4.2.3 A copy of the TBT and this barn owl 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.

4.2.4 No works are to be undertaken in the development area between an hour before dusk and an hour after dawn within the bird breeding season.

4.2.5 There must be no illumination of active barn owl nests, known nesting sites, or barn owl boxes during the works, and dark areas maintained between these areas and adjacent habitats. Illumination of the west wall, north wall and adjacent woodland/trees must be avoided if possible, and kept to an absolute minimum.

4.2.6 Destruction or modification of known barn owl nests, including altering access routes, must be avoided wherever possible; advice must be sought from the site ecologist. If a nest cannot be retained, no works can be carried out until the nest has been inspected by a licenced ecologist and it is confirmed that no owls are currently nesting there.

4.2.7 If a nest site is removed, a barn owl box will be erected as close as possible to the original nest (see Section 5). No works must be carried out within 50m of the new barn owl box within 6 months of its installation, so that barn owls are not discouraged from using the box.

4.3 *Post-construction Phase*

4.3.1 Post-construction lighting must not illuminate any known barn owl nests, and there should be minimal light spill into the areas used by foraging barn owls (see Section 4.2.6). The

ecological impacts of proposed additional site lighting have been reviewed in a separate report (Cutts, 2024).

- 4.3.2 Where possible, disturbance of known nests should be avoided. The risks of future disturbance will depend on the nest location(s), but could be minimised through a range of measures including (but not restricted to) erecting permanent fencing, directing footfall (particularly public access) on to alternative routes, and storing frequently used tools or equipment in alternative locations.

4.4 *Discovery of barn owls*

- 4.4.1 As works will not be carried out between dusk and dawn, it is unlikely that barn owls will be active within the site during working hours. If a barn owl is seen during daylight hours, it should not be approached and the area should be avoided until the following day or until it is seen to leave.

- 4.4.2 **If at any point a barn owl nest or young owl is encountered in ANY working area, all works must immediately cease and all staff, volunteers and contractors must immediately leave the area. If the ecologist is not already present they should be called immediately.**

4.5 *Monitoring*

- 4.5.1 Barn owl nesting activity will continue to be monitored within the site for a minimum of three years post-development, with at least two surveys per year (between March and August, inclusive). The surveys will involve any combination of the following:

- Inspections of known or potential barn owl nest sites, including barn owl boxes, which will be carried out under licence.
- Dusk surveys of barn owl activity across the site.

4.6 *Persons Responsible for Implementing the Works*

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

5.0 Barn Owl Boxes

- 5.1 It is recommended that two barn owl boxes are erected on the site in the following locations (see Figure 5.1):
- Inside/on/in the vicinity of the open building to the north-west of Robertson Square. This area is relatively undisturbed, and expected to remain so, and is positioned in an area where barn owls are known to perch/forage (and potentially nest).
 - On/in the vicinity of the Agent's House. This area is expected to have a relatively high footfall (although far lower than the central steelworks area), but the box could be set back from the track and is well positioned with respect to suitable foraging habitat.
- 5.2 Both of these locations are a suitable distance from the likely barn owl nest in the west wall of the steelworks, and they would potentially be used as alternative nesting locations within their nesting area. There must be no works within 50m of the boxes for the first six months after they are installed and, as it is assumed that barn owls will be nesting in them, no works should be carried out within 30m of the boxes during the typical breeding season (March to August, inclusive).



FIGURE 5.1: PROPOSED LOCATIONS FOR BARN OWL NEST BOXES (GREEN DIAMONDS)
BACKGROUND IMAGE ©GOOGLE MAPS 2024

- 5.3 Additional barn owl boxes will be erected to replace any nests that are removed through the course of the works, positioned as close as possible to location of the original nest.
- 5.4 Barn owl boxes should be mounted at least 3m from the ground, and ideally located within buildings with their access hole facing (and visible from) the entrance to the building. There must be no obstructions on the flight line to the access point.
- 5.5 Barn owl boxes can also be mounted at a suitable height on trees, poles, or the outside of buildings. As these positions are more exposed they may be less favourable to barn owls, but do still provide alternative nesting space where installation within a building is not possible. The access hole should be directed towards open ground so it is visible by barn owls that are passing, avoiding the prevailing weather if possible, and not obscured by branches or leaves.
- 5.6 Barn owl boxes are available commercially or can be constructed; the Barn Owl Trust provides suitable designs for both internal and external barn owl boxes, which are shown below (Figures 5.2 and 5.3). Note that there must be a minimum internal height of 450mm from the floor of the box to the access hole in order to minimise the risk of owlets falling from the box. For interior boxes, 9mm FSC approved plywood is recommended. Exterior boxes need to be constructed from suitable weatherproof wood (e.g. 9mm exterior grade tanalised softwood plywood), or treated with wood preservative. Exterior boxes also need to be covered at the top with heavy duty roofing felt, and have all joints sealed with waterproof sealant.
- 5.7 Nest boxes must be inspected annually between November and January, avoiding days with poor weather in case roosting adults are flushed out of the box. Carrying out inspections in mid-winter minimises the risk of nesting owls or dependant young being present, however **if eggs or young owls found in the box it must be immediately closed; no further inspection or maintenance can be carried out until the owls have finished nesting** (this may require checks from a licenced ecologist). If there is more than 50mm of debris at the bottom of the nest box it should be cleaned out to prevent young owls reaching the access hole. This inspection and cleaning of boxes will be done *in situ*, without adjustment to position or orientation of the box.
- 5.8 There should be no lighting around the boxes, with a dark buffer around the boxes and linking them to suitable habitat via dark flightlines. The recommended box positions already have limited/no illumination, and there will be no light spill on them from additional external lighting (see separate review of light spillage; Cutts, 2024).
- 5.9 Long term management of the barn owl boxes, including repairs or replacement, is the responsibility of Brymbo Heritage Trust. If defects or damage to any of the boxes is noted, an ecologist should be called to inspect the boxes; a licence will be required to inspect boxes during the main breeding season.

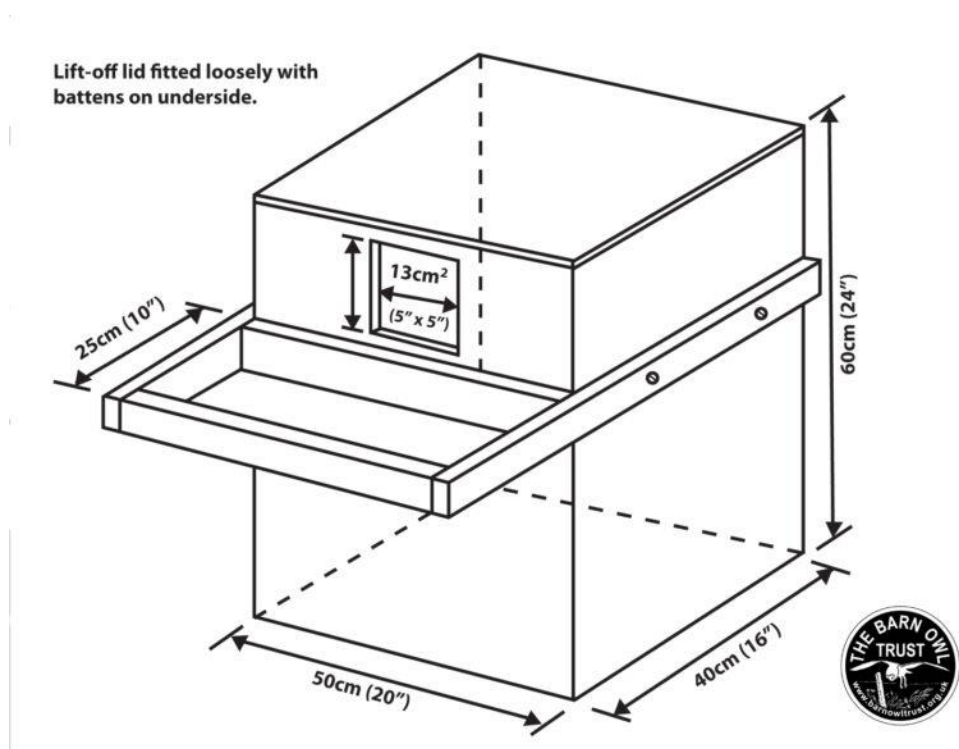


FIGURE 5.2: BARN OWL NEST BOX DESIGN FOR USE INSIDE BUILDINGS

[HTTPS://WWW.BARNOWLTRUST.ORG.UK/BARN-OWL-NESTBOX/BARN-OWL-NESTBOXES/](https://www.barnowltrust.org.uk/barn-owl-nestbox/barn-owl-nestboxes/)
 ©BARN OWL TRUST 2021

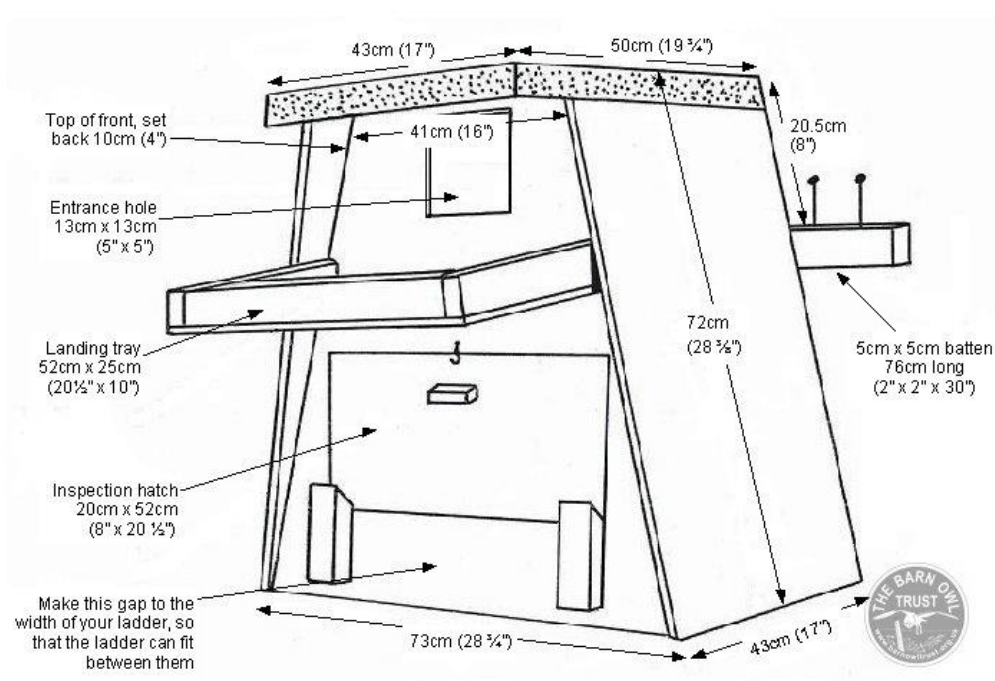


FIGURE 5.3: BARN OWL NEST BOX DESIGN FOR EXTERIOR USE

[HTTPS://WWW.BARNOWLTRUST.ORG.UK/BARN-OWL-NESTBOX/OWL-BOXES-FOR-TREES/](https://www.barnowltrust.org.uk/barn-owl-nestbox/owl-boxes-for-trees/)
 ©BARN OWL TRUST 2021

6.0 Ecological Compliance Audit and KPIs

- 6.1 To ensure that the barn owl conservation plan is followed in a satisfactory manner, an Ecological Compliance Audit (ECA) will be carried during and after the works.
- 6.2 The ECA must be carried out by a suitably experienced ecologist.
- 6.3 The ECA will involve an audit visit following completion of the works, which the landowner will be responsible for organising.
- 6.4 Key Performance Indicators for the ECA are listed in Table 6.1. Copies of all documents will be made available to the auditor and, where specified, should also be available for inspection on site.
- 6.5 If any of the performance indicators are failed this should be immediately reviewed, and appropriate steps taken if necessary.

TABLE 6.1. KEY PERFORMANCE INDICATORS

Performance Indicator	Evidence
A toolbox talk (TBT) covering barn owl 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.
Barn owl activity will be monitored as part of the works package in May/June 2024 and March-June 2025 (two surveys per year), and used to establish 'no access' zones during each breeding season.	A report summarising barn owl activity and exclusion zones.
Two barn owl boxes to be installed during the works, and additional boxes installed for any lost nest sites.	Inspection of installed barn owl boxes.
Barn owl nesting surveys will be carried out by suitably experienced (and, if necessary, licenced) ecologists at least twice a year during the main breeding season (March to August inclusive), for a minimum of three years starting in 2026*. 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 barn owl population, the following must be demonstrated: • Barn owls observed nesting within the site each year.	A report summarising results of barn owl surveys.
* start date is based on the current estimated completion date for the works	

7.0 Timing, Phasing and Duration of Construction and Conservation Measures

- 7.1 Table 7.1 details important dates with respect to barn owl ecology and the proposed timetable of works.
- 7.2 Barn owls can nest throughout the year, and will not necessarily be restricted to the 'main' nesting season. A clutch is typically laid in April or May (although it can be earlier or later); following an early clutch, a second and potentially third clutch may be laid later in the year.
- 7.3 Planned works may need to be adjusted to account for 'no access' zones put in place around active nests; **no works** can be carried out in these areas while they are in place, and any activities in these areas should subsequently be restricted to times outside of the main breeding season (March to August, inclusive).
- 7.4 No works must take place within 50m of newly installed barn owl boxes for at least six months; this must be taken into account when deciding when to install the boxes.

TABLE 7.1. TIMETABLE OF WORKS

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	
Barn owl ecology																								
Main nesting season																								
Barn owl surveys																								
‘No access’ fencing																								
Nest box inspection																								
Construction phase																								
Machine Shop																								
Agents House																								
Pattern Shop																								
Foundry																								
No. 1 Furnace																								
Cupolas																								
Charging Wall North																								
Charging Wall West																								
Landscaping																								
Interpretation & Exhibition fit-out																								

8.0 Legislation

8.1 *Birds*

Under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000, all wild birds, their nests and eggs are protected. This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

8.2 *Barn Owls*

Barn Owls are afforded additional protection as a named species in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Disturb any wild bird included in Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young.
- Disturb dependent young of such a bird.

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: EE.672.24e.RC rev. 1. Enfys Ecology Ltd.