



Marshall Road, Oxford

Preliminary Ecological Appraisal and Bat Survey

May 2020

E2015r2



COMMISSIONED BY

Drennan International

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Marshall Road, Oxford

Preliminary Ecological Appraisal and Bat Survey

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1 INTRODUCTION AND METHODS

1.1 Introduction

1.1.1 Bioscan (UK) Ltd was commissioned by Drennan International initially to undertake a preliminary ecological appraisal (PEA) of a site known as Marshall Road, Oxford (grid reference SP549045), which is proposed to be re-developed to housing. Following this, Bioscan was also commissioned to undertake supplementary bat emergence surveys of the small, derelict house that is present on the site, which was identified as having bat roosting potential during the PEA.

1.1.2 The site is located in east Oxford, close to the Eastern By-Pass. The site currently contains a large warehouse which is in use for storage, and a derelict red brick house.

1.2 Methods

Desk study

1.2.1 The desk study included a search of relevant internet sources, including the on-line 'MAGIC' database managed by Natural England¹, in order to source data relating to statutory designations and important habitats and species within a 1km radius from the site.

Habitat survey

1.2.2 The Phase 1 habitat survey was carried out on the 22nd of January 2020 by Sam Watson and Christina Derrick, both of Bioscan (UK) Ltd. The survey was carried out based on the Phase 1 habitat survey approach² whereby the habitat types were identified and mapped, and a relevant species list compiled for each.

1.2.3 Although January is outside the optimal period for detailed botanical surveys it was nevertheless possible to categorise the habitat's into broad types to facilitate an assessment of likely significance of the impacts arising out of the proposal.

Protected species surveys

1.2.4 Concurrent with the habitat survey the site was assessed for its ability to support protected species, such as reptiles, with a search of the site also undertaken for evidence badger activity *Meles meles*, such as setts, latrines and snuffle pits.

¹ Multi-Agency Geographic Information for the Countryside website - <http://magic.defra.gov.uk/MagicMap.aspx>

² Nature Conservancy Council (1990) 'A Handbook for Phase 1 Habitat Survey' (updated JNCC 2010)

Bats – building survey

- 1.2.5 In order to investigate the potential use of the buildings on the site by bats for roosting, a survey was carried based on the methodology outlined in the Bat Conservation Trust (BCT) Good Practice Guidelines³.
- 1.2.6 This involved a detailed external and, where access permitted, internal survey of the buildings to check for evidence of bats such as droppings, feeding remains, staining and any bats themselves. The exterior of each building was then assessed for its potential to support roosting bats based on the presence and suitability of features bats could potentially exploit for roosting such as gaps behind fascia/barge boards and soffits, loose or hanging tiles, cracks in brickwork or panelling/weatherboarding.
- 1.2.7 The survey was carried out concurrently with the habitat survey on the 22nd January 2020 by Sam Watson (Bat Survey Class Licence WML-CL18 registration ref: 2015-11529) and Christina Derrick, both of Bioscan (UL) Ltd.

Bats – emergence survey

- 1.2.8 In order to investigate further the potential use of the small, derelict house at the eastern end of the site by bats for roosting, dusk emergence surveys were carried out. Whilst the building was assessed to have low roosting potential, internal assess was not possible during the PEA and as such two dusk emergence surveys were therefore undertaken. The methodology for these was based on the 2016 BCT guidance and involved two surveyors, each equipped with a bat detector (Pettersson d240x), attending the site shortly before sunset in order to monitor the building continually from 15 minutes before sunset until at least an hour after, by which point it was too dark to determine with certainty if any bats detected had emerged from the building. This time period is, however, considered to be long enough to capture the typical emergence period for species that emerge later such as *Plecotus* and *Myotis* species⁴.
- 1.2.9 In addition, a FLIR e95 thermal imaging camera was also employed to assist with confirmation of possible emergence. This was deployed to monitor the south and east elevations of the house during the first survey, and north and west elevations during the second survey.
- 1.2.10 Both dusk surveys were carried out by Samuel Watson and Rebecca Read, of Bioscan (UK) Ltd.

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

⁴ Russ J (2012) *British Bat Calls - A Guide to Species Identification*. Pelagic Publishing

2 RESULTS

2.1 Desk study

2.1.1 The desk study confirms that the site is not subject to a statutory nature conservation designation and there are no such sites in the immediate vicinity. The closest such site is the Lye Valley SSSI approximately 600m north of Marshall Road.

2.1.2 Regarding protected species, there were two records of bats within the 1km search radius, in the form of granted European Protected Species derogation licences. These related to common pipistrelle (*Pipistrellus pipistrellus*) roost, approximately 500m north-east, and common pipistrelle and brown long-eared bat (*Plecotus auritus*) roost, approximately 1km north.

2.2 Habitat survey

2.2.1 The following broad habitat types were found on the site:

- Hardstanding
- Buildings
- Improved grassland
- Disturbed ground
- Bramble

2.2.2 Each habitat is mapped on Figure 1, with the characteristic species described below. See appendix 1 photos 1-5 for images of the habitats found on site.

Hardstanding

2.2.3 The majority of the site consists of hardstanding, with much of this being covered in a thin layer of mud/soil which has allowed some colonisation by opportunistic species. Grasses recorded include Yorkshire fog (*Holcus lanatus*), common bent (*Agrostis capillaris*), cock's-foot (*Dactylis glomerata*), and smooth meadow grass (*Poa pratensis*).

2.2.4 The herb component included smooth sow thistle (*Sonchus oleraceus*), dandelion (*Taraxacum officinale* agg.), herb Robert (*Geranium robertianum*), hedge woundwort (*Stachys sylvatica*), dove's-foot crane's-bill (*Geranium molle*), cleavers (*Galium aparine*), ribwort plantain (*Plantago lanceolata*), petty spurge (*Euphorbia peplus*), black medic (*Medicago lupulina*), cats ear (*Hypochaeris radicata*), hairy bitter-cress (*Cardamine hirsuta*), thale cress (*Arabidopsis thaliana*), wood avens (*Geum urbanum*), and localized patches of Wilson's honeysuckle (*Lonicera nitida*), buddleia (*Buddleja davidii*), common valerian (*Valeriana officinalis*) and nipplewort (*Lapsana communis*). One undesirable addition to this habitat identified during the dusk bat surveys is rockspray cotoneaster *Cotoneaster horizontalis*.

- 2.2.5 There were also areas of ivy (*Hedera helix*) and bramble (*Rubus fruticosus agg.*) along the boundaries, and a single black currant (*Ribes nigrum*) plant on the western edge of the driveway. Similarly, a single small holly (*Ilex aquifolium*) was found along the southern boundary.

Buildings

- 2.2.6 There are two buildings on the site; a large warehouse, which is currently in use, on the central area of site, and a derelict house behind this towards the eastern end of the site. These are described in more detail in section 2.3.2.

Improved grassland

- 2.2.7 At the eastern end of the site there is an area of outgrown, improved grassland that looks to have once been the garden of the now derelict house. The grassland was species poor consisting mostly of common bent, Yorkshire fog and smooth meadow grass. Ribwort plantain, white clover (*Trifolium repens*), dove's foot cranesbill and cleavers were also found throughout, although as a relatively small component of the overall sward.

Disturbed ground

- 2.2.8 Adjoining the improved grassland to the south, north-east and north-west were areas of disturbed ground. These appear to have been bramble thickets have been recently cut down, with the ivy dominated ground flora now uncovered.

Bramble thicket

- 2.2.9 At the north of the site, between the warehouse and the northern boundary fence, there is narrow strip of dense bramble. Other species noted to be present here included cleavers and ivy.

2.3 Bats - building survey

- 2.3.1 Below is a description of each building, a summary of results of the survey and an assessment of the overall bat roosting potential of each building as identified from the inspection. See appendix 1 photos 6-14 for images of both buildings.

Description of buildings

- 2.3.2 The warehouse is a single-story, predominately red brick building with gable ends and a shallow pitched roof. It has a metal profile roof with four strips of sky lights running the length of the roof.
- 2.3.3 Internally, the building lacks a contained roof void, although there is shallow gap between the roof covering and internal false ceiling. This was not accessible for detailed inspection but missing ceiling tiles in places allowed the space to be viewed

confirming that the building has an internal metal frame which is unlikely to provide any significant roosting potential. The rest of the interior of the building was well lit due to the skylights.

2.3.4 Externally, the brickwork was generally in good condition with no obvious gaps or cracks. The only potential roost location noted was a narrow gap between the fascia and top of the gable on the western end.

2.3.5 The derelict house is a two-story gable ended building with two adjoining single-story outhouses, both with gable ends. The roof is pitched with slate tiles and there is a chimney on the western end. It was not possible to gain entry into the building due to the windows and doors being boarded up and so only an external survey could be carried out at the time of the survey.

2.3.6 Generally, the building is in poor condition and it appears unlikely to have been occupied for some time. Roosting opportunities noted on this building include where the ridge is missing a tile and at under the eaves. It is also possible that the building has an internal roof void.

Evidence found and roosting potential

2.3.7 No bat droppings or urine staining was found inside the warehouse or externally on either building. Overall, the warehouse was assessed as having negligible to low roosting potential⁵, with the house no more than low based on the observable features. Given the lack of internal access to the house, a precautionary moderate potential assessment was however applied following the building stage.

2.4 Bats – emergence survey

2.4.1 The emergence surveys were carried out on 27th April and 12th May 2020. The position of the surveyors during each survey is shown on Figure 2. The survey conditions are provided in Table 1 below.

Table 1. Bat activity survey details

| Date | Start Time | Sunset | End Time | Temperature Range (°C) | Weather |
|------------|------------|--------|----------|------------------------|---------------------------------------|
| 27/04/2020 | 20:10 | 20:23 | 21:40 | 16 – 16 | 75% cloud, wind 0-2, no precipitation |
| 12/05/2020 | 20:34 | 20:49 | 22:00 | 12 – 13 | 25% cloud, wind 0-1, no precipitation |

⁵ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.

- 2.4.2 A single common pipistrelle bat was recorded emerging from the northern elevation of the building (see Figure 2 and Photo 12) at 20:30 during the first dusk survey. Examination of this location prior to the start of the second survey suggests that the roost location is at the wall top.
- 2.4.3 No other activity was detected during either survey that would indicate a roost at other locations on the building. Other bats detected during the survey include a small number of common pipistrelle passes and a single noctule registration.

3 EVALUATION

3.1 The principles of site evaluation

- 3.1.1 While a certain level of subjectivity is unavoidable when apportioning value to ecological features and resources, certain parameters and points of reference can be used to help ensure consistency. Those used in this appraisal are explained below.
- 3.1.2 Sites already possessing statutory or non-statutory nature conservation designations will have been subjected to some form of evaluation process in the past, and their importance defined at a geographical scale (e.g. international, national, local). For these, evaluation will generally reaffirm their qualifying attributes, or in some cases may identify where designation may no longer be appropriate.
- 3.1.3 Factors such as extent, naturalness, rarity, fragility and diversity are all relevant to the determination of ecological value, and for the evaluation of sites and habitat features outside designated sites, these and other criteria as described by Ratcliffe⁶, may be applied. Ratcliffe's criteria are integral to the procedure for selecting both Sites of Special Scientific interest and many non-statutory designation systems in the UK, and therefore remain an accepted standard for site evaluation.
- 3.1.4 In applying these criteria, attention may be drawn to the relative scarcity or abundance of features within the survey area and in the wider geographical context. Some criteria are however absolute and not relative to scale. Ancient woodland, for example, is fragile irrespective of whether it is being considered in an international or local context. Similarly, the value of an otherwise poor habitat may be elevated if it is central to the survival of a rare species.
- 3.1.5 In the context of land-use planning and development control, the above approach needs to be supplemented by consideration of whether individual species are subject to legal protection⁷, or whether habitats or species are present which have been identified as of 'principal importance' for biodiversity conservation in the UK⁸. Planning authorities have a statutory duty⁹ to have regard to protected species and further biodiversity objectives and the presence of such species may be a material consideration in the determination of development control decisions¹⁰.
- 3.1.6 Finally, attention may be drawn to species not necessarily subject to legal protection or identified as a priority for biodiversity conservation, but which nonetheless have an 'unfavourable' conservation status as defined by the Red Data Book system or the

⁶ Ratcliffe (1977) *A Nature Conservation Review*.

⁷ Principal legislation being the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended) which consolidates The Conservations (Natural Habitats &c.) Regulations 1994 (as amended), both of which implement the EC Habitats Directive and Birds Directive. Some animals are protected under separate legislation (e.g. the Protection of Badgers Act 1992).

⁸ As published by the Secretary of State further to their duties under Section 41 of the Natural Environment and Rural Communities Act 2006

⁹ Section 40 of the Natural Environment and Rural Communities Act 2006

¹⁰ National Planning Policy Framework 2012 (as supplemented by Circular 06/2005).

Red and Amber lists for birds¹¹, or which are otherwise known to be rare or scarce in a local or regional context.

- 3.1.7 Scales of comparison varying from the international to the context of the local area may be used to define the measure of importance attached to individual features. The definition of geographic terms can vary, but in this evaluation the geographic frame of reference contained within the CIEEM guidelines¹² is used.

3.2 Site evaluation

Habitats

- 3.2.1 Without exception, the plant species found on site are common and widespread throughout the UK, and the assemblages identified are typical of a site of this type. None of the habitats is subject to any special protection and their loss would not be likely to result in a significant impact at any geographic level above the immediate confines of the site itself. Rockspray cotoneaster is listed on Schedule 9 to the Wildlife and Countryside Act 1981 (as amended) making it an offence to plant or otherwise cause it to grow in the wild.

Fauna

- 3.2.2 The only confirmed evidence of specially protected species being resident on the site was the emergence of a single common pipistrelle bat from a roost that is likely to be at the wall top on the northern elevation of the derelict house during the dusk survey on 27th April. All bat species and their roosts in Britain are afforded full protection under the Conservation of Habitats and Species Regulations 2017 (as amended). Regulation 43 of these sets out that it is an offence to:

- deliberately capture, injure or kill any bat;
- damage or destroy a breeding site or resting place of a bat;
- deliberately disturbs bats, in particular any disturbance which is likely to:
 - impair their ability to
 - survive, breed or reproduce, or rear or nurture their young; or
 - hibernate or migrate; or
 - to affect significantly the local distribution or abundance of that species.

- 3.2.3 Confirmation of the presence of bat roosting in the building means that the above provisions apply and **a derogation licence issued by Natural England will therefore be required before any work can be carried out to this building.**

- 3.2.4 No evidence of other specially protected species being resident on the site was found during the surveys and overall, there is very limited scope for the site to support such

¹¹ Eaton *et al.* (2009) Birds of Conservation Concern 3: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. *British Birds* 102, pp296-341.

¹² Chartered Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom* (version 26 June 2006).



species, with the habitats assessed as unlikely to support reptiles and with no evidence of badgers found. Notwithstanding this, although not confirmed during the survey, there is scope for the site to be used by birds for nesting.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

- 4.1.1 Overall, no significant ecological constraints on the redevelopment of this site have been identified and it is considered unlikely that the proposals would result in a significant ecological impact.

4.2 Recommendations

Rockspray cotoneaster

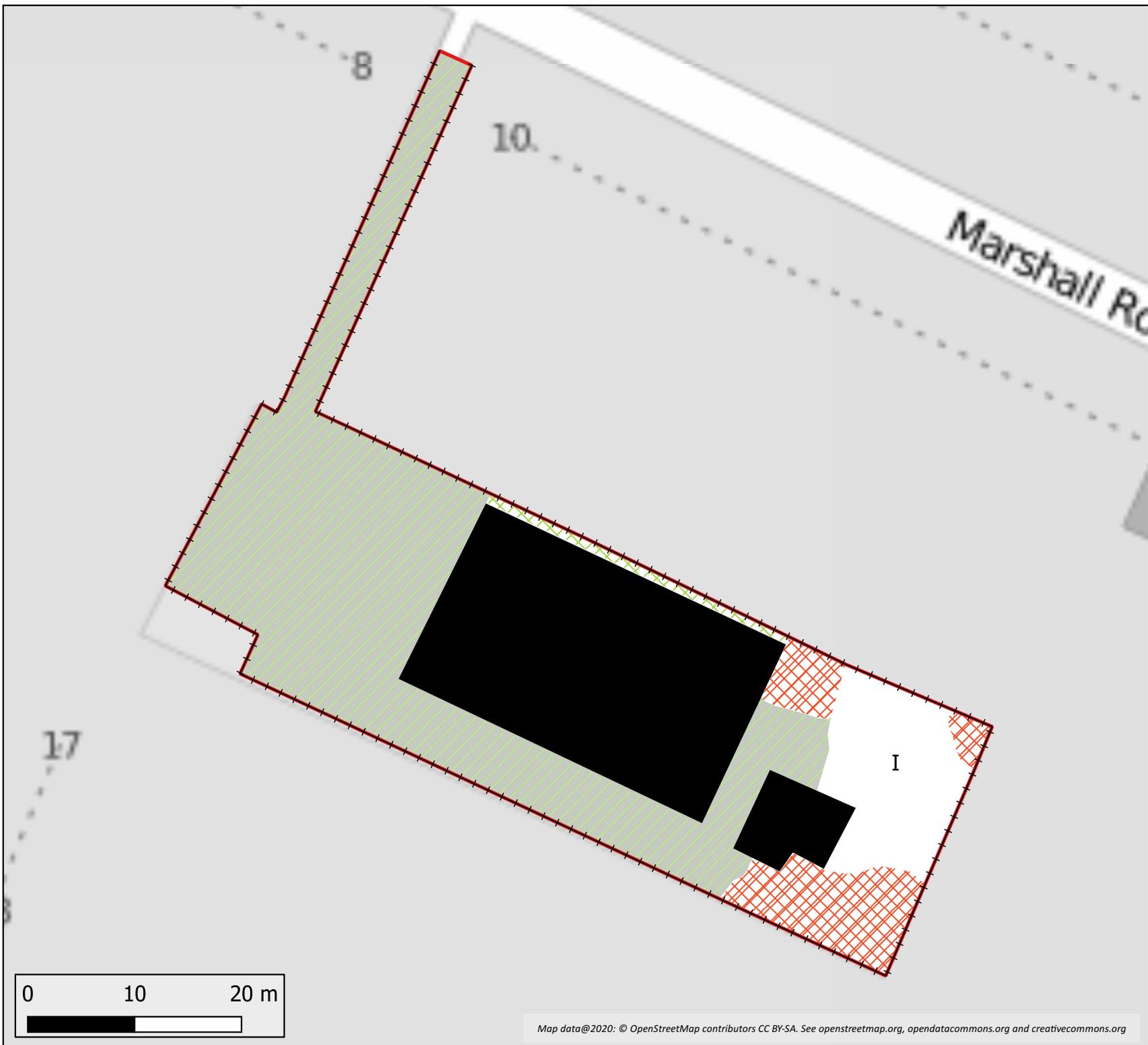
- 4.2.1 Care should be taken when undertaken any site clearance work or ground investigation to ensure that due regard is given to the presence of this invasive species to prevent it being inadvertently spread.

Bats

- 4.2.2 On the basis that a single bat was detected emerging from the roost, it is assessed to be of low conservation significant and licencing in this instance can be by way of the low impact class licencing system. Mitigation for the loss of this roost is recommended to be in the form of bat brick installed into one of the proposed buildings. This should be installed at eave height and with a south or south-westerly aspect.

Nesting birds

- 4.2.3 In order to avoid legislative constraints relating to nesting birds, it is recommended to carry out any clearance works, such as vegetation removal and building demolition, outside the bird nesting season, which typically runs from mid-February to August inclusive, although some bird species will nest all year-round if conditions are suitable. If the work is programmed for during the peak nesting period a prior survey by a suitably experienced ecologist would be recommended to identify if any nesting constraint is present at that time. If an active nest was identified within an area to be affected by any works, it is likely that it would have to remain *in situ* and unaffected until such time as a re-survey confirmed that it was no longer in active use, at which point it is likely that it could be removed.



Key

-  Bramble thicket
-  Building
-  Disturbed ground
-  Hardstanding with vegetation
-  Improved grassland
-  Wooden fence
-  Site boundary



Title
Habitat map

| | |
|--------------------------|------------------------------------|
| Project Marshall Road | Client Drennan International |
|--------------------------|------------------------------------|

| | | |
|-------------------------|----------|----------------------|
| Drawing No. Figure 1 | Revision | Project No. E2015 |
|-------------------------|----------|----------------------|

| | | |
|-------------|---------------|-----------------------|
| Drawn CD | Checked SW | Date February 2020 |
|-------------|---------------|-----------------------|

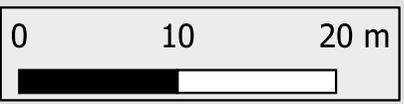
Bioscan (UK) Ltd

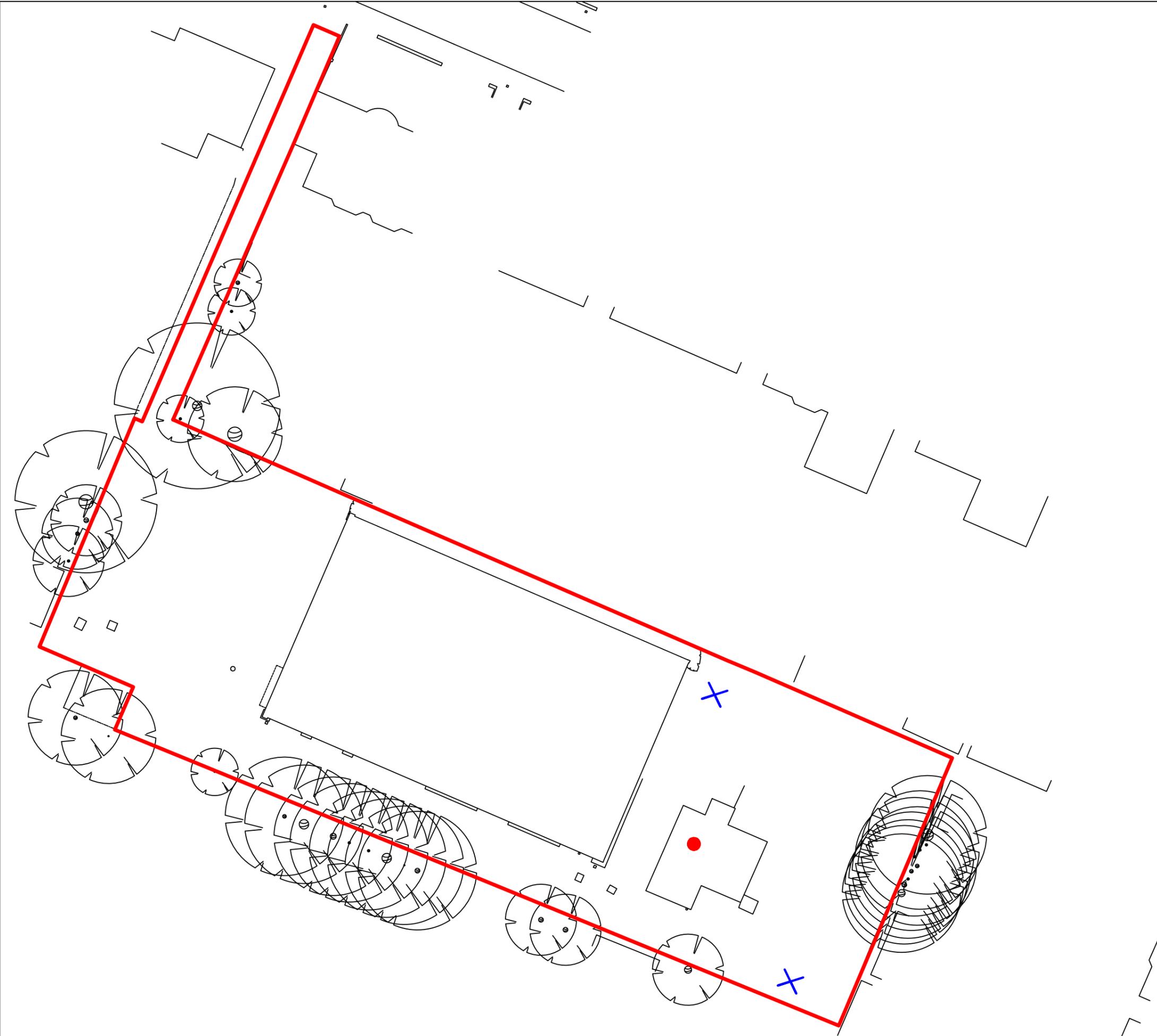
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Key

-  Site boundary
-  Location of surveyor
-  Roost location



DO NOT SCALE

| | | |
|--------------------|-----------------------|--------------------|
| Title | | |
| Bat survey | | |
| Project | Client | |
| Marshall Road | Drennan International | |
| Drawing No. | Revision | Project No. |
| Figure 2 | A | E2015 |
| Drawn | Checked | Date |
| SW | SW | May 2020 |

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Site Photos

Photo 1: Hardstanding at western end of the site



Photo 2: Hardstanding along the southern site boundary



Photo 3: Hardstanding along site access road



Photo 4: Improved grassland showing areas of disturbed ground



Photo 5: Bramble between the warehouse and northern site boundary



Photo 6: Western aspect of the warehouse



Photo 7: Southwestern aspect of the warehouse



Photo 8: Eastern aspect of the warehouse



Photo 9: Missing ceiling tile showing metal frame and lack of insulation between the metal roof and internal ceiling



Photo 10: Inside the warehouse illustrating it's use for storage



Photo 11: Inside the warehouse showing the sky lights



Photo 12: Northern aspect of the derelict house



Photo 13: Southeastern aspect the derelict building



Photo 14: Western aspect of the derelict house





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