

Preliminary Roost Assessment



Coach Road Farm, Cut Lane,
Kirkby, Knowsley, L33 3AJ

Principal Author:

Jordane Marsh BSc (Hons) QCIEEM

Address:

RSK ADAS Ltd
14 Beecham Court
Wigan
WN3 6PR

Date: 19th April 2022

ADAS Reference: WNT69105-1052 (01)

Commissioned For:

Brian Leonard
14 Cobden Road
Southport
PR9 7TJ
07761 749210
On behalf of: Mark Groves



Quality Assurance

Author	Checked	Approved
Jordane Marsh BSc (Hons) QCIEEM	Simon Fawcett BSc (Hons) ACIEEM	Rob Nicholson BSc (Hons) MCIEEM
		

The information which ADAS has prepared and provided is true, and has been prepared and provided in accordance with the CIEEM's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

Disclaimer

RSK ADAS Ltd (ADAS) has prepared this report for the sole use of the client, showing reasonable skill and care, for the intended purposes as stated in the agreement under which this work was completed. The report may not be relied upon by any other party without the express agreement of the client and ADAS. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Where any data supplied by the client or from other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by ADAS for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

No part of this report may be copied or duplicated without the express permission of ADAS and the party for whom it was prepared.

Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

This work has been undertaken in accordance with the quality management system of RSK ADAS Ltd.

Revision History

ADAS Ref (Revision number)	Date	Amendment
WNT69105-1052 (01)	27/04/2022	Initial report

Contents

Summary	1
1 Introduction	2
1.1 Background and Survey Objectives	2
1.2 Site Description	2
1.3 Description of the Proposed Development.....	3
2 Legislation	4
2.1 Bats	4
2.2 Birds	4
2.3 National Planning Policy Framework.....	4
2.4 Local Planning Policy.....	5
3 Methodology	8
3.1 Desk Study.....	8
3.2 Preliminary Roost Assessment	8
3.3 Limitations.....	9
4 Results.....	10
4.1 Desk Study.....	10
4.2 Preliminary Roost Assessment	10
5 Conclusion and Recommendations	14
6 References.....	16

Appendices

Appendix 1: Site Plan

Appendix 2: Photographs

Appendix 3: Desk Study Maps

Appendix 4: Example Surveyor Locations for Further Surveys

Appendix 5: Examples of Native Nectar Rich Fragrant Plants as Enhancement Planting for Bats

Summary

RSK ADAS Ltd was commissioned by Brian Leonard, on behalf of Mark Groves to conduct a Preliminary Roost Assessment (PRA) of farm buildings and trees on land at the Former Coach Road Farm, Knowsley to determine suitability for roosting bats and inform a planning proposal for conversion works. The works are currently in the design stage but are anticipated to take place in 2022.

A PRA was carried out on 19th April 2022 of four buildings on site (Stone Barn A, Stone Barn B, Main Barn and the Piggery) and all trees likely impacted by the proposed works.

No roosts were found, but a number of suitable crevices (potential roost features) and minimal scattered bat droppings were identified. Stone Barn A, Stone Barn B and the Piggery were considered to have moderate potential to support roosts of crevice dwelling bats. The Main Barn was considered to have a negligible potential to support roosting bats

To confirm the presence or likely absence of bats roosts within Stone Barn A, Stone Barn B and the Piggery, further surveys have been recommended in the form of dusk emergence and dawn re-entry bat surveys. Two surveys are required on each building during the bat active season (May-September).

All trees likely to be impacted by the proposed works were considered to be of negligible potential to support roosting bats.

It is recommended that if external lighting is required, it is sensitively designed as not to impact any bats foraging or commuting in the wider area.

To enhance the site for bats, it is recommended bat roost boxes are installed on the side of the buildings and native nectar rich fragrant plants are planted surrounding the property. Further details are provided within this report.

There was evidence of birds, such as Swallows and Barn Owls, using Stone Barns A and B, works are recommended to take place outside of nesting bird season (March-August inclusive) to avoid disturbance of nesting birds, if this is not possible nesting bird checks must take place prior to works.

1 Introduction

1.1 Background and Survey Objectives

ADAS was commissioned by Brian Leonard to undertake a Preliminary Roost Assessment (PRA) of farm buildings and trees located on land at the former Coach Road Farm, Knowsley, L33 3AJ, hereafter referred to as 'the site', to determine suitability for roosting bats in support of a planning application for conversion works.

The objectives of this study are to;

- *identify any bat roosts within the building;*
- *assess the potential for bat roosts within the building;*
- *identify the value of any roosts present; and,*
- *detail any measures required to ensure proposed works do not negatively affect bat populations.*

1.2 Site Description

The site was located on land at the former Coach Road Farm, Cut Lane, Knowsley, L33 3AJ (Grid Reference; SJ45579739), the area of which covers approximately 0.47 hectares, comprising four farm buildings; Stone Barn A, Stone Barn B, the Main Barn and the Piggery. There are a small number of trees and a large pond immediately south of the site.

The site was located directly south of Cut Lane, with no visible dividing boundary; the lane was frequented by dog walkers and cyclists but was a dead end to road vehicles. The west of the site had a recently converted farm building house refurbishment.

The wider area in all directions comprised arable fields and country lanes with land drains and hedgerows and Knowsley Brook to the east.

The location of the buildings is outlined in red in Figure 1 below and in Appendix 1.



Figure 1. Building locations (red) and surrounding landscape - MAGIC Maps 2022.

1.3 Description of the Proposed Development

The proposed development consists of separating the site into two domestic dwellings with the Piggery being renovated, forming a garden room to accompany the Main Barn property, and Stone Barn A and B forming the second dwelling. There are plans to have the roofs raised on all four of the buildings for insulation and the replacement of slates where they are of irregular size or are broken. Wooden beams will be tested for rot and woodworm and replaced where necessary. Structural works are needed for bowing in the wall adjoining Stone Barn A and B.

A fence and line of trees will be erected bisecting the site, separating the Stone Barns from the Piggery and Main Barn, and there are plans to request reopening the far end of Cut Lane to allow for vehicular access.

2 Legislation

2.1 Bats

Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. It is illegal to kill or injure bats, cause disturbance at their resting places or to block access to, damage or destroy their roost.

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a statutory duty on public bodies that “every public body must, in exercising its functions have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. Section 41 of the NERC Act requires the Secretary of State to draw up a list of Habitats and Species of Principal Importance which should be used to guide decision-makers in implementing their duty under Section 40.

2.2 Birds

Breeding wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). Under the Wildlife and Countryside Act, a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds however are not included in this definition (except for limited parts of the Act). They are covered by the Game Acts, which fully protect them during the close season.

All birds, their nests and eggs are protected and it is thus an offence, with certain exceptions to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird whilst it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954;
- use traps or similar items to kill, injure or take wild birds; and

Additionally, for some species listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) it is an offence to intentionally or recklessly disturb the adults while they are in and around their nest or intentionally or recklessly disturb their dependent young.

2.3 National Planning Policy Framework

The National Planning Policy Framework (NPPF) July 2021, is an update to the previous version issued in February 2019 and is a policy framework document which provide a range of important principles.

Paragraph 174 of the NPPF states that decisions should contribute to and enhance the natural local environment by:

‘Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.’

Paragraph 175 goes on to state:

‘... take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.’

When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principle (paragraph 180):

‘development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.’

2.4 Local Planning Policy

Relevant policies from Knowsley Council’s Knowsley Local Plan Core Strategy Documents (January 2016) are summarised in Table 1.

Table 1 – Summary of relevant policies from Knowsley Local Plan Core Strategy Documents (January 2016).

Policy	Description
SD1: Sustainable Development	1) When considering development proposals, a positive approach will be taken, which reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. Work will be undertaken proactively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area. 2) Planning applications that accord with the policies in this Local Plan (and any relevant policies in Neighbourhood Plans) will be approved without delay, unless material considerations indicate otherwise. 3) Where there are no policies relevant to the application or relevant policies are out of date at the time of making the decision then permission will be granted unless material considerations indicate otherwise – taking into account whether: a) Any adverse impacts of granting permission would significantly and demonstrably outweigh the benefits, when assessed against the policies in the National Planning Policy Framework taken as a whole; or b) Specific policies in that Framework indicate that development should be restricted.

Policy	Description
CS2: Development Principles	Principle 4: Recognise environmental limits, protect and enhance environmental assets, enhance local character and promote quality of place by: a) Understanding and respecting the character and distinctiveness of places and landscapes; b) Protecting and enhancing the historic environment; c) Promoting good quality design and ensuring that development respects its setting taking into account relevant design requirements, and best practice; d) Maximising opportunities for the regeneration of previously developed land, including derelict or unsightly areas to improve the image of Knowsley and use land resources efficiently; e) Mitigating potential negative impacts of traffic growth and road traffic on highway safety, air quality, noise and health; g) Maintaining or enhancing the tranquillity of open countryside and rural areas; h) Maintaining or enhancing the quantity and quality of biodiversity and habitats, including potential impacts on nationally and internationally important sites for biodiversity; Principle 5: Make the most efficient use of available resources and infrastructure by prioritising locations consistent with the spatial strategy, which: a) Do not require major investment in new infrastructure, including transport, water supply and sewerage, or where this is unavoidable, incorporate appropriate development phasing and delivery assistance; b) Ensure environmental protection is enhanced through the phasing of new development and delivery of supporting infrastructure, including working with neighbouring authorities and key partner agencies where appropriate; c) Support prudent and efficient management of natural and man-made resources; and d) Promote sustainable construction and efficiency in resource use (including reuse and recycling of materials).
CS8: Green Infrastructure	1) Knowsley's existing Green Infrastructure and its beneficial functions will be protected, managed and/or enhanced, primarily to: b) Sustain and promote biodiversity (including designated sites, priority habitats and protected and endangered species) in accordance with importance and contribution to ecological networks; c) Preserve the character and function of historic environments and valued landscapes; 2) To achieve the above, planning powers and other interventions will be used to: c) Promote effective movement of wildlife through a network of strategic green links, by protecting, maintaining and improving existing and new open spaces, water courses (including water quality) and biodiversity assets; d) Protect, enhance and/or introduce biodiversity into existing areas of Green Infrastructure, through integration into the design of new development and public realm projects; h) Deliver new integrated and functional Green Infrastructure that helps to mitigate and adapt to climate change, such as sustainable drainage systems, carbon capture and storage, soft landscaping and green roofs.

Policy	Description
	3) Site allocations for greenspace will be identified in the Local Plan: Site Allocations and Development Policies document, with further guidance set out in the Developer Contributions Supplementary Planning Document or future Supplementary Planning Document as appropriate. Approach to Green Infrastructure and New Development. 6) New development must be served by Green Infrastructure to meet the needs of residents and the local environment, in a manner which will: a) Contribute to the creation of a high quality residential environment; c) Seek to protect, maintain and where possible enhance biodiversity within and around new developments according to their designation and significance to provide space for nature; and d) Provide adequate mitigation and/or, as a last resort, compensation for Green Infrastructure or biodiversity loss, in circumstances where harm resulting from the development is otherwise unavoidable.
CS21: Greenspaces and Trees	10)The Council will encourage proposals for new development to incorporate: a) Retention of existing trees, woodland, vegetation and other habitat features which offer a positive contribution to the local environment in terms of visual amenity, recreation value or biodiversity/wildlife interest; b) Appropriate planting of trees, other soft landscaping and installation of habitat features for the benefit of biodiversity; and c) Adequate replacement provision where tree loss is unavoidable, comprising two additional trees for every tree lost and taking account of species and size.

3 Methodology

3.1 Desk Study

A request to a Local Record Centre for records of known bat roosts was not made as part of this assessment. However, Natural England's MAGIC online resource was used to identify records of granted bat European Protected Species Mitigation (EPSM) licences as well as the location of statutory designated sites of nature conservation importance in relation to bats within 10 km of the site.

3.2 Preliminary Roost Assessment

A PRA was carried out to determine suitability of the buildings on site for roosting bats. ADAS Ecological Consultant Jordane Marsh BSc (Hons) QCIEEM, under the guidance of Rob Nicholson BSc (Hons) MCIEEM, a highly experienced and licensed bat surveyor (licence no. 2015-14102-CLS-CLS), conducted an internal and external inspection of the buildings on the 19th April 2022.

This involved systematically checking the exterior and all accessible internal areas of the buildings, identifying and classifying any features or structures suitable for bat roosts and potential entry / exit points, including evidence of bats such as droppings, urine staining, scratch marks or feeding remains.

Windows, walls and other external surfaces were checked for droppings or other secondary field signs or evidence of the presence of bats. A 2000 Lumens LED torch was used to illuminate recesses and crevices where present.

Close-focusing 10x50 binoculars were used to examine the external features. All areas internally were accessible to survey and photographs are provided in Appendix 2.

The assessment was based on the most recent guidance included in the Bat Conservation Trust's *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016), which is summarised in Table 2.

Table 2. Classification of buildings and trees, according to their potential to support roosting bats.

Category (Bat Potential)	Description
Negligible value	Building, structure or tree where surveyor has not identified any suitable potential roosting features, or where those that are present are of such poor quality or condition, such that bats are highly unlikely to use them.
Low value	Building, structure or tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).

Category (Bat Potential)	Description
Moderate value	Building, structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High value	Building, structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed roost	Bats or signs of bats, such as droppings and / or feeding remains, found, or information provided via desk study which indicates a roost.

3.3 Limitations

Vegetation clearance and some site clearance works have commenced on site and construction materials have the potential to obscure existing signs of bat use on the site.

External signs of use by bats (i.e. droppings, urine staining) can be washed away by exposure to wind and rain preceding the survey. The absence of evidence of bats on the exterior of the building does not therefore rule out use by bats.

Often, bats roosting within a building do not leave any visible signs of presence. Consequently, the absence of evidence found inside the building does not on its own necessarily rule out use by bats.

Not all features of the buildings were accessible for detailed close-up inspection due to health and safety restrictions and difficulty accessing these features (e.g. ridge tiles). However, these features were inspected from ground level using close focussing binoculars and torchlight where required.

4 Results

4.1 Desk Study

The data search returned no records of European Protected Species Mitigation licences for bats within 2 km of the site. A map is provided in Appendix 3.

Acornfield Plantation Local Nature Reserve (LNR) (SJ 436 978) is a statutory designated site of nature conservation importance within 1.8 km west of the site. The LNR predominantly comprises mature broadleaved woodland of Birch (*Betula sp.*), Oak (*Quercus sp.*) and Sycamore (*Acer pseudoplatanus*), with a pond and drainage ditches present.

There are 11 other statutory designated sites within 10 km of the site (see Appendix 3), but of these only one has a designation that references bats. Mill Brow LNR is 1.81 hectares in size and is located 3.6 km southeast of site. Notified features include Bluebells (*Hyacinthoides non-scripta*), Greater Spotted Woodpecker (*Dendrocopos major*), Water Vole (*Microtus agrestis*), Nuthatch (*Sitta Europaea*) and bats. The proposed development is considered unlikely to significantly impact the notified features or any conservation objectives of Mill Brow LNR.

4.2 Preliminary Roost Assessment

Stone Barn A

Stone Barn A (Appendix 2: Photograph 1) shares an adjoining wall with Stone Barn B which was of older construction and built with differing materials. Stone Barn A was built in 1759 and has a main double height storage room with a large open entrance, a stable stalls and storage two-storey section to the south side, and two two-storey stable and storage sections to the north side. This building had double 4.5" stone walls, white-washed internally and with well-maintained pointing throughout.

The small cavity between walls is accessible to bats in several places externally where the roof meets the walls and within the window frames (Appendix 2: Photograph 3). The roof is timber framed, has uneven sized slate tiles that are lifted in multiple places (Appendix 2: Photograph 8) and is lined with a dark grey breathable roofing membrane (BRM) (Appendix 2: Photograph 5).

The floorboards have been removed from all upper rooms within the structure with only the support beams present. There are open doorways and missing windows which create potential internal access for bats but also result in the interior of the building being exposed to daylight and draughts, reducing the suitability and likelihood of bats roosting openly within the building.

Scattered bat droppings in low numbers were found in the main two storey storage room and the stable stalls area.

From the location and spread of the bat droppings, they are likely as a result of transient access (e.g. foraging within the barn) to the building through doors and windows rather than indicative of the presence of a bat roost.

In view of the above, Stone Barn A is considered suitable only for crevice-dwelling bats within the roof structure and wall cavities (accessible via gaps in mortar and between timber lintels) and transient bats using the internal space for foraging.

The building has multiple potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but it is unlikely to support a high population roost or roost of high conservation value, this building is considered to have 'moderate bat roost potential' as per current professional survey guidelines (Collins, J (ed) 2016).

Note: In addition to the above, clear feeding remains and pellets from an owl (Appendix 2: Photographs 6 & 7), considered likely to be Barn Owl (*Tyto alba*) were present at the time of survey along with white bird spray at various locations around the interior of the barn, though no nesting signs were visible for owls at the time of the survey.

Stone Barn B

Stone Barn B (Appendix 2: Photograph 9) has two two-storey storage and stable sections each with pitched roofs. The building has poorly maintained render over red brick cavity walls (Appendix 2: Photograph 10), white-washed internally and timber support beams and bituminous felt lined slate roof, with a few lifting tiles.

The building is open with access opportunities through missing windows and open doorways, it is suitable only for crevice-dwelling bats within the roof and wall cavities and transient bats using the internal space for foraging and feeding due to the interior of the building being exposed to daylight and draughts.

The building has multiple potential roost sites, such as internal and external window frame gaps (Appendix 2: Photograph 12), that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but it is unlikely to support a high population roost or roost of high conservation value, this building is considered to have 'moderate bat roost potential' as per current professional survey guidelines (Collins, J (ed) 2016).

Main Barn

The Main Barn (Appendix 2: Photograph 13) is two-storey, with open sides, partial breeze-block walls and steel frame with intermittent wooden plank cladding around the top third of the walls. The roof is pitched, unlined and comprised of corrugated sheet covering.

No potential roost features were identified in association with the building, which due to its open nature and structure is highly unlikely to support bat roosts. In view of the above and given the lack of field signs of bats recorded externally and internally, the building is considered to have 'negligible potential' for roosting bats as per current professional survey guidelines (Collins, J (ed) 2016).

The "Piggery"

The Piggery (Appendix 2: Photograph 15) is a one-storey brick building with multiple entrances, split in to four sections; garage, store and two piggery blocks. The structure is open, exposed to daylight internally, is white-washed internally, and has a pitched slate roof lined with timber sarking. There are gaps between slates with many lifted creating gaps accessible to bats.

The building has wooden doors and window frames in a poor state of repair, and open entrances in the southern aspect wall, originally intended to allow access for birds and livestock pigs and that now potentially allow bats and birds access, and has a newer constructed wooden awning topped with slate over the open entrances to the southern aspect of the building. Sited within the walls are multiple concrete 100 mm diameter downward-facing ventilation tubes (Appendix 2: Photograph 16).

Two bat droppings were found scattered on the internal half-height wall that separates the piggery blocks (Appendix 2: Photograph 17). From the location and spread of the bat droppings, they are considered likely to be present as a result of transient access to the building (e.g. for foraging) (Appendix 2: Photograph 18) rather than being indicative of the presence of a roost.

The building has potential roost features for bats within the spaces between roof tiles and wooden roof lining that could be used by individual bats. However, these potential roost sites are considered unlikely to provide enough space, shelter, protection, and appropriate conditions to be used on a regular basis or by larger numbers of bats.

The interior of the structure is exposed to the daylight and draught and as such will not be suitable for supporting openly roosting bats such as Brown Long Eared bat (*Plecotus auritus*).

Nevertheless, given the potential roost features present for crevice-dwelling species (e.g. *Pipistrellus* sp.) and abundance of highly suitable foraging habitat in the vicinity of the site, the Piggery is considered to be of moderate bat roost potential as per current professional survey guidelines (Collins, J (ed) 2016).

Other Habitat for Bats

There is limited vegetation within the courtyard area of the site, as this predominantly comprises largely of made ground and disturbed bare earth, but there are approximately 20 immature and semi-mature trees to the southern site boundary (Appendix 2: Photograph 20).

The trees on site are a mix of mostly young and semi-mature Oak, Birch, and Sycamore species (Appendix 2: Photograph 20). Trees on site likely to be affected by works have no visible potential bat roosting features and are therefore considered of 'negligible potential' to support bat roosts as per current professional survey guidelines (Collins, J (ed) 2016).

Beyond the site boundary to the south there is a pond (approximately 500 m²) (Appendix 2: Photograph 21) and associated trees and shrubs.

There is highly suitable habitat for bats in the surrounding areas, such as the adjacent pond directly south of site, farmland surrounding the site, and associated hedgerows, woodland and low-lying scrub, this adds greater commuting and feeding potential for bats in the wider area.

Nesting Birds

Three disused nests were seen during the site survey within the Stone Barns A and B on the exposed beams of the old floor of the second storey (Appendix 2: Photographs 23 & 24). Due to their composition and location, two of these nests are likely to be Swallow (*Hirundo rustica*) nests.

5 Conclusion and Recommendations

Stone Barns A and B and the Piggery were each considered to have 'moderate' bat roost potential, and the Main Barn was considered to have 'negligible' bat roost potential. This was due to the good quality habitat surrounding the site, the occasional bat droppings within the Stone barns and piggery, the number of features available for crevice-dwelling bats within the stone barns and the piggery, and the structure of and lack of suitable roosting features within the Main barn.

To confirm the presence of likely absence of bat roosts within Stone Barn A, Stone Barn B and the Piggery, further surveys are recommended prior to commencement of the application.

In line with best practice guidelines (Collins, J (ed) 2016), two emergence / re-entry bat surveys are recommended for Stone Barns A, Stone Barn B and the Piggery to confirm presence or a likely absence of bat roosts within the structures.

As structures are located adjacent to each other, all buildings can be surveyed at the same time to reduce survey effort, using five surveyors to cover all aspects and potential roost features identified during this assessment (potential positions are suggested in Appendix 4).

Bat surveys can be undertaken between 1st May and 30th September with at least one of the surveys to be carried out between May and August. The surveys should comprise of two separate visits with one a dusk emergence survey and the other a dawn re-entry survey. If a bat roost is identified on a structure during the first or second survey visit, a third visit will be required to inform the required mitigation which may include obtaining a European Protected Species Mitigation licence granted by Natural England to impact a bat roost.

All trees on site likely to be affected by the proposed development, were considered to have a negligible potential to support roosting bats. As such, no further survey of the trees is required.

It is unknown at present if any external lighting will be included as part of the proposed development. If so, this lighting should be minimal and designed sensitively. To avoid potential disturbance to bats in the general area, if present, lights should be directional, or shrouds or baffles fitted, and any security lighting should be sensor activated.

To further enhance the area, it is recommended that consideration is given to inclusion of a bat box or bat brick on the buildings as part of the development. These should be sited at a height of >4m and facing towards the wider area (south/easterly aspect) to enhance the site for and attract bats to the area.

In accordance with guidance from the local planning policy, where possible, it is recommended that planning designs include the addition of native nectar-rich and fragrant plants, to encourage invertebrates

and in turn to provide a good food source for bats. Examples of suitable native nectar-rich fragrant plants are provided in Appendix 5.

There was evidence of birds such as Swallows and Barn Owls using Stone Barns A and B, works are recommended to take place outside of nesting bird season (March-August inclusive) to avoid disturbance of nesting birds, if this is not possible nesting bird checks must take place prior to works. Observations in relation to the presence of Barn Owl (afforded additional protection under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended)) will be made during the nocturnal bat surveys and the results of this and any further recommendations referenced in the subsequent bat survey report.

6 References

Bat Conservation Trust, 2020. *Artificial Lighting Guidance*. Retrieved from Bat Conservation Trust: <https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting>

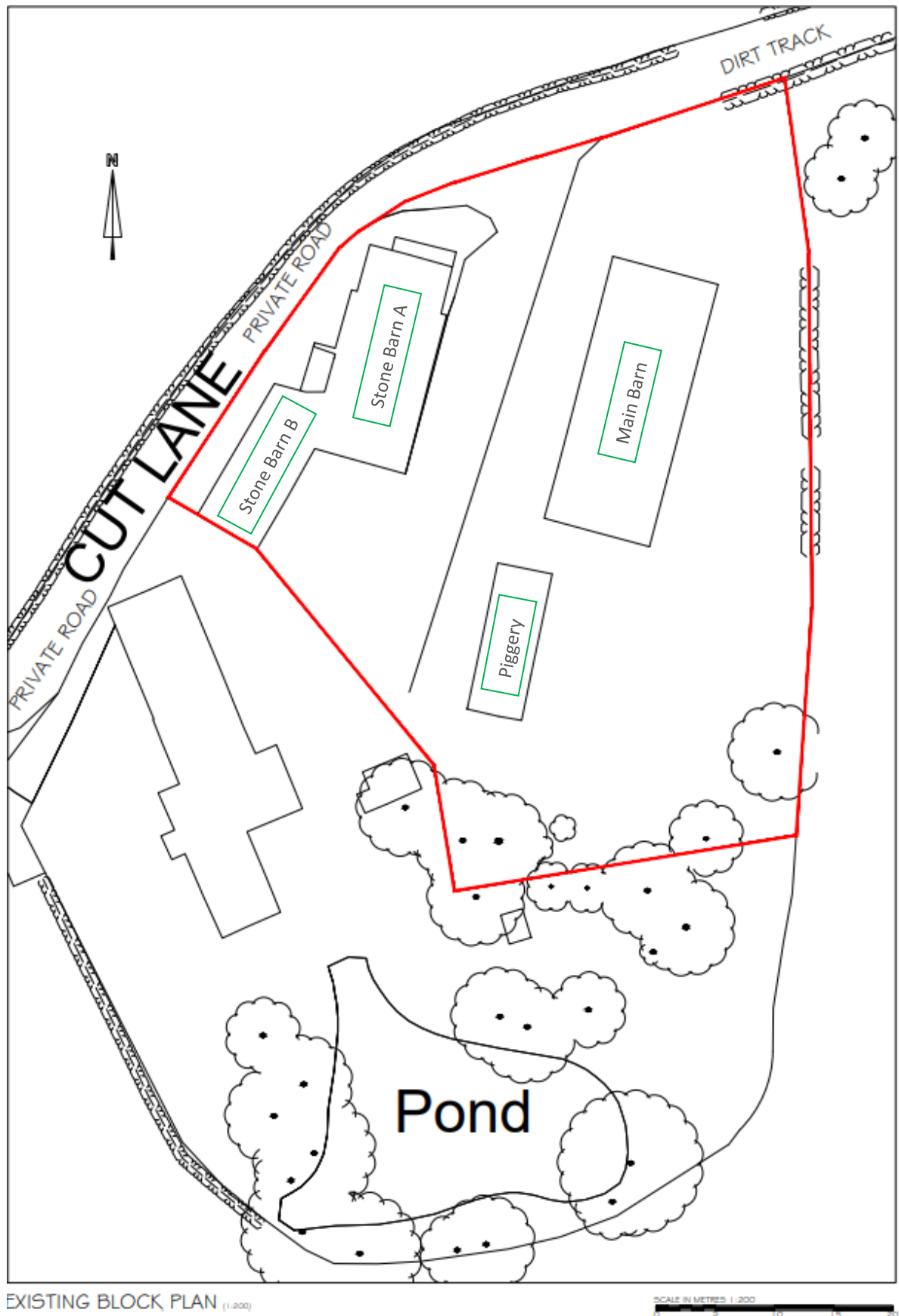
Bat Conservation Trust, 2015. Encouraging bats, Retrieved from Bat Conservation Trust: https://cdn.bats.org.uk/pdf/Resources/Encouraging_Bats.pdf?mtime=20181101151549&focal=none

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

Knowsley Council. (July 2016). Knowsley Local Plan: Core Strategy. Retrieved from Knowsley.gov: http://www.knowsley.gov.uk/pdf/CS01_KnowsleyLocalPlanCore%20Strategy-Submission%20Document2.pdf

Natural England, 2022. *Magic Map Application*. [Online] Available at: <http://magic.defra.gov.uk/magicmap.aspx> .

Appendix 1: Site Plan



Appendix 2: Photographs



Photograph 1: Stone Barn A front view (eastern aspect)



Photograph 2: Stone Barn A inside



Photograph 3: Stone Barn A cavity wall view in window frame



Photograph 4: Stone Barn A roof cavities



Photograph 5: Stone Barn A roof lining (BRM)



Photograph 6: Stone Barn A mouse carcass
(Owl feeding remains)



Photograph 7: Stone Barn A Owl pellet. Evidence
of likely Barn Owl presence (no evidence of
nesting).



Photograph 8: Stone Barn A lifted tiles



Photograph 9: Stone Barn B (eastern aspect)



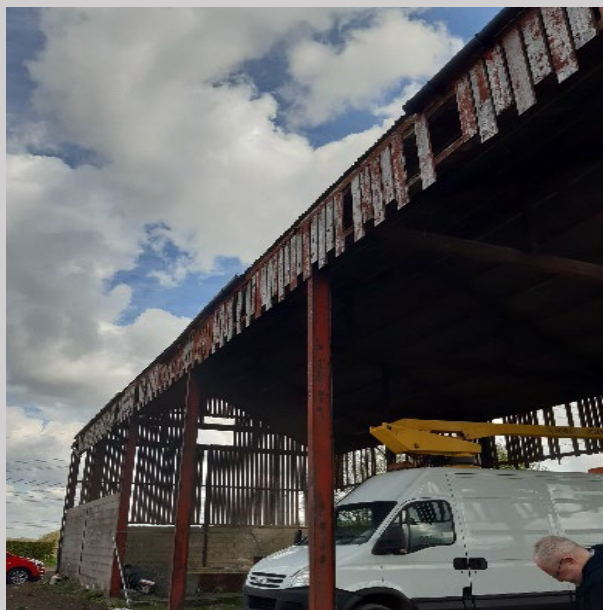
Photograph 10: Stone Barn B red bricks and damaged render (western aspect)



Photograph 11: Stone Barn A – B adjoining wall damage



Photograph 12: Stone Barn B window frame cavity



Photograph 13: Main Barn (western aspect)



Photograph 14: Main Barn unlined roof



Photograph 15: Piggery (eastern aspect)



Photograph 16: Piggery ventilation tubes



Photograph 17: Bat droppings found within the Piggery on half-height internal wall



Photograph 18: Piggery pig and bird entrances (southern aspect)



Photograph 19: Piggery timber sarking lining roof



Photograph 20: Trees to southern site boundary



Photograph 21: Pond beyond site boundary to south of site



Photograph 22: Site construction material in courtyard.



Photograph 23: Disused Bird nest Stone Barn A

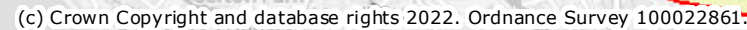


Photograph 24: Disused Swallow nest Stone Barn B

Appendix 3: Desk Study Maps

- Statutory Designations 10 km buffer (MAGIC)
- Habitats 2 km buffer (MAGIC)
- EPSM licences 2 km buffer (MAGIC)

See following page.

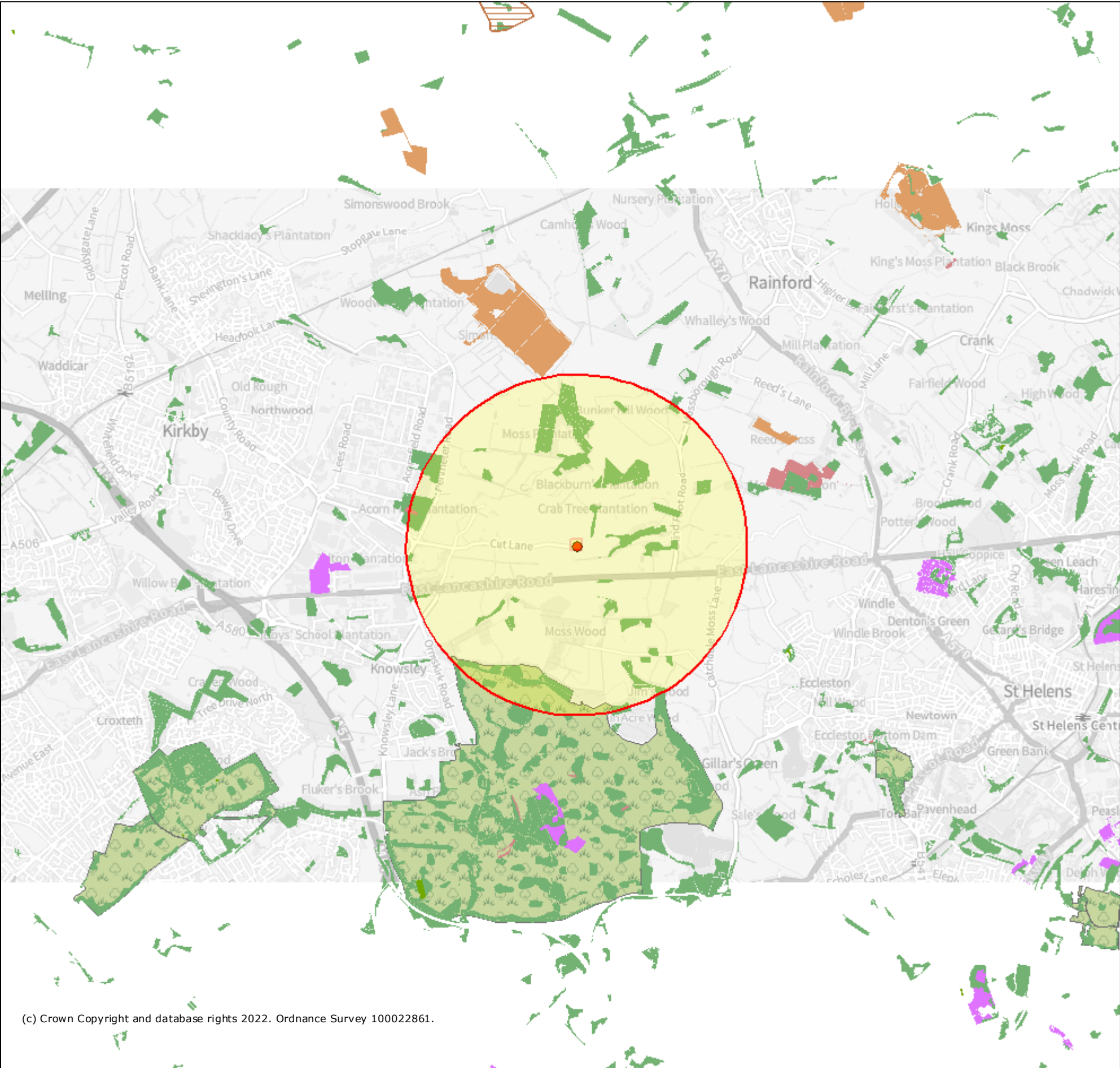


 Local Nature Reserves (England)

 Sites of Special Scientific Interest (England)

```
xmin = 322300
ymin = 386600
xmax = 372200
ymax = 410900
```

Map produced by MAGIC on 25 April, 2022.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

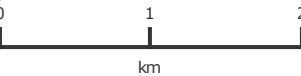


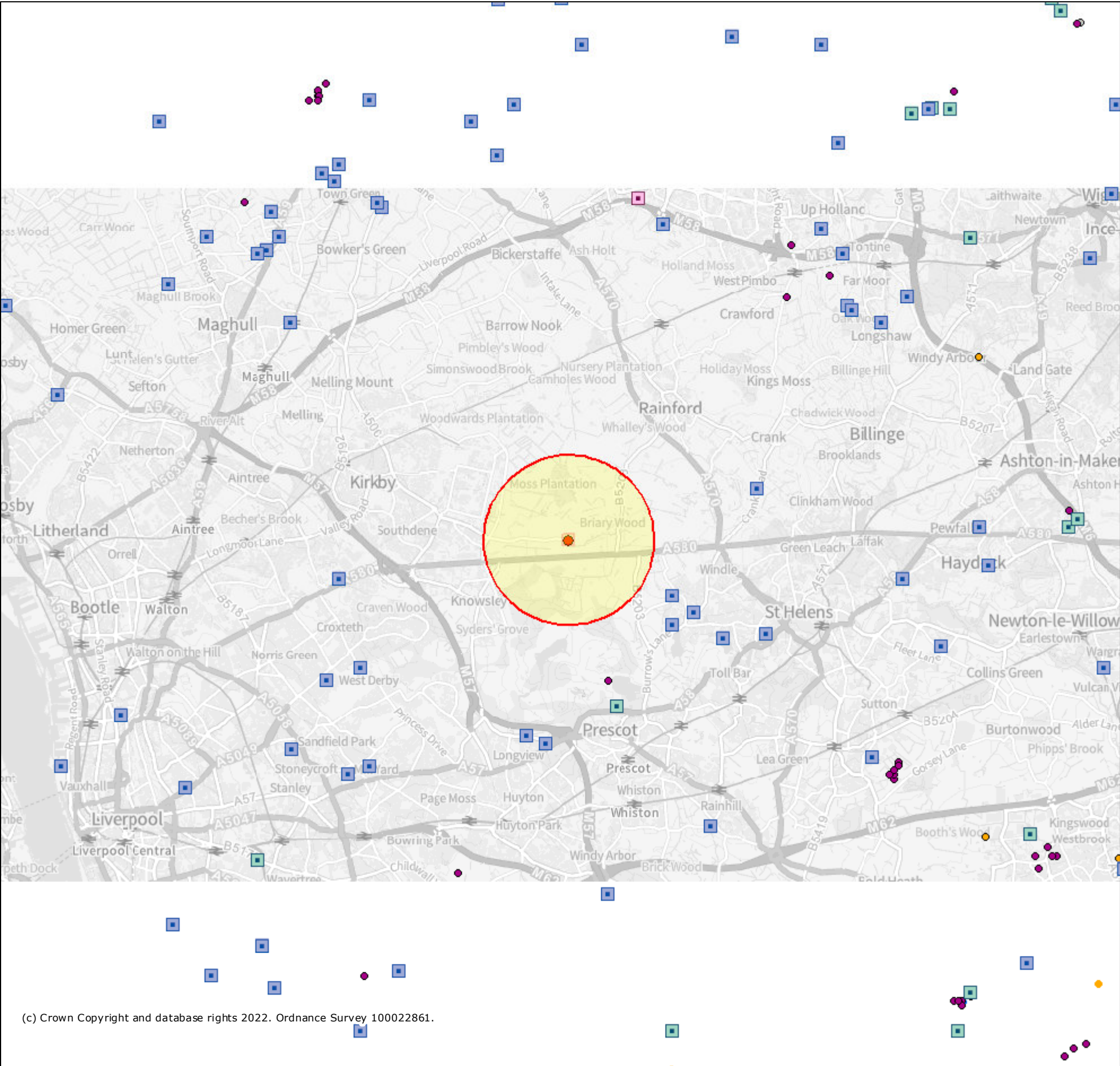
Legend

- Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)
- Priority Habitat Inventory - Lowland Fens (England)
- Priority Habitat Inventory - Lowland Raised Bog (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Priority Habitat Inventory - Deciduous Woodland (England)
- Priority Habitat Inventory - Traditional Orchards (England)
- Woodpasture and Parkland BAP Priority Habitat (England)





Legend

Important Plant Areas Plantlife (GB)

Granted European Protected Species Applications (England)

- Amphibian
- Bat
- Cetacean
- Invertebrate
- Other Mammal
- Plant
- Reptile
- Great Crested Newt Class Survey Licence Returns (England)

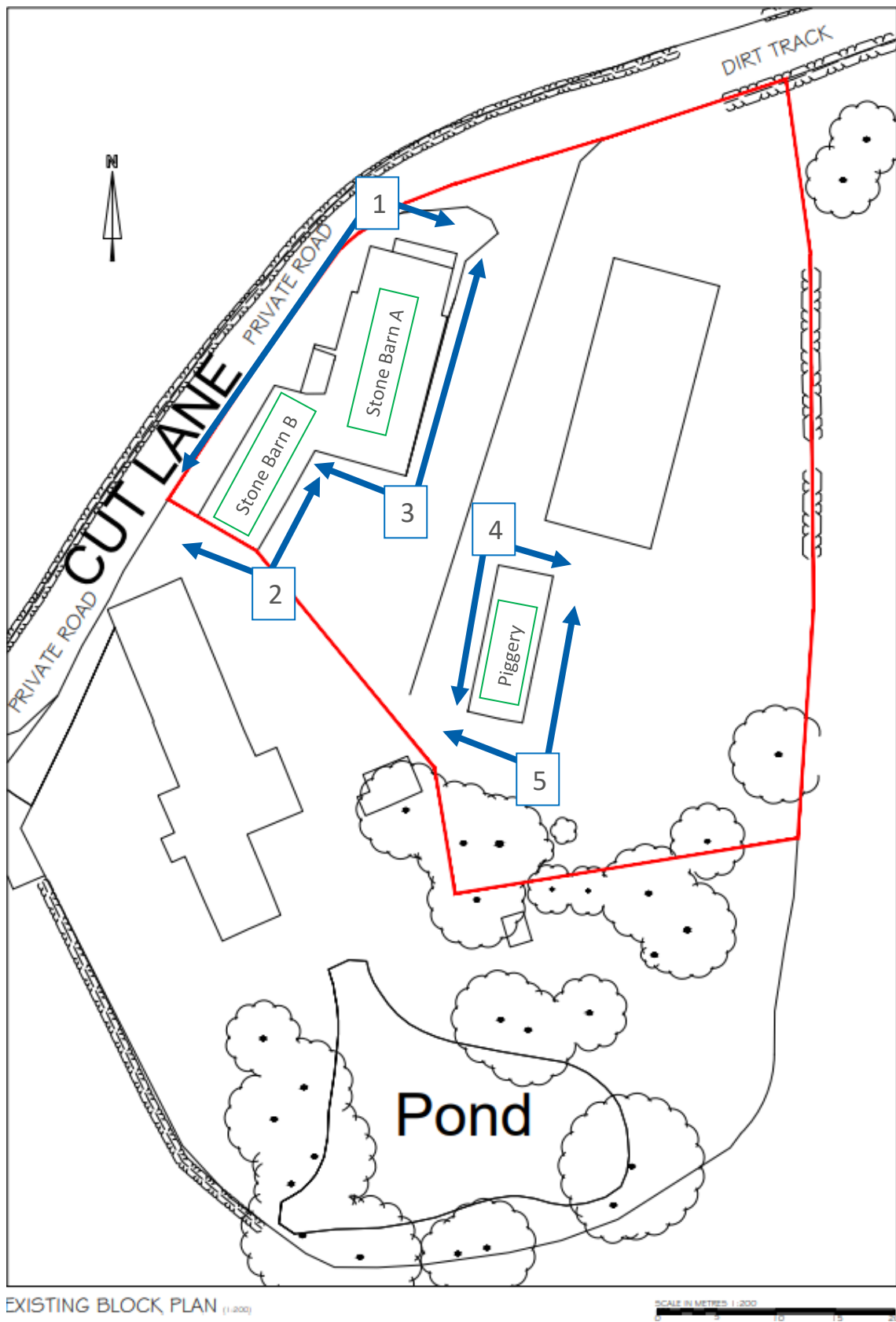
Great Crested Newt Pond Surveys 2017 - 2019

- 10 FIG present
- 10 FIG absent
- 10 FIG inconclusive
- 8 FIG present
- 6 FIG present
- 4 FIG present
- 4 FIG absent
- 4 FIG inconclusive

Projection = OSGB36
xmin = 327800
ymin = 389400
xmax = 362900
ymax = 405600

Map produced by MAGIC on 20 April, 2022.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

Appendix 4: Example Surveyor Locations for Further Surveys



Appendix 5: Examples of Native Nectar Rich Fragrant Plants as Enhancement Planting for Bats.

Species	Flowering season
Corncockle (<i>Agrostemma githago</i>)	Summer
Cornflower (<i>Centaurea cyanus</i>)	Late spring and summer into autumn
Corn marigold (<i>Glebionis segetum</i>)	Late summer
Corn poppy (<i>Papaver rhoeas</i>)	Late summer
English Bluebell (<i>Hyacinthoides non-scripta</i>)	Spring
Field poppies (<i>Papaver rhoeas</i>)	Summer
Common Knapweed (<i>Centaurea nigra</i>)	Summer to autumn
Musk Mallow (<i>Malva moschata</i>)	Summer to autumn
Ox-eye daisy (<i>Leucanthemum vulgare</i>)	Summer
Primrose (<i>Primula vulgaris</i>)	Spring
Red campion (<i>Silene dioica</i>)	Spring
Scabious (<i>scabiosa</i> sp.)	Summer
St John's wort (<i>Hypericum perforatum</i>)	Spring
Wood forget-me-not (<i>Myosotis sylvatica</i>)	Spring
Yarrow (<i>Achillea millefolium</i>)	Early summer
Angelica (<i>angelica sylvestris</i>)	Summer
Borage (<i>Borago officinalis</i>)	Summer to early autumn
Coriander (<i>Coriandrum sativum</i>)	Summer
English marigolds (<i>Calendula officinalis</i>)	Early summer to autumn
Fennel (<i>Foeniculum vulgare</i>)	Summer to early autumn
Feverfew (<i>Tanacetum parthenium</i>)	Summer to autumn
Hyssop (<i>Hyssopus officinalis</i>)	Summer to early autumn
Lavenders (<i>Lavandula</i> sp.)	Summer
Lemon balm (<i>Melissa officinalis</i>)	Spring and early summer
Marjoram (<i>Origanum majorana</i>)	Summer
Rosemary (<i>Salvia rosmarinus</i>)	Spring
Sweet Cicely (<i>Myrrhis odorata</i>)	Spring to early summer
Thyme (<i>Thymus vulgaris</i>)	Summer