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ECOLOGY • FORESTRY • LAND USE

ECOLOGICAL IMPACT ASSESSMENT

WEM INDUSTRIAL ESTATE

Arbor Vitae Environment Ltd, Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Project name: **Unit C9, Wem Industrial Estate, Wem, SY4 5SD.**

Grid Reference: SJ52383004

Date: 08/06/2023

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Reviewed by: Phillipa Stirling BSc MSc ACIEEM

Requested by: Peter Richards

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the extension of a hardstanding yard on an area of previously disturbed land. There is an existing industrial building and an area of hardstanding concrete at the site which will be extended and used as a lorry depot and yard.

Arbor Vitae were commissioned by Peter Richards to undertake an Ecological Impact Assessment in order to assess the impact of the development on habitats and protected species.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

The proposed development site is located on the north side of Wem Industrial Estate, Wem, SY4 5SD. The surrounding land is semi-rural, characterised by an area of industrial buildings immediately adjacent the site, permanent pasture, arable agriculture and the market town of Wem, which lies roughly 1 mile to the south-west of the development site. The wider landscape also includes small pockets of residential property and areas of broadleaved woodland.

The proposed development will comprise the extension of a hardstanding yard on an area of scrub and ruderal vegetation. The current plan will utilise the existing industrial building and concrete yard. The new site will be used as a lorry depot and yard. The site has an existing access point which extends to the south of the site.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were MagicMap, NBN Atlas and the Shropshire Environment Network.

3.2 SITE SURVEY

A site visit was made on 29/03/2023. A second site survey was carried out on 03/05/2023 as this was the optimal time to survey water vole presence. The surveys were carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the surveys was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

- Badger
- Bats
- Breeding birds
- Great Crested Newt
- Otters
- Reptiles
- Water vole

- White clawed crayfish

The survey methodology was tailored to evaluate the area for these species in the following ways:

Badger

An area within 50 metres of the site was closely searched for the following signs of badger activity:

- Setts,
- Tracks and footprints,
- Latrines,
- Snuffle holes.

Bats

The objective of the survey was to find and record any signs of use by bats, for example:

- Droppings, sometimes in concentrations below roost sites
- Feeding signs such as butterfly and moth wings
- Staining of timber, brickwork around access points

The general structure of the building was assessed for its potential to provide bats with roosting opportunities.

The site was also assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newt

A desk study and a ground search were conducted to search for any areas of open water within 250 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

Otter

Any water courses within the area and appropriate terrestrial land were searched for the following field signs:

- Spraint,
- Footprints,
- Feeding remains.

Reptiles

The site was assessed based on its suitability to support reptile populations including connections to terrestrial land from water and suitable resting habitat nearby.

Water vole

The watercourse was searched for suitable habitat which may be used by water vole and field signs, including:

- Wide swathes of vegetation growing along the banks and within a watercourse,
- Sandy/silty banks for burrowing,
- Slow-flowing watercourses of varying depths,
- Latrines, burrow entrances and 'runs',
- Discarded vegetation, cut at a 45 degree angle.

White clawed crayfish

The water course was assessed based on the following habitat specifications:

- Fast-flowing, shallow watercourse,
- Presence of natural or artificial refuges,
- Fully submerged refuges,
- Aerated conditions,
- Stable and resistant to high water.

3.3 PERSONNEL

The first survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist, Natural England bat licence number: 2021-52205-CLS-CLS and GCN licence number: 2019-42631-CLS-CLS, who was joined by Molly Isherwood BSc Hons: Assistant Ecologist on the second survey.

3.4 CONSTRAINTS

There were no constraints to the surveys being carried out successfully.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found no designations within 1km of the site. The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR.

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected species have been recorded:

Species	Distance	Protection
Mammals		
European water vole	0-0.3km	Natural Environment and Rural Communities Act 2006, Wildlife and Countryside Act 1981.
Natterer's Bat Noctule Bat Pipistrelle	0.7-0.9km	European Protected Species, Wildlife and Countryside Act 1981.
Western European Hedgehog	0.8km	Wildlife and Countryside Act 1981.
Birds		
Brambling Fieldfare Redwing	0.6-1km	Wildlife and Countryside Act 1981.
Amphibians		
Great Crested Newt	0.6-0.8km	European Protected Species, UK Post-2010 Priority Species, Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Scattered Scrub and ruderal vegetation

The main site, to the north and west of the existing building, is a mixture of scattered scrub and ruderal vegetation. Species identified within the scrub were bramble, hawthorn, goat willow, broom and ash. A wet ditch lies within this habitat, lined with soft rush. Elf cup and turkey tail fungi were also identified during the field survey.

Herbaceous species noted during the site visit included common thistle, clover, coltsfoot, Yorkshire fog, germander speedwell, cleavers, common nettle, spear thistle, comfrey, teasel, common daisy, bird's-foot-trefoil and great mullein.

Buildings

An existing industrial building near the south-east corner of the development site. The building has a breezeblock structure with single-skin corrugated sheet metal elevations and roofing and sits on a concrete pad. The ridge of the building has been capped with flash banding or similar, as are the verges. There are large industrial roller shutters on the south facing elevation. Many of the windows and doors around the building have broken or are open, creating light and drafty conditions within. Internally, there are precast concrete support posts and beams which provide few cavities or internal enclosed voids. There are some PVC clear panels within the roof, further adding to the light internal conditions.

Hardstanding

The area immediately adjacent to the building is hardstanding concrete. There is an existing access track near the south-east corner of the site, which connects the site to the industrial estate and to Soulton Road to the south.

Native broadleaved woodland

A young native broadleaved woodland lies on the east of the site and includes ash, hazel, alder, silver birch and elder. There is a developing shrub and ground layer which consists of bramble, hart's tongue fern and common nettle.

4.3 ADJACENT HABITATS

Running water

A slow-moving man-made drainage ditch lies to the north of the site. It has sloping banks, varying from gradually sloping to the north-east to steeply sloping to the north-west. The banks are well vegetated and dominated by common nettle and red dead nettle with dandelion, soft rush, P*hragmites*, rosebay willowherb and cow parsley. The water is fairly silty and there is fool's watercress in the ditch.

Buildings

Many industrial buildings lie to the south and east of the development site which are part of Wem Industrial Estate.

Hardstanding

The site is connected to the rest of the industrial estate by an access track which extends to the south of the site. Similar hardstanding tracks connect other industrial buildings to the estate.

A gravel track lies to the north of the site, separating the site from the wet ditch. This is used as a footpath and as vehicle access to other parts of the industrial estate.

4.4 PROTECTED SPECIES

Badgers

The field survey and previous ecological surveys confirmed badger activity on site.

In 2017, a Preliminary Ecological Appraisal by Pearce Environment found six badger setts on site, five of which were still active (see figures 3 and 4). They (T Pearce, 2017) also noted badger paths near the north and west of the site.

During the site visit on 29/03/2023, a minimum of six active sett entrances were identified on site within the woodland section to the east. Established badger paths and a large spoil heap were also identified within the woodland habitat. See figure 5 for the locations of these observations. No evidence of badger setts on the main site (to the north, west and south of the building) was found during the field survey.

Bats

No habitats on site provide roosting opportunities for bat species. However, the habitats on site do provide good commuting and foraging opportunities for bat species.

The adjacent broadleaved woodland provides negligible potential as a bat roost as there were no mature trees which provide aged features which can be utilised as a bat roost.

Breeding birds

The onsite scrub habitat provides some nesting potential for breeding birds, although none were visible during the time of survey.

The adjacent woodland provides good nesting opportunities for breeding birds.

Great Crested Newt

There are recent records of great crested newts in the wider landscape. However, the closest observation was 0.6km from the site. No ponds were identified within 250m of the proposed development site and therefore no further survey work is required with regard to this species.

Otter

The site provides low habitat suitability for otter and no evidence of otter was found during the field survey.

Reptiles

There are no historical records of reptiles within 1km of the site and no evidence of reptiles was observed during the time of survey. No further field work is required with regard to this species.

Water vole

There are recent records of water vole on site and the Wem area is well known for its high rates of water vole occurrences.

The drainage ditch provides a high-quality habitat for water vole and evidence of water vole presence was noted during the field survey. Obvious water vole 'runs' and a few feeding stations were identified along the banks of the ditch. A small number of burrow entrances were also observed. The actual number of burrow entrances is likely to be higher, but dense vegetation growth obscured these from view.

White clawed crayfish

There are no historical records of white clawed crayfish on site and the drainage ditch is slow running and silty. Hence, it provides low habitat suitability for this species and no further survey work is required.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

Scattered Scrub and ruderal vegetation

The proposal will result in the loss of a portion of scattered scrub and ruderal vegetation which provides little valuable habitat. Inevitably this will result in the loss of habitat for invertebrates and small mammals, although the area is small and the loss is of local significance only.

Buildings

The building provides no valuable habitat for priority or protected species. Due to the materials of the building, it provides no cavities or enclosed voids which bat species could utilise as a bat roost. The thermal properties of the building and the light conditions within

further reduce its suitability as a bat roost. The building provides poor potential for breeding birds due to the lack of features which could be utilised for nest-building.

Hardstanding

Existing hardstanding will be re-surfaced or improved for future use. It currently provides negligible value as a habitat.

Native broadleaved woodland

A young broadleaved woodland lies on the east of the site which provides valuable habitats for badgers, bats and breeding birds. The initial plan for the site was to clear this area of woodland to create a hardstanding lorry yard. However, due to the obvious high-quality habitat it provides for a range of species, specifically badger, the plans have been amended so that construction work will not extend into this area. Mitigation will be required to avoid any unintentional damage to this habitat.

Running water

The drainage ditch provides valuable habitat to water vole which is a protected species. The current plans do not extend to the ditch and so the proposal will have a negligible impact upon this habitat. Even so, mitigation will be required to avoid any disruption.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

Definite signs of badger occurrence were evident on site during the field survey and have also been noted in previous ecological surveys.

Previous ecological surveys (T Pearce, 2017) observed two badger setts on the main site near the north-west and south-west corners of the building. No evidence of these setts was observed during the field survey in May 2023.

The proposal is likely to disturb some of the badger trails around the site. A badger trail was found on the south boundary of the site, connecting the woodland habitat to the wider landscape to the north and west. This has signs of frequent use.

Overall, the proposal with the amended red line boundary will result in a low impact to badger. A method statement has been outlined in Section 6.2 to mitigate against any impacts. Any increase in external lighting may have an impact upon badger behaviour and this requires mitigation.

Bats

The proposal will have no impact upon suitable or potential roosting features, and therefore negligible impacts to bat species. Any increase in external lighting may have an impact on bat foraging behaviour and this requires mitigation.

Breeding birds

The proposal is unlikely to have any impact upon breeding birds but precautionary measures will be adopted.

Great crested newt

No ponds were identified within 250m of the proposed development site and the site provides sub-optimal opportunities for GCN. The proposal will result in negligible impacts to GCN.

Otters

The proposal will result in negligible impact to otter as the site provides low habitat suitability for otter and no evidence of their presence was found during the field survey.

Reptiles

There are no historical records of reptiles on site and no evidence of reptiles was observed during the time of survey. The site also offers limited habitats for reptile species. The proposal will result in negligible impacts to reptile species. Even so, precautionary measures will be adopted, outlined in Section 6.2.

Water vole

There is definite evidence of water vole presence along the drainage ditch to the north of the site. Although the drainage ditch sits on the other side of an access track which lies outside of the proposal's red line boundary, mitigation will be required to ensure all risk to this protected and priority species is removed.

White clawed crayfish

The site provides sub-optimal habitat for white clawed crayfish and no evidence of this species was noted during the field survey. The proposal will not impact white clawed crayfish or the adjacent water course.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

Native broadleaved woodland

Mitigation is required to avoid any damage to the woodland habitat to the east of the site. As stated earlier, the initial site plans included this habitat in the development area. However, amended plans will preserve this habitat due to its high ecological value. The existing access track will act as a buffer, avoiding any infringement upon the woodland. This access track provides a buffer of roughly 2.5 metres between the development site and the woodland. Any potential widening of the access track must not infringe upon the woodland and so it can only be widened on the west side of the track. Any future plans must include the retention and protection of the woodland section.

Running water

The drainage ditch to the north provides valuable water vole habitat and, although construction work does not extend to the bank top, mitigation is required to minimise disturbance. As per government guidelines, a buffer zone of a minimum of 3 metres shall be enforced from the top of the bank. This can include the access track that lies on the north boundary of the site, which offers a 5-metre buffer.

6.2 PROTECTED SPECIES MITIGATION

Badger

The proposal with the amended red line boundary will not disturb any badger setts as all active badger setts were observed in the woodland habitat. Even so, there are definite signs of badger activity on site, with numerous foraging sites and badger trails being noted across the site.

A reasonable avoidance method statement has been outlined below. The aim of the following avoidance measures is to eliminate as far as possible the risk of disturbing badgers during and after the development. If all avoidance measures are adopted and implemented, work will be able to proceed without the need for a licence from Natural England.

Pre-commencement check

A pre-commencement check by an ecologist is required prior to the start of any construction to evaluate the status of badgers onsite. This is because badgers can excavate additional setts or holes at any time. Any active sett(s) found on the main site

outside of the woodland habitat will have to be closed and work will not continue in these locations.

Induction of contractors

- A toolbox talk will be given to all site personnel in order to make them aware of the possible presence of badgers, their responsibility to avoid disturbing them, and the avoidance measures to be used on site.
- A paper copy of the avoidance measures will be retained on site together with the contact details of the issuing ecologist.

Site layout

- Previous site plans have included the woodland habitat to the east of the site in the development. However, the amended proposal will not extend into this area due to the obvious high-quality habitat it provides. This will be a designated 'badger protection area'.
- There will be no infringement upon the woodland as the access track running from south to north of the site on the east boundary will act as a 2.5 metre buffer. Any widening of this access track will only occur on the west side so that it does not encroach the woodland.
- A raised palisade or timber panel fence shall be constructed along the south and west boundaries of the woodland habitat to further protect badgers. An access point will be located at the south-west corner of the fencing, facing west, to allow onsite and offsite access for badgers. This will also allow for the continued use of the badger trail on the south boundary and will connect the woodland habitat to the new buffer zone.
- Temporary site fencing will be installed along the east edge of the track to prevent machinery or operatives from entering the woodland.
- A **2-metre-wide** buffer zone will be left on the southern boundary in order to maintain a corridor for habitat connectivity. This will allow the continued use of the existing badger trail as a commuting and foraging pathway to the wider landscape. As badgers are happy to use established paths, even if they are subject to development, allowing a small corridor off-site will help to avoid any conflict which may arise between the development and badgers in the area.
- A triangular area of roughly 150 square-metres lies at the south-west corner of the site which current plans do not utilise for development. This area will be removed from current plans and remain as an area of scrub and ruderal vegetation. Additionally, it will be enhanced as a badger foraging site by seeded species rich

planting and the planting of a mix of native fruit trees. These can include, but are not restricted to, elder, hawthorn, hazel, plum and wild cherry.

On site protocols

- Any excavations/ditches should be either; covered completely at night time, **or** an access ramp should be left within each separate excavation/ditch to allow badgers or other to escape should they fall in.
- Any chemicals or harmful substances should be kept within a locked container, off the ground and ideally within a structure on site.
- No fire or burning of materials is to take place within 30m of the woodland edge to the east of the site.

Badger, bats and otter

Any artificial lighting will be designed with nocturnal wildlife in mind. The following measures will be incorporated into lighting plans for the site:

- Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife.
- Any exterior security or decorative lights to be installed on the development site will be less than 3 m from the ground and fitted with hoods to direct the light below the horizontal plane, at an angle of less than seventy degrees from vertical, and shall not be fixed to, or directed at, bat boxes or gables or eaves.
- Security lighting will be set on motion sensors with short timers (<1 minute) and will be LED with a passive infrared trigger.
- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires will be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

Breeding birds

A thorough ground and internal inspection should be completed prior to works commencing on site if works start between 1st March and 31st August (inclusive) in any given year. If breeding birds are found, an exclusion zone of 5 metres should be

implemented and maintained until breeding is complete and the fledglings have left the nest.

If any hedgerow removal is necessary, a thorough inspection of the section of hedgerow should be carried out to check for breeding birds if work start between 1st March and 31st August (inclusive).

Great Crested Newt

The proposals will have no impact upon this species and mitigation will not be required.

Reptiles

The proposal is unlikely to have an impact upon reptiles. However, the precautionary measures outlined below will be adopted to avoid any harm to reptiles.

Legislation

Common or Viviparous Lizard, Adder, Grass Snake and Slow Worm are protected under Schedule 5 of The Wildlife and Countryside Act (1981), under part of Section 9(1) and all of Section 9(5). As such it is an offence to;

- intentionally kill or injure an individual of these species,
- transport for sale or exchange, or offer for sale or exchange live or dead an individual or any part of an individual of these species.

The objectives of this method statement are therefore to:

- Avoid committing an offence under the above legislation; and,
- Ensure that the favourable conservation status of the species concerned is maintained.

Any development related activities on the site, such as vegetation clearance or excavations in areas of suitable reptile habitat may potentially affect this species. As a result, safeguards must be implemented and the Method Statement below details measures to ensure these objectives are achieved.

Method statement

- A tool box talk will be given to all Contractors working on the site, to inform personnel of the potential presence of reptiles within the local area.
- A paper copy of the avoidance measures will be retained on site together with the contact details of the issuing ecologist.

- An Ecological Clerk of Works (ECoW) will be appointed and be available, as and when required throughout the construction period.
- All areas to be strimmed and cleared of vegetation will be thoroughly hand-searched by the ECoW prior to removal. Any piles of wood, brash, and rubble within the working area will be dismantled by hand and immediately removed from the working area under the supervision of the ecologist.
- Any vegetation works including the removal of taller vegetation (above 15cm) and areas of gorse and scrub will be undertaken using hand-held tools (e.g. hand-held strimmer). This will be carried out in two phases: the first to 0.2 m, the second close to the ground, with all cuttings raked and removed the same day.
- All vegetation within the site to be removed will be carried out during the reptile activity season, which is between April and September. This will encourage any resting reptiles to disperse from the area before vegetation clearance is carried out.
- Should any common reptiles be discovered during clearance or construction, which are likely to be affected by the development, clearance or works will cease immediately. The owner/site manager will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide.
- Any reptiles found will be relocated by a suitably qualified and experienced ecologist to an area of retained habitat on the perimeter of the site.
- Any trenches left overnight will be covered or provided with ramps to prevent common reptiles and other animals being trapped.
- Any building materials such as bricks, stone etc. that are to be stored within the site will be stored on pallets to discourage reptiles from using them as shelter.

Water vole

As per government guidelines, a buffer zone of a minimum of three metres from the bank top shall be enforced to minimise disturbance to water voles and the banks of the ditch. The access track to the north provides a 5-metre buffer and construction work will not extend beyond this. Protective fencing will be installed around the outside of the development site to prevent machinery and operatives from entering ecologically sensitive areas.

White clawed crayfish

The proposals will have no impact upon white clawed crayfish and mitigation will not be required.

6.3 ECOLOGICAL ENHANCEMENT

In order to provide shelter, breeding and hibernating opportunities for a variety of wildlife, we recommend that a nest box scheme is adopted as follows:

- Four Woodcrete general purpose bat boxes, suitable for crevice-dwelling species should be installed into mature trees within the boundary hedgerows. No lighting should be installed in the vicinity of the boxes. They should be at least 3m from the ground and face south or south west.
- Four Woodcrete cavity nesting bird boxes with 28mm or 32mm access holes. These should be positioned within mature trees on the boundary of the site and the access should face away from the prevailing wind.
- Two hedgehog domes should be installed in the woodland habitat to the east of the site.
- A minimum of one amphibian and reptile hibernacula will be created on site, as per Figure 3 of the GCN Mitigation Guidelines.

7 SUMMARY

Planning permission will be sought for the extension of a hardstanding yard on an area of previously disturbed land. Arbor Vitae were commissioned by Peter Richards to undertake an Ecological Impact Assessment in order to assess the impact of the development on habitats and protected species.

The proposal will result in the loss of an area of scattered scrub and ruderal vegetation which provides little valuable habitat. No mitigation is required for this loss of habitat.

The amended plans recognise the importance of the woodland area at the east of the site as a highly valuable habitat and so it will remain undisturbed. Mitigation is required to avoid any unintentional damage to this valuable habitat. The existing access track that runs alongside the woodland will act as a barrier, providing a 2.5 metre buffer. Any widening of the access track must not infringe upon the woodland and so it can only be widened to the west. Any future plans must to include the retention and protection of the woodland section.

The drainage ditch to the north provides valuable water vole habitat and so, as per government guidelines, a buffer zone of a minimum of 3 metres shall be enforced from the top of the bank. This can include the access track that lies on the north boundary, providing a 5-metre buffer.

The proposal will have no impact upon great crested newts or white clawed crayfish and mitigation will not be required.

The proposal is unlikely to have an impact upon bat species and otters, although Wildlife Sensitive Lighting Plan will be adopted on site due to its semi-rural location. This will also reduce any behavioural impacts to badgers on site.

The proposal is unlikely to have an impact upon breeding birds, although precautionary measures outlined in Section 6.2 will be adopted.

Definite signs of badger occurrence were noted during the field survey and have been observed in previous ecological surveys. Much badger activity, including at least two setts, were observed in the woodland habitat, although this will now be protected from any development. Construction work on the main site will have a low impact on badgers as, despite evidence of trails, no badger sett was found on the area of scrub and ruderal vegetation. A set of reasonable avoidance measures that have been outlined in Section 6.2 will be followed to reduce any impacts to badger species.

The proposal is unlikely to impact reptile species, although a set of reasonable avoidance measures will be followed to avoid any harm to reptiles from the construction work.

There are conclusive signs of water vole presence along the drainage ditch. The ditch lies outside of the proposed development site, although, as per government guidelines, a buffer zone of a minimum of three metres from the bank top shall be enforced to minimise disturbance to water voles and the banks of the ditch. The access track to the north provides a 5-metre buffer and construction work will not extend beyond this.

In order to provide ecological enhancements, the following features will be installed on site following completion of works: four Woodcrete general purpose bat boxes, four Woodcrete cavity nesting bird boxes, and two hedgehog domes, one reptile hibernacula and four insect hotels.

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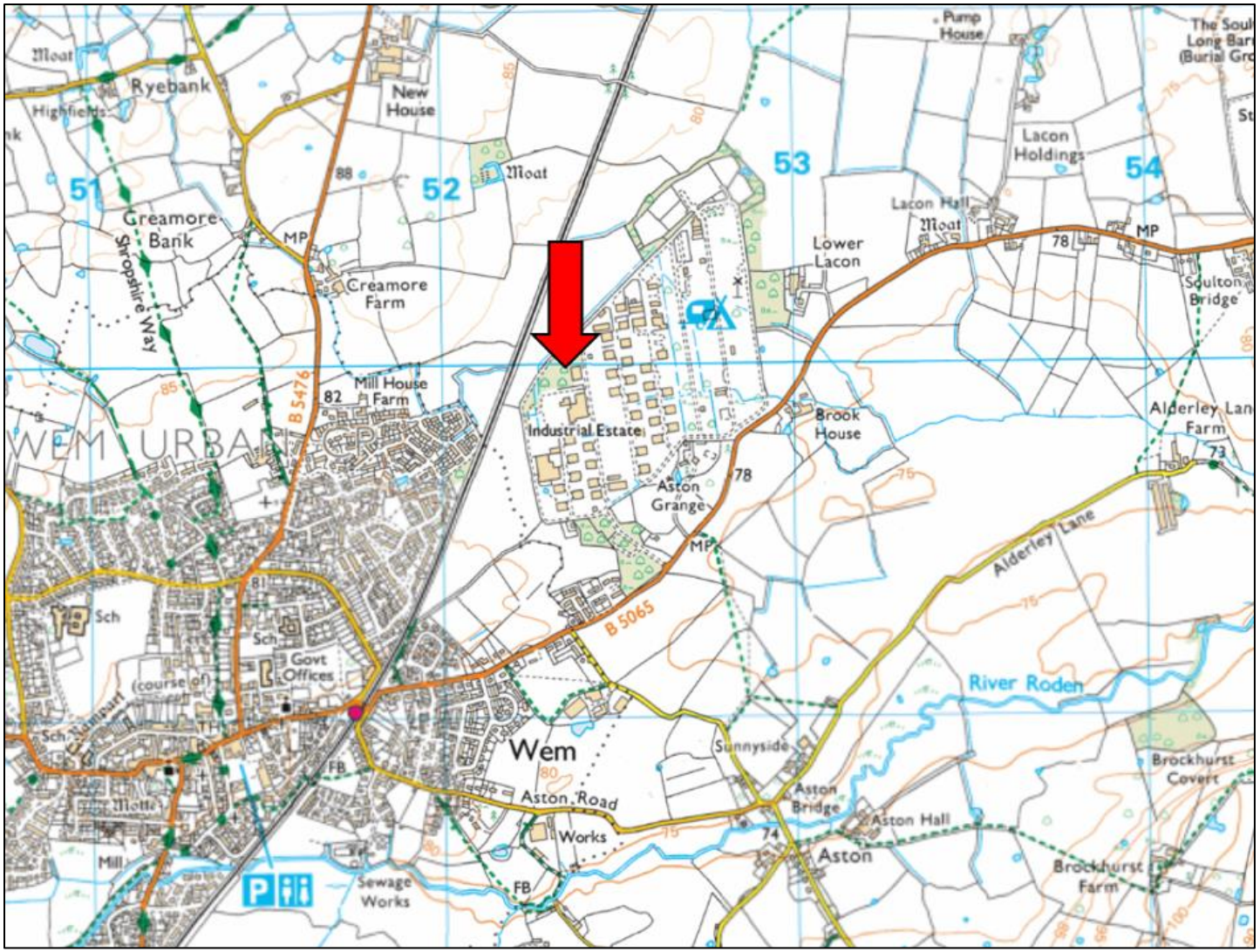
FIGURE 1 LOCATION



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

FIGURE 2 AERIAL PHOTOGRAPH

FIGURE 3 MAP OF 2023 BADGER ACTIVITY ON SITE

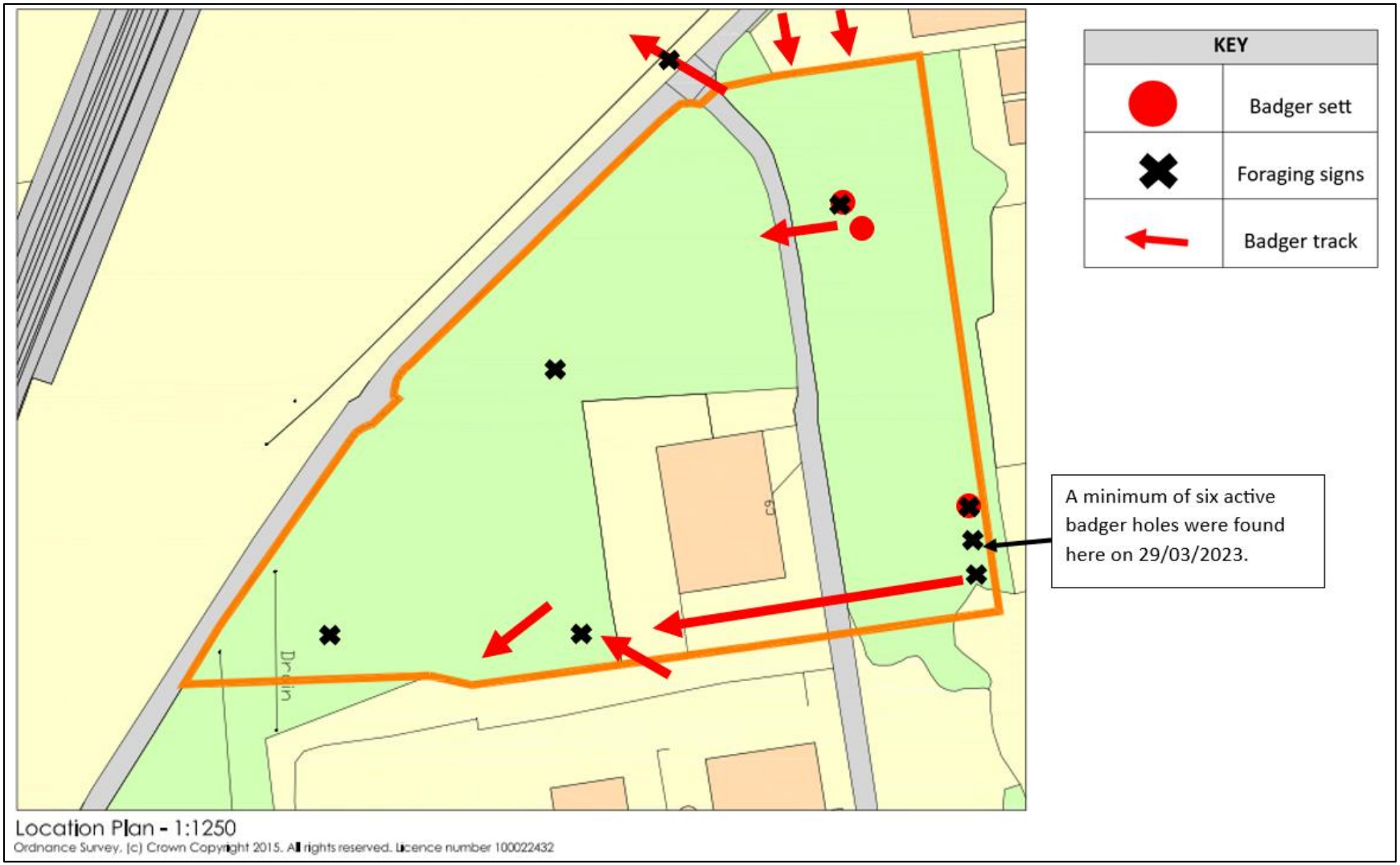
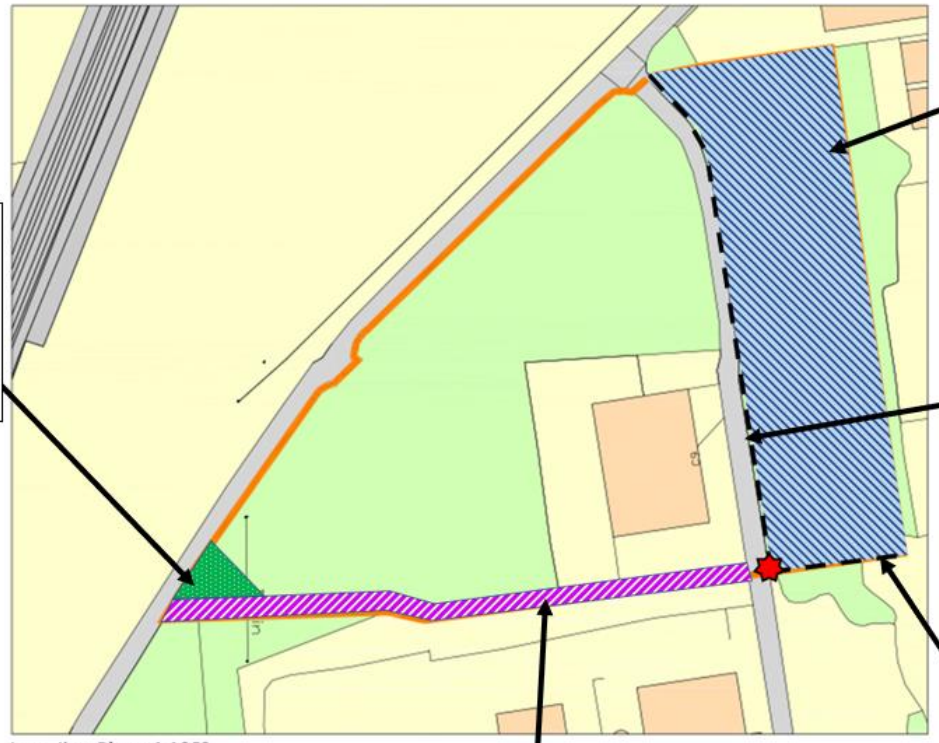


FIGURE 4 BADGER MITIGATION AND ENHANCEMENT PLAN 2023



ENHANCED FORGAING:

This area is to be enhanced with seeded species rich planting and a mix of native fruit trees.

WOODLAND HABITAT:

'Badger Protection Area' – 0.5 ha of retained and protected woodland habitat where development will not extend.

This habitat can be enhanced through the planting of a mix of native fruit trees including elder, hawthorn, hazel, plum and wild cherry.

WOODLAND BUFFER:

The existing access track provides a 2.5 metre buffer from the woodland to the construction area. Any widening of the track will occur on the west side to avoid encroachment upon the valuable woodland habitat.

BADGER FENCING:

Raised palisade or timber panel fencing will be put in place, further protecting the badgers and allowing badger movement.

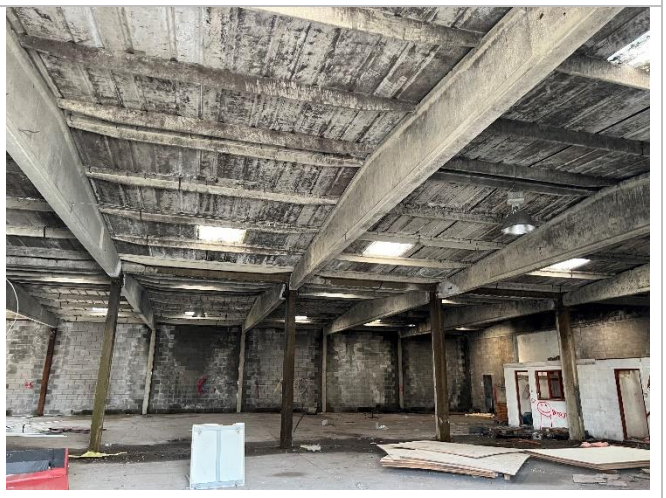
An access point is located at the south-west corner of the fencing to allow onsite and offsite access for badgers.

(The access point is marked on the map as ✸)

BADGER CORRIDOR:

A **2-metre-wide** buffer zone will be left on the southern boundary in order to maintain a corridor for habitat connectivity.

APPENDIX 1 PHOTOGRAPHS

	
Scattered scrub and ruderal vegetation on the main site.	View of the site from the north.
	
View of the building near the south-east corner of the site.	Internal view of the buiding with precast concrete support beams.
	
Badger trail in the woodland habitat to the east.	Existing access track to the site on the east of the site providing a 2.5 metre buffer for the woodland.

	
Active badger sett in the woodland habitat.	View of the ditch ot the north of the site.
	
View of water vole runs at the base of the bank.	View of the access track at the north of the site providing a 5 metre buffer for the ditch.