



ECOLOGYSOLUTIONS

Part of the ES Group

HOME FARM,
HAYES

Bat Survey Report

January 2023
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1. INTRODUCTION

1.1. Background

- 1.1.1. Ecology Solutions was commissioned in April 2022 by Lichfields, on behalf of the Church Commissioners for England (CCE), to undertake an ecological appraisal of land at Home Farm, Hayes.
- 1.1.2. Following the initial survey, Ecology Solutions was further instructed to complete a series of bat surveys at the site, namely of Building B5.
- 1.1.3. The proposals for the wider site involve its promotion for development and removal from the Green Belt as part of an upcoming Local Plan Review process. The purpose of this report is to address the demolition of Building B5.

1.2. Site Characteristics

- 1.2.1. The site is situated to the north of Hayes, within the London Borough of Hillingdon. It is bordered by Mellow Lane East and Hayes End Road to the immediate south and Charville Lane to the north. Existing residential development is present to the south, west, north and east. Three office buildings are located to the west of Hayes Park, which forms the eastern extent of the site. These buildings, in addition to a multi-storey carpark and their surroundings, are enclosed within the site but are not part of it (see Plan ECO1).
- 1.2.2. The site largely comprises fields of semi-improved grassland used for grazing horses and other agricultural activities. Home Farm is situated in the south of the site, where existing farm buildings remain in a state of disrepair – Building B5 is present in this location. Some of the buildings in this area are business units. An active workshop and disused buildings are situated to the east of the farm and are separated by a brick wall. The field boundaries are generally formed by hedgerows, including mature trees, some of which are classed as veteran. Fencing borders the fields actively used as horse paddocks and woodland is located to the immediate northeast and east of the site. Mature trees, living and dead, are situated across the site within the fields of semi-improved grassland. Also present is modified grassland, scrub, and two former gardens (see Plan ECO2).

1.3. Purpose of this Report

- 1.3.1. This report sets out the results of the bat survey work undertaken by Ecology Solutions between July and September 2022.
- 1.3.2. Where necessary, mitigation measures are recommended so as to safeguard this faunal group within the site and, where appropriate, enhancement measures are put forward.

2. LEGISLATION AND ECOLOGY

2.1. Legislation and Licensing

2.1.1. All bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 ("the Habitats Regulations"). These include provisions making it an offence to:

- Deliberately kill, injure or take (capture) bats;
- Deliberately disturb bats in such a way as to:-
 - (i) be likely to impair their ability to survive, to breed or rear or nurture their young; or to hibernate or migrate; or
 - (ii) to affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

2.1.2. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

2.1.3. European Protected Species licences are available from Natural England in certain circumstances, and permit activities that would otherwise be considered an offence.

2.1.4. In accordance with the Habitats Regulations Natural England must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

- the activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
- there must be no satisfactory alternative; and
- the favourable conservation status of the species concerned must be maintained.

2.1.5. Licences can usually only be granted if the development is in receipt of full planning permission.

2.2. Ecology

2.2.1. There are seventeen breeding bat species in Britain. Many of them are considered threatened due to a variety of factors including habitat loss and disturbance / damage to roosts. Of these seventeen species, a number regularly use buildings as roost sites.

2.2.2. Bats are highly mobile flying mammals, which, in Britain, feed entirely on insects. They are able to fly and feed in the dark by using a system of echolocation that gives them a 'sound picture' of their surroundings.

2.2.3. In winter when prey is scarce, British bats hibernate in humid parts of buildings, caves or hollow trees where temperatures are typically stable.

They may wake occasionally but only become fully active again in the spring.

2.2.4. Female bats gather together in maternity roosts in summer to give birth and rear their single offspring. Like other mammals, bats have fur and give birth to live young. Infant bats suckle on their mother's milk for several weeks until they can fly and hunt insects for themselves. Bats are long-lived mammals and some British species are known to live to over twenty-five years of age.

3. SURVEY METHODOLOGY

3.1. Desk Study

3.1.1. In order to compile background information on the site and the surrounding area, Ecology Solutions contacted Greenspace Information for Greater London CIC (GiGL).

3.2. Field Survey

3.2.1. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004¹), the Joint Nature Conservation Committee (2004²) and the Bat Conservation Trust (2016³).

3.2.2. All buildings within the site were assessed by Ecology Solutions for their potential to support roosting bats during the Phase 1 habitat surveys conducted in May and June 2022. Buildings were categorised as having high, medium, low or negligible suitability for roosting bats in accordance with the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines*.

3.2.3. Owing to health and safety concerns, Building B5 (see Plan ECO2) is scheduled for demolition and is the focus of this report.

3.2.4. An internal inspection of Building B5 was not considered safe and, as such, only an external survey was completed.

3.2.5. The probability of a building being used by bats as a summer roost site increases if it:

- is largely undisturbed;
- dates from pre-20th Century;
- has a large roof void with unobstructed flying spaces;
- has access points for bats (though not too draughty);
- has wooden cladding or hanging tiles;
- is in a rural setting and close to woodland or water.

3.2.6. Conversely, the probability decreases if a building is of a modern or pre-fabricated design / construction, is in an urban setting, has small or cluttered roof voids, has few gaps at the eaves or is a heavily disturbed premises.

3.2.7. The main requirements for a winter / hibernation roost site are that it maintains a stable (cool) temperature and humidity. Sites commonly utilised by bats as winter roosts include cavities / holes in trees, underground sites and parts of buildings. While different species may show a preference for one of these types of roost site, none are solely dependent on a single type.

¹ Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

² Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.

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

- 3.2.8. In addition to the external survey, two dusk emergence surveys were undertaken in July and August 2022 and one dawn re-entry survey was undertaken in September 2022 on Building B5.
- 3.2.9. The survey methods undertaken aimed to identify any roosting bats leaving or entering the building or using the wider site for foraging. The dusk emergence surveys were undertaken from approximately 15 minutes before sunset until approximately two hours after sunset and the dawn survey two hours before sunrise until 15 minutes after, as per current guidelines.
- 3.2.10. Surveys were conducted when the night-time temperature was equal to or above 10°C. The insectivorous diet of bats means there is little or no food available when the temperature falls below this level and consequently levels of activity are low and may not accurately reflect the value of the application site for bats. The weather conditions for the surveys were recorded and any limitations noted.
- 3.2.11. Experienced surveyors were equipped with iPads paired with Echo Meter Touch 2 PRO bat detectors, and all recorded data was subject to analysis via Kaleidoscope software.

4. SITE DESCRIPTION

4.1. Buildings

4.1.1. Several buildings (Buildings B1 to B8 – see Plan ECO2) are present in the south of the site, some of which are in a state of disrepair. These structures comprise the former farmhouse (Building B1) and a series of traditional farm buildings (Buildings B2A, B5, B7, B8 and B9), in addition to newer builds used for storage and commercial purposes (Buildings B2B, B2C, B4 and B6). Building B3 is a shed in very poor condition. More temporary structures are also present in this area and include shipping containers. Buildings B9 to B13 are separated from the other buildings by a brick wall where non-native *Cotoneaster* sp. is present. Building B9 (a former guard house), Building B10 (a former residential cottage) and Buildings B11 and B13, which adjoin B10, are vacant and deteriorating in condition. Building B12 is actively used as a workshop.

4.1.2. The focus for the survey was Building B5 (Photograph 1). This is a single-storey, double-height barn in a poor state of repair. The building is constructed of red brick and cinder blocks with a wooden gable end on the southern aspect. The hipped roof comprises clay tiles, many of which are missing or have broken, resulting in many access points. There is notable warping of the roof with a collapse on the eastern and north-western corners (Photograph 2). Several boarded windows are present on its north and south faces (Photograph 3) but a large open entrance with strip curtains provides another large entry point to the building from the south. Significant ivy *Hedera helix* growth is present on the southwest of the structure and gaps are present under the eaves. The building is surrounded by an area of hardstanding, with two storage containers present on its southern side (Photograph 4).

4.2. Other Habitats Present

4.2.1. The site largely consists of semi-improved grassland used for grazing horses and the production of hay or silage. The fields are separated via hedgerows, post and wire fencing and rudimentary wood palette fencing.

4.2.2. Mixed Woodland is located in the northeast and east of the site and areas of scrub are present towards the centre and south of the site.

4.2.3. Field F1 is a former horse paddock and comprises bare ground, containing only early colonising and opportunistic plant species, in addition to tyres and traffic cones.

4.2.4. Hardstanding surrounds the buildings in the south of the site.

5. SURVEY RESULTS

5.1. Desk Study

- 5.1.1. The desk study returned eight records of bat species including Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus* and Noctule *Nyctalus noctula*, in addition to unidentified Pipistrelle species and records described as 'Bats'
- 5.1.2. The closest records pertained to Common Pipistrelle, Soprano Pipistrelle and Noctule, all dating from 2009, and were situated approximately 0.8km to the northwest. The most recent record related to Common Pipistrelle, dating from 2017, located approximately 1.3km to the southeast.
- 5.1.3. In addition, the desk study returned three records of a Pipistrelle bat species within a 1km grid square encompassing the search radius, the most recent of which dated from 1993.
- 5.1.4. One confidential record of 'Bats' was also returned by the data search. This record falls within the search radius, but its exact location is not known, at the request of the data owners / originators. The record is dated 2008.

5.2. External Survey

- 5.2.1. Upon inspection, Building B5 was determined to exhibit high bat roosting potential in the form of raised roof tiles, gaps under the lead flashing and the partial collapse of the roof, which provides a significant entry point. Additionally, vegetation growth may conceal further entry points.

5.3. Emergence and Re-entry Surveys

- 5.3.1. Emergence and re-entry surveys were carried out in July, August and September 2022. The timings and weather conditions are shown in Table 5.1 below.

Date	14.07.22	22.08.22	16.09.22
Survey Type	Dusk emergence	Dusk emergence	Dawn re-entry
Sunset	21:14	20:10	06:38
Survey Start	20:59	19:55	04:38
Survey End	23:14	22:10	06:53
Cloud Cover (%)	12.5	100	50
Temperature (°C)	21 - 17	20 - 19	10 - 10
Weather & Wind	No rain and light breeze	Showers and light breeze	No rain and light air

Table 5.1. Weather conditions and survey timings.

Emergence Survey 14.07.22

- 5.3.2. The results of the emergence survey are summarised below and in Table 5.2. The results are also illustrated on Plan ECO3a.
- 5.3.3. Five emergences and six re-entries were recorded during this survey. All confirmed emergences can be attributed to Common Pipistrelle. Bats were

observed emerging from the south-western corner of Building B5 and subsequently re-entering into the south-eastern corner of Building B6 and vice versa. In total, three emergences and two re-entries were recorded for the southwestern corner of Building B5 and one emergence and three re-entries recorded for Building B6. In addition, one re-entry of an unidentified Pipistrelle sp. was recorded on the south side of Building B5 and one unidentified Pipistrelle emergence was recorded on the south-eastern section of the building. A maximum of two bats were seen emerging and re-entering at any one time and it is considered at least three individuals were moving between Buildings B5 and B6.

5.3.4. A number of instances of bats commuting and/or foraging around the building were recorded. Registrations can be attributed to Noctule and Common Pipistrelle. Registrations for Soprano Pipistrelle, unidentified *Pipistrellus* sp., Serotine *Eptesicus serotinus* and Leisler's Bat *Nyctalus leisleri* were also recorded but not observed.

Position	Species	No. Registrations	First Registration Post Sunset
1	Ppip	6	55 min
	Ppyg	1	57 min
	Nn	19	18 min
	Nsp	1	1 h 58 min
2	Ppip	6	30 min
	Nn	22	19 min
	Es	2	1 h 20 min
	NI	2	47 min
3	Ppip	15	1 h 6 min
	Nn	18	17 min
	Es	1	1 h 17 min
	NI	3	1 h 2 min
4	Ppip	20	51 min
	Nn	21	18 min
	Es	1	1 h 18 min
	NI	3	46 min
	Nsp	6	1 h 3 min

Table 5.2. Emergence survey results for July 2022.⁴

Emergence Survey 22.08.22

5.3.5. The results of the emergence survey are summarised below and in Table 5.4. The results are also illustrated on Plan ECO3b.

5.3.6. One observed instance of an emergence was recorded. This pertained to a Common Pipistrelle emerging from the north-eastern corner of B5.

5.3.7. A number of bats were observed commuting and/or foraging around the building, including Common Pipistrelle, Soprano Pipistrelle and Noctule, as well as several instances of unidentified bat species. Leisler's Bat was recorded but not observed.

⁴ In all cases the following abbreviations are used: Bb/Barbastelle *Barbastella barbastellus*; Es/Serotine *Eptesicus serotinus*; Myo/Myotis species; Nn/Noctule *Nyctalus noctula*; NI/Leisler's Bat *Nyctalus leisleri*; Nsp/Nyctalus species; Pa/Brown Long-eared Bat *Plecotus auritus*; Psp/Pipistrelle species; Pnat/Nathusius' Pipistrelle *Pipistrellus nathusii*; Ppip/Common Pipistrelle *Pipistrellus pipistrellus*; and Ppyg/Soprano Pipistrelle *Pipistrellus pygmaeus*.

5.3.8. The earliest registration occurred five minutes after sunset and related to Common Pipistrelle. This suggests that a roost is present on site and lends support to the sighting of emerging bats in the July emergence survey.

Position	Species	No. Registrations	First Registration Post Sunset
1	Ppip	10	55 min
	Ppyg	3	23 min
	Nn	4	16 min
	Nsp	1	49 min
2	Ppip	28	5 min
	Ppyg	2	20 min
	Nn	3	16 min
3	Ppip	12	6 min
	Ppyg	1	32 min
	Nn	4	17 min
	NI	1	50 min
4	Ppip	14	5 min
	Ppyg	3	20 min
	Nn	2	16 min

Table 5.4. Emergence survey results for August 2022

Re-entry Survey 16.09.22

5.3.1. The results of the re-entry survey are summarised below and in Table 5.6. The results are also illustrated on Plan ECO3c.

5.3.2. No bats were observed emerging from or re-entering the building.

Position	Species	No. Registrations	Last Registration Before Sunrise
1	Ppyg	2	39 min
2	No bats recorded		
3	Psp	2	43 min
4	No bats recorded		

Table 5.6. Re-entry survey results for September 2022.

6. DISCUSSION AND RECOMMENDATIONS

6.1. Use of Buildings and Site

- 6.1.1. Clear evidence of roosting bats was recorded across the emergence surveys undertaken in July and August 2022, with several observed emergences and re-entries of Common Pipistrelle and Unidentified Pipistrelle bats from Buildings B5 and B6, as well as early post-sunset registrations of individuals of this species. At least four roosts are present in Building B5 and one possibly within Building B6.
- 6.1.2. Common Pipistrelle was the most frequently recorded species across the emergence surveys, followed by Noctule. A moderate level of bat activity was recorded overall. There were more Noctule than Common Pipistrelle recordings in July. Bats were observed foraging around, and commuting over, Building B5.
- 6.1.3. A significantly lower level of bat activity was noted during the re-entry survey when compared to the emergence surveys. This can likely be attributed to the lower temperatures present and due to this study being conducted later in the year.

6.2. Proposals and Effect

- 6.2.1. Building B5 is structurally unsafe and will be demolished on the basis of health and safety concerns. Common Pipistrelle roosts will be subsequently lost.

6.3. Mitigation and Enhancements

Conservation Significance

- 6.3.1. Reference to Natural England's *Bat Mitigation Guidelines* is instructive in formulating appropriate mitigation measures to offset the bat interest identified within the site.
- 6.3.2. Common Pipistrelles are the UK's most common bat species. In addition to the presence of a moderate number of these individuals on-site, eleven instances of emergences and / or re-entries were observed over the course of all three surveys. Consequently, the building likely supports a small number of bats.
- 6.3.3. The conservation significance of roosts of individual bats of common species is low, as is the significance of feeding areas of common species. The mitigation requirement according to the *Bat Mitigation Guidelines* is *flexibility over provision of bat boxes, access to new buildings etc.; no conditions about timing or monitoring*.

Licensing

- 6.3.4. Due to the presence of these roosts in the building, a European Protected Species (EPS) licence from Natural England is required to facilitate its demolition.

6.3.5. The licence application would be accompanied by a method statement and reasoned statement of application. The building is in an advanced state of disrepair and is considered structurally unsafe. The building is beyond repair with no reasonable possibility of retaining it.

Approach to Demolition Works

6.3.6. Work will not be commenced until the project is in receipt of a Natural England EPS licence.

6.3.7. Work will only be undertaken during favourable weather conditions and not during heavy rain, high winds or temperatures below 5°C.

6.3.8. It is recommended that where possible works be undertaken between October and May, outside the sensitive season, meaning that disturbance will be avoided.

6.3.9. Due to the presence of roosting bats, a soft-strip demolition will be required, with works to proceed under the supervision of an Ecological Clerk of Works (ECoW). This will involve careful removal of the roof tiles to avoid any bats being injured or killed during destruction of the roof. Any bats encountered during this work will be moved to bat boxes installed on retained trees in the wider site ownership.

6.3.10. Before the start of demolition work, contractors will be briefed as to the presence of bats. Contractors will be informed of their legal responsibilities and instructed to seek advice from a licensed bat worker / ECoW in the event that a bat is uncovered during the work.

6.3.11. Where possible and safe to do so, an ecologist will check identified roost features with an endoscope prior to demolition. Roost features will be lowered to the ground and checked on the ground if not possible at the outset.

Retaining opportunities for Bats

6.3.12. To provide replacement roosting opportunities, bat boxes will be installed prior to the demolition on suitable trees in proximity to the structure. This would compensate for the loss of and / or increase available roosting opportunities for bats. Suitable designs would include Habitat bat boxes or the Schwegler 1FR Bat Tube (or similar). Boxes would be located in sheltered spots and placed at a height of at least three metres from the ground, most likely on suitably retained trees within the site.

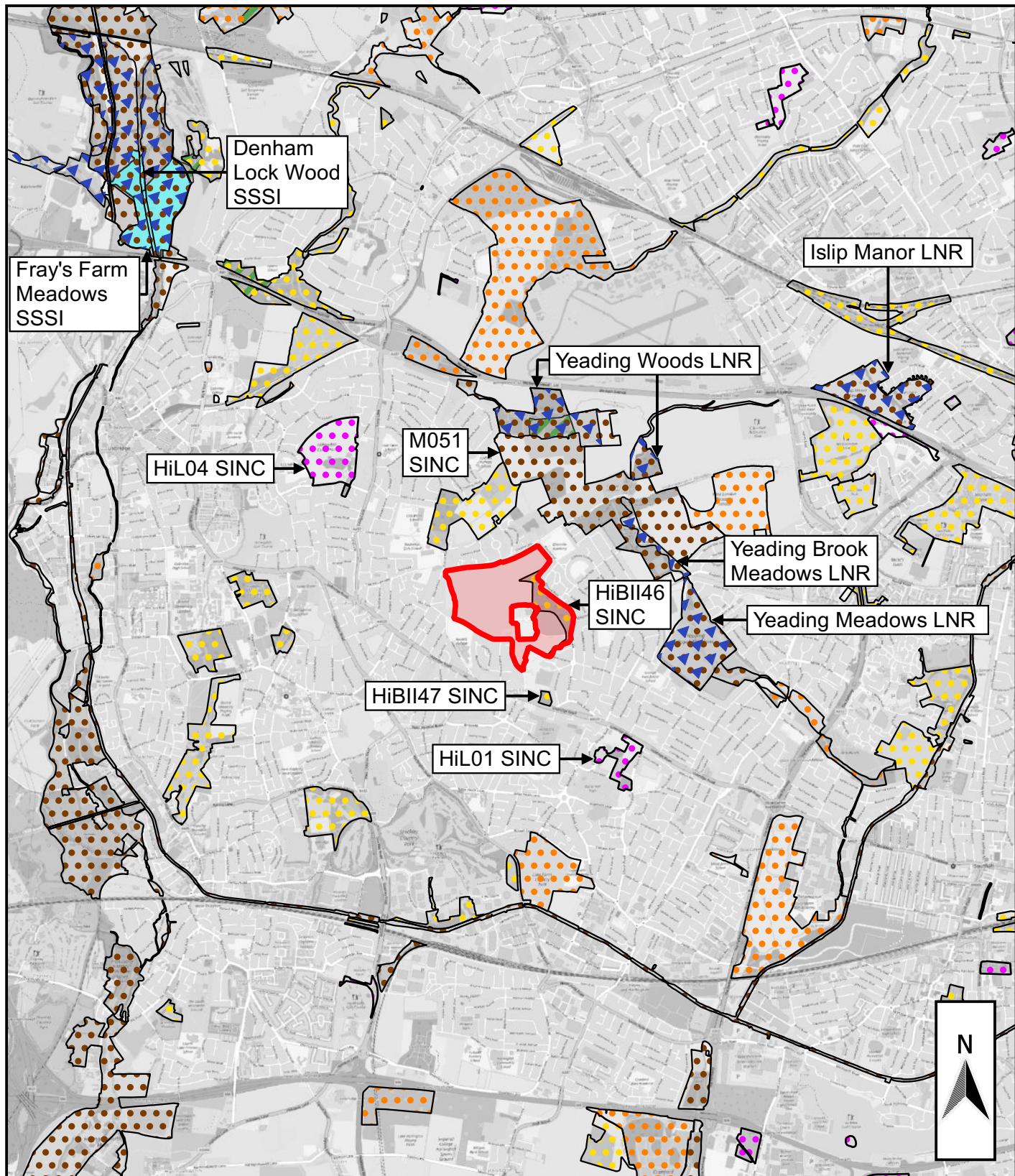
7. SUMMARY AND CONCLUSIONS

- 7.1. Ecology Solutions was commissioned by Lichfields on behalf of the CCE in April 2022 to undertake an ecological appraisal of land at Home Farm, Hayes.
- 7.2. Following the initial survey, Ecology Solutions was further instructed to complete a series of bat surveys at the site.
- 7.3. The proposals for the wider site involve its promotion for development and removal from the Green Belt as part of an upcoming Local Plan Review process. The purpose of this report is to address the demolition of Building B5.
- 7.4. Results from the dusk emergence and dawn re-entry surveys undertaken in July, August and September, respectively, show that a small number of Common Pipistrelles are using Building B5, and possibly the adjacent Building B6, to roost. In addition, several species, including Soprano Pipistrelle, Noctule and Leisler's Bat are foraging and / or commuting within the site.
- 7.5. Building B5 is structurally unsafe and requires demolition due to health and safety concerns. Roosts of small numbers of Common Pipistrelles will subsequently be lost as part of these works.
- 7.6. Demolition of Building B5 will need to be undertaken under a European Protected Species Licence from Natural England.
- 7.7. It is recommended that where possible any works be undertaken between October and May, outside the sensitive season, to avoid disturbance to bats.
- 7.8. A soft-strip demolition will be required under the supervision of an ECoW.
- 7.9. Bat boxes will be installed prior to demolition works, in order to compensate for the loss of roosts and increase available roosting opportunities.
- 7.10. In conclusion, the surveys undertaken have identified bat roosts of a common species. These will be lost as a consequence of the demolition of Building B5, which will require a Natural England EPS licence. A series of mitigation measures have been recommended to ensure that the favourable conservation status of the species in the locality is maintained.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- SITE BOUNDARY
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- LOCAL NATURE RESERVE (LNR)
- SINC (METROPOLITAN IMPORTANCE)
- SINC (BOROUGH IMPORTANCE)
- SINC (BOROUGH IMPORTANCE GRADE 1)
- SINC (BOROUGH IMPORTANCE GRADE 2)
- SINC (LOCAL IMPORTANCE)
- ANCIENT WOODLAND



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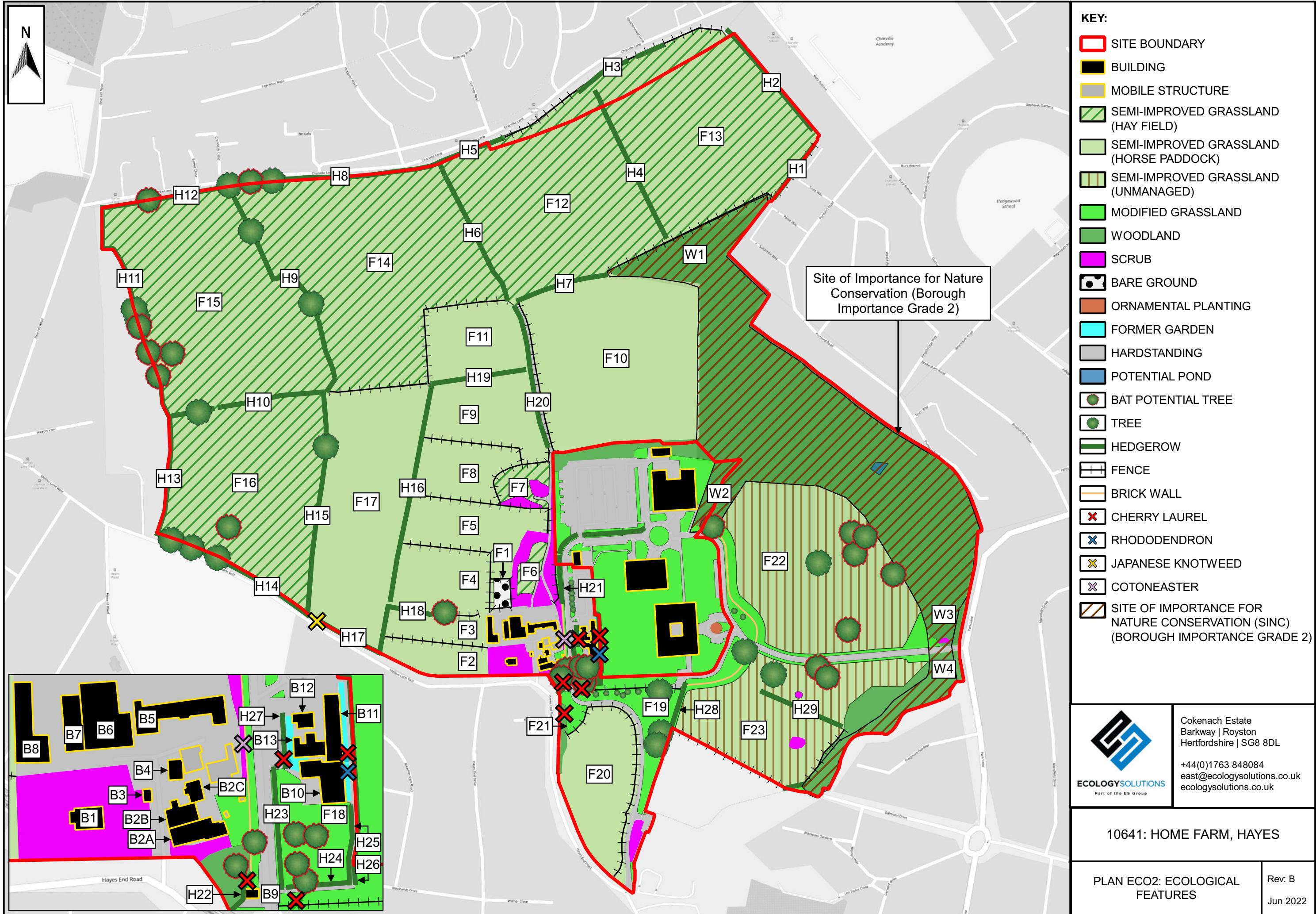
10641: HOME FARM, HAYES

PLAN ECO1: SITE LOCATION AND
ECOLOGICAL DESIGNATIONS

Rev: B
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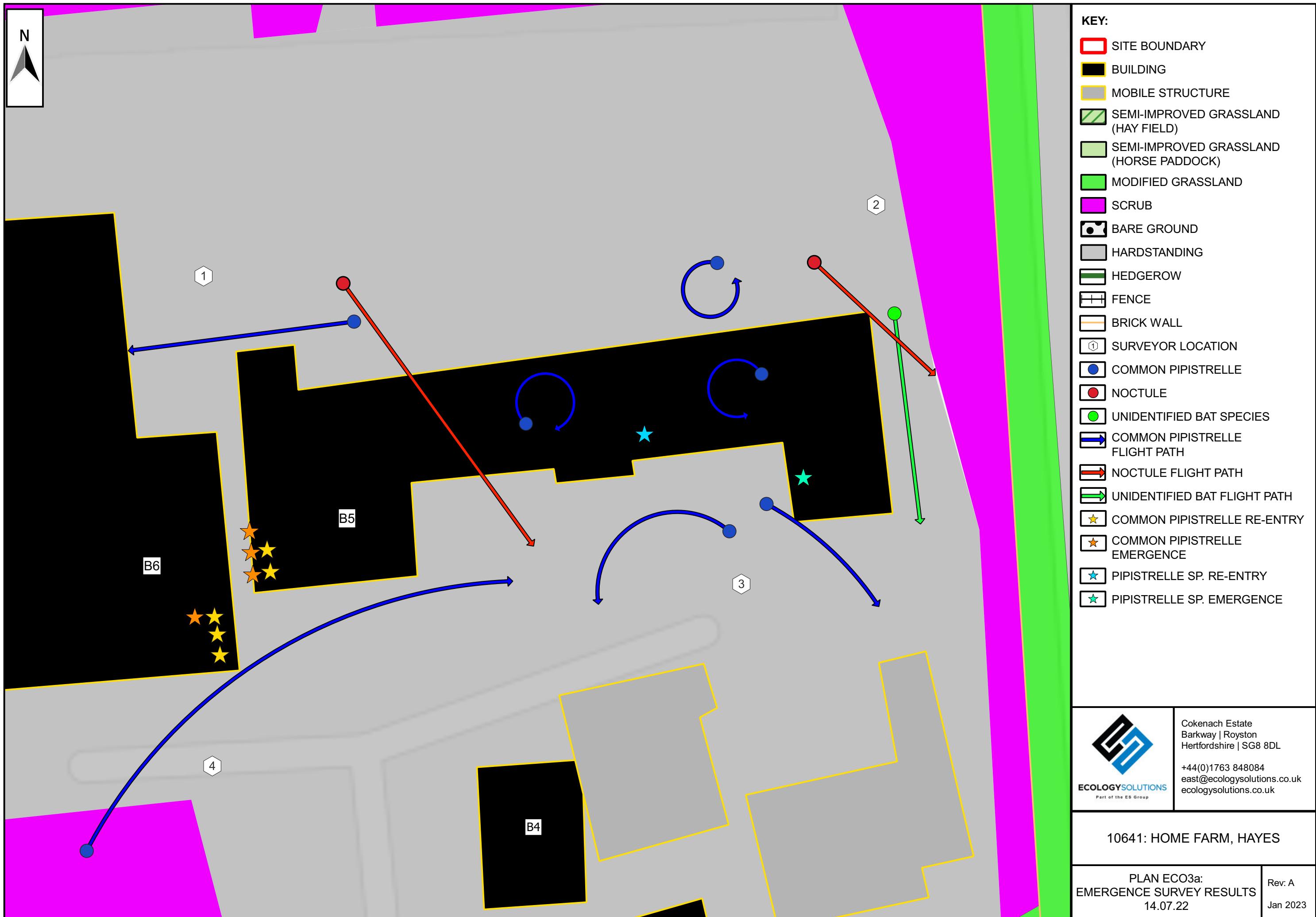
PLAN ECO2

Ecological Features



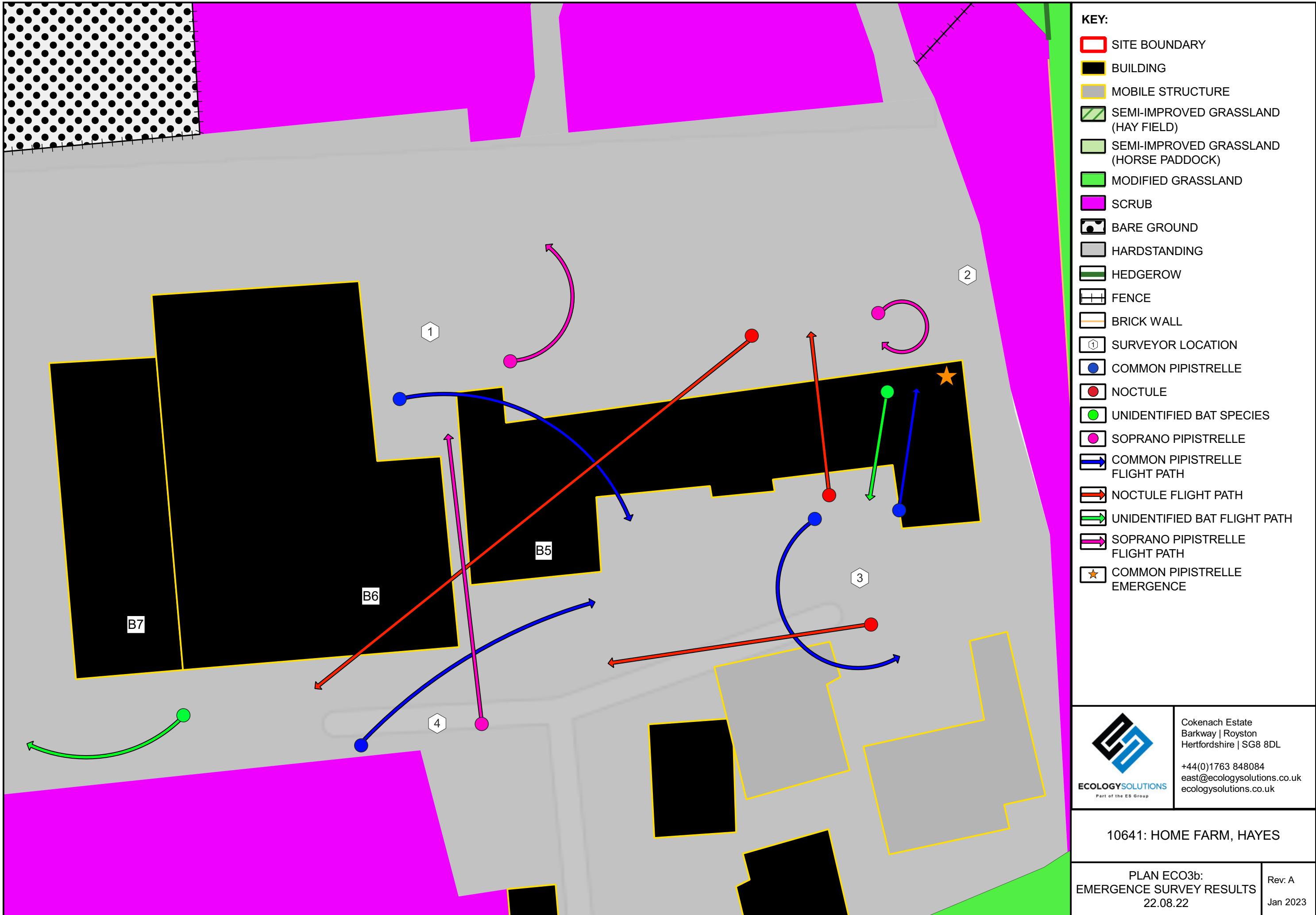
PLAN ECO3a

Emergence Survey Results 14.07.22



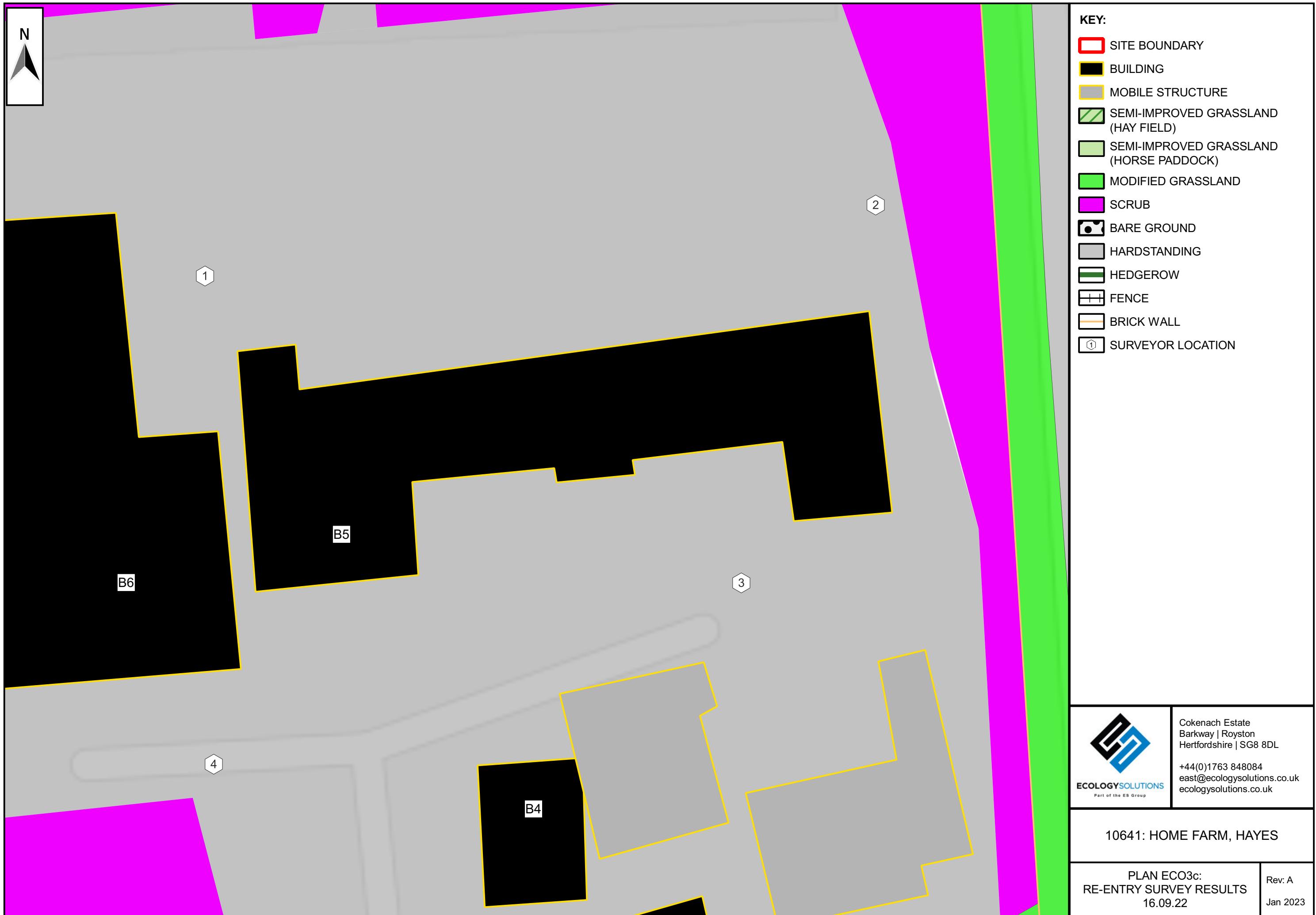
PLAN ECO3b

Emergence Survey Results 22.08.22



PLAN ECO3c

Re-Entry Survey Results 16.09.22



PHOTOGRAPHS

PHOTOGRAPH 1: Building B5 (south side)



PHOTOGRAPH 2: Building B5 (roof collapse and warping on north side)



PHOTOGRAPH 3: Building B5 (boarded windows on southwest corner)



PHOTOGRAPH 4: Building B5 (storage container and roof on south side)





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